IM3 (Jolie) Discrete 256M & UMA Block Diagram VER : 3A

POWER
- AC/BATT CONNECTOR PG 55
- BATT CHARGER PG 48

HybridSLI POWER
- VGA Core +1.1V_GFX PG 53
- REGULATOR For GDDR3 +1.8V_RUN PG 50
- HybridSLI SW +3.3V_NB9X/+1.8V_FBVDDQ/ +1.1V_GFX_PCIE PG 23

Dual Core CPU
Intel Penryn
(25W)
(478 Micro-FCPGA)
35 x 35 mm
PG 3,4

1066 MHz FSB

SYSTEM POWER
- MCP VR +MCP_CORE PG 50
- CPU VR +VCC_CORE/ +1.05V_VCCP PG 49,54
- REGULATOR For DDR3 +1.5V_DDR/ +0.75V_DDR_VTT PG 51
- REGULATOR +3.3V_ALW/+5V_SRC/ +15V_ALW PG 52
- RUN/SUS POWER SW +5V/+3.3V/+1.5V_RUN +3.3V_SUS PG 56
- LDO +1.1V_SUS PG 53
- LDO +1.1V_RUN PG 51

DDR3-SODIMM -A PG 15 — 1066 MHZ DDR-III
DDR3-SODIMM -B PG 16 — 1066 MHZ DDR-III

NVIDIA
MCP79MX
(1437 Pin PBGA)
35 x 35 mm
PG 5~14

LVDS x 1 Channel → **Panel** PG 26
VGA → **CRT CONN** PG 27
ML_LANE → **MUX/DeMUX Switch Texas SN75DP122** (56 Pin QFN) 8 x 8 mm PG 28
- HDMI → **HDMI Connector** PG 29
- DP → **Display Port** PG 29

PCIEx16 → **NVIDIA GPU NB9M-GE(GB1-64)** (533 BGA) 23 x 23 mm PG 17~23
- **Frame Buffer 32Mx32 Bit x 2** (136 FBGA) 11 x 14 mm
- **GDDR3 256MB** PG 24,25

PCI-E / USB2.0 → **WLAN MINI-CARD Half size** PG 32
PCI-E / USB2.0 → **WWAN MINI-CARD** PG 33
PCI-E / USB2.0 → **UWB/BT MINI-CARD** PG 33
PCI-E / USB2.0 → **Express Card** PG 34 → **Express Switch RICOH R5538D001** (20 QFN) 4 x 4 mm PG 34

RGMII → **PHY Broadcom B5071A2KFBG** (100 BGA) 9 x 9 mm PG 45 → **Magnetic** PG 46 → **RJ45** PG 46

IHDA → **AUDIO IDT 92HD73C** (56 LQFP) 9 x 9 mm PG 42
- **Audio Jack -HP1** PG 44 ← **Amplifier Texas TPA4411MRTJR** (20 Pin QFN) PG 43
- **Audio Jack -MIC** PG 44
- **Audio Jack -HP2** PG 44 ← **Amplifier Texas TPA6040A4** (32 Pin QFN) PG 43
- **Internal Speaker** PG 38

USB2.0 → **WebCam+DMIC** PG 38
USB2.0 → **Fingerprint** PG 38
USB2.0 x 2 → **USB CONN -Left** PG 30
USB2.0 → **eSATA/USB COMBO CONN** PG 30
SATA2 → **SATA - ODD** PG 31
SATA2 → **SATA - HDD** PG 31
33MHz PCI → **PC Card/1394 RICOH R5C833T** (128 Pin TQFP) 14 x 14 mm PG 40,41
- **1394 CONN** PG 41
- **CardReader CONN** PG 41

LPC → **SIO ITE ITE8512E** (128 Pin LQFP) 16 x 16 mm PG 36
- SPI → **FLASH Memory SPI, 2MB** (8 Pin SO8W) PG 37
- PS/2 → **K/B, CCD, D/B connector** PG 38
- **CIR** PG 37
- **Touchpad** PG 38

GPU THERMAL ADM1032
GPU SS Clock PG1819G-08SR PG 19

CPU Thermal & FAN SMSC1423 (10 TSSOP) 3 x 3 mm PG 35

QUANTA COMPUTER

Title	Schematic Block Diagram	
Size	Document Number IM3 (XPS-Jolie)	Rev 2A
Date: Thursday, October 23, 2008	Sheet 1 of 59	

INDEX

Power States

Power Rail	Control Signal	S0	S3	S4	S5	G3
+PWR_SRC	N/A	V	V	V	V	
+0.75V_DDR_VTT	RUN_ON	V				
+1.05V_VCCP	CPUVDD_EN	V				
+1.1V_GFX	+3.3V_NB9X	V				
+1.1V_GFX_PCIE	MXM_PWR_EN	V				
+1.1V_RMGT	SLP_RMGT#	V	V			
+1.1V_RUN	RUN_ON	V				
+1.1V_SUS	+3.3V_SUS	V	V			
+1.5V_RUN	RUN_ON	V				
+1.5V_DDR	SIO_SLP_S5#	V	V			
+1.8V_FBVDDQ	NB9_CORE_PWRGD	V				
+1.8V_RUN	RUN_ON	V				
+15V_ALW	+5V_ALW	V	V			
+3.3V_ALW	+5V_ALW2	V	V	V	V	
+3.3V_NB9X	MXM_PWR_EN	V				
+3.3V_RMGT	SLP_RMGT#	V	V			
+3.3V_RUN	RUN_ON	V				
+3.3V_SUS	SUS_ON	V	V			
+5V_ALW	5V_ALW_ON	V	V			
+5V_ALW2	+PWR_SRC	V	V	V	V	
+5V_HDD	HDDC_EN	V				
+5V_MOD	MODC_EN	V				
+5V_RUN	RUN_ON	V				
+GFX_PWR_SRC	RUN_ON	V				
+LCDVCC	EN_LCDVCC	V				
+MCP_CORE	RUN_ON	V				
+NB9_CORE	+3.3V_NB9X	V				
+RTC_CELL	N/A	V	V	V	V	V
+VCC_CORE	1.05V_VCCP_PWRGD	V				
+USB_RIGHT_PWR	USB_SIDE_EN#	V	V			
+USB_LEFT_PWR	USB_BACK_EN#	V	V			

QUANTA COMPUTER

Title	Index & Power Status	
Size	Document Number IM3 (XPS-Jolie)	Rev 2A
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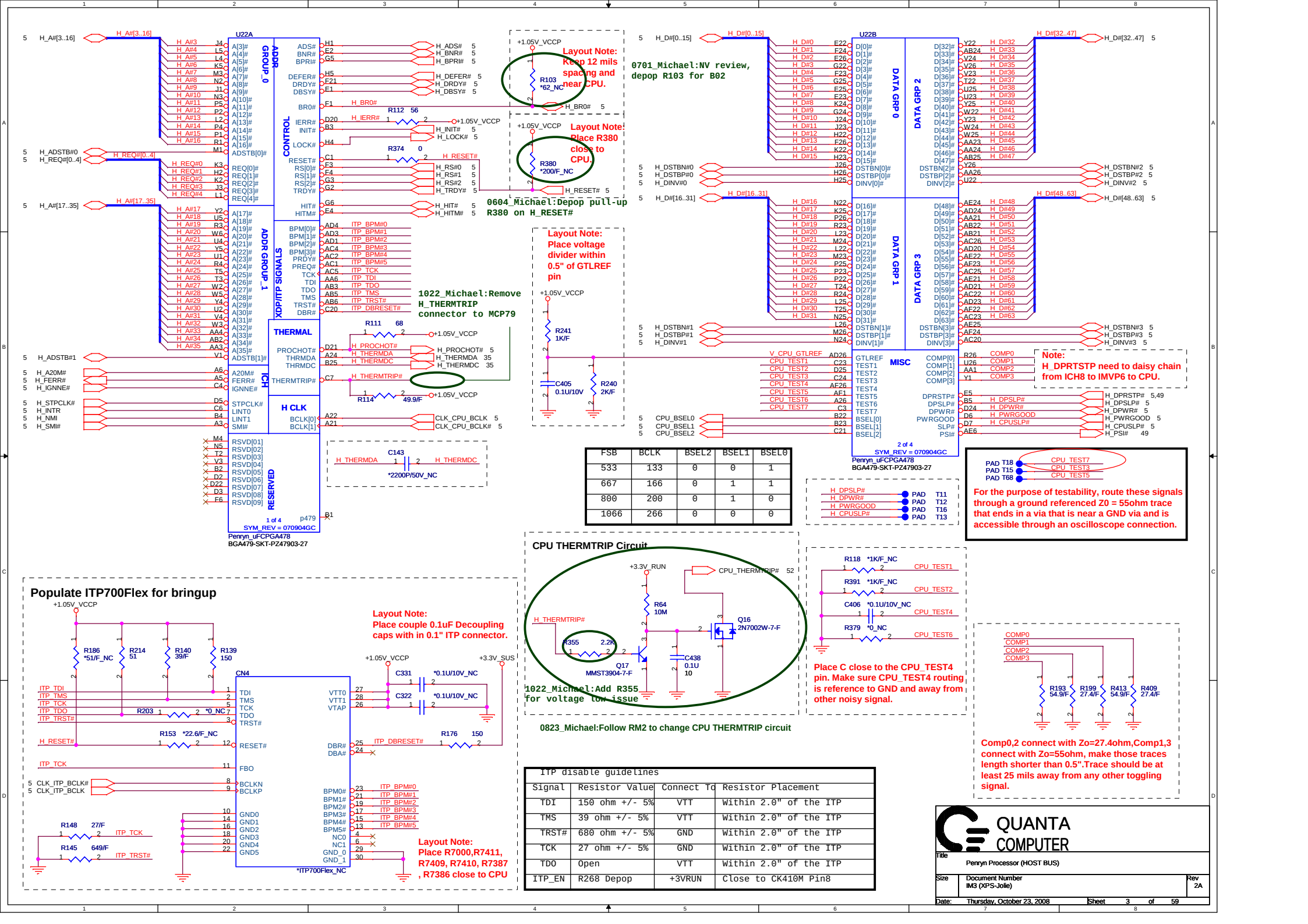

FSB	BCLK	BSEL2	BSEL1	BSEL0
533	133	0	0	1
667	166	0	1	1
800	200	0	1	0
1066	266	0	0	0

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)	
Size	Document Number: IM3 (XPS-Jolie)	Rev: 2A
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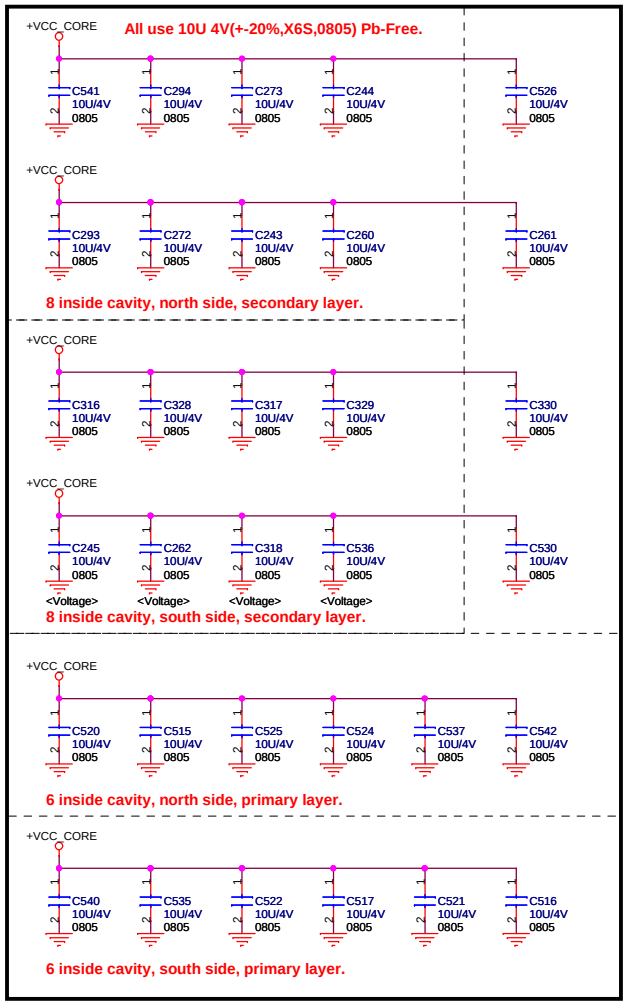

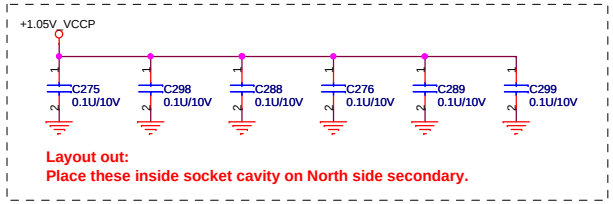

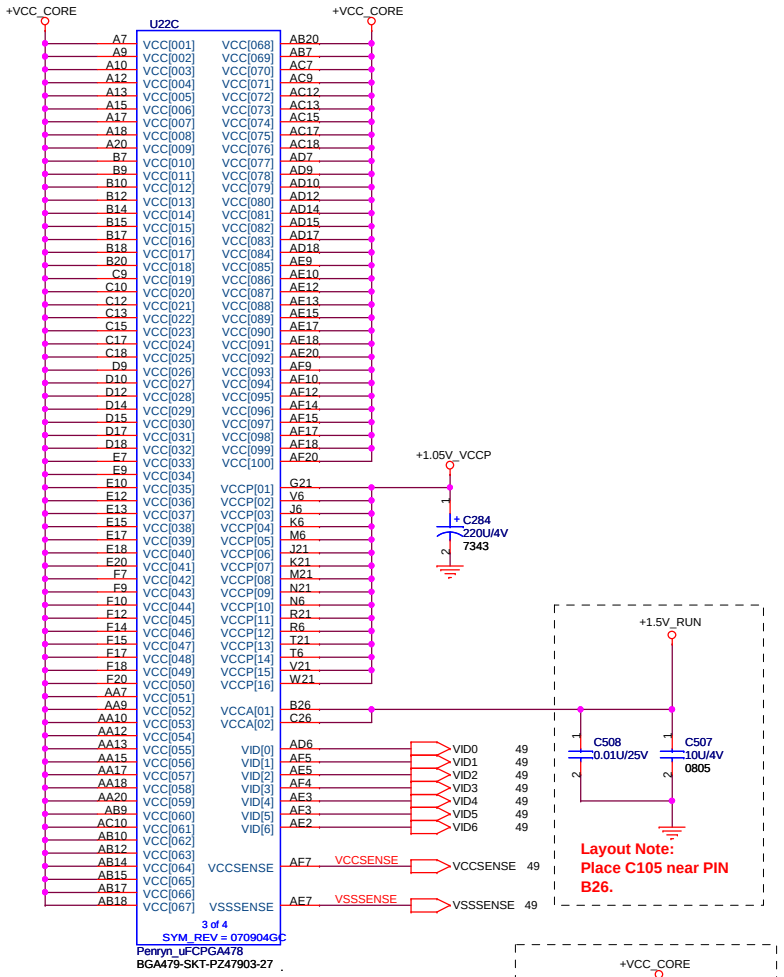

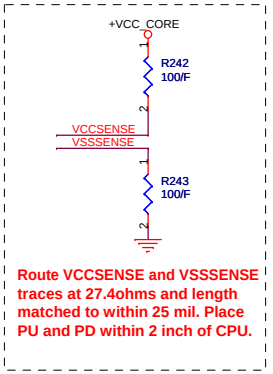

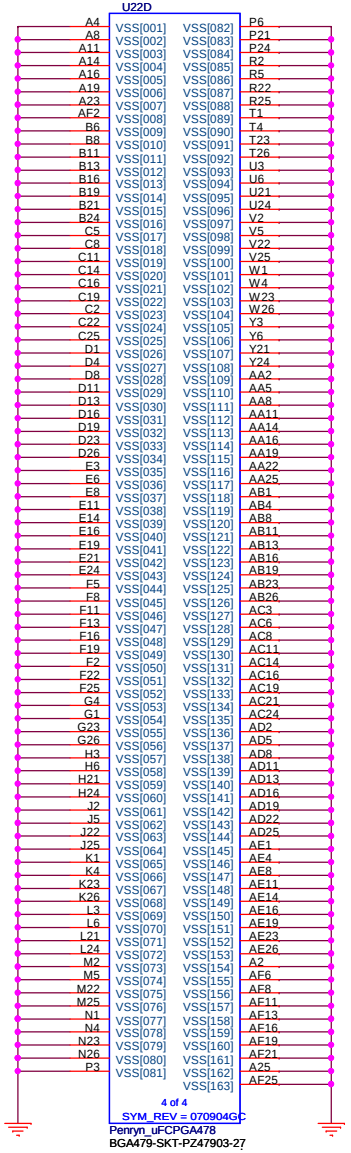

QUANTA COMPUTER

Title	Penryn Processor (POWER)	
Size	Document Number IM3 (XPS-Jolie)	Rev 2A
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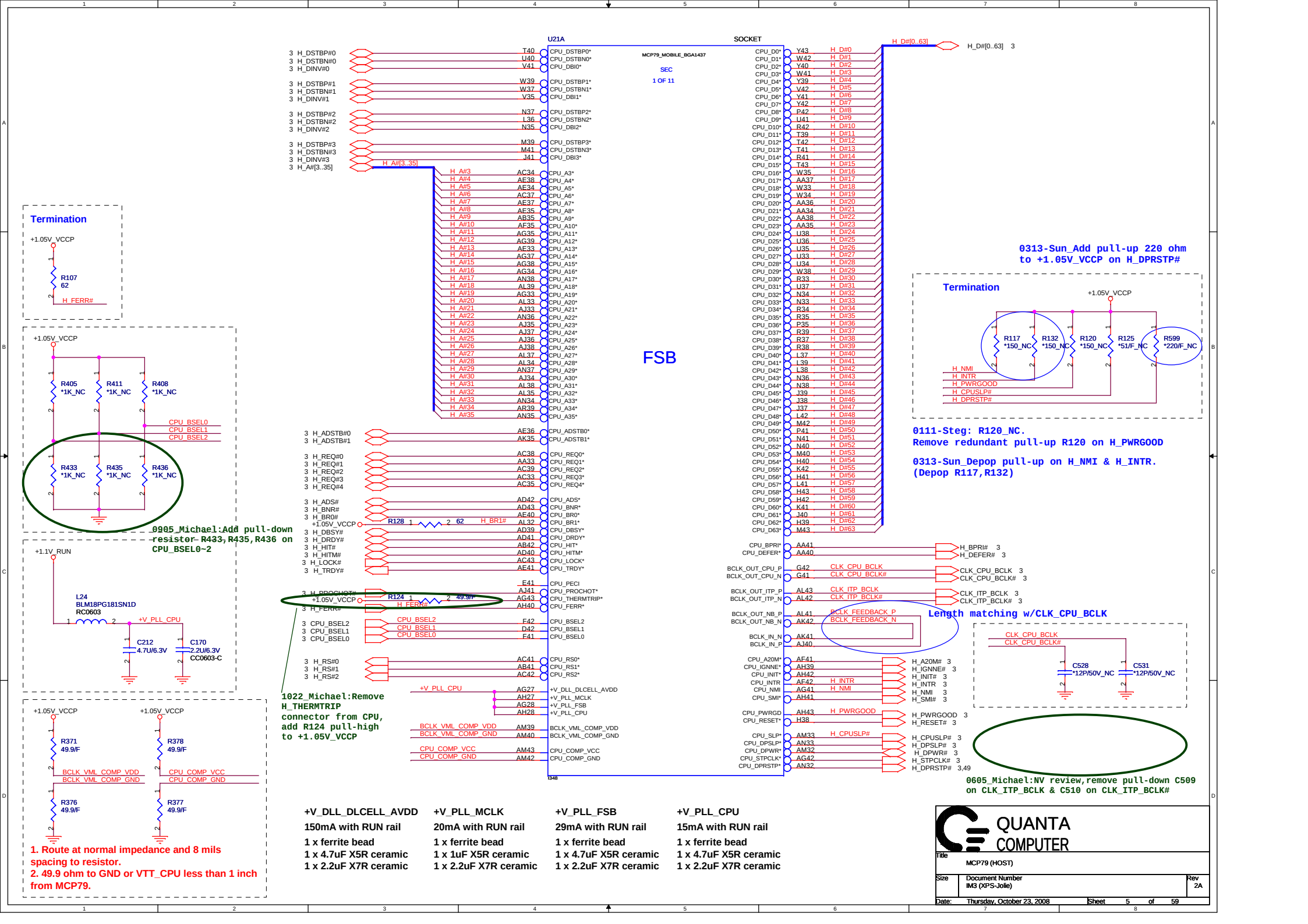
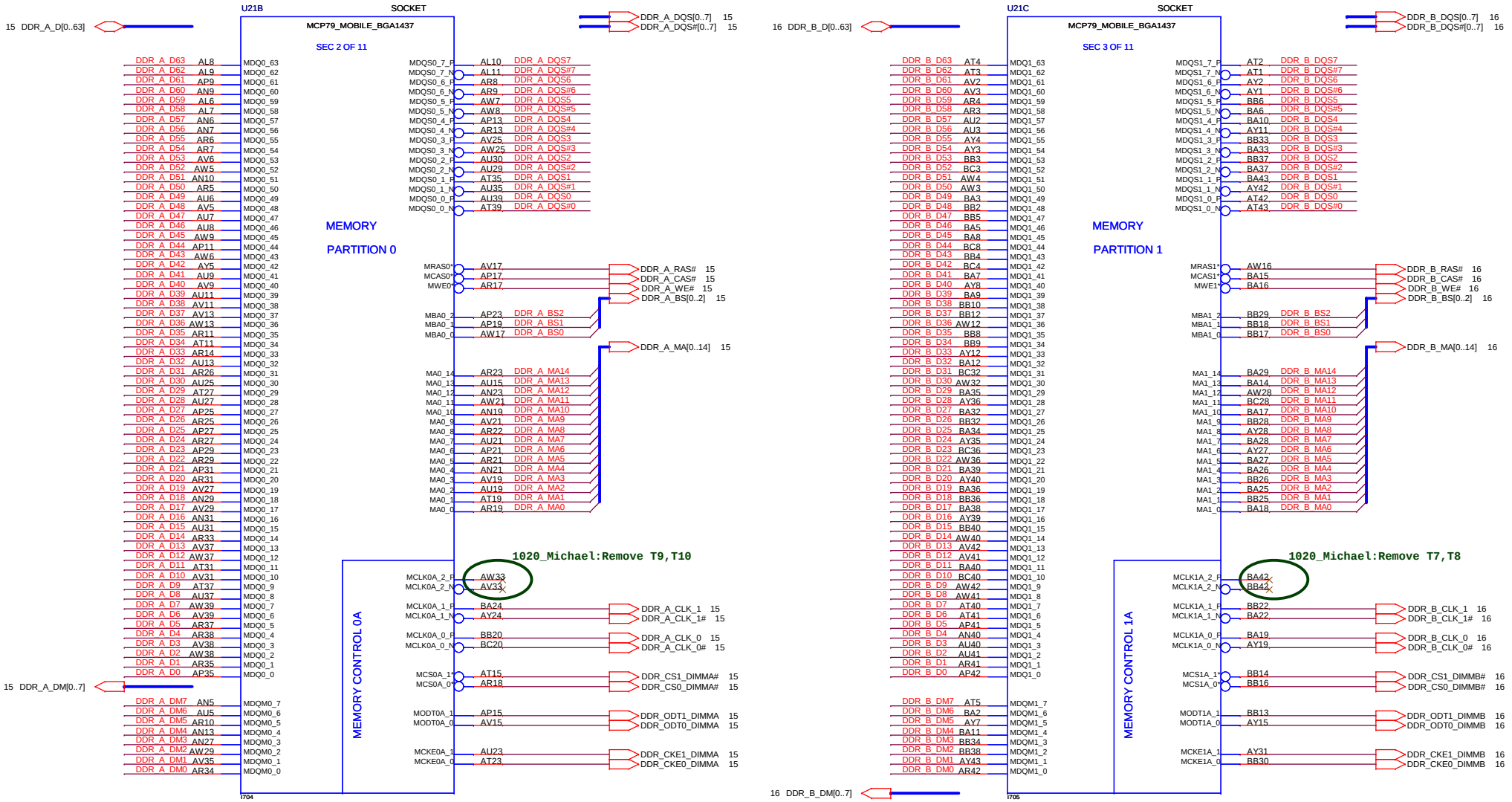

U21A
MCP79_MOBILE_BGA1437
SEC
1 OF 11
SOCKET
FSB
H_D#[0..63]
H_A#[3..35]
Termination
+1.05V_VCCP
R107
62
H_FERR#
R405 *1K_NC
R411 *1K_NC
R408 *1K_NC
R433 *1K_NC
R435 *1K_NC
R436 *1K_NC
CPU_BSEL0
CPU_BSEL1
CPU_BSEL2
0905_Michael:Add pull-down resistor R433,R435,R436 on CPU_BSEL0~2
+1.1V_RUN
L24
BLM18PG181SN1D
RC0603
+V_PLL_CPU
C212
4.7U/6.3V
C170
2.2U/6.3V
CC0603-C
R124
49.9/F
H_FERR#
1022_Michael:Remove H_THERMTRIP connector from CPU, add R124 pull-high to +1.05V_VCCP
R371
49.9/F
R378
49.9/F
BCLK_VML_COMP_VDD
BCLK_VML_COMP_GND
CPU_COMP_VCC
CPU_COMP_GND
R376
49.9/F
R377
49.9/F
1. Route at normal impedance and 8 mils spacing to resistor.
2. 49.9 ohm to GND or VTT_CPU less than 1 inch from MCP79.
0313-Sun_Add pull-up 220 ohm to +1.05V_VCCP on H_DPRSTP#
Termination
R117 *150_NC
R132 *150_NC
R120 *150_NC
R125 *51/F_NC
R599 *220/F_NC
H_NMI
H_INTR
H_PWRGOOD
H_CPUSLP#
H_DPRSTP#
0111-Steg: R120_NC.
Remove redundant pull-up R120 on H_PWRGOOD
0313-Sun_Depop pull-up on H_NMI & H_INTR.
(Depop R117,R132)
CLK_CPU_BCLK
CLK_CPU_BCLK#
CLK_ITP_BCLK
CLK_ITP_BCLK#
BCLK_FEEDBACK_P
BCLK_FEEDBACK_N
Length matching w/CLK_CPU_BCLK
C528
*12P/50V_NC
C531
*12P/50V_NC
0605_Michael:NV review,remove pull-down C509 on CLK_ITP_BCLK & C510 on CLK_ITP_BCLK#
+V_DLL_DLCELL_AVDD
150mA with RUN rail
1 x ferrite bead
1 x 4.7uF X5R ceramic
1 x 2.2uF X7R ceramic
+V_PLL_MCLK
20mA with RUN rail
1 x ferrite bead
1 x 1uF X5R ceramic
1 x 2.2uF X7R ceramic
+V_PLL_FSB
29mA with RUN rail
1 x ferrite bead
1 x 4.7uF X5R ceramic
1 x 2.2uF X7R ceramic
+V_PLL_CPU
15mA with RUN rail
1 x ferrite bead
1 x 4.7uF X5R ceramic
1 x 2.2uF X7R ceramic
QUANTA COMPUTER
Title
MCP79 (HOST)
Size
Document Number
IM3 (XPS-Jolie)
Rev
2A
Date: Thursday, October 23, 2008
Sheet 5 of 59



Layout Notice:

Memory Data Signal Group

MCP79 BGA Breakout (<175ps): Route at 50 ohm impedance and 1.5x dielectric height spacing.

After Breakout: Route at 40 ohm impedance and 4x(Microstrip) or 3x(Stripline) dielectric spacing.

DIMM Fan-in (<90ps): Route at 40 ohm impedance and 1.5x dielectric height spacing.

Memory Data Strobes

Route strobes differentially at 66 ohm impedance (42 ohm SE) and 5x dielectric height spacing to other signals.

Memory Clock Signal Group

MCP79 BGA Breakout (<90ps): Route at 50 ohm SE / 100 ohm differential impedance.

After Breakout: Route at 40 ohm SE / 66 ohm differential impedance and 5x dielectric height spacing to other signals.

Memory Address/Command/Control Signal Group

MCP79 BGA Breakout (<90ps): Route at 50 ohm impedance and 1.5x dielectric height spacing.

After Breakout: Route at 40 ohm impedance and 2x dielectric height to other signals and 3x dielectric spacing to other non-associated signals.

DIMM Fan-in (<90ps): Route at 40 ohm impedance and 1.5x dielectric height spacing.

QUANTA COMPUTER

Title	MCP79 (DDR3)	
Size	Document Number: IM3 (XPS-Jolie)	Rev: 2A
Date: Monday, October 20, 2008	Sheet 6 of 59	

+V_VPLL
39mA with RUN rail

+V_PLL_XREF_XS
17mA with RUN rail

+V_PLL_CORE
19mA with RUN rail

+V_PLL_DP
12mA with RUN rail

1 x ferrite bead
1 x 4.7uF X5R ceramic
1 x 0.1uF X7R ceramic

4.3A with ALW rail for S0
318mA for S0 Idle

1 x 2.2uF ceramic
12 x 0.1uF X7R ceramic

U21D SOCKET
MCP79_MOBILE_BGA1437
SEC 4 OF 11
MEMORY CONTROL 0B
MEMORY CONTROL 1B

+1.1V_RUN
L28
BLM18PG181SN1D
RC0603
C250 4.7U/6.3V
C738 4.7U/6.3V
C254 2.2U/6.3V CC0603
+V_PLL_XREF
MEM_COMP_VDD
MEM_COMP_GND

0910_Michael:Follow NV check list
add 4.7U C738

0605_Michael:Remove 0ohm R93
MEM_RESET# 15,16

+1.5V_RUN
C103 2.2U/6.3V CC0603-C
C160 0.1U/10V
C157 0.1U/10V
C159 0.1U/10V
C152 0.1U/10V
C151 0.1U/10V
C161 0.1U/10V
C162 0.1U/10V
C146 0.1U/10V
C93 0.1U/10V
C112 0.1U/10V
C109 0.1U/10V

0918_Michael:Follow NV checklist
change value from 4.7U to 2.2U

0102-Sun_Change MEM_COMP_VDD &
MEM_COMP_GND setting
MEM_COMP_VDD from +1.5V_RUN to GND &
MEM_COMP_GND from GND to +1.5V_RUN

R372 40.2/F
R373 40.2/F
MEM_COMP_VDD
MEM_COMP_GND
+1.5V_RUN

1217- AC Stitch Cap
+1.5V_RUN
C131 0.1U/10V
C130 0.1U/10V
C132 0.1U/10V

Layout Notice:
1. 40.2 +-1% ohm to +1.5V_SUS less than 1 inch from MCP79 for DDR3.
2. Route with 7 mils trace width and 8 mils spacing to termination reisitor.

QUANTA COMPUTER

Title	MCP79 (MEM POWER)	
Size	Document Number IM3 (XPS-Jolie)	Rev 2A
Date: Friday, September 19, 2008	Sheet 7 of 59	

PCIE Layout Notice:
MCP79 BGA Breakout (<27ps):
Route at 50 ohm impedance and 1.5x dielectric height spacing.
After Breakout:
Route at 50 Signal end and 90 ohm differential.
Inter-pair spacing 4x (Microstrip) dielectric height spacing 3x (Stripline)
dielectric height spacing.

U21E
SOCKET
MCP79_MOBILE_BGA1437
SEC 5 OF 11
PCIE

17 PCIE_MRX_GTX_P[0..15]
17 PCIE_MRX_GTX_N[0..15]

PCIE_MTX_GRX_P[0..15] 17
PCIE_MTX_GRX_N[0..15] 17

0605_Michael:Remove 0ohm
R185 on MXM_ON#
R433,R435,168 pull-down to GND
R177 on PE_RESET_MXM#
R458 on PCIE_WAKE#

10 MXM_ON#

Express Card
34 CARD_CLK_REQ#
34,36 EXPRCRD_PWREN#
D9 CH751H-40HPT

WLAN
32 MINI1CLK_REQ#

UWB/BT
33 MINI2CLK_REQ#

WWAN
33 MINI3CLK_REQ#

17 PE_RESET_MXM#
MXM_PRESENT#

+3.3V_SUS
R211 100K_UMA
MXM_PRESENT#
R210 1K_DIS

0314_Change MXM_PRESENT# pull down RES (R210) from 100k to 1k ohm base on NV suggestion

38 KB_LED_DET
36,47 MXM_RUNPWRGD
32,33,34 PCIE_WAKE#

0825_Michael:Add KB detect function
0918_Michael:Remove KB detect function
0920_Michael:Add KB detect function

Express Card
34 PCIE_RX0_P
34 PCIE_RX0_N

WLAN
32 PCIE_RX1_P
32 PCIE_RX1_N

UWB/BT
33 PCIE_RX2_P
33 PCIE_RX2_N

WWAN
33 PCIE_RX3_P
33 PCIE_RX3_N

0605_Michael:Remove Test pad
T21,T22,T28,T30

PE_RST0# K11 PE_RESET# C

+1.1V_RUN
482mA with RUN rail
JP3 SHORT40X18
0312-Sun_Change footprint to normal short type "short40x18"
1 x 2.2uF X5R ceramic
2 x 1uF X7R ceramic
2 x 0.1uF X7R ceramic
C227 2.2U/6.3V CC0603-C
C740 1U/6.3V
C234 1U/6.3V
C233 0.1U/10V
C253 0.1U/10V
+DVDD_PEX
0918_Michael:Follow NV checklist change value from 4.7U to 2.2U and add 1U

+1.1V_RUN
L22 BLM18PG181SN1D RC0603
82mA with RUN rail
1 x ferrite bead
1 x 4.7uF X5R ceramic
1 x 2.2uF X7R ceramic
C256 4.7U/6.3V CC0603
C229 2.2U/6.3V CC0603
+1.1V_PE_PLL
PE_CLK_COMP
R434 *2.37K/F_NC

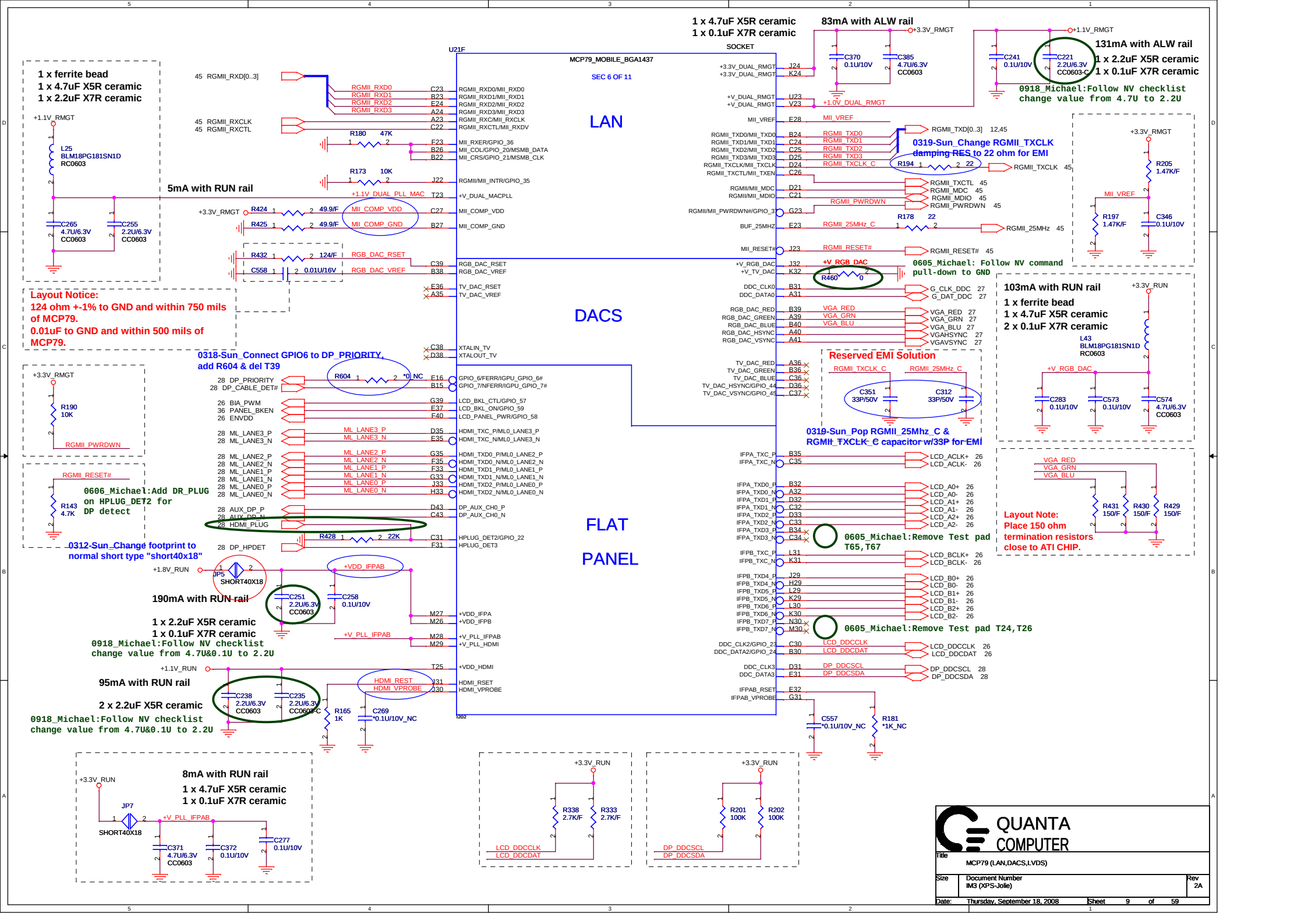
+AVDD_PEX
L6 BLM21PG600SN1D
+1.1V_RUN
1304mA with RUN rail
1x ferrite bead
1x 10uF
1 x 2.2uF X5R ceramic
2 x 1uF X5R ceramic
2 x 0.1uF X7R ceramic
C105 10U/6.3V CC0603
0624_Michael:Change L6 type from BLM21PG331SN1D to BLM21PG600SN1D
C228 0.1U/10V
C183 0.1U/10V
C240 1U/6.3V
C266 1U/6.3V
C216 2.2U/6.3V CC0603
0918_Michael:Follow NV checklist change value from 4.7U to 2.2U

T517
pad-s1
+AVDD_PEX
1221-Sun_Add dummy part for +AVDD_PEX

+3.3V_SUS
C579 0.047U/10V
U25 TC7SZ32FU(T5L,F,T)
PE_RESET# C
PE_RESET# 17,32,33,34,36

QUANTA COMPUTER

Title	MCP79 (PCIE)	
Size	Document Number IM3 (XPS-Jolie)	Rev 2A
Date: Saturday, September 20, 2008	Sheet 8 of 59	


1 x 4.7uF X5R ceramic
1 x 0.1uF X7R ceramic
83mA with ALW rail
SOCKET
U21F
MCP79_MOBILE_BGA1437
SEC 6 OF 11
LAN
DACS
FLAT
PANEL
1 x ferrite bead
1 x 4.7uF X5R ceramic
1 x 2.2uF X7R ceramic
5mA with RUN rail
Layout Notice:
124 ohm +-1% to GND and within 750 mils of MCP79.
0.01uF to GND and within 500 mils of MCP79.
0318-Sun_Connect GPIO6 to DP_PRIORITY, add R604 & del T39
0312-Sun_Change footprint to normal short type "short40x18"
0606_Michael:Add DR_PLUG on HPLUG_DET2 for DP detect
190mA with RUN rail
1 x 2.2uF X5R ceramic
1 x 0.1uF X7R ceramic
0918_Michael:Follow NV checklist change value from 4.7U&0.1U to 2.2U
95mA with RUN rail
2 x 2.2uF X5R ceramic
8mA with RUN rail
0319-Sun_Change RGMII_TXCLK damping RES to 22 ohm for EMI
0605_Michael: Follow NV command pull-down to GND
Reserved EMI Solution
0319-Sun_Pop RGMII_25Mhz_C & RGMII_TXCLK_C capacitor w/33P for EMI
0605_Michael:Remove Test pad T65,T67
0605_Michael:Remove Test pad T24,T26
131mA with ALW rail
103mA with RUN rail
Layout Note:
Place 150 ohm termination resistors close to ATI CHIP.
QUANTA COMPUTER
Title
MCP79 (LAN,DACS,LVDS)
Size
Document Number
IM3 (XPS-Jolie)
Rev
2A
Date:
Thursday, September 18, 2008
Sheet
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of
59

U21G

MCP79_MOBILE_BGA1437

SEC 7 OF 11

SOCKET

PCI

LPC

GND

0630_Michael:Remove Mini PCI CN8 and circuit

0319-Sun_Pop PCI_CLK capacitor w/15P for COMM

Layout Notice:
Cap placed within
500 mil of MCP79.

C242 15P/50V

C252 15P/50V

0605_Michael:NV review,remove pull-up R576 to +3.3V_SUS

0627_Michael:Add pull-up R208 to +3.3V_SUS(Leave Empty)

R208 *10K_NC

0606_Michael:Remove Test pad T77 and pull-down C257 to GND

R209 0/0603

Layout Notice:
Serise resistor placed within 500 mil of MCP79.
Length matching w/PCI_CLK*

Layout Notice:
33 ohm serise resistor placed within 500 mil of MCP79.

C513 *10P/50V_NC

0607_Michael:Remove pull-up R126 to +3.3V_RUN

0823_Michael:Follow NV checklist MXM_PWR_EN pull-down 10K to GND

Termination

RP1 8.2KX8

RP2 8.2KX8

R127 8.2K

R331 *8.2K_NC

R281 10K

MCP79 Strapping

0605_Michael:NV review,remove pull-up R237 & R390 to +3.3V_SUS

R198 10K

R385 10K

Boot BIOS Strapping

	HDA_SDATA_OUT	LPC_FRAME#
LPC BIOS	0	0
PCI BIOS	0	1
SPI BIOS(CS0)	1	0
SPI BIOS(CS1)	1	1

QUANTA COMPUTER

Title	MCP79 (PCI,LPC)	
Size	Document Number IM3 (XPS-Jolie)	Rev 2A
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0318-Sun_change left USB port from port1 to port0 for NV remote SW debug.

U21H
MCP79_MOBILE_BGA1437
SEC 8 OF 11

SOCKET

SATA

USB

SATA Layout Notice:
BGA Breakout:
Route differentially at normal impedance and 4 mils within pair and 6 mils to other signals.Maximum brackout distance is 400 mils of MCP79.
BGA Fan-out:
Route differentially at normal impedance and 4 mils within pair and 10 mils to other signals.Maximum BGA brackout plus Fan-out distance is 500 mils.
After Brackout:
Route at 100 ohm differential impedance (50 ohm SE) and 3x dielectric height spacing to other signals.
TX and RX intra-pair skew for a differential pair is 5 mils.

+V_PLL_SATA
163mA with RUN rail
1x ferrite bead
1 x 4.7uF X5R ceramic
1 x 0.1uF X7R ceramic

0312-Sun_Change footprint to normal short type "short40x18"

0918_Michael:Follow NV checklist change value from 4.7U to 2.2U

+DVDD0_SATA
117mA with RUN rail
1 x 2.2uF X5R ceramic
1 x 0.1uF X7R ceramic

0605_Michael: Remove 0ohm R123

+AVDD0_SATA
363mA with RUN rail
1x ferrite bead
1x 10uF
1 x 2.2uF X5R ceramic
3 x 0.1uF X7R ceramic

0910_Michael:Follow NV check list add 0.1U C510
0918_Michael:Follow NV checklist change value from 4.7U to 2.2U

0605_Michael: Remove 0ohm R109

Layout Notice:
2.49K ohm to GND within 500 mils of MCP79.
Routing 8 mils spacing to resistor.

USB Layout Notice:
BGA Breakout:
Route differentially at normal impedance and 4 mils within pair and 6 mils to other signals.Maximum brackout distance is 300 mils of MCP79.
BGA Fan-out:
Route differentially at normal impedance and 4 mils within pair and 10 mils to other signals.Maximum BGA brackout plus Fan-out distance is 400 mils.
After Brackout:
Route at 100 ohm differential impedance (50 ohm SE) and 4x dielectric height spacing (Microstrip) or 2x dielectric height spacing (Stripline) to other signals.
Each USB pair must be length metched to within 50 mil.

Left Side (froth)
Left Side
Combo (eSATA/USB)
Mini Card (WLAN)
Mini Card (WWAN)
Mini Card (WPAN)
Express Card
Biometric
Camera

1020_Michael:Remove T36,T37

1020_Michael:Remove T23,T29,T32,T34

0605_Michael: Follow NV command change power rail from +3.3V_RUN to +3.3V_SUS
0704_Michael:Move R7 pull-up to +3.3V_SUS close to MCP79

0616_Michael:Cancel fingerprinter and remove MCP_USB10+/-

0625_Michael:Add R403 for debug if have need

+V_PLL_USB
18mA with Run rail
1 x ferrite bead
1 x 4.7uF X5R ceramic
1 x 0.1uF X7R ceramic

0311-Sun_Changes USB RBIAS resistor to 806ohm. (NV)

Layout Notice:
909 ohm +-1% to GND within 1000 mil of MCP79.
Routing trace at least 8 mil wide to resistor.

Title	MCP79 (SATA,USB)
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QUANTA COMPUTER

1 x 4.7uF X5R ceramic
1 x 0.1uF X7R ceramic
6mA with ALW rail

C581 0.1U/10V
C400 0.1U/10V
C302 4.7U/6.3V CC0603-C
+3.3V_SUS

0910_Michael:Follow NV check list add 0.1U C581

U21I
MCP79_MOBILE_BGA1437
SEC 9 OF 11
SOCKET

HDA

42 HDA_SDATA_IN — G15 HDA_SDATA_IN0
35 THERM_ALERT# — J14 HDA_SDATA_IN1/GPIO_2/PS2_KB_CLK
T57 PAD — J15 HDA_SDATA_IN2/GPIO_3/PS2_KB_DATA
+3.3V_SUS
R438 49.9/F
A15 HDA_PULLDN_COMP

HDA_SDATA_OUT — F15 HDA_SDATA_OUT_R — R189 22 — HDA_SDATA_OUT 10,42
HDA_BITCLK — E15 HDA_BITCLK_R — R187 22 — HDA_BITCLK 42
C321 10P/50V
C345 10P/50V

0607_Michael:NV review,remove 0ohm R166 on PE_RESET_MXM#

HDA_RESET# — K15 HDA_RESET#_R — R212 22 — HDA_RESET# 36,42
HDA_SYNC — L15 HDA_SYNC_R — R188 33 — HDA_SYNC 42
HDA_DOCK_EN#/GPIO_4/PS2_MS_CLK — K17
HDA_DOCK_RST#/GPIO_5/PS2_MS_DATA — L17
PAD T518
C356 10P/50V
C310 10P/50V

0229-Sun_Depop R166
0314-Sun_Remove MXM_RUNPWROK from GPIO4 (pin K17) and reserve TP.

+1.1V_RUN
C246 1U/10V CC0603
L18 BLM18PG181SN1D RC0603
1 x ferrite bead
1 x 4.7uF X5R ceramic
2 x 2.2uF X7R ceramic

18mA with RUN rail
15mA with RUN rail
AE18 +V_PLL_NV_H
AE17 +V_PLL_SP_SPREF
C129 4.7U/6.3V CC0603
C196 2.2U/6.3V CC0603-C
C195 2.2U/6.3V CC0603-C

SLP_S3# — G17 — SIO_SLP_S3# 36
SLP_RMGT# — J17 — SLP_RMGT# 14
SLP_S5# — H17 — SIO_SLP_S5# 36,51

0607_Michael:Remove Test pad T60,T58

R309 *22K/F_NC
R442 *22K/F_NC
R320 *22K/F_NC

THERM_DIODE_P — B11
THERM_DIODE_N — C11

MCP_VID0/GPIO_13 — L20 MCP_CORE_VID0 — MCP_CORE_VID0 50
MCP_VID1/GPIO_14 — M20 MCP_CORE_VID1 — MCP_CORE_VID1 50
MCP_VID2/GPIO_15 — M21 MCP_CORE_VID2 — MCP_CORE_VID2 50

SPKR — C13 SPKR — SPKR 42

SMB_CLK0 — L19 MCP_SMB_SCL_R — MCP_SMB_SCL_R 13
SMB_DATA0 — K19 MCP_SMB_SDA_R — MCP_SMB_SDA_R 13
SMB_CLK1/MSMB_CLK — G21 SMB_MEM_SCL — SMB_MEM_SCL 15,16
SMB_DATA1/MSMB_DATA — F21 SMB_MEM_SDA — SMB_MEM_SDA 15,16
SMB_ALERT#/GPIO_6 — M23 SMB_ALERT# — R427 2.7K/F — +3.3V_RUN

FANRPM0/GPIO_60 — B12 — PCIE_MCARD1_DET# 32
FANCTL0/GPIO_61 — A12 — USB_MCARD1_DET# 32
FANRPM1/GPIO_63 — D12 — PCIE_MCARD2_DET# 33
FANCTL1/GPIO_62 — C12 — USB_MCARD2_DET# 33

CPUVDD_EN — D17 — CPUVDD_EN 49,54

SPI_CS0/GPIO_10 — C14 — PCIE_MCARD3_DET# 33
SPI_CLK/GPIO_11 — D13 — USB_MCARD3_DET# — USB_MCARD3_DET# 33
SPI_DI/GPIO_8 — C15 — MCP_EXT_SCI# 36
SPI_DO/GPIO_9 — B14

0606_Michael:Remove 0ohm R208

0606_Michael:NV review,remove pull-up R437,R281 to +3.3V_SUS

MISC

T31 PAD — L24 GPIO_1/PWRDN_OK/SPI_CS1

0606_Michael:NV review,remove pull-up R577,R578,R586 to +3.3V_SUS

36 SIO_EXT_WAKE# — L26 GPIO_12/SUS_STAT#/ACCLMTR_EXT_TRIG
36 MCP_A20GATE — K13 A20GATE
36 MCP_KBRDRSTIN# — L13 KBRDRSTIN#
36 MCP_PME# — C19 SIO_PME#
36 MCP_EXT_SMI# — C18 EXT_SMI#/GPIO_32
+RTC_CELL — R191 49.9K/F — B20 INTRUDER#

0607_Michael:NV review,remove pull-up R579,R580 to +3.3V_SUS
0606_Michael:NV review,remove pull-up R581 to +3.3V_SUS

M25 LID#
M24 LLB#
C344 0.1U/10V
49 DPRSLPVR — M22 CPU_DPRSLPVR
36 MCP_PWRBTN# — R200 0 — C16 PWRBTN#
T63 PAD — D16 RSTBTN#
RTC_RST# — C20 RTC_RST#

0606_Michael:Remove pull-up R220 to +3.3V_SUS,add Test pad T63

36 PWRGD_SB — D20 PWRGD_SB
36 PS_PWRGD — E20 PS_PWRGD
36,49 CPU_PWRGD
C17 CPU_VLD

0606_Michael:Remove pull-up R584,R585 to +3.3V_SUS,add Test pad T65,T35

T65 PAD
T62 PAD
T35 PAD
MCP_JTAG_TDI — E19 JTAG_TDI
MCP_JTAG_TDO — F19 JTAG_TDO
MCP_JTAG_TMS — J19 JTAG_TMS
R172 10K — MCP_JTAG_TRST# — J18 JTAG_TRST#
R174 10K — MCP_JTAG_TCK — G19 JTAG_TCK

0606_Michael:Remove Test pad T25,T33

XTALIN — A16 XTALIN
XTALOUT — B16 XTALOUT
XTALIN_RTC — A19 XTALIN_RTC
XTALOUT_RTC — B19 XTALOUT_RTC

SUS_CLK/GPIO_34 — B18 PAD T59
BUF_SIO_CLK — AE7 PAD T17
TEST_MODE_EN — K22
PKG_TEST — L22
R156 1K

i157

MCP79 Strapping

+3.3V_RMGT
R356 10K
9,45 RGMII_TXD0

Networking Select	
MII	0
RGMII	1

0606_Michael:NV review, remove pull-down R355 to GND

MCP79 Strapping

0606_Michael:NV review, remove pull-up R491 to +3.3V_SUS

SPKR
R484 10K

Boot Mode Select	
User Mode	0
Safe Mode	1

MCP79 Strapping

HDA_SYNC
R213 10K

SIO Clock Select	HDA_SYNC
14.318MHz	0
24MHz	1

+3.3V_SUS
R255 10K
HDA_RESET#

0910_Michael:Follow NV check list change R244,R245,R12,R14 value from 2.7K to 2.2K

+3.3V_SUS
R244 2.2K
R245 2.2K
MCP_SMB_SCL_R
MCP_SMB_SDA_R

+3.3V_RUN
R12 2.2K
R14 2.2K
SMB_MEM_SCL
SMB_MEM_SDA

+3.3V_SUS
R368 10K
USB_MCARD3_DET#

0625_Michael:Remove SPI Freq select circuit for SPI ROM function not used

+RTC_CELL
R196 49.9K/F
RTC_RST#
R183 *0_NC

CLEAR CMOS ONLY	RTC_RST#
CLEAR	0
NORMAL	1

25MHz Clock

XTALIN
R421 0
Y2
25MHz
XTALOUT
C566 27P/50V
C555 27P/50V

32KHz Clock

XTALIN_RTC
R422 0
W1
32.768KHZ
XTALOUT_RTC
C567 18P/50V
C568 18P/50V

Layout Notice:
Place cystal within 1000 mil of MCP79.

0709-Steg: Change CAP Vaule from 10p to 18p

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1 x 10uF ceramic
2 x 2.2uF X5R ceramic
3 x 1uF X5R ceramic
3 x 0.22uF X5R ceramic
12 x 0.1uF X7R ceramic

17.756A with RUN rail for S0
2850mA for S0 Idle

+VTT_CPU
1139mA for ALW rail

+VTT_CPUCLK
43mA for ALW rail

1 x 10uF ceramic
1 x 2.2uF X5R ceramic
3 x 0.1uF X7R ceramic

0918_Michael:Follow NV checklist
change value from 10U to 2.2U

U21J
MCP79_MOBILE_BGA1437
SOCKET
SEC
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POWER

+MCP_CORE
+VDD_CORE
C148 2.2U/6.3V CC0603
C156 2.2U/6.3V CC0603
C184 1U/6.3V
C188 1U/6.3V
C202 1U/6.3V
C149 10U/6.3V CC0603-C
C169 0.22U/6.3V
C186 0.22U/6.3V
C187 0.22U/6.3V
C217 0.1U/10V
C204 0.1U/10V
C173 0.1U/10V
C189 0.1U/10V
C194 0.1U/10V
C220 0.1U/10V
C168 0.1U/10V
C211 0.1U/10V
C206 0.1U/10V
C218 0.1U/10V
C182 0.1U/10V
C225 0.1U/10V

+1.05V_VCCP
C185 0.1U/10V
C219 2.2U/6.3V CC0603
C353 10U/10V CC0805
C150 0.1U/10V
C158 0.1U/10V
C314 1U/6.3V
C282 0.1U/10V
C336 0.1U/10V
C332 1U/6.3V
C303 0.1U/10V
C295 0.1U/10V
C341 0.1U/10V

0918_Michael:Follow NV checklist
change value from 10U to 2.2U

+3.3V_RUN_MCP
450mA with RUN rail

1 x 4.7uF X5R ceramic
4 x 0.1uF X7R ceramic

0312-Sun_Change footprint to
normal short type "short40x18"

JP4 SHORT40X18
C231 0.1U/10V
C205 0.1U/10V
C200 0.1U/10V
C209 0.1U/10V
C226 4.7U/6.3V CC0603-C

0312-Sun_Change footprint to
normal short type "short40x18"

JP6 SHORT40X18
C386 0.1U/10V
C364 4.7U/6.3V CC0603-C

+3.3V_DUAL
16mA with ALW rail

1 x 4.7uF X5R ceramic
1 x 0.1uF X7R ceramic

+3.3V_DUAL_USB
450mA with ALW rail

1 x 4.7uF X5R ceramic
1 x 0.1uF X7R ceramic

+VDD_AUXC
105mA with ALW rail

2 x 0.1uF X7R ceramic

JP8 SHORT40X18
C249 0.1U/10V
C236 0.1U/10V

These are for
backdrive issue.

+3.3V_RUN
R257 2.7K/F
R260 2.7K/F
12 MCP_SMB_SCL_R
MCP_SMB_SCL
MCP_SMB_SCL 32,33,34
Q35 2N7002W-7-F
12 MCP_SMB_SDA_R
MCP_SMB_SDA
MCP_SMB_SDA 32,33,34
Q36 2N7002W-7-F

HDCP
R23 *10K_NC
R16 *10K_NC
R20 *10K_NC
U5
NC_1 NC_2 NC_3 VCC SDA SCL WP GND
*AT24C16BN-SH-T_NC
C30 *0.1U/10V_NC

+RTC_CELL
C368 4.7U/6.3V CC0603
C509 4.7U/6.3V CC0603
C713 0.1U/10V
+VBAT

0229-Sun_Add C713 with 0.1U on +VBAT of MCP79
0829_Michael:Follow NV new DG add C509 on +RTC_CELL of MCP79

0.06mA with ALW rail for S0
2 x 4.7uF X5R ceramic

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U21K SOCKET

MCP79_MOBILE_BGA1437

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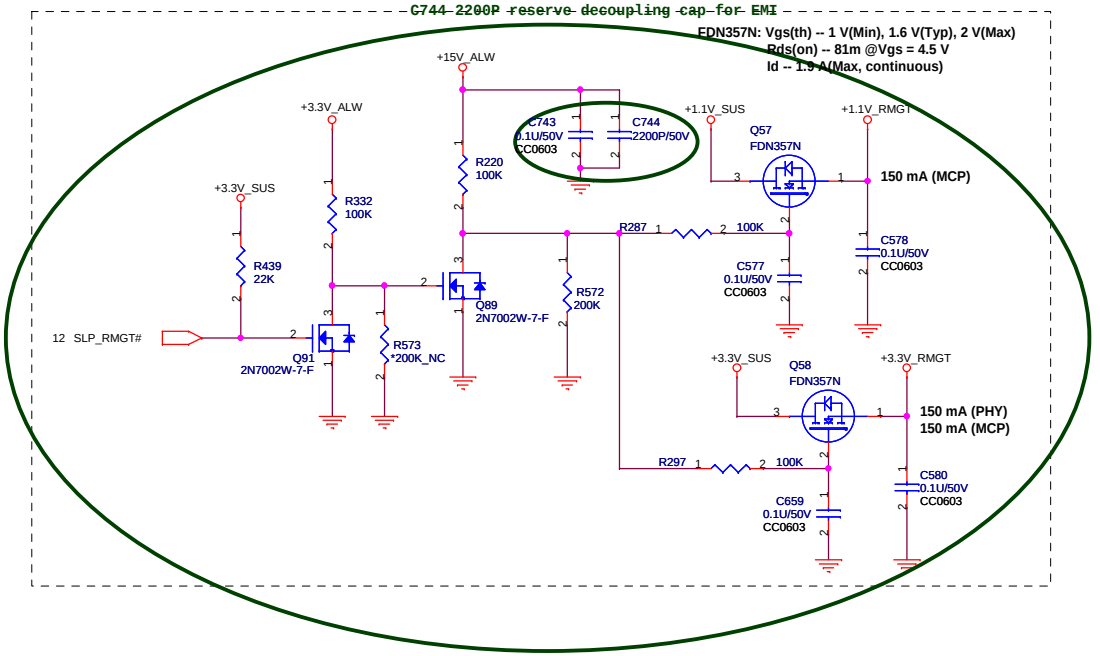
GND

0918_Michael:Add C743 0.1U and C744 2200P reserve decoupling cap for EMI

FDN357N: Vgs(th) -- 1 V(Min), 1.6 V(Typ), 2 V(Max)
Rds(on) -- 81m @Vgs = 4.5 V
Id -- 1.9 A(Max, continuous)



0229-Sun_1.1V_RMGT & +3.3V_RMGT MOSFET Vgs aren't enough issue, modify circuit reference NV CRB (Del JP11,JP12
Change Q57 from SI2304BDS-T1-E3 to FDN357N, Q58 from SI2304BDS-T1-E3 to SI2301BDS-T1-E3
Add Q89 with 2N7002,R591 with 10K)

0825_Michael:Change Q58 type from SI2301BDS to FDN357N and add MOS 2N7002W-7-F,R&C for +1.1V_RMGT and +3.3V_RMGT power low issue

QUANTA COMPUTER

Title	MCP79 (GND)	
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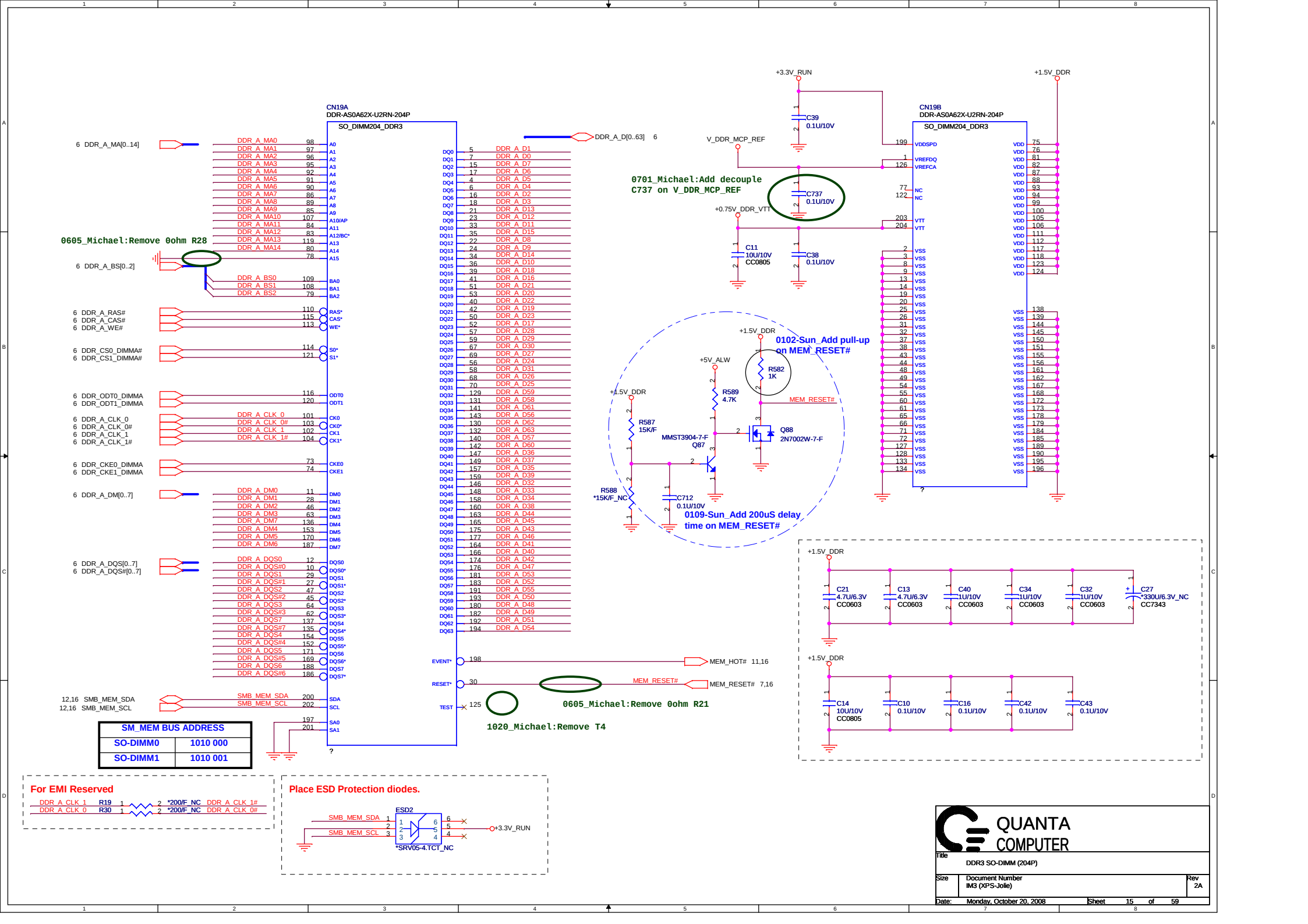
CN19A
DDR-AS0A62X-U2RN-204P
SO_DIMM204_DDR3
CN19B
DDR-AS0A62X-U2RN-204P
SO_DIMM204_DDR3
+3.3V_RUN
+1.5V_DDR
V_DDR_MCP_REF
+0.75V_DDR_VTT
+5V_ALW
0605_Michael:Remove 0ohm R28
0701_Michael:Add decouple
C737 on V_DDR_MCP_REF
0102-Sun_Add pull-up
on MEM_RESET#
0109-Sun_Add 200uS delay
time on MEM_RESET#
0605_Michael:Remove 0ohm R21
1020_Michael:Remove T4
SM_MEM BUS ADDRESS
SO-DIMM0 1010 000
SO-DIMM1 1010 001
For EMI Reserved
Place ESD Protection diodes.
*SRV05-4.TCT_NC
QUANTA COMPUTER
DDR3 SO-DIMM (204P)
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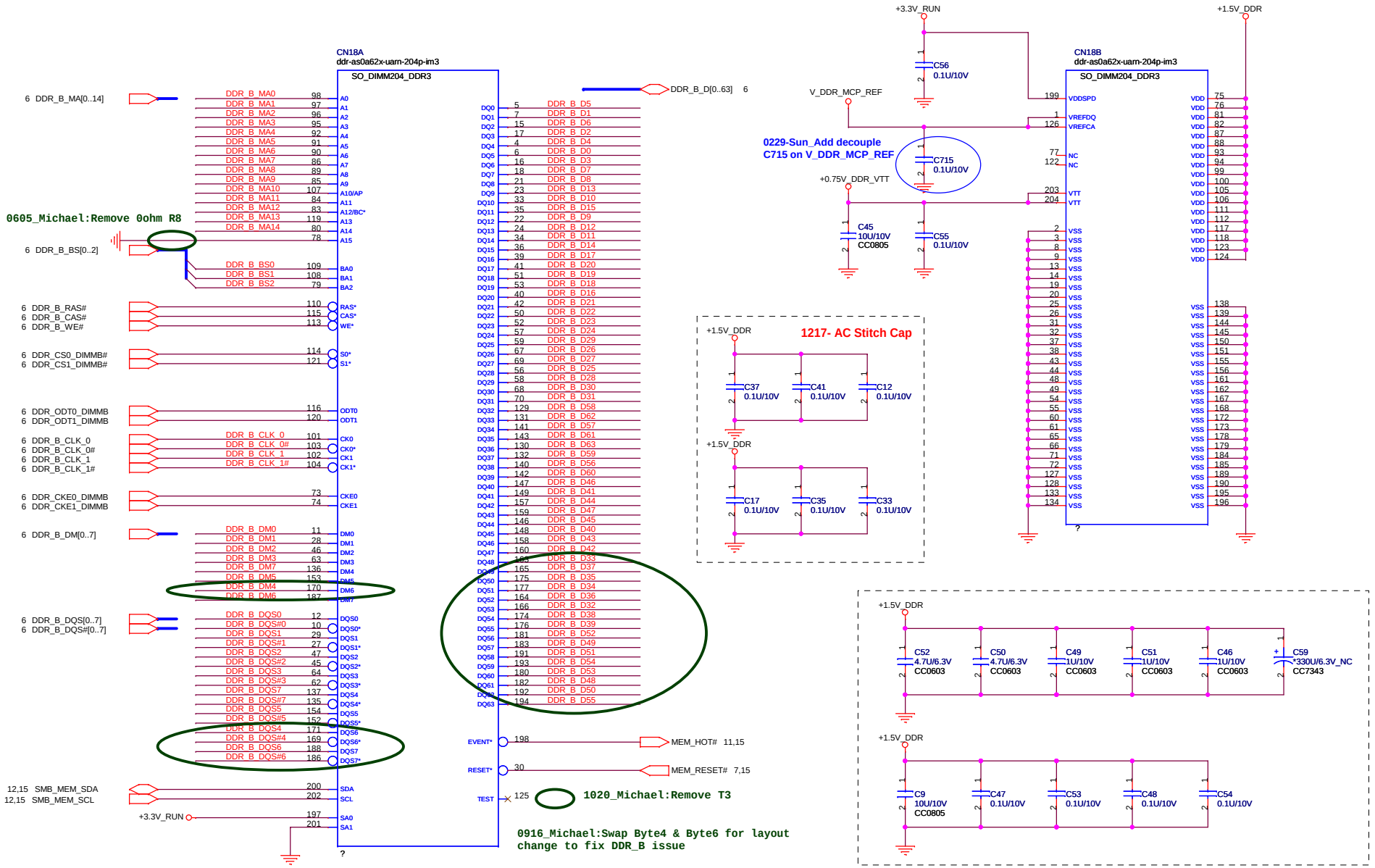

QUANTA COMPUTER		
Title	DDR3 SO-DIMM (204P)	
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IM3 dedicated.

1113-Sun_Swap PEG for routing smooth.

1115-Sun_Follow NV's command to swap PEG for routing

1115-Sun_Follow NV's command to swap PEG for routing smooth

0904_Michael:Add R398 on GFX_THERM# and change port type from input to output

0604_Michael: Follow NV command to modify VRAM Strap resistor vaule

0825_Michael:Modify THERMTRIP circuit,add MOS and CAP

Footprint: BGA533-NVIDIA-NB9M-GS

GPIO USAGE

GPIO	I/O	ACTIVE	USAGE	Used
0	IN	N/A	NVGEM HOTPLUG DETECT	
1	IN	N/A	DVI/HDMI LINKC HOTPLUG DETECT	
2	OUT	HIGH	PANEL BACKLIGHT PWM	
3	OUT	HIGH	PANEL POWER ENABLE	
4	OUT	HIGH	PANEL BACKLIGHT ENABLE	
5	OUT	HIGH	NVVDD ALTV0	
6	OUT	HIGH	NVVDD ALTV1	
7	OUT	HIGH	FBVDD VID0	
8	IN	LOW	OVERTEMP ALERT	
9	OUT	LOW	THERMAL ALERT	
10	OUT	HIGH	DYNAMIC FB VREF GDDR3 (not used for DDR2)	
11	OUT	HIGH	SLI SYNC0 (not used for GB1-64)	
12	IN	N/A	AC DETECT	
13	OUT	LOW	POWER SUPPLY CONTROL0	
14	OUT	HIGH	POWER SUPPLY CONTROL1	
15	IN	N/A	HPD_E	
16	IN	N/A	DVI_E	No
17	IN	N/A	HDMI_E	No
18	IN	N/A	DVI_F (not used)	No
19	IN	N/A	HDMI_F (not used)	No

VRAM Strap:ROM_SI

ID	ROM_SI	Memory part
01	Pull down 30K	Qimonda 32M*32
02	Pull down 45K	Samsung 32M*32
	QPN:CS34532FB18	
03		

Title	VGA-NB9X GB1-64 (PCIE,PCIE POWER)
Size	Document Number: IM3 (XPS-Jolie) — Rev: 2A
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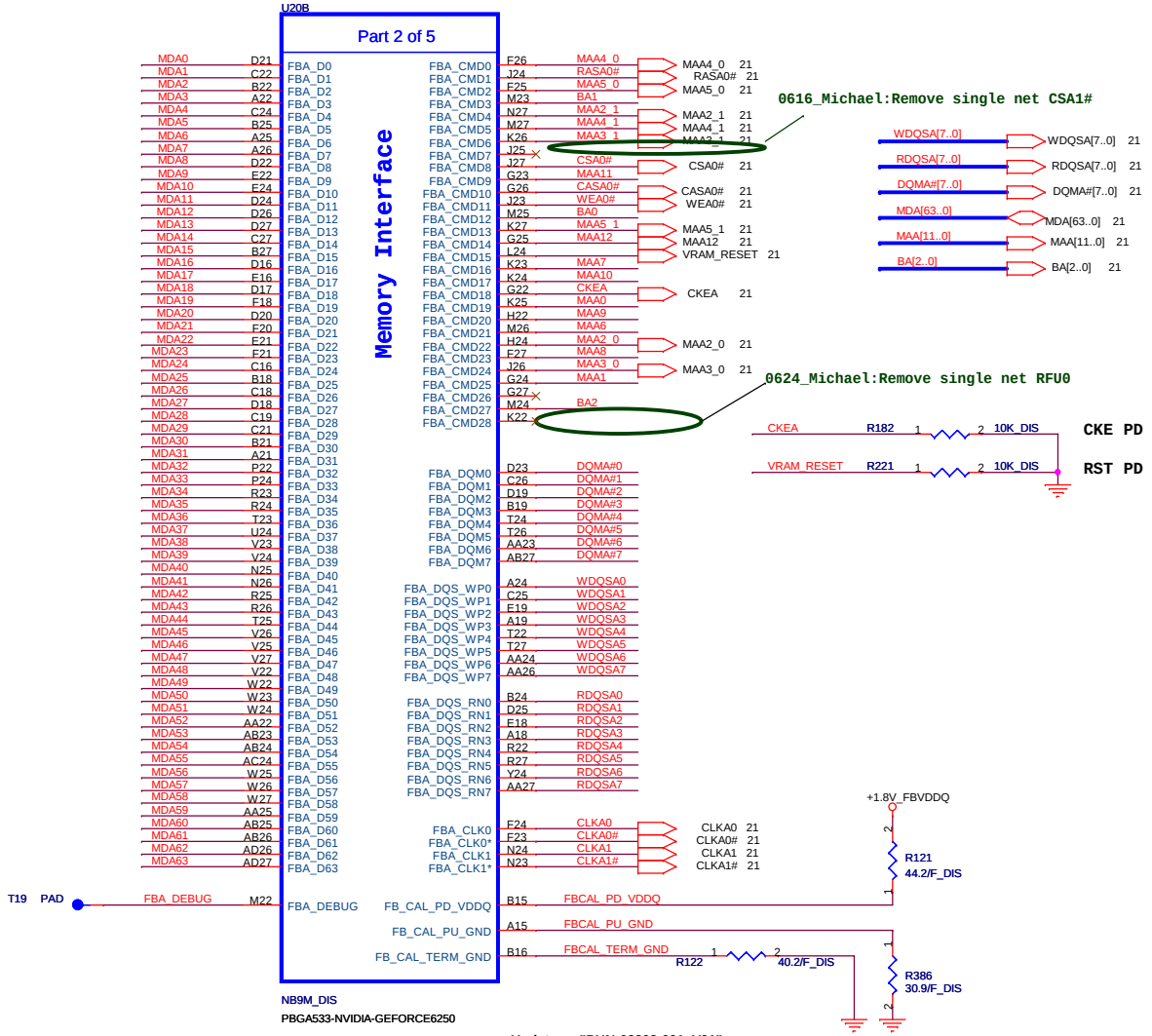

Update as "PUN-03303-001_V01".

GPU Driver Calibration

Memory/PKG	FBVDDQ	FBCAL_PU_GND	FBCAL_PD_VDDQ
DDR2	1.8V	30.1	30.1
GDDR3	1.8V	30.9	44.2
GDDR3 DVS	1.8V/1.5V	30.9	44.2

Note: Use only 1% resistors for driver calibration

QUANTA COMPUTER

Title	VGA-NB9X GB1-128 (Frame Buffer Channel A)	
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0627_Michael:Change GPU_Thermal control from SMBus2 to SMBus0

0807_Change R361, R44 from 4.7k to 47k for battery issue

+3.3V_NB9X

R361 47K_DIS

R44 47K_DIS

36,48,55 SMBCLK0

36,48,55 SMBDAT0

Q6 2N7002W-7-F_DIS

Q5 2N7002W-7-F_DIS

GFX_SCLK

GFX_SDATA

THERMAL MONITOR

0708_Michael:Depop U18 circuit for nternal thermal monitor

R54 *10K_NC

R45 *0_NC

17 GFX_THERM_ALERT#

U18 *ADM1032ARM_NC

SCLK SDATA ALERT# GND VDD D+ D- THERM#

C493 *2200P/50V_NC

C494 *0.1U/10V_NC

GFX_THERMDP GFX_THERMDN GFX_THERM# 17

0309-Sun_Pop R45 for GFX_THERM_ALERT#

0605_Michael: Add R56 connect to GFX_THERM#

0904_Michael:Remove R56 and change port type from output to input

0708_Michael:Pop R46 & R47 for nternal thermal monitor

R46 0_DIS

R47 0_DIS

R86 R87 R82 R83 R72 R71 R90 R91 R84 R62 10K_DIS

0701_Michael:Remove SPREAD SPECTRUM circuit

GXTAL_IN GXTAL_OUT

Y1 27MHZ_DIS XTL-8X4_5-6_5

R96 1M_DIS

C113 22P/50V_DIS

C107 22P/50V_DIS

0709-Steg: Change CAP Value from 18p to 22p

U20C

PART 3 OF 5

DVI: IFPC_AUX* IFPC_AUX IFPC_L3* IFPC_L3 IFPC_L2* IFPC_L2 IFPC_L1* IFPC_L1 IFPC_L0* IFPC_L0 IFPC_RSET

DP Port: IFPE_L0 IFPE_L0* IFPE_L1 IFPE_L1* IFPE_L2 IFPE_L2* IFPE_L3 IFPE_L3* IFPE_AUX IFPE_AUX* IFPE_RSET

HDA: HDA_BCLK HDA_SYNC HDA_SDI HDA_SDO HDA_RST* SPDIF

THERMAL: THERMDP THERMDN

SERIAL BUS: I2CE_SDA I2CE_SCL I2CD_SDA I2CD_SCL I2CC_SDA I2CC_SCL I2CB_SDA I2CB_SCL I2CA_SDA I2CA_SCL

Clock: XTAL_SSIN XTAL_OUTBUFF XTAL_IN XTAL_OUT

LVDS: IFPA_TXD0 IFPA_TXD0* IFPA_TXD1 IFPA_TXD1* IFPA_TXD2 IFPA_TXD2* IFPA_TXD3 IFPA_TXD3* IFPA_TXC IFPA_TXC* IFPB_TXD4 IFPB_TXD4* IFPB_TXD5 IFPB_TXD5* IFPB_TXD6 IFPB_TXD6* IFPB_TXD7 IFPB_TXD7* IFPB_TXC IFPB_TXC* IFPAB_RSET

DACA: DACA_RED DACA_GREEN DACA_BLUE DACA_HSYNC DACA_VSYNC DACA_VDD DACA_VREF DACA_RSET

R41 10K_DIS

DACB: DACB_RED DACB_GREEN DACB_BLUE DACB_CSYNC DACB_VDD DACB_VREF DACB_RSET

R101 10K_DIS

DACC: DACC_RED DACC_GREEN DACC_BLUE DACC_HSYNC DACC_VSYNC DACC_VDD DACC_VREF DACC_RSET

R85 10K_DIS

NB9M_DIS

Reserve CRT for debug on first build.
Remove all of parts except DACA_VDD supply before QT
1020_Michael:Remove T48,T52,T50,T53,T51,R49,C89,R89

QUANTA COMPUTER

Title	VGA-NB9X GB1-64 (OUTPUT)	
Size	Document Number IM3 (XPS-Jolie)	Rev 2A
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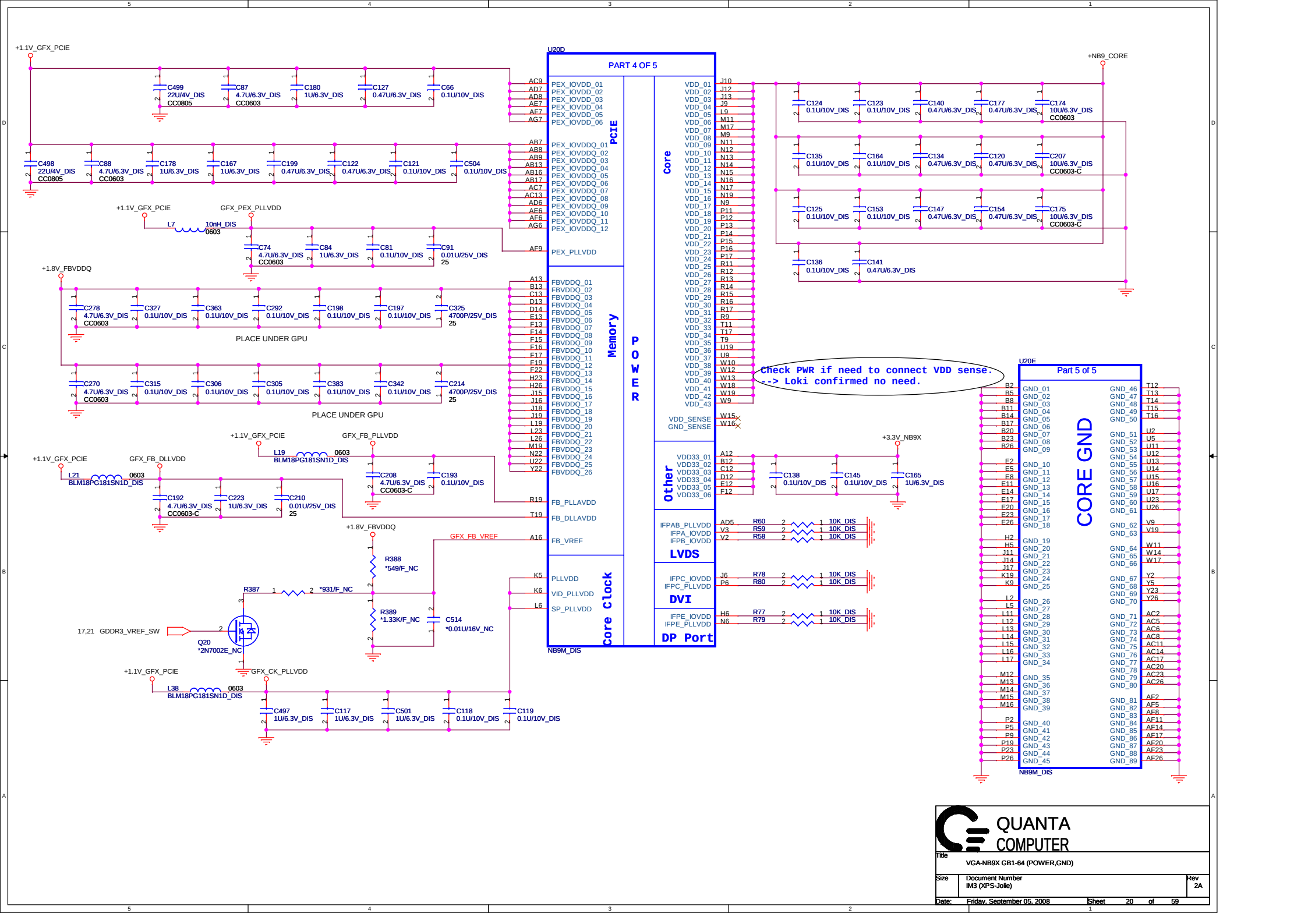
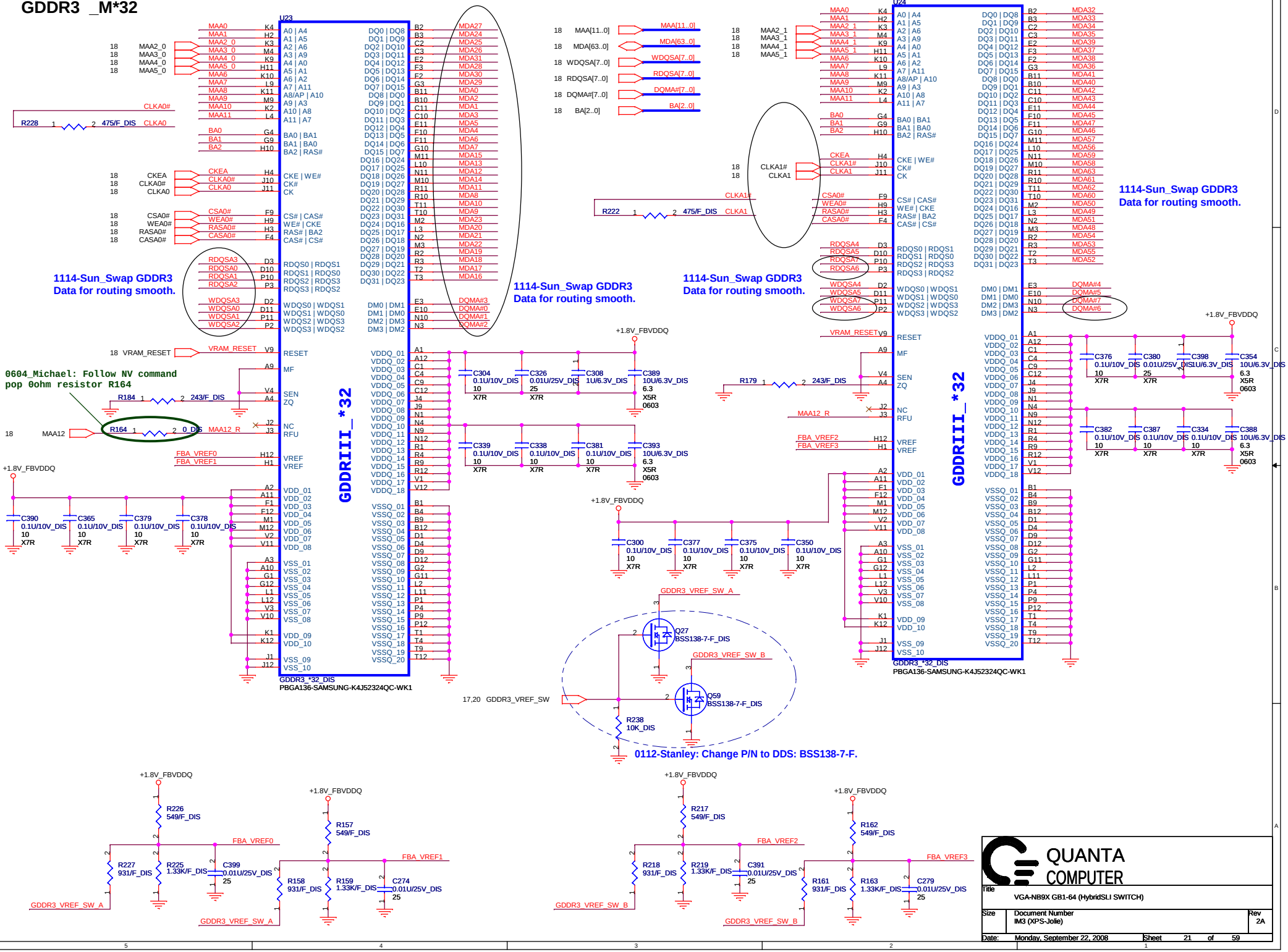

+1.1V_GFX_PCIE
U20D
PART 4 OF 5
PCIE
Memory
POWER
Core
Other
LVDS
DVI
DP Port
Core Clock
NB9M_DIS
+NB9_CORE
+1.8V_FBVDDQ
PLACE UNDER GPU
GFX_PEX_PLLVDD
GFX_FB_PLLVDD
GFX_FB_DLLVDD
GFX_FB_VREF
GFX_CK_PLLVDD
+3.3V_NB9X
17,21 GDDR3_VREF_SW
Check PWR if need to connect VDD sense.
--> Loki confirmed no need.
U20E
Part 5 of 5
CORE GND
QUANTA COMPUTER
VGA-NB9X GB1-64 (POWER,GND)
IM3 (XPS-Jolie)
Friday, September 05, 2008

GDDR3 _M*32



Title	VGA-NB9X GB1-64 (HybridSLI SWITCH)
Size	Document Number: IM3 (XPS-Jolie) — Rev: 2A
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QUANTA COMPUTER

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Title		
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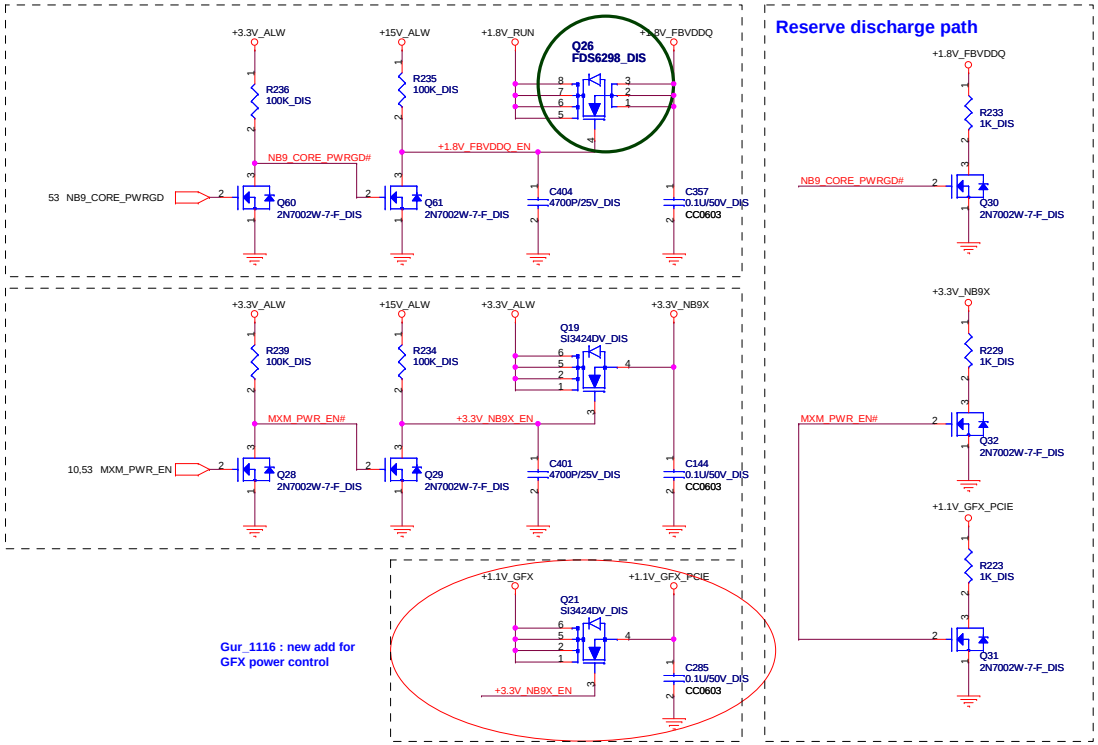
1225-Sun_Chenge Q26 from SI4812BDY to SI4800BDY-T1-E3
1022_Michael:Change Q26 from SI4800BDY-T1-E3 to BAM62980005



QUANTA COMPUTER

Title	VGA-NB9X GB1-128 (PCIE,PCIE POWER)	
Size	Document Number IM3 (XPS-Jolie)	Rev 2A
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QUANTA COMPUTER

Title		
Size	Document Number IM3 (XPS-Jolie)	Rev 2A
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QUANTA COMPUTER

Title		
Size	Document Number IM3 (XPS-Jolie)	Rev 2A
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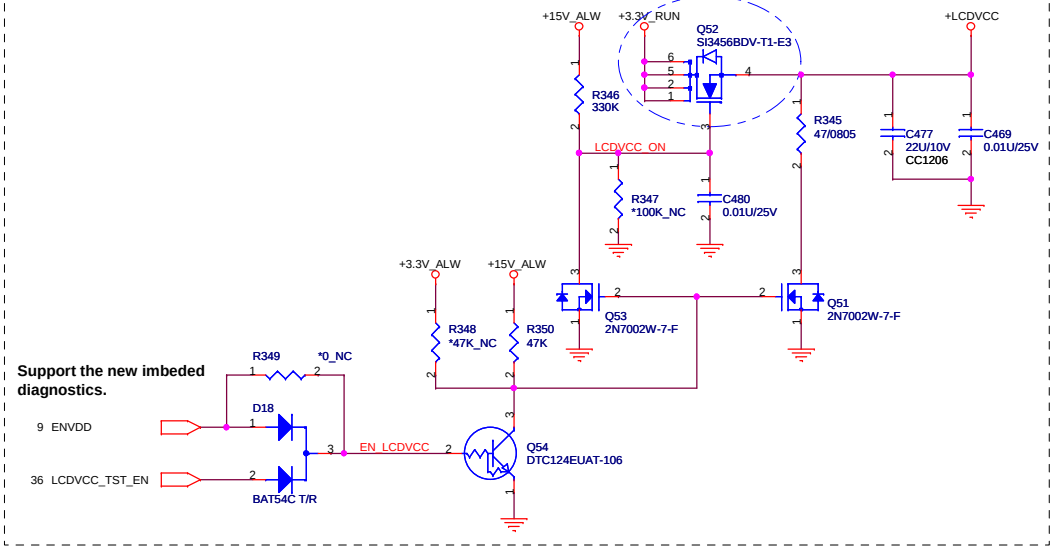
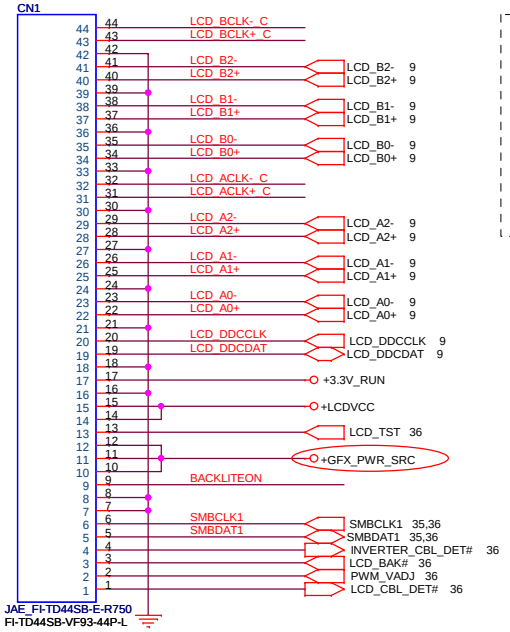
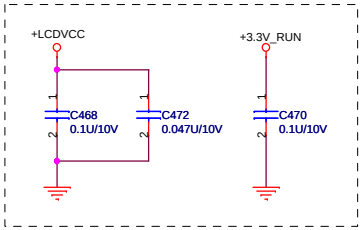
0112-Stanley: Change BOM for EOL issue (SI3456BDV).



GND,VCC要用最粗的電子線

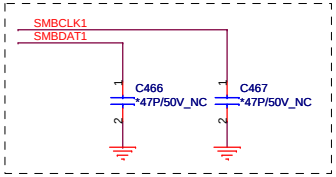




WXGA 1280*800=>70 MHz
WXGA+ 1440*900=>108 MHz
WSXGA+ 1680*1050=>120MHz
WUXGA 1920*1200=>166 MHz

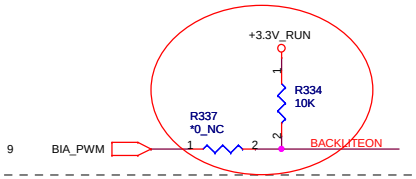
Address : A9H --Contrast
AAH --Backlight

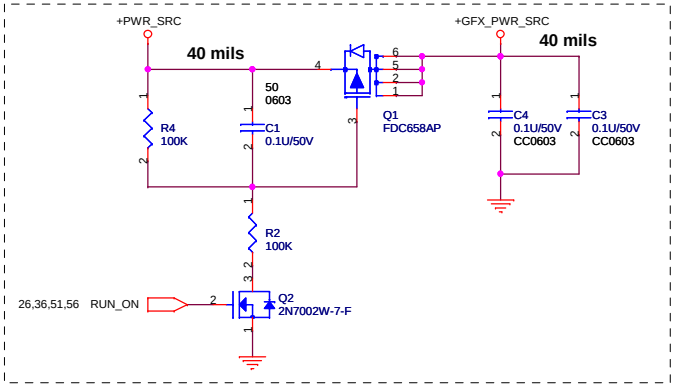
MBRAI specification of antenna gain is 10dBi@474MHz, -7dBi@698MHz, -5dBi@858MHz.



Populate R65 for DPST implementation only.

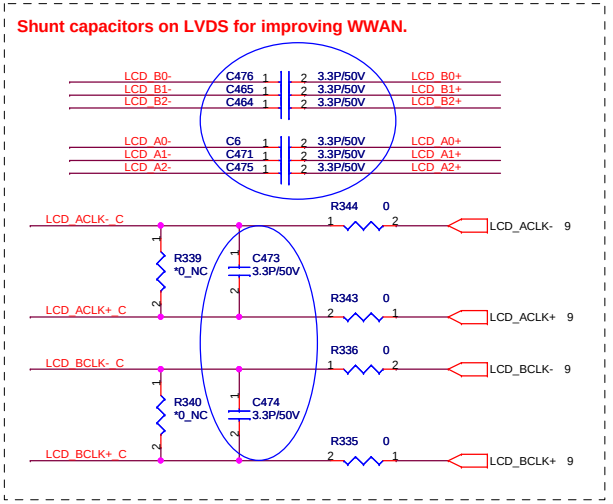
Populate R341 for platform without DPST support. No Stuff for Discrete DSPT support due to back up plan.





0319-Sun_Pop 3.3P on LVDS bus for COMM team demand

Shunt capacitors on LVDS for improving WWAN.



QUANTA COMPUTER

Title	LCD CONN	
Size	Document Number: IM3 (XPS-Jolie)	Rev: 2A
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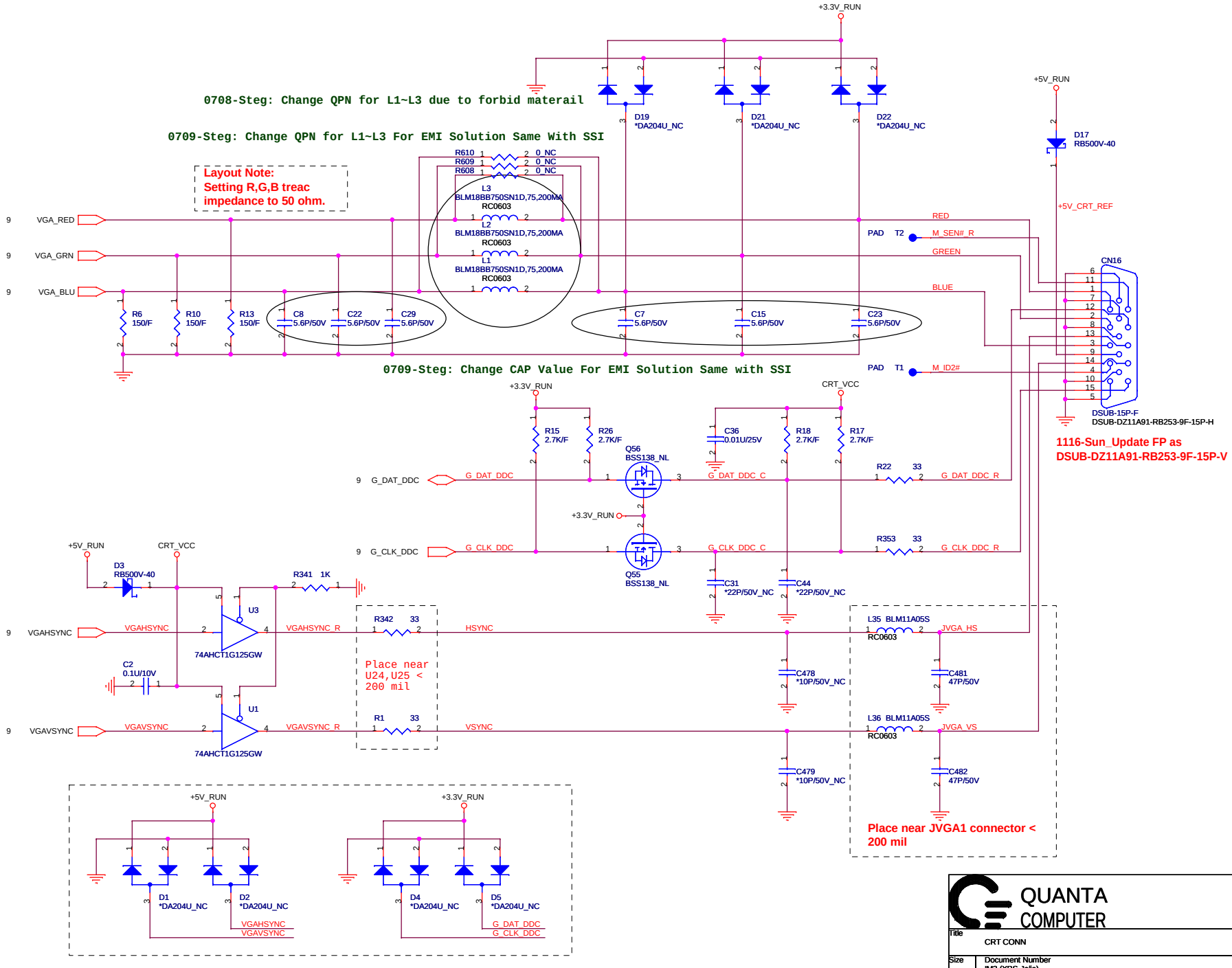
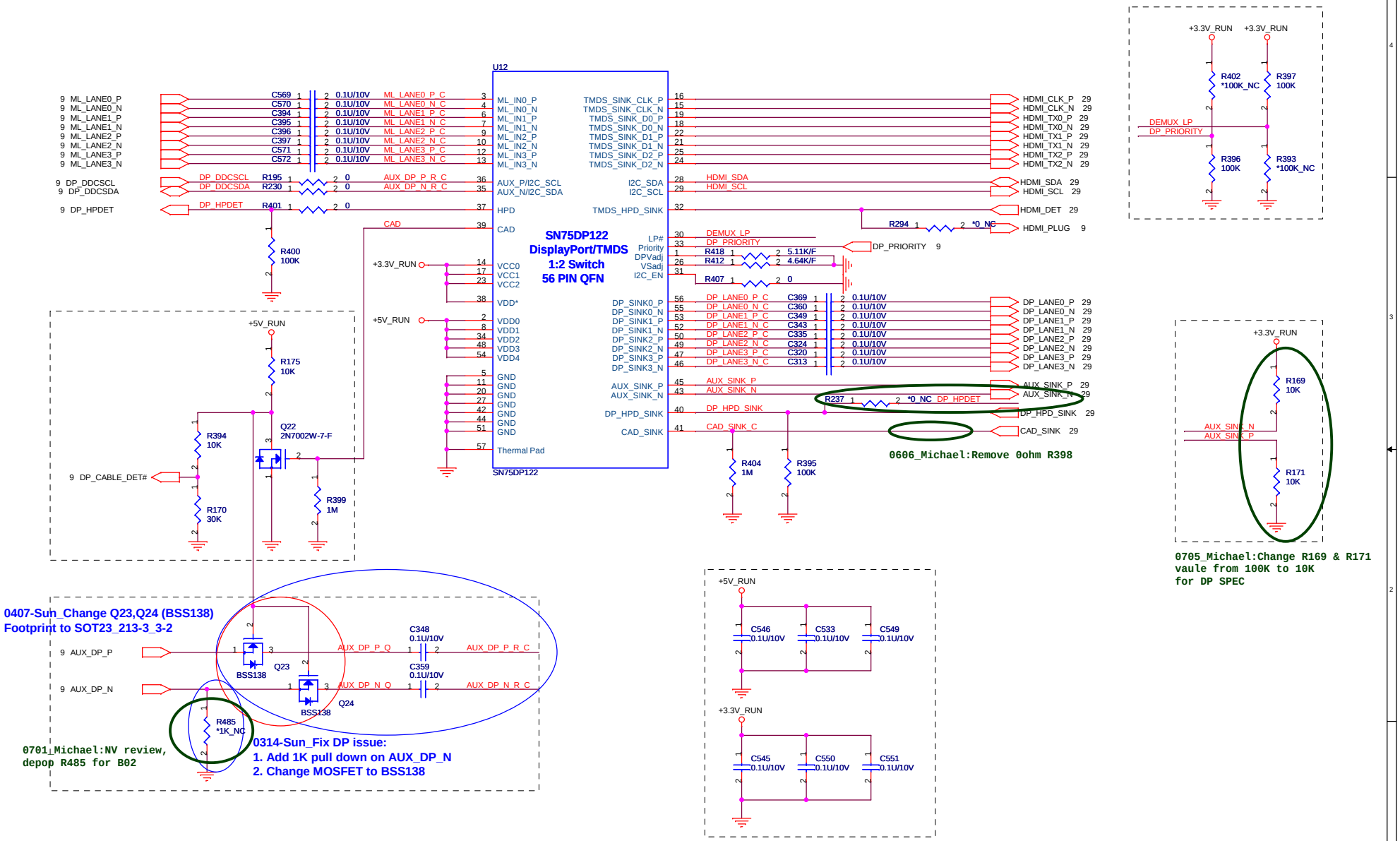


QUANTA COMPUTER

Title	CRT CONN	
Size	Document Number IM3 (XPS-Jolie)	Rev 2A
Date: Friday, September 05, 2008	Sheet 27 of 59	



Title	DeMUX Switch (SN75DP122)
Size	Document Number: IM3 (XPS-Jolie) — Rev: 2A
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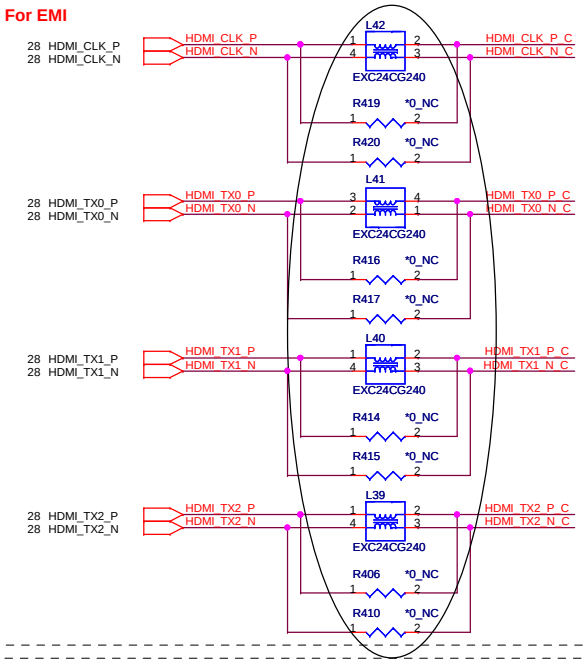
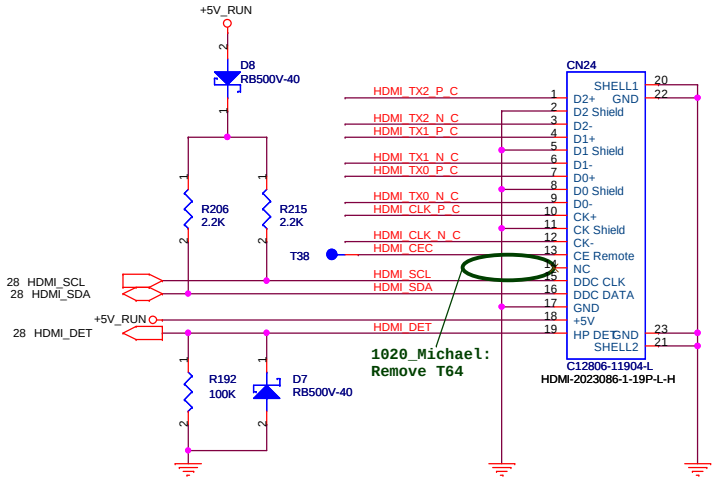
QUANTA COMPUTER

0319-Sun_Pop EMI baed
w/EXC24CG240 for HDMI port

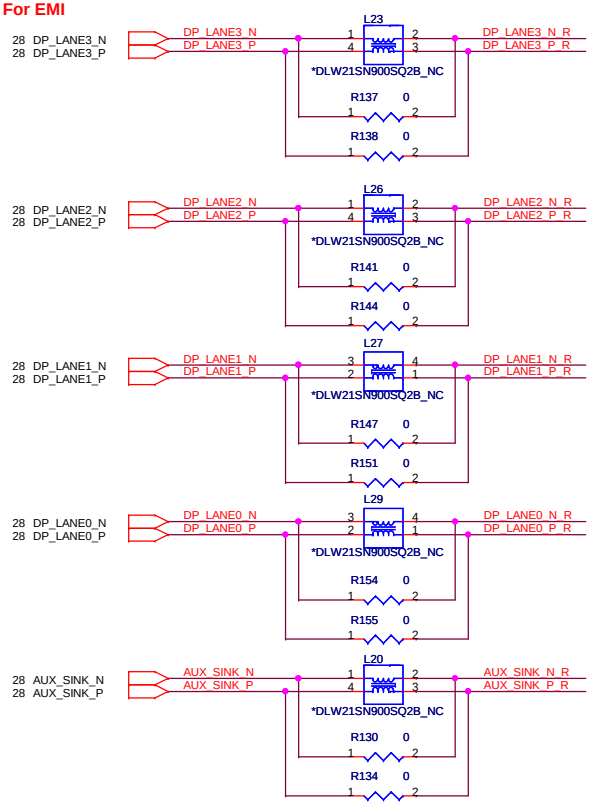
Reserve For EMI



HDMI CONNECTOR

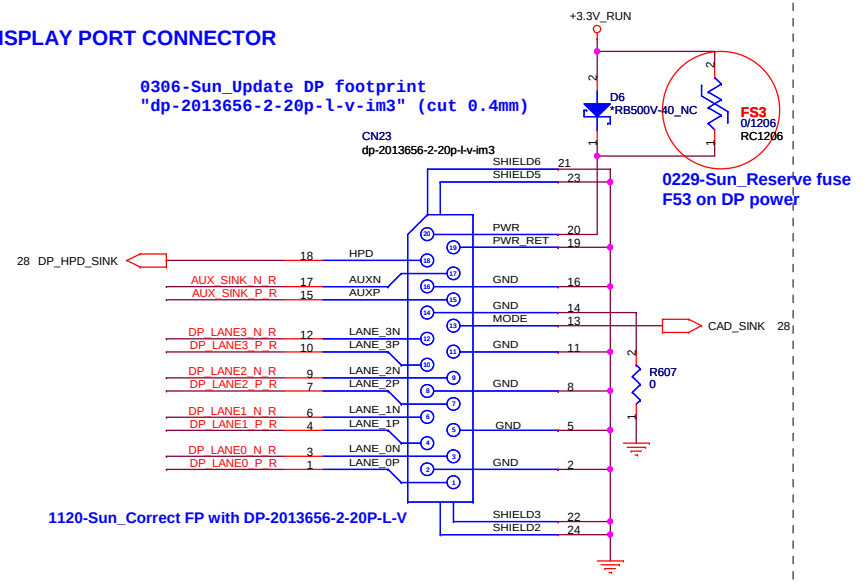


Reserve For EMI



DISPLAY PORT CONNECTOR

0306-Sun_Update DP footprint
"dp-2013656-2-20p-l-v-im3" (cut 0.4mm)



QUANTA COMPUTER		
Title: HDMI & DP CONN		
Size	Document Number: IM3 (XPS-Jolie)	Rev: 2A
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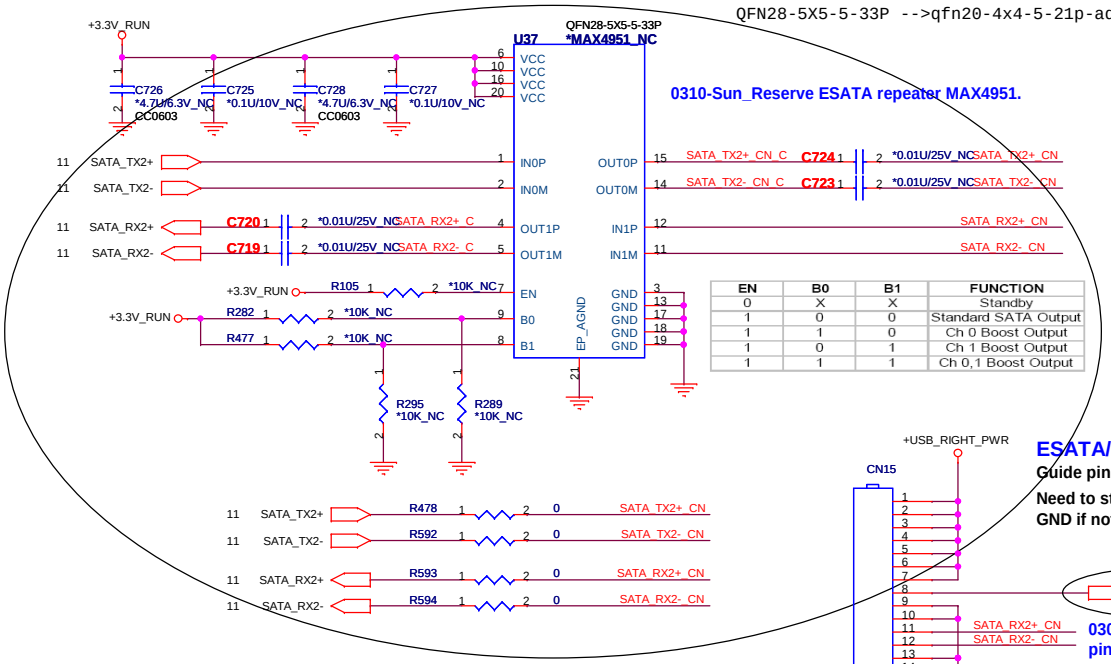
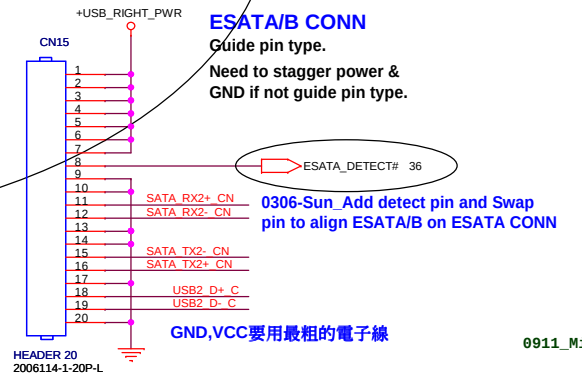
QFN28-5X5-5-33P -->qfn20-4x4-5-21p-adg786



EN	B0	B1	FUNCTION
0	X	X	Standby
1	0	0	Standard SATA Output
1	1	0	Ch 0 Boost Output
1	0	1	Ch 1 Boost Output
1	1	1	Ch 0,1 Boost Output



ESATA/B CONN

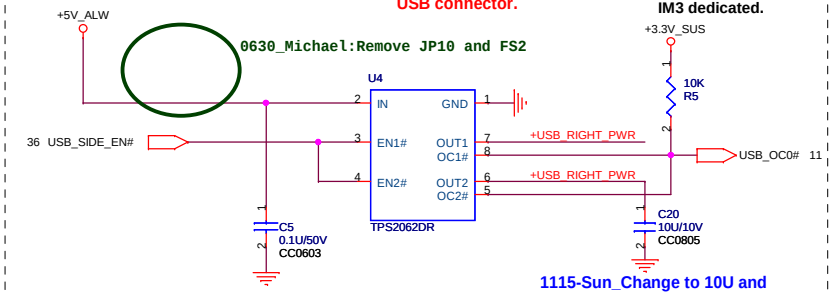
Guide pin type.

Need to stagger power & GND if not guide pin type.

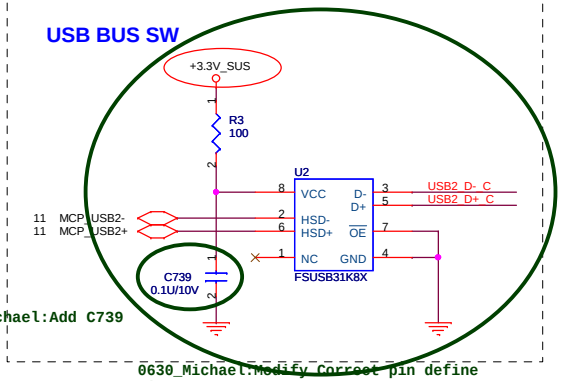
0306-Sun_Add detect pin and Swap pin to align ESATA/B on ESATA CONN

GND,VCC要用最粗的電子線

USB POWER SW

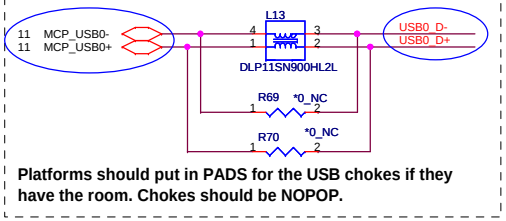


USB BUS SW



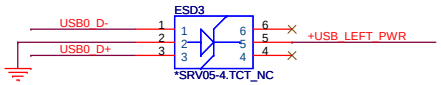
0630_Michael:Modify Correct pin define
pin1=NC
pin2=HSD-
pin3=D-
pin5=D+
pin6=HSD+
pin7=OE

0318-Sun_change left USB port from port1 to port0

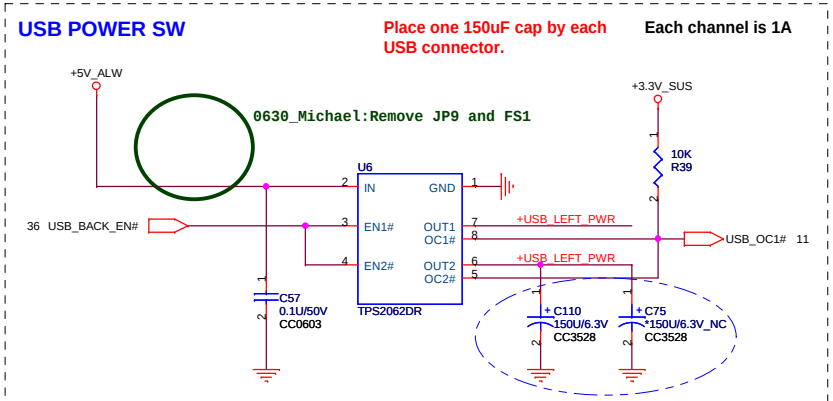


Platforms should put in PADS for the USB chokes if they have the room. Chokes should be NOPOP.

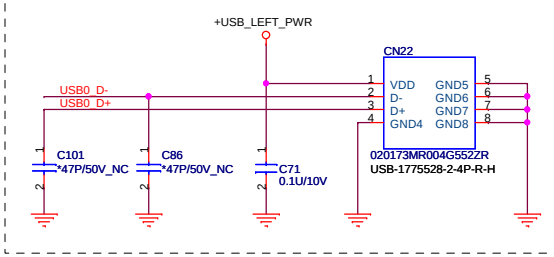
Place ESD diodes as close as USB connector.



USB POWER SW



USB CONN



QUANTA COMPUTER

Title	USB, eSATA	
Size	Document Number IM3 (XPS-Jolie)	Rev 2A
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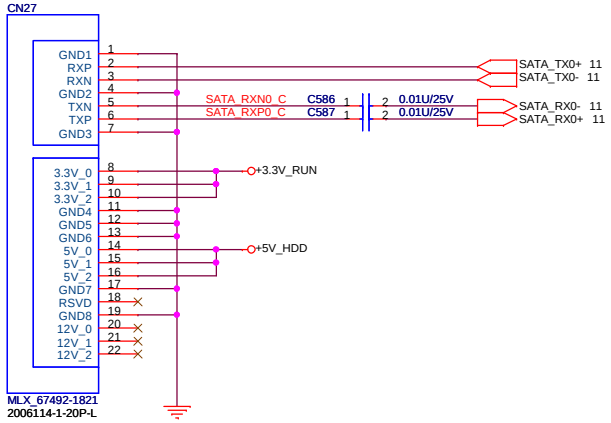
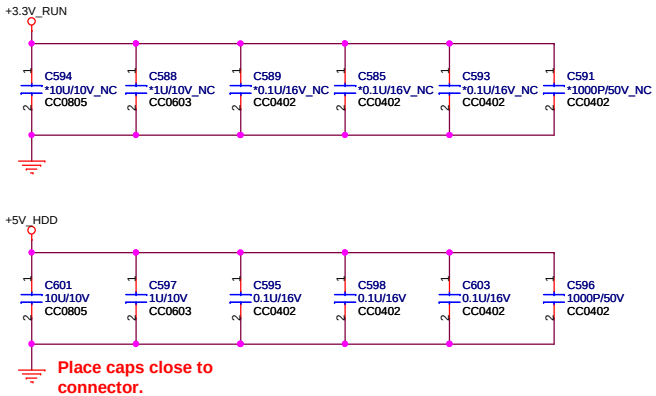
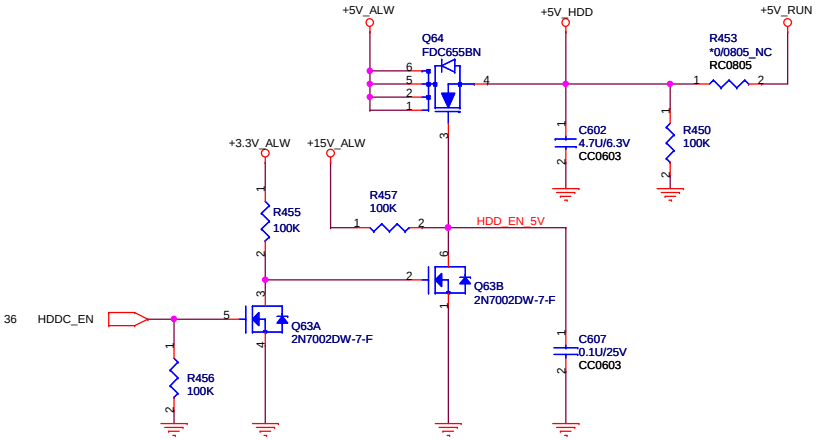
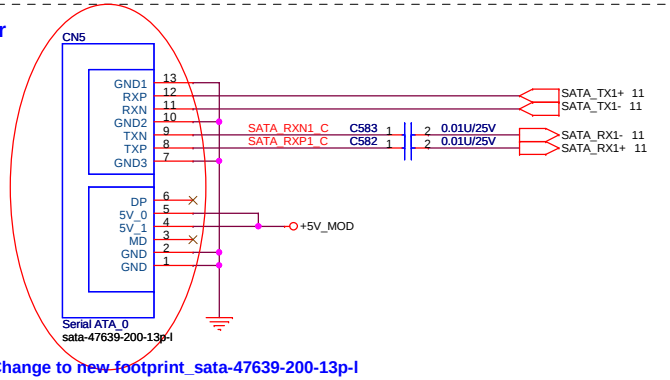
SATA HDD Connector





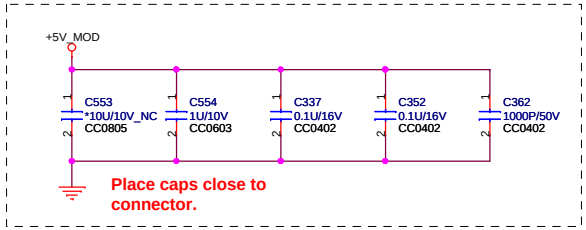


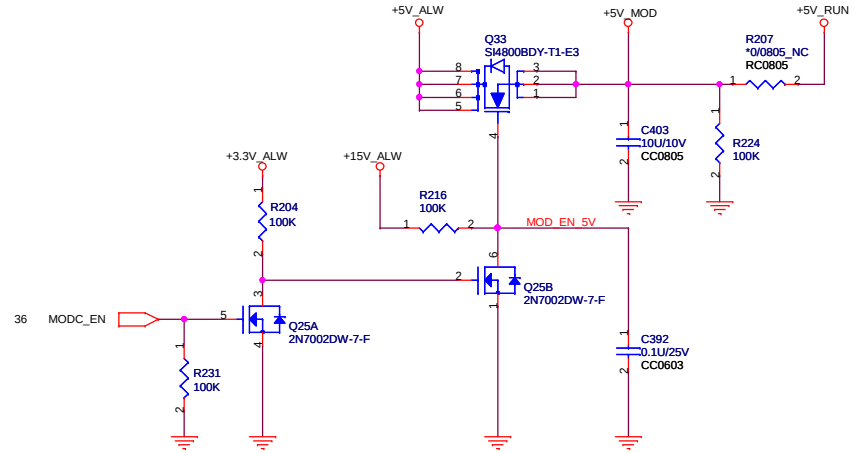
SATA ODD Connector



0306-Sun_Change to new footprint_sata-47639-200-13p-l

0407-Sun_Swap pin assignment due to pin direction is reversed





QUANTA COMPUTER

Title	SATA (HDD&CD ROM)	
Size	Document Number IM3 (XPS-Jolie)	Rev 2A
Date: Friday, September 05, 2008	Sheet 31 of 59	

MiniCard WLAN Connector

0829_Michael:Change Footprint from H-C197PB to H-c197d39pb

0616_Michael:Change footprint

Mini Card Nut (h3.2) H-c197d39pb — H29

Mini Card Nut (h3.2) H-BC197D102PB — H30

0320-Sun_Change Mini Card WLAN Latch to Nut

(Del CN25, add H29,H30)

Reserved PAD for EMI

USB4_D- / USB4_D+ → L33 *DLW21SN900SQ2B_NC → MCP_USB4- 11 / MCP_USB4+ 11

R264 0

R270 0

PCI-Express TX and RX direct to connector

+3.3V_SUS → R583 10K

+3.3V_WLAN

CN32

8,33,34 PCIE_WAKE#	1	WAKE#	3.3V_1 2
33 COEX2_WLAN_ACTIVE	3	RESERVED_1	GND0 4
33 COEX1_BT_ACTIVE_MINI	5	RESERVED_2	1.5V_1 6
8 MINI1CLK_REQ#	7	CLKREQ#	UIM_PWR 8
	9	GND1	UIM_DATA 10
8 CLK_PCIE_MINI1#	11	REFCLK-	UIM_CLK 12
8 CLK_PCIE_MINI1	13	REFCLK+	UIM_RESET 14
	15	GND2	UIM_VPP 16
	17	UIM_C8	GND3 18
	19	UIM_C4	W_DISABLE# 20
	21	GND4	PERST# 22
8 PCIE_RX1_N	23	PERn0	3.3VAUX1 24
8 PCIE_RX1_P	25	PERp0	GND5 26
	27	GND6	1.5V_2 28
	29	GND7	SMB_CLK 30
8 PCIE_TX1_N	31	PETn0	SMB_DATA 32
8 PCIE_TX1_P	33	PETp0	GND8 34
	35	GND9	USB_D- 36
12 PCIE_MCARD1_DET#	37	RESERVED_3	USB_D+ 38
	39	RESERVED_4	GND10 40
	41	RESERVED_5	LED_WWAN# 42
	43	RESERVED_6	LED_WLAN# 44
	45	RESERVED_7	LED_WPAN# 46
	47	RESERVED_8	1.5V_3 48
	49	RESERVED_9	GND11 50
	51	RESERVED_10	3.3V_2 52

TYC_1775838-1 MIPCIEXP-1775838-1-52P

0320-Sun_Change FP to MIPCIEXP-1775838-1-52P

R299 0 → PE_RESET# 8,17,33,34,36

WLAN_RADIO_OFF# → R298 *0_NC → WLAN_PCIE_RST# 10

+3.3V_WLAN

WLAN_SMBCLK

WLAN_SMBDATA

USB4_D- / USB4_D+

USB_MCARD1_DET# 12 — PAD T72

LED_WLAN_OUT# 39 — PAD T41

MINI1CLK_REQ# → C428 220P/50V

+3.3V_WLAN

RP6 2.2KX2

Q72 *2N7002W-7-F_NC

WLAN_SMBCLK → MCP_SMB_SCL 13,33,34

R487 *0_NC

Q77 *2N7002W-7-F_NC

WLAN_SMBDATA → MCP_SMB_SDA 13,33,34

R513 *0_NC

Suport for WoW

D27 SDMK0340L-7-F

WLAN_RADIO_OFF# → WLAN_RADIO_DIS# 10

R459 *0_NC

Prevent backdrive when WoW is enabled.

+PWR_SRC / +3.3V_ALW / +3.3V_WLAN / +3.3V_RUN

Q50 *FDC655BN_NC

R307 0/0805 RC0805

R486 *100K_NC

R514 *100K_NC

Q76B *2N7002DW-7-F_NC

Q76A *2N7002DW-7-F_NC

36 AUX_EN_WOWL

R490 *100K_NC

R493 *200K_NC

R301 *470K_NC

C660 *4700P/50V_NC

Place caps close to connector.

+1.5V_RUN

C435 0.047U/10V

C434 0.047U/10V

+3.3V_WLAN

C664 0.1U/10V

C633 0.047U/10V

C426 0.1U/10V

C424 0.047U/10V

C433 4.7U/10V CC0805

C606 *330U/6.3V_NC CC7343

QUANTA COMPUTER

Title	MINI-CARD (WLAN)		
Size	Document Number IM3 (XPS-Jolie)		Rev 2A
Date: Thursday, October 23, 2008		Sheet 32 of 59	

0829_Michael:Change Footprint from H-C197PB to H-c197d39pb
0605_Michael: Del MiniCard WPAN latch add Nut H31,H32

MiniCard Robson, BT. UWB Connector

Mini Card Nut
H31 Mini Card Nut (h3.2) H-c197d39pb
H32 Mini Card Nut (h3.2) H-BC197D102PB

0606_Michael:Remove 0ohm R297,R294

CN28
TYC_1775838-1 MIPCIEXP-1775838-1-52P

PCIE_WAKE# COEX2_WLAN_ACTIVE MINI2CLK_REQ#
CLK_PCIE_MINI2# CLK_PCIE_MINI2
LPC_RESET# CLK_LPC_DEBUG
PCIE_RX2_N PCIE_RX2_P
PCIE_TX2_N PCIE_TX2_P
PCIE_MCARD3_DET#

PCI-Express TX and RX direct to connector

R451 0
R286 R284 R279 R276 R273 0
LPC_LFRAME# LPC_LAD3 LPC_LAD2 LPC_LAD1 LPC_LAD0
R268 0 PE_RESET#
R262 *0_NC
WPAN_RADIO_DIS_MINI# WPAN_PCIE_RST#
MCP_SMB_SCL MCP_SMB_SDA
USB6_D- USB6_D+
USB_MCARD3_DET#
R248 0
LED_WPAN_OUT#

C436 *33P/50V_NC R300 *100K_NC
C281 220P/50V

0829_Michael:Change Footprint from H-C197PB to H-c197d39pb
0318-Sun_Correct Nut footprint as "H-TC157BC236D102PB"
0229-Sun_Change Mini Card WWAN Latch to Nut (Del CN31, add H27,H28)
0704_Michael:Remove 0ohm R602 & R603

MiniCard WWAN Connector

Mini Card Nut
H27 Mini Card Nut (h3.2) H-BC197D102PB
H28 Mini Card Nut (h3.2) H-c197d39pb

0616_Michael:Change footprint

CN29
TYC_1775838-1 MIPCIEXP-1775838-1-52P

T70 PAD T69 PAD
PCIE_WAKE# MINI3CLK_REQ#
CLK_PCIE_MINI3# CLK_PCIE_MINI3
PCIE_RX3_N PCIE_RX3_P
PCIE_TX3_N PCIE_TX3_P
PCIE_MCARD2_DET#

UIM_PWR UIM_DATA UIM_CLK UIM_RESET UIM_VPP
(Place close to CN29) C257 *15P/50V_NC
R452 0 PE_RESET#
R454 *0_NC WWAN_RADIO_DIS# WWAN_PCIE_RST#
MCP_SMB_SCL MCP_SMB_SDA
USB5_D- USB5_D+
USB_MCARD2_DET# LED_WWAN_OUT#

0704_Michael:Add C437 on UIM_PWR
0606_Michael:Modify pin defind for 2WM610C1C-DD-7F-6P
1022_Michael:Change ESD1 PN from ALSRV054011 to AL004220007 for EOL

CN17 2WM610C1C-DD-7F simcard-2wm610c1c-dd-7f-6p
C437 4.7U/6.3V CC0603
C18 C19 33P/50V
ESD1
C24 C25 33P/50V
C28 1U/10V CC0603
C355 220P/50V

Place as close as possible to JMINI connector

Reserve For EMI

L32 *DLW21SN900SQ2B_NC
USB6_D- USB6_D+ MCP_USB6- MCP_USB6+
R254 0 R251 0

Layout Note:
R240 and R244 close to choke as possible to minimize stubs.

Place caps close to connector.

+1.5V_RUN: C409 0.047U/10V, C413 0.047U/10V
+3.3V_RUN: C604 0.1U/10V, C432 0.047U/10V, C414 0.1U/10V, C408 0.047U/10V, C590 4.7U/6.3V CC0603

1020_Michael:Remove C608 (leave empty)

Reserve For EMI

L31 *DLW21SN900SQ2B_NC
USB5_D- USB5_D+ MCP_USB5- MCP_USB5+
R252 0 R249 0

Layout Note:
R240 and R244 close to choke as possible to minimize stubs.

0704_Michael:Add C257 on UIM_CLK

Place caps close to connector.

+1.5V_RUN: C429 0.047U/10V, C425 33P/50V
+3.3V_RUN: C592 33P/50V, C630 0.047U/10V, C427 33P/50V, C629 0.047U/10V, C599 330U/6.3V CC7343, C600 *330U/6.3V_NC CC7343

QUANTA COMPUTER

Title	MINI-CARD (WWAN,WPAN)	
Size	Document Number IM3 (XPS-Jolie)	Rev 2A
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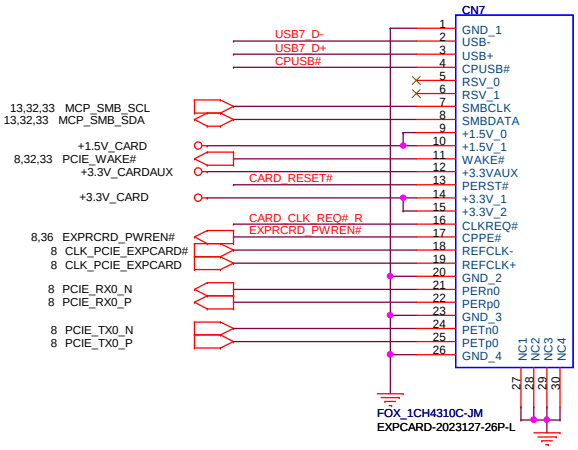
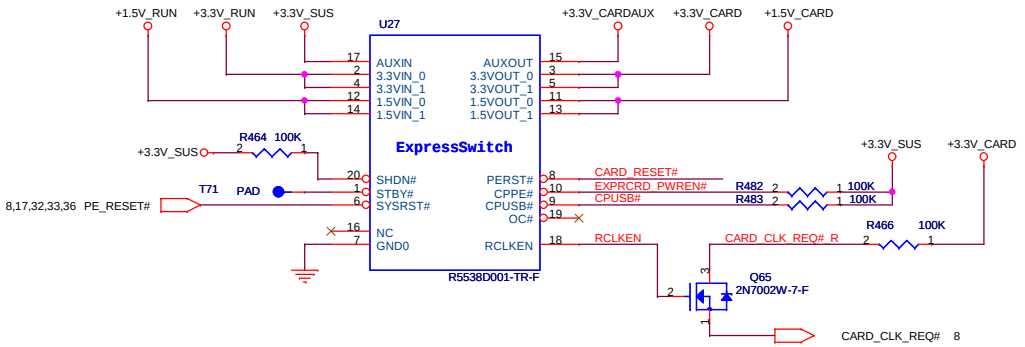
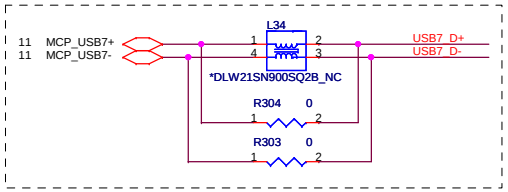
Express Card

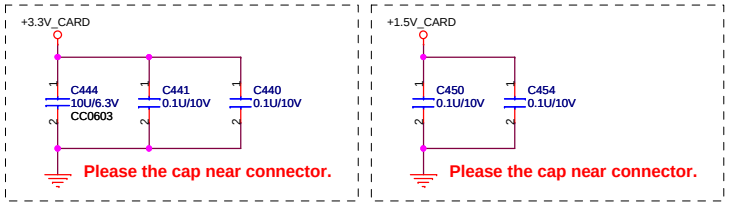
+1.5V_CARD Max. 650mA, Average 500mA.
+3V_CARD Max. 1300mA, Average 1000mA.

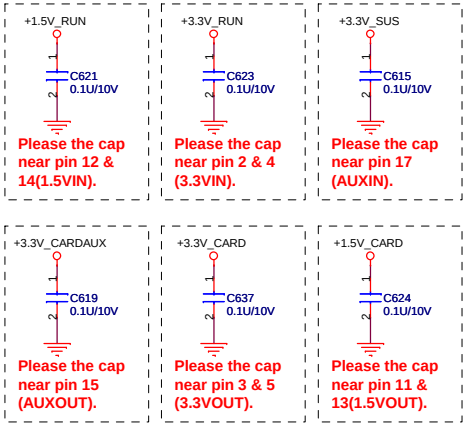




PCI-Express TX and RX direct to connector.

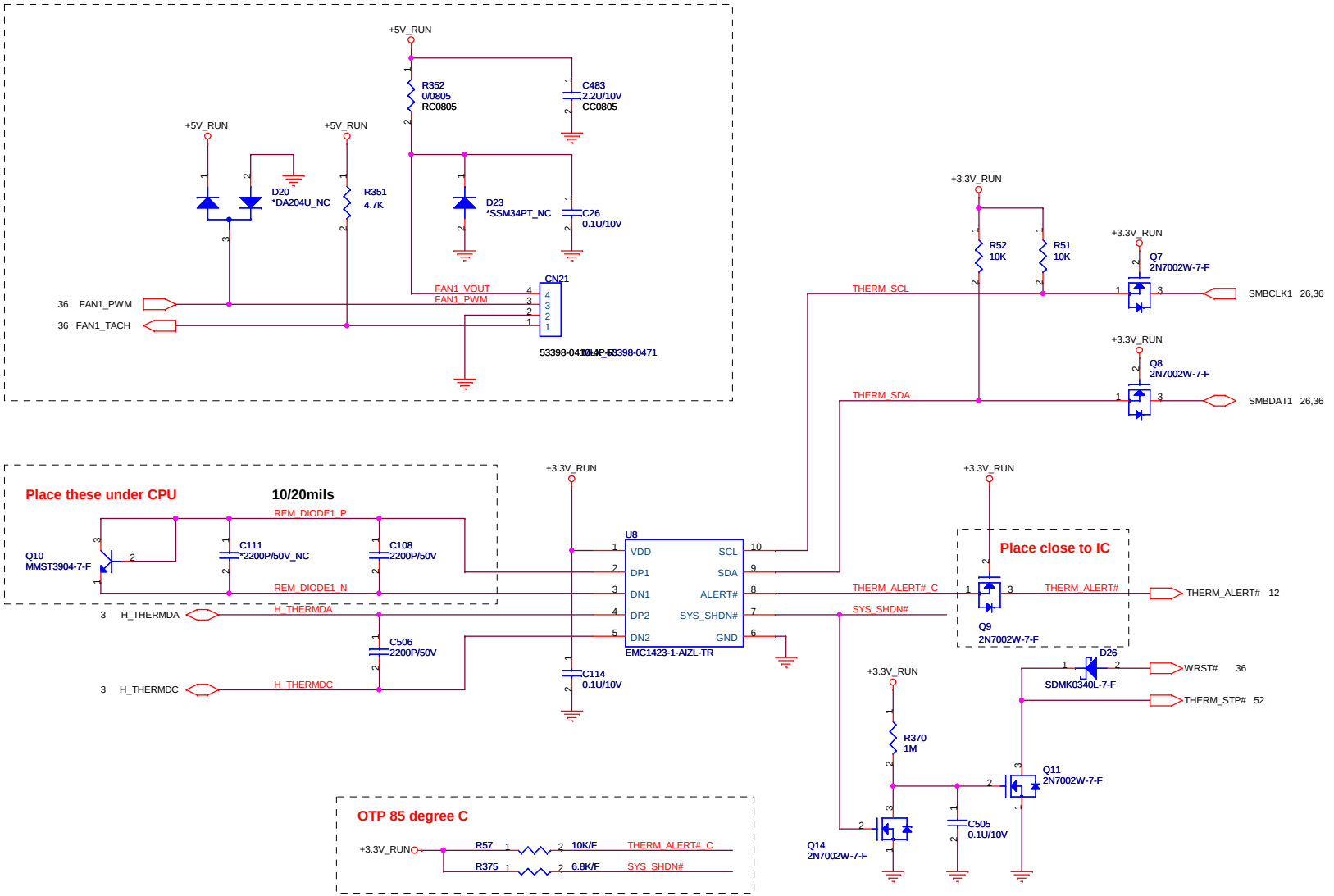






QUANTA COMPUTER

Title	ExpressCard	
Size	Document Number: IM3 (XPS-Jolie)	Rev: 2A
Date: Friday, September 05, 2008	Sheet 34 of 59	



QUANTA COMPUTER

Title	FAN & THERMAL	
Size	Document Number: IM3 (XPS-Jolie)	Rev: 2A
Date: Wednesday, September 17, 2008	Sheet 35 of 59	

ITE8512E LQFP-128L

U32

38 KSO[0..16]
38 KSI[0..7]

39 LED_MASK#

12 MCP_EXT_SMI# — D31 SDMK0340L-7-F — ECSMI#
12 MCP_EXT_SCI# — D29 SDMK0340L-7-F — ECSCI#
12 MCP_A20GATE — D32 SDMK0340L-7-F — GA20
12 MCP_KBRDRSTIN# — D33 SDMK0340L-7-F — GPB6
C733 *220P/50V_NC

0313-Sun_Reserve 220P on MCP_KBRDRSTIN#

33 CLK_LPC_DEBUG — R263 0 — CLK_LPC

0305-Sun_Change ITE8512 pin22 I/P to HDA_RESET#

+3.3V_ALW — R494 100K — WRST# — C641 1U/10V CC0603

GPU_Thermal and Charge and BAT
LCD and Thermal
Media button

0627_Michael:Change GPU_Thermal control from SMBus2 to SMBus0

T43 PAD
T73 PAD

38 CLK_TP_SIO
38 DAT_TP_SIO

CLK_LPC — R313 *10_NC — C451 *2.2P/50V_NC

KEYBOARD

KSO17/GPC5
KSO16/GPC3
KSO15
KSO14
KSO13
KSO12/SLCT
KSO11/ERR
KSO10/PE
KSO9/BUSY
KSO8/ACK
KSO7/PD7
KSO6/PD6
KSO5/PD5
KSO4/PD4
KSO3/PD3
KSO2/PD2
KSO1/PD1
KSO0/PD0

KSI7
KSI6
KSI5
KSI4
KSI3/SLIN
KSI2/INIT
KSI1/AFD
KSI0/STB

ADC/DAC

ADC0/GPI0
ADC1/GPI1
ADC2/GPI2
ADC3/GPI3
ADC4/GPI4
ADC5/GPI5
ADC6/GPI6
ADC7/GPI7

DAC0/GPJ0
DAC1/GPJ1
DAC2/GPJ2
DAC3/GPJ3
DAC4/GPJ4
DAC5/GPJ5

LPC

LPCRST/WUI4/GPD2
LPCCLK
LFRAME
LAD0
LAD1
LAD2
LAD3

CLKRUN/GPH0/ID0
SERIRQ
ECSMI/GPD4
ECSCI/GPD3
GA20/GPB5
LPCPD/WUI6/GPE6

KBRST/GPB6
WRST
PWUREQ/GPC7

L80HLAT/GPE0
L80LLAT/WUI7/GPE7

PWM

PWM0/GPA0
PWM1/GPA1
PWM2/GPA2
PWM3/GPA3
PWM4/GPA4
PWM5/GPA5
PWM6/GPA6
PWM7/GPA7

TACH0/GPD6
TACH1/GPD7

TMRI0/WUI2/GPC4
TMRI1/WUI3/GPC6

IR/UART

RXD/GPB0
TXD/GPB1
CRX0/GPC0
CTX0/GPB2
CRX1/GPH1/ID1
CTX1/GPH2/ID2

SMBUS

SMCLK0/GPB3
SMDAT0/GPB4

SMCLK1/GPC1
SMDAT1/GPC2

SMCLK2/GPF6
SMDAT2/GPF7

LPC/FWH FLASH

FLFRAME/GPG2/LF
FLRST/GPG0/TM
FLAD3/GPG6

FLAD2/SO
FLAD1/SI
FLAD0/SCE
FLCLK

PS/2

PS2CLK0/GPF0
PS2DAT0/GPF1

PS2CLK1/GPF2
PS2DAT1/GPF3

PS2CLK2/GPF4
PS2DAT2/GPF5

EGPC

EGAD/GPE1
EGCS/GPE2
EGCLK/GPE3

GPIO

GPH3/ID3
GPH4/ID4
GPH5/ID5
GPH6/ID6
GPG1/ID7

RI1/WUI0/GPD0
RI2/WUI1/GPD1
WUI5/GPE5

RING/PWRFAIL/LPCRST/GPB7

PWRSW/GPE4

GINT/GPD5

CK32K
CK32KE

VSS1
VSS2
VSS3
VSS4
VSS5
VSS6
VSS7

AVCC
AVSS

ITE8512E
LQFP128-16X16-4-FX2

VBAT1
VCC

VSTBY1
VSTBY2
VSTBY3
VSTBY4
VSTBY5
VSTBY6

+3.3V_RUN
+3.3V_ALW

R323 *0_NC
R326 0 — +RTC_CELL
C460 0.1U/10V

0609_Michael:Change SMBus2 pull-up sistor vaule from 2.2K to 10K for ISSP

0310-Sun_Remove 10K ohm on SIO_SLP_S5# to +3.3V_ALW. (Remove R485)

SMBDAT0 — RP4 2.2KX2 — SMBCLK0
SMBDAT1 — RP3 2.2KX2 — SMBCLK1
SMBDAT2 — RP23 10KX2 — SMBCLK2

LCD_CBL_DET# — R472 100K
INVERTER_CBL_DET# — R476 100K
KB_DET# — R569 10K
LID_SW# — R601 10K

0314-Sun_Add pull up RES on LID_SW# to +3.3V_ALW

HWPG
LCD_CBL_DET#
INVERTER_CBL_DET#
ADAPT_OC_IINP
SIO_SLP_S5#
PWRGD_SB

HWPG 47
IMVP6_PROCHOT# 49
MXM_RUNPWROK 8,47
LCD_CBL_DET# 26
INVERTER_CBL_DET# 26
PBAT_PRES# 55
ADAPT_OC_IINP 48
SIO_SLP_S5# 12,51

PS_PWRGD 12
SIO_EXT_WAKE# 12
LAN_DISABLE 45
EXPRCRD_PWREN# 8,34
PWRGD_SB 12
MCP_PWRBTN# 12

D28 SDMK0340L-7-F

0229-Sun_Del BAT_LED2#
0904_Michael:Use for power buttom LED control

BREATH_LED# 39
PWR_LED# 39
FAN1_PWM 35
PWM_VADJ 26
BAT1_LED# 39
KB_BACKLITE_EN 38
CAP_LED# 38
BEEP 42

FAN1_TACH 35
FANEN_BKEN 9

LID_SW# 38
MEDIA_INT# 38

0625_Michael:Change FAN1_TACH pin type from output to input

SUS_ON — R327 100K
HWPG — R469 100K
PWRGD_SB — R317 100K
C736 0.1U/10V

IRQ_SERIRQ — R325 10K
LCD_BAK# — R314 *10K_NC

0314-Sun_Add bypass capacitor on PWRGD_SW to absorb glitch from EC when +3.3V_ALW boot up.

+3.3V_SUS
SIO_SLP_S5# — R590 *10K_NC
SIO_SLP_S3# — R600 *10K_NC

0314-Sun_Reserve 10K pull-up on SIO_SLP_S3# & SIO_SLP_S5#.

0310-Sun_Remove T75 and connect GPB0 to ESATA_DETECT#.

ESATA_DETECT# 30
AUX_EN_WOWL 32
CIRRX 37
RUN_ON 26,36,51,56
HDDC_EN 31

0612_Michael:Remove net CAMERA_CBL_DET#

EC_FLASH_SPI_CLK — R329 *10_NC — C458 *2.2P/50V_NC

0413-Sun_Reserve MMB power control for MMB ISSP Support
0705_Michael:Change net name from MMB_ISSP to MMB_ISSP#

SUS_ON 56
KB_DET# 38
MMB_ISSP# 38

EC_FLASH_SPI_DO 37
EC_FLASH_SPI_DIN 37
EC_FLASH_SPI_CS# 37
EC_FLASH_SPI_CLK 37

PS_ID 55
5V_ALW_ON 52
SIO_PWRGD_SB 47

GPH3
GPH4
GPH5
GPH6

MODC_EN 31

Default is pull-up

SIO_SLP_S3# 12
ACAV_IN 48
USB_SIDE_EN# 30
USB_BACK_EN# 30
MAIN_PWR_SW# 38
LCDVCC_TST_EN 26

Board ID Straps

Discrete	BID2	BID1	BID0
	R539 10K_DIS	R318 10K	R552 *10K_NC	R319 10K
	R538 10K_UMA	R328 *10K_NC	R553 10K	R330 *10K_NC

1023_Michael:Change Board ID to 101 for QT.

0424-Steg Add R330

UMA

BID2	BID1	BID0	XPS (UMA)	XPS (Dis)
0	0	0	SSI (X00)	SSI (X00)
0	0	1	PT1 (X01)	PT1 (X01)
0	1	0	PT2 (X01)	PT2 (X01)
0	1	1	ST (X02)	ST (X02)
1	0	0	ST2 (X02)	ST2 (X02)
1	0	1	QT (A00) (A01)	QT (A00) (A01)

VGA_IDENTIFY : USB_SIDE_EN#
1 = Discrete Gfx / 0 = UMA.

ITE8512IX pin12 connect to GND.
ITE8512JX pin12 connect to 0.1uF. (Default on PT1)

SIO_VSS — R510 *0_NC — C656 0.1U/10V — C663 *1U/10V_NC CC0603

+3.3V_ALW — C671 10U/6.3V CC0603 — C445 0.1U/10V — C693 0.1U/10V — C617 0.1U/10V — C694 0.1U/10V

Place these caps close to ITE8512.

32KHz Clock

R529 0 — ITE8512_XTAL2
W2 32.768KHZ — ITE8512_XTAL1
C678 15P/50V
C684 15P/50V

+3.3V_ALW — L46 BLM11A05S RC0603 — SIO_AVCC — C649 0.1U/10V
L48 BLM11A05S RC0603 — SIO_AVSS

0709-Steg: Change CAP value from 10p to 15p

ITE8512_XTAL1
ITE8512_XTAL2
SIO_VSS
SIO_AVCC
SIO_AVSS

R481 0 — CLK_LPC
R501 0
R567 0 — 43 NB_MUTE# — 8,17,32,33,34 PE_RESET#

0627_Michael:Del D36 & "MCP_PME#" to connect "PE_RESET#" to R567

12,42 HDA_RESET#	22
10 CLK_LPC	13
10,33 LPC_LFRAME#	6
10,33 LPC_LAD0	10
10,33 LPC_LAD1	9
10,33 LPC_LAD2	8
10,33 LPC_LAD3	7
10,40,57 CLKRUN#	93
10,40,57 IRQ_SERIRQ	5
	15 ECSMI#
	23 ECSCI#
	126 GA20
26 LCD_TST	17
	4 GPB6
35 WRST#	14 WRST#
26 LCD_BAK#	16 LCD_BAK#
	19
	20
19,48,55 SMBCLK0	110 SMBCLK0
19,48,55 SMBDAT0	111 SMBDAT0
26,35 SMBCLK1	115 SMBCLK1
26,35 SMBDAT1	116 SMBDAT1
38 SMBCLK2	117 SMBCLK2
38 SMBDAT2	118 SMBDAT2
51 1.5V_DDR_PWRGD	85
12,49 CPU_PWRGD	86
	87
	88
	89
	90
	128 ITE8512_XTAL1
	2 ITE8512_XTAL2
	1 SIO_VSS
	12
	27
	49
	91
	113
	122
	74 SIO_AVCC
	75 SIO_AVSS

QUANTA COMPUTER

Title	SIO(ITE8512)	
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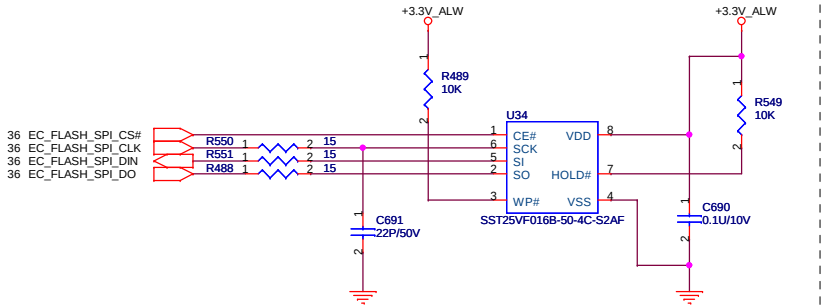
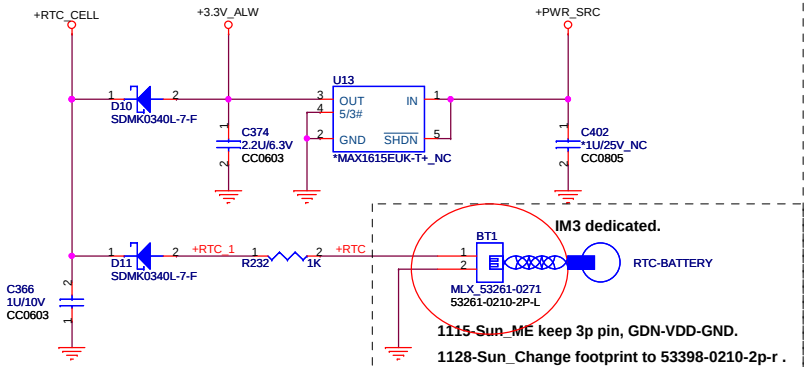
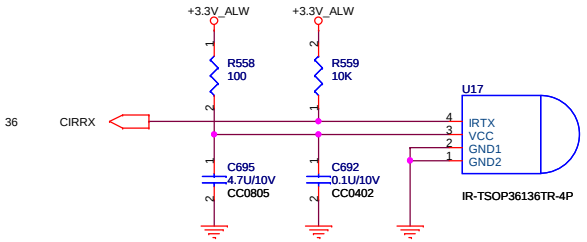
16Mbit (2M Byte), SPI



RTC BATTERY



Consumer IR



QUANTA COMPUTER

Title	FLASH & RTC	
Size	Document Number: IM3 (XPS-Jolie)	Rev: 2A
Date: Friday, September 05, 2008	Sheet 37 of 59	

0605_Michael: Change CN6 from 32pin to 28pin but need to check footprint and PN

BREATH_PWRLED_BOT:
Solid = System On, Normal Activity; "Breathing" = System in Standby; Off = System Off (or in Hibernate)

0920_Michael:Add KB detect function
1023_Michael:Disable KB_LED function depop R722 and change R723 from 200K to 0 ohm

Power Button

Speaker

KB LED

Touch Pad

Media Button

0624_Michael:Change net name from +5V_ALW2 to +MMB_PWR
0704_Michael:Swap SMBCLK2 and +MMB_PWR for Ass'y issue

0825_Michael:Add KB detect function
0911_Michael:Change pin from 16 to 8
0918_Michael:Return to LID_SW#

0909_Michael:Remove LID_SW# and connector to GND

0411-Sun_Reserve circuit for MMB ISSP support

0414-Sun_Change MOSFET control voltage level

0701_Michael: Remove Q91 for ISSP

0609_Michael:Add MOS Q92 on +MMB_PWR for ISSP

Power Buttom

KEYBOARD CONNECTOR

0701_Michael:Remove Q80 and add Q46 & R491 for leakage issue on S3

0310-Sun_CAP_LED +5V_ALW2 change to +5V_RUN

1022_Michael: Change R533 from 2.49K to158ohm for LED brightness

100P CAPS CLOSE TO JKB1

Array Microphone & Camera

GND,VCC要用最粗的電子線

0306-Sun_Change CCD connector to 10pin

0612_Michael:Remove CAMERA DET circuit, R64 pull-up to +3.3V_RUN and connector to U32 pin95

Hall Switch

0815_Michael:Add Hall Switch circuit and MEDIA_INT# pull-high at MB side

1023_Michael:Depop LID_Switch function on MB side

Title	USER INTERFACE/CIR
Size	Document Number: IM3 (XPS-Jolie) — Rev: 2A
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QUANTA COMPUTER

Battery status

0313-Sun_Change battery LED to Amber (3.3V drive) (Remove Q68, R462, R460)

0229-Sun_Remove BAT_LED controled by LID_SW# [Del Q69 (2N7002), Q67 (DDTA114YUA); change R462 from 220 to 10K]

0606_Michael:Add R462 connect to CN2 on BAT1_LED

0922_Michael:Remove BAT1_AMB_LED function

0229-Sun_Del BAT_LED2 [Del R295,Q48,Q43 (2N7002) and Q46,Q47 (DDTA114YUA)]

HDD Activity LED

Flicker with HDD activity.

1022_Michael:Change R500 from 2.49K to 169ohm for LED brightness

WLAN

Turns On when WiFi radio is on.

1022_Michael:Change R523 from 2.49K to 169ohm for LED brightness

BT / UWB LED

Turns On when Bluetooth radio is on.

1022_Michael:Change R519 from 2.49K to 169ohm for LED brightness

WWAN

Turns On when WWAN radio is on.

1022_Michael:Change R97 from 2.49K to 169ohm for LED brightness

0229-Sun_Change PWRLED_SW control same as PWRLED_LOGO [Del U10 (TC7SZ04F), Q16 (2N7002)]

0904_Michael:Add R576 and onnector to PWR_LED# from ITE8512

0618_Michael:Follow DELL command modify circuit to change the LED behavior of Power button

Power LED_LOGO

1022_Michael:Change R390 from 1K to 390ohm for LED brightness

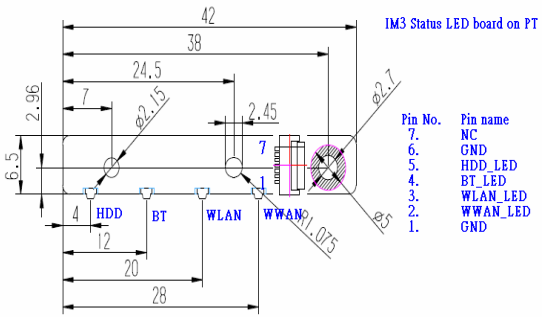
1022_Michael:Change R366 from 220ohm to 100ohm for LED brightness

50mA/ 200mW

WWAN_LED
WLAN_LED
BT_LED
HDD_LED

0229-Sun_Remove LED control by LID_SW# (Del R478,R477,Q75)

0704_Michael:Change CN33 pin number from 7pin to 6pin and also change type from HEADER7 to HS62_1909782-1 for cost down



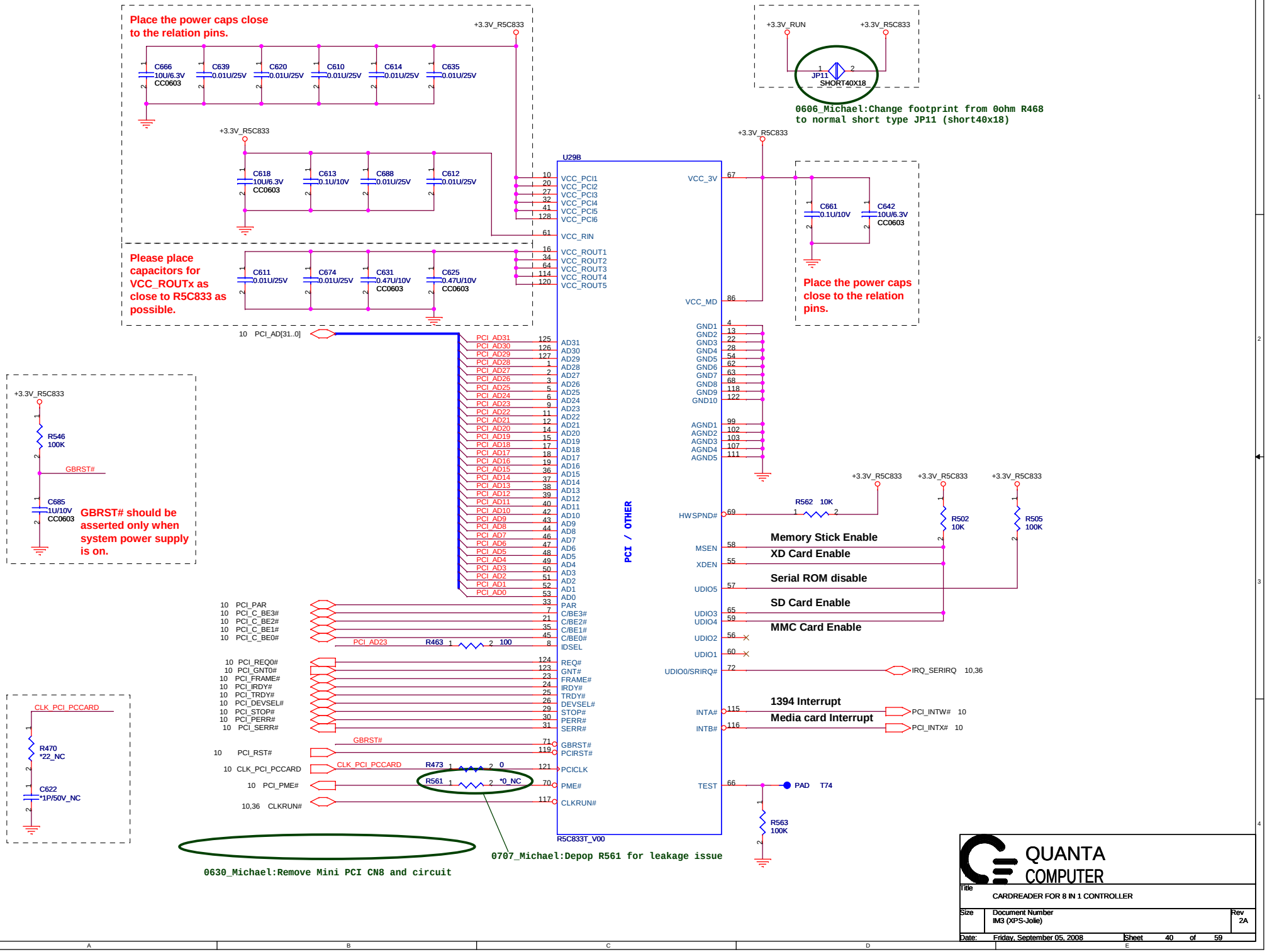
Logo LED/B connector

0306-Sun_Change Logo LED as BAT & PWR LED and change connector to 6pin_HS62_1909782-1

0314-Sun_Add short pad on GND of Logo LED/B connector for EMI request.

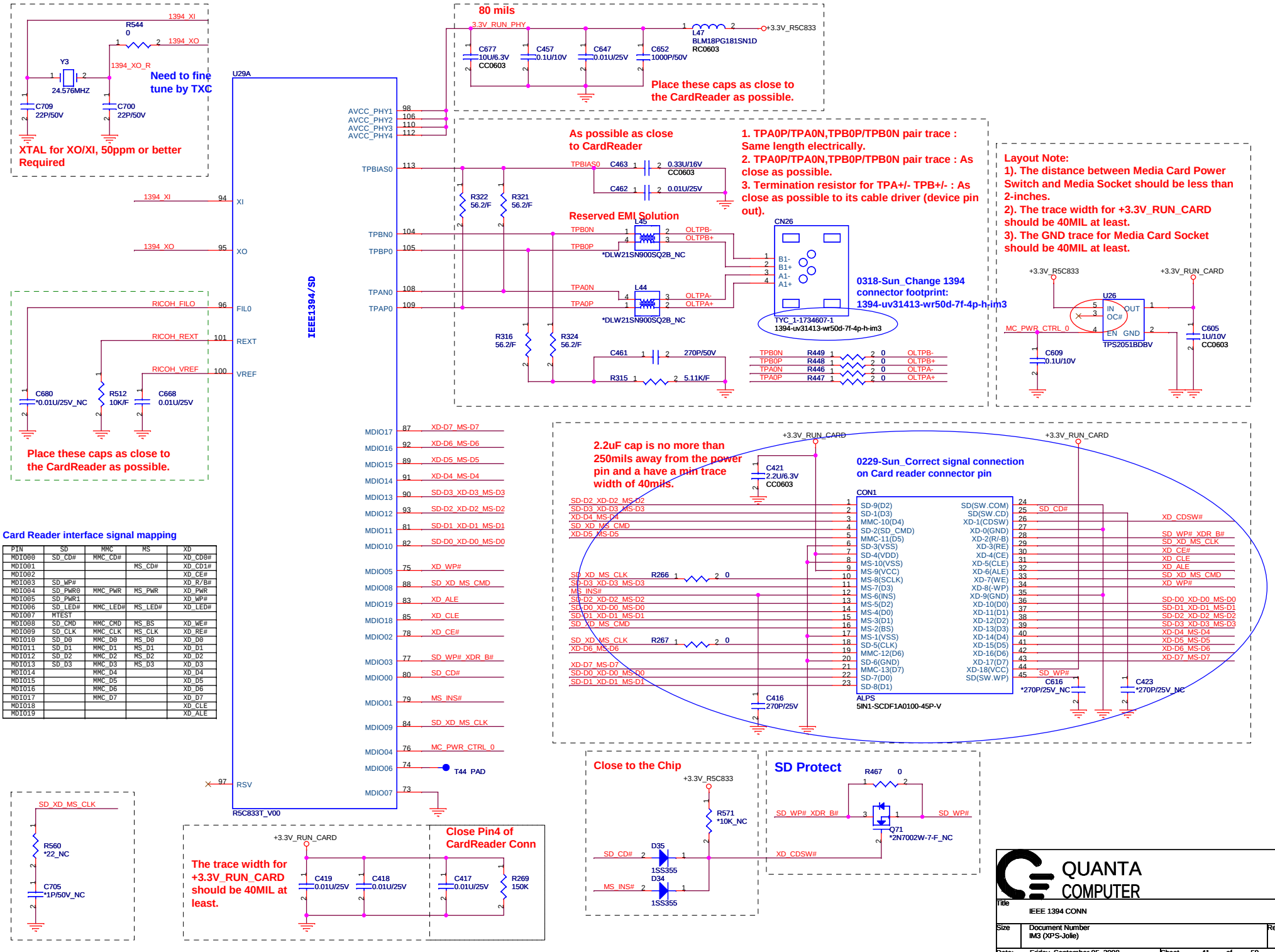
Title	LED
Size	Document Number: IM3 (XPS-Jolie) — Rev: 2A
Date:	Wednesday, October 22, 2008 — Sheet 39 of 59

QUANTA COMPUTER



Title	CARDREADER FOR 8 IN 1 CONTROLLER
Size	Document Number: IM3 (XPS-Jolie) — Rev: 2A
Date:	Friday, September 05, 2008 — Sheet 40 of 59

QUANTA COMPUTER



PIN	SD	MMC	MS	XD
MDIO00	SD_CD#	MMC_CD#		XD_CD0#
MDIO01			MS_CD#	XD_CD1#
MDIO02				XD_CE#
MDIO03	SD_WP#			XD_R/B#
MDIO04	SD_PWR0	MMC_PWR	MS_PWR	XD_PWR
MDIO05	SD_PWR1			XD_WP#
MDIO06	SD_LED#	MMC_LED#	MS_LED#	XD_LED#
MDIO07	MTEST			
MDIO08	SD_CMD	MMC_CMD	MS_BS	XD_WE#
MDIO09	SD_CLK	MMC_CLK	MS_CLK	XD_RE#
MDIO10	SD_D0	MMC_D0	MS_D0	XD_D0
MDIO11	SD_D1	MMC_D1	MS_D1	XD_D1
MDIO12	SD_D2	MMC_D2	MS_D2	XD_D2
MDIO13	SD_D3	MMC_D3	MS_D3	XD_D3
MDIO14		MMC_D4		XD_D4
MDIO15		MMC_D5		XD_D5
MDIO16		MMC_D6		XD_D6
MDIO17		MMC_D7		XD_D7
MDIO18				XD_CLE
MDIO19				XD_ALE

Title	IEEE 1394 CONN
Size	Document Number: IM3 (XPS-Jolie)
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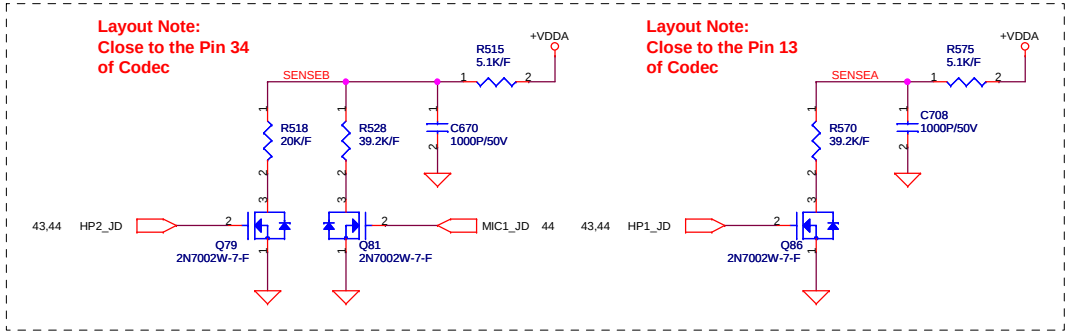
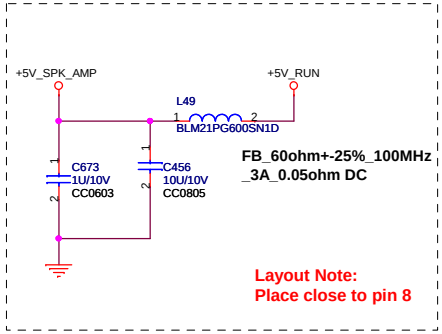
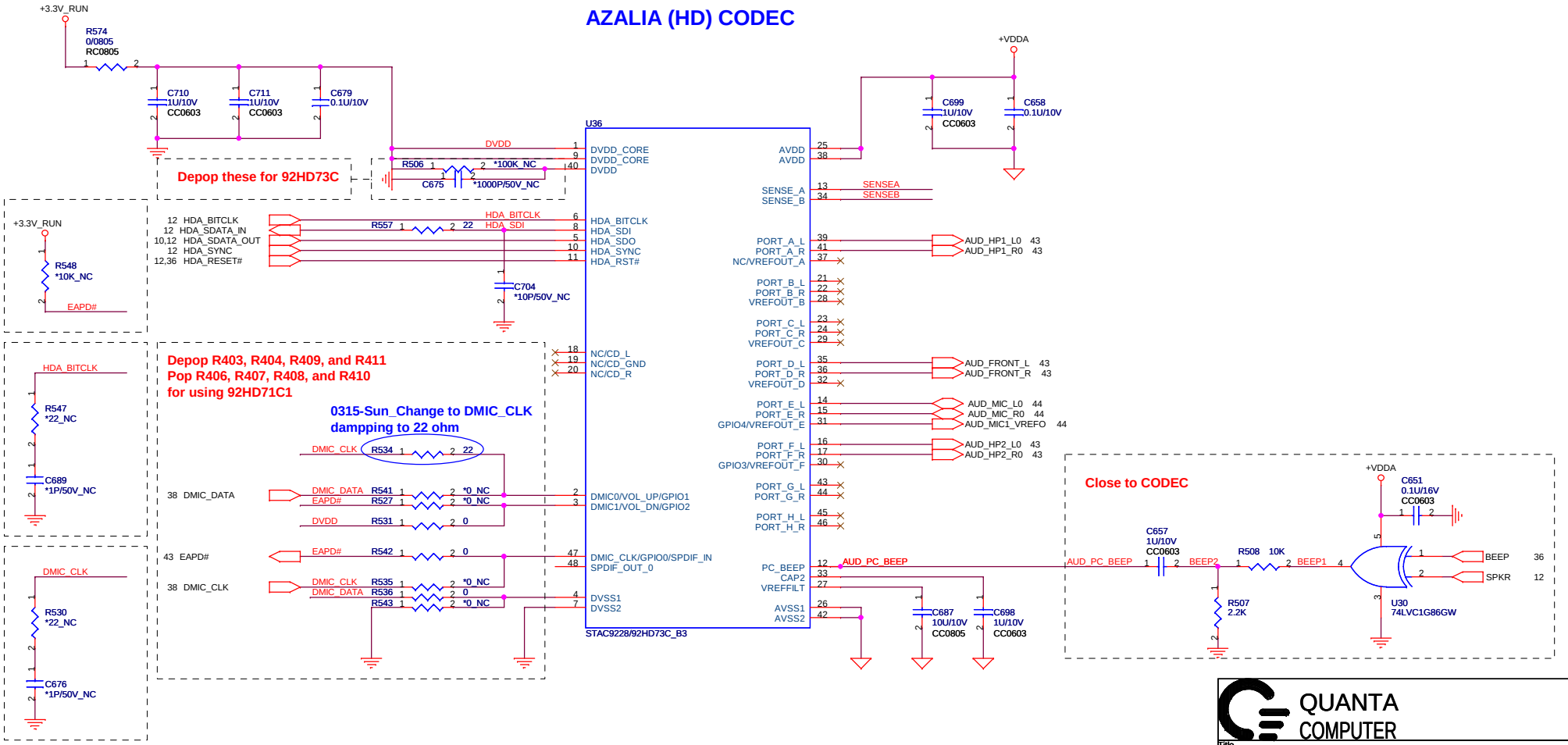
QUANTA COMPUTER

AZALIA (HD) CODEC



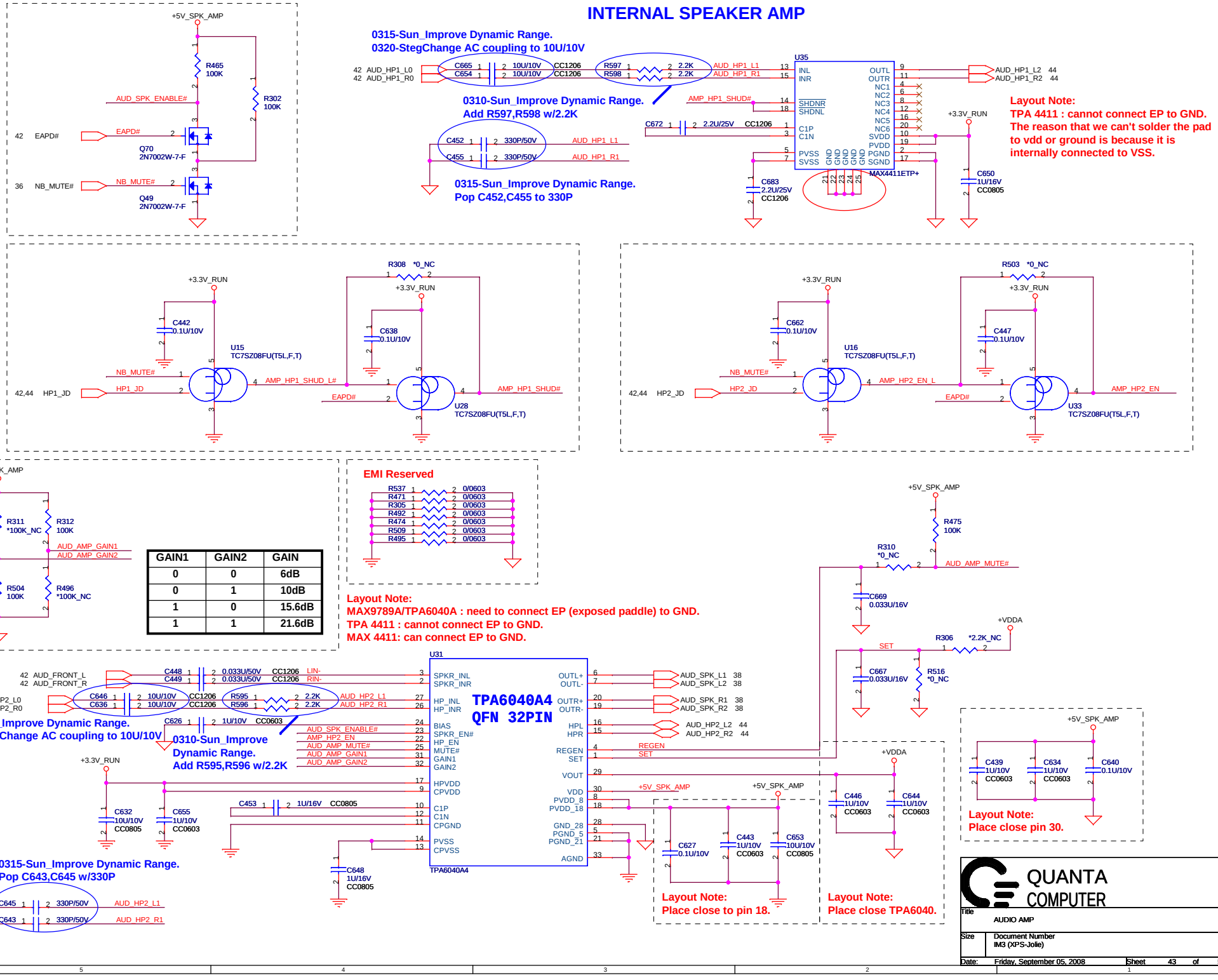




Title	Azelia CODEC	
Size	Document Number IM3 (XPS-Jolie)	Rev 2A
Date: Friday, September 05, 2008	Sheet 42 of 59	

QUANTA COMPUTER

INTERNAL SPEAKER AMP

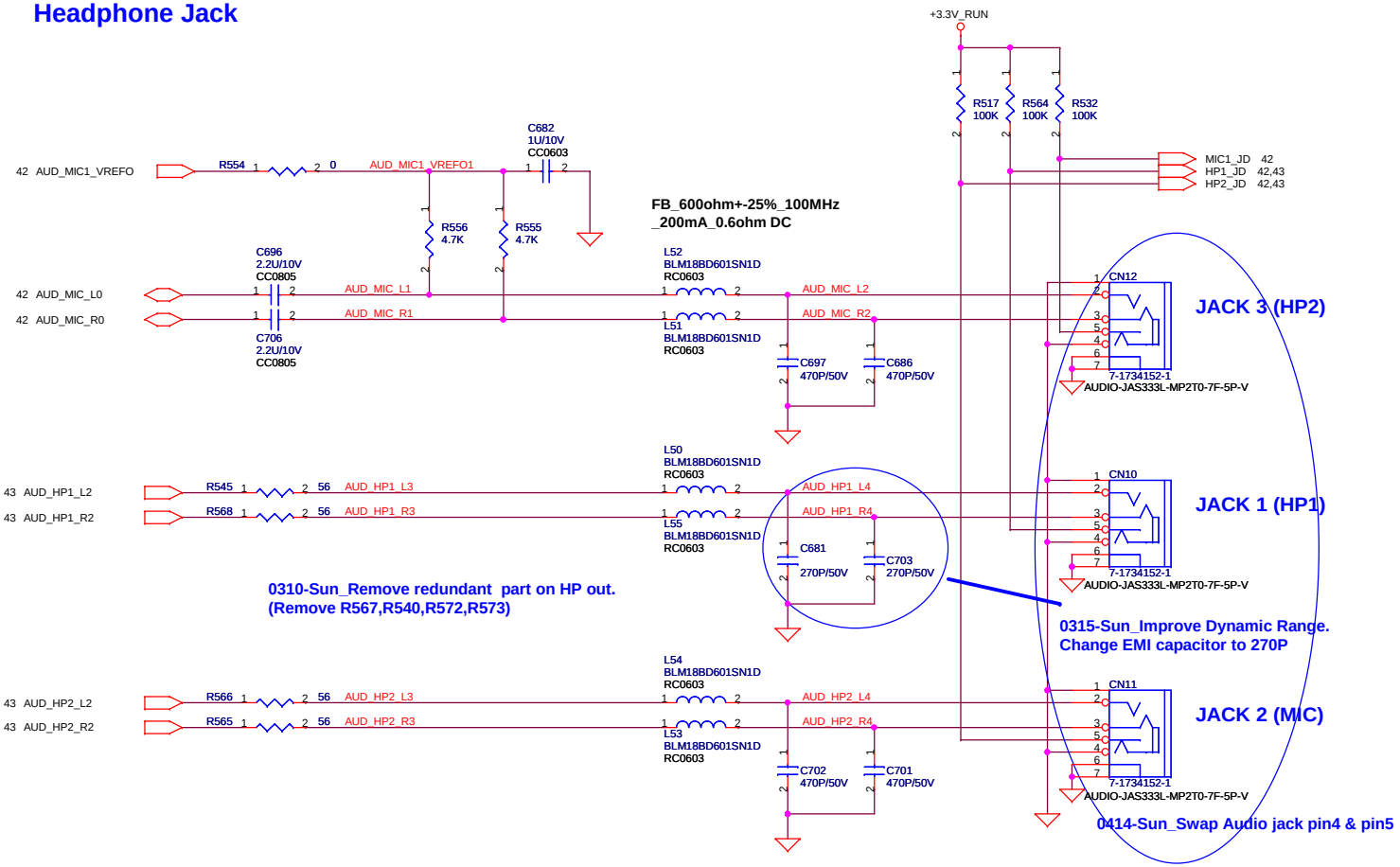


GAIN1	GAIN2	GAIN
0	0	6dB
0	1	10dB
1	0	15.6dB
1	1	21.6dB

QUANTA COMPUTER

Title	AUDIO AMP	
Size	Document Number: IM3 (XPS-Jolie)	Rev: 2A
Date: Friday, September 05, 2008	Sheet 43 of 59	

Headphone Jack



QUANTA COMPUTER

Title	AUDIO CONN	
Size	Document Number IM3 (XPS-Jolie)	Rev 2A
Date: Thursday, October 23, 2008	Sheet 44 of 59	

Layout Note:
1.Use 50 ohm impedance for all trace.
2. Trace length matched to a tolerance of 9.8mm in order to keep the skew between signals less than 0.07ns.
3.The receive and transmit signals kept away from each other and other analog and clock signals to reduce crosstalk.

Reserved EMI
0319-Sun_Pop 6.8P on LAN bus

TRD0+ TRD0- TRD1+ TRD1- — C490 6.8P/50V, C491 6.8P/50V, C486 6.8P/50V, C487 6.8P/50V
TRD2+ TRD2- TRD3+ TRD3- — C502 6.8P/50V, C503 6.8P/50V, C492 6.8P/50V, C495 6.8P/50V

U19
B5071A2KFBG
PHY
100 BALL BGA

GTXCLK, TX_EN, TX_ER, TXD[0], TXD[1], TXD[2], TXD[3], TXD[4], TXD[5], TXD[6], TXD[7], TXC
RXC, RX_DV, RX_ER, COL, CRS, RXD[0], RXD[1], RXD[2], RXD[3], RXD[4], RXD[5], RXD[6], RXD[7]
MDC, MDIO, XTALI, XTALO, CLK_125
TDI, TMS, TCK, TDO, TRST
MODE_SEL[1], MODE_SEL[0]
LOWPWR, TEST0, TEST1, RESET
NC_1 … NC_12

TRD[0]+ … TRD[3]- → TRD0+ … TRD3- (46)
LED[1] SPD10LED# (46), LED[2] SPD100LED# (46), LED[3] PHY_ACTLED (46), LED[4] PHY_LED[4]
REGOUT[1], DVDD_1, DVDD_2, DVDD_3 → +1.2V_PHY
AVDDL_1, AVDDL_2, VREF → PHY_AVDDL
PLLVDD → PHY_PLLVDD
REGOUT[2], AVDD_2, AVDD_1 → +2.5V_PHY
BIASVDD, XTALVDD, RDAC → R369 1.24K/F
OVDD1, OVDD2 → +3.3V_PHY; REGSUPPLY[1], REGSUPPLY[2] → +3.3V_PHY (3.3V)
GND_1, GND_2, GND_3
AGND_1, AGND_2, AGND_3, PLLGND
NC_13 … NC_22 → R34 *10K_NC to +3.3V_PHY

Pull-High: Address 1
NC : Address 0

9 RGMII_TXCLK, 9 RGMII_TXCTL
9,12 RGMII_TXD0, 9 RGMII_TXD1, 9 RGMII_TXD2, 9 RGMII_TXD3
9 RGMII_RXCLK, 9 RGMII_RXCTL
9 RGMII_RXD0, 9 RGMII_RXD1, 9 RGMII_RXD2, 9 RGMII_RXD3
9 RGMII_MDC, 9 RGMII_MDIO
9 RGMII_25MHz
9 RGMII_PWRDWN, 36 LAN_DISABLE
9 RGMII_RESET#

0319-Sun_Change RGMII_RXCLK damping RES to 22 ohm for EMI
RGMII_RXCLK — R63 22 — RGMII_RXCLK_C
RGMII_RXCTL — R152 0 — RGMII_RXCTL_C

+3.3V_PHY — R53 1.5K/F — RGMII_MDIO

Reserved EMI
RGMII_RXCLK — C79 33P/50V

0319-Sun_Pop RGMII_RXCLK capacitor w/33P for EMI
RGMII_25MHz — R75 22 — C100 10P/50V

0319-Sun_Pop AC termination on PHY_XTALI for EMI

0312-Sun_Remove R74 on PHY_XTALI.

0312-Sun_Remove R76 on RGMII_25MHz

0616_Michael:Change net name connector to RGMII_25MHz

T56 PAD, T55 PAD
T6 PAD, T46 PAD, T5 PAD, T45 PAD

R43 0
+3.3V_PHY — R55 10K
R31 0, R33 *0_NC

0312-Sun_Remove R56 on RGMII_RESET#

0311-Sun_Add EMI bead on +3.3V_PHY. (Place on JP1)
+3.3V_RMGT — L56 HCB2012KF-601T20 RC0805 — +3.3V_PHY
JP1 SHORT40X12
GB2012091601
C69 10U/10V CC0805

0709-Steg: Change QPN for L56 due to forbid material.

+3.3V_PHY — R50 *4.7K_NC — PHY_RESET# — C76 *1P/50V_NC

0320-Steg_Add EMI capacitor on +3.3V_RGMT & +3.3V_PHY. (Place close to JP1/L56)
+3.3V_RMGT: C714 10P/50V, C717 47P/50V, C718 3300P/50V, C721 0.01U/25V, C722 1000P/16V
+3.3V_PHY: C730 33P/50V, C731 3300P/50V, C729 0.01U/25V

Auto-Negotiate 10/100/1000BASE-T
0319-Sun_Pop 3300P on SPD10LED# and SPD100LED# for EMI
SPD10LED#, PHY_LED[4], PHY_ACTLED
0311-Sun_Add EMI capacitor on PHY_ACTLED (Place close to CN20)
C732 33P/50V, R48 4.7K, R35 33P/50V, R42 3300P

Pace 0.1u close PHY
+3.3V_PHY — C70 0.1U/10V, C68 0.1U/10V

Layout Note:
Locate the RDAC resistor as close to the RDAC pin as possible and keep the trace between the pin and resistor and short and wide as possible.

Pace 0.1u close DVDD pins
Pace 10u close pin F3 "REGOUT[1]"
+1.2V_PHY (1.2V) — C62 0.1U/10V, C67 0.1U/10V, C73 0.1U/10V, C85 10U/10V CC0805

Pace close AVDDL pins
1.2V — PHY_AVDDL — L16 BLM18AG601SN1D — C80 0.1U/10V, C78 0.1U/10V, C104 10U/10V CC0805

1.2V — PHY_PLLVDD — L15 BLM18AG601SN1D — C97 0.1U/10V, C90 10U/10V CC0805

Pace 10u close pin H3 "REGOUT[2]"
+2.5V_PHY (2.5V) — C64 0.1U/10V, C60 0.1U/10V, C485 10U/10V CC0805

2.5V — BIASVDD — L17 BLM18AG601SN1D — C99 0.1U/10V

2.5V — XTALVDD — L14 BLM18AG601SN1D — C95 0.1U/10V

Title	LAN Broadcom PHY B5071	
Size	Document Number: IM3 (XPS-Jolie)	Rev: 2A
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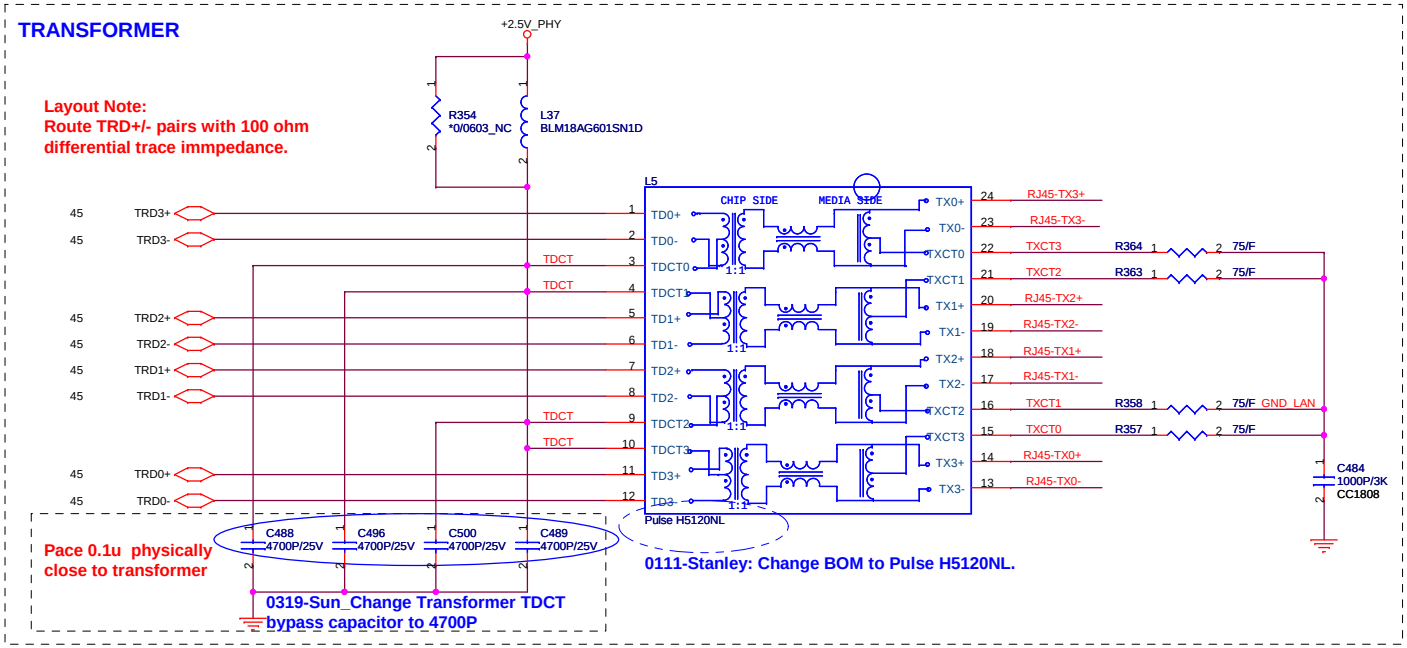
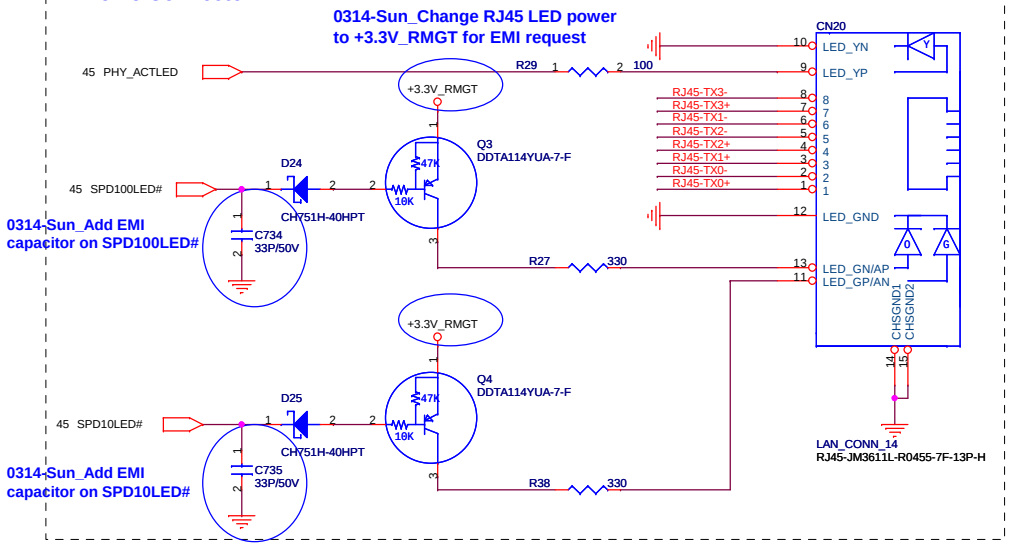
QUANTA COMPUTER

TRANSFORMER

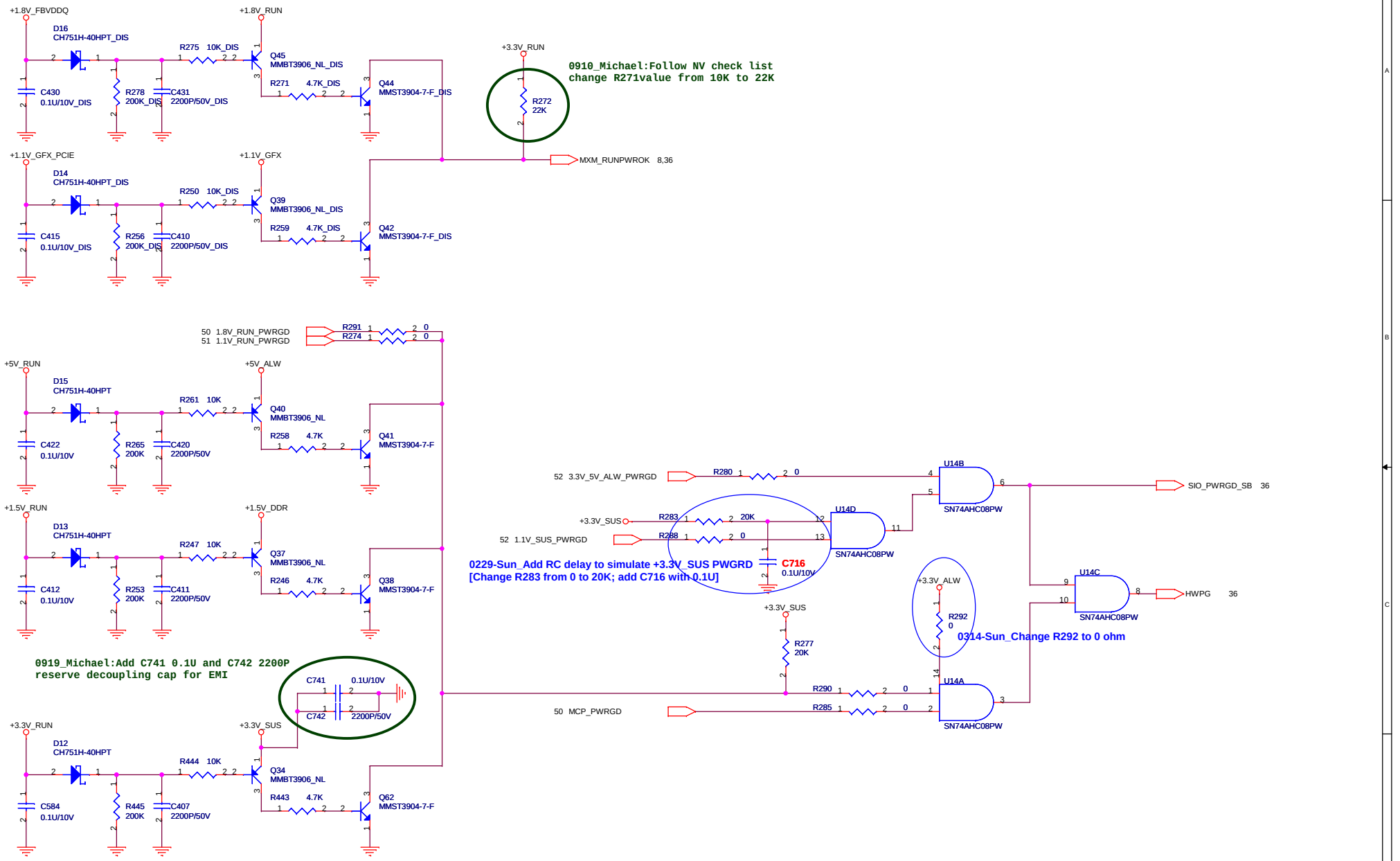


RJ-45 Connector



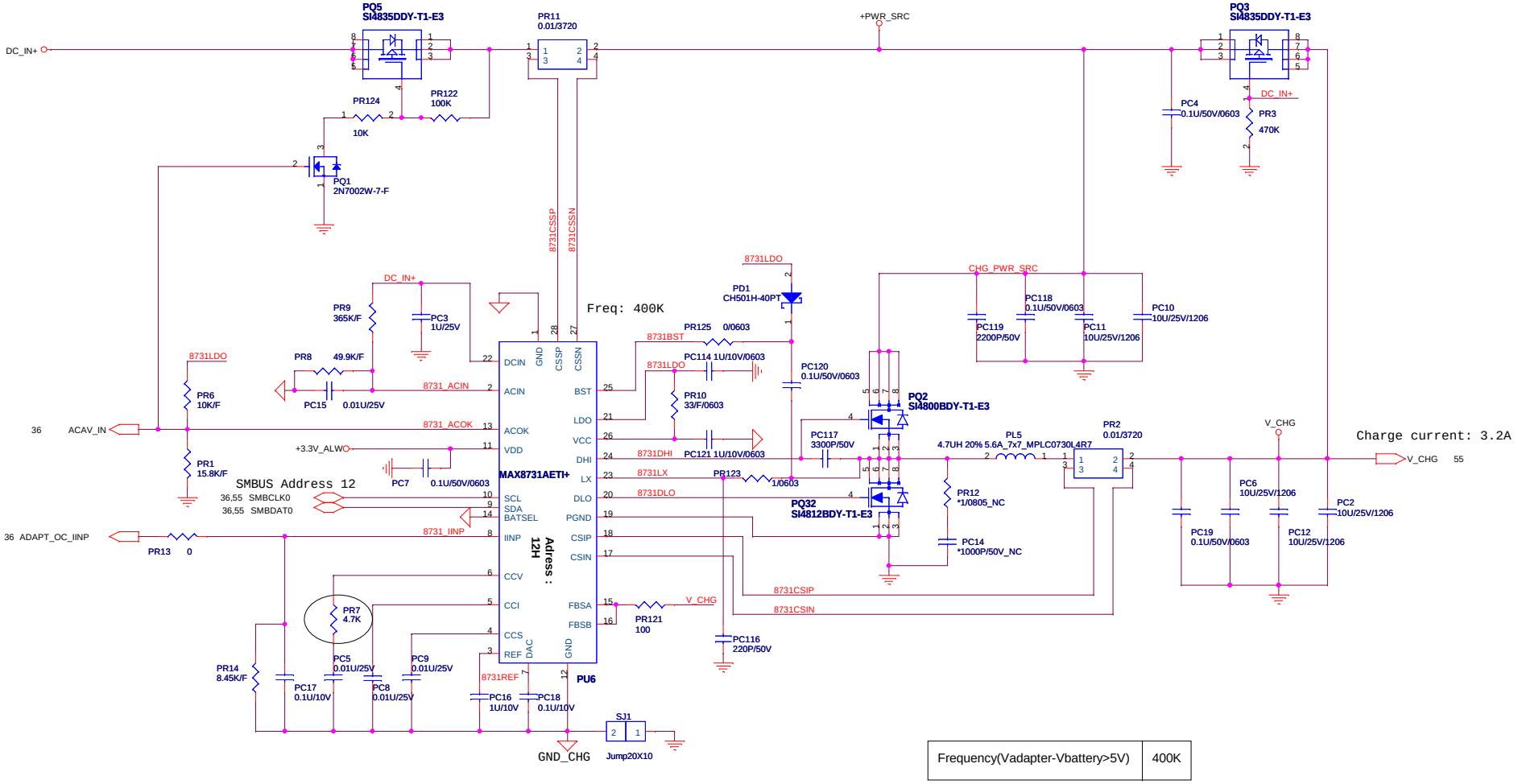
QUANTA COMPUTER

Title	LAN SWITCH	
Size	Document Number: IM3 (XPS-Jolie)	Rev: 2A
Date: Friday, September 05, 2008	Sheet 46 of 59	



QUANTA COMPUTER

Title	System Reset Circuit	
Size	Document Number IM3 (XPS-Jolie)	Rev 2A
Date: Thursday, October 23, 2008	Sheet 47 of 59	



Frequency(Vadapter-Vbattery>5V)	400K

QUANTA COMPUTER

Title	CHARGER	
Size	Document Number IM3 (XPS-Jolie)	Rev 1A
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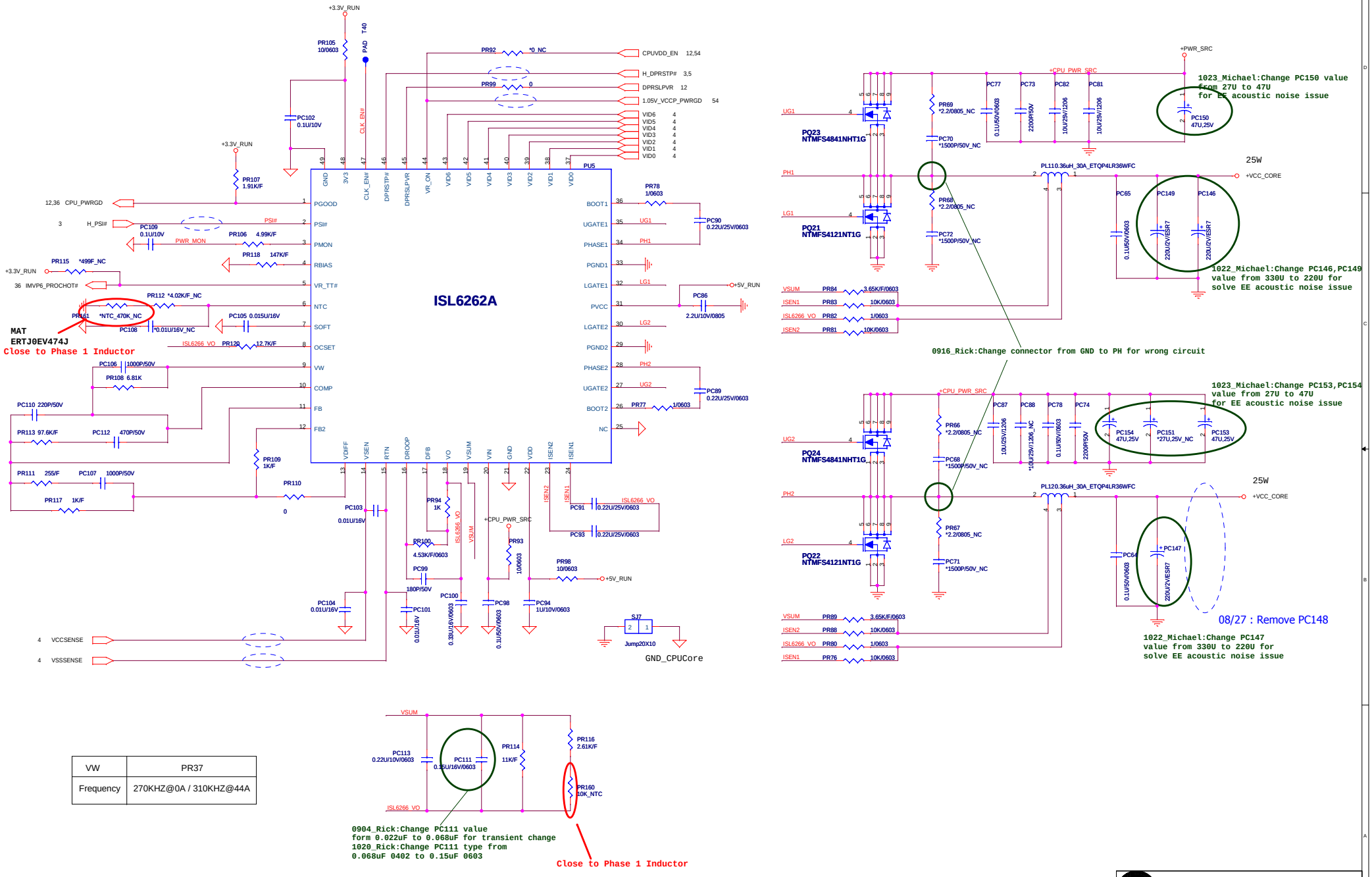
08/27 : Remove 0 ohm (PR102, PR97, PR119, PR104, PR103)



VW	PR37
Frequency	270KHZ@0A / 310KHZ@44A

QUANTA COMPUTER

Title	CPU_Core_2Phase (ISL6262)	
Size	Document Number IM3 (XPS-Jolie)	Rev 1A
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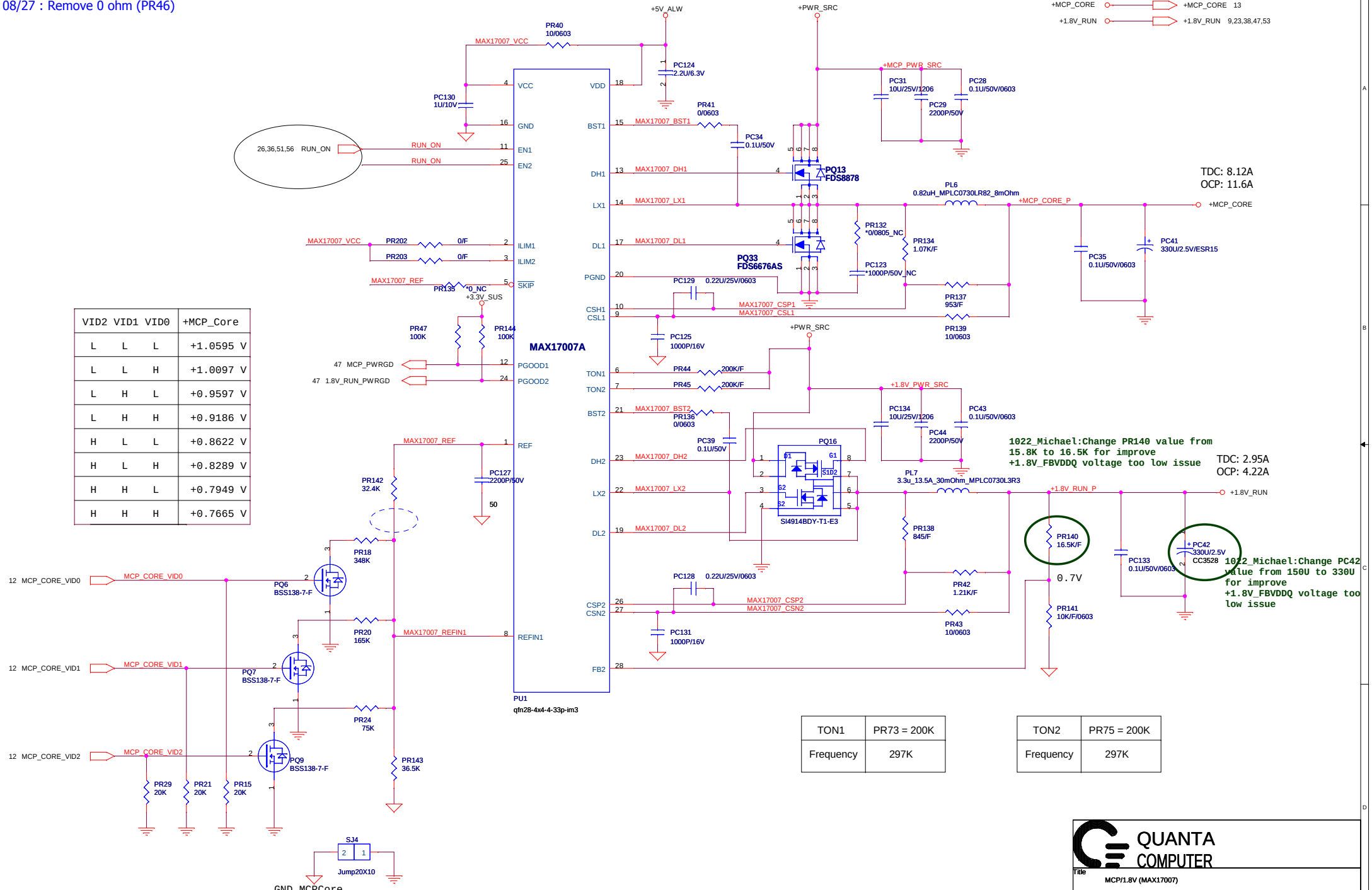
08/27 : Remove 0 ohm (PR46)



VID2	VID1	VID0	+MCP_Core
L	L	L	+1.0595 V
L	L	H	+1.0097 V
L	H	L	+0.9597 V
L	H	H	+0.9186 V
H	L	L	+0.8622 V
H	L	H	+0.8289 V
H	H	L	+0.7949 V
H	H	H	+0.7665 V

TON1	PR73 = 200K
Frequency	297K

TON2	PR75 = 200K
Frequency	297K

QUANTA COMPUTER

Title	MCP/1.8V (MAX17007)	
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+1.5V_DDR +1.5V_DDR 15,16,47,56
+0.75V_DDR_VTT +0.75V_DDR_VTT 15,16,56
+1.1V_RUN +1.1V_RUN 5,7,8,9,11,12
V_DDR_MCP_REF V_DDR_MCP_REF 15,16

08/27 : Remove PJP20, PJP21, PR48(0 ohm)

0709-Steg: Change PR39 Value for EMI Solution

1A

TDC: 11.19A
OCP: 15.98A

PU7 TPS51116

Frequency(Fixed)	400K

(Note 1) Current Limiting Setting :
Rtrip(Kohm)=100*(Iocp-0.5*Iripple)*Rds(on)

PU11 RT9024PE

TDC : 1.81A
NDV : 1.072V

QUANTA COMPUTER	
Title	1.8VSUS & 0.9VTT (TPS51116)
Size	Document Number: IM3 (XPS-Jolie) — Rev: 1A
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+1.1V_SUS → +1.1V_SUS 13,14

+5V_ALW → +5V_ALW 15,30,31,38,39,47,50,51,53,54,56

+3.3V_ALW → +3.3V_ALW 23,26,31,32,36,37,38,39,47,48,55,56

08/27 : Remove PR169, PR173 (0 ohm)

08/27 : Add Zener Diode (PD12), PR173 and change PR184=68K, PR181=200K to fix +3.3V_ALW glitch issue when adapter unplug

0916_Rick:Change PC177 value from 0.1U to 1U

Reserve for MAX17020

Reserve for MAX17020

Reserve for MAX17020

+PWR_SRC

+5V_PWR_SRC

PC173 10U/25V/1206

PC174 10U/25V/1206

PC172 2200P/50V

PC175 0.1U/50V/0603

PR173 *0_NC

PD12 UDZSTE-175.6B

6236_VIN

PC181 0.1U/10V

+5V_ALW2

PR178 10/0603

PC182 4.7U/10V/0805

+5V_VCC

PC176 1U/10V

PR188 *0_NC

PC167 0.1U/10V

2VREF

PR187 0

PR197 0

PR198 *0_NC

PC179 0.1U/50V

PC177 1U/6.3V

PR184 68K

EN_LDO

PR181 200K/F

+5V_ALW

TDC: 4.77A

OCP: 6.81A

PL14 3.3u_13.5A_30mOhm_MPLC0730L3R3

+5V_SRC_P

PR180 *0_NC

PC164 0.1U/50V/0603

PC170 220U/6.3V/ESR25

PR182 0

PR175 *0/0805_NC

PC169 *1500P/50V_NC

PQ46 SI4800BDY-T1-E3

PQ44 SI4812BDY-T1-E3

PU9 MAX17020

PAD PAD PAD PAD BYP OUT1 FB1 ILIM1 PGOOD1 ON1 DH1 LX1 PAD PAD PAD

LDOREFIN LDO VIN RTC ONLDO VCC TON REF

REFIN2 ILIM2 OUT2 SKIP# PGOOD2 ON2 DH2 LX2

BST1 DL1 VDD SECFB AGND PGND DL2 BST2

+5V_FB1 +5V_ILIM1 +5V_POK1 +5V_EN1 +5V_DH +5V_LX

+3.3V_OUT +3.3V_POK2 +3.3V_EN2 +3.3V_DH +3.3V_LX

PR185 237K/F

PR172 340K/F

PC184 0.1U/50V/0603

PC166 0.1U/50V/0603

PR177 1/0603

PR174 1/0603

+5V_BOOT

+3.3V_BOOT

+3.3V_DL

+5V_DL

+5V_ALW2

SJ3

Jump20X10

GND_SYS

PR206 *0_NC

PR205 0

PC180 1U/10V

PR207 0

+3.3V_DL

PR183 *0_NC

PR186 0

+3.3V_PWR_SRC

+PWR_SRC

PC160 10U/25V/1206

PC161 10U/25V/1206

PC163 2200P/50V

PC165 0.1U/50V/0603

PQ43 SI4800BDY-T1-E3

PQ42 SI4812BDY-T1-E3

PL13 2.2UH_8.2A(MPLC0730L2R2)

+3.3V_SRC

PR168 *0/0805_NC

PR170 0

PC162 *1500P/50V_NC

PR171 *0_NC

+3.3V_ALW

TDC: 6.67A

OCP: 9.53A

PC158 0.1U/50V/0603

PC159 220U/6.3V/ESR25

TON	GND
Frequency	OUT1@400K , OUT2@500K

PR192 39K/F

+5V_ALW2

PR191 0

+3.3V_EN2

PR190 0

THERM_STP# 35

36 5V_ALW_ON

PD11 BAS316

+5V_EN1

PR189 200K/F

PR193 *0_NC

CPU_THERMTRIP# 3

PR179 *0_NC

PR201 *0_NC

GFX_THERMTRIP# 17

PC185 0.1U/50V/0603

PC186 0.1U/50V/0603

PD10 DA204U

PD9 DA204U

+5V_ALW

PC183 0.1U/50V/0603

+3.3V_SUS

PR194 100K

PR195 0

+3.3V_POK2

PR196 0

+5V_POK1

3.3V_5V_ALW_PWRGD 47

+15V_ALW

PR176 0/0603

PC178 0.1U/50V/0603

PR200 *200K/F_NC

2V

PR204 *39K/F_NC

08/27 : Add PR209, PC196 for RC delay

+3.3V_SUS

PR164 100K

47 1.1V_SUS_PWRGD

PU8 MAX1935ETA+

POK IN1 IN2 SHDN OUT2 OUT1 SET GND GND

+3.3V_SUS

PR209 0

PC196 *0.1U/10V_NC

PC156 1U/10V/0603

+1.1V_SUS_P

PR71 0/0603

+1.1V_SUS

TDC: 74mA

NDV : 1.072V

PR163 3.32K/F/0603

0.8V

PR162 10K/F

PC155 10U/4V

Title	SYS 5V/3V(MAX17020)		
Size	Document Number IM3 (XPS-Jolie)		Rev 1A
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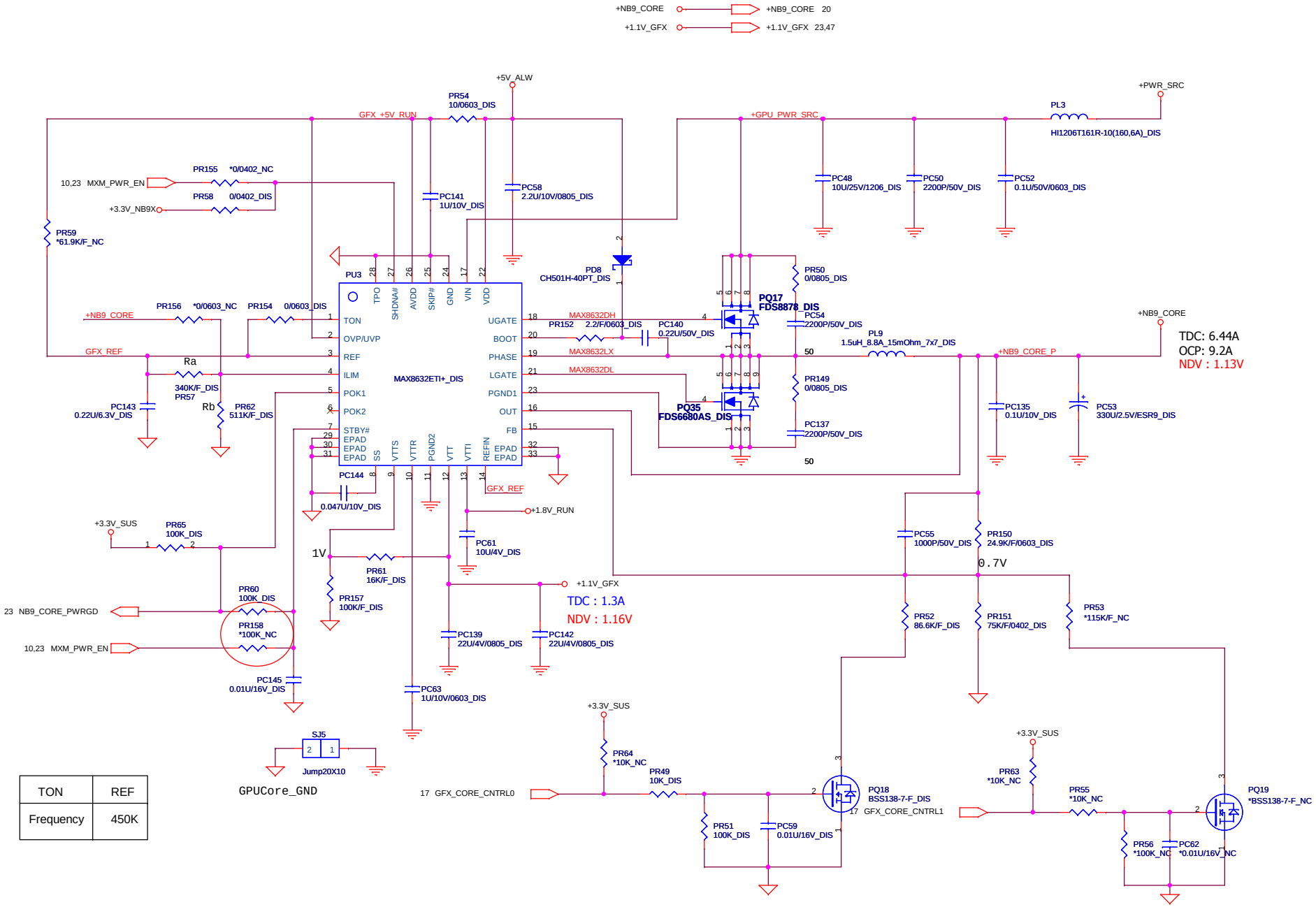
QUANTA COMPUTER



TON	REF
Frequency	450K

ILIM	Iovp=(2*(Rb/(Ra+Rb))*0.1*(1/RDSON)+(I_DELTA/2)
SKIP#	AVDD = Low-noise, forced-PWM mode. GND = Pulse-skipping operation.
OVP/UVP	The overvoltage limit is 116% of Vout. The undervoltage limit is 70% of Vout.

GFX_CORE_CNTRL1	GFX_CORE_CNTRL0	+NB9_CORE
LOW	LOW	0.9
HIGH	LOW	0.9
HIGH	HIGH	1.1V

QUANTA COMPUTER

Title	VGA DC/DC	
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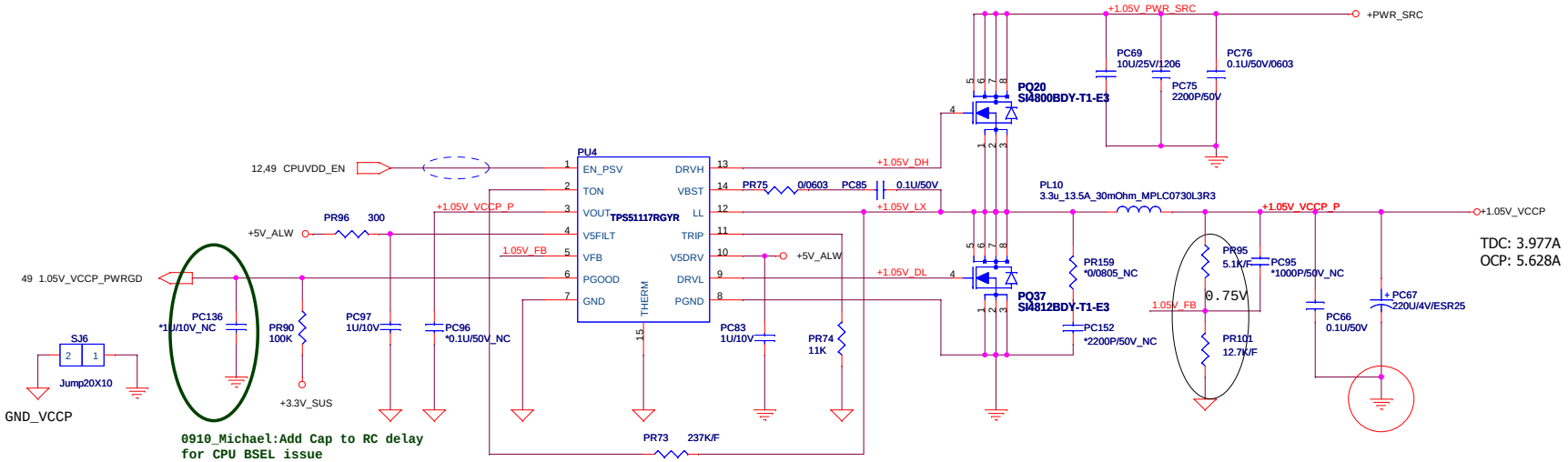
+1.05V_VCCP +1.05V_VCCP 3,4,5,13

08/27 : Remove 0 ohm (PR79)



TON	PR185=237K
Frequency	300K

QUANTA COMPUTER

Title	CPUVTT_Core (TPS51117)	
Size	Document Number IM3 (XPS-Jolie)	Rev 1A
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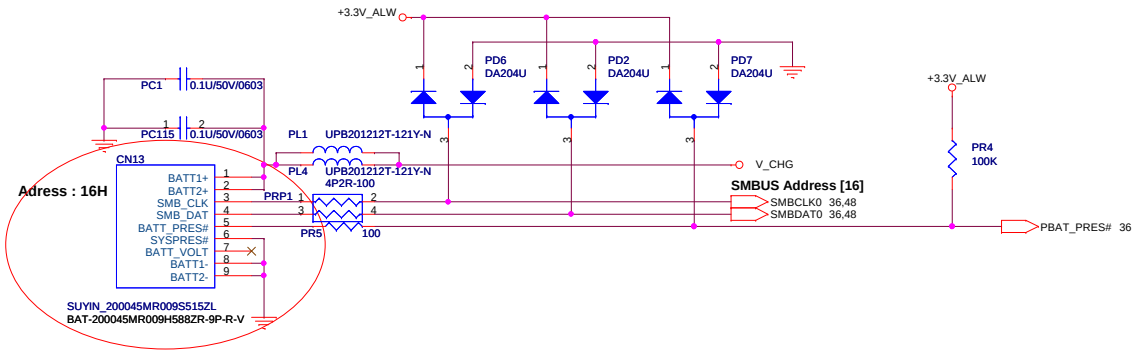
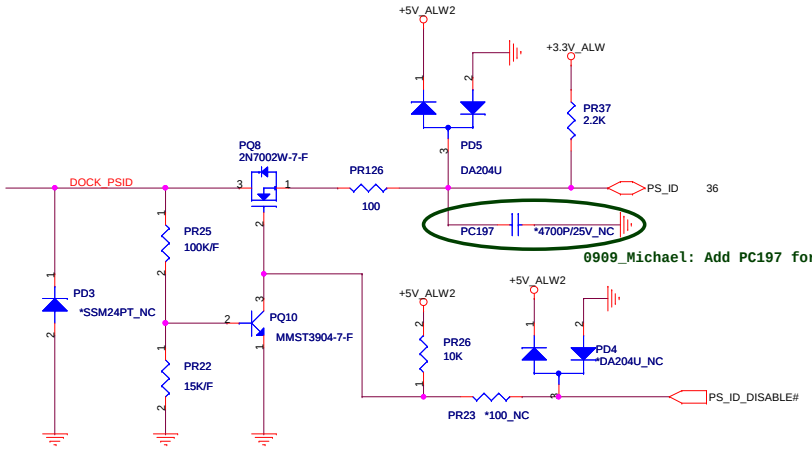
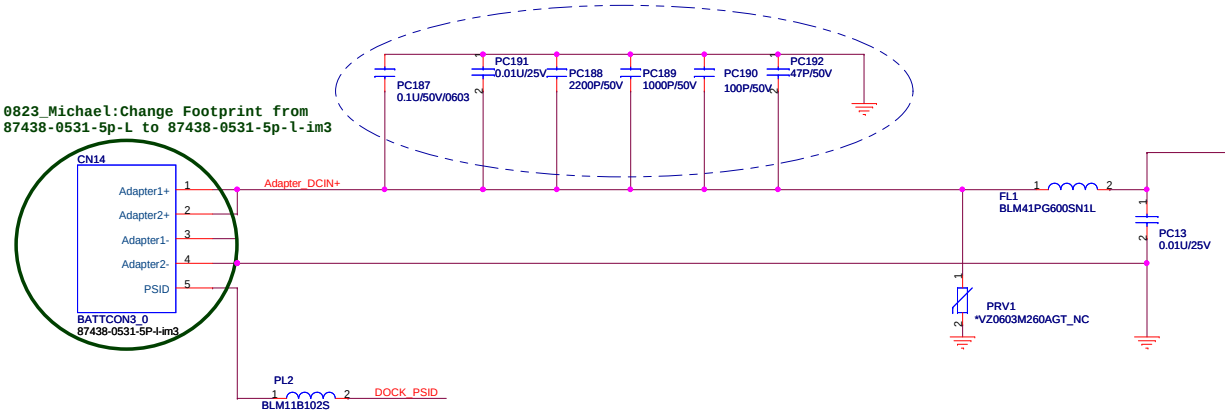




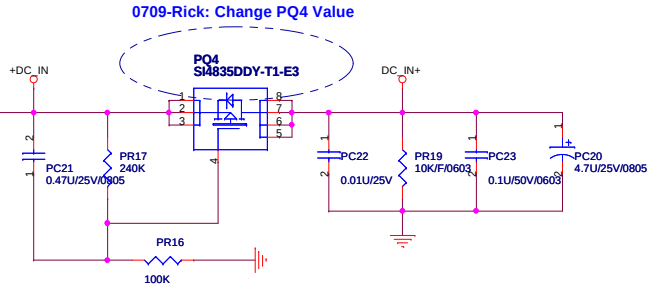
0909_Michael: Add PC197 for adaper unknow issue

0311-Rick: Add PC187~PC192 for EMC

0823_Michael:Change Footprint from 87438-0531-5p-L to 87438-0531-5p-l-im3

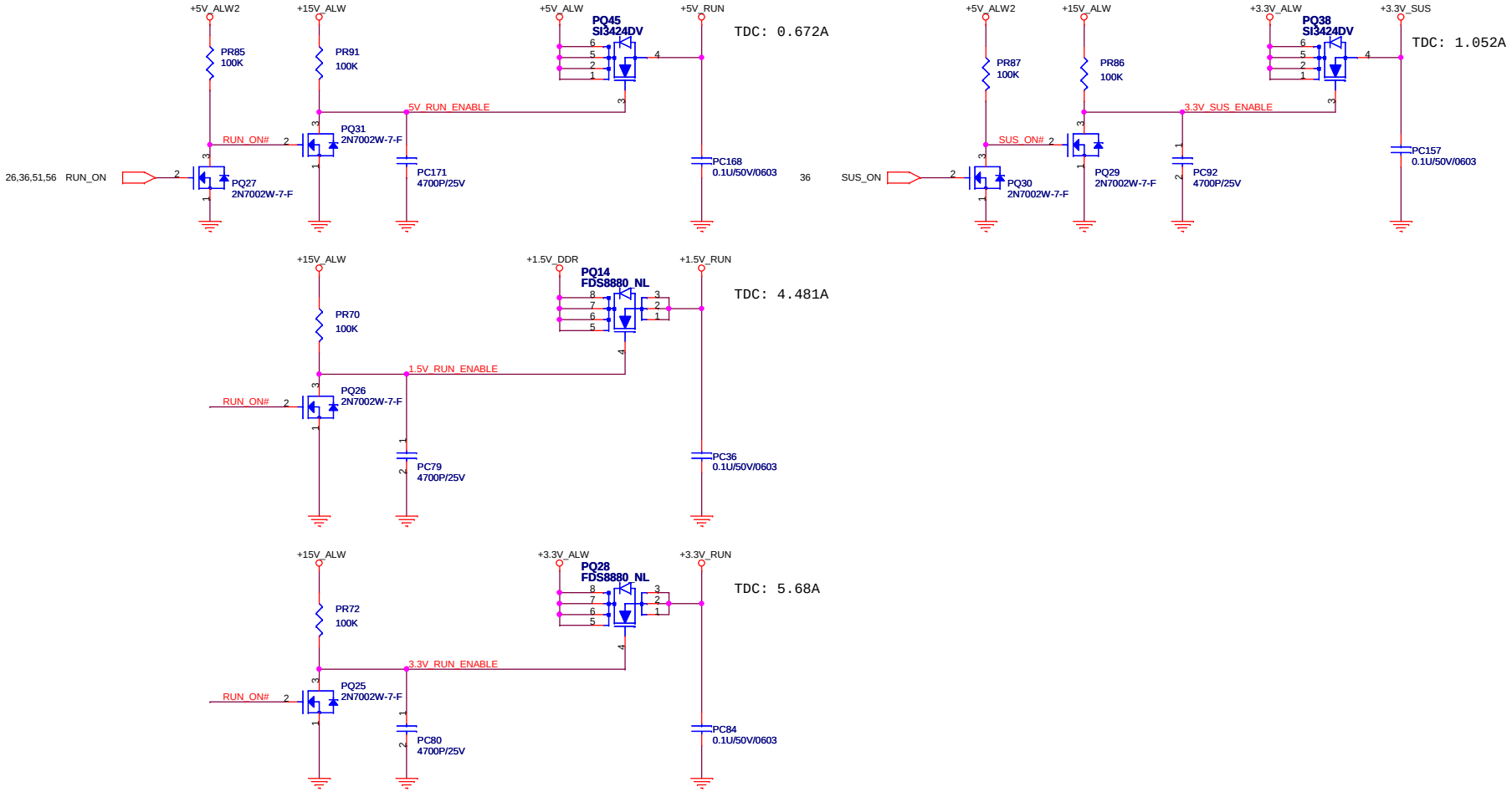


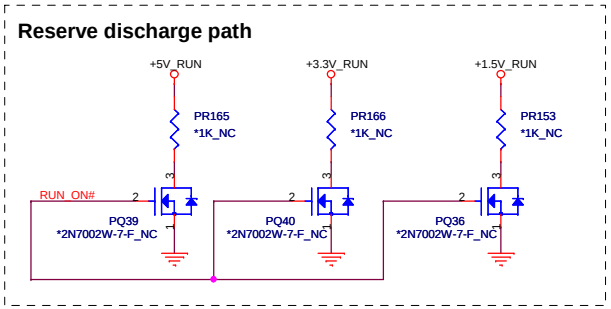
0709-Rick: Change PQ4 Value

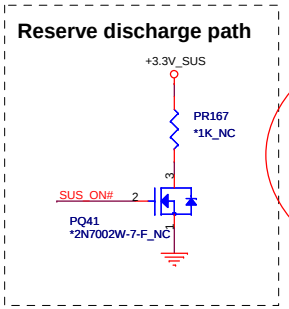


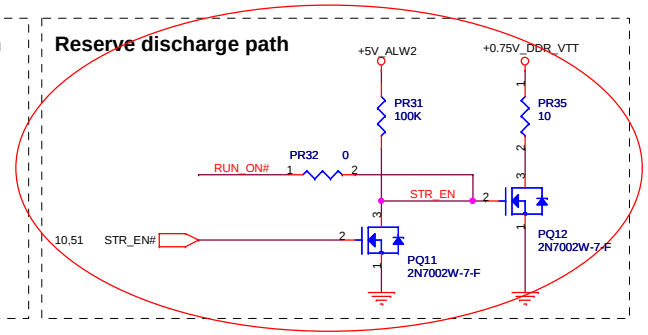
QUANTA COMPUTER

Title	DCIN,Batt	
Size	Document Number IM3 (XPS-Jolie)	Rev 1A
Date: Thursday, October 23, 2008	Sheet 55 of 59	



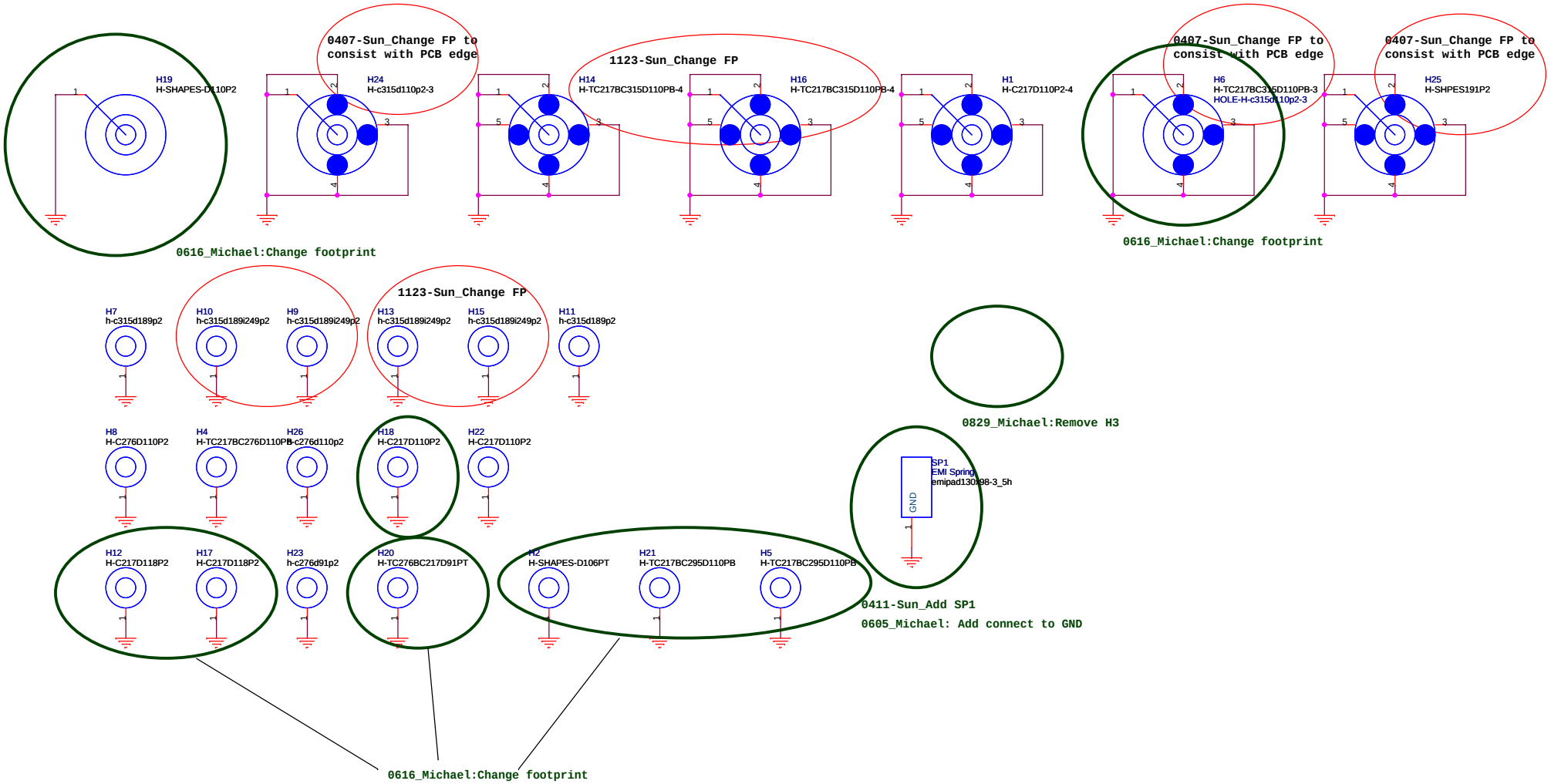






QUANTA COMPUTER

Title	RUN POWER SW	
Size	Document Number: IM3 (XPS-Jolie)	Rev: 1A
Date: Tuesday, September 09, 2008	Sheet 56 of 59	



QUANTA COMPUTER

Title	SCREW PAD	
Size	Document Number IM3 (XPS-Jolie)	Rev 2A
Date: Thursday, October 23, 2008	Sheet 58 of 59	