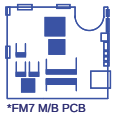


FM7 Hepburn Intel Discrete GFX

VER : D3B

POWER
- SYSTEM RESET CIRCUIT PG 44
- BATT CHARGER PG 46
- RUN POWER SW +3.3V_SUS/+5V_SUS +5V/+3.3V/+1.8V PG 53
- AC/BATT CONNECTOR PG 54

Penryn (478 Micro-FCPGA) PG 3,4

1066 MHz FSB

FAN & THERMAL SMSC1423 PG 39

CLOCK SLG8SP513V (QFN-64) PG 17

POWER
- REGULATOR +1.5V_RUN/+1.05V_VCCP PG 48
- REGULATOR +1.8V_SUS/+1.25V_RUN /+0.9V_DDR_VTT PG 49
- CPU VR PG 51
- DC/DC +3.3V_ALW/+5V_ALW/ +15V_ALW PG 52
- VGA Core PG 50

CANTIGA 1329 uFCBGA PG 5,6,7,8,9,10

DDR2-SODIMM1 PG 15,16 — 667/800 MHZ DDR II

DDR2-SODIMM2 PG 15,16 — 667/800 MHZ DDR II

PCIEx16

GDDR2 x 4 (256M 64bits) PG 23

ATI M82-SCE PCI EXPRESS GFX PG 18,19,20,21,22
- LVDS → Panel Connector PG 26
- HDMI → HDMI CONN. PG 26
- VGA → CRT CONN. PG 27

DMI interface

ICH9-M 676 BGA PG 11,12,13,14

SATA-ODD PG 36 — SATA

SATA-HDD PG 36 — SATA

E-SATA Combo with USB CONN PG 35 — PI2EQX3211BHE PG 35 — SATA

IHDA

USB2.0

AUDIO/AMP 92HD73C PG 40
- Audio SPK conn PG 40
- Audio Jacks x3 PG 41

Camera + D-MIC PG 41

LPC

KBC ITE8512 PG 31
- CIR TSOP36136TR PG 37
- 18X8 → Keyboard PG 37
- SPI → FLASH 2Mbyts PG 32
- PS/2 → Touchpad PG 37

USER INTERFACE PG 38

USB2.0 x 4 → USB conn x 4 PG 35

PCIEx1 → LAN BCM5784M PG 42 → RJ45/Magnetics PG 43

PCIEx1 / USB2.0 → EXPRESS-CARD R5538 PG 30

PCIEx2 / USB2.0 → MINI-CARD WLAN PG 34

PCIEx1 / USB2.0 → MINI-CARD WWAN PG 33

USB2.0 → MINI-CARD WPAN PG 33

Biometric PG 38

33MHz PCI → 8-in-1 Card Reader R5C833 PG 28
- 1394 → 1394 CONN. PG 29
- Card Reader CONN. PG 30

QUANTA COMPUTER

Title	Schematic Block Diagram1	
Size	Document Number FM6	Rev 3A
Date: Thursday, July 31, 2008	Sheet 1 of 58	

Table of Contents

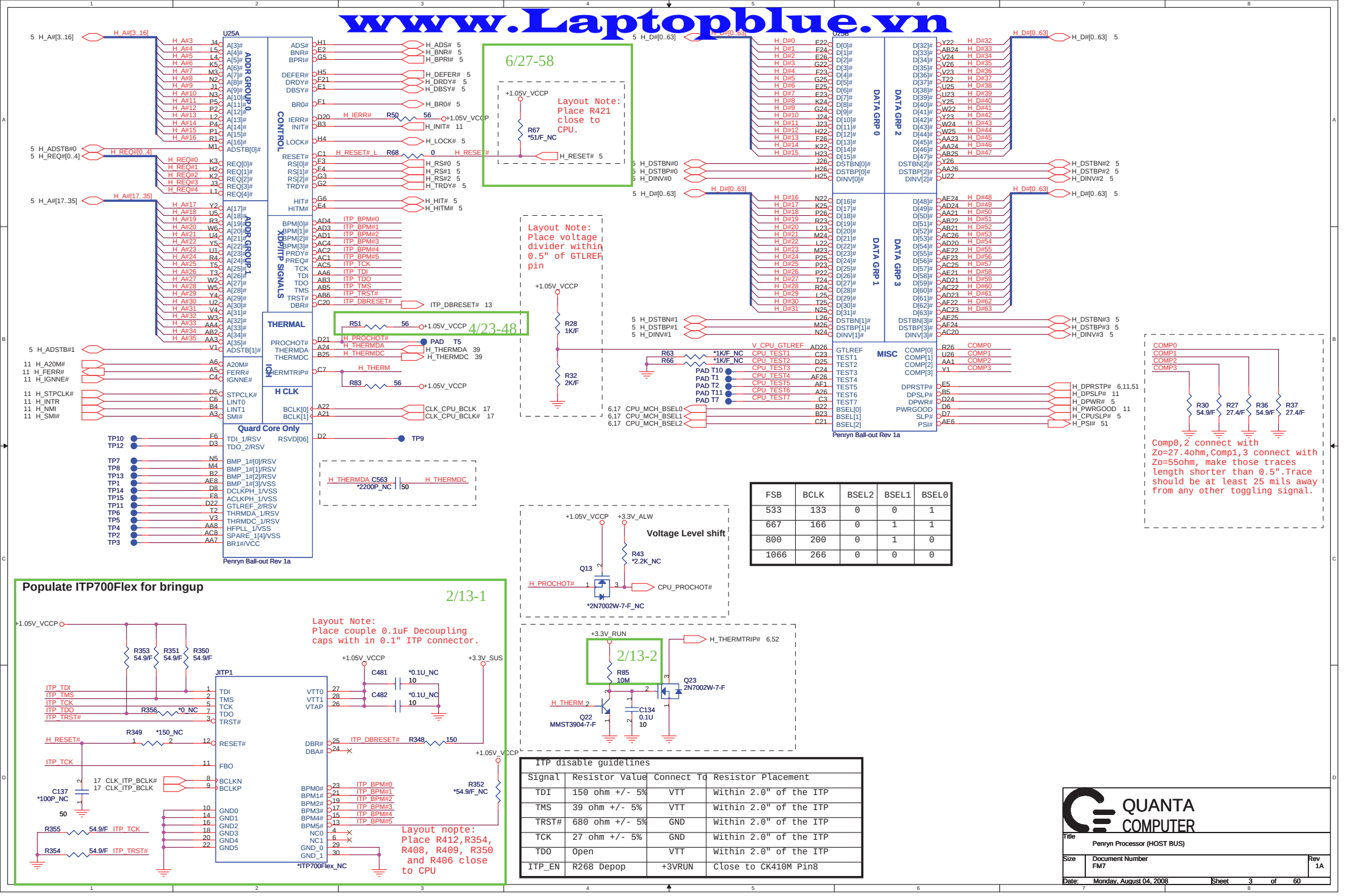
Power State

POWER PLANE	VOLTAGE	PAGE	DESCRIPTION	CONTROL SIGNAL	ACTIVE IN
+PWR_SRC	10V~+19V	4,26,32,34,46,48,49,50,51,52,56	MAIN POWER		S0~S5
+RTC_CELL	+3.0V~+3.3V	11,14,31,32	RTC		S0~S5
+3.3V_ALW	+3.3V	3,13,31,32,34,36,37,38,44,46,49,52,53,54	8051 POWER	ALWON	S0~S5
+5V_ALW	+5V	35,36,46,48,49,52,53,54	LCD/CHARGE POWER	ALWON	S0~S5
+5V_ALW2	+5V	37,38,52,53	LARGE POWER	+5V_ALW	S0~S5
+3.3V_LAN	+3.3V	42,43	LAN POWER	AUX_ON	
+5V_SUS	+5V	14,38,50,51,53	SLP_S5# CTRLD POWER	SUS_ON	
+3.3V_SUS	+3.3V	3,11,12,13,14,20,26,30,37,38,43,48,49, 50,51,53	SLP_S5# CTRLD POWER	3.3V_SUS_ON	
+1.8V_SUS	+1.8V	6,8,9,15,48,49,50,53	SODIMM POWER	DDR_ON	
+0.9V_DDR_VTT	+0.9V	16,49,53	SODIMM POWER	0.9V_DDR_VTT_ON	
+5V_RUN	+5V	14,20,26,27,36,37,38,40,41,53	SLP_S3# CTRLD POWER	RUN_ON	
+3.3V_RUN	+3.3V	6,8,9,11,12,13,14,15,17,19,20,22,26,27,28,30, 31,33,34,36,38,39,40,41,42,53,56	SLP_S3# CTRLD POWER	3.3V_RUN_ON	
+1.8V_RUN	+1.8V	19,20,21,22,23,38,53	SDVO POWER	RUN_ON	
+1.5V_RUN	+1.5V	4,9,14,30,33,34,48,53,56	CALISTOGA/ICH8 POWER	1.5V_RUN_ON	
+1.2V_LOM	+1.25V	42	CALISTOGA/ICH8 POWER	1.25V_RUN_ON	
+1.1V_GFX_PCIE	+1.1V	21,50	VGA POWER	RUN_ON	
+1.05V_VCCP	+1.05V	3,4,5,6,8,9,11,14,48,56	CPU/CALISTOGA/ICH8 POWER	1.05V_RUN_ON	
+VCC_CORE	+0.7V~+1.77V	4,51,56	CPU CORE POWER	IMVP_VR_ON	
+LCDVCC	+3.3V	26	LCD Power	LCDVCC_TST_EN & ENVDD	
+5V_MOD	+5V	36	Module Power	MODC_EN#	
+5V_HDD	+5V	36	HDD Power	HDDC_EN#	

GND PLANE	PAGE	DESCRIPTION
8731AGND	46	
AGND_0.9V	49	
AGND_DC/DC	52	
AGND_DC2	48	
AGND_DDR	49	
AGND_ISL6260	51	
GND	ALL	

QUANTA COMPUTER

Title	Index & Power Status	
Size	Document Number FM6	Rev 1A
Date: Monday, June 30, 2008	Sheet 2 of 58	



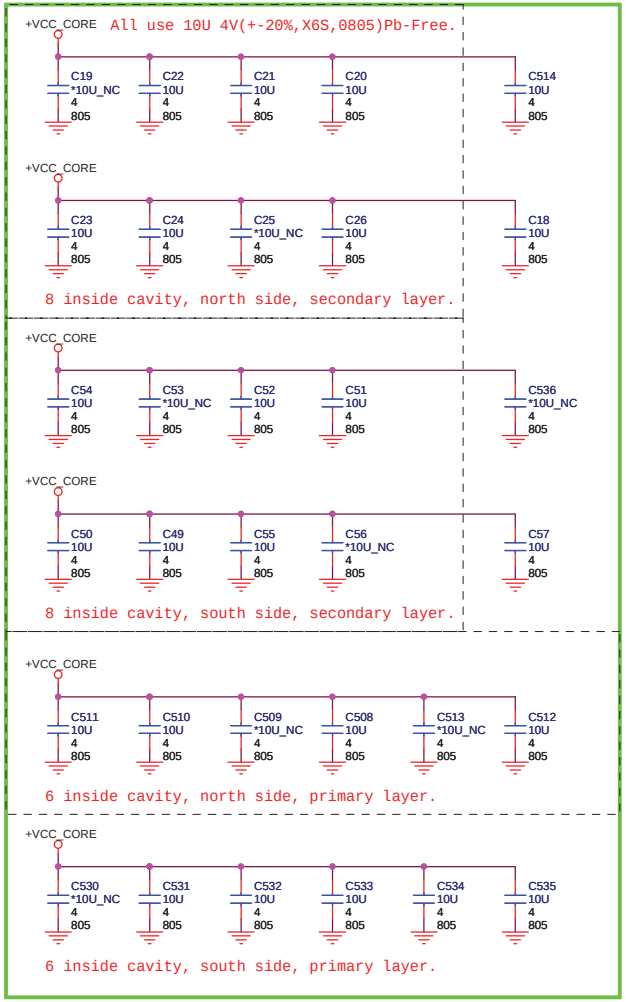
FSB	BCLK	BSEL2	BSEL1	BSEL0
533	133	0	0	1
667	166	0	1	1
800	200	0	1	0
1066	266	0	0	0

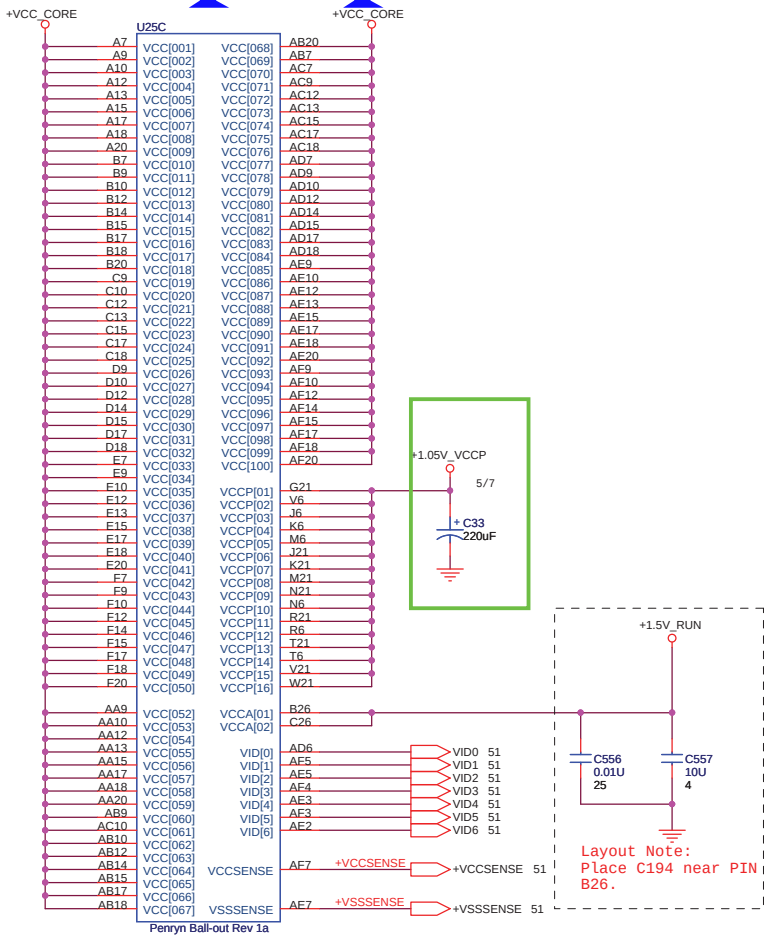
ITP disable guidelines

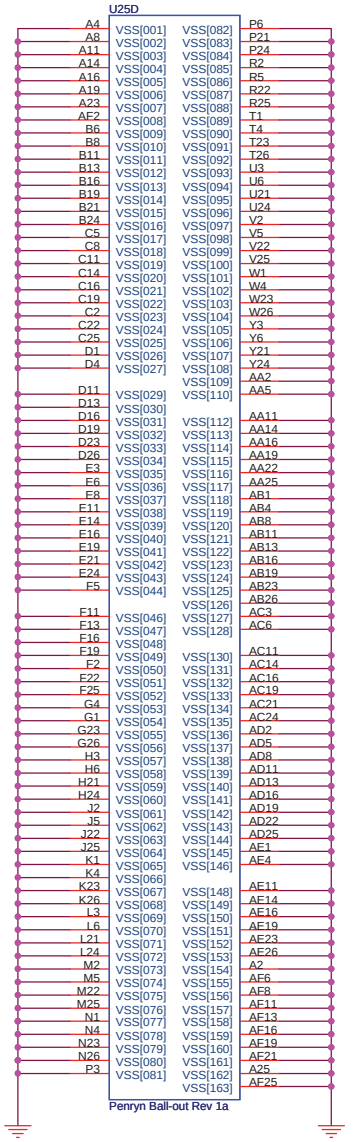
Signal	Resistor Value	Connect To	Resistor Placement
TDI	150 ohm +/- 5%	VTT	Within 2.0" of the ITP
TMS	39 ohm +/- 5%	VTT	Within 2.0" of the ITP
TRST#	680 ohm +/- 5%	GND	Within 2.0" of the ITP
TCK	27 ohm +/- 5%	GND	Within 2.0" of the ITP
TDO	Open	VTT	Within 2.0" of the ITP
ITP_EN	R268 Depop	+3VRUN	Close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

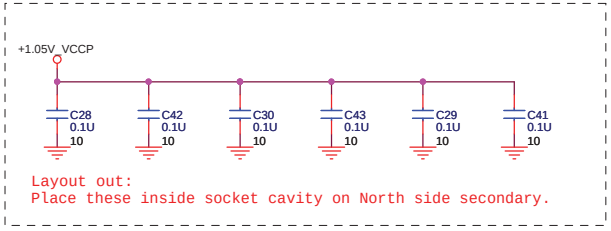
QUANTA COMPUTER

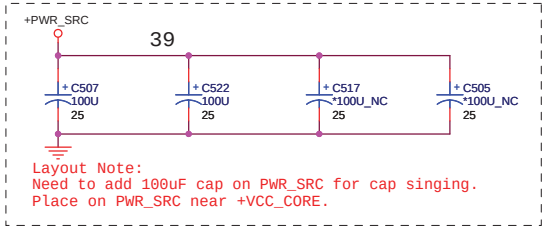
Title	Penryn Processor (HOST BUS)	
Size	Document Number FM7	Rev 1A
Date: Monday, August 04, 2008	Sheet 3 of 60	

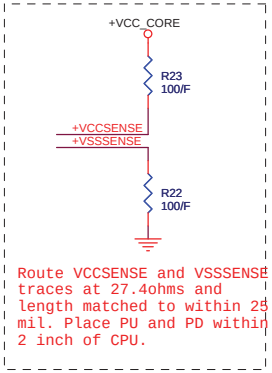






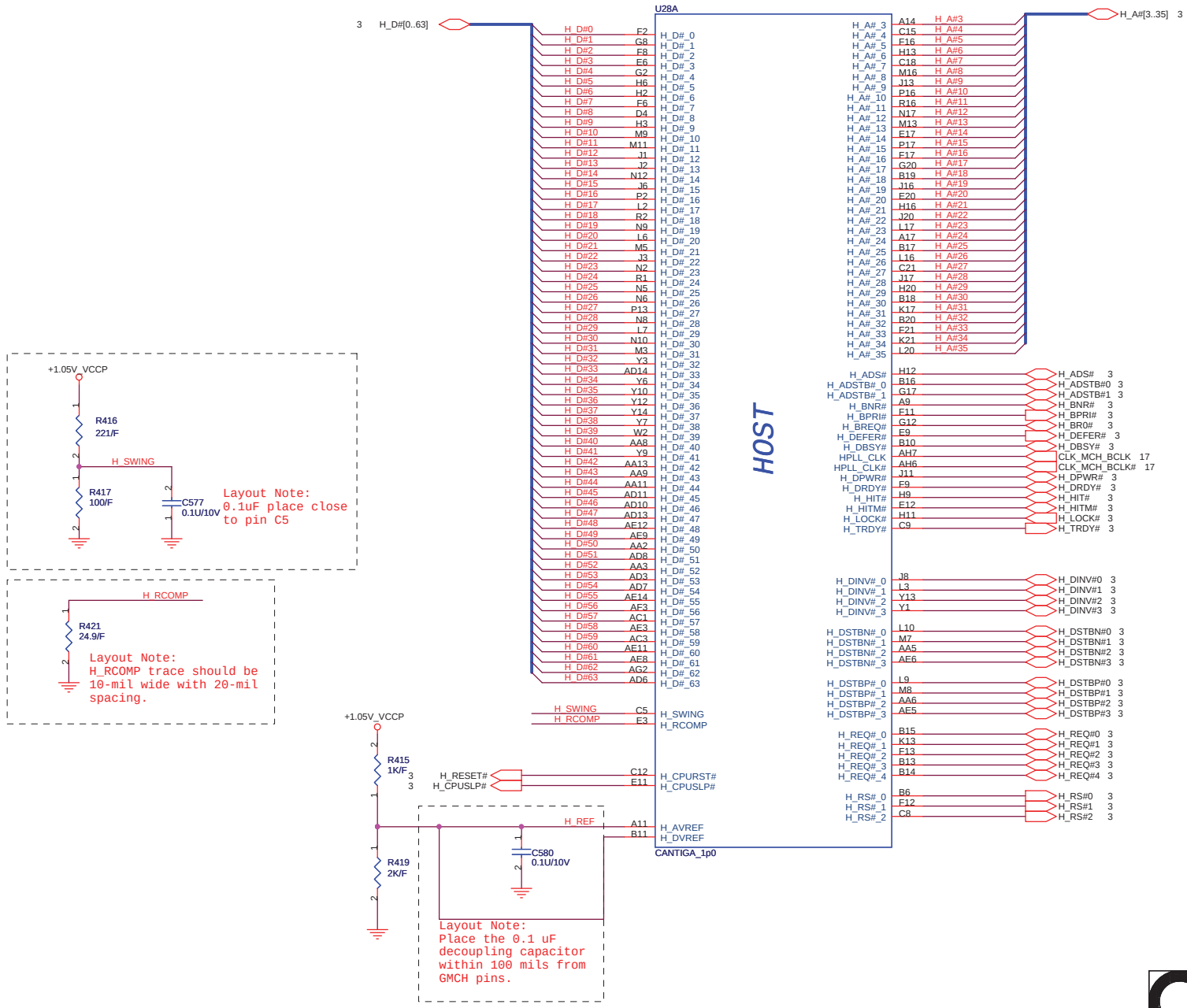




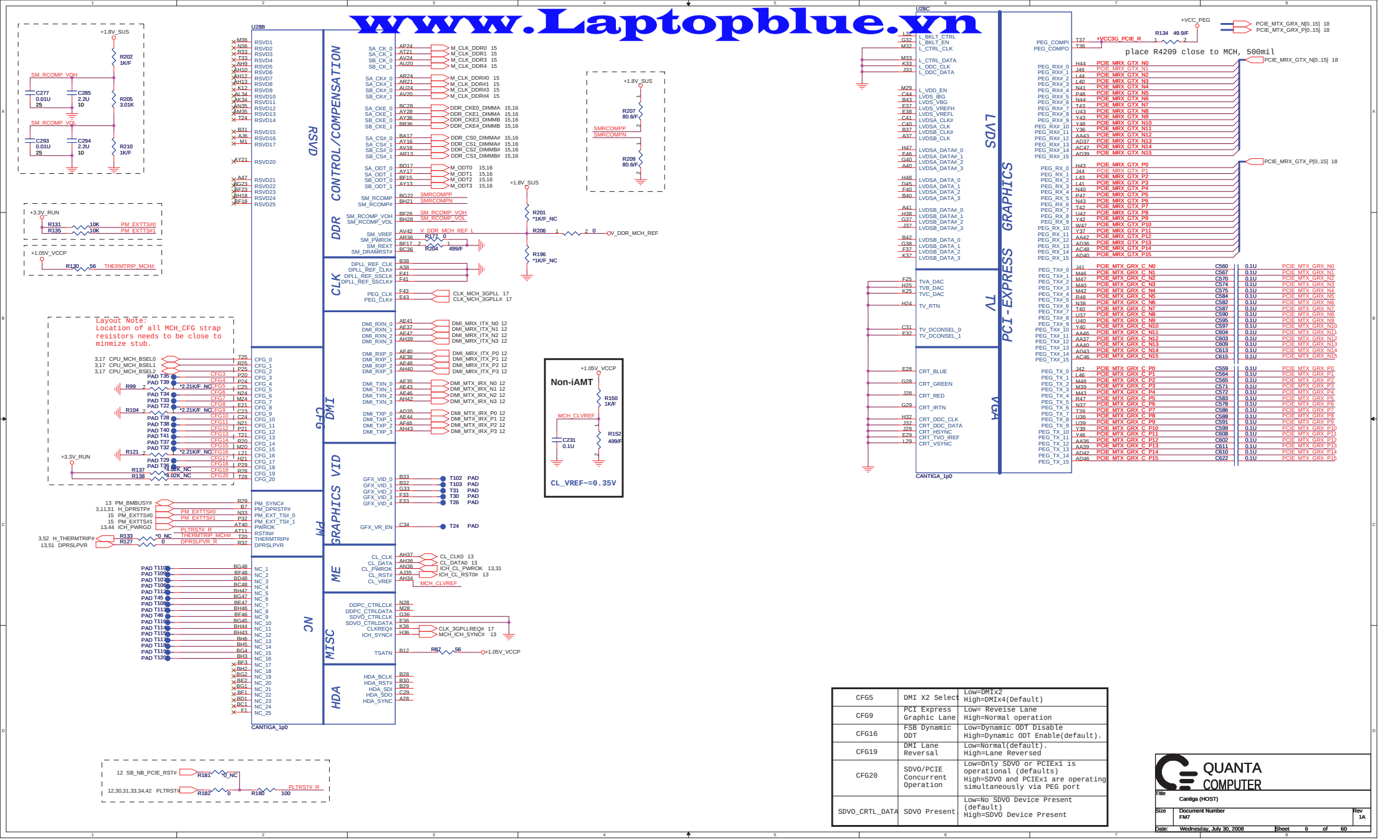


QUANTA COMPUTER

Title	Penryn Processor (HOST BUS)	
Size	Document Number FM7	Rev 1A
Date: Monday, August 04, 2008	Sheet 4 of 60	



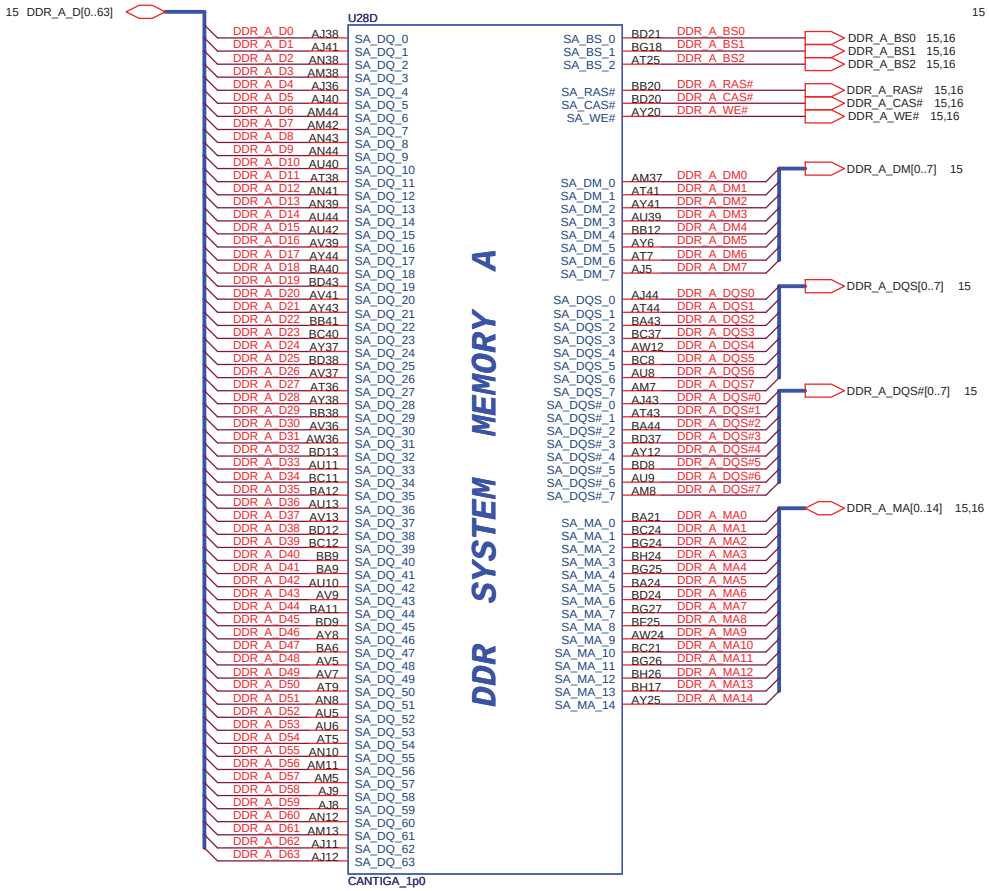
QUANTA COMPUTER		
Title: Cantiga (HOST)		
Size	Document Number: FM7	Rev: 1A
Date: Wednesday, July 30, 2008	Sheet 5 of 60	

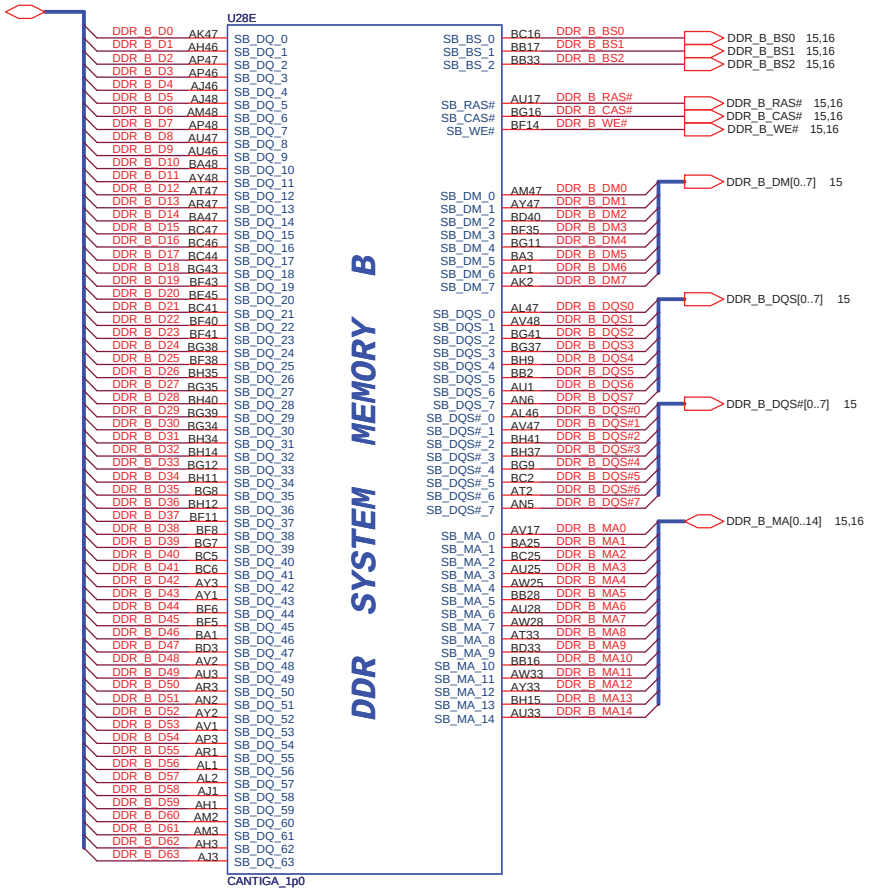


CFG5	DMI X2 Select	Low=DMIx2 High=DMIx4(Default)
CFG9	PCI Express Graphic Lane	Low= Reveise Lane High=Normal operation
CFG16	FSB Dynamic ODT	Low=Dynamic ODT Disable High=Dynamic ODT Enable(default).
CFG19	DMI Lane Reversal	Low=Normal(default). High=Lane Reversed
CFG20	SDVO/PCIE Concurrent Operation	Low=Only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

QUANTA COMPUTER

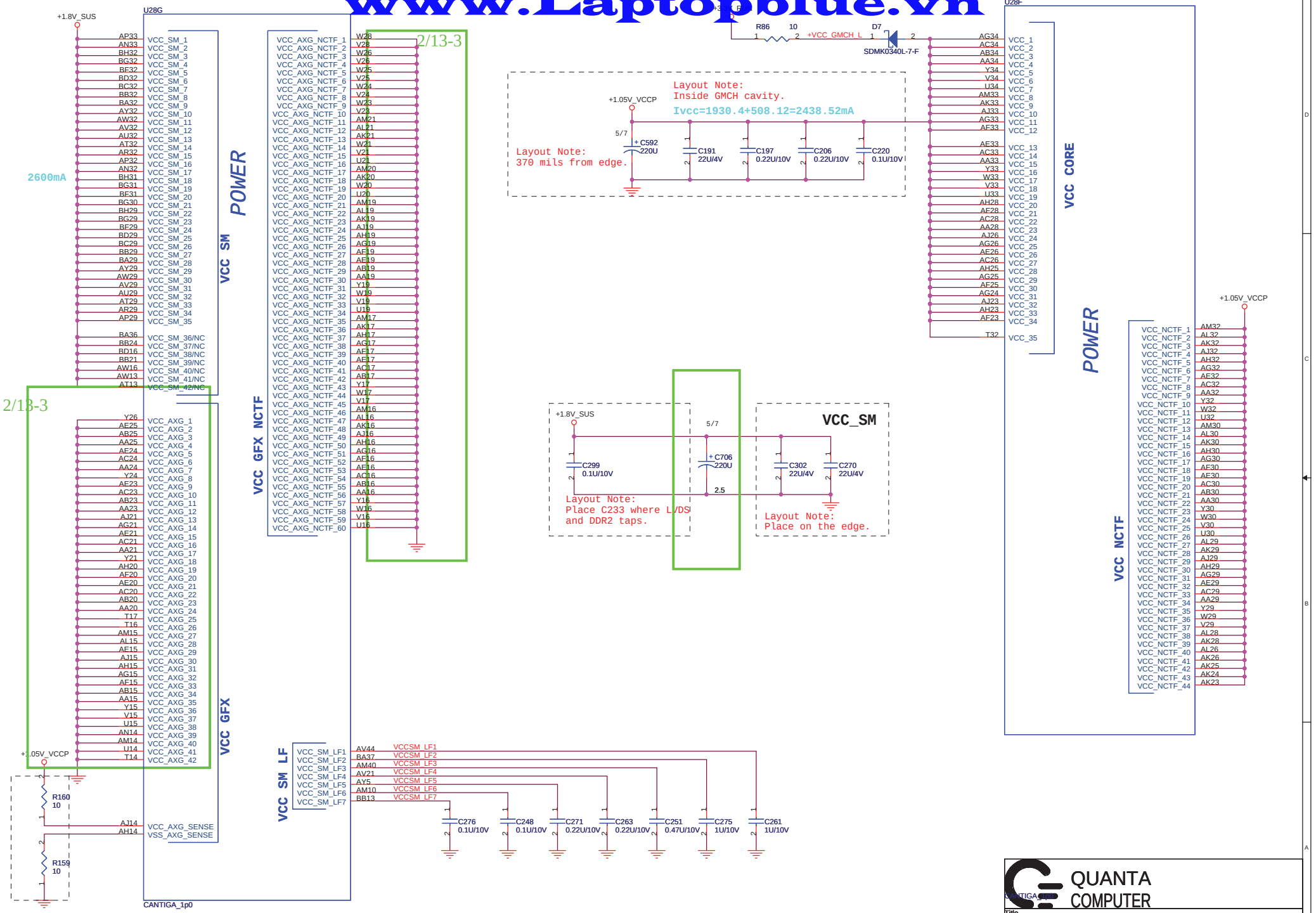
Title	Cantiga (HOST)		
Size	Document Number FM7		Rev 1A
Date: Wednesday, July 30, 2008	Sheet 6	of 60	





QUANTA COMPUTER

Title	Cantiga (HOST)	
Size	Document Number FM7	Rev 1A
Date:	Wednesday, July 30, 2008	Sheet 7 of 60



UMA: Places R721, R726 to 10 ohm.
Dis: Please R721, R726 to 0 ohm.

Title	Cantiga (HOST)
Size	Document Number FM7
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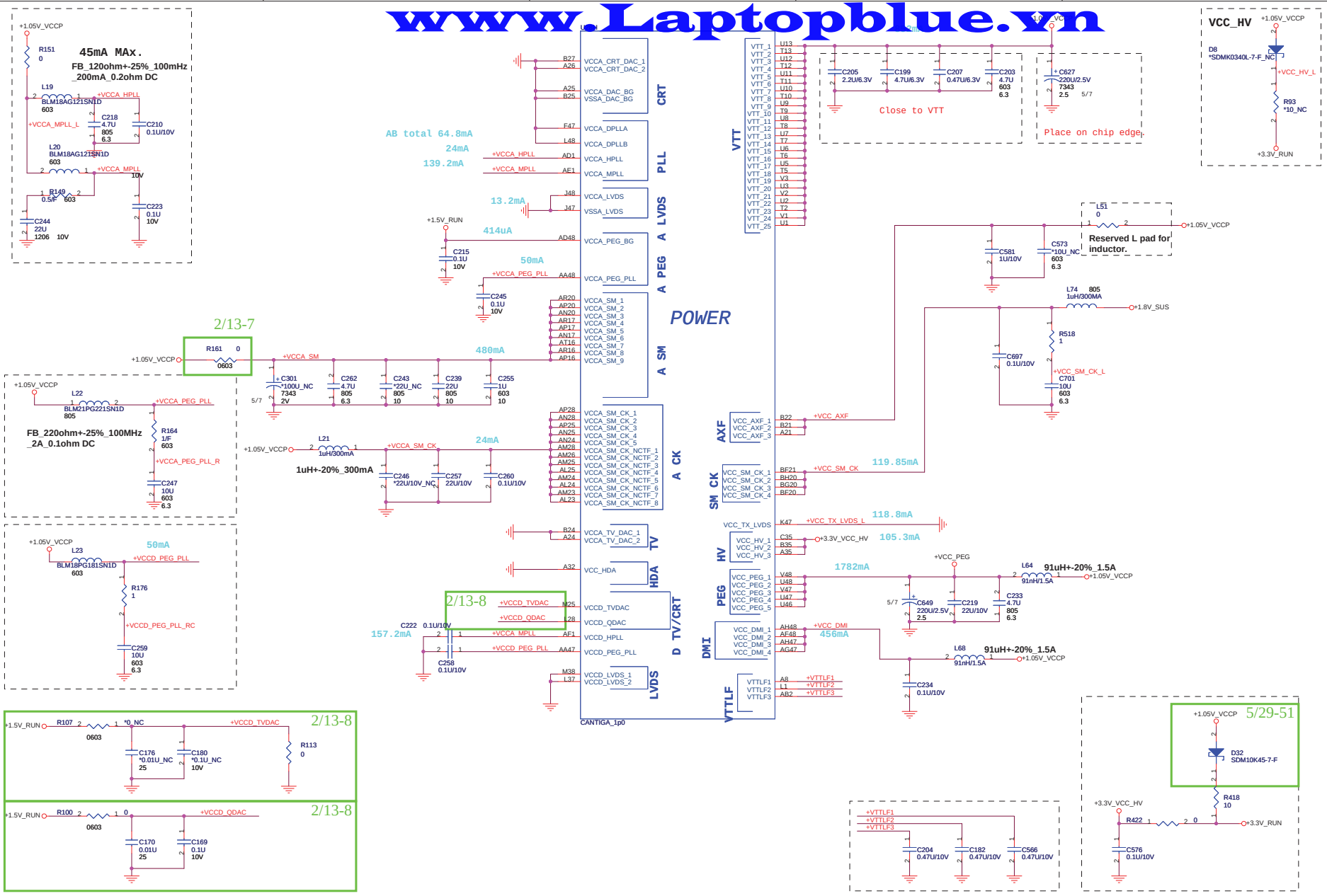
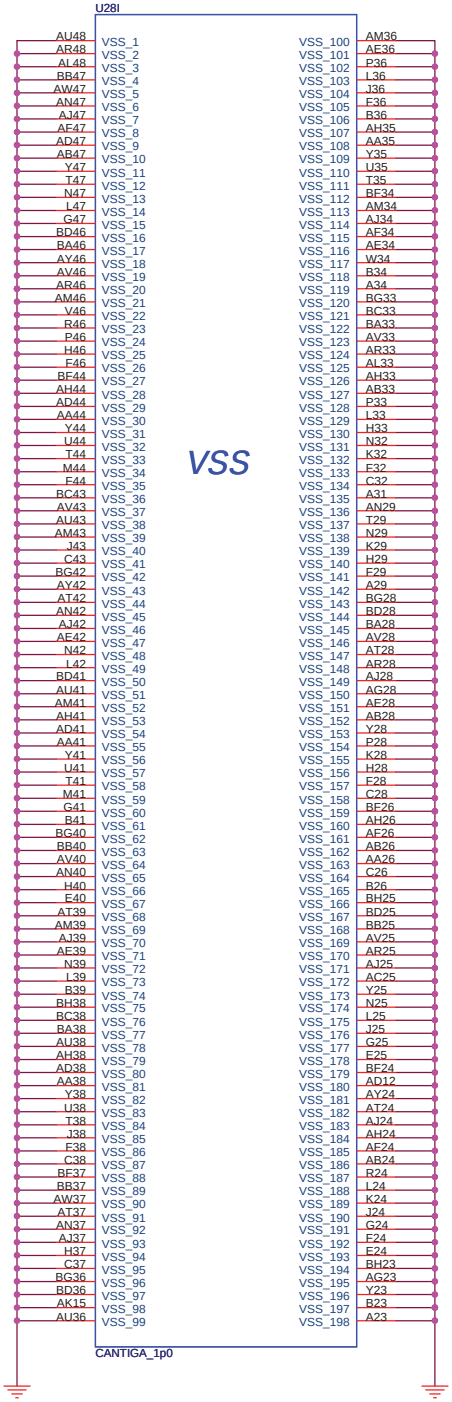
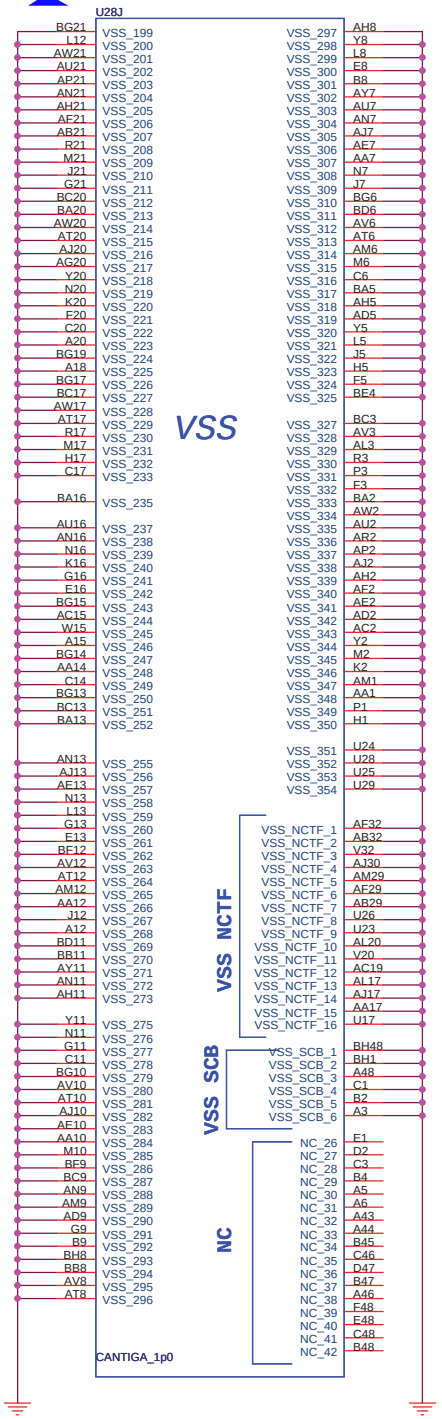
QUANTA COMPUTER



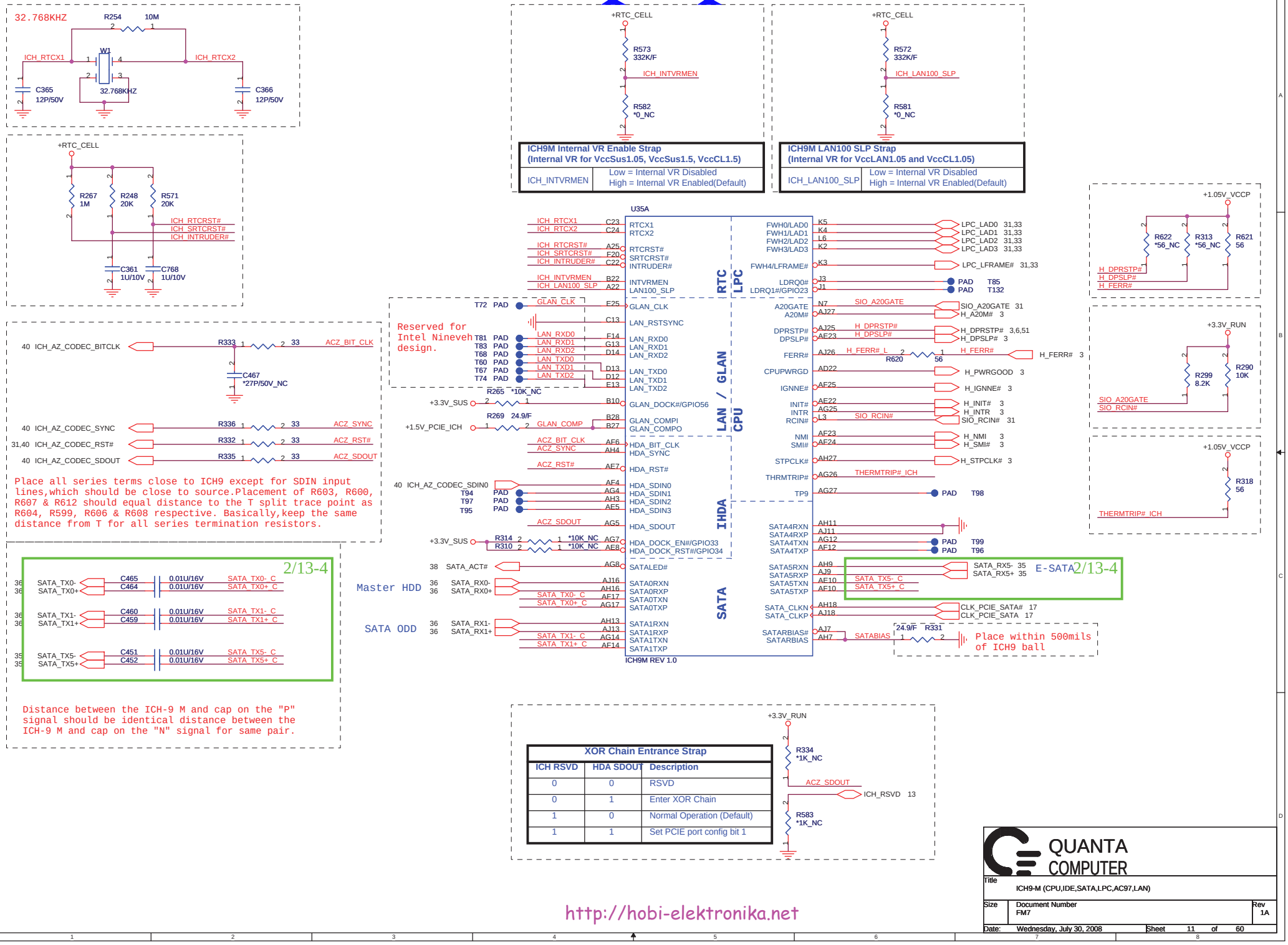
QUANTA COMPUTER		
Title	Cantiga (HOST)	
Size	Document Number FM7	Rev 1A
Date: Wednesday, July 30, 2008	Sheet 9 of 60	





QUANTA COMPUTER

Title	Cantiga (HOST)	
Size	Document Number FM7	Rev 1A
Date: Wednesday, July 30, 2008	Sheet 10 of 60	



QUANTA COMPUTER

Title	ICH9-M (CPU,IDE,SATA,LPC,AC97,LAN)	
Size	Document Number FM7	Rev 1A
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Place TX DC blocking caps close ICH8.

33 PCIE_TX1- C408 1 2 0.1U 10 PCIE_TXN1_C
33 PCIE_TX1+ C419 1 2 0.1U 10 PCIE_TXP1_C

34 PCIE_TX2- C401 1 2 0.1U 10 PCIE_TXN2_C
34 PCIE_TX2+ C399 1 2 0.1U 10 PCIE_TXP2_C

33 PCIE_TX3- C392 1 2 0.1U 10 PCIE_TXN3_C
33 PCIE_TX3+ C385 1 2 0.1U 10 PCIE_TXP3_C

30 PCIE_TX4- C383 1 2 0.1U 10 PCIE_TXN4_C
30 PCIE_TX4+ C380 1 2 0.1U 10 PCIE_TXP4_C

42 PCIE_TX6-/GLAN_TX- C374 1 2 0.1U 10 GLAN_TXN_C
42 PCIE_TX6+/GLAN_TX+ C372 1 2 0.1U 10 GLAN_TXP_C

ICH_SPI_CS1#_R
PCI_GNT0#
R280 *1K_NC
R287 *1K_NC

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

33 PCIE_RX1- N29 PERN1
33 PCIE_RX1+ N28 PERP1
PCIE_TXN1_C P27 PETN1
PCIE_TXP1_C P26 PETP1
MiniWWAN

34 PCIE_RX2- L29 PERN2
34 PCIE_RX2+ L28 PERP2
PCIE_TXN2_C M27 PETN2
PCIE_TXP2_C M26 PETP2
MiniWLAN

33 PCIE_RX3- J29 PERN3
33 PCIE_RX3+ J28 PERP3
PCIE_TXN3_C K27 PETN3
PCIE_TXP3_C K26 PETP3
MiniWPAN

30 PCIE_RX4- G29 PERN4
30 PCIE_RX4+ G28 PERP4
PCIE_TXN4_C H27 PETN4
PCIE_TXP4_C H26 PETP4
Express Card

T131 PAD E29 PERN5
T130 PAD E28 PERP5
T73 PAD F27 PETN5
T75 PAD F26 PETP5

PCI-Express

42 PCIE_RX6-/GLAN_RX- C29 PERN6/GLAN_RXN
42 PCIE_RX6+/GLAN_RX+ C28 PERP6/GLAN_RXP
GLAN_TXN_C D27 PETN6/GLAN_TXN
GLAN_TXP_C D26 PETP6/GLAN_TXP
Giga Bit LOM

Direct Media Interface

DMI0RXN V27 DMI_MTX_IRX_N0 6
DMI0RXP V26 DMI_MTX_IRX_P0 6
DMI0TXN U29 DMI_MRX_ITX_N0 6
DMI0TXP U28 DMI_MRX_ITX_P0 6

DMI1RXN Y27 DMI_MTX_IRX_N1 6
DMI1RXP Y26 DMI_MTX_IRX_P1 6
DMI1TXN W29 DMI_MRX_ITX_N1 6
DMI1TXP W28 DMI_MRX_ITX_P1 6

DMI2RXN AB27 DMI_MTX_IRX_N2 6
DMI2RXP AB26 DMI_MTX_IRX_P2 6
DMI2TXN AA29 DMI_MRX_ITX_N2 6
DMI2TXP AA28 DMI_MRX_ITX_P2 6

DMI3RXN AD27 DMI_MTX_IRX_N3 6
DMI3RXP AD26 DMI_MTX_IRX_P3 6
DMI3TXN AC29 DMI_MRX_ITX_N3 6
DMI3TXP AC28 DMI_MRX_ITX_P3 6

DMI_CLKN T26 CLK_PCIE_ICH# 17
DMI_CLKP T25 CLK_PCIE_ICH 17

DMI_ZCOMP AE29
DMI_IRCOMP AE28 DMI_COMP R600 24.9/F +1.5V_PCIE_ICH

Place within 500mils of ICH8

T64 PAD D23 SPI_CLK
T63 PAD D24 SPI_CS0#
ICH_SPI_CS1#_R F23 SPI_CS1#/GPIO58/CLGPIO6
T71 PAD D25 SPI_MOSI
T77 PAD E23 SPI_MISO

SPI

USB

35 USB_OC0_1# USB_OC0_1# N4 OC0#/GPIO59
N5 OC1#/GPIO40
35 USB_OC2_3# USB_OC2_3# N6 OC2#/GPIO41
P6 OC3#/GPIO42
OC4# M1 OC4#/GPIO43
OC5# N2 OC5#/GPIO29
OC6# M4 OC6#/GPIO30
OC7# M3 OC7#/GPIO31
USB_OC8# USB_OC8# N3 OC8#/GPIO44
OC9# N1 OC9#/GPIIO45
OC10# P5 OC10#/GPIO46
OC11# P3 OC11#/GPIO47

USBP0N AC5 ICH_USBP0- 35 Side pair Top / left
USBP0P AC4 ICH_USBP0+ 35 Side pair bottom / left
USBP1N AD3 ICH_USBP1- 35 Side pair top/right(DB)
USBP1P AD2 ICH_USBP1+ 35 Side pair Bot right(DB)
USBP2N AC1 ICH_USBP2- 35
USBP2P AC2 ICH_USBP2+ 35
USBP3N AA5 ICH_USBP3- 35
USBP3P AA4 ICH_USBP3+ 35
USBP4N AB2 ICH_USBP4- 34 Mini Card (WLAN)
USBP4P AB3 ICH_USBP4+ 34 Mini Card (WWAN)
USBP5N AA1 ICH_USBP5- 33 Mini Card (WPAN)
USBP5P AA2 ICH_USBP5+ 33
USBP6N W5 ICH_USBP6- 33
USBP6P W4 ICH_USBP6+ 33 Express Card
USBP7N Y3 ICH_USBP7- 30
USBP7P Y2 ICH_USBP7+ 30
USBP8N W1 PAD T135
USBP8P W2 PAD T134
USBP9N V2 PAD T89
USBP9P V3 PAD T90
USBP10N U5 ICH_USBP10- 38 Biometric
USBP10P U4 ICH_USBP10+ 38
USBP11N U1 ICH_USBP11- 41 Camera
USBP11P U2 ICH_USBP11+ 41

Places within 500 mils of the ICH9
R601 22.6/F
USBRBIAS AG2 USBRBIAS
AG1 USBRBIAS#

ICH9M REV 1.0

2/25-27

PCI Pullups

RP25 +3.3V_RUN
PCI_FRAME# PCI_PLOCK#
PCI_TRDY# PCI_STOP#
PCI_DEVSEL# PCI_PIRQD#
PCI_REQ1# PCI_IRDY#
+3.3V_RUN

RP31 +3.3V_RUN
PCI_PIRQA# PCI_PIRQB#
PCI_SERR# PCI_PIRQC#
PCI_REQ0# PCI_PERR#
ICH_IRQH_GPIO5
+3.3V_RUN

SB_WPAN_PCIE_RST# R286 20K
SB_WWAN_PCIE_RST# R281 20K
SB_WLAN_PCIE_RST# R292 20K
SB_LOM_PCIE_RST# R266 20K
SB_NB_PCIE_RST# R276 20K

BIOS should not enable the internal GPIO pull up resistor.

WWAN Noise - ICH improvements

OC6# C402 *0.1U_NC
OC4# C793 *0.1U_NC
OC5# C796 *0.1U_NC
OC7# C789 *0.1U_NC
USB_OC8# C795 *0.1U_NC
USB_OC2_3# C410 *0.1U_NC
USB_OC0_1# C416 *0.1U_NC
OC9# C422 *0.1U_NC

RP37 +3.3V_SUS
OC7# OC9#
OC6# USB_OC2_3#
OC5# USB_OC0_1#
OC4# USB_OC8#
+3.3V_SUS
10KX8
OC10# R300 10K +3.3V_SUS
OC11# R304 10K

28 PCI_AD[0..31]

U35B

PCI

PCI_AD0 D11 AD0
PCI_AD1 C8 AD1
PCI_AD2 D9 AD2
PCI_AD3 E12 AD3
PCI_AD4 E9 AD4
PCI_AD5 C9 AD5
PCI_AD6 E10 AD6
PCI_AD7 B7 AD7
PCI_AD8 C7 AD8
PCI_AD9 C5 AD9
PCI_AD10 G11 AD10
PCI_AD11 F8 AD11
PCI_AD12 F11 AD12
PCI_AD13 E7 AD13
PCI_AD14 A3 AD14
PCI_AD15 D2 AD15
PCI_AD16 F10 AD16
PCI_AD17 D5 AD17
PCI_AD18 D10 AD18
PCI_AD19 B3 AD19
PCI_AD20 F7 AD20
PCI_AD21 C3 AD21
PCI_AD22 F3 AD22
PCI_AD23 F4 AD23
PCI_AD24 C1 AD24
PCI_AD25 G7 AD25
PCI_AD26 H7 AD26
PCI_AD27 D1 AD27
PCI_AD28 G5 AD28
PCI_AD29 H6 AD29
PCI_AD30 G1 AD30
PCI_AD31 H3 AD31

REQ0# F1 PCI_REQ0# PCI_REQ0# 28
GNT0# G4 PCI_GNT0# PCI_GNT0# 28
REQ1#/GPIO50 B6 PCI_REQ1# PAD T51
GNT1#/GPIO51 A7 PCI_GNT1# PAD T128
REQ2#/GPIO52 E13 SB_WWAN_PCIE_RST# SB_WWAN_PCIE_RST# 33
GNT2#/GPIO53 E12 PCI_GNT2# PAD T84
REQ3#/GPIO54 E6 SB_LOM_PCIE_RST# SB_LOM_PCIE_RST# 42
GNT3#/GPIO55 F6 PCI_GNT3# PAD T82

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

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

PLTRST# C14 PCI_PLTRST#
PCICLK D4 CLK_PCI_ICH CLK_PCI_ICH 17
PME# R2 ICH_PME# ICH_PME# 28,31

Interrupt I/F

T66 PAD PCI_PIRQA# J5 PIRQA# PIRQE#/GPIO2 H4 SB_WPAN_PCIE_RST# SB_WPAN_PCIE_RST# 33
28 PCI_PIRQB# E1 PIRQB# PIRQF#/GPIO3 K6 SB_WLAN_PCIE_RST# SB_WLAN_PCIE_RST# 34
28 PCI_PIRQC# J6 PIRQC# PIRQG#/GPIO4 F2 SB_NB_PCIE_RST# SB_NB_PCIE_RST# 6
T55 PAD PCI_PIRQD# C4 PIRQD# PIRQH#/GPIO5 G2 ICH_IRQH_GPIO5 PAD T69

ICH9M REV 1.0

CLK_PCI_ICH
R270 *10_NC
C371 *8.2P_NC
Reserved for EMI.Place resister and cap close to ICH. 16

PCI_GNT3#
R285 *1K_NC

A16 away override strap.

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

Non-iAMT

Add Buffers as needed for Loading and fanout concerns.

+3.3V_SUS
C432 0.047U
U21
PCI_RST# G
PCI_RST# 28
TC7SZ32FU(T5L,F,T)

+3.3V_SUS
C344 0.047U
U18
PCI_PLTRST#
PLTRST# 6,30,31,33,34,42
TC7SZ32FU(T5L,F,T)

QUANTA COMPUTER

Title	ICH9-M (USB,DMI,PCIE,PCI)		
Size	Document Number FM7		Rev 1A
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PCI_IRDY#

2/13-5 2/18-19

Non-iAMT

+3.3V_SUS

RP23 2.2KX2: ICH_SMBCLK, ICH_SMBDATA

2/13-5 2/18-19

Non-iAMT

ASF 2.0

+3.3V_SUS

RP24 *10KX2_NC: ICH_SMLINK0, ICH_SMLINK1

ICH_SMBCLK R250 0 ICH_SMLINK0

ICH_SMBDATA R251 0 ICH_SMLINK1

+3.3V_RUN

R283 8.2K

CLKRUN#

R282 *10_NC

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

2/25-29 6/11-53

R319 0

37 KB_LED_DET#

34 PCIE_MCARD1_DET# — PCIE_MCARD1_DET# R288 4.7K

+3.3V_SUS

Non-iAMT

R252 *10K_NC RSV_ICH_CL_RST1#

R274 10K ICH_RI#

R253 10K SIO_EXT_SCI#

R279 1K PCIE_WAKE#

U35C

ICH9M REV 1.0

SMB: SMBCLK, SMBDATA, LINKALERT#/GPIO60/CLGPIO3, SMLINK0, SMLINK1

SATA GPIO: SATA0GP/GPIO21, SATA1GP/GPIO19, SATA4GP/GPIO36, SATA5GP/GPIO37

Clocks: CLK14, CLK48, SUSCLK

SYS GPIO: RI#, SUS_STAT#/LPCPD#, SYS_RESET#, PMSYNC#/GPIO0, SMBALERT#/GPIO11, STP_PCI#/GPIO15, STP_CPU#/GPIO25, CLKRUN#/GPIO32, WAKE#, SERIRQ, THRM#, VRMPWRGD, TP8

Power MGT: S4_STATE#/GPIO26, PWROK, DPRSLPVR/GPIO16, BATLOW#, PWRBTN#, LAN_RST#, RSMRST#, CK_PWRGD, CLPWROK, SLP_M#

GPIO: TACH1/GPIO1, TACH2/GPIO6, TACH3/GPIO7, GPIO8, LANPHYPC/GPIO12, ENGDET/GPIO13, TACH0/GPIO17, GPIO18, GPIO20, SCLOCK/GPIO22, QRT_STATE0/GPIO27, QRT_STATE1/GPIO28, SATACLKREQ#/GPIO35, SLOAD/GPIO38, SDATAOUT0/GPIO39, SDATAOUT1/GPIO48, GPIO49, GPIO57/CLGPIO5

Controller Link: CL_CLK0, CL_CLK1, CL_DATA0, CL_DATA1, CL_VREF0, CL_VREF1, CL_RST0#, CL_RST1#

MISC: SPKR, MCH_SYNC#, TP3, TP9, TP10, TP11, MEM_LED/GPIO24, ALERT#/GPIO10, NETDETECT/GPIO14, WOL_EN/GPIO9

+3.3V_RUN

R328 8.2K

CLK_ICH_14M, CLK_ICH_48M, ICH_SUSCLK, SIO_SLP_S3#, SIO_SLP_S4#, SIO_SLP_S5#, ICH_PWRGD, DPRSLPVR, ICH_BATLOW#, SIO_PWRBTN#, RSV_ICH_LAN_RST#, ICH_RSMRST#, CLK_PWRGD, ICH_CL_PWROK, CL_CLK0, CL_CLK1, CL_DATA0, CL_DATA1, CL_VREF0, CL_VREF1, ICH_CL_RST0#, CL_RST1#, RSV_GPIO24, RSV_GPIO10, RSV_GPIO14, RSV_WOL_EN

R580 8.2K +3.3V_SUS

R264 8.2K +3.3V_SUS

Place these close to ICH8.

CLK_ICH_48M — R321 *10_NC — C454 *4.7P_NC — 50

CLK_ICH_14M — R590 *10_NC — C780 *4.7P_NC — 50

2/13-5

Non-iAMT

ICH_PWRGD R291 10K

DPRSLPVR R594 100K

ICH_RSMRST# R277 10K

RSV_ICH_LAN_RST# R268 10K

ICH_CL_PWROK R303 1M

+3.3V_SUS

RSV_GPIO10 R249 10K

DIS:ALW

UMA:SUS (19)

Non-iAMT

+3.3V_RUN

+3.3V_ALW +3.3V_SUS

R263 3.24K/F

R575 *3.24K/F_NC

R576 *3.24K/F_NC

CL_VREF0

CL_VREF1

C359 0.1U

R256 453/F

C771 *0.1U_NC

R578 *453/F_NC

10

10

CL_VREF0/1 ~=0.405V

R323 10K PLTRST_DELAY#

7/30-68

+3.3V_RUN

R247 1.91K/F IMVP_PWRGD

R329 100K USB_MCARD2_DET#

R626 100K USB_MCARD3_DET#

R289 100K PCIE_MCARD1_DET#

R324 100K PCIE_MCARD2_DET#

R635 100K PCIE_MCARD3_DET#

+3.3V_RUN

R624 *10K_NC MCH_ICH_SYNC# R

R296 10K IRQ_SERIRQ

R625 10K THERM_ALERT#

+3.3V_SUS

R257 10K RSV_WOL_EN

R574 10K SIO_EXT_SMI#

R579 100K USB_MCARD1_DET#

+3.3V_RUN

R293 *1K_NC

SPKR

No Reboot strap.

SPKR	Low = Default. High = No Reboot.

SMbus address D2

These are for backdrive issue.

+3.3V_RUN

RP17 2.2KX2

30,33,34 ICH_SMBDATA — Q31 2N7002W-7-F — MEM_SDATA 15

30,33,34 ICH_SMBCLK — Q32 2N7002W-7-F — MEM_SCLK 15

QUANTA COMPUTER

Title	ICH9-M (PM,GPIO,SMB,CL)	
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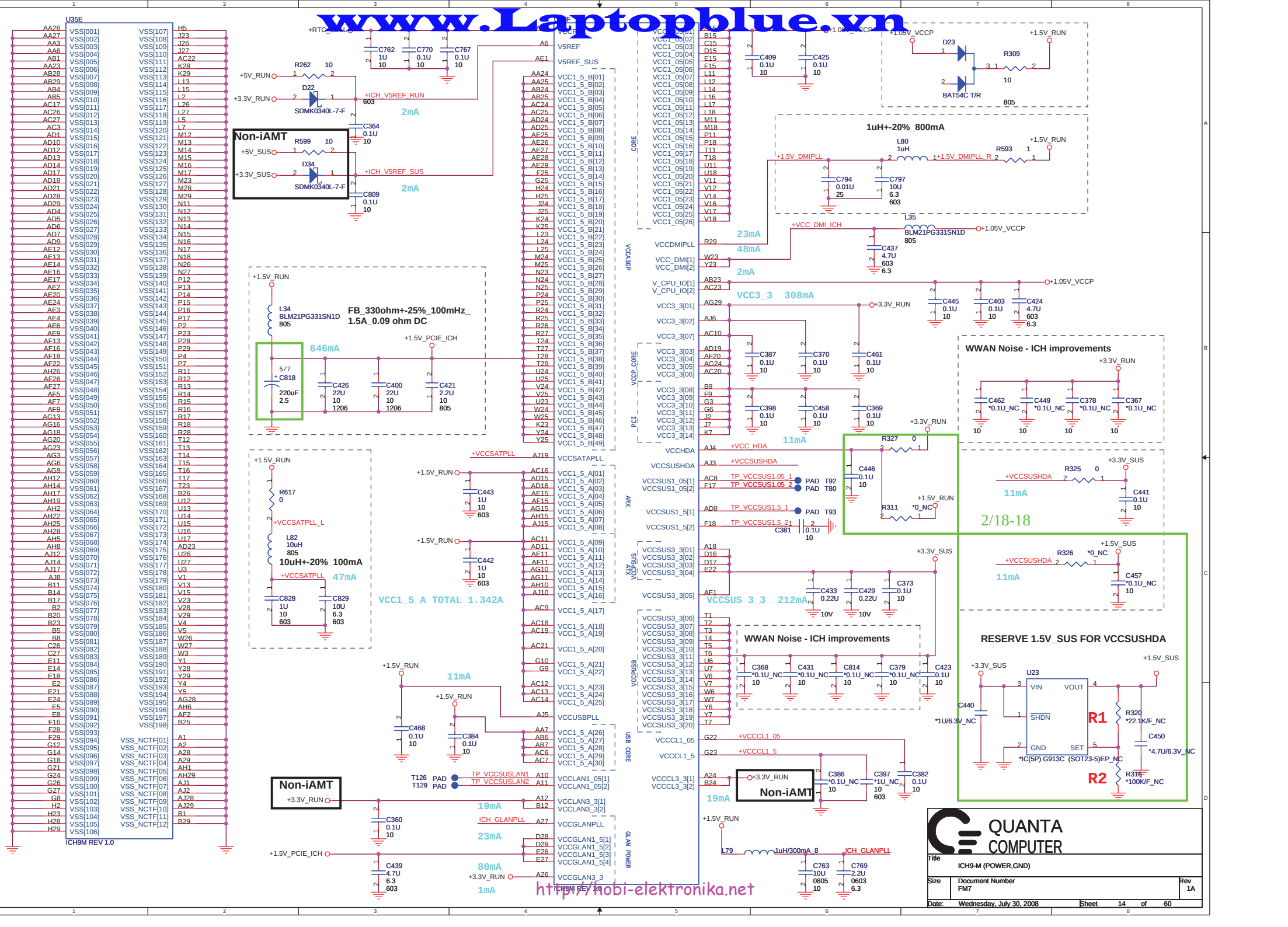

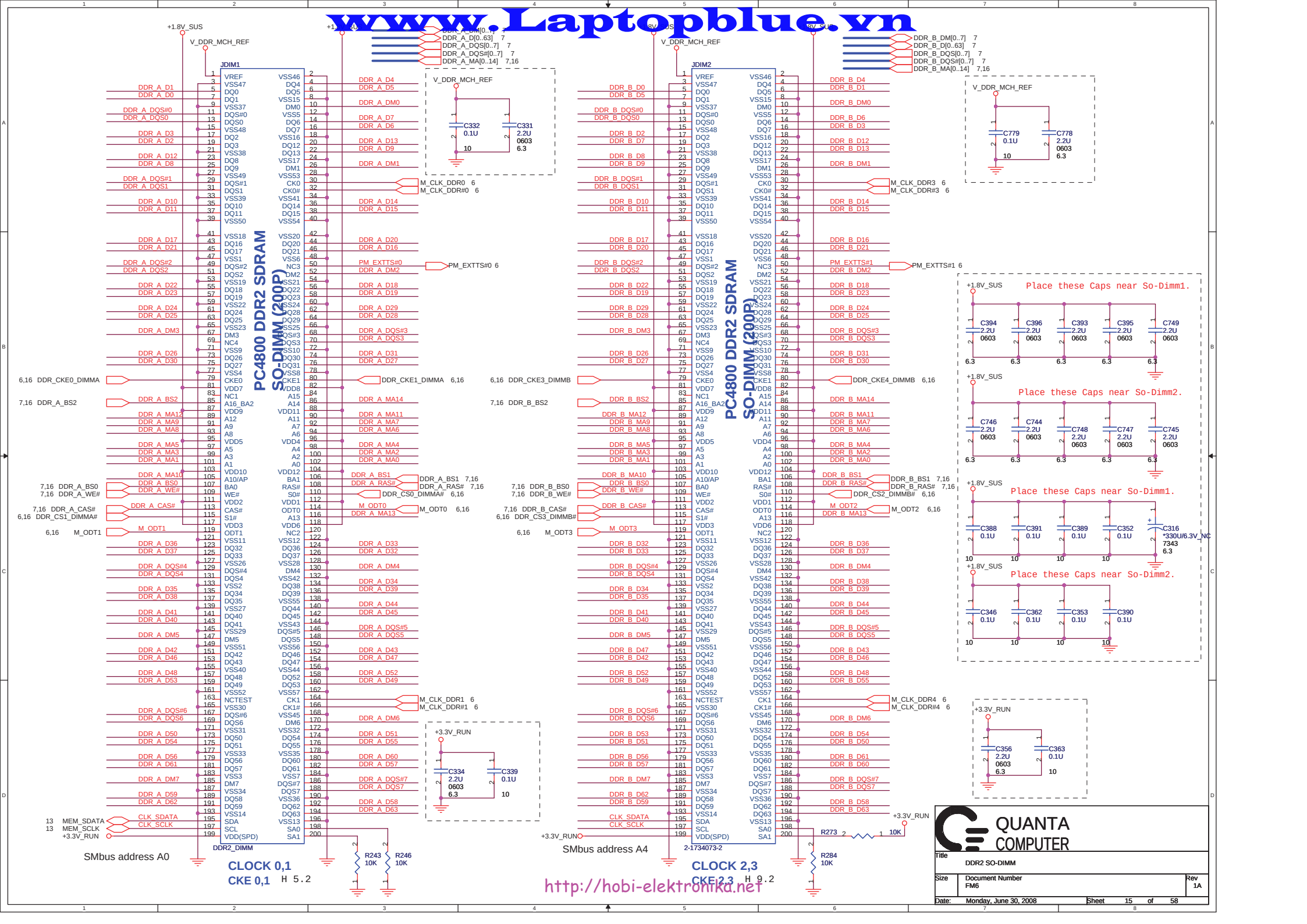

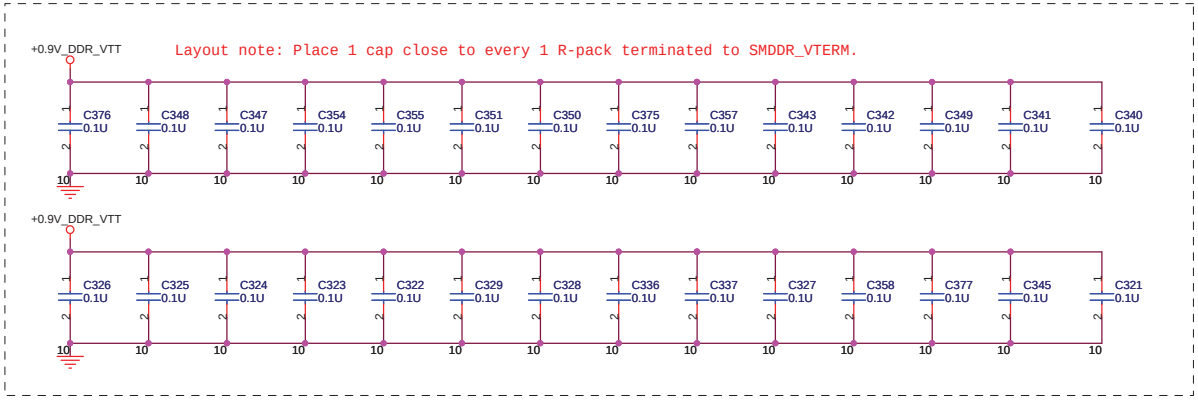

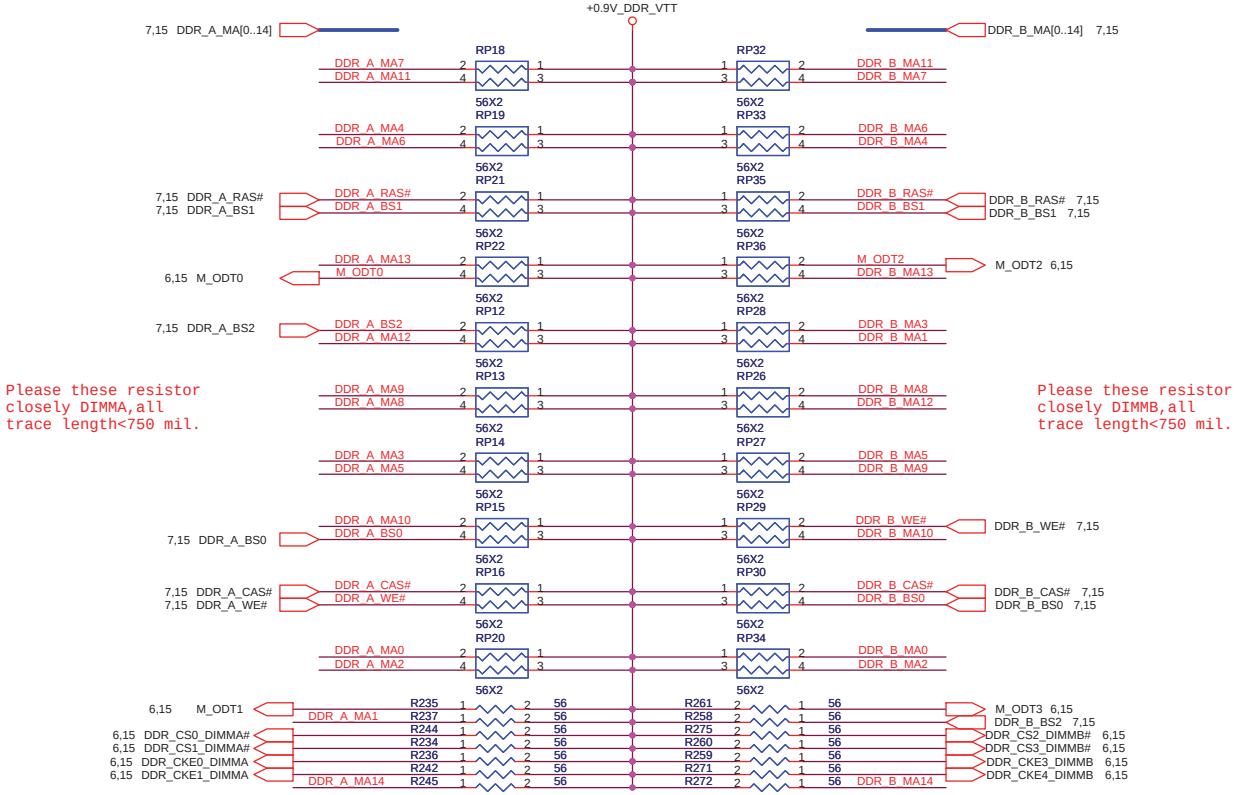

QUANTA COMPUTER

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

C694 20P 50 CLK_ICH_48M
C666 *27P_NC 50 CLK_ICH_14M
C679 *27P_NC 50 CLK_PCI_8512
C272 *27P_NC 50 CLK_PCI_PCCARD
C689 *27P_NC 50 CLK_PCI_ICH

Y3 14.318MHZ
CLK_XTAL_IN — CLK_XTAL_OUT
C653 33P 50
C652 33P 50
14.318MHz

U31
CK505
QFN64
SLG8SP513V

+CK_VDD_PCI, +CK_VDD_PLL3, +CK_VDD_48, +CK_VDD_SRC, +CK_VDD_MAIN
VDD_PCI, VDD_REF, VDD_PLL3, VDD_48, VDD_SRC, VDD_CPU, VDD_IO, GND
CR#_A/PCI-0, CR_B/PCI-1, TME/PCI-2, SRC5_EN/PCI-3, 27M_SEL/PCI-4, ITP_EN/PCIF-5#
FSA/USB48, FSB/TEST_MODE, FSC/TEST_SEL/REF
RESET#/CK_PWRGD/PD#
XOUT, XIN
SDATA, SCLK

CPU-0 CPU_BCLK — CPU-0# CPU_BCLK# — RP40 0x2 — CLK_CPU_BCLK 3 / CLK_CPU_BCLK# 3
CPU-1 MCH_BCLK — CPU-1# MCH_BCLK# — RP39 0x2 — CLK_MCH_BCLK 5 / CLK_MCH_BCLK# 5
SRC-8/CPU_ITP PCIE_MINI1 — SRC-8#/CPU_ITP# PCIE_MINI1# — RP38 0x2 — CLK_PCIE_MINI1 34 / CLK_PCIE_MINI1# 34
SRC-0/DOT96 DOT96_SSC — SRC-0#/DOT96# DOT96_SSC# — RP9 0x2 — CLK_PCIE_VGA 18 / CLK_PCIE_VGA# 18
SRC-1/SE1 27M_NSS — SRC-1#/SE2 27M_SS — R510 33 / R509 *33_NC — CLK_VGA_27M_NSS 19 / CLK_VGA_27M_SS 19
SRC-2/SATA PCIE_SATA — SRC-2#/SATA# PCIE_SATA# — RP10 0x2 — CLK_PCIE_SATA 11 / CLK_PCIE_SATA# 11
CR#_C/SRC-3 PCIE_MINI3 — CR#_D/SRC-3# PCIE_MINI3# — RP45 0x2 — CLK_PCIE_MINI3 33 / CLK_PCIE_MINI3# 33
SRC-4 MCH_3GPLL — SRC-4# MCH_3GPLL# — RP44 0x2 — CLK_MCH_3GPLL 6 / CLK_MCH_3GPLL# 6
PCI_STOP#/SRC-5 — CPU_STOP#/SRC5-5# — H_STP_PCI# 13 / H_STP_CPU# 13
SRC-6 PCIE_EXPCARD — SRC-6# PCIE_EXPCARD# — RP41 0x2 — CLK_PCIE_EXPCARD 30 / CLK_PCIE_EXPCARD# 30
CR#_F/SRC-7 MINI1CLK_REQ#_C — CR#_E/SRC-7# CARD_CLK_REQ#_C — R464 475/F MINI1CLK_REQ# — R466 475/F CARD_CLK_REQ# — MINI1CLK_REQ# 34 / CARD_CLK_REQ# 30
SRC-9 PCIE_MINI2 — SRC-9# PCIE_MINI2# — RP43 0x2 — CLK_PCIE_MINI2 33 / CLK_PCIE_MINI2# 33
SRC-10 PCIE_ICH — SRC-10# PCIE_ICH# — RP42 0x2 — CLK_PCIE_ICH 12 / CLK_PCIE_ICH# 12
CR#_H/SRC-11 PCIE_LOM — CR#_G/SRC-11# PCIE_LOM# — RP8 0x2 — CLK_PCIE_LOM 42 / CLK_PCIE_LOM# 42

2/20-21
2/21-24

Only for debug
7/30-70

13 SATA_CLKREQ# — SATA_CLKREQ# — R487 475/F
6 CLK_3GPLLREQ# — CLK_3GPLLREQ# — R489 475/F
33 CLK_LPC_DEBUG — CLK_LPC_DEBUG — R189 *22_NC
28 CLK_PCI_PCCARD — CLK_PCI_PCCARD — R190 33
31 CLK_PCI_8512 — CLK_PCI_8512 — R492 33
12 CLK_PCI_ICH — CLK_PCI_ICH — R499 33
13 CLK_ICH_48M — CLK_ICH_48M — R508 33
3,6 CPU_MCH_BSEL0 — L73 BLM18AG601SN1D — R507 2.2K — FSA
3,6 CPU_MCH_BSEL1 — BLM18AG601SN1D — R471 0 — FSB
3,6 CPU_MCH_BSEL2 — L65 BLM18AG601SN1D — R477 10K — FSC
13 CLK_ICH_14M — CLK_ICH_14M — R481 33
13 CLK_PWRGD

SATA_CLKREQ# C, CLK_3GPLLREQ# C, PCI_PCCARD, PCI_SIO, 27M_SEL, PCI_ICH

2/13-6

CLK_XTAL_OUT, CLK_XTAL_IN
CLK_SDATA, CLK_SCLK

H_STP_PCI# R167 10K
H_STP_CPU# R174 10K
2/20-21

+3.3V_RUN

CLK_3GPLLREQ# R490 10K
SATA_CLKREQ# R488 10K
CARD_CLK_REQ# R469 10K
MINI1CLK_REQ# R463 10K
PCI_PCCARD R188 *10K_NC

PCI_SIO R493 *10K_NC
PCI_ICH R501 *10K_NC

3 CLK_ITP_BCLK — RP6 *0x2_NC — PCIE_MINI1
3 CLK_ITP_BCLK# — PCIE_MINI1#

+3.3V_RUN
R198 *10K_NC
PCI_ICH
R200 *10K_NC

R188 POP: For Internal pull-low.
R191 POP: For internal pull-high.

+3.3V_RUN
R495 10K
27M_SEL
R497 *10K_NC

UMA without iAMT

+3.3V_RUN
L71 BLM21PG600SN1D 0805 120 ohms@100Mhz
+CK_VDD_MAIN
C693 0.1U 10
C692 0.1U 10
C691 0.1U 10
C661 0.1U 10
C642 0.1U 10
C641 0.1U 10
C690 *10U_NC 0603 6.3

L72 BLM21PG600SN1D 0805 120 ohms@100Mhz
R474 2.2
+CK_VDD_PCI
C662 0.1U 10
C269 0.1U 10
2/19-20

R506 2.2
+CK_VDD_PLL3
C695 0.1U 10

R504 2.2
+CK_VDD_48
C687 0.1U 10
C688 4.7U 0603 6.3

R162 2.2
+CK_VDD_SRC
C659 0.1U 10
C254 0.1U 10
2/19-20

Non-iAMT

SMbus address D2

These are for backdrive issue.

+3.3V_RUN
RP7 2.2KX2
26,31,39 SMBDAT1 — Q26 2N7002W-7-F — CLK_SDATA
+3.3V_RUN
26,31,39 SMBCLK1 — Q28 2N7002W-7-F — CLK_SCLK

FSC	FSB	FSA	CPU	SRC	PCI
1	0	1	100	100	33
0	0	1	133	100	33
0	1	1	166	100	33
0	1	0	200	100	33
0	0	0	266	100	33
1	0	0	333	100	33
1	1	0	400	100	33
1	1	1	RSVD	100	33

27M_SEL

27M_SEL (PIN13)	PIN20	PIN21	PIN24	PIN25
0=UMA	DOT96T	DOT96C	96/ 100M_T	96/ 100M_C
1 = Disc. GRFX down	SRCT0	SRCC0	27Mout	27MSSout

QUANTA COMPUTER

Title	CLOCK GENERATOR	
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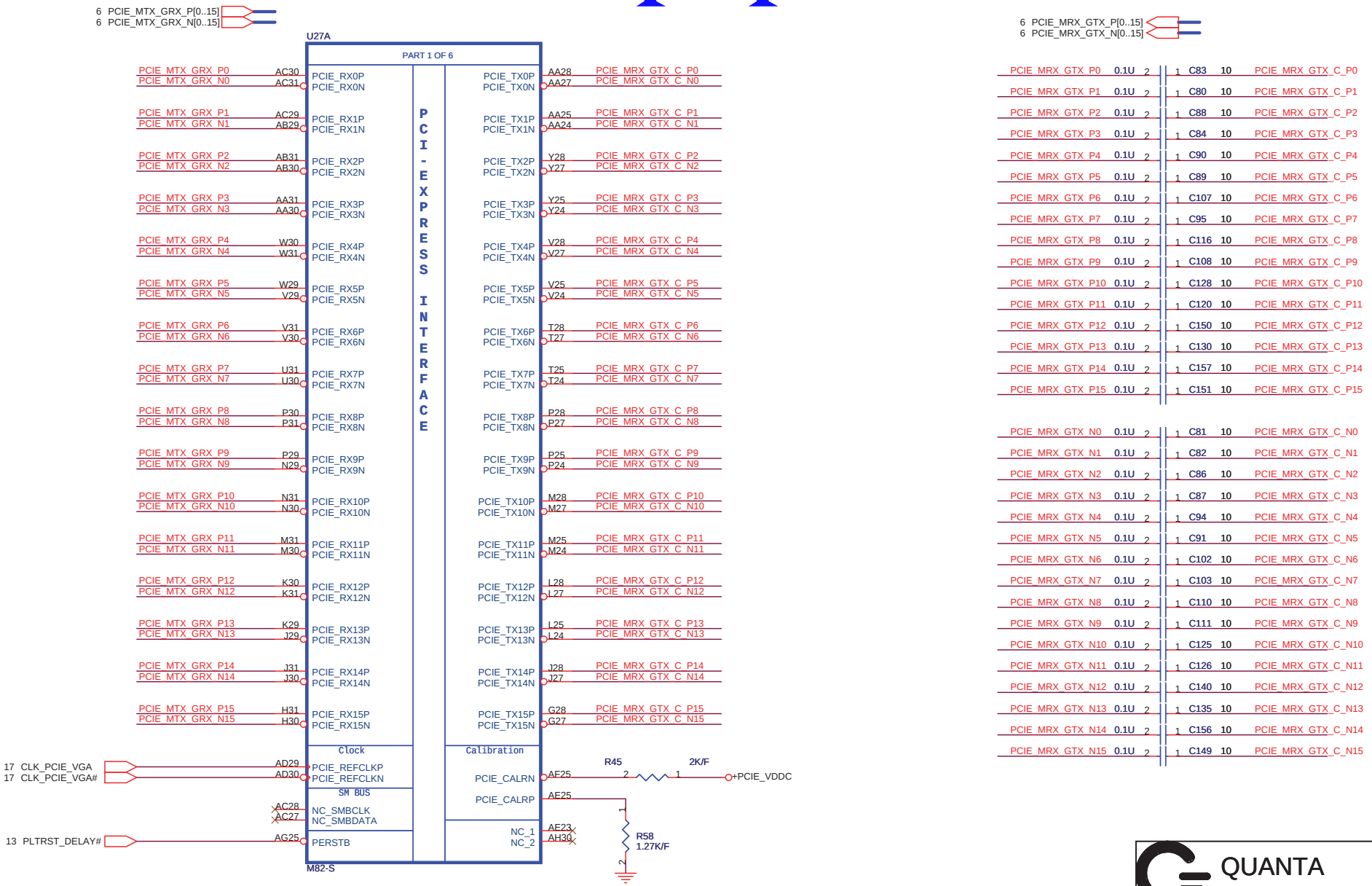

QUANTA COMPUTER

Title	VGA-M82-S (PCIe)	
Size	Document Number FM7	Rev 1A
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MEMORY APERTURE SIZE SELECT				
MEMORY SIZE	CFG3 GPIO9	CFG2 GPIO13	CFG1 GPIO12	CFG0 GPIO11
128MB	X	0	0	0
256MB	X	0	0	1
64MB	X	0	1	0
512MB	X	1	0	0

Memory Straps	RAM_TYPE_CFG3	RAM_TYPE_CFG2	RAM_TYPE_CFG1	RAM_TYPE_CFG0
400MHz 256MB(32M*16) Samsung	0	0	1	0
400MHz 256MB(32M*16) Hynix	0	0	1	1
500MHz 256MB(32M*16) Samsung	0	1	1	0
500MHz 256MB(32M*16) Qimonda	0	1	0	0

+3.3V_DELAY
R431 10K RAM_CFG0
R432 *10K_NC RAM_CFG1
R433 *10K_NC RAM_CFG2
R96 *10K_NC RAM_CFG3

+1.8V_RUN
R401 *10K_NC RAM_TYPE_CFG0
R402 *10K_NC RAM_TYPE_CFG1
R403 10K RAM_TYPE_CFG2
R400 *10K_NC RAM_TYPE_CFG3

GPIO Straps table	DESCRIPTION OF DEFAULT SETTINGS	ATI Usage	FM6 Usage
GPIO0	PCIE FULL TX OUTPUT SWING	X	1
GPIO1	PCIE TRANSMITTER DE-EMPHASIS ENABLED	X	1
GPIO2	ATI reserved configuration straps.	RSVD	0
GPIO3	ATI reserved configuration straps.	RSVD	0
GPIO4	DEBUG SIGNALS MUXED OUT	0	0
GPIO5	Allows either PCIe 2.5GT/s or 5.0GT/s operation	X	0
GPIO6	ATI Internal use only	0	0
GPIO10	Serial ROM clock to ROM.		0
ATI Usage recommended settings	0= DO NOT INSTALL RESISTOR, X = DESIGN DEPENDANT, RSVD = ATI RESERVED (DO NOT INSTALL)		

+3.3V_DELAY
R80 10K GPIO0
R420 10K GPIO1
R424 *10K_NC GPIO2
R79 *10K_NC GPIO3
R425 *10K_NC GPIO4
R423 *10K_NC GPIO5
R101 *10K_NC GPIO6
R430 *10K_NC GPIO10
R97 10K HDMI_HD_EN
R102 *10K_NC TEMP_FAIL#
R78 10K GFX_CLKREQ#
R410 10K VGAHSYNC

R84 10K TEMP_FAIL#

22 OSC_SPREAD R389 *0_NC
17 CLK_VGA_27M_SS R398 *0_NC CLK_VGA_27M_SSIN_R
17 CLK_VGA_27M_NSS R399 100/F R411 0 R412 120/F R393 *10K_NC
22 OSC_OUT R388 *0_NC Y2 *27MHZ_NC R387 *0_NC R390 1M_NC C524 *18P_NC C520 *18P_NC

+1.8V_RUN R75 499/F R74 249/F C93 0.1U

R46 1K

31 PANEL_BKEN
50 GFX_CORE_CNTRL0
22 THERMAL_INT# R105 *0_NC
20 TEMP_FAIL#
50 GFX_CORE_CNTRL1
20 BB_ENA
R438 1K

RAM_TYPE_CFG0 RAM_TYPE_CFG1 RAM_TYPE_CFG2 RAM_TYPE_CFG3
GPIO0 GPIO1 GPIO2 GPIO3 GPIO4 GPIO5 GPIO6
HDMI_HD_EN RAM_CFG3 GPIO10 RAM_CFG0 RAM_CFG1 RAM_CFG2
CLK_VGA_27M_SSIN_R TEMP_FAIL# GFX_CLKREQ#

T101 PAD T17 PAD T104 PAD T18 PAD T25 PAD T19 PAD T20 PAD T15 PAD T14 PAD T16 PAD T8 PAD T9 PAD

PART 2 OF 6

INTEGRATED TMDS/DP PORT
TXCP_DPA0P TXCP_DPA0N
TX0P_DPA1P TX0P_DPA1N
TX1P_DPA2P TX1P_DPA2N
TX2P_DPA3P TX2P_DPA3N
TXCM_DPB0P TXCP_DPB0N
TX0P_DPB1P TX0P_DPB1N
TX1P_DPB2P TX1P_DPB2N
TX2P_DPB3P TX2P_DPB3N

DVALID PSYNC_NEW
DVPCNTL_MVP_0 DVPCNTL_MVP_1 DVPCNTL_0 DVPCNTL_1 DVPCNTL_2 DVPCLK
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

EXT TMDS DVO

GENERAL PURPOSE I/O
GPIO_0 GPIO_1 GPIO_2 GPIO_3 GPIO_4 GPIO_5 GPIO_6 GPIO_7_BLON GPIO_8_ROMSO GPIO_9_ROMSI GPIO_10_ROMSCK GPIO_11 GPIO_12 GPIO_13 GPIO_14_HPD2 GPIO_15_PWRCNTL0 GPIO_16_SSIN GPIO_17_THERMAL_INT GPIO_18_HPD3 GPIO_19_CTF GPIO_20_PWRCNTL1 GPIO_21_BB_EN GPIO_22_ROMCSB GPIO_23_CLKREQB GPIO_24_JMODE GPIO_25_TDI GPIO_26_TCK GPIO_27_TMS GPIO_28_TDO

GEN_A GEN_B GEN_C GEN_D_HPD4 GEN_E

VREFG

PLL & XTAL
DPLL_PVDD DPLL_PVSS PCIE_PVDD MPVDD MPVSS DPLL_VDDC XTALIN XTALOUT

TEST
TESTEN PLLTEST

M82-S

DPA_PVDD DPA_PVSS DPB_PVDD DPB_PVSS DPA_VDDR_1 DPA_VDDR_2 DPB_VDDR_1 DPB_VDDR_2 DPB_VSSR_5 DPB_VSSR_4 DPB_VSSR_3 DPB_VSSR_2 DPB_VSSR_1 DPA_VSSR_5 DPA_VSSR_4 DPA_VSSR_3 DPA_VSSR_2 DPA_VSSR_1 DP_CALR HPD1

+TPVDD +DPA_VDDR +DPB_VDDR R413 0 VIP_3 R73 150

DAC1 / CRT
R RB G GB B BB HSYNC VSYNC RSET AVDD AVSSQ VDD1DI VSS1DI
VGA_RED 27 VGA_GRN 27 VGA_BLU 27 VGAHSYNC VGAVSYNC R59 499/F +AVDD +VDD1D_2D

DAC2 (TV/CRT2)
R2 R2B G2 G2B B2 B2B C Y COMP V2SYNC H2SYNC A2VDD A2VDDQ A2VSSQ VDD2DI VSS2DI R2SET
+A2VDD +A2VDDQ +VDD1D_2D R404 715/F

SERIAL BUSES
SCL SDA DDC1DATA DDC1CLK DDC2DATA DDC2CLK DDC3DATA_DP3_AUXN DDC3CLK_DP3_AUXP DDC4DATA_DP4_AUXN DDC4CLK_DP4_AUXP

LVDS
LCD_DDCDAT LCD_DDCCLK
HDMI
HDMI_SDA HDMI_SCL G_DAT_DDC2 G_CLK_DDC2 R61 0 R60 0
CRT
VGA_THERMDP VGA_THERMDN

THERMAL
TS_FDO DPLUS DMINUS

HDMI_CLK- HDMI_CLK+ HDMI_TX0- HDMI_TX0+ HDMI_TX1- HDMI_TX1+ HDMI_TX2- HDMI_TX2+

+3.3V_DELAY
R76 10K R82 10K Q19 MMST3904-7-F Q41 DTC114TUAT106 R373 100K HDMI_DET

2/13-9
3/28-36

VGA_BLU VGA_GRN VGA_RED
R406 150/F R407 150/F R408 150/F

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

2/25-28

1108.21
+3.3V_DELAY
LCD_DDCDAT R397 2.2K
LCD_DDCCLK R396 2.2K

QUANTA COMPUTER

Title	VGA-G86GLM (VIDEO)		
Size	Document Number FM6		Rev 2A
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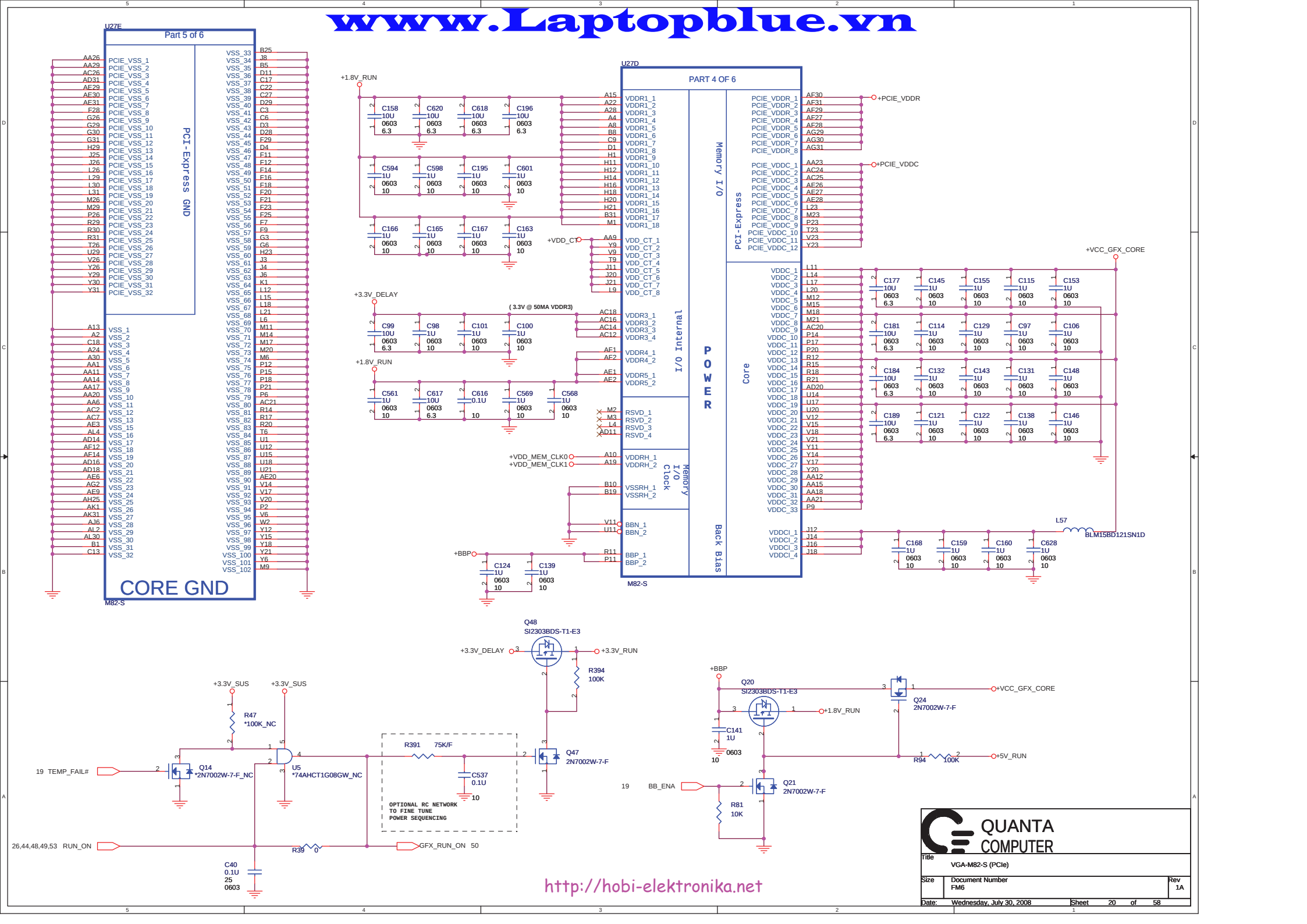
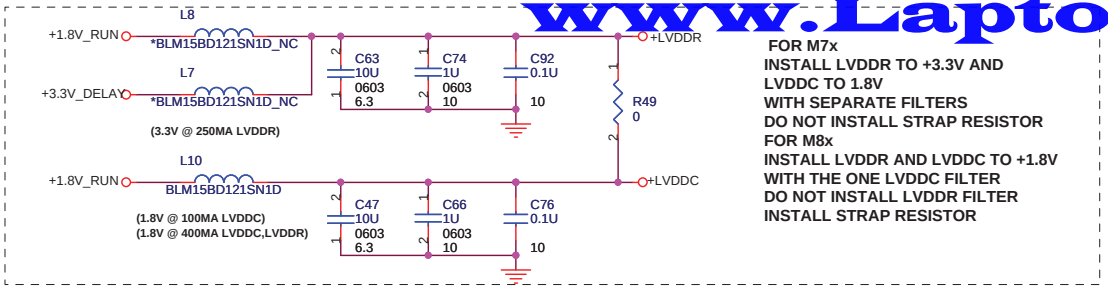
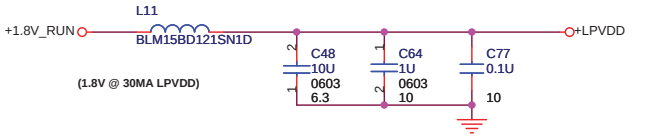
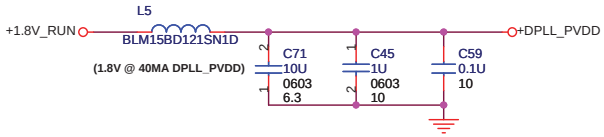


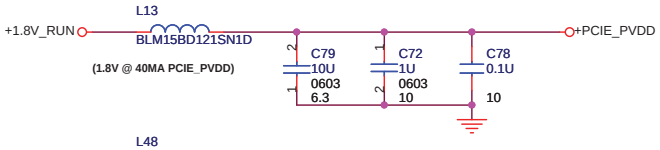
QUANTA COMPUTER

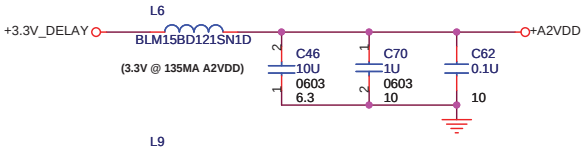
Title	VGA-M82-S (PCIe)	
Size	Document Number FM6	Rev 1A
Date: Wednesday, July 30, 2008	Sheet 20 of 58	

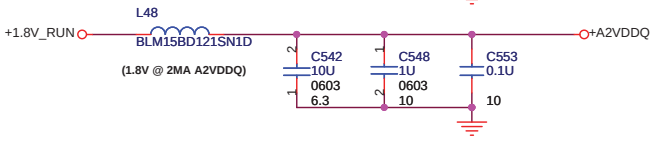


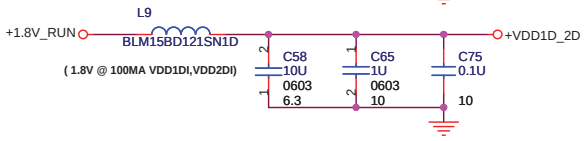


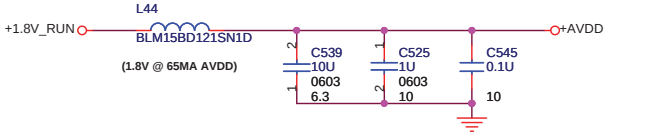


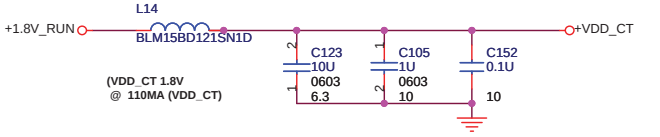


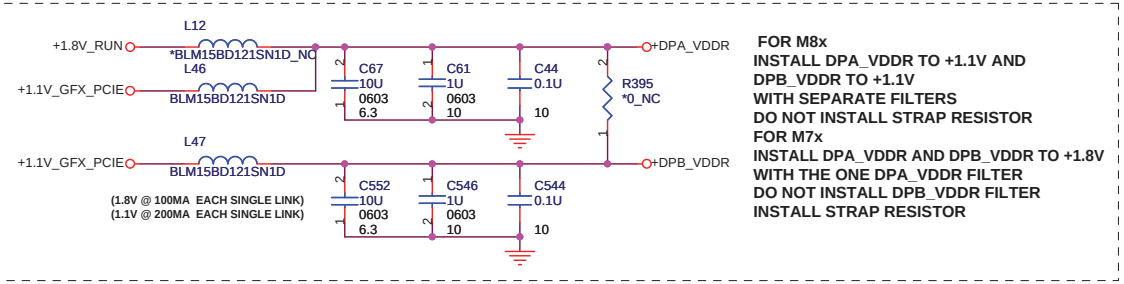




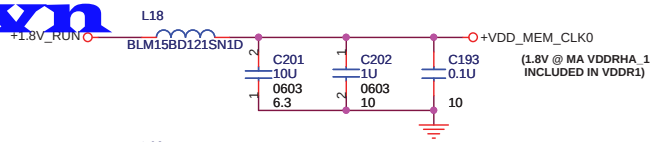


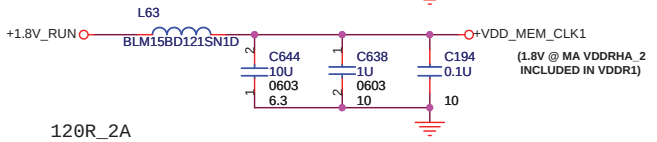




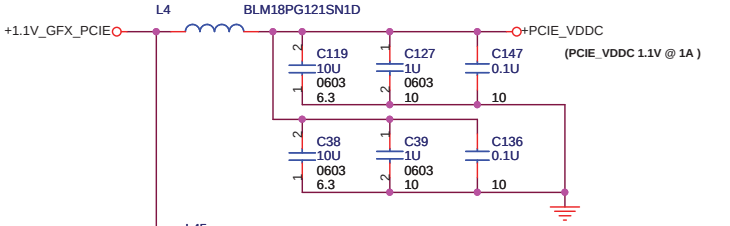


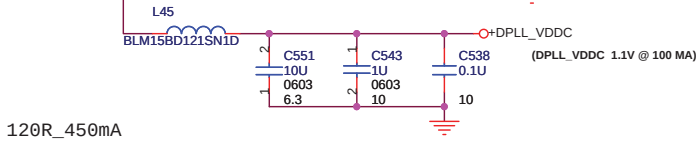
PLACE ALL DECOUPLING AS CLOSE TO ASIC AS POSSIBLE



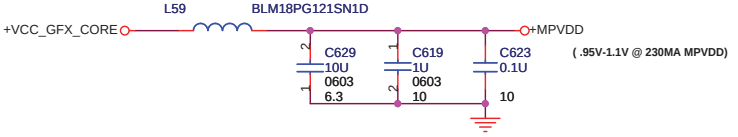


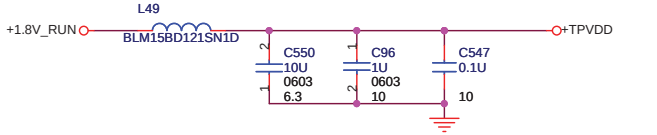
120R_2A





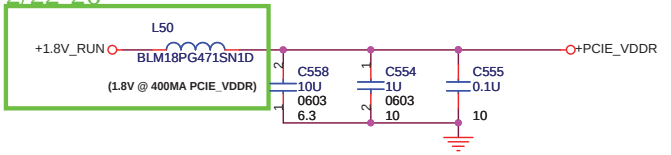
120R_450mA





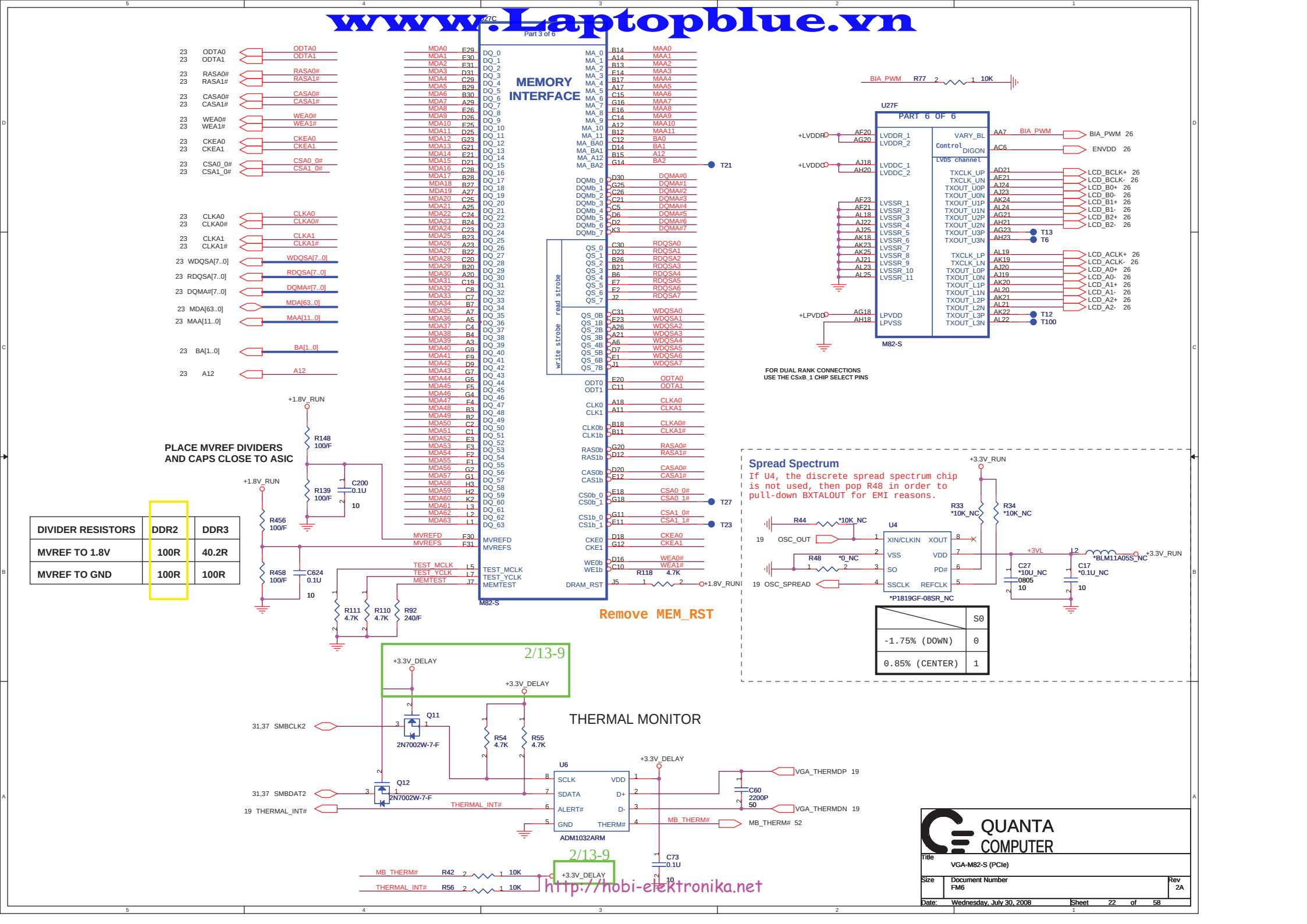
(1.8V@ 20mA for Single link and 40mA for Dual-Link)

2/22-26

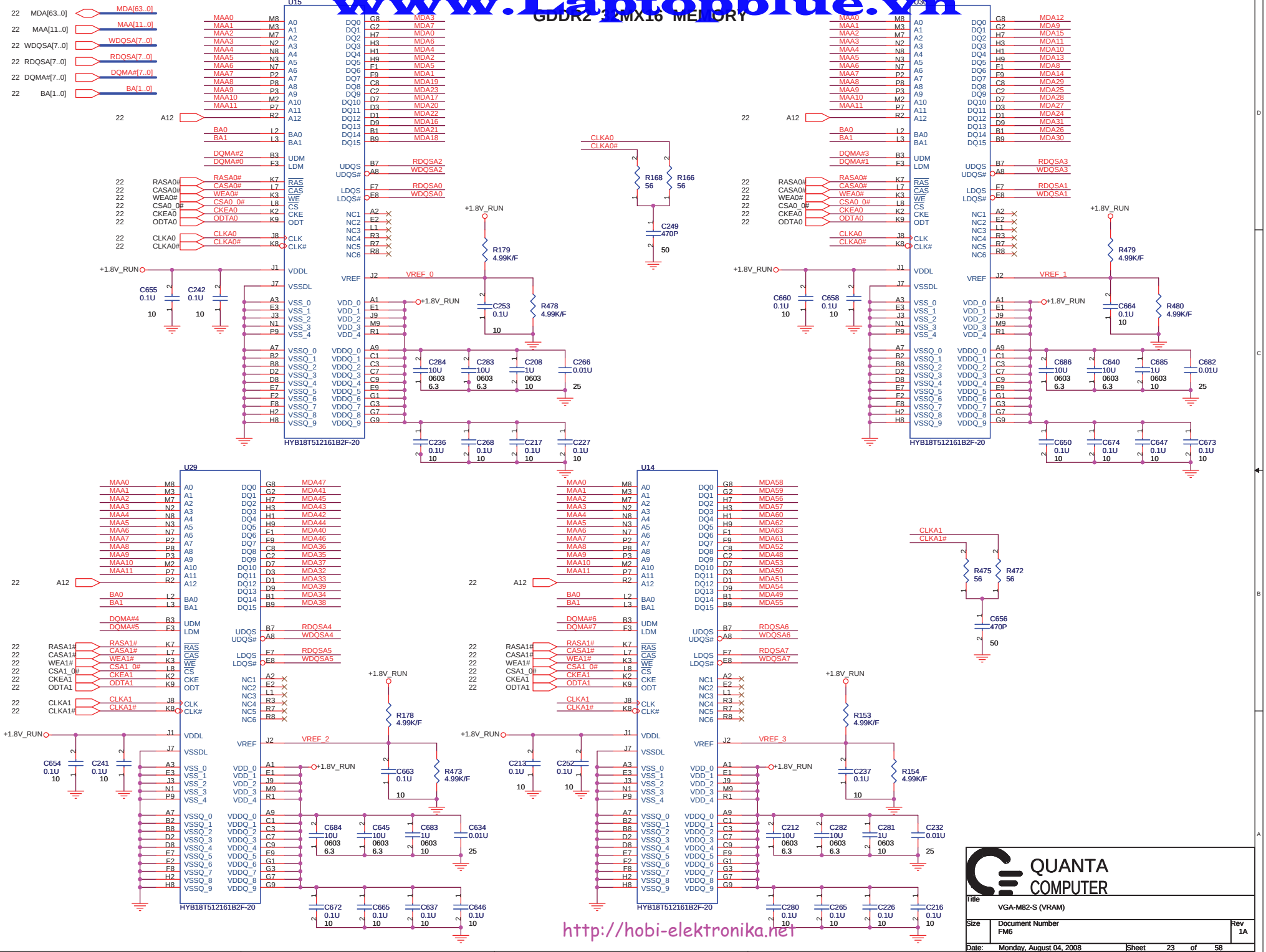


QUANTA COMPUTER

Title	VGA-M82-S (PCIe)	
Size	Document Number FM6	Rev 1A
Date: Monday, June 30, 2008	Sheet 21 of 58	



GDDR2 32MX16 MEMORY



QUANTA COMPUTER

Title	VGA-M82-S (VRAM)	
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GPIO Straps table	DESCRIPTION OF DEFAULT SETTINGS	ATI Usage	FM6 Usage
GPIO0	PCIE FULL TX OUTPUT SWING	X	1
GPIO1	PCIE TRANSMITTER DE-EMPHASIS ENABLED	X	1
GPIO2	ATI reserved configuration straps.	RSVD	0
GPIO3	ATI reserved configuration straps.	RSVD	0
GPIO4	DEBUG SIGNALS MUXED OUT	0	0
GPIO5	Allows either PCIe 2.5GT/s or 5.0GT/s operation	X	0
GPIO6	ATI Internal use only	0	0
GPIO10	Serial ROM clock to ROM.		0
ATI Usage recommended settings	0= DO NOT INSTALL RESISTOR, X = DESIGN DEPENDANT, RSVD = ATI RESERVED (DO NOT INSTALL)		

QUANTA COMPUTER

Title	VGA-M82-S (PCIe)	
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QUANTA COMPUTER

Title	VGA-M82-S (PCIe)	
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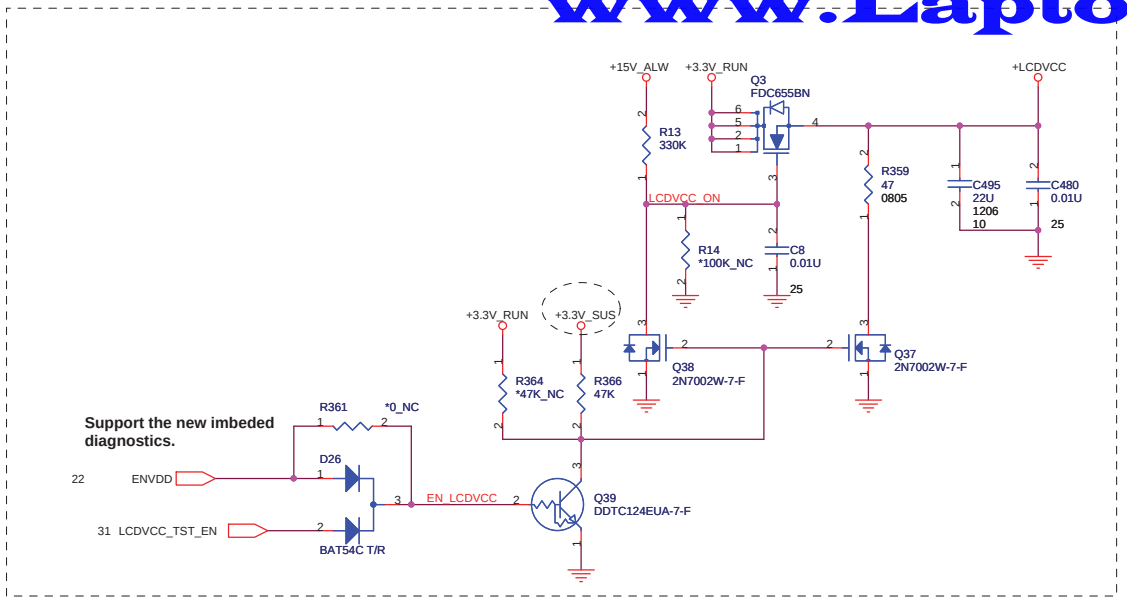
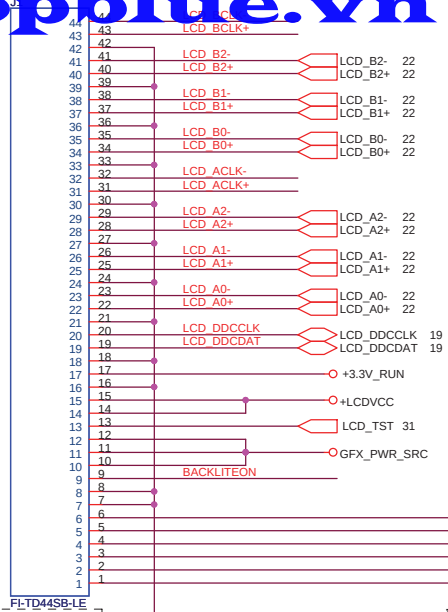
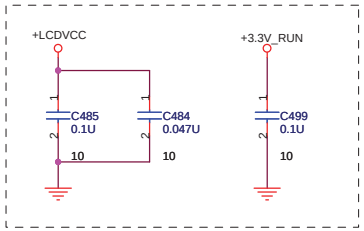
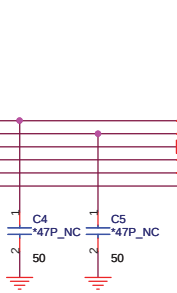






Adress : A9H --Contrast
AAH --Backlight

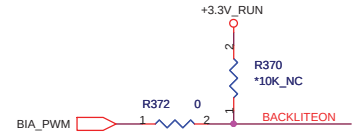
SMBCLK1 17,31,39
SMBDAT1 17,31,39
INVERTER_CBL_DET# 31
LCD_BAK# 31
PWM_VADJ 31
LCD_CBL_DET# 31



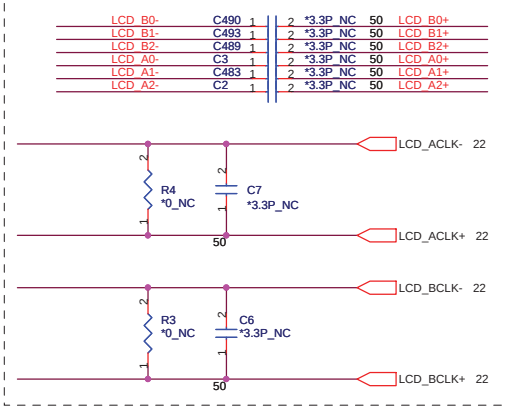
UMA

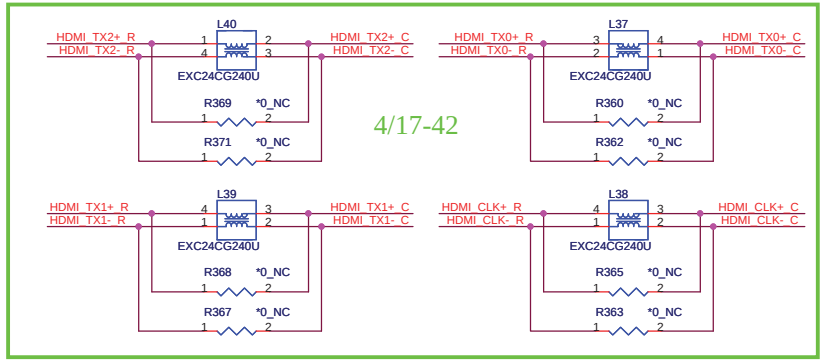
Populate R355 for DPST implementation only.

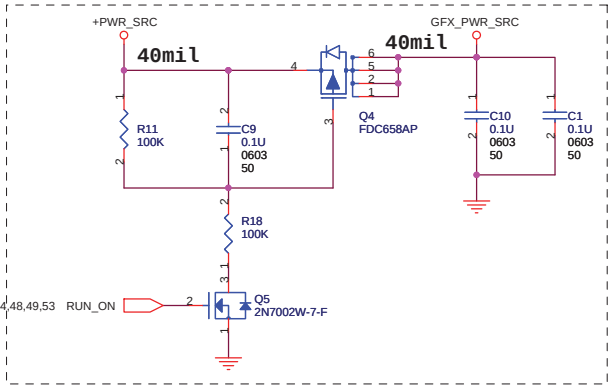
Populate R353 for platform without DPST support. No Stuff for Discrete DSPT support due to back up plan.

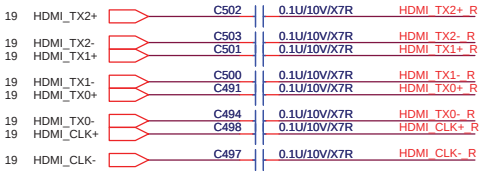


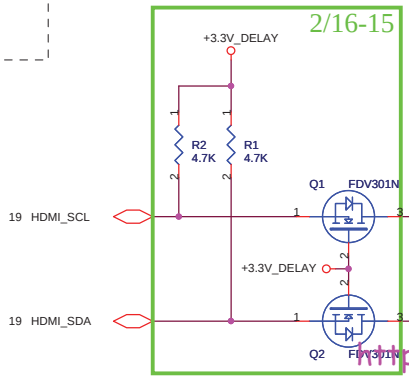
Shunt capacitors on LVDS for improving WWAN.

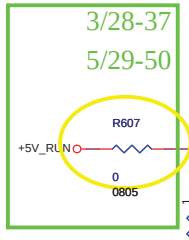


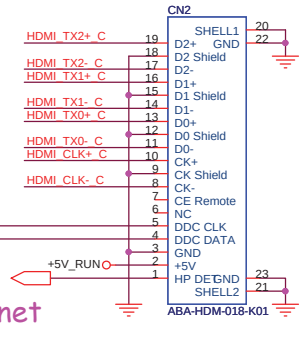


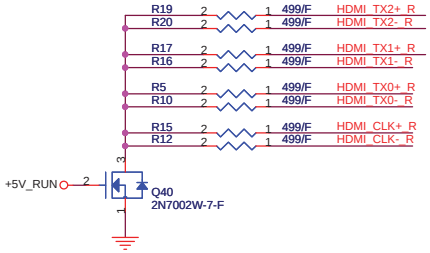






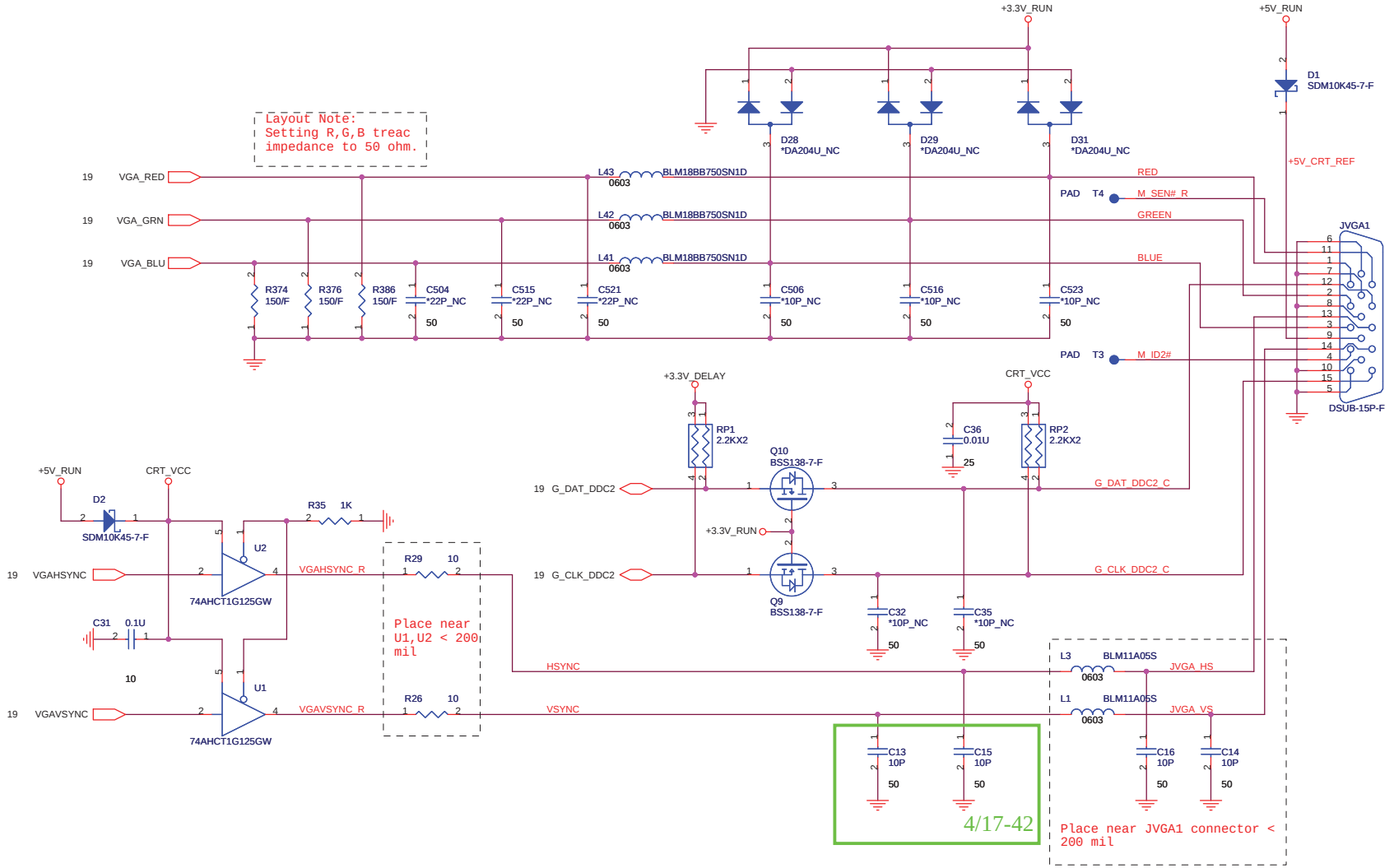






QUANTA COMPUTER

Title	LCD CONN & CK-SSCD	
Size	Document Number FM6	Rev 2A
Date:	Wednesday, July 30, 2008	Sheet 26 of 58



QUANTA COMPUTER

Title	CRT&TV CONN	
Size	Document Number FM6	Rev 2A
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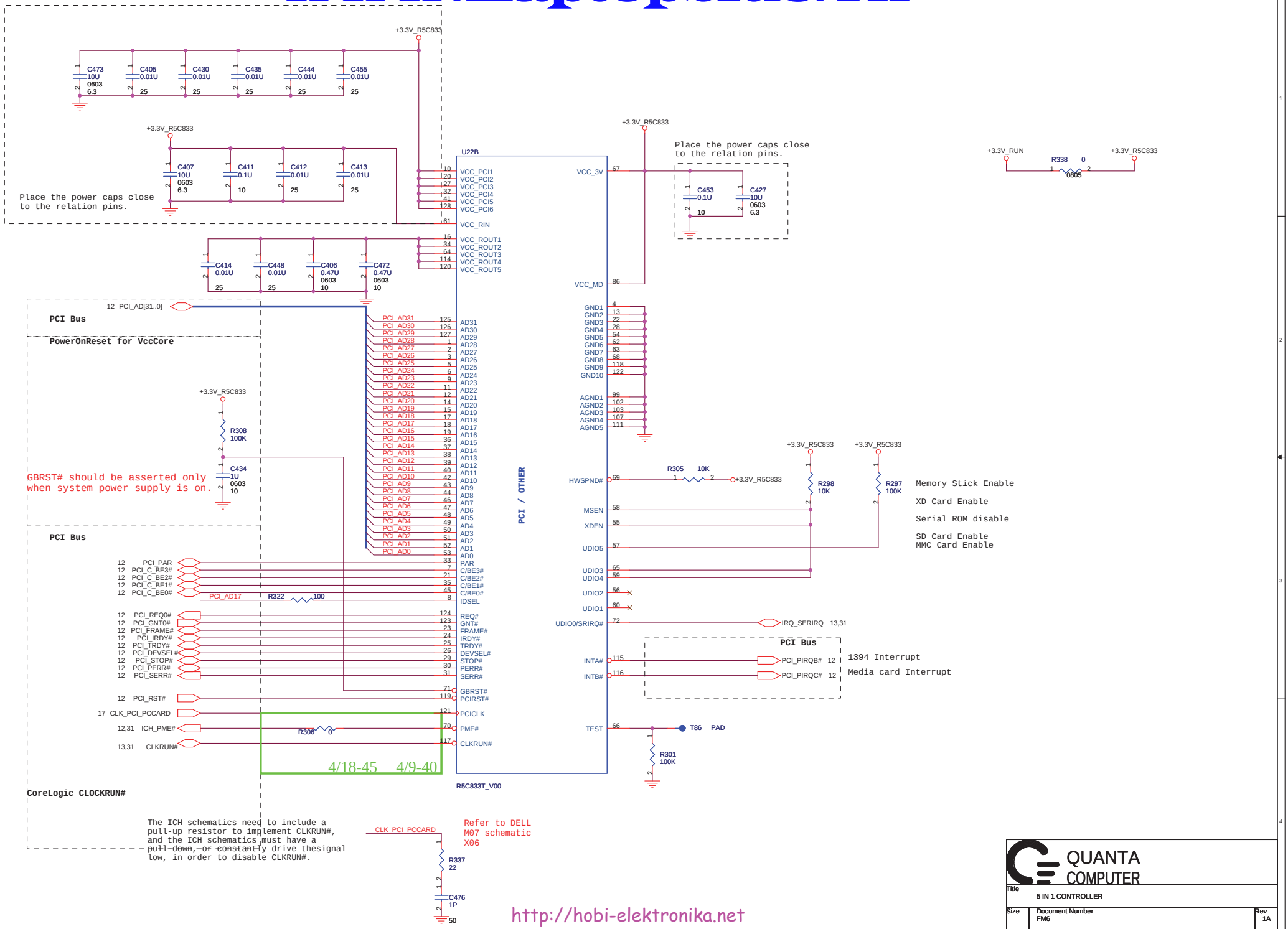

QUANTA COMPUTER

Title	5 IN 1 CONTROLLER	
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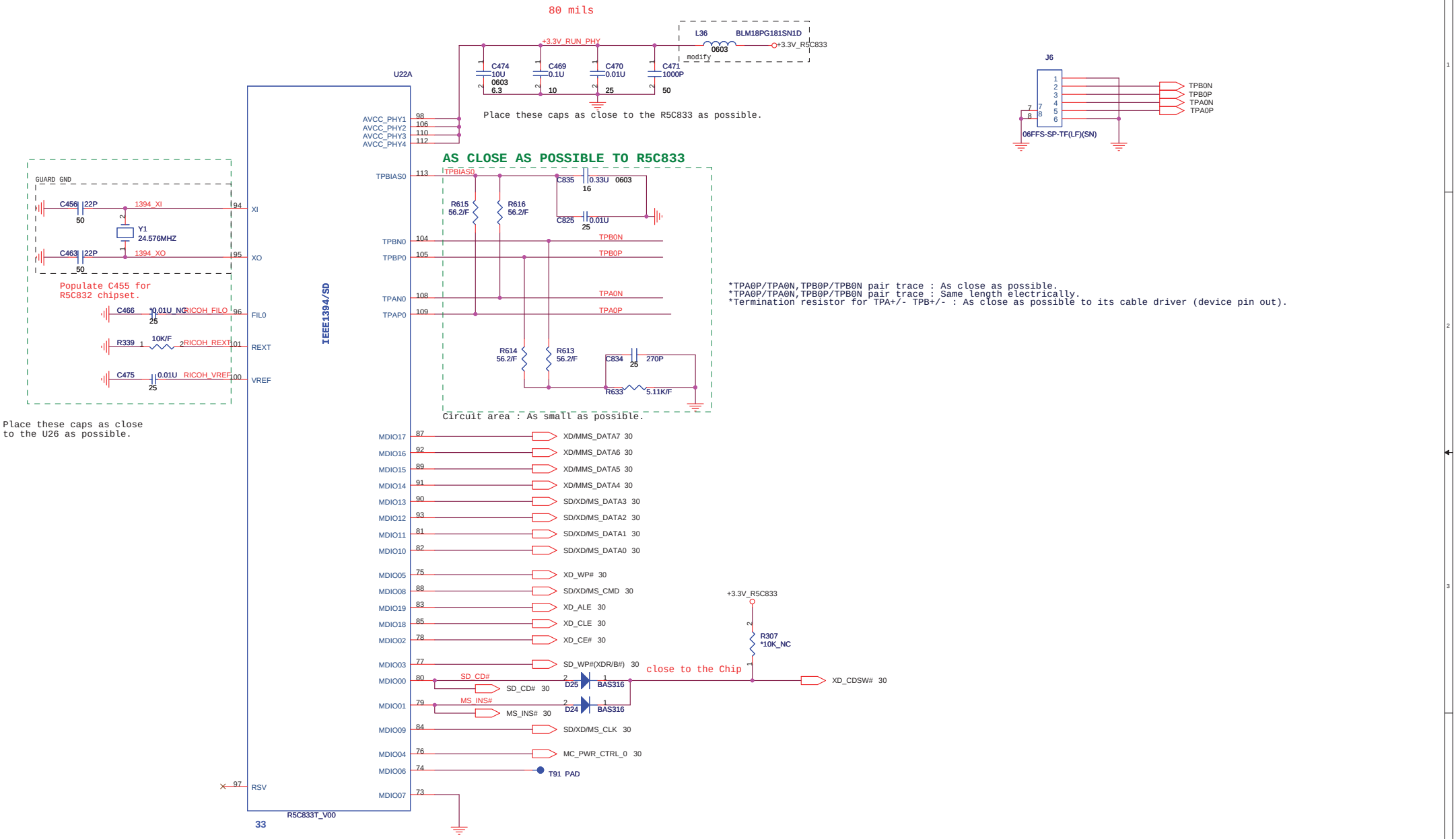

QUANTA COMPUTER

Title	IEEE 1394	
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Express Card

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

12 ICH_USBP7+
12 ICH_USBP7-
L33
*PLW3216S900SQ2T1_NC
USBP7 D+
USBP7 D-
R233 0
R238 0

Please the cap near connector.

+3.3V_CARD
C782 0.1U 10
C784 0.1U 10
C787 10U 0603 6.3
Please the cap near connector.

CN1
USBP7 D-
USBP7 D+
CPUSB#
13,33,34 ICH_SMBCLK
13,33,34 ICH_SMBDATA
+1.5V_CARD
13,33,34,42 PCIE_WAKE#
+3.3V_CARDAUX
CARD_RESET#
+3.3V_CARD
17 CARD_CLK_REQ#
31 EXPRCRD_PWREN#
17 CLK_PCIE_EXPCARD#
17 CLK_PCIE_EXPCARD
12 PCIE_RX4-
12 PCIE_RX4+
12 PCIE_TX4-
12 PCIE_TX4+
GND_1 USB- USB+ CPUSB# RSV_0 RSV_1 SMBCLK SMBDATA +1.5V_0 +1.5V_1 WAKE# +3.3VAUX PERST# +3.3V_1 +3.3V_2 CLKREQ# CPPE# REFCLK- REFCLK+ GND_2 PERn0 PERp0 GND_3 PETn0 PETp0 GND_4 NC1 NC2 NC3 NC4 GND_5
48303-0033
JAE PX10FS16PH-26P
PCI-Express TX and RX direct to connector.

+1.5V_RUN +3.3V_RUN +3.3V_SUS
U20
AUXIN 3.3VIN_0 3.3VIN_1 1.5VIN_0 1.5VIN_1
AUXOUT 3.3VOUT_0 3.3VOUT_1 1.5VOUT_0 1.5VOUT_1
+3.3V_CARDAUX +3.3V_CARD +1.5V_CARD
ExpressSwitch
R302 100K
+3.3V_SUS
T87 PAD
6,12,31,33,34,42 PLTRST#
SHDN# STBY# SYSRST#
PERST# CPPE# CPUSB# OC# NC GND0 RCLKEN
CARD_RESET#
EXPRCRD_PWREN#
CPUSB#
R295 100K
R294 100K
+3.3V_SUS
R5538D001-TR-F

+1.5V_RUN C418 0.1U 10 Please the cap near pin 12 & 14(1.5VIN).
+3.3V_RUN C415 0.1U 10 Please the cap near pin 2 & 4 (3.3VIN).
+3.3V_SUS C428 0.1U 10 Please the cap near pin 17 (AUXIN).
+3.3V_CARDAUX C420 0.1U 10 Please the cap near pin 15 (AUXOUT).
+3.3V_CARD C404 0.1U 10 Please the cap near pin 3 & 5 (3.3VOUT).
+1.5V_CARD C417 0.1U 10 Please the cap near pin 11 & 13(1.5VOUT).

+3.3V_RUN_CARD
0906.3
CON5
29 SD_CD#
SD_WP#
XD/MMS_DATA7 XD/MMS_DATA6 XD/MMS_DATA5 XD/MMS_DATA4 SD/XD/MS_DATA1 SD/XD/MS_DATA3 SD/XD/MS_DATA0 SD/XD/MS_DATA2 XD/MMS_DATA7 SD/XD/MS_DATA1
XD/MMS_DATA6 SD/XD/MS_CMD SD/XD/MS_CLK SD/XD/MS_DATA1 SD/XD/MS_DATA0 SD/XD/MS_DATA0
SD(CD2/WP2/GND) SD(CD1) SD(WP1) XD-18(VCC) XD-17(D7) XD-16(D6) XD-15(D5) XD-14(D4) SD-8(DAT1) XD-13(D3) SD-7(DAT0) XD-12(D2) MMC-(D7) XD-11(D1) SD-6(GND/VSS2) MS-1(VSS) MMC-(D6) MS-2(BS) SD-5(CLK) MS-3(VCC/DATA1) XD-10(D0) MS-4(SDIO/DATA0) SD-4(VCC/VDD)
MS-5(DATA2) XD-9(GND) MS-6(INS) SD-3(VSS1) MS-7(DATA3) MMC-(D5) MS-8(SCLK) SD-2(CMD) MS-9(VCC) MMC-(D4) MS-10(VSS) SD-1(DAT3) XD-8(WP) SD-9(DAT2) XD-7(WE) XD-6(ALE) XD-5(CLE) XD-4(CE) XD-3(RE) XD-2(R/-B) XD-1(CD) XD-0(GND)
GND_1 GND_2
144-2400002900
SD/XD/MS_DATA2
MS_INS# 29
SD/XD/MS_DATA3 XD/MMS_DATA5 SD/XD/MS_CLK SD/XD/MS_CMD
R587 0
XD/MMS_DATA4
SD/XD/MS_DATA3 XD_WP# SD/XD/MS_DATA2 SD/XD/MS_CMD XD_ALE XD_CLE XD_CE# SD/XD/MS_CLK SD_WP#(XDR/B#) XD_CDSW#
C755 *270P_NC 25
C850 22P 50 NPO
C773 2.2U 0603 6.3
C750 *270P_NC 25
C777 270P 25
7/30-62
4/17-42

29 XD_CDSW#
29 SD_WP#(XDR/B#)
29 XD/MMS_DATA7
29 XD/MMS_DATA6
29 XD/MMS_DATA5
29 XD/MMS_DATA4
29 SD/XD/MS_DATA3
29 SD/XD/MS_DATA2
29 SD/XD/MS_DATA1
29 SD/XD/MS_DATA0
29 SD/XD/MS_CMD
29 XD_WP#
29 XD_ALE
29 XD_CLE
29 XD_CE#
29 SD/XD/MS_CLK

8 IN1 CARD READER

+3.3V_RUN_CARD
C772 0.01U 25
C781 0.01U 25
C757 0.01U 25
R586 150K

R595 2*0_NC
Q71 2N7002W-7-F
SD_WP#(XDR/B#)
SD_WP#
XD_CDSW#

+3.3V_R5C833
U36
IN OUT NC EN GND
TPS2051BDBV
29 MC_PWR_CTRL_0
+3.3V_RUN_CARD
C799 1U 0603 10
C798 0.1U 10

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Title	ExpressCard/SmartCard	
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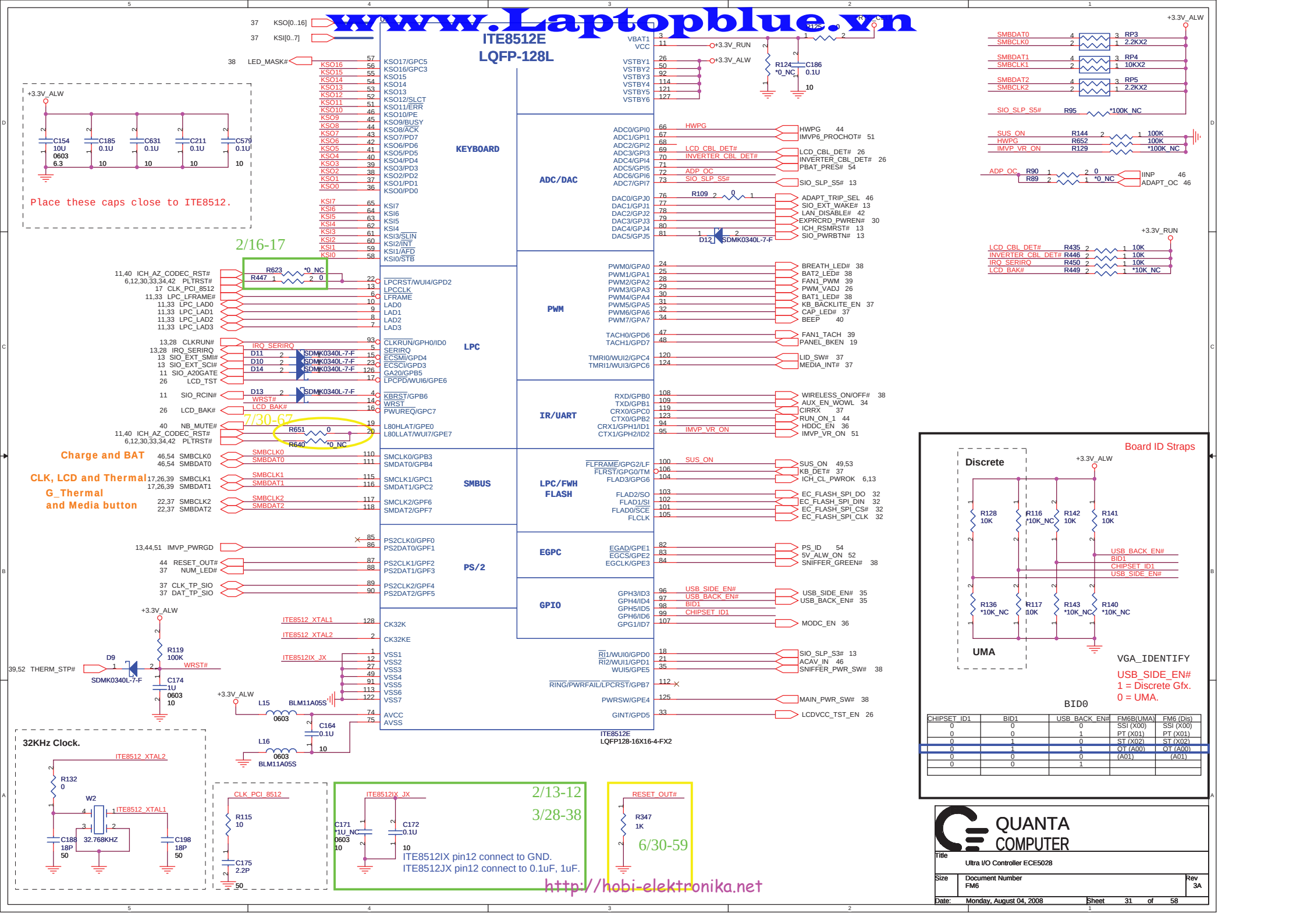
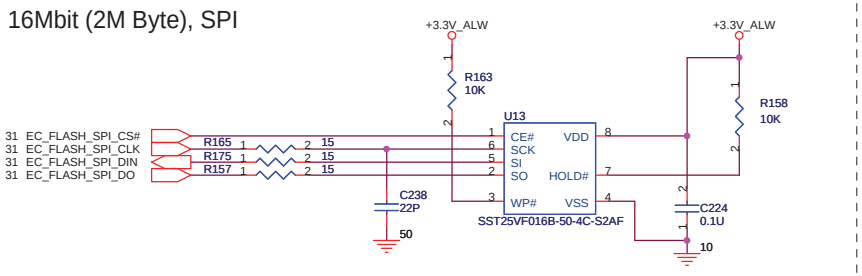
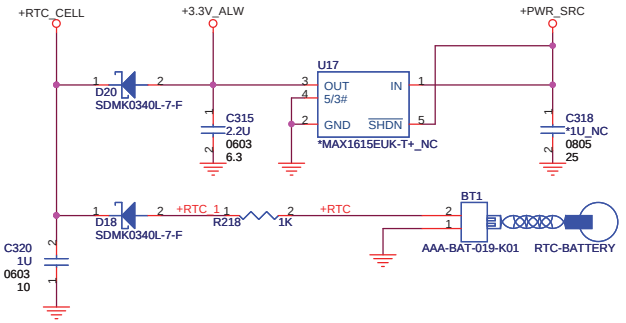


CHIPSET_ID1	BID1	USB_BACK_EN#	FM6B(UMA)	FM6 (Dis)
0	0	0	SSI (X00)	SSI (X00)
0	0	1	PT (X01)	PT (X01)
0	1	0	ST (X02)	ST (X02)
0	1	1	OT (A00)	OT (A00)
0	0	0	(A01)	(A01)
0	0	1		

16Mbit (2M Byte), SPI



RTC BATTERY



QUANTA COMPUTER

Title	Ultra I/O Controller ECE5028	
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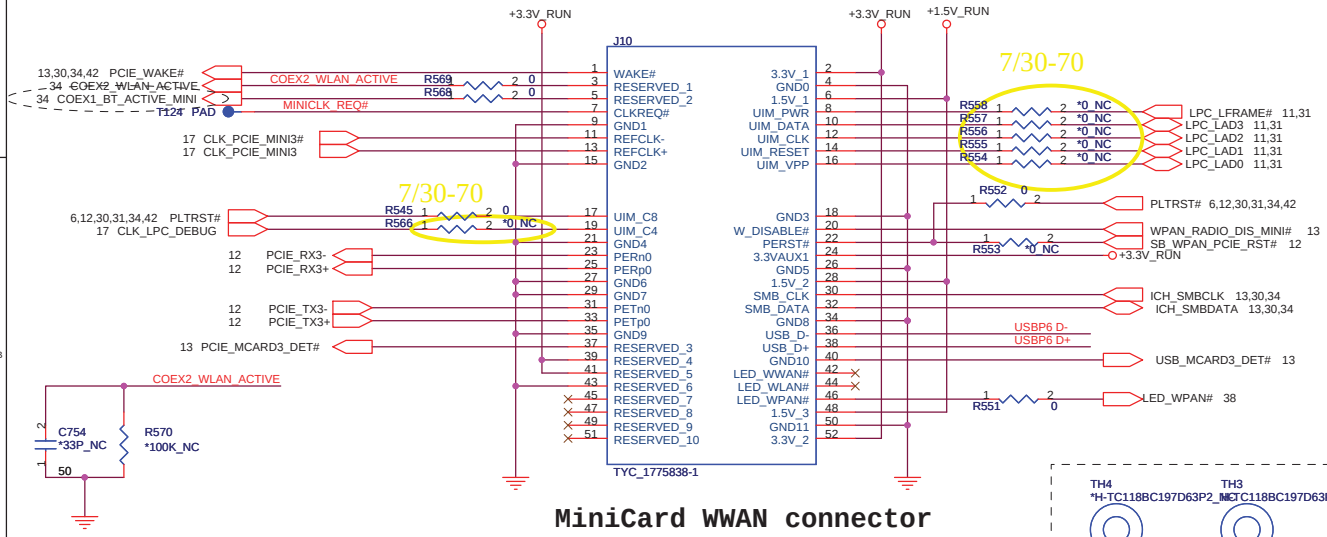
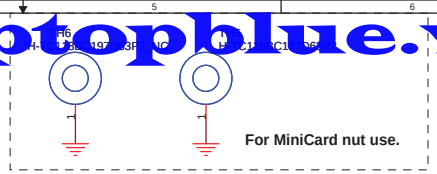
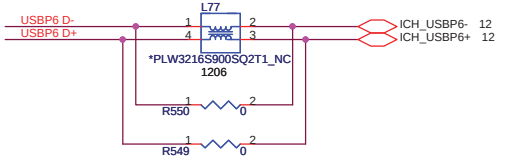
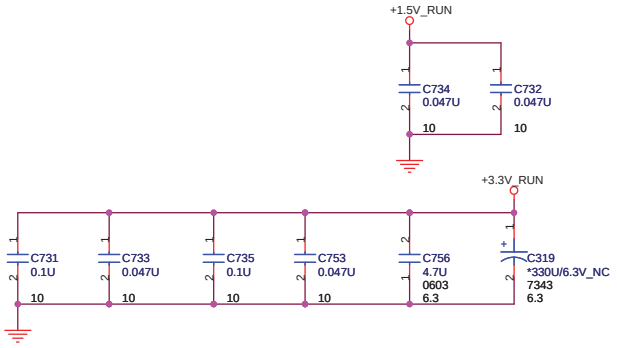
MiniCard Robson, BT. UWB connector

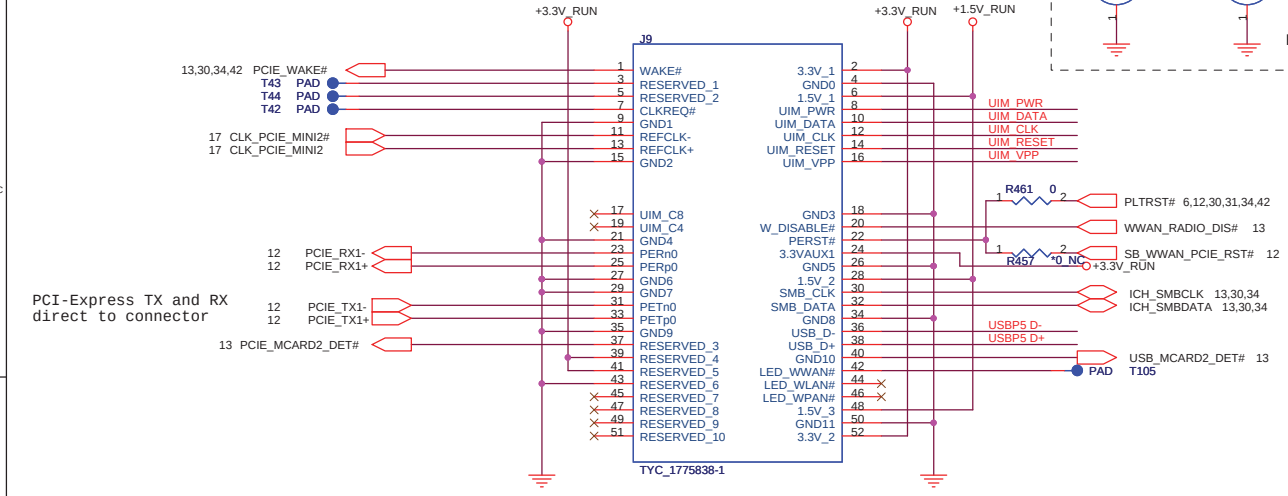


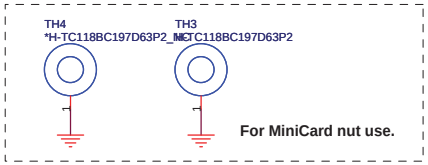


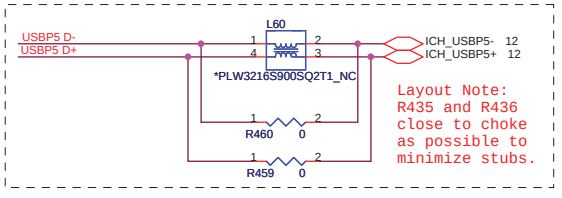


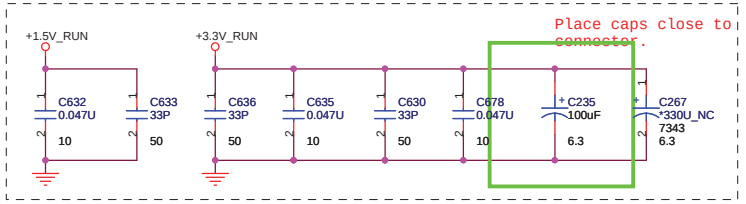


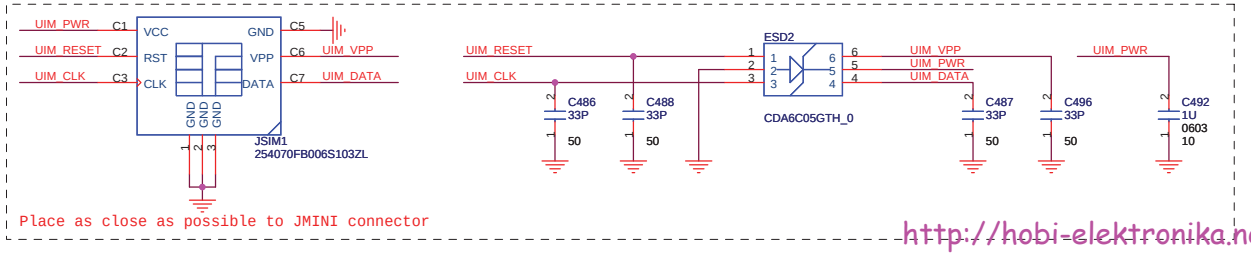
MiniCard WWAN connector











QUANTA COMPUTER

Title	MINI-PCI	
Size	Document Number FM6	Rev 2A
Date: Friday, August 01, 2008	Sheet 33 of 58	

MiniCard WLAN connector

TH2 *H-TC177BC197D83P2_N
TH1 -TC177BC197D83P2

For MiniCard nut use.

J11 TYC_1775838-1

13,30,33,42	PCIE_WAKE#	1	WAKE#	3.3V_1	2
33	COEX2_WLAN_ACTIVE	3	RESERVED_1	GND0	4
33	COEX1_BT_ACTIVE_MIN	5	RESERVED_2	1.5V_1	6
17	MINI1CLK_REQ#	7	CLKREQ#	UIM_PWR	8
		9	GND1	UIM_DATA	10
17	CLK_PCIE_MINI1#	11	REFCLK-	UIM_CLK	12
17	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
12	PCIE_RX2-	23	PERn0	3.3VAUX1	24
12	PCIE_RX2+	25	PERp0	GND5	26
		27	GND6	1.5V_2	28
12	PCIE_TX2-	29	GND7	SMB_CLK	30
12	PCIE_TX2+	31	PETn0	SMB_DATA	32
		33	PETp0	GND8	34
13	PCIE_MCARD1_DET#	35	GND9	USB_D-	36
		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

MINI1CLK_REQ# — C752 220P 50

R565 0, R567 0 (MINI1CLK_REQ#)

R544 0 — PLTRST# 6,12,30,31,33,42

WLAN_RADIO_OFF#

R548 *0_NC — SB_WLAN_PCIE_RST# 12

+3.3V_WLAN

WLAN_SMBCLK

WLAN_SMBDATA

USBP4 D-

USBP4 D+

USB_MCARD1_DET# 13

LED_WLAN_OUT# 38

PCI-Express TX and RX direct to connector

Non-iAMT: T123 PAD, T122 PAD, T121 PAD

L78 *PLW3216S900SQ2T1_NC 1206

USBP4 D- / USBP4 D+ — ICH_USBP4- 12, ICH_USBP4+ 12

R560 0, R559 0

RP46 2.2KX2

Q62 *2N7002W-7-F_NC — WLAN_SMBCLK — ICH_SMBCLK 13,30,33 — R546 *0_NC

Q61 *2N7002W-7-F_NC — WLAN_SMBDATA — ICH_SMBDATA 13,30,33 — R562 *0_NC

Suport for WoW

WLAN_RADIO_OFF# — D33 SDMK0340L-7-F — WLAN_RADIO_DIS# 13 — R537 *0_NC

Prevent backdrive when WoW is enabled.

+PWR_SRC, +3.3V_ALW, +3.3V_WLAN, +3.3V_RUN

Q60 *FDC655BN_NC

R542 *100K_NC, R538 *100K_NC, R547 0 0805

Q59B *2N7002DW-7-F_NC, Q59A *2N7002DW-7-F_NC

31 AUX_EN_WOWL

R543 *200K_NC, R534 *470K_NC, R532 *100K_NC, C713 *4700P_NC 0603 50

Place caps close to connector.

+1.5V_RUN: C736 0.047U 10, C738 0.047U 10

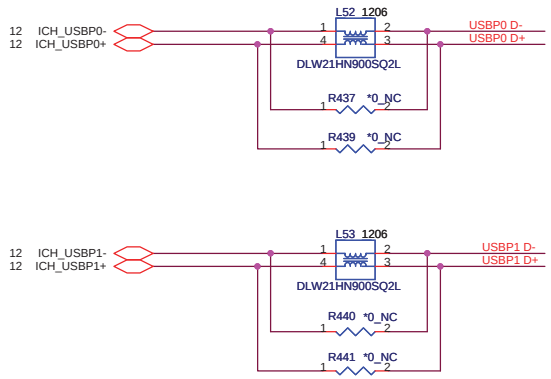
+3.3V_WLAN: C737 0.1U 10, C739 0.047U 10, C740 0.1U 10, C751 0.047U 10, C730 4.7U 0805 10, C317 *330U/6.3V_NC 7343 6.3

QUANTA COMPUTER

Title	MDC CONN.		
Size	Document Number FM6		Rev 1A
Date:	Friday, August 01, 2008	Sheet 34 of 58	

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

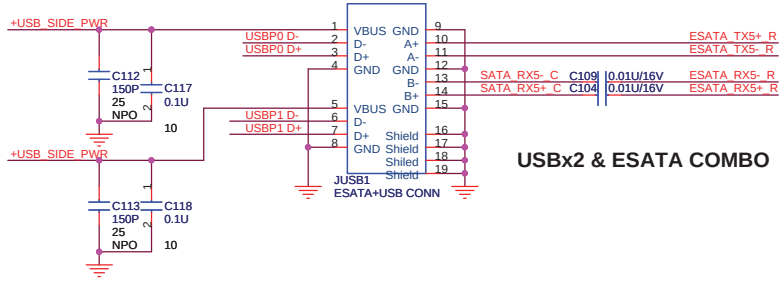
2/22-25
4/17-42



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

Side External USBX2

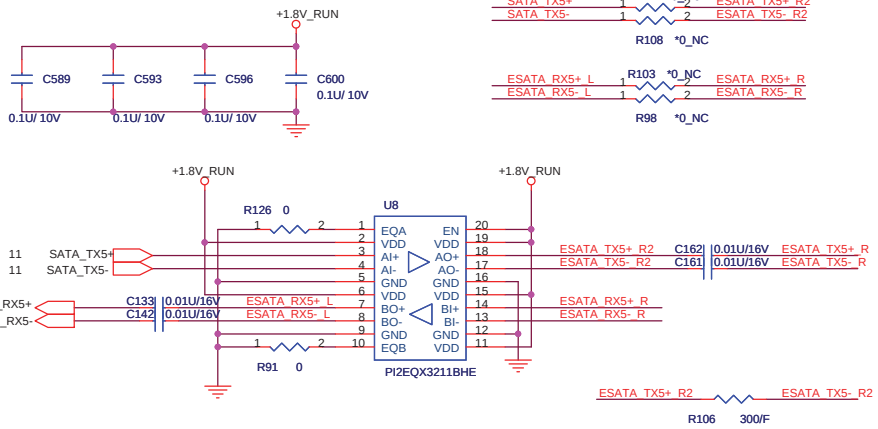
2/13-4



USBx2 & ESATA COMBO

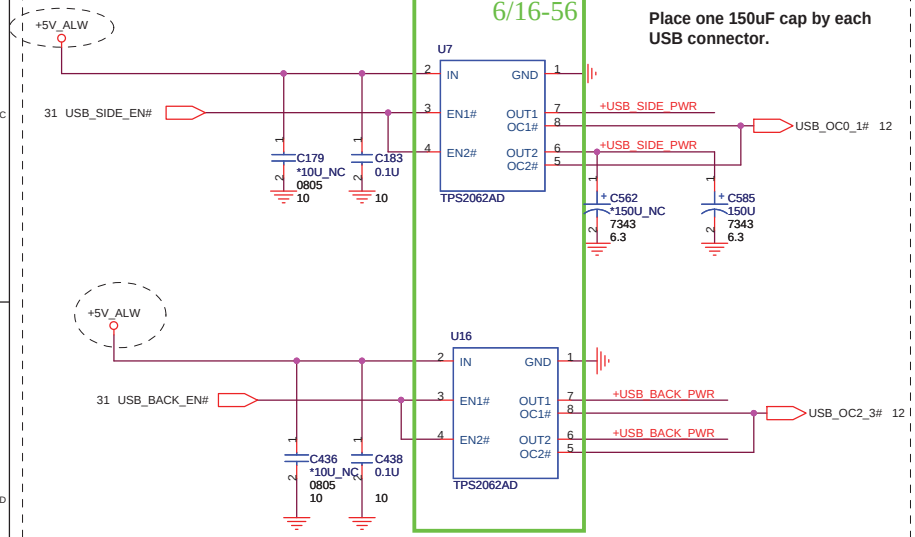
5/29-52
2/20-22

E-SATA Re-driver



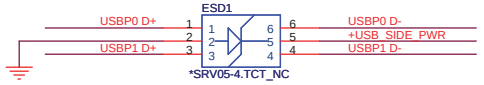
6/16-56

Place one 150uF cap by each USB connector.

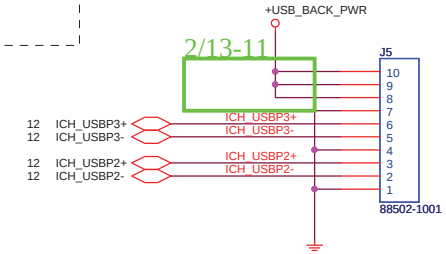


Each channel is 1A

Place ESD diodes as close as USB connector.



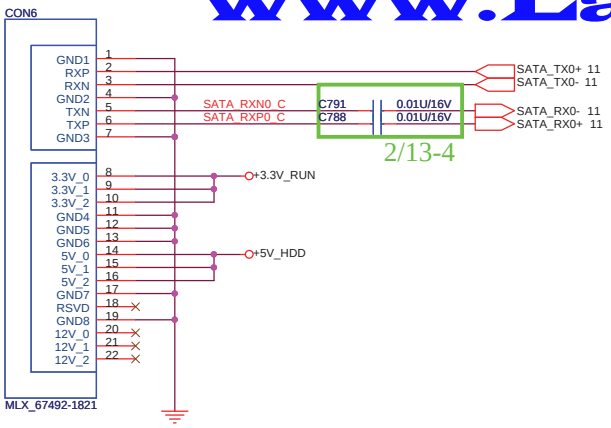
MB side

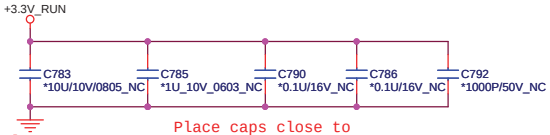


QUANTA COMPUTER

Title	SERIAL PORT & USB	
Size	Document Number FM6	Rev 3A
Date: Wednesday, July 30, 2008	Sheet 35 of 58	

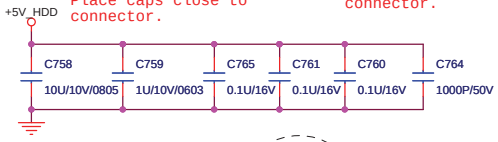
SATA Connector.

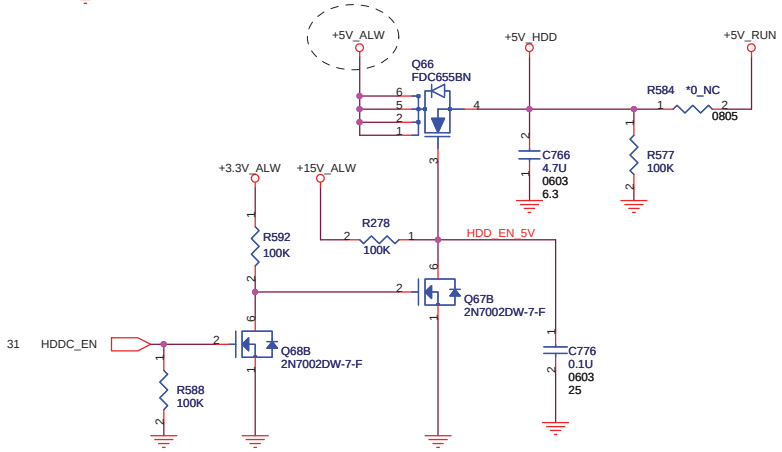




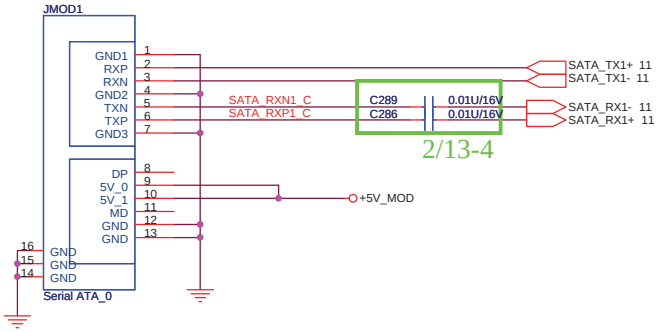
Place caps close to connector.

Place caps close to connector.



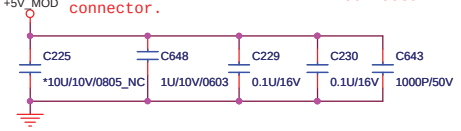


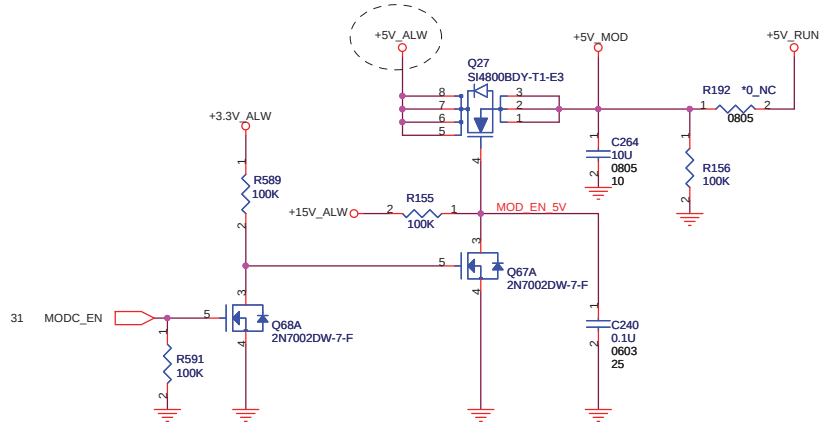
ODD Connector



Place caps close to connector.

Place caps close to connector.





QUANTA COMPUTER

Title	SATA (HDD&CD_ROM)	
Size	Document Number FM6	Rev 2A
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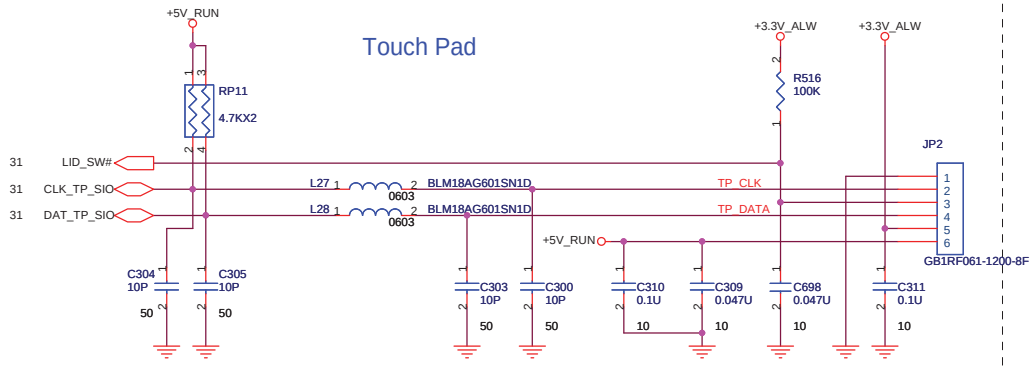
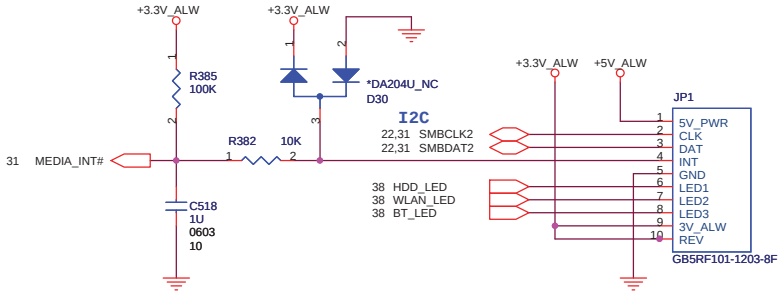
Touch Pad



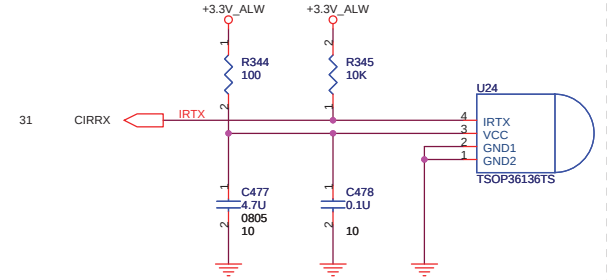
Media Button

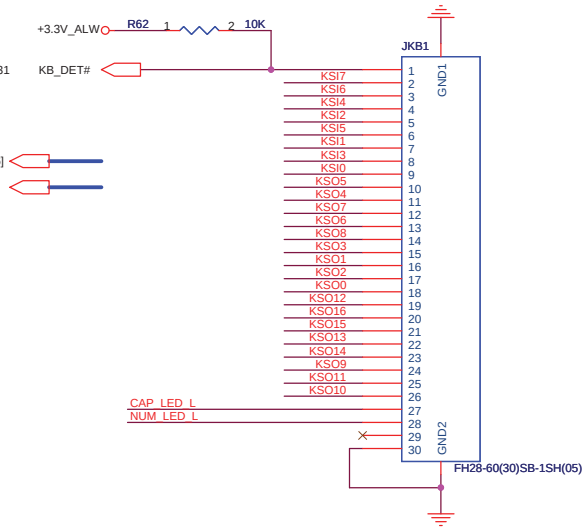
2/13-10

Change to P/N:DFFC10FR138
F/T:88501-1001-10P-L(0816)

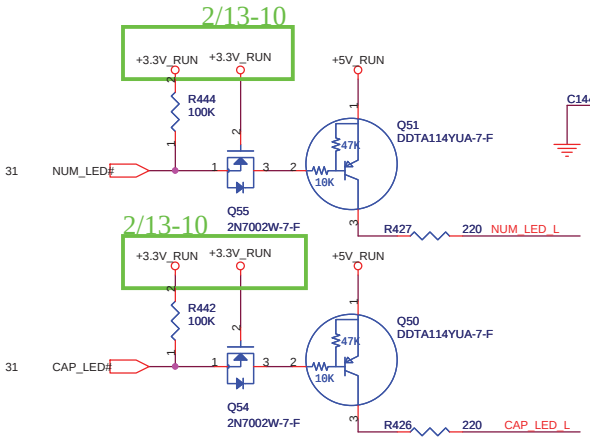


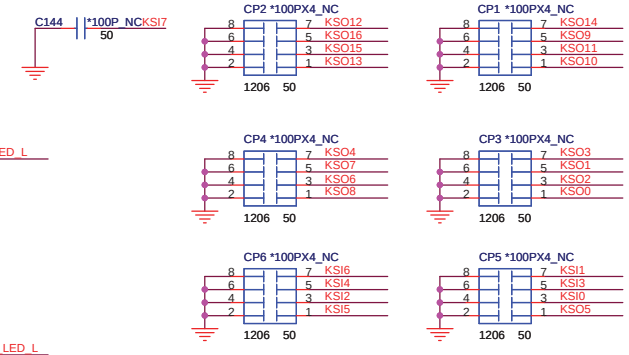
Consumer IR





2/13-10

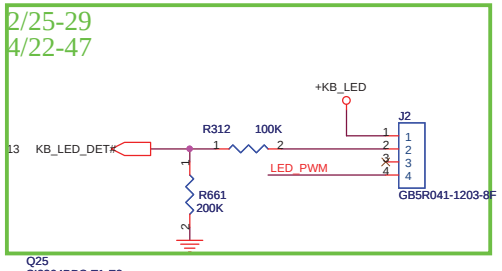


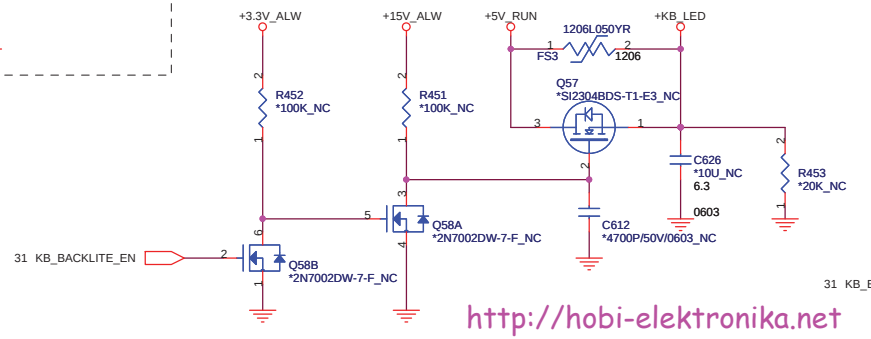


100P CAPS CLOSE TO JKB1

Key board Illumination

2/25-29
4/22-47

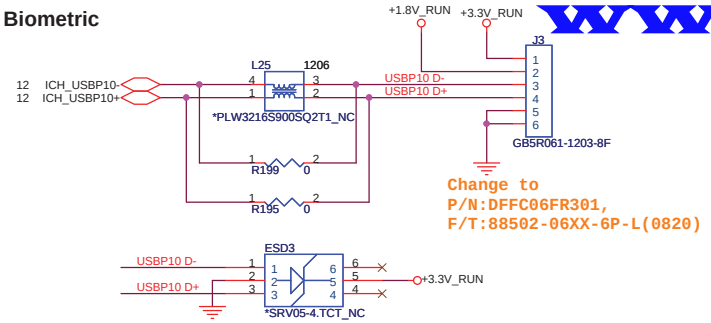




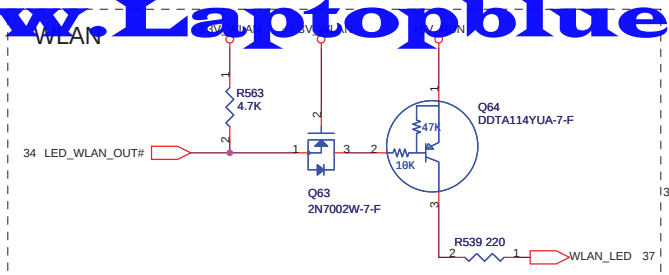
QUANTA COMPUTER

Title	TOUCH PAD, BULE TOOTH & FIR	
Size	Document Number FM6	Rev 3A
Date: Wednesday, July 30, 2008	Sheet 37 of 58	

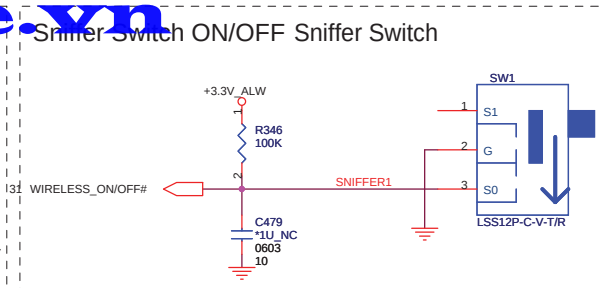
Biometric



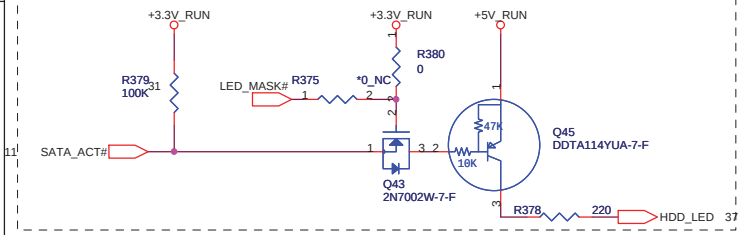
WLAN



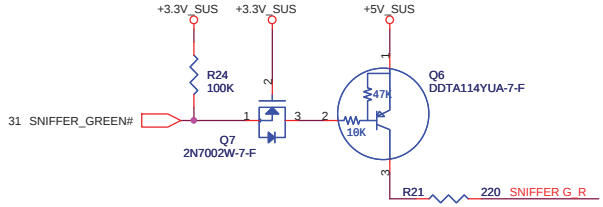
Sniffer Switch ON/OFF Sniffer Switch



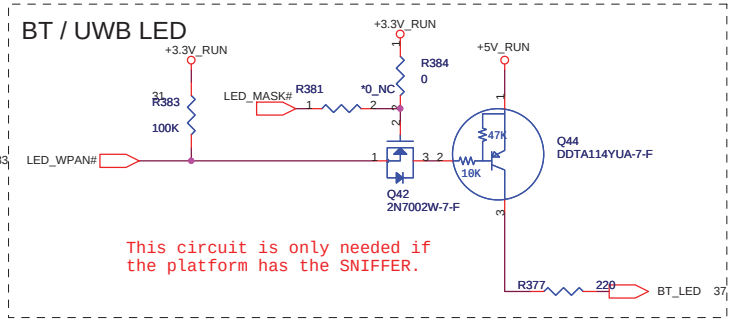
HDD activity LED.

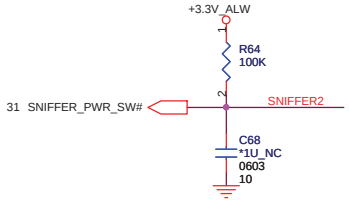


Sniffer Buttom

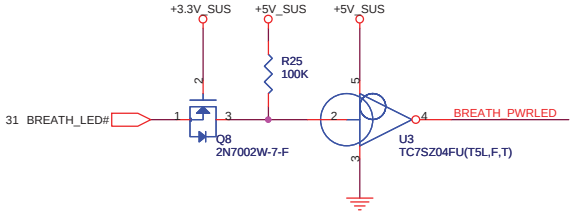


BT / UWB LED

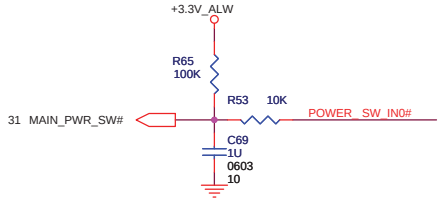




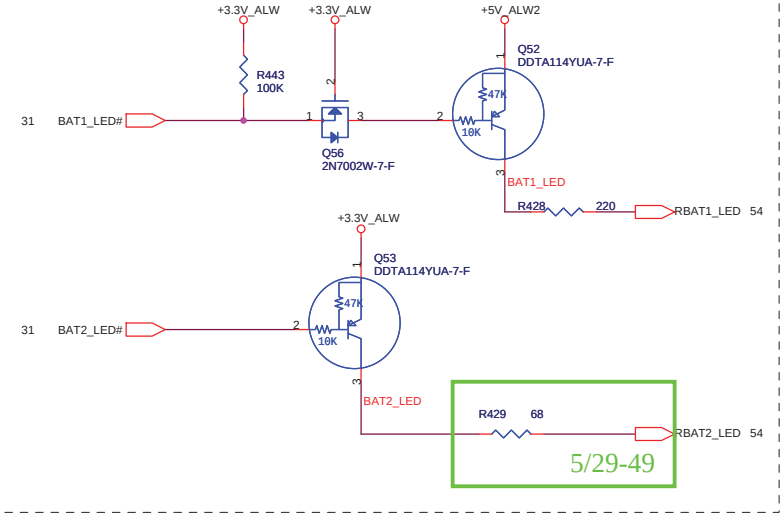
Power & Suspend.

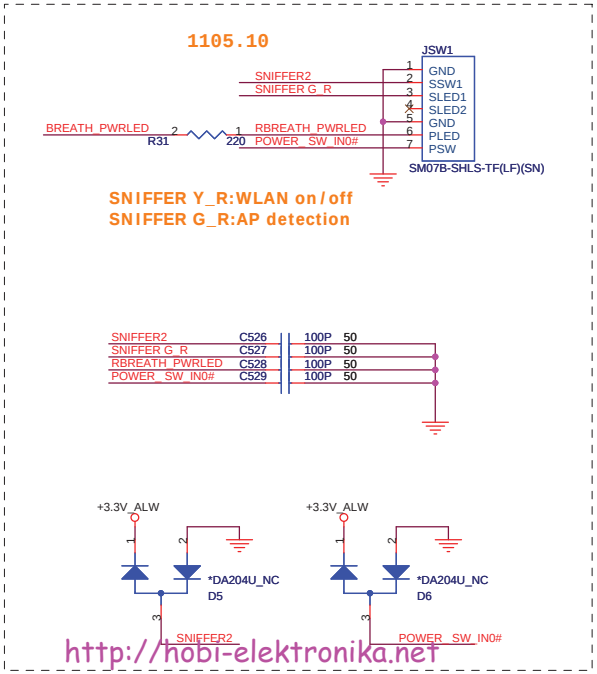


Power Switch



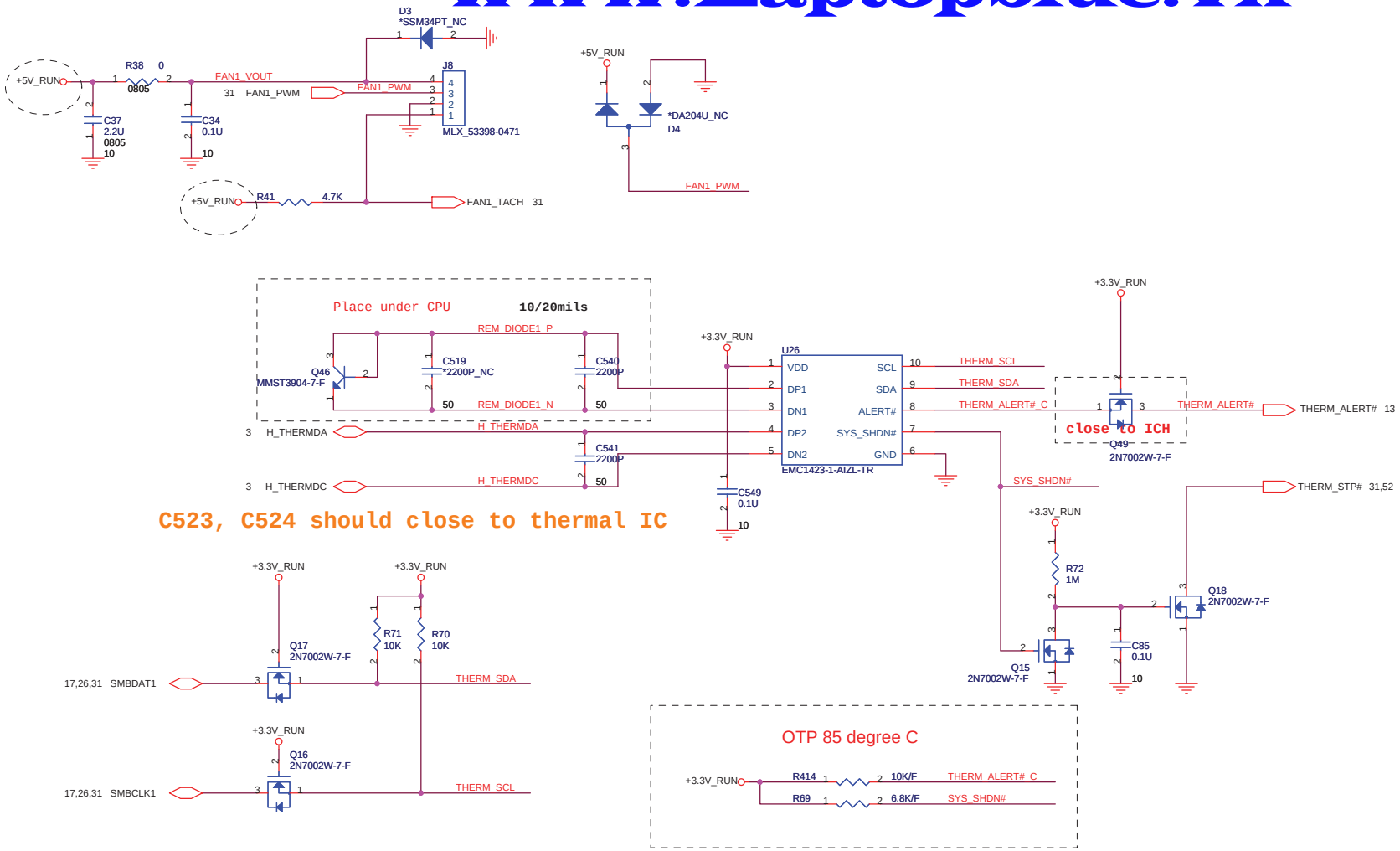
Battery status.





QUANTA COMPUTER

Title	SWITCH, KEYBOARD & LED	
Size	Document Number FM6	Rev 3A
Date: Wednesday, July 30, 2008	Sheet 38 of 58	



QUANTA COMPUTER

Title	FAN & THERMAL	
Size	Document Number FM6	Rev 1A
Date: Wednesday, July 30, 2008	Sheet 39 of 58	

INTERNAL SPEAKER AMP

AZALIA (HD) CODEC

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

TPA6040A4 QFN 32PIN

92HD73C

Layout Note: Place close U34 pin 23.

Layout Note: Close to U35 Pin 34

Layout Note: Close to U35 Pin 13

Layout Note: Place close to pin 18.

Layout Note: Place close U34.

Layout Note: Place close to pin 8.

Depop R561,C786 for using 92HD73C

Depop R603, R617, R578,R616 Pop R602, R619, R562 ,R601, for using 92HD73C R602,R617 close to U35, Let DVDD width be 10-mils

FB_60ohm+-25%_100MHz _3A_0.05ohm DC

EMI Request

Close to U35 7/10-61

2/16-16

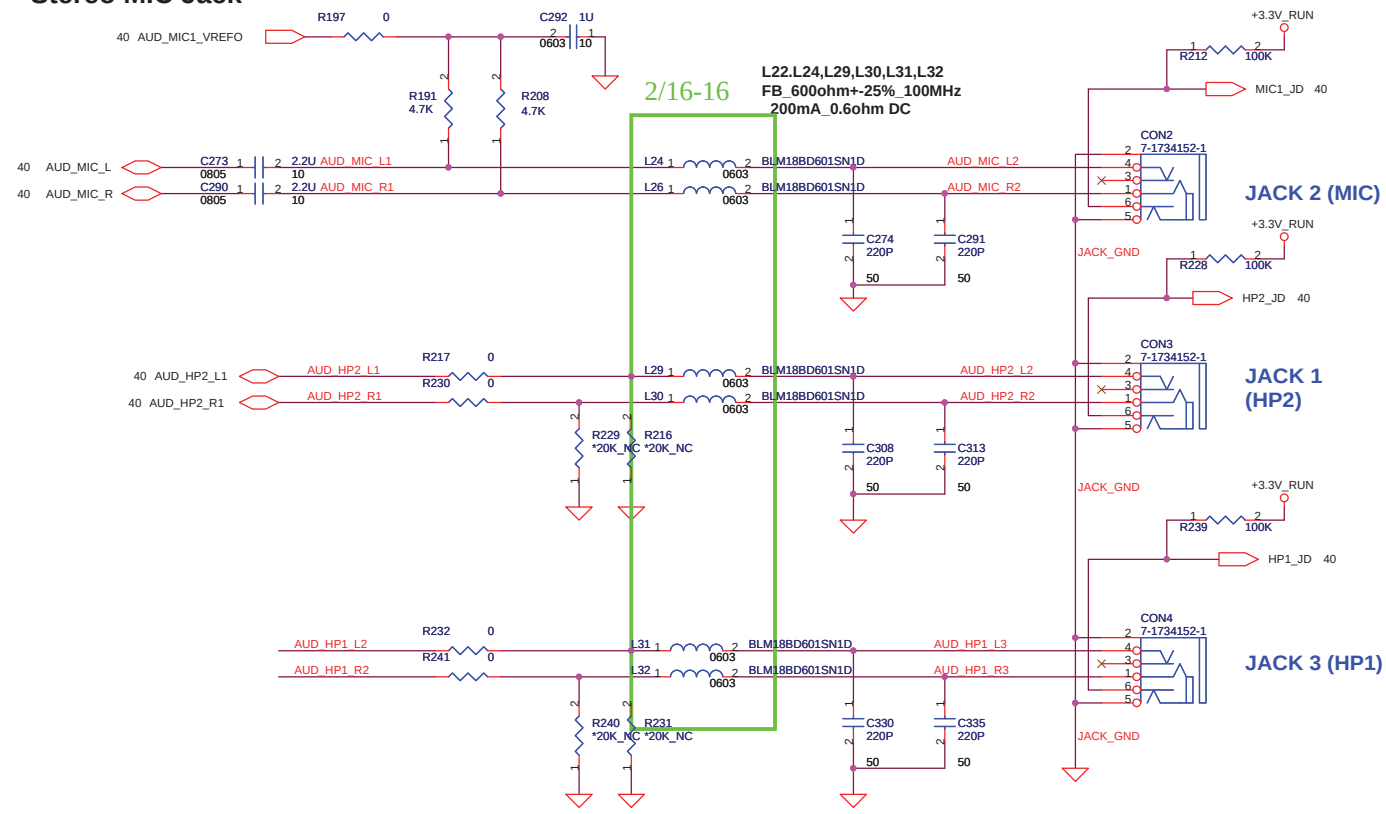
QUANTA COMPUTER

Title: Azelia CODEC

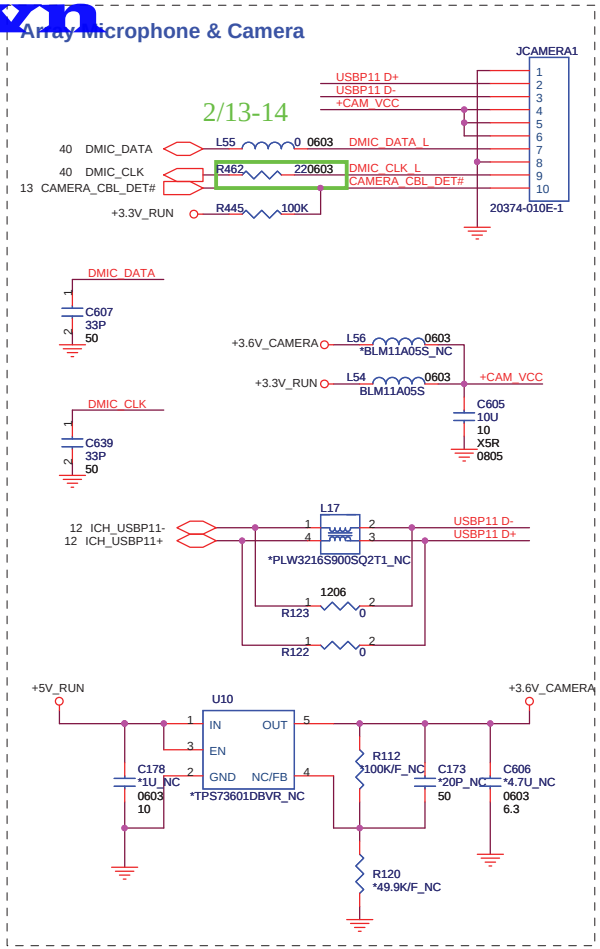
Size: | Document Number: FM6 | Rev: 2A

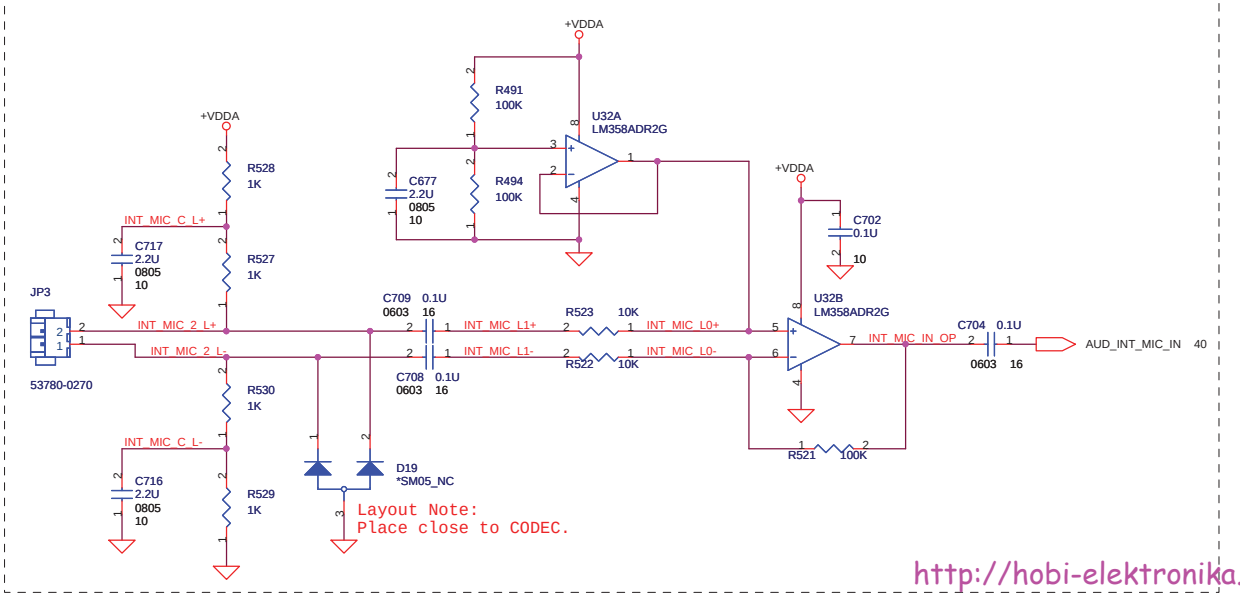
Date: Wednesday, July 30, 2008 | Sheet 40 of 58

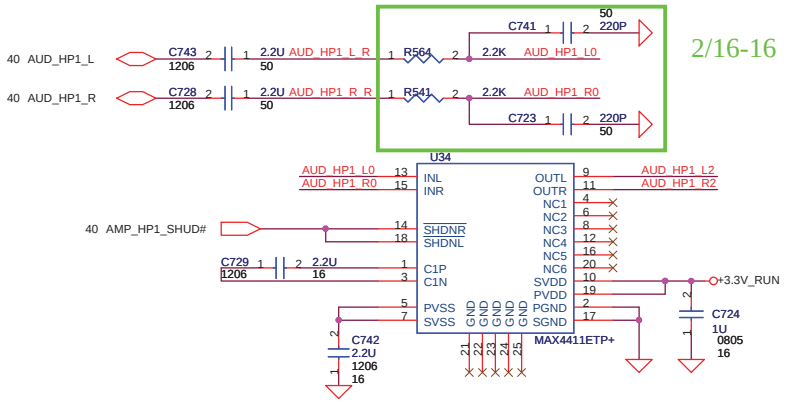
Headphone Jack
Stereo MIC Jack



Array Microphone & Camera







QUANTA COMPUTER

Title	AUDIO CONN	
Size	Document Number FM6	Rev 2A
Date: Monday, August 04, 2008	Sheet 41 of 58	

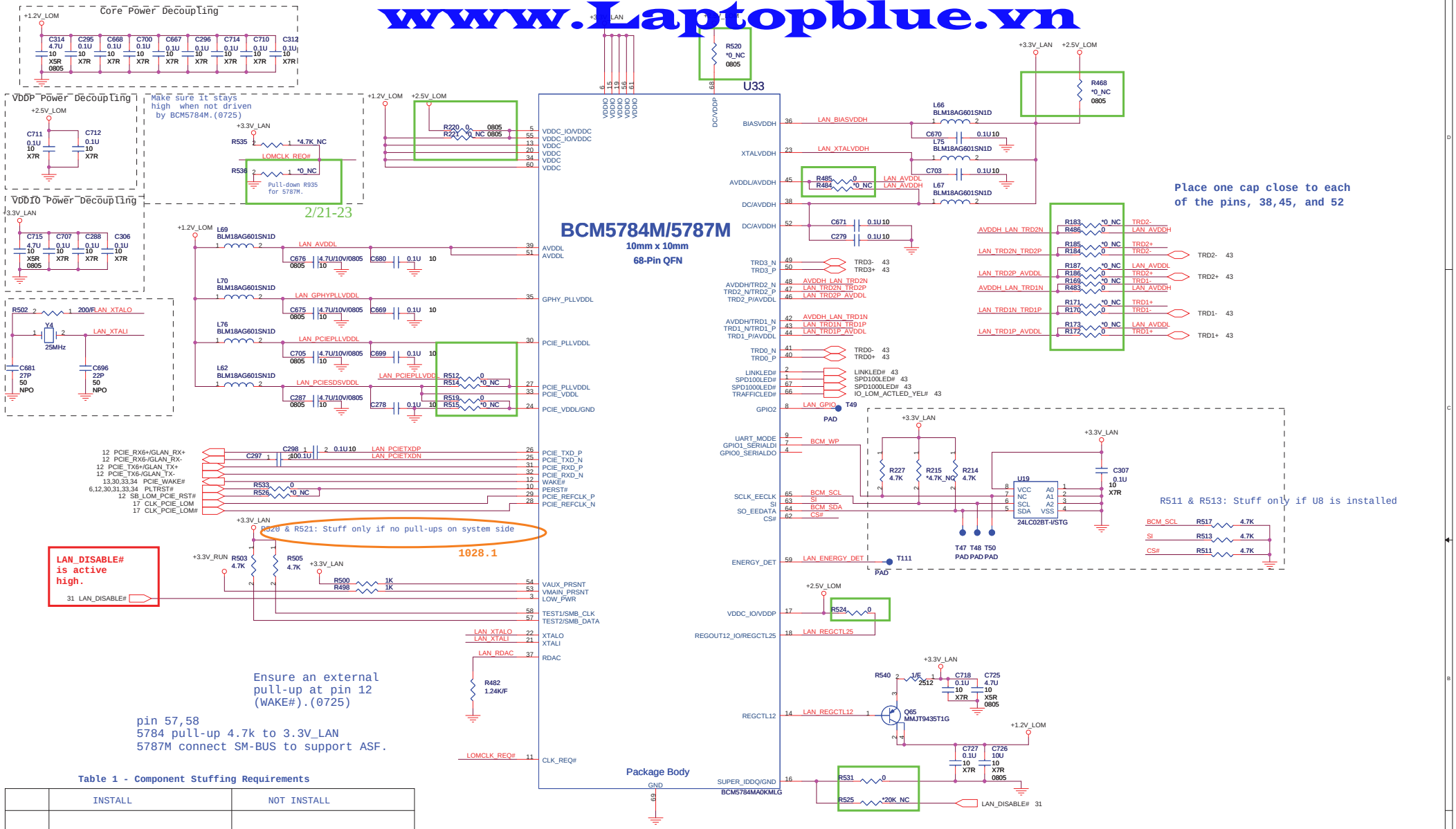


Table 1 - Component Stuffing Requirements

	INSTALL	NOT INSTALL
5787M	R221,R487,R488,Q55,C671,C672, C686,C687,R174,R176,R178,R169, R171,R173,R459,R443,R492	R209,R485,R491,R496,R461,R175, R177,R458,R170,R172,R460,R451
5784	R209,R485,R491,R496,R461,R175, R177,R458,R170,R172,R460,R451	R221,R487,R488,Q55,C671,C672, C686,C687,R174,R176,R178,R169, R171,R173,R459,R443,R492

	5784M	5787M
R503	39k	0
R497	20k	*20k_NC

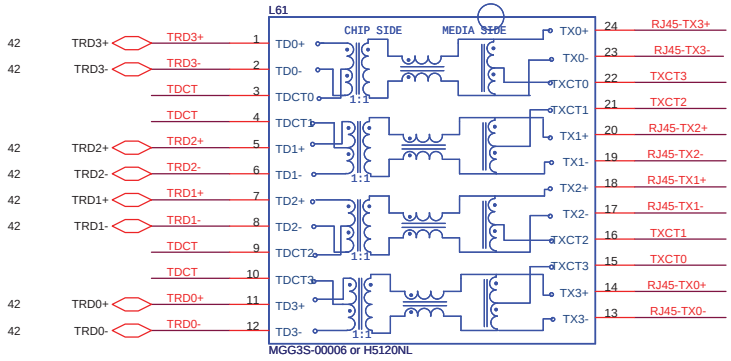
QUANTA COMPUTER

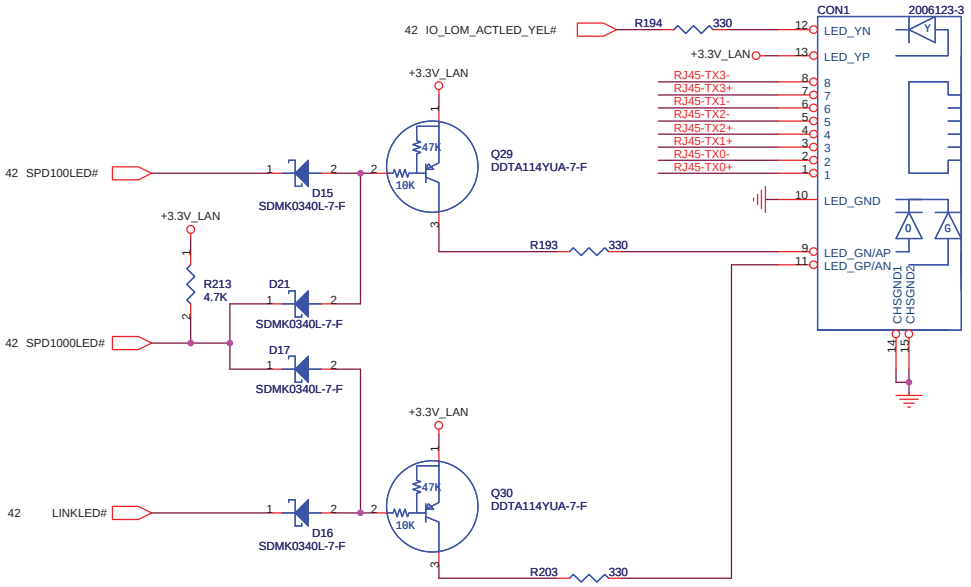
Title	LAN	
Size	Document Number FM6	Rev 3A
Date: Monday, June 30, 2008	Sheet 42 of 58	

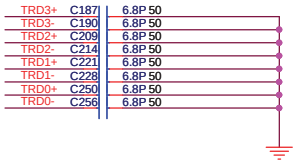
RJ-45 Connector

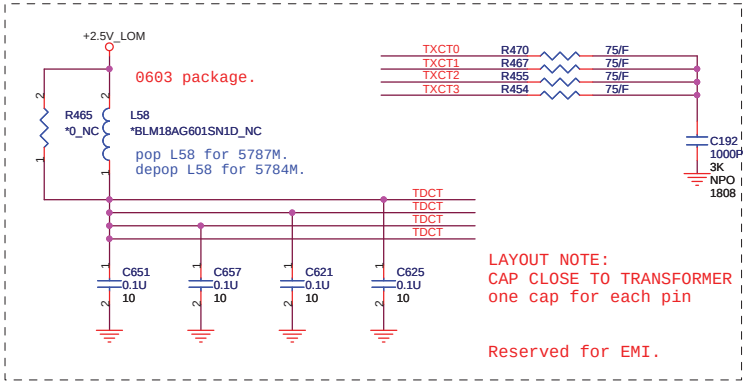
TRANSFORM

TRANSFORM









QUANTA COMPUTER

Title	LAN SWITCH	
Size	Document Number FM6	Rev 3A
Date: Monday, June 30, 2008	Sheet 43 of 58	

8/01-71

+3.3V_SUS

+3.3V_ALW

R330 *0_NC

R255 0

U11 74AHC1G08GW

13,31,51 IMVP_PWRGD

31 RESET_OUT#

ICH_PWRGD 6,13

4/23-48

Keep Away from high speed buses

3/24-35

+3.3V_ALW

U39A

48 1.5V_RUN_PWRGD

SN74AHC08PW

U39C

SN74AHC08PW

U39B

50 GFX_PCIE_PWRGD

50 GFX_CORE_PWRGD

SN74AHC08PW

U39D

48 1.05V_RUN_PWRGD

HWPG

HWPG 31

SN74AHC08PW

+3.3V_ALW

U12 74AHC1G08GW

49 1.8V_SUS_PWRGD

31 RUN_ON_1

RUN_ON 20,26,48,49,53

R146 *0_NC

4/23-48

R145 *10K_NC RUN_ON

R147 *10K_NC RUN_ON_1

QUANTA COMPUTER

Title	System Reset Circuit	
Size	Document Number FM6	Rev 2A
Date: Friday, August 01, 2008	Sheet 44 of 58	

QUANTA COMPUTER

Title	Battery Selector	
Size	Document Number FM6	Rev 1A
Date: Monday, June 30, 2008	Sheet 45 of 58	

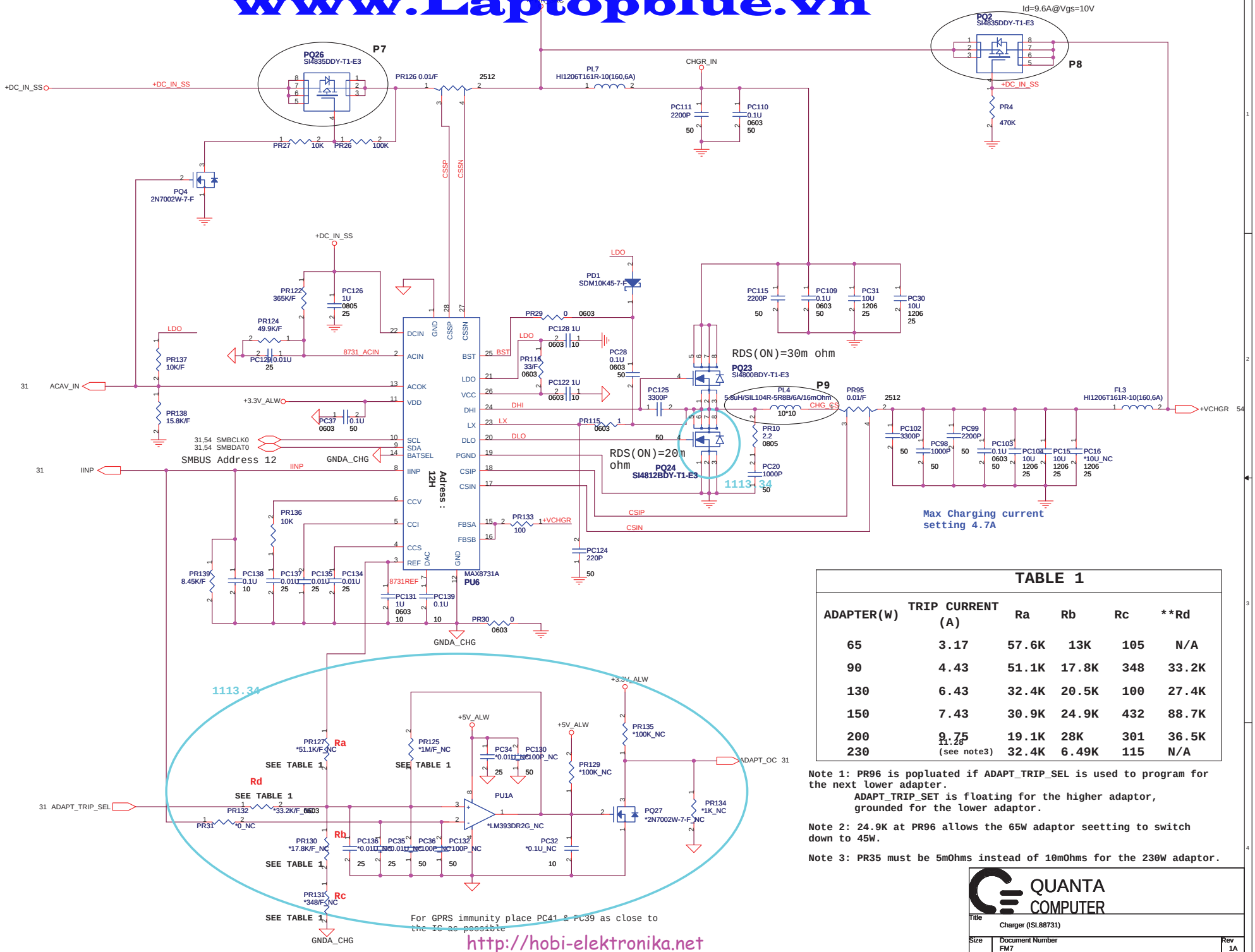


TABLE 1

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

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

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

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

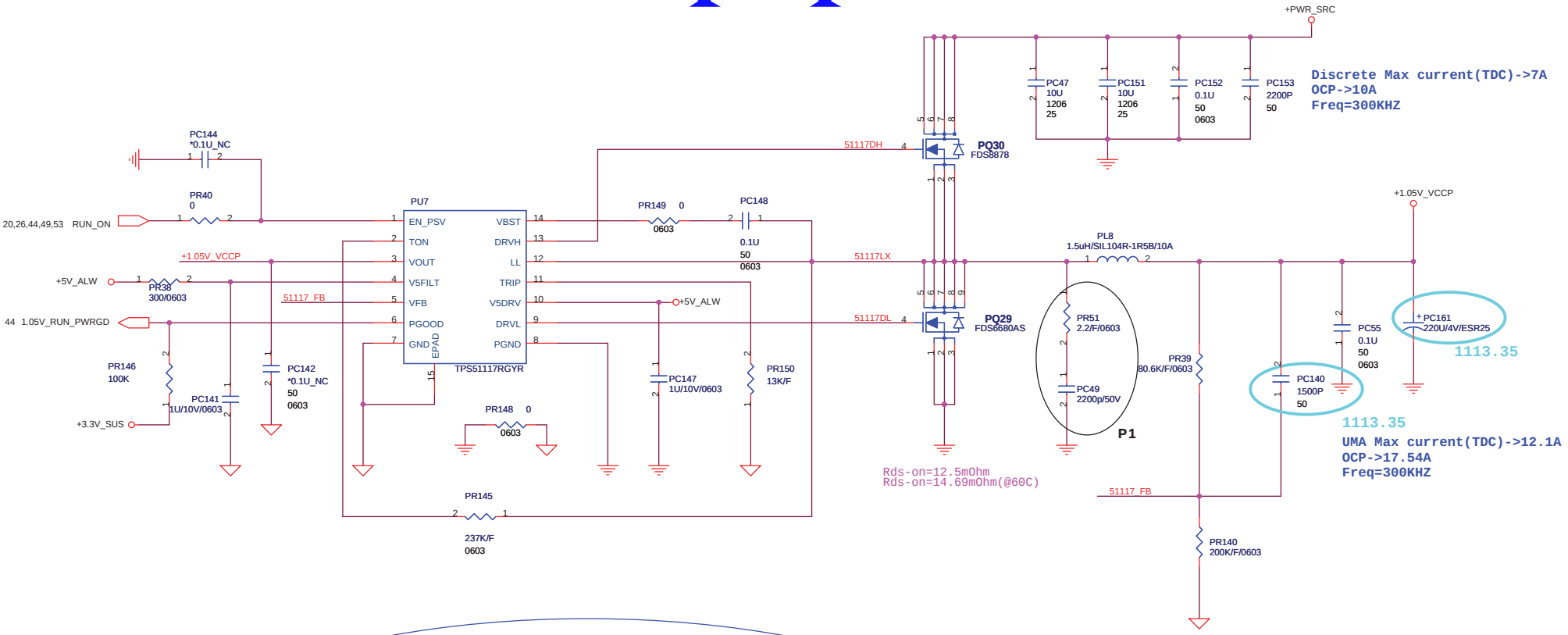
QUANTA COMPUTER

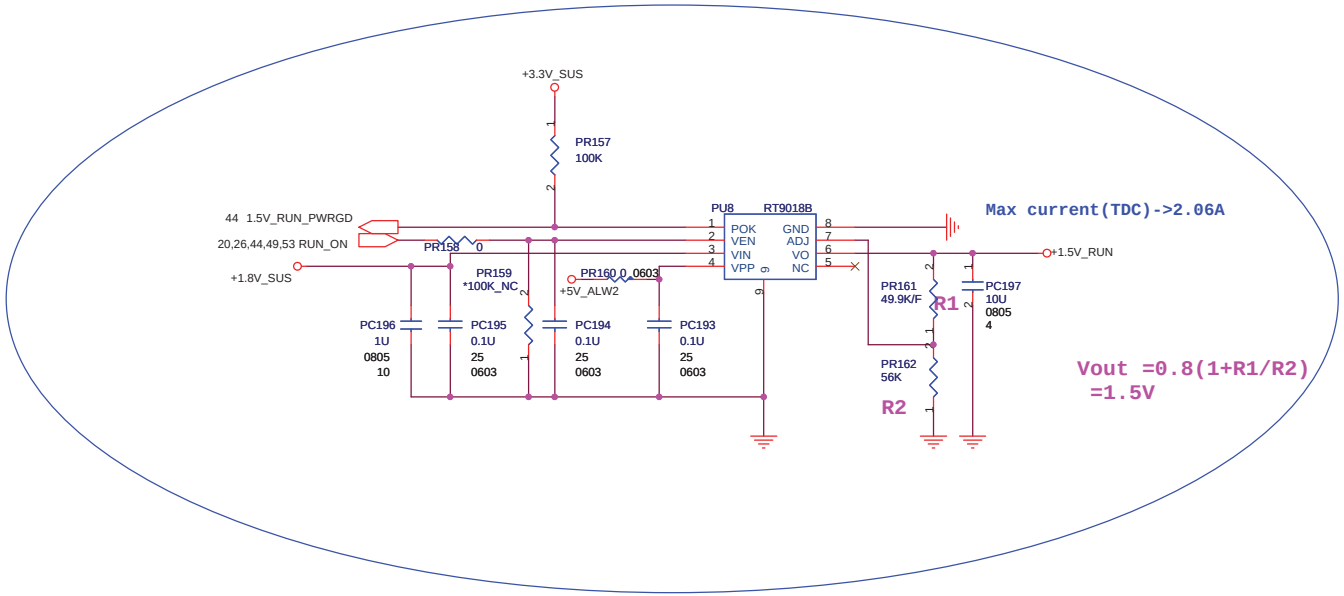
Title	Charger (ISL88731)	
Size	Document Number FM7	Rev 1A
Date: Wednesday, July 30, 2008	Sheet 46 of 60	

BLANK PAGE FOR PAGE NUMBER SAME AS DISCRETE

QUANTA COMPUTER

Title		
Size	Document Number FM7	Rev 1A
Date: Monday, June 30, 2008	Sheet 47 of 60	

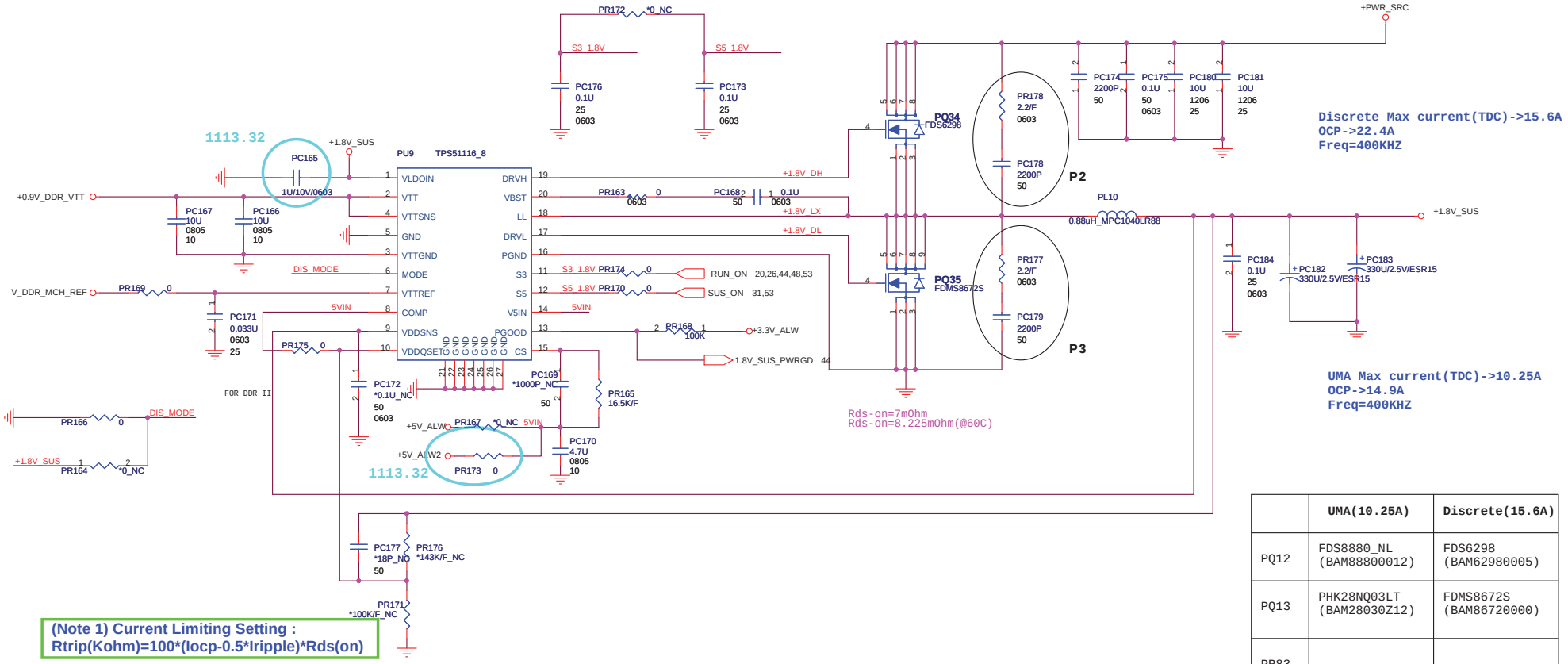




	UMA(12.1A)	Discrete(7A)
PQ22	FDS8880_NL (BAM88800012)	FDS8878 (BAM88780020)
PQ25	FDS6676AS_NL (BAM66760026)	FDS6680AS (BAM66800061)
PL25	SIL105RA-1R5-R (CV-15F0MZ08)	SIL104R-1R5PF (DC-15A00010)
PR452	9.09K/F (CS29092FB27)	10K/F (CS31002FB26)

QUANTA COMPUTER

Title	1.05_VCCP & 1.5V_RUN	
Size	Document Number FM7	Rev 1A
Date: Wednesday, July 30, 2008	Sheet 48 of 60	

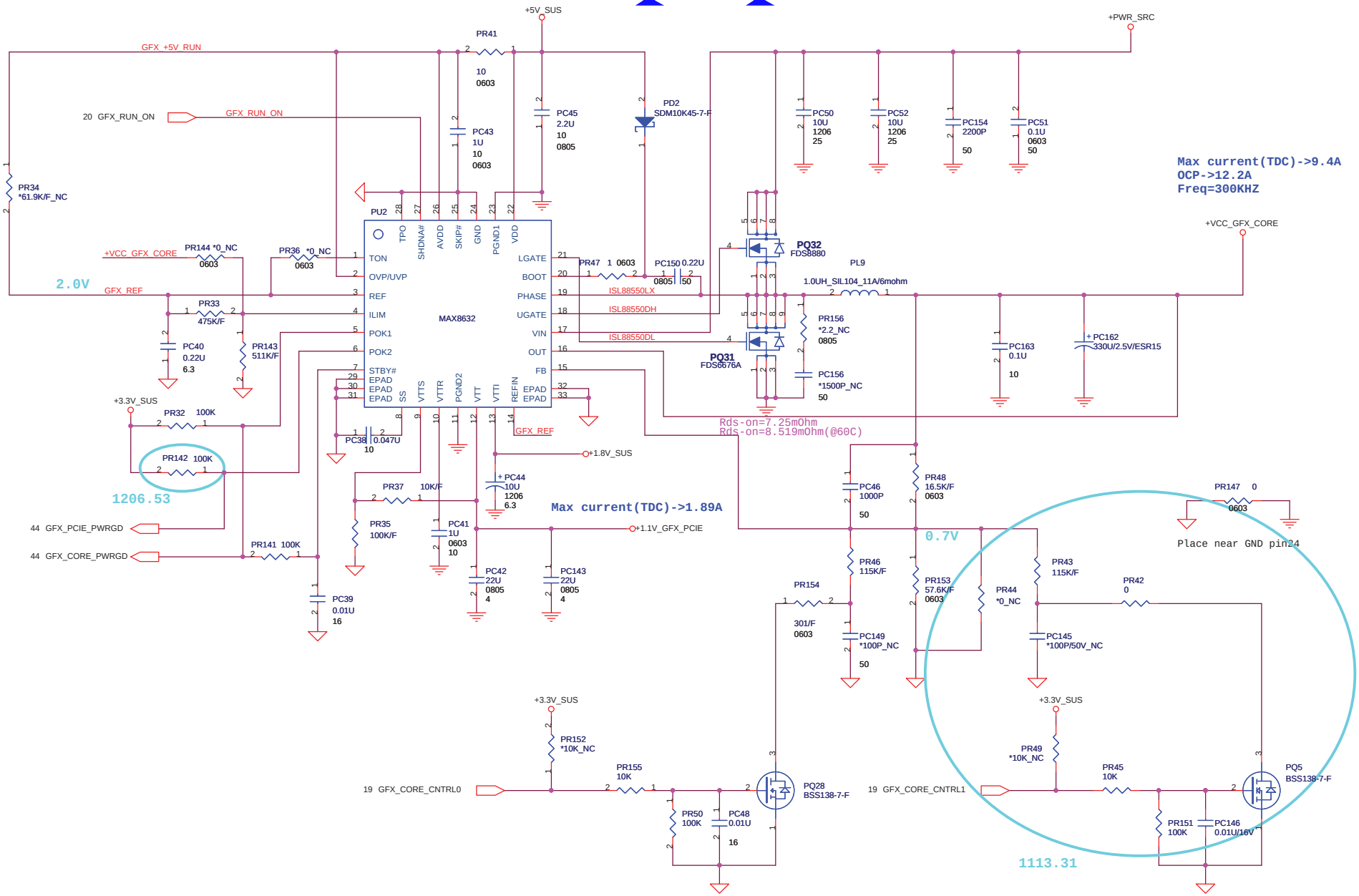


(Note 1) Current Limiting Setting :
Rtrip(Kohm)=100*(Iocp-0.5*Iripple)*Rds(on)

	UMA(10.25A)	Discrete(15.6A)
PQ12	FDS8880_NL (BAM88800012)	FDS6298 (BAM62980005)
PQ13	PHK28NQ03LT (BAM28030Z12)	FDMS8672S (BAM86720000)
PR83		

QUANTA COMPUTER

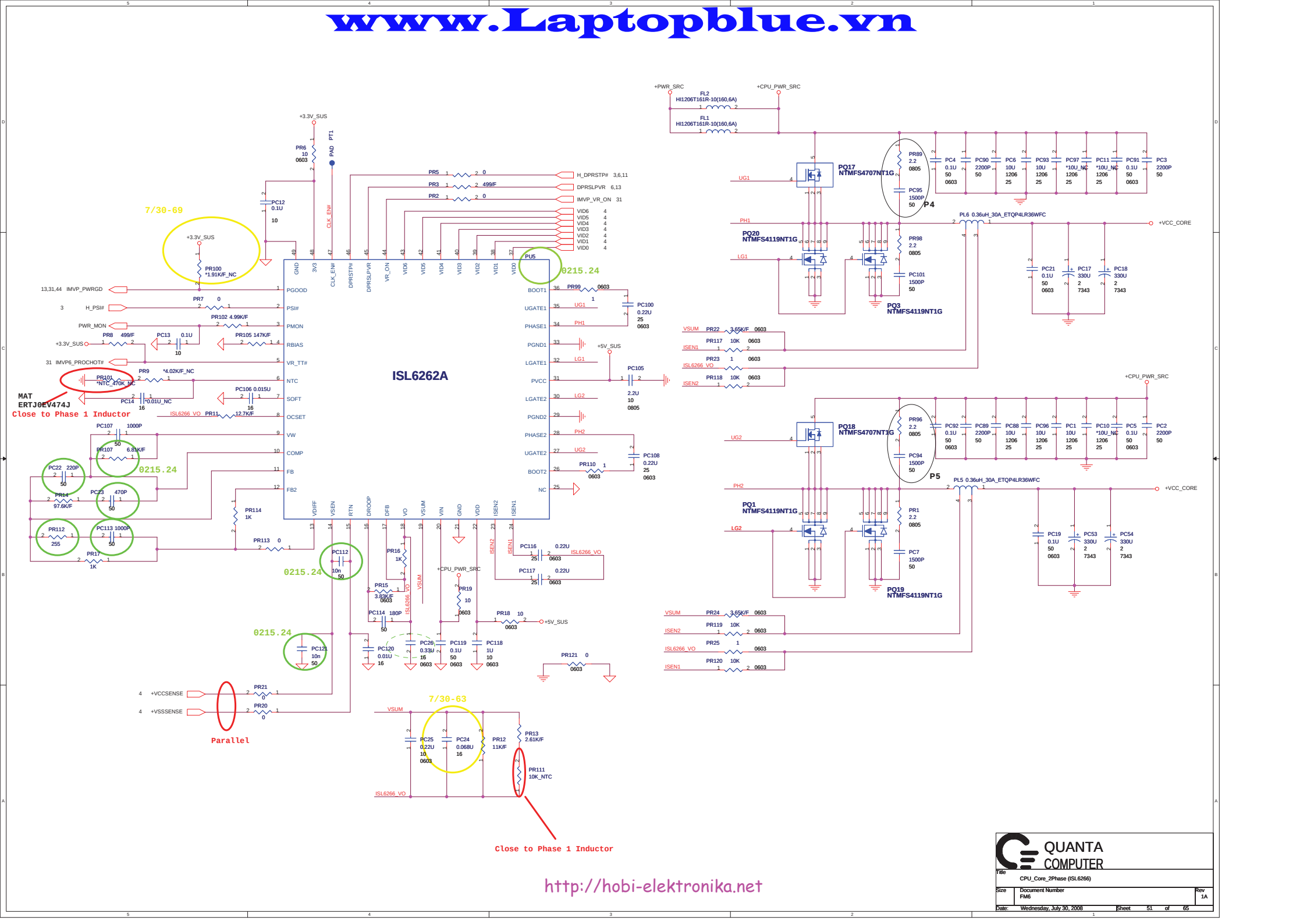
Title	1.8VSUS & 0.9VTT (TPS51116)	
Size	Document Number FM7	Rev 1A
Date: Thursday, July 31, 2008	Sheet 49 of 60	



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

QUANTA COMPUTER

Title	VGA DC/DC	
Size	Document Number FM7	Rev 1A
Date: Wednesday, July 30, 2008	Sheet 50 of 60	



QUANTA COMPUTER

Title	CPU_Core_2Phase (ISL6266)	
Size	Document Number FM6	Rev 1A
Date: Wednesday, July 30, 2008	Sheet 51 of 65	

DC/DC +3V_ALW/+5V_SUS/+5V_ALW /+15V_ALW

Place these CAPs close to FETs

Place these CAPs close to FETs

Max current->6A
OCP->8.3A
Freq=400KHZ

Max current->6.2A
OCP->8.63A
Freq=300KHZ

Rds-on=20mOhm
Rds-on=23.5mOhm(@60C)

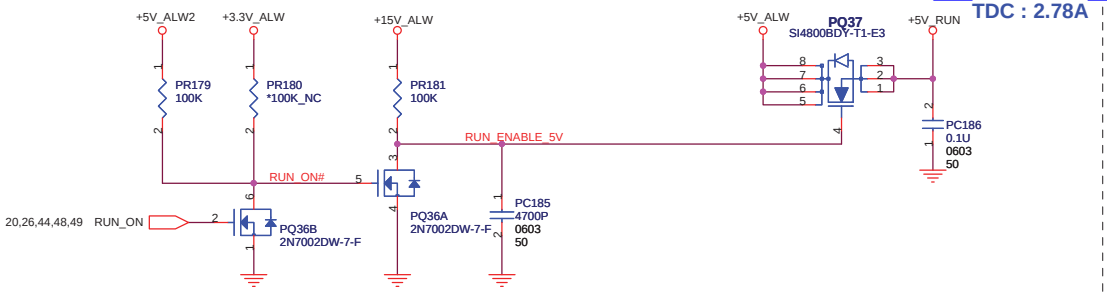
Rds-on=20mOhm
Rds-on=23.5mOhm(@60C)

6/17-57
4/18-44

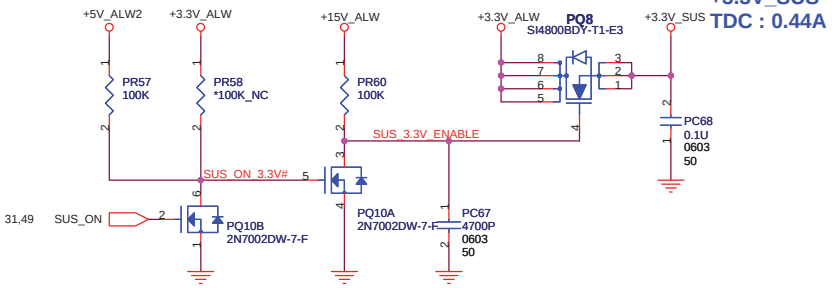
Title	3VALW,5V,3V, Power On
Size	Document Number FM7
Rev	1A
Date:	Thursday, July 31, 2008
Sheet	52 of 60

QUANTA COMPUTER

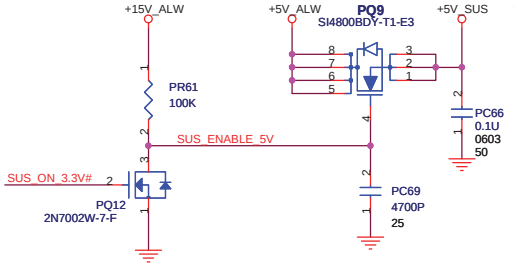
+5V_RUN
TDC : 2.78A



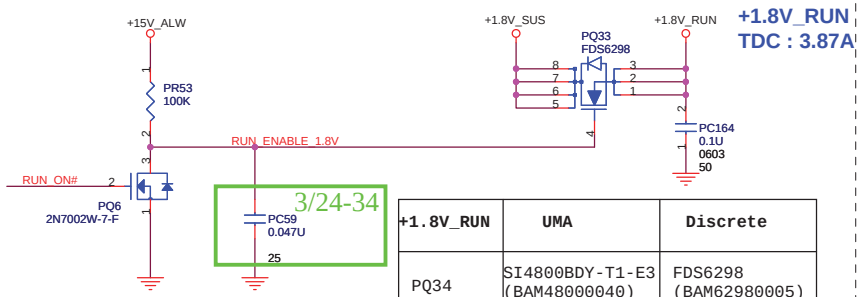
+3.3V_SUS
TDC : 0.44A



+5V_SUS
TDC : 1A

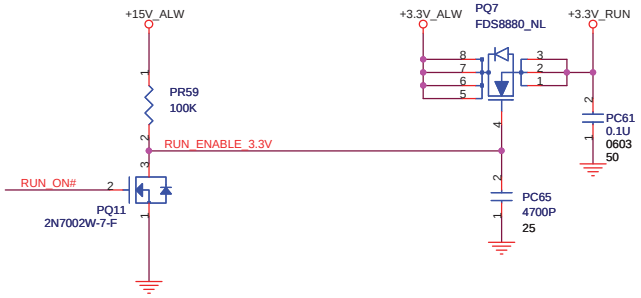


+1.8V_RUN
TDC : 3.87A

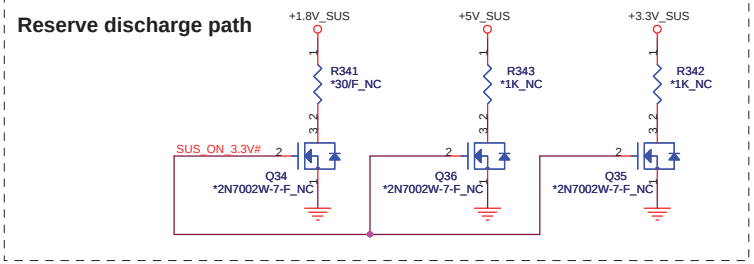


+1.8V_RUN	UMA	Discrete
PQ34	SI4800BDY-T1-E3 (BAM48000040)	FDS6298 (BAM62980005)

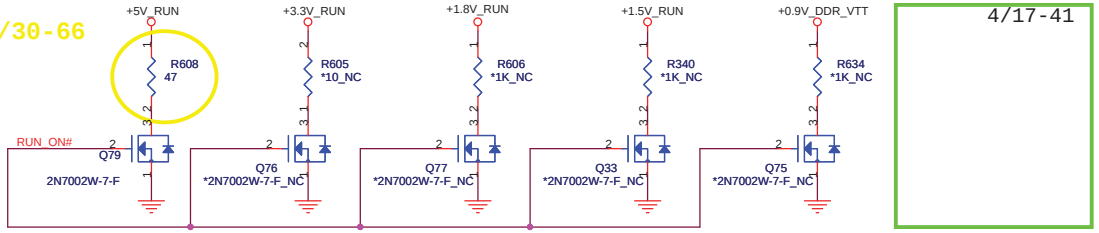
+3.3V_RUN
TDC : 5.23A



Reserve discharge path

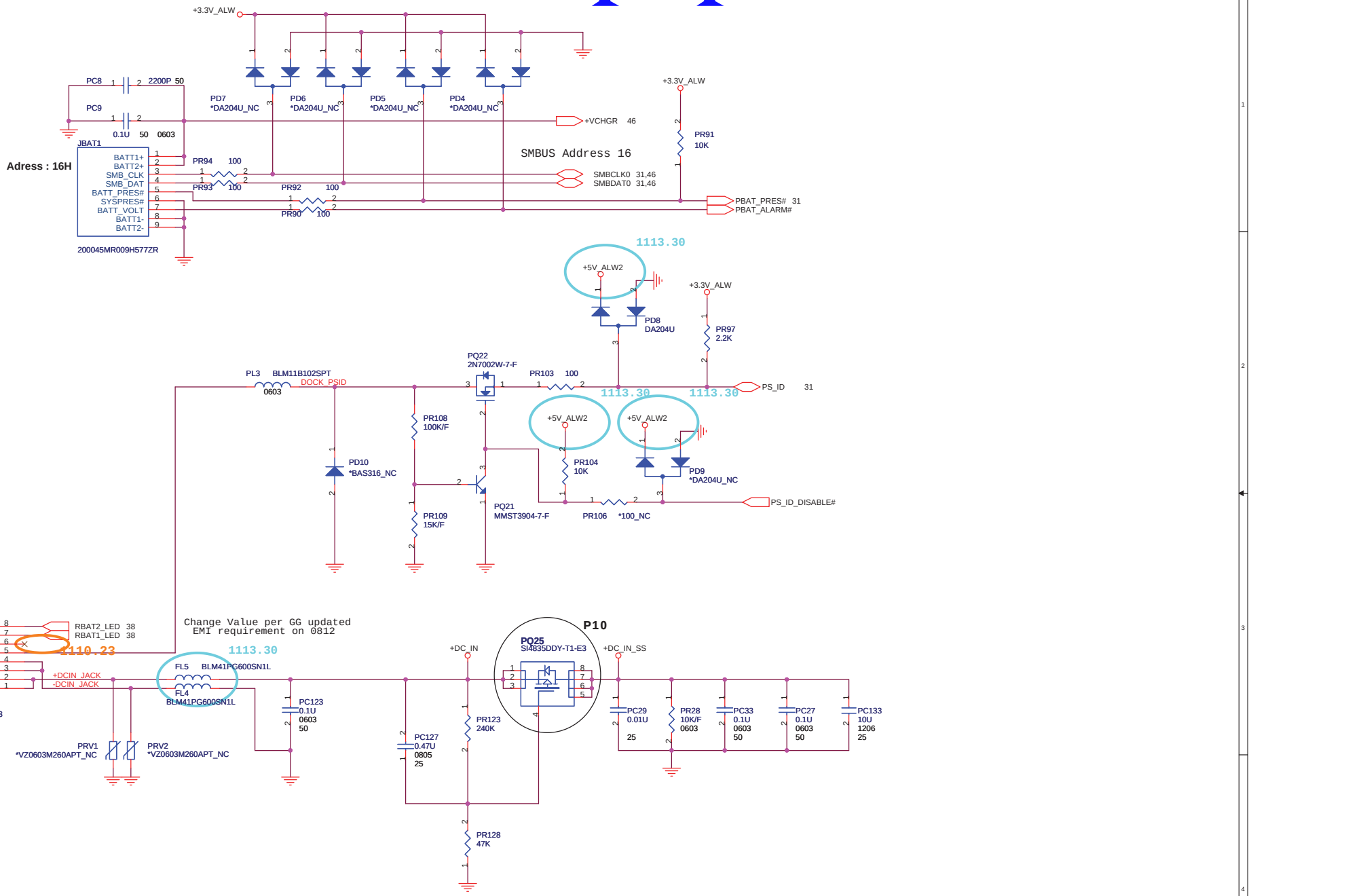


Reserve discharge path



QUANTA COMPUTER

Title	RUN POWER SW	
Size	Document Number FM7	Rev 1A
Date: Wednesday, July 30, 2008	Sheet 53 of 60	



QUANTA COMPUTER

Title	DCIN,BATT CONNECTOR	
Size	Document Number FM7	Rev 1A
Date: Wednesday, July 30, 2008	Sheet 54 of 60	

H18
H-O126X157D126X157N
H-O126X157D126X157N

H9
H-C126D126N
H-C126D126N

H23
H-O126X157D126X157N
h-o165x87d165x87n

H24
H-O126X157D126X157N
H-C118D118N

PAD138X98XH
GND

PAD158X98XH
GND

4/22-46

TH34
h-o71x118d32x79p2

TH35
h-o71x118d32x79p2

6/12-54

H3
H-C315D110P2-V4
H-TC197BC236D110P2-V4

H7
H-TC197BC216D110P2-V4
H-TC197BC216D110P2-V4

H15
H-C315D110P2-V4
H-C315D110P2-V4

H22
H-TC354BS335D110P2-V4
H-TC354BS335D110P2-V4

H17
H-C315D110P2-V4
H-TC197BC236D110P2-V4

H20
H-TSBC315D110P2-V4
H-TSBC315D110P2-V4

H6
H-TC276BC315D110P2-V4
H-TC276BC315D110P2-V4

H12
H-TC216BC236D110P2-V4
H-TC216BC236D110P2-V4

H16
H-C236D110P2-V4
H-C236D110P2-V4

H21
H-TC335BS335D110P2-V4
H-TC335BS335D110P2-V4

H19
H-TSBC315D126P2-V4
H-TSBC315D126P2-V4

FOR GPU use

H8
*FBJM5030_NC
H-C256D154P2

H13
*H-C256D154P2_NC
H-C256D154P2

H1
H-C256D110P2-V4
H-TC197BC236D110P2-V4

H2
H-TC197BC236D110P2-V4
H-TC197BC236D110P2-V4

H14
H-C236D110P2-V4
H-C236D110P2-V4

FOR CPU use

H11
*H-C276D157P2_NC
H-C276D157P2

H5
*H-C276D157P2_NC
H-C276D157P2

H10
*H-C276D157P2_NC
H-C276D157P2

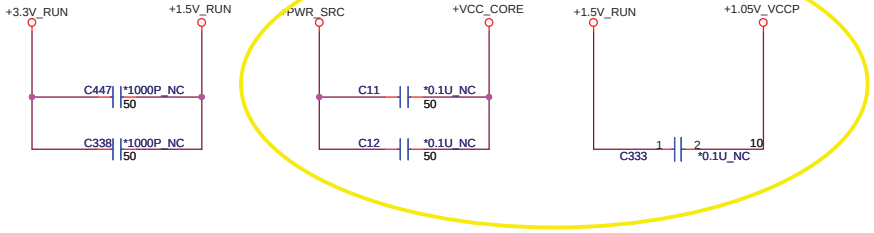
H4
*H-C276D157P2_NC
H-C276D157P2

QUANTA COMPUTER

Title	SCREW PAD	
Size	Document Number FM6	Rev 2A
Date: Monday, June 30, 2008	Sheet 55 of 58	

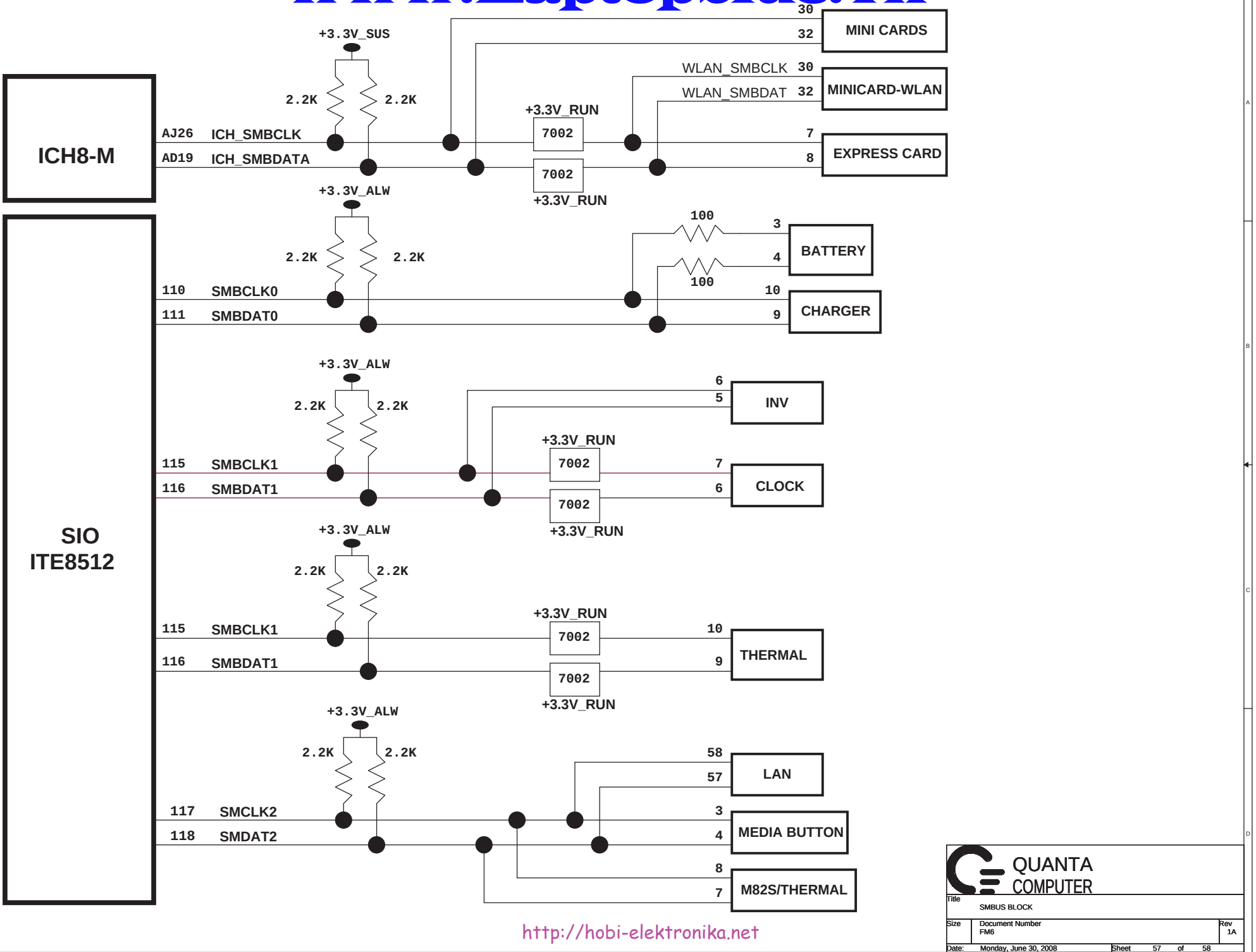
Reserved for EMI.

0906.1



QUANTA COMPUTER

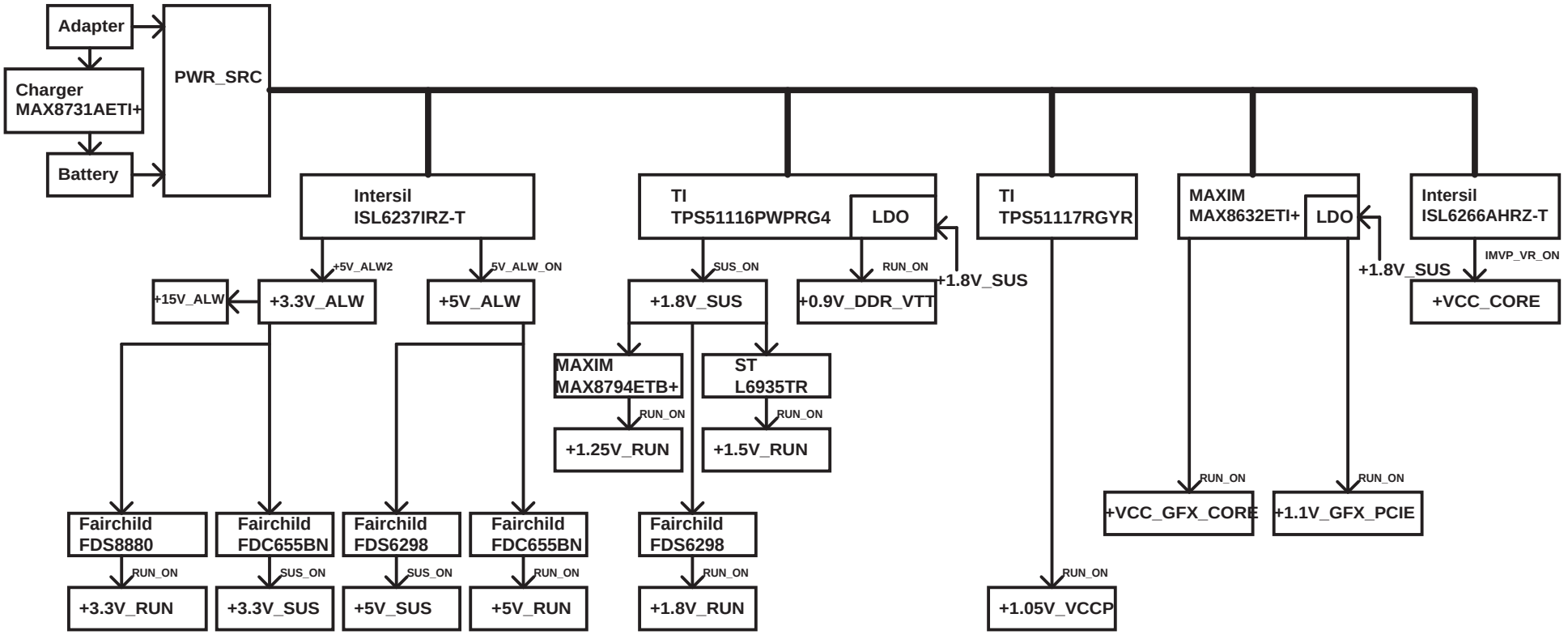
Title	EMI CAP	
Size	Document Number FM6	Rev 1A
Date: Monday, June 30, 2008	Sheet 56 of 58	



QUANTA COMPUTER

Title	SMBUS BLOCK	
Size	Document Number FM6	Rev 1A
Date: Monday, June 30, 2008	Sheet 57 of 58	

VER : 1A



QUANTA COMPUTER

Title	Schematic Block Diagram1	
Size	Document Number FM6	Rev 1A
Date: Monday, June 30, 2008	Sheet 58 of 58	

Model	Item	Page	Date	ECN Number	Item Id	Rev.	Issue Description	Solution Description
FM7	1	3	2-13-08				Debug port needs to be updated for MV	Change the BOM, and add a pull hign circuit on ITP_BPM#5
	2	3	2-13-08				H_THERM circuit has risk	Change the BOM in order to make it same with FM6
	3	8	2-13-08				VCC_AXG and VCC_AXG_NCTF are different with MV DG	Change VCC_AXG, and VCC_AXG_NCTF to ground
	4	11, 35	2-13-08				Add E-SATA function	Refer to page 11 and 35
	5	13	2-13-08				Some power rails don't mach with DG	Refer to page 13
	6	17	2-13-08				BSEL0, BSEL1, and BSEL2's seris resisters don't mach with DG	Refer to page 17
	7	9	2-13-08				VCCA_SM doesn't mach with DG	Add 0-ohm in order to make it same with other project
	8	9	2-13-08				VCCD_TVDAC and VCCD_QDAC are different with DG	Grond VCCD_TVDAC and update another circuit for VCCD_QDAC
	9	19,22	2-13-08				Change the power rail for avoiding leakage during power up	Change +3.3V_RUN to +3.3V_DELAY
	10	37	2-13-08				MMB vender changed it's F/W to fix the LED flash issue. Change Num/Cap LED circuit for avoiding leakage voltage	Change the circuit, refer to page 37
	11	35	2-13-08				Fulfill reliability's request	Add one more power pin on connector
	12	31	2-13-08				New chip version for ITE	Change the circuit
	13	40,42	2-13-08				Change chip version for Codec and LOM	Done
	14	41	2-13-08				Approve DMIC'S performance according to IDT's recommendation	Change o-ohm to 22-ohm
	15	26	2-16-08				DDC BUS for HDMI Certificate	Add Level Shift on DDC BUS of HDMI
	16	40,41	2-16-08				Need to meet WLP4.0	Refer to page 40 and 41
	17	31	2-16-08				Add audio solution for PO noise issue when loading driver	Connect ICH_AZ_CODEC_RST# to SIO.22
	18	14	2-18-08				Reserve +1.5V_SUS for VCCSUSHDA	Add a LDO and reserve 0-ohm for +1.5V_SUS
	19	13	2-18-08				Avoid leakage voltage	Follow the SR FM6 design
	20	17	2-19-08				After FAE review, modify circuit in order to let wave form smooth	Add two 0.1u cap
	21	17	2-20-08				After FAE review, modify circuit for single end nets	change 0-ohm to 33-ohm, add pull high resister
	22	35	2-20-08				Add E-SATA redriver function	Refer to page 35
	23	42	2-21-08				According to FAE, stub a resister	Refer to page 42
	24	17	2-21-08				In order to meet spec, we need to swap two signals	Refer to page 17
	25	35	2-22-08				Co-work with GM3 team and decide to take USB charger function off	Refer to page 35
	26	21	2-22-08				According to realiability team request, change BOM	Change L51
	27	12	2-25-08				Need to meet Dell USB port requirement	Refer to page 12
	28	19	2-25-08				FAE's suggestion is add ground	Refer to page 19
	29	13,37	2-25-08				Add one pin for LCD inventer det	Refer to pages
	30	30	3-03-08				Footprint is wrong for express card	Refer to FM6 footprint
	31	32 35	3-24-08				Change locations for USB and Coin Battery for safty requirement	Refer to those pages
	32	26 35	3-24-08				Change BOM for HDMI and E-sata	Refer to those pages
	33	49	3-24-08				Del 1.25V power rail	Refer to page 49
	34	53	3-24-08				Change BOM for correcting power sequence	Refer to page 53

QUANTA COMPUTER

Title	Change List		
Size	Document Number FM7		Rev 1A
Date:	Wednesday, June 18, 2008	Sheet 1 of 6	

Model	Item	Page	Date	ECN Number	Issue Description	Solution Description
FM7	35	44	3-24-08		Change system reset circuit	Refer to page 44
	36	19	3-28-08		Change HDMI detect circuit	Refer to page 19
	37	26	3-28-08		In order to pass HDMI 7-13 item	Change diode, which has only 2pF internal capacitance
	38	31	3-28-08		ITE EC hardware issue	Del a cap
	39	1,31	4-03-08		Get schematic ready for PT build	Change block diagram and Board ID strap pin
	40	28	4-09-08		Leakage voltage issue	Change 0-ohm to diode
	41	53	4-17-08		1.25V_RUN discharge voltage is no need	Remove it
	42	30,35 26 27	4-17-08		EMI Issue	Refer to pages
	P1	48	4-17-08		For EMI suggested	populate 2.2ohm in PR56 and 1500pf in PC49
	P2	49	4-17-08		For EMI suggested	populate 2.2ohm in PR178 and 1500pf in PC178
	P3	49	4-17-08		For EMI suggested	populate 2.2ohm in PR177 and 1500pf in PC179
	P4	51	4-17-08		For EMI suggested	populate 2.2ohm in PR89 and 1500pf in PC95
	P5	51	4-17-08		For EMI suggested	populate 2.2ohm in PR96 and 1500pf in PC94
	P6	48	4-17-08		LDO cost issue	Change one LDO to another vender
	43		4-18-08		Change connectors PN due to connector list changes J2,JP1,JP2,J3,JSIM1,J5,J6,BT1., AND JDIM2	Refer to locations
	44	52	4-18-08		ATI OTP circuit redesigned	Refer to page 52
	45	28	4-18-08		the leakage voltage can be solved by EC	Change diode back to resister
	46	55	4-22-08		Layout team request two hole footprints and EMI spring	Refer to page 55
	47	37	4-22-08		K/B B/L circuit change to high active	Refer to page 37
	48	3 44	4-23-08		BOM change for CPU and system reset circuit	Change Resister value to 56 ohm for prochot pin and AND gate PN

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Model	Item	Page	Date	ECN Number	Item	Key	Issue Description	Solution Description
FM7	49	38	5-29-08				The brightness is not light enough	Change R432 from 220 ohm to 68 ohm
	50	26	5-29-08				Secound sources team ask to change the diode PN.	Change D27 to another PN, which use on the other pages
	51	9	5-29-08				The diode PN is not on DELL PSL	Change PN
	52	35	5-29-08				Remove E-sata redriver	Refer to page 35
	53	13	6-11-08				Dell asks us to support KB_DET function	Add 0-ohm, which make the schematic work
	54	55	6-12-08				EMI request to change EMI spring PN and location Factory asks us to have a housing for CIR	Rerer to page 55
	55	40	6-16-08				Audio codec has new version	Change PN
	56	35	6-16-08				USB power IC is going to pass UL, so we will need to change it to new one	Change PN
	57	52	6-17-08				DELL's request on thermal detect pin	Refer to page 52
	58	3	6-27-08				Follow INTEL CRB and schematic checl list 2.0	De-pop H_RESET# PU resistor

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Model	Item	Page	Date	ECN Number	Item Id	Rev.	Issue Description	Solution Description
FM7	59	31	6-30-08				1.System not stable2.RTC time reset3.BIOS crash issue4.RTC discharge then system can boot.	Add 1K pull-down on KBC 8512 pin 87 RESET_OUT#
	60	35,48,49, 50,52	7-10-08				FM7 forward to QT status	Remove all debug power jumps
	61	40	7-10-08				Pin 1 V_high is lower than +VDDA*0.7	Change U41 P/N to ALCT1G86000,cause its Vih=2V
	62	30	7-30-08				MS card test fail, and EMI request	Change 27P to 22P
	63	51	7-30-08				Power Team ask to change the value from 0.022u to 0.068u	Refer to the Page 51
	64	31	7-30-08				Board ID Straps	Change Board ID Straps
	65	26	7-30-08				Fix 7-13 HDMI issue	Add 0805 0 ohm at D27 location
	66	53	7-30-08				Fix 7-13 HDMI issue	Pop Q79, R608 and R608=47
	67	31	7-30-08				Cold boot issue	Refer tp Page 31
	68	13	7-30-08				Change the power from +3.3V_SUS to +3.3_RUN	Change the value of R247(1.91K)
	69	51	7-30-08				Change the power from +3.3V_SUS to +3.3_RUN	Del PR100
	70	17,33	7-30-08				Remove debug function	Refer tp P17,P33
	71	44	8-01-08				Reserve 3.3V_SUS and 3.3V_ALW power	Refer tp P44

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