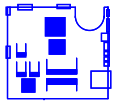
FM7B Hepburn Intel UMA VER : D3B



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

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
- LVDS → Panel Connector PG 26
- SDVO → PI3VDP411LSZDE PG 18 → HDMI → HDMI CONN. PG 26
- VGA → CRT CONN. PG 27
- USB2.0 x 4 → USB conn x 4 PG 35
- PCIEx1 → LAN BCM5784M PG 42 → RJ45/Magnetics PG 43
- DMI interface

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

- SATA-ODD PG 36 — SATA
- SATA-HDD PG 36 — SATA
- PI2EQX3211BHE PG 35 — SATA → E-SATA Combo with USB CONN PG 35
- 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
- USB2.0 → Biometric PG 38
- IHDA / USB2.0 → Cantiga
- 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 → USER INTERFACE PG 38
  - SPI → FLASH 2Mbyts PG 32
  - PS/2 → Touchpad PG 37
- 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 FM7B	Rev 1A
Date: Monday, July 21, 2008	Sheet 1 of 60	

Table of Contents

PAGE	DESCRIPTION
1	Schematic Block Diagram
2	Front Page
3-4	Merom
5-10	Crestline
11-14	ICH8M
15-16	DDRII SO-DIMM(200P)
17	Clock Generator
18	HDMI
23	LCD Conn. & SSP
24	CRT Conn
25	SATA Conn
26-27	CARD READER/Conn & 1394
28	Express Card & Smart Card
29-30	Mini Card
31	SIO (ITE8512)
32	FLASH/RTC
33	USB
35	TP / KEYBOARD
36	SWITCH /LED
37	FAN & Thermal
38-39	Audio CODEC(ALC888)/Phone Jack
40-41	LOM / Switch
44	System Reset Circuit
46	Battery Selector & Charger
48	1.05VCCP / 1.5VRUJN
49	DDR2_1.8VSUS, 0.9V
51	CPU_ISL6266(2phase)
52	MAX8744 (+5.5V,+3,3V)
53	RUN Power Switch
54	DCIN,Batt
55	PAD& SCREW
56	EMI CAP
57	SMBUS BLOCK
58	Power Block Dianram

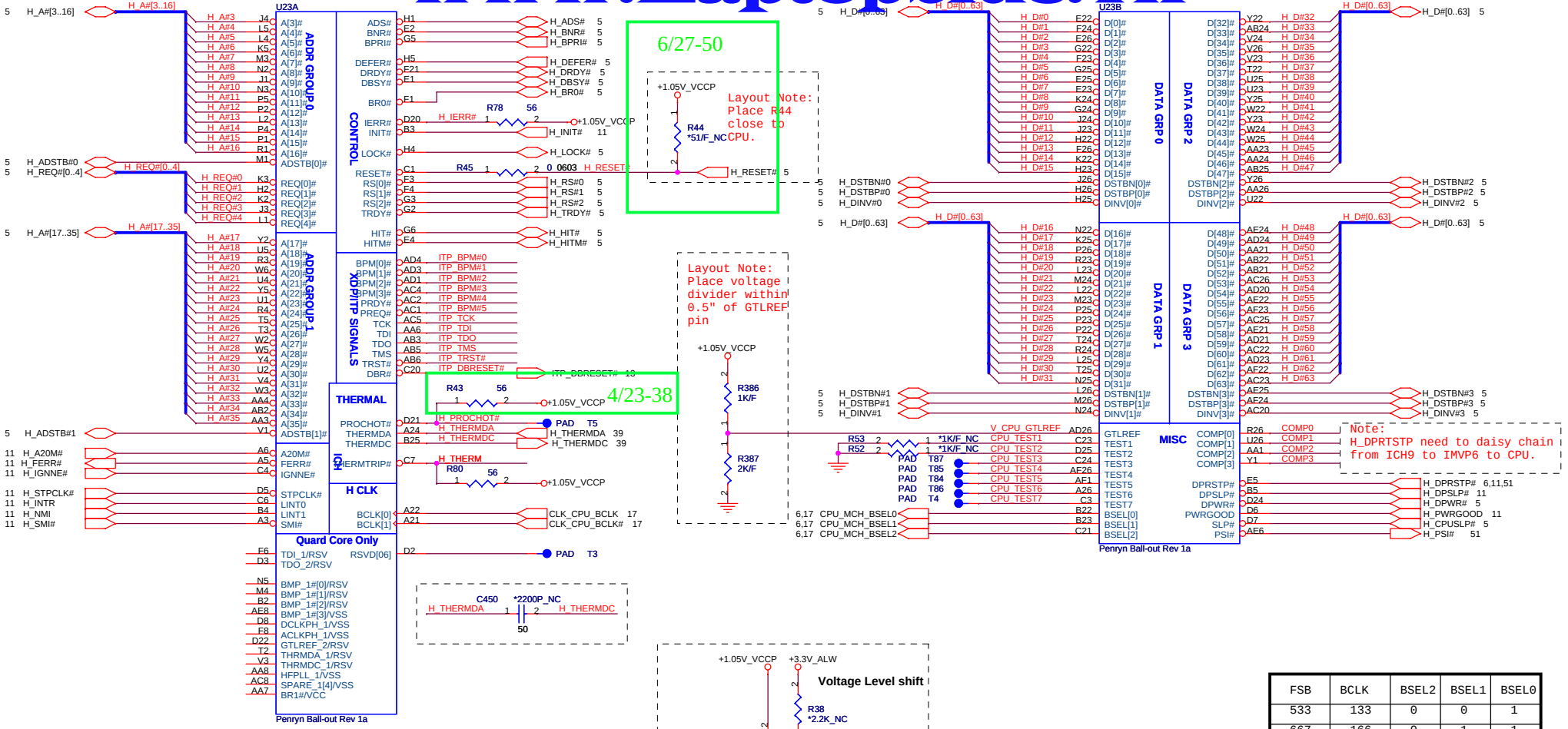
Power State

POWER PLANE	VOLTAGE	PAGE	DESCRIPTION	CONTROL SIGNAL	ACTIVE IN
+PWR_SRC	10V~+19V	4,26,32,34,46,48,49,51,52,56	MAIN POWER		S0~S5
+RTC_CELL	+3.0V~+3.3V	11,14,31,32	RTC		S0~S5
+3.3V_ALW	+3.3V	3,31,32,34,36,37,38,44,46,49,52,53,54	8051 POWER	ALWON	S0~S5
+5V_ALW	+5V	35,36,46,48,49,52,53,54,56	LCD/CHARGE POWER	ALWON	S0~S5
+15V_ALW	+15V	26,36,37,52,53	LARGE POWER	+5V_ALW	S0~S5
+3.3V_LAN	+3.3V	42,43	LAN POWER	AUX_ON	
+5V_SUS	+5V	14,38,51,53	SLP_S5# CTRLD POWER	SUS_ON	
+3.3V_SUS	+3.3V	3,11,12,13,14,26,30,37,38,43,48,49,51,53	SLP_S5# CTRLD POWER	3.3V_SUS_ON	
+1.8V_SUS	+1.8V	6,8,9,15,48,49,53	SODIMM POWER	DDR_ON	
+0.9V_DDR_VTT	+0.9V	16,49,53	SODIMM POWER	0.9V_DDR_VTT_ON	
+5V_RUN	+5V	14,18,27,36,37,38,39,40,41,53	SLP_S3# CTRLD POWER	RUN_ON	
+3.3V_RUN	+3.3V	14,18,27,36,37,38,39,40,41,53	SLP_S3# CTRLD POWER	3.3V_RUN_ON	
+1.8V_RUN	+1.8V	18,38,53	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	
+1.25V_RUN	+1.25V	6,9,14,49,53	CALISTOGA/ICH8 POWER	1.25V_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#	
+PBATT	+10V~+17V		MAIN BATTERY	CHG_PBATT	
+SBATT	+10V~+17V		SECOND BATTERY	CHG_SBATT	

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	

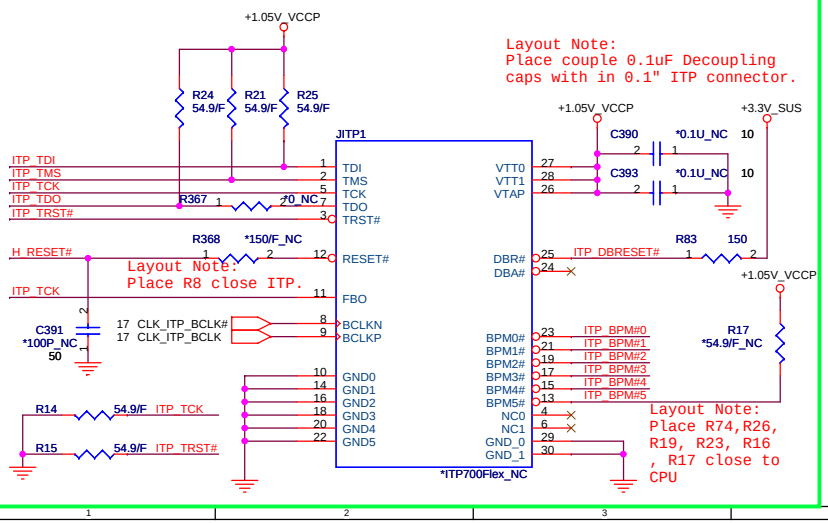
QUANTA COMPUTER

Title	Index & Power Status	
Size	Document Number FM6B	Rev 1A
Date: Monday, June 30, 2008	Sheet 2 of 60	



Populate ITP700Flex for bringup

2/18-5



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

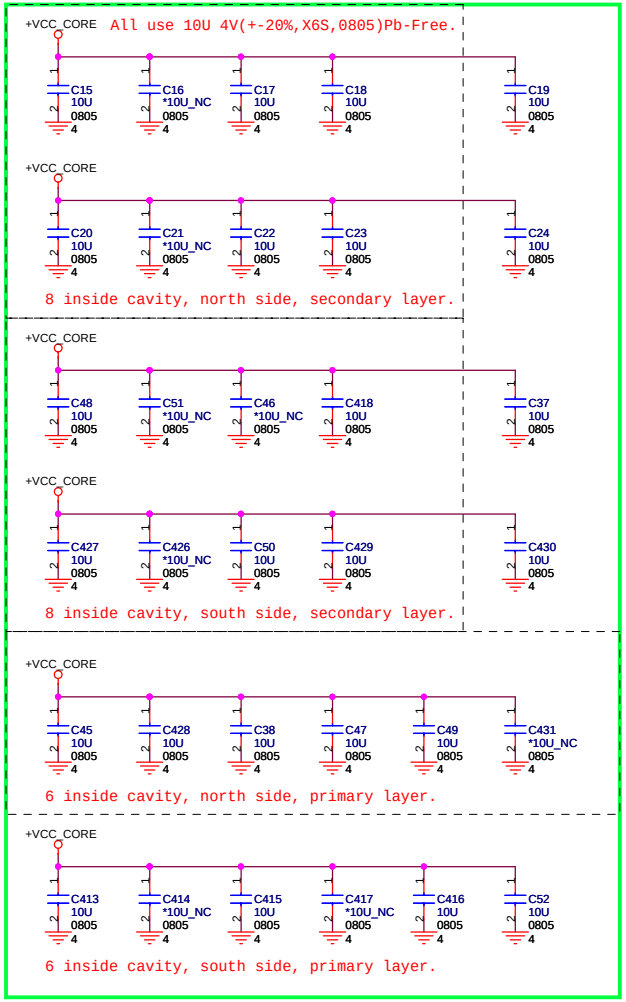
Comp0,2 connect with Zo=27.4ohm,Comp1,3 connect with Zo=55ohm, make those traces length shorter than 0.5".Trace should be at least 25 mils away from any other toggling signal.

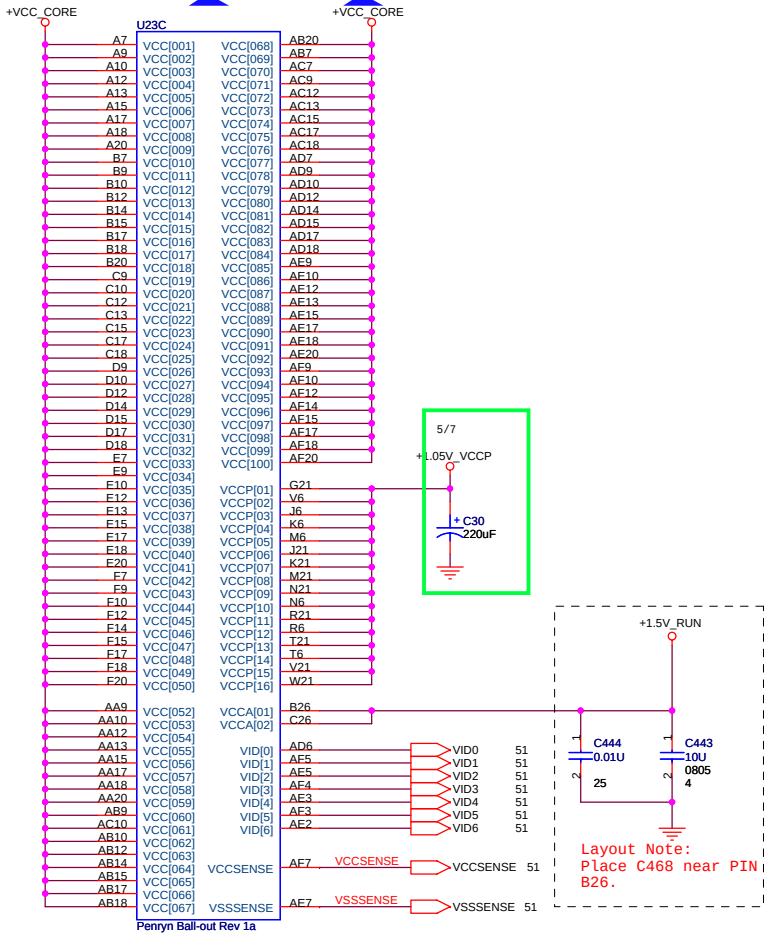
ITP disable guidelines

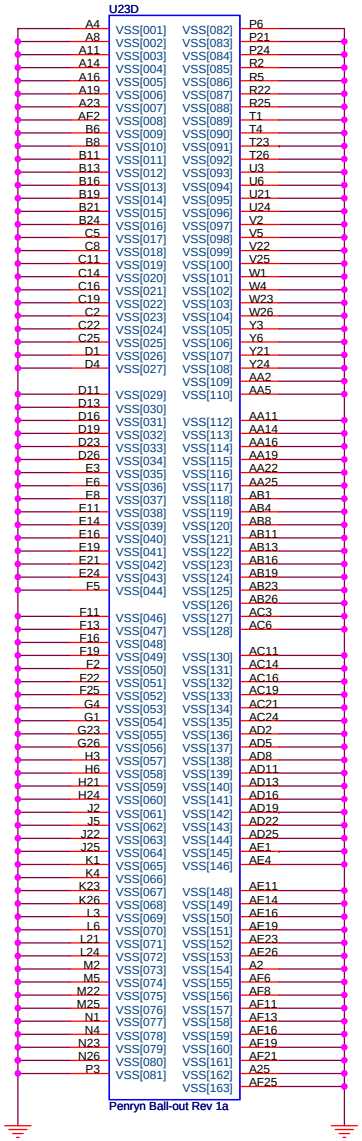
Signal	Resistor Value	Connect To	Resistor Placement
TDI	150 ohm +/- 5%	VTT	Within 2.0" of the ITP
TMS	39 ohm +/- 5%	VTT	Within 2.0" of the ITP
TRST#	680 ohm +/- 5%	GND	Within 2.0" of the ITP
TCK	27 ohm +/- 5%	GND	Within 2.0" of the ITP
TDO	Open	VTT	Within 2.0" of the ITP
ITP_EN	R268 Depop	+3VRUN	Close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

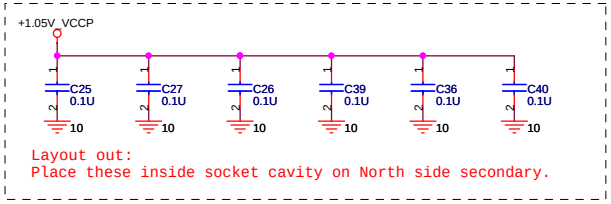
QUANTA COMPUTER

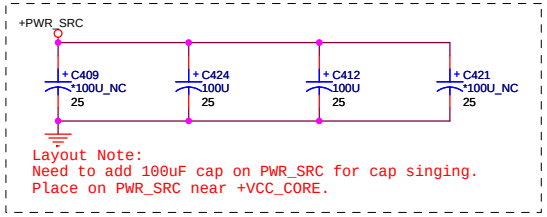
Title	Merom Processor (HOST BUS)	
Size	Document Number FM7B	Rev 1A
Date: Wednesday, July 16, 2008	Sheet 3 of 60	

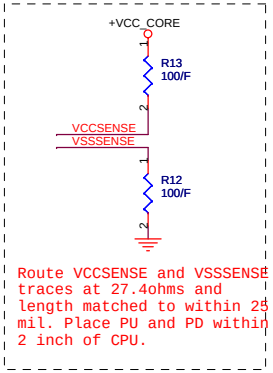






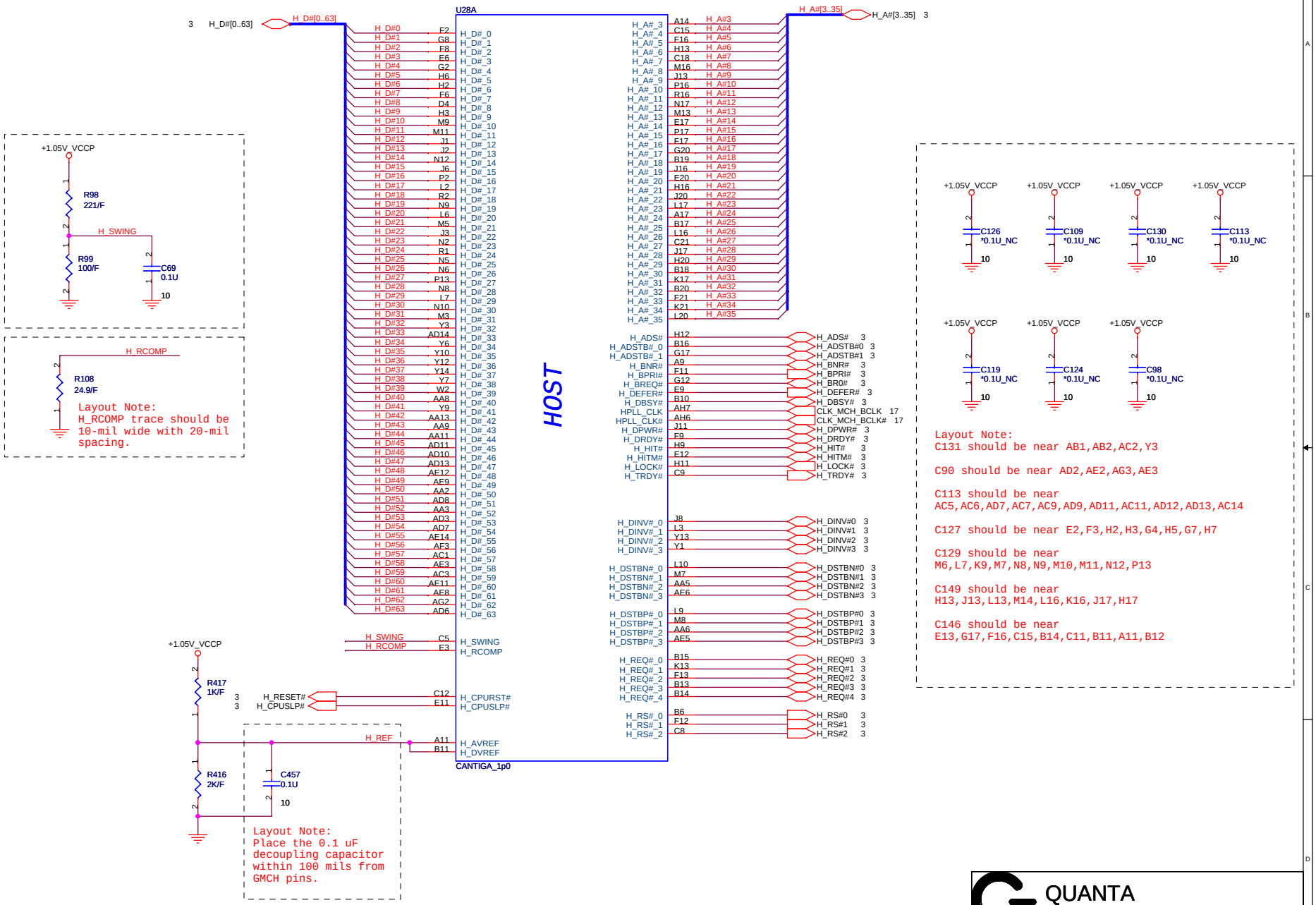




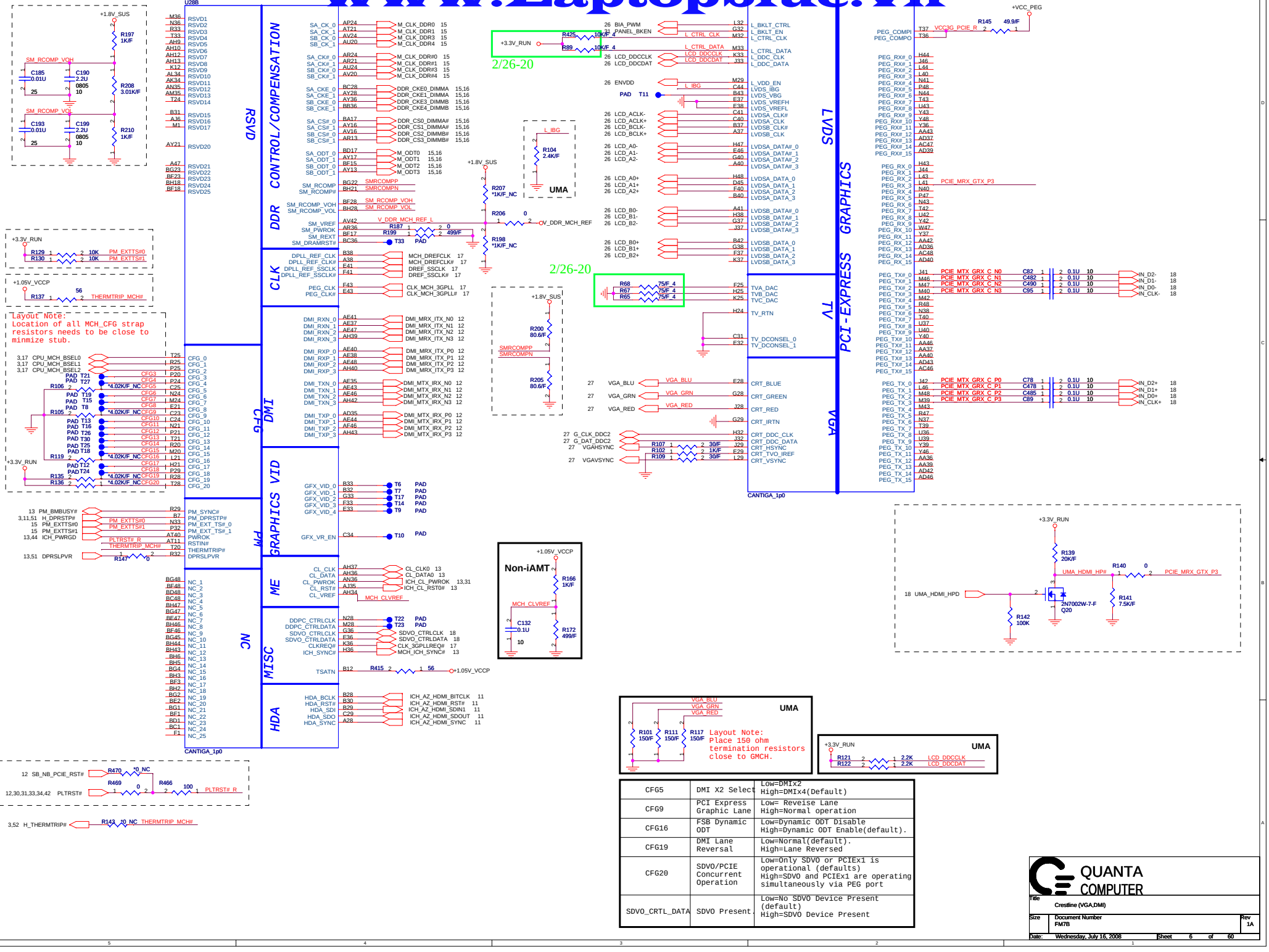


QUANTA COMPUTER

Title	Merom Processor (POWER)	
Size	Document Number FM7B	Rev 1A
Date:	Wednesday, July 16, 2008	Sheet 4 of 60



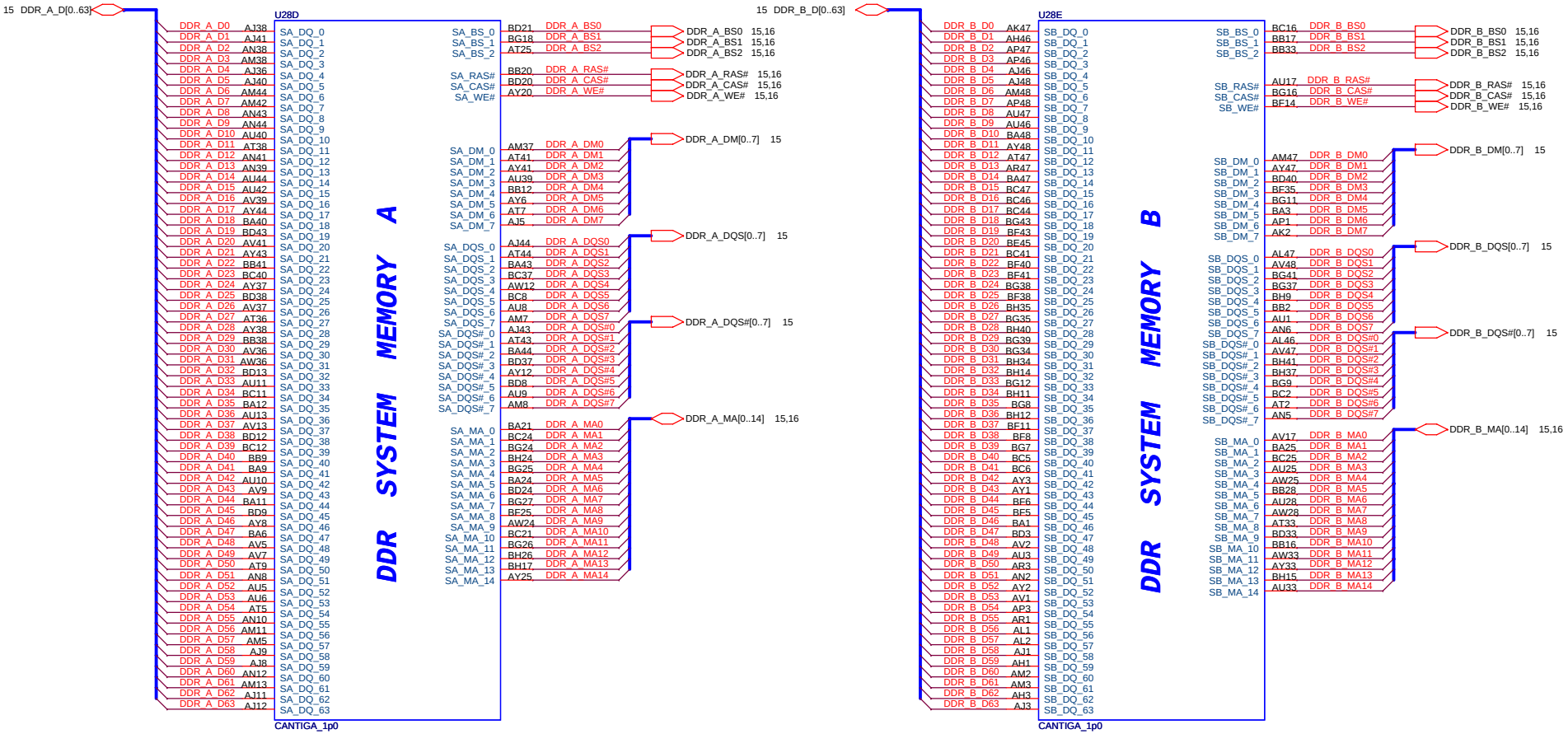
QUANTA COMPUTER			
Title	Crestline (HOST)		
Size	Document Number FM7B		Rev 1A
Date:	Wednesday, July 16, 2008	Sheet 5 of 60	



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

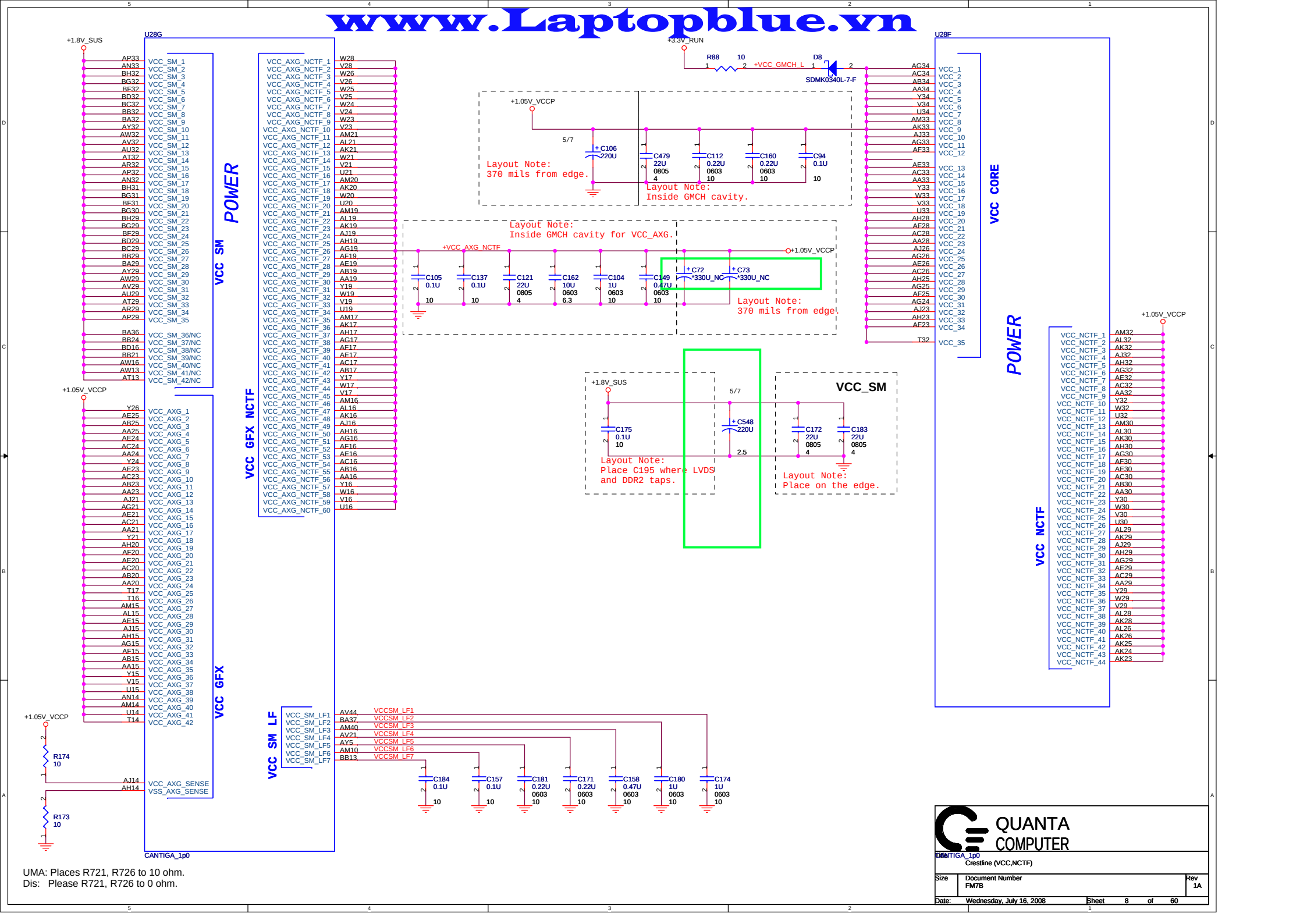
QUANTA COMPUTER

Title	Crestline (VGA,DMI)	
Size	Document Number FM7B	Rev 1A
Date: Wednesday, July 16, 2008	Sheet 6 of 60	



QUANTA COMPUTER

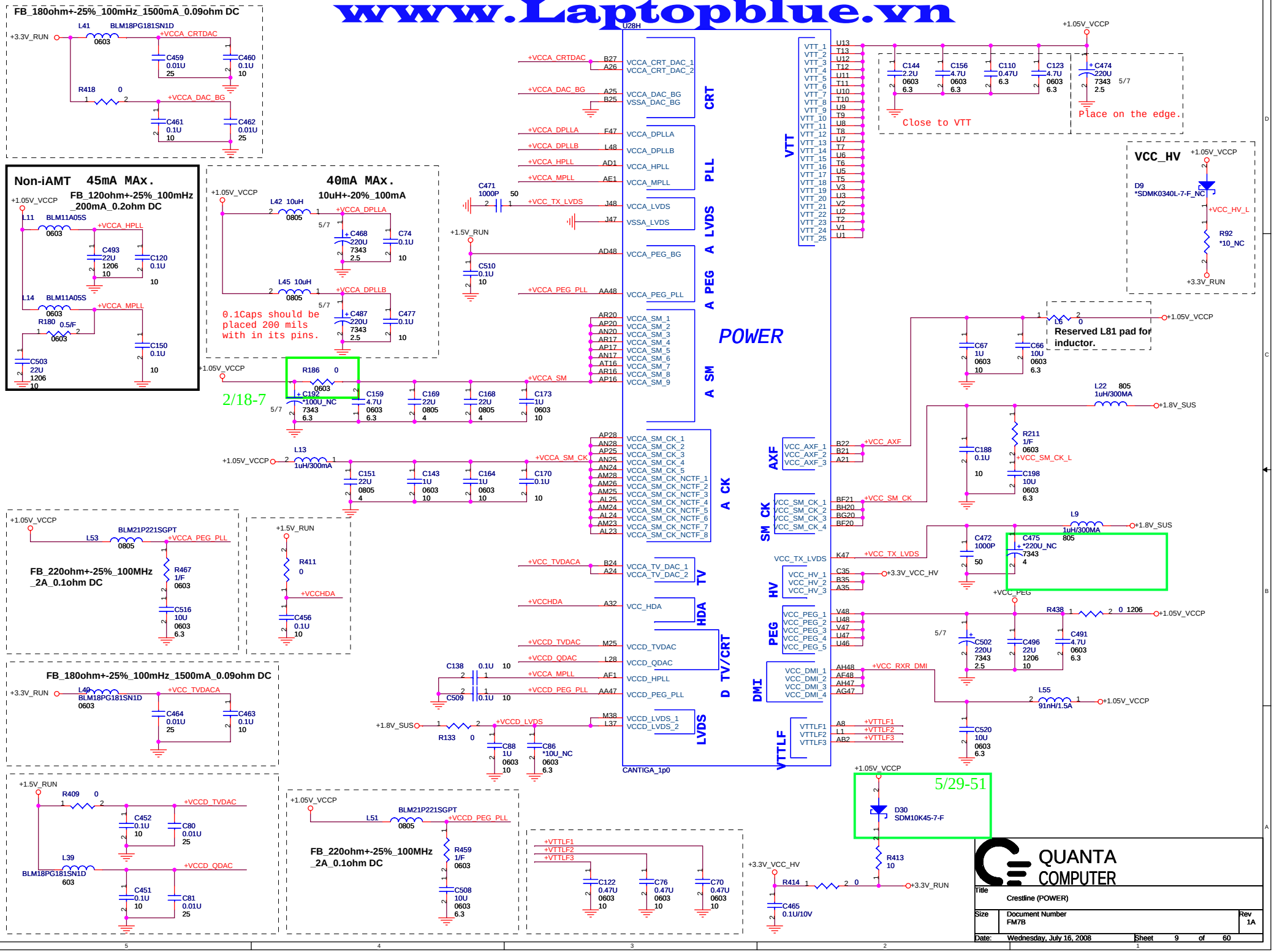
Title	Crestline (DDR2)	
Size	Document Number FM7B	Rev 1A
Date: Wednesday, July 16, 2008	Sheet 7 of 60	

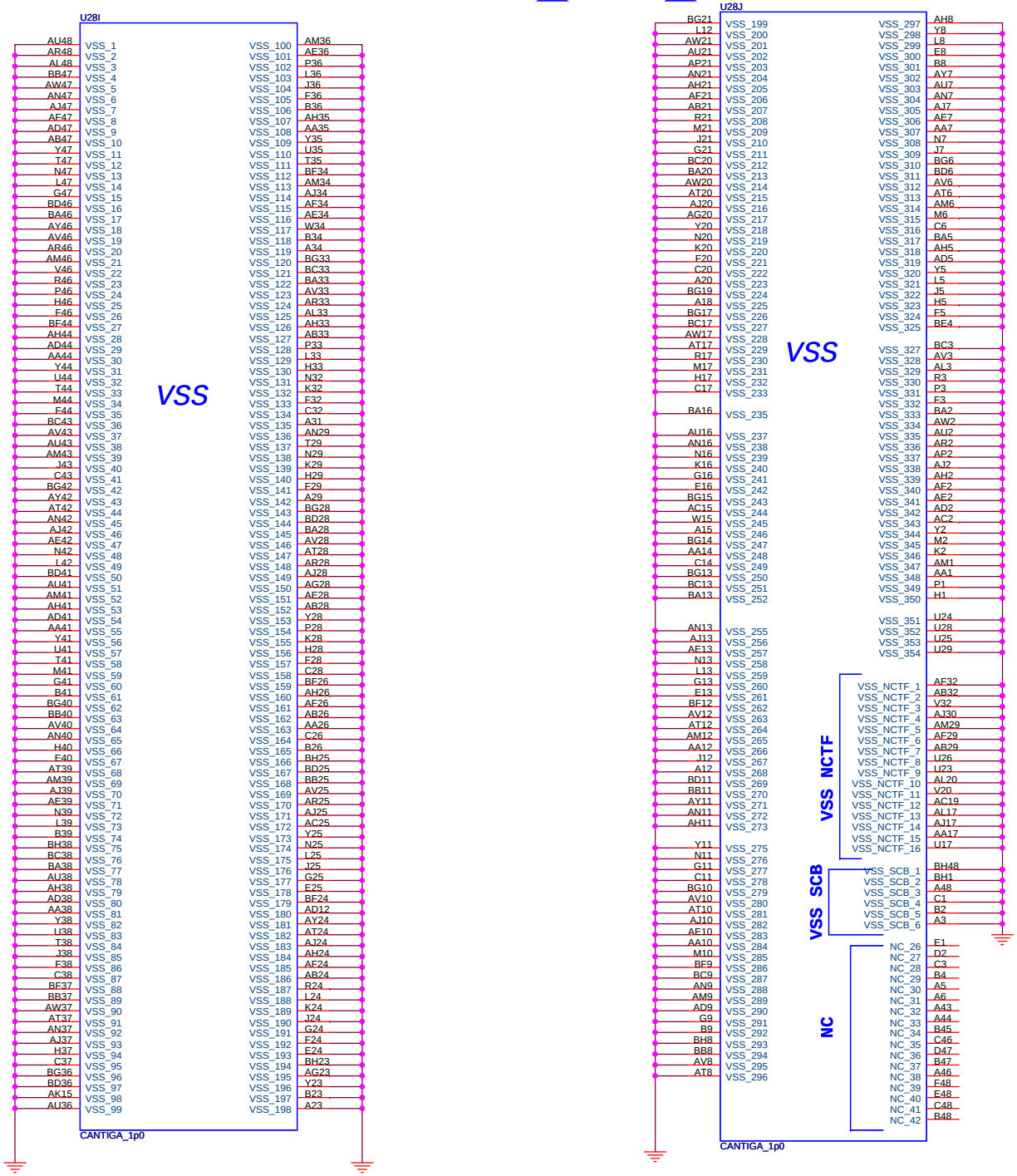


UMA: Places R721, R726 to 10 ohm.
Dis: Please R721, R726 to 0 ohm.

QUANTA COMPUTER

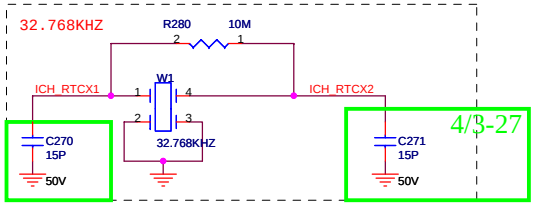
Title	CANTIGA_1p0 Crestline (VCC,NCTF)	
Size	Document Number FM7B	Rev 1A
Date:	Wednesday, July 16, 2008	Sheet 8 of 60

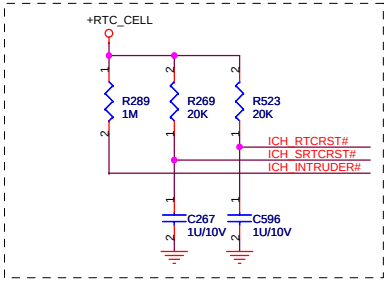


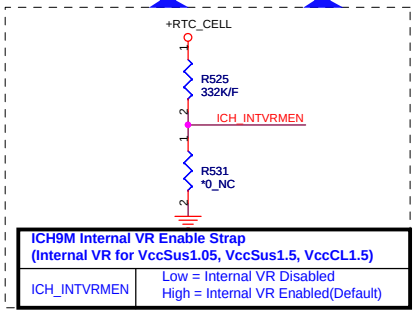


Title	Crestline (VSS)
Size	Document Number FM7B — Rev 1A
Date:	Wednesday, July 16, 2008 — Sheet 10 of 60

QUANTA COMPUTER

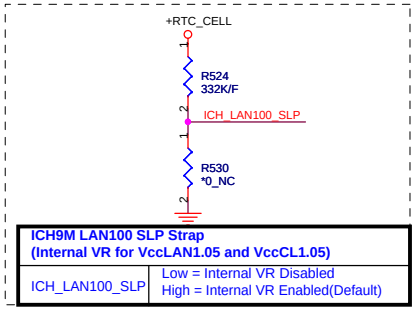






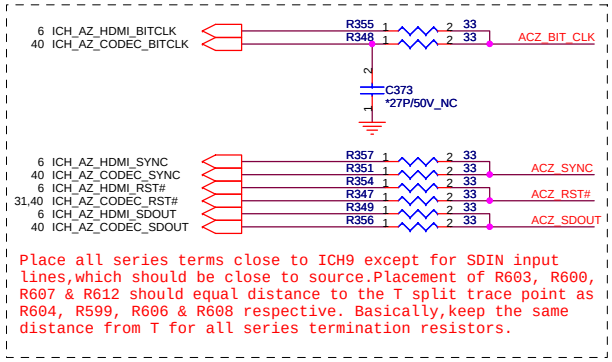
ICH9M Internal VR Enable Strap (Internal VR for VccSus1.05, VccSus1.5, VccCL1.5)

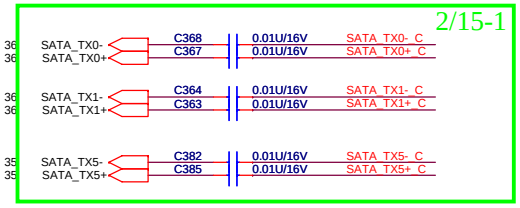
ICH_INTVRMEN	Low = Internal VR Disabled High = Internal VR Enabled(Default)

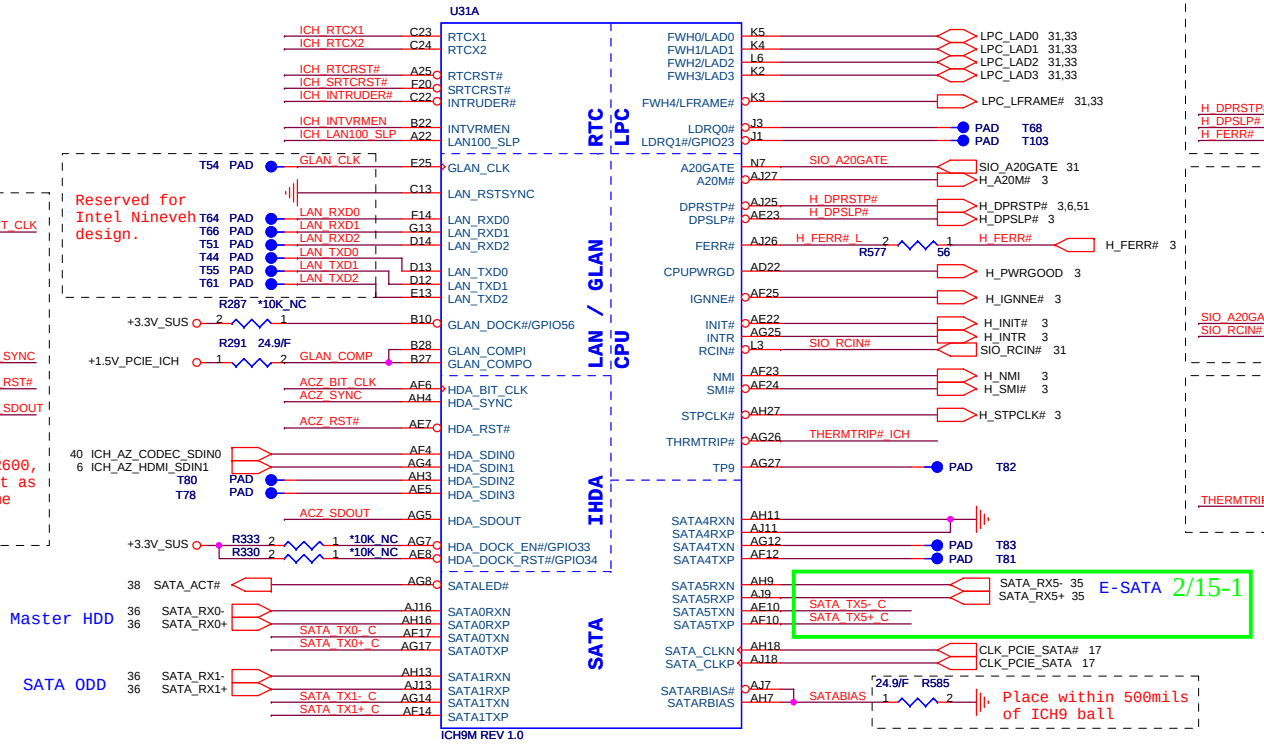


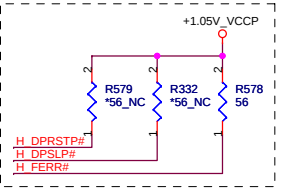
ICH9M LAN100 SLP Strap (Internal VR for VccLAN1.05 and VccCL1.05)

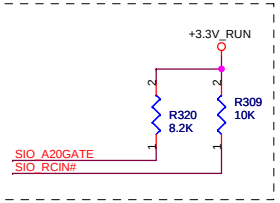
ICH_LAN100_SLP	Low = Internal VR Disabled High = Internal VR Enabled(Default)

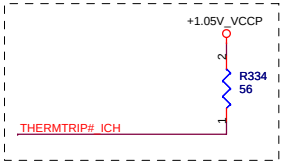


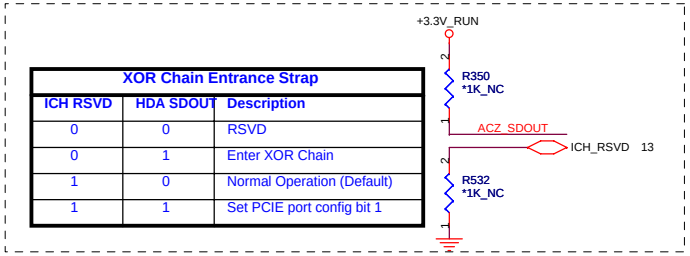












XOR Chain Entrance Strap

ICH RSVD	HDA SDOUT	Description
0	0	RSVD
0	1	Enter XOR Chain
1	0	Normal Operation (Default)
1	1	Set PCIE port config bit 1

QUANTA COMPUTER

Title	ICH9-M (CPU,IDE,SATA,LPC,AC97,LAN)	
Size	Document Number FM7B	Rev 1A
Date: Wednesday, July 16, 2008	Sheet 11 of 60	

Place TX DC blocking caps close ICH8.

33	PCIE_TX1-	C315	0.1U	10	PCIE_TXN1_C	
33	PCIE_TX1+	C323	0.1U	10	PCIE_TXP1_C	
34	PCIE_TX2-	C307	0.1U	10	PCIE_TXN2_C	
34	PCIE_TX2+	C305	0.1U	10	PCIE_TXP2_C	
33	PCIE_TX3-	C298	0.1U	10	PCIE_TXN3_C	
33	PCIE_TX3+	C289	0.1U	10	PCIE_TXP3_C	
30	PCIE_TX4-	C287	0.1U	10	PCIE_TXN4_C	
30	PCIE_TX4+	C284	0.1U	10	PCIE_TXP4_C	
42	PCIE_TX6-/GLAN_TX-	C278	0.1U	10	GLAN_TXN_C	
42	PCIE_TX6+/GLAN_TX+	C276	0.1U	10	GLAN_TXP_C	

ICH_SPI_CS1#_R
PCI_GNT0#
R302 *1K_NC
R305 *1K_NC

Boot BIOS Strap

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

2/20-12

+3.3V_RUN
C231 *0.1U_NC 10
R241 *10K/F_NC
U15 (VDD, HOLD#, VSS, CE#, SCK, SI, SO, WP#)
SPI_CLK_R
C243 *0.1U_NC 10
R239 *22_NC SPI_CS#0_R
R253 *22_NC SPI_CLK_R
R256 *22_NC SPI_MOSI
R242 *22_NC SPI_MISO
SPI_HOLD#
SPI_WP#
R252 *10K/F_NC
*W25X40VSSIG_NC

WWAN Noise - ICH improvements

OC6#	C308	1	2	*0.1U_NC	10
OC4#	C620	1	2	*0.1U_NC	10
OC5#	C623	1	2	*0.1U_NC	10
OC7#	C618	1	2	*0.1U_NC	10
USB_OC8#	C622	1	2	*0.1U_NC	10
USB_OC2_3#	C292	1	2	*0.1U_NC	10
USB_OC0_1#	C321	1	2	*0.1U_NC	10
OC9#	C326	1	2	*0.1U_NC	10

PCI-Express / Direct Media Interface

33	PCIE_RX1-	N29	PERN1	MiniWWAN
33	PCIE_RX1+	N28	PERP1	
	PCIE_TXN1_C	P27	PETN1	
	PCIE_TXP1_C	P26	PETP1	
34	PCIE_RX2-	L29	PERN2	MiniWLAN
34	PCIE_RX2+	L28	PERP2	
	PCIE_TXN2_C	M27	PETN2	
	PCIE_TXP2_C	M26	PETP2	
33	PCIE_RX3-	J29	PERN3	MiniWPAN
33	PCIE_RX3+	J28	PERP3	
	PCIE_TXN3_C	K27	PETN3	
	PCIE_TXP3_C	K26	PETP3	
30	PCIE_RX4-	G29	PERN4	Express Card
30	PCIE_RX4+	G28	PERP4	
	PCIE_TXN4_C	H27	PETN4	
	PCIE_TXP4_C	H26	PETP4	
T102	PAD	E29	PERN5	
T101	PAD	E28	PERP5	
T60	PAD	F27	PETN5	
T56	PAD	F26	PETP5	
42	PCIE_RX6-/GLAN_RX-	C29	PERN6/GLAN_RXN	Giga Bit LOM
42	PCIE_RX6+/GLAN_RX+	C28	PERP6/GLAN_RXP	
	GLAN_TXN_C	D27	PETN6/GLAN_TXN	
	GLAN_TXP_C	D26	PETP6/GLAN_TXP	

T48	PAD	SPI_CLK_R	D23	SPI_CLK
T49	PAD	SPI_CS#0_R	D24	SPI_CS0#
		ICH_SPI_CS1#_R	F23	SPI_CS1#/GPIO58/CLGPIO6
T53	PAD	SPI_MOSI	D25	SPI_MOSI
T58	PAD	SPI_MISO	E23	SPI_MISO

USB

35	USB_OC0_1#	USB_OC0_1#	N4	OC0#/GPIO59
35	USB_OC2_3#	USB_OC2_3#	N5	OC1#/GPIO40
			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

R553 22.6/F
USBRBIAS
Places within 500 mils of the ICH9
ICH9M REV 1.0

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	R552 24.9/F	+1.5V_PCIE_ICH

Place within 500mils of ICH8

USBP0N	AC5	ICH_USBP0-	35	Side pair Top / left
USBP0P	AC4	ICH_USBP0+	35	
USBP1N	AD3	ICH_USBP1-	35	Side pair bottom / left
USBP1P	AD2	ICH_USBP1+	35	
USBP2N	AC1	ICH_USBP2-	35	Side pair top/right(DB)
USBP2P	AC2	ICH_USBP2+	35	
USBP3N	AA5	ICH_USBP3-	35	Side pair Bot right(DB)
USBP3P	AA4	ICH_USBP3+	35	
USBP4N	AB2	ICH_USBP4-	34	Mini Card (WLAN)
USBP4P	AB3	ICH_USBP4+	34	
USBP5N	AA1	ICH_USBP5-	33	Mini Card (WWAN)
USBP5P	AA2	ICH_USBP5+	33	
USBP6N	W5	ICH_USBP6-	33	Mini Card (WPAN)
USBP6P	W4	ICH_USBP6+	33	
USBP7N	Y3	ICH_USBP7-	30	Express Card
USBP7P	Y2	ICH_USBP7+	30	
USBP8N	W1	PAD T73		
USBP8P	W2	PAD T75		
USBP9N	V2	PAD T74		
USBP9P	V3	PAD T72		
USBP10N	U5	ICH_USBP10-	38	Biometric
USBP10P	U4	ICH_USBP10+	38	
USBP11N	U1	ICH_USBP11-	41	Camera
USBP11P	U2	ICH_USBP11+	41	

2/25-18

PCI Pullups

RP21: PCI_FRAME#, PCI_TRDY#, PCI_DEVSEL#, PCI_REQ1# / PCI_PLOCK#, PCI_STOP#, PCI_PIRQD#, PCI_IRDY# (+3.3V_RUN)
RP27: PCI_PIRQA#, PCI_REQ0#, ICH_IRQH_GPIO5, PCI_SERR# / PCI_PIRQB#, PCI_PIRQC#, PCI_PERR# (+3.3V_RUN)

RP33 (10KX8): OC7#, OC6#, OC5#, OC4# / OC9#, USB_OC2_3#, USB_OC0_1#, USB_OC8# (+3.3V_SUS)
OC10# R321 10K +3.3V_SUS
OC11# R323 10K

SB_WPAN_PCIE_RST#	R315	20K
SB_WWAN_PCIE_RST#	R307	20K
SB_WLAN_PCIE_RST#	R313	20K
SB_LOM_PCIE_RST#	R288	20K
SB_NB_PCIE_RST#	R294	20K

BIOS should not enable the internal GPIO pull up resistor.

PCI

28 PCI_AD[0..31]

PCI_AD0	D11	AD0	REQ0#	E1
PCI_AD1	C8	AD1	GNT0#	G4
PCI_AD2	D9	AD2	REQ1#/GPIO50	B6
PCI_AD3	E12	AD3	GNT1#/GPIO51	A7
PCI_AD4	E9	AD4	REQ2#/GPIO52	E13
PCI_AD5	C9	AD5	GNT2#/GPIO53	E12
PCI_AD6	E10	AD6	REQ3#/GPIO54	E6
PCI_AD7	B7	AD7	GNT3#/GPIO55	E6
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		

C/BE0#	D8	PCI_C_BE0#	28
C/BE1#	B4	PCI_C_BE1#	28
C/BE2#	D6	PCI_C_BE2#	28
C/BE3#	A5	PCI_C_BE3#	28
IRDY#	D3	PCI_IRDY#	28
PAR	E3	PCI_PAR	28
PCIRST#	R1	PCI_RST# G	
DEVSEL#	C6	PCI_DEVSEL#	28
PERR#	E4	PCI_PERR#	28
PLOCK#	C2	PCI_PLOCK#	
SERR#	J4	PCI_SERR#	28
STOP#	A4	PCI_STOP#	28
TRDY#	E5	PCI_TRDY#	28
FRAME#	D7	PCI_FRAME#	28
PLTRST#	C14	PCI_PLTRST#	
PCICLK	D4	CLK_PCI_ICH	
PME#	R2	ICH_PME#	28,31

Interrupt I/F

T50	PAD	PCI_PIRQA#	J5	PIRQA#
28 PCI_PIRQB#		PCI_PIRQB#	E1	PIRQB#
28 PCI_PIRQC#		PCI_PIRQC#	J6	PIRQC#
T38	PAD	PCI_PIRQD#	C4	PIRQD#

PIRQE#/GPIO2	H4	SB_WPAN_PCIE_RST#	33
PIRQF#/GPIO3	K6	SB_WLAN_PCIE_RST#	34
PIRQG#/GPIO4	E2	SB_NB_PCIE_RST#	6
PIRQH#/GPIO5	G2	ICH_IRQH_GPIO5	

T52 PAD
ICH9M REV 1.0

CLK_PCI_ICH
R292 *10_NC
C275 *8.2P_NC
Reserved for EMI.Place resister and cap close to ICH. 16

Non-iAMT

Add Buffers as needed for Loading and fanout concerns.

+3.3V_SUS
C344 0.047U
U19 (TC7SZ32FU(T5L,F,T))
PCI_RST# G
PCI_RST# 28
C250 0.047U
U17 (TC7SZ32FU(T5L,F,T))
PCI_PLTRST#
PLTRST# 6,30,31,33,34,42

PCI_GNT3#
R304 *1K_NC

A16 away override strap.

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

PCI_IRDY#

QUANTA COMPUTER

Title	ICH9-M (USB,DMI,PCIE,PCI)	
Size	Document Number FM7B	Rev 1A
Date:	Wednesday, July 16, 2008	Sheet 12 of 60

Non-iAMT
+3.3V_SUS
RP19
ICH_SMBDATA
ICH_SMBCLK
2.2KX2

Non-iAMT
ASF 2.0
+3.3V_SUS
RP20
ICH_SMLINK0
ICH_SMLINK1
*100KX2_NC
ICH_SMBCLK R271 0 ICH_SMLINK0
ICH_SMBDATA R272 0 ICH_SMLINK1

Non-iAMT
+3.3V_SUS
R273 *10K_NC RSV_ICH_CL_RST1#
R293 10K ICH_RI#
R275 10K SIO_EXT_SCI#
R299 1K PCIE_WAKE#

+3.3V_RUN
R346 8.2K

Place these close to ICH8.
CLK_ICH_48M
R337 *10_NC
C357 *4.7P_NC
50
CLK_ICH_14M
R539 *10_NC
C610 *4.7P_NC
50

+3.3V_RUN
R300 8.2K
CLKRUN#
R303 *10_NC
Option to " Disable " clkrun. Pulling it down will keep the clks running.

U31C
ICH9M REV 1.0

SMB
SMBCLK G16
SMBDATA A13
LINKALERT#/GPIO60/CLGPIO3 E17
SMLINK0 C17
SMLINK1 B18
RI# F19
SUS_STAT#/LPCPD# R4
SYS_RESET# G19
PMSYNC#/GPIO0 M6
SMBALERT#/GPIO11 A17
STP_PCI#/GPIO15 A14
STP_CPU#/GPIO25 E19
CLKRUN#/GPIO32 L4
WAKE# E20
SERIRQ M5
THRM# AJ23
VRMPWRGD D21
TP8 A20

SATA GPIO
SATA0GP/GPIO21 AH23
SATA1GP/GPIO19 AE19
SATA4GP/GPIO36 AE21
SATA5GP/GPIO37 AD20

Clocks
CLK14 H1 CLK_ICH_14M
CLK48 AF3 CLK_ICH_48M
SUSCLK P1 ICH_SUSCLK

Power MGT
SLP_S3# C16
SLP_S4# E16
SLP_S5# G17
S4_STATE#/GPIO26 C10
PWROK G20 ICH_PWRGD
DPRSLPVR M2
BATLOW# B13 ICH_BATLOW#
PWRBTN# R3
LAN_RST# D20 RSV_ICH_LAN_RST#
RSMRST# D22 ICH_RSMRST#
CK_PWRGD R5 CLK_PWRGD
CLPWROK R6 ICH_CL_PWROK
SLP_M# B16

GPIO
TACH1/GPIO1 AG19
TACH2/GPIO6 AH21
TACH3/GPIO7 AG21
GPIO8 A21
LANPHYPC/GPIO12 C12
ENGDET/GPIO13 C21
TACH0/GPIO17 AE18
GPIO18 K1
GPIO20 AF8
SCLOCK/GPIO22 AJ22
QRT_STATE0/GPIO27 A9
QRT_STATE1/GPIO28 D19
SATACLKREQ#/GPIO35 L1
SLOAD/GPIO38 AE19
SDATAOUT0/GPIO39 AG22
SDATAOUT1/GPIO48 AF21
GPIO49 AH24
GPIO57/CLGPIO5 A8

Controller Link
CL_CLK0 F24
CL_CLK1 B19 RSV_ICH_CL_CLK1
CL_DATA0 F22
CL_DATA1 C19 RSV_ICH_CL_DATA1
CL_VREF0 C25 CL_VREF0
CL_VREF1 A19 CL_VREF1
CL_RST0# F21
CL_RST1# D18 CL_RST1#

MISC
SPKR M7
MCH_SYNC# AJ24
TP3 B21
TP9 AH20
TP10 AJ20
TP11 AJ21
MEM_LED/GPIO24 A16 RSV_GPIO24
ALERT#/GPIO10 C18 RSV_GPIO10
NETDETECT/GPIO14 C11 RSV_GPIO14
WOL_EN/GPIO9 C20 RSV_WOL_EN

R529 8.2K +3.3V_SUS
SIO_PWRBTN# 31
ICH_PWRGD 6,44
DPRSLPVR 6,51
ICH_CL_PWROK 6,31
CL_CLK0 6
CL_DATA0 6
ICH_CL_RST0# 6
R286 8.2K +3.3V_SUS

Non-iAMT
ICH_PWRGD R310 10K
DPRSLPVR R542 100K
ICH_RSMRST# R298 10K
RSV_ICH_LAN_RST# R290 10K
ICH_CL_PWROK R322 1M
+3.3V_SUS
RSV_GPIO10 R270 10K

2/25-17 6/11-44
37 KB_LED_DET#
34 PCIE_MCARD1_DET#
R155 0
R306 4.7K

33 USB_MCARD2_DET#
33 USB_MCARD3_DET#
31 SIO_EXT_WAKE#
31 SIO_EXT_SMI#
31 SIO_EXT_SCI#
T96 PAD
33 PCIE_MCARD2_DET#
33 PCIE_MCARD3_DET#
34 WLAN_RADIO_DIS#
41 CAMERA_CBL_DET#
17 SATA_CLKREQ#
PLTRST_DELAY#
33 WPAN_RADIO_DIS_MINI#
33 WWAN_RADIO_DIS#
T106 PAD
T97 PAD

40 SPKR
6 MCH_ICH_SYNC#
11 ICH_RSVD
T105 PAD
T108 PAD
T107 PAD
SPKR
TP9
TP10
TP11

R331 10K PLTRST_DELAY#
7/17-63

+3.3V_RUN
R268 1.91K/F IMVP_PWRGD
R344 100K USB_MCARD2_DET#
R583 100K USB_MCARD3_DET#
R257 100K PCIE_MCARD1_DET#
R339 100K PCIE_MCARD2_DET#
R255 100K PCIE_MCARD3_DET#

+3.3V_RUN
R581 *10K_NC MCH_ICH_SYNC#_R
R316 10K IRQ_SERIRQ
R582 10K THERM_ALERT#

+3.3V_SUS
R278 10K RSV_WOL_EN
R526 10K SIO_EXT_SMI#
R528 100K USB_MCARD1_DET#

+3.3V_RUN
R314 *1K_NC
SPKR

No Reboot strap.

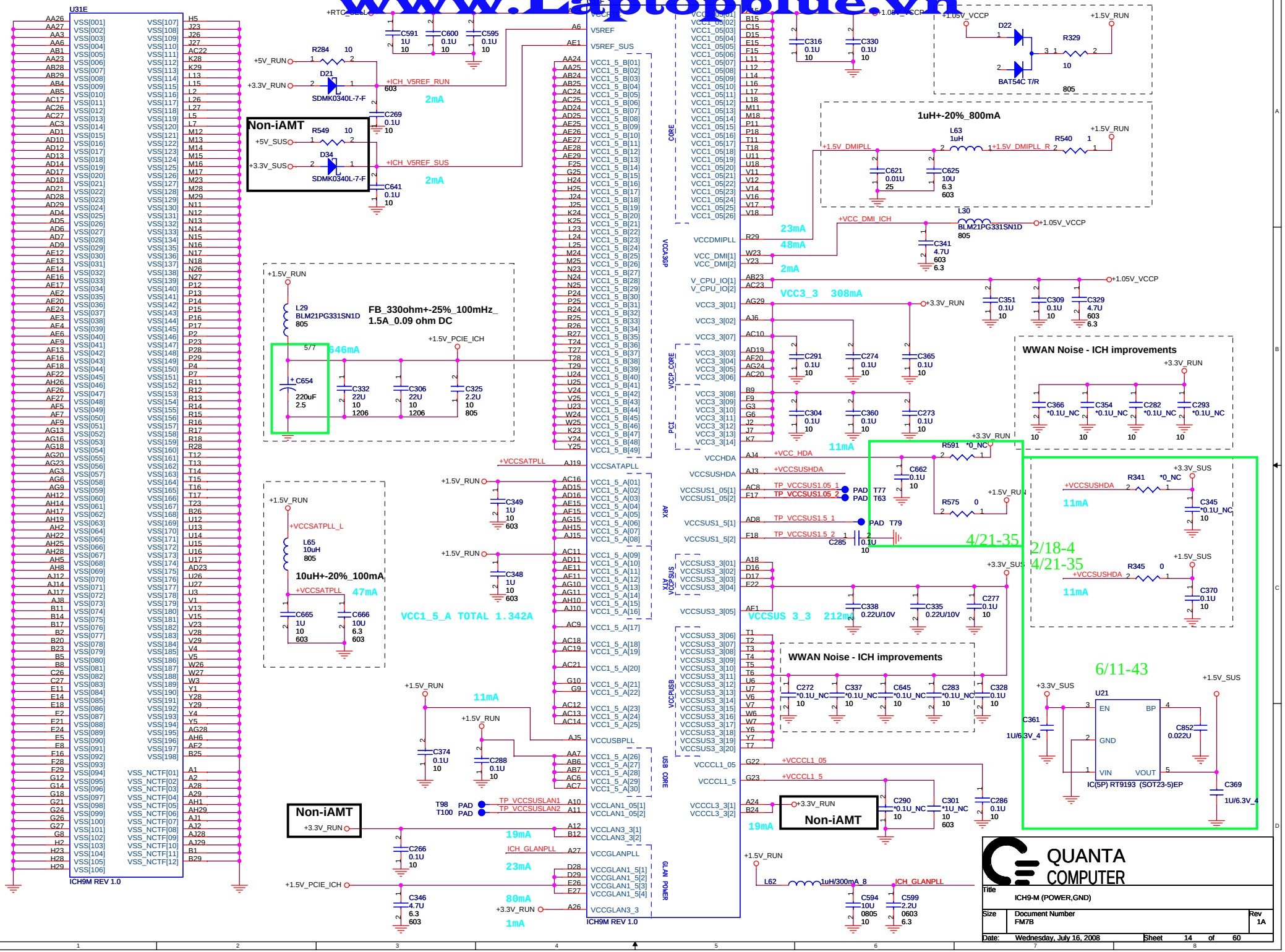
SPKR	Low = Default. High = No Reboot.

SMbus address D2
Non-iAMT
These are for backdrive issue.
+3.3V_RUN
RP13 2.2KX2
30,33,34 ICH_SMBDATA
Q29 2N7002W-7-F
MEM_SDATA 15
30,33,34 ICH_SMBCLK
Q28 2N7002W-7-F
MEM_SCLK 15

DIS:ALW
UMA:SUS (19)
Non-iAMT
+3.3V_RUN
+3.3V_ALW +3.3V_SUS
R285 3.24K/F
R527 *3.24K/F_NC
R534 *3.24K/F_NC
CL_VREF0
CL_VREF1
C265 0.1U
R277 453/F
C598 *0.1U_NC
R533 *453/F_NC
10
10
CL_VREF0/1 ~=0.405V

QUANTA COMPUTER

Title	ICH9-M (PM,GPIO,SMB,CL)	
Size	Document Number FM7B	Rev 1A
Date: Thursday, July 17, 2008	Sheet 13 of 60	



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

TOP

JDIM1

PC4800 DDR2 SDRAM SO-DIMM (200P)

DDR2_DIMM

BOT

JDIM2

PC4800 DDR2 SDRAM SO-DIMM (200P)

PC4800 DDR2 0

Non-iAMT

SMbus address A0

CLOCK 0,1
CKE 0,1

Non-iAMT

SMbus address A4

CLOCK 2,3
CKE 2,3

Non-iAMT

Non-iAMT

Non-iAMT

Place these Caps near So-Dimm1.

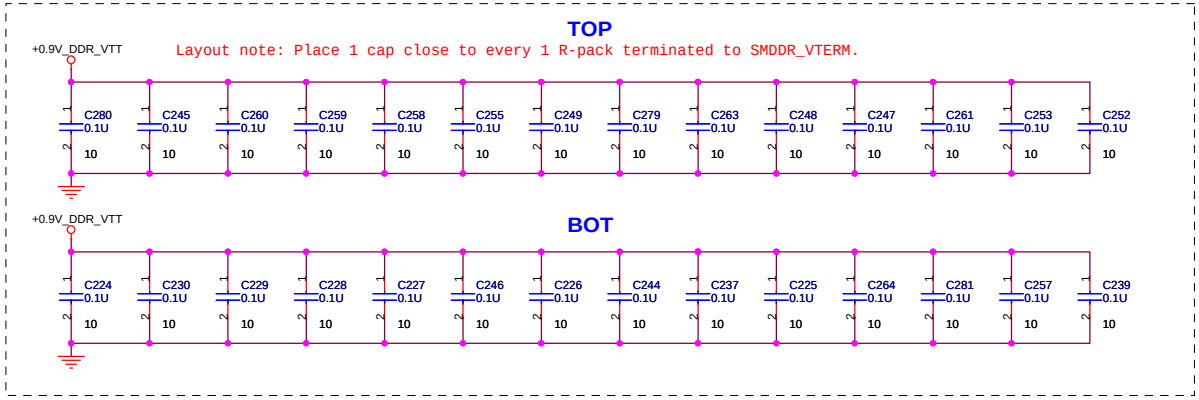
Place these Caps near So-Dimm2.

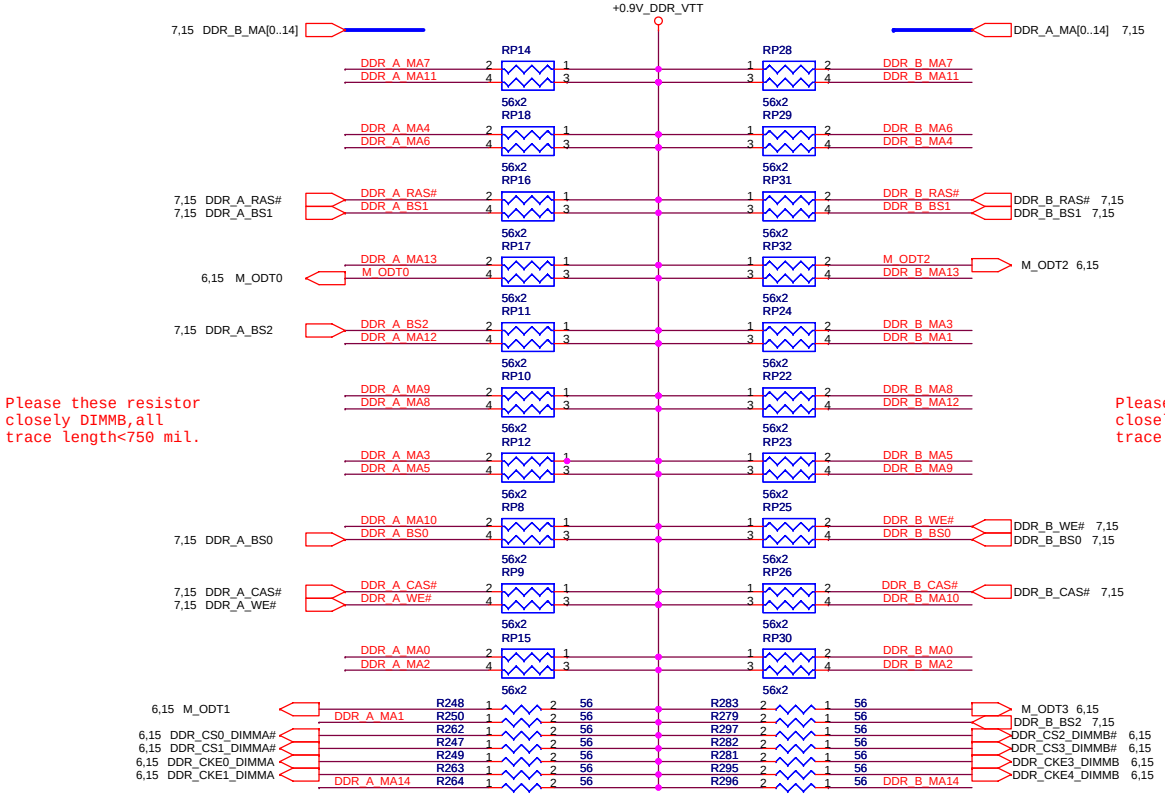
Place these Caps near So-Dimm1.

Place these Caps near So-Dimm2.

QUANTA COMPUTER

Title	DDR2 SO-DIMM (200P) X 2	
Size	Document Number FM7B	Rev 1A
Date: Monday, June 30, 2008	Sheet 15 of 60	





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

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

QUANTA COMPUTER

Title	DDR2 RES ARRAY	
Size	Document Number FM7B	Rev 1A
Date: Monday, June 30, 2008	Sheet 16 of 60	

Add capacitor pads for improving WWAN.

C544 20P 50 CLK_ICH_48M
C530 *27P_NC 50 CLK_ICH_14M
C537 *27P_NC 50 CLK_PCI_8512
C182 *27P_NC 50 CLK_PCI_PCCARD
C540 *27P_NC 50 CLK_PCI_ICH

Y2
CLK_XTAL_IN — 14.318MHZ — CLK_XTAL_OUT
C512 33P 50
C511 33P 50
14.318MHz

U29
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, VDD_IO, VDD_IO, VDD_IO, VDD_IO, VDD_IO
GND, GND, GND, GND, GND, GND, GND, GND, GND, 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-0# — CPU_BCLK / CPU_BCLK# — RP35 0x2 — CLK_CPU_BCLK 3 / CLK_CPU_BCLK# 3
CPU-1 / CPU-1# — MCH_BCLK / MCH_BCLK# — RP34 0x2 — CLK_MCH_BCLK 5 / CLK_MCH_BCLK# 5
SRC-8/CPU_ITP / SRC-8#/CPU_ITP# — PCIE_MINI1 / PCIE_MINI1# — RP36 0x2 — CLK_PCIE_MINI1 34 / CLK_PCIE_MINI1# 34
SRC-0/DOT96 / SRC-0#/DOT96# — DOT96_SSC / DOT96_SSC# — RP43 0x2 — MCH_DREFCLK 6 / MCH_DREFCLK# 6
SRC-1/SE1 / SRC-1#/SE2 — 27M_SS / 27M_NSS — RP45 0x2 — DREF_SSCLK 6 / DREF_SSCLK# 6
SRC-2/SATA / SRC-2#/SATA# — PCIE_SATA / PCIE_SATA# — RP44 0x2 — CLK_PCIE_SATA 11 / CLK_PCIE_SATA# 11
CR#_C/SRC-3 / CR#_D/SRC-3# — PCIE_MINI3 / PCIE_MINI3# — RP42 0x2 — CLK_PCIE_MINI3 33 / CLK_PCIE_MINI3# 33
SRC-4 / SRC-4# — MCH_3GPLL / MCH_3GPLL# — RP41 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 / SRC-6# — PCIE_EXPCARD / PCIE_EXPCARD# — RP37 0x2 — CLK_PCIE_EXPCARD 30 / CLK_PCIE_EXPCARD# 30
CR#_F/SRC-7 / CR#_E/SRC-7# — MINI1CLK_REQ# / CARD_CLK_REQ# — R456 475/F MINI1CLK_REQ# — R455 475/F CARD_CLK_REQ# — MINI1CLK_REQ# 34 / CARD_CLK_REQ# 30
SRC-9 / SRC-9# — PCIE_MINI2 / PCIE_MINI2# — RP40 0x2 — CLK_PCIE_MINI2 33 / CLK_PCIE_MINI2# 33
SRC-10 / SRC-10# — PCIE_ICH / PCIE_ICH# — RP38 0x2 — CLK_PCIE_ICH 12 / CLK_PCIE_ICH# 12
CR#_H/SRC-11 / CR#_G/SRC-11# — PCIE_LOM / PCIE_LOM# — RP39 0x2 — CLK_PCIE_LOM 42 / CLK_PCIE_LOM# 42
GND 65

13 SATA_CLKREQ# — SATA_CLKREQ# — R476 475/F
6 CLK_3GPLLREQ# — CLK_3GPLLREQ# — R478 475/F
SATA_CLKREQ# C 8
CLK_3GPLLREQ# C 10
PCI_PCCARD 11
PCI_SIO 12
27M_SEL 13
PCI_ICH 14

33 CLK_LPC_DEBUG — CLK_LPC_DEBUG — R193 22
28 CLK_PCI_PCCARD — CLK_PCI_PCCARD — R194 33
31 CLK_PCI_8512 — CLK_PCI_8512 — R481 33
12 CLK_PCI_ICH — CLK_PCI_ICH — R485 33
13 CLK_ICH_48M — CLK_ICH_48M — R489 33
3,6 CPU_MCH_BSEL0 — L58 BLM18AG601SN1D — R490 2.2K — FSA
3,6 CPU_MCH_BSEL1 — R177 0 — FSB
3,6 CPU_MCH_BSEL2 — L15 BLM18AG601SN1D — R472 10K — FSC
2/18-6
13 CLK_ICH_14M — CLK_ICH_14M — R474 33
13 CLK_PWRGD

CLK_XTAL_OUT 2
CLK_XTAL_IN 3
CLK_SDATA 6
CLK_SCLK 7

2/20-10
+3.3V_RUN
H_STP_PCI# — R182 10K
H_STP_CPU# — R184 10K

+3.3V_RUN
CLK_3GPLLREQ# — R479 10K
SATA_CLKREQ# — R477 10K
CARD_CLK_REQ# — R458 10K
MINI1CLK_REQ# — R449 10K
PCI_PCCARD — R192 *10K_NC

PCI_SIO — R482 *10K_NC

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

+3.3V_RUN
PCI_ICH — R201 *10K_NC
R486 *10K_NC

R185 POP: For Internal pull-low.
R439 POP: For internal pull-high.

+3.3V_RUN
27M_SEL — R483 *10K_NC
R484 10K

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

27M_SEL

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

UMA without iAMT

+3.3V_RUN
L56 BLM21PG600SN1D 0805 120 ohms@100Mhz — +CK_VDD_MAIN
C547 0.1U, C545 0.1U, C538 0.1U, C522 0.1U, C504 0.1U, C505 0.1U, C189 *10U_NC 0603 6.3
L57 BLM21PG600SN1D 0805 120 ohms@100Mhz
R465 2.2 — +CK_VDD_PCI — C515 0.1U, C166 0.1U
2/19-8
R491 2.2 — +CK_VDD_PLL3 — C546 0.1U
R488 2.2 — +CK_VDD_48 — C539 0.1U, C542 4.7U 0603 6.3
R188 2.2 — +CK_VDD_SRC — C514 0.1U, C155 0.1U
2/19-8

Non-iAMT

SMbus address D2

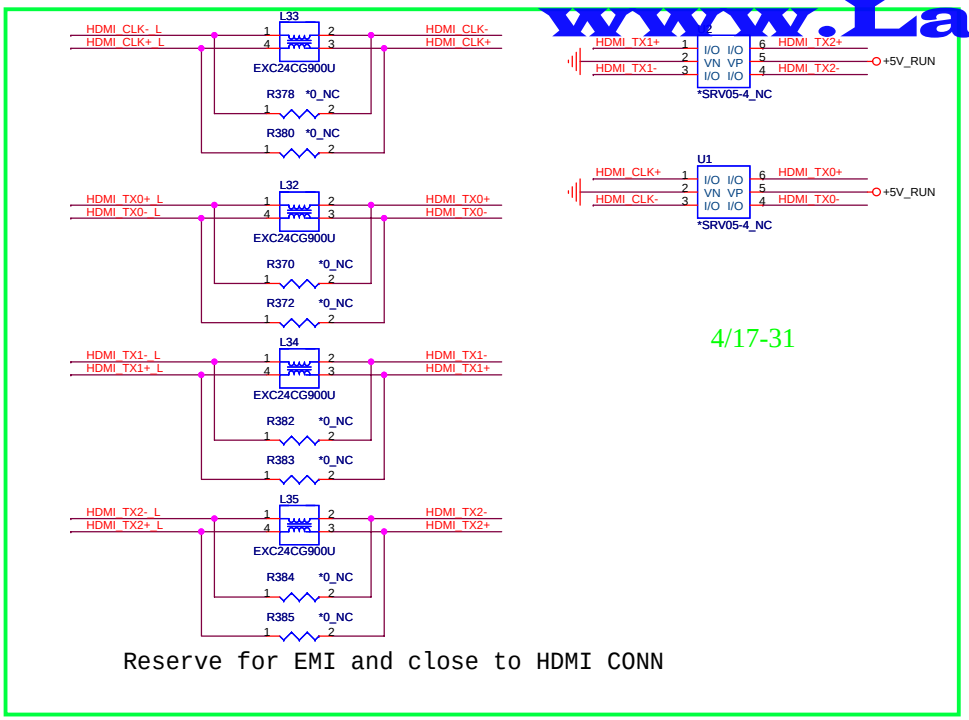
These are for backdrive issue.

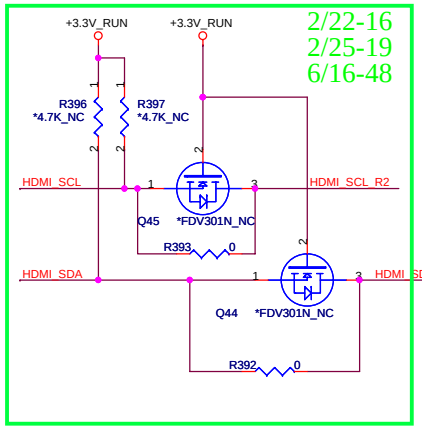
+3.3V_RUN
RP7 2.2KX2
26,31,39 SMBDAT1 — Q22 2N7002W-7-F — CLK_SDATA
+3.3V_RUN
26,31,39 SMBCLK1 — Q23 2N7002W-7-F — CLK_SCLK

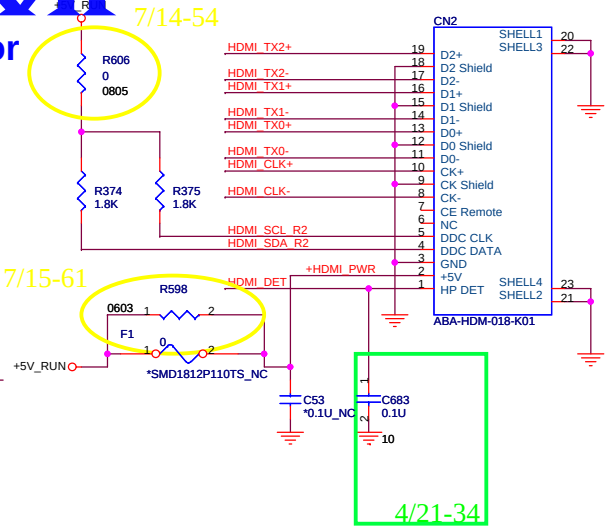
QUANTA COMPUTER

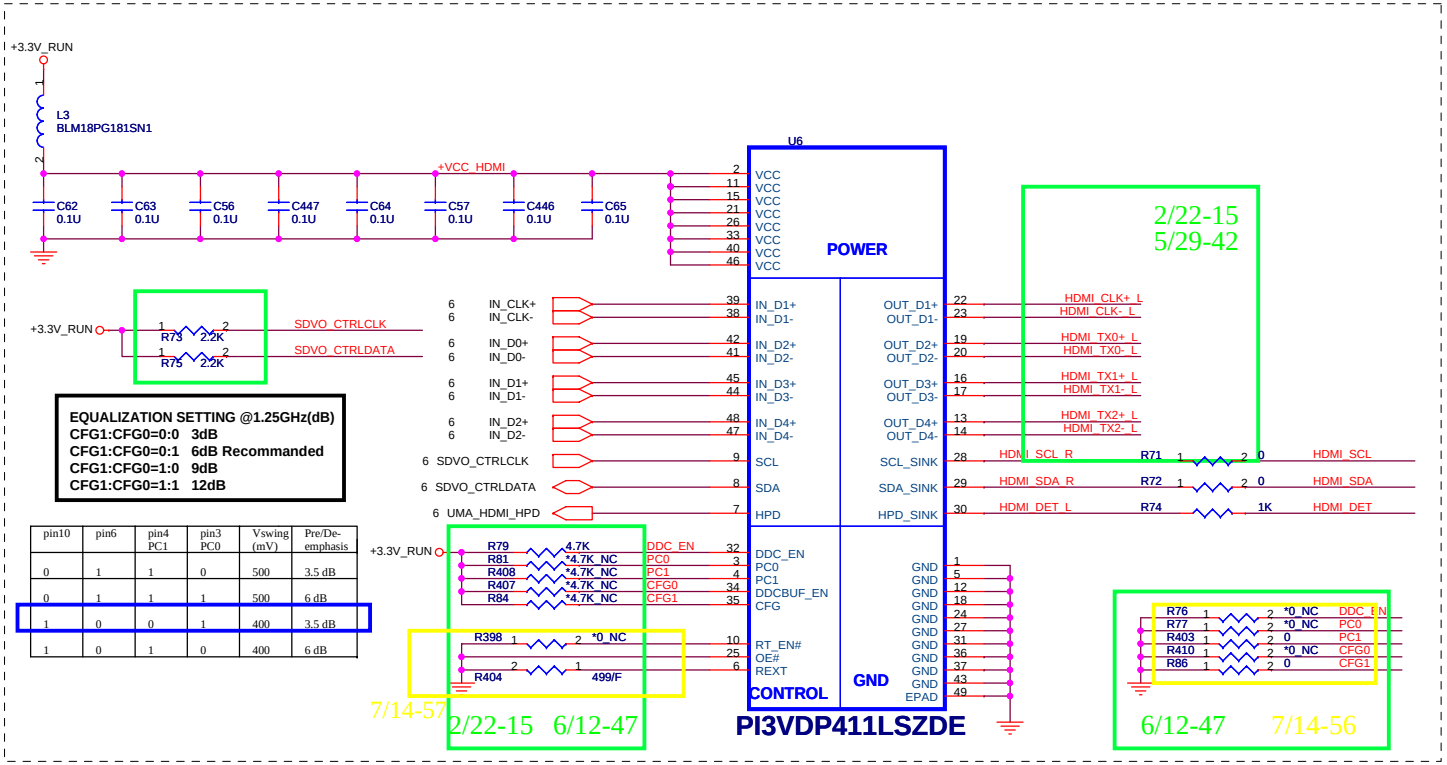
Title	CLOCK GENERATOR	
Size	Document Number FM7B	Rev 1A
Date: Monday, July 14, 2008	Sheet 17 of 60	

HDMI Connector









pin10	pin6	pin4 PC1	pin3 PC0	Vswing (mV)	Pre/De-emphasis
0	1	1	0	500	3.5 dB
0	1	1	1	500	6 dB
1	0	0	1	400	3.5 dB
1	0	1	0	400	6 dB

QUANTA COMPUTER

Title	Sil 1362	
Size	Document Number FM7B	Rev 1A
Date: Monday, July 21, 2008	Sheet 18 of 60	

BLANK PAGE FOR PAGE NUMBER SAME AS DISCRETE

QUANTA COMPUTER

Title		
Size	Document Number FM6B	Rev 1A
Date: Monday, June 30, 2008	Sheet 19 of 60	

BLANK PAGE FOR PAGE NUMBER SAME AS DISCRETE

QUANTA COMPUTER

Title		
Size	Document Number FM6B	Rev 1A
Date: Monday, June 30, 2008	Sheet 20 of 60	

BLANK PAGE FOR PAGE NUMBER SAME AS DISCRETE

QUANTA COMPUTER

Title		
Size	Document Number FM6B	Rev 1A
Date: Monday, June 30, 2008	Sheet 21 of 60	

BLANK PAGE FOR PAGE NUMBER SAME AS DISCRETE

QUANTA COMPUTER

Title		
Size	Document Number FM6B	Rev 1A
Date: Monday, June 30, 2008	Sheet 22 of 60	

QUANTA COMPUTER

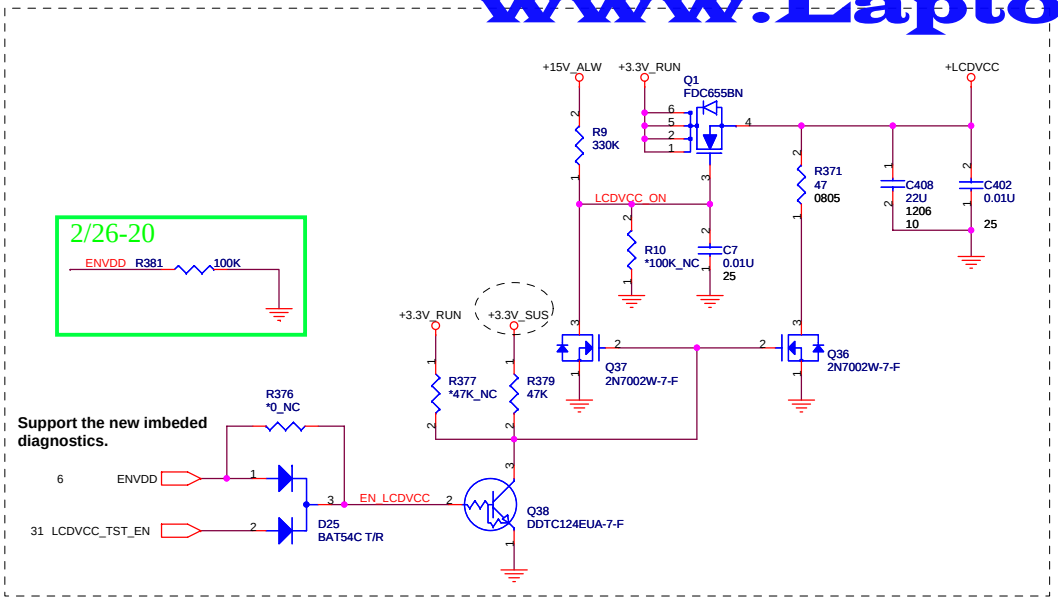
Title	FLASH, RTC & KC	
Size	Document Number FM6B	Rev 1A
Date: Monday, June 30, 2008	Sheet 23 of 60	

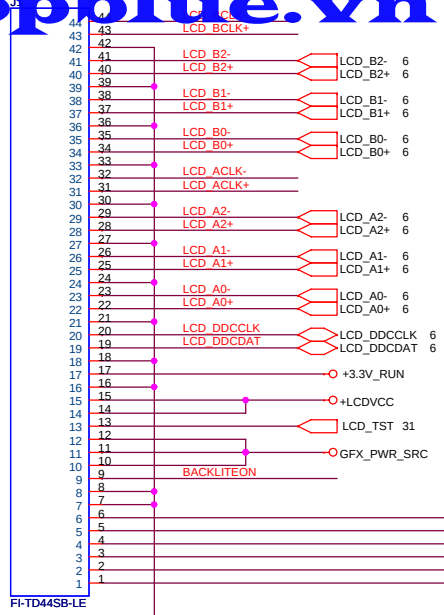
QUANTA COMPUTER

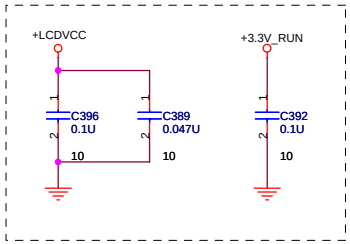
Title	Battery Selector	
Size	Document Number FM6B	Rev 1A
Date: Monday, June 30, 2008	Sheet 24 of 60	

QUANTA COMPUTER

Title	Docking Station CONN.	
Size	Document Number FM6B	Rev 1A
Date: Monday, June 30, 2008	Sheet 25 of 60	







Adress : A9H --Contrast
AAH --Backlight

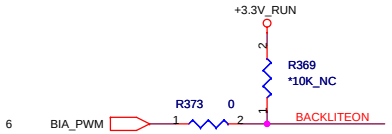
SMBCLK1 17,31,39
SMBDAT1 17,31,39
INVERTER_CBL_DET# 31
LCD_BAK# 31
PWM_VADJ 31
LCD_CBL_DET# 31

C403 *47P_NC 50
C404 *47P_NC 50

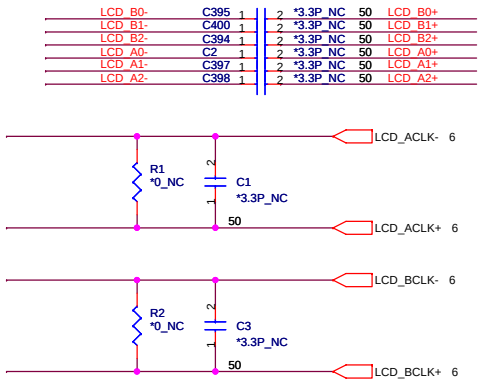
UMA

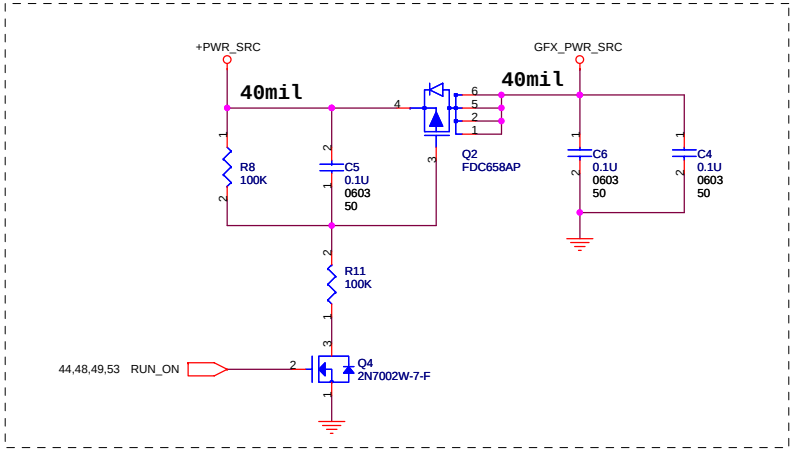
Populate R351 for DPST implementation only.

Populate R346 for platform without DPST support. No Stuff for Discrete DSPT support due to back up plan.



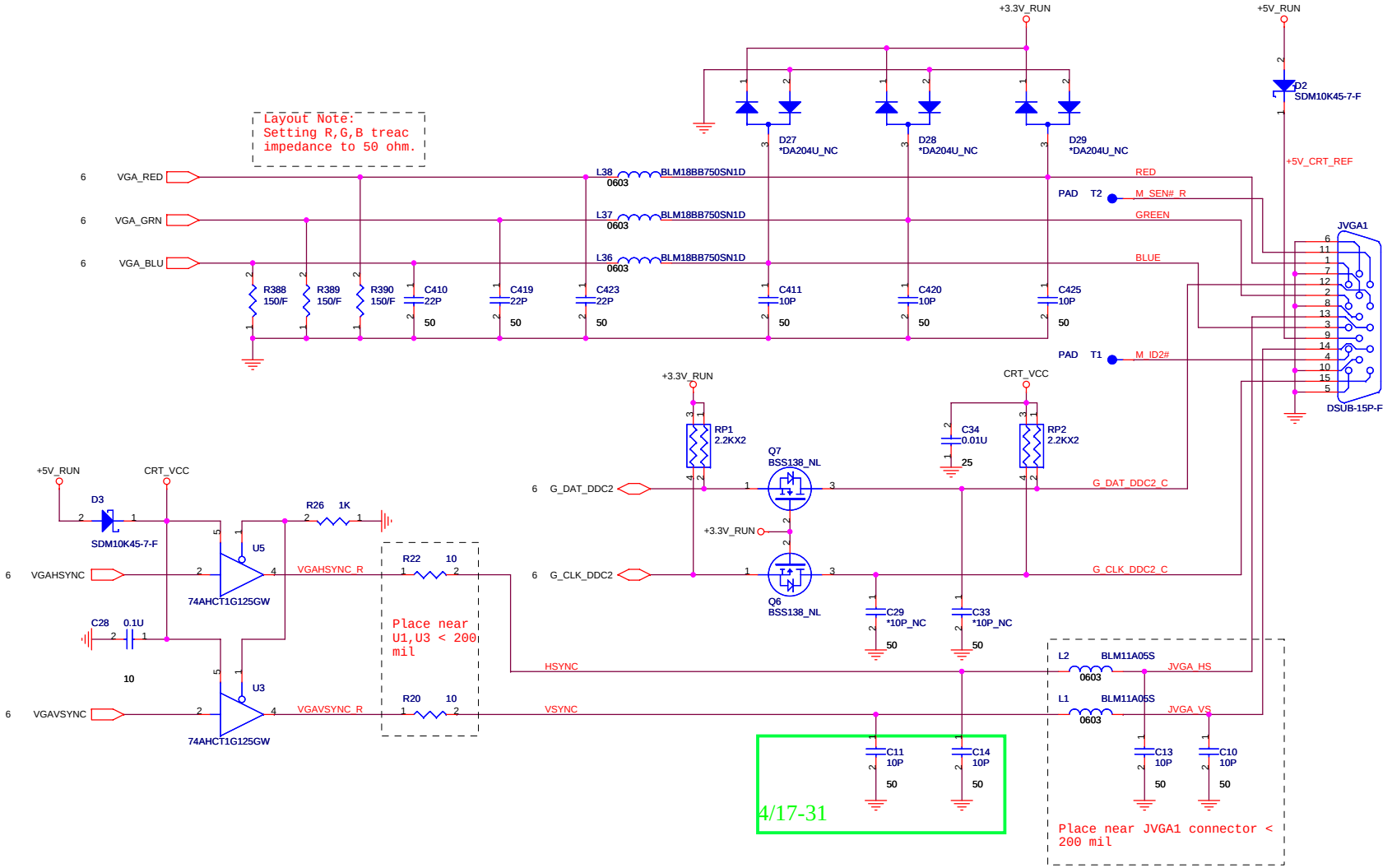
Shunt capacitors on LVDS for improving WWAN.





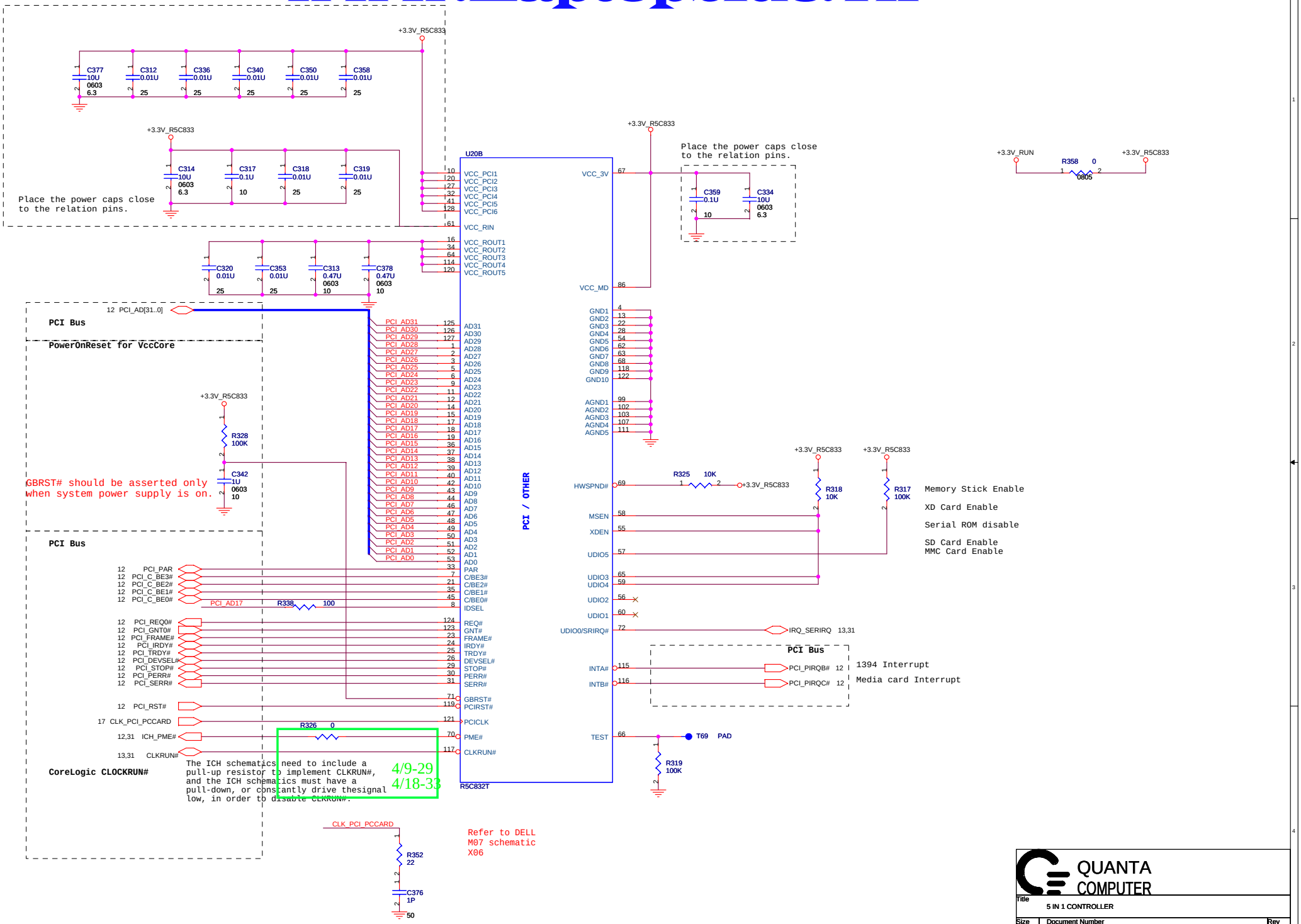
QUANTA COMPUTER

Title	LCD CONN & CK-SSCD	
Size	Document Number FM7B	Rev 1A
Date: Monday, June 30, 2008	Sheet 26 of 60	



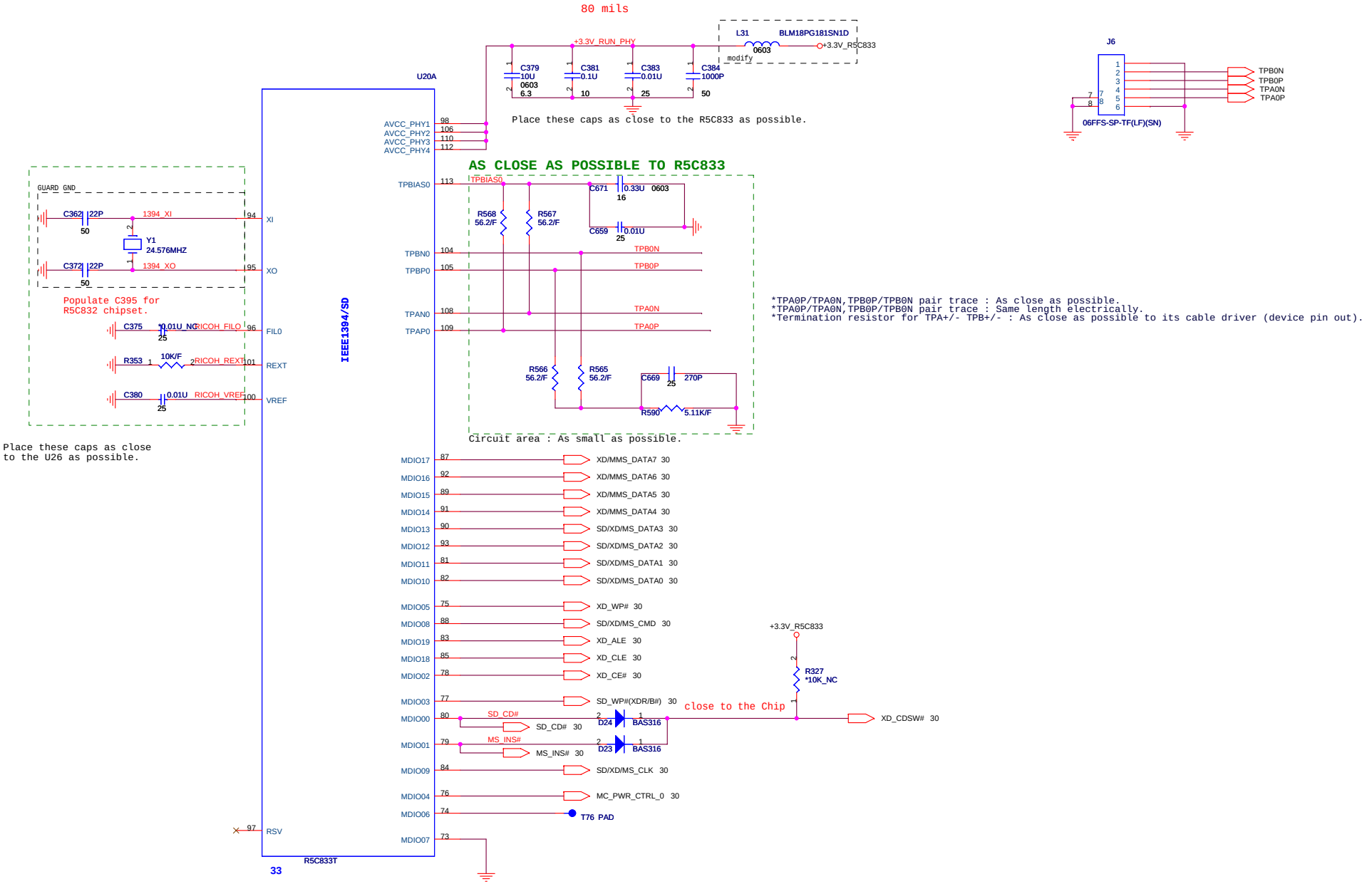
QUANTA COMPUTER

Title	CRT&TV CONN	
Size	Document Number FM7B	Rev 1A
Date: Monday, July 14, 2008	Sheet 27 of 60	



Title	5 IN 1 CONTROLLER	
Size	Document Number FM7B	Rev 1A
Date: Wednesday, July 16, 2008	Sheet 28 of 60	

QUANTA COMPUTER



QUANTA COMPUTER			
Title	IEEE 1394		
Size	Document Number FM7B		Rev 1A
Date: Monday, June 30, 2008		Sheet 29 of 60	

Express Card

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

L28 *PLW3216S900SQ2T1_NC
R246 0
R251 0
C607 0.1U 10
C608 0.1U 10
Please the cap near connector.
C616 0.1U 10
C614 0.1U 10
C611 10U 0603 6.3
Please the cap near connector.

CN1 JAE PX10FS16PH-26P 48303-0033
PCI-Express TX and RX direct to connector.

U18 ExpressSwitch R5538D001-TR-F
R324 100K
T71 PAD
R311 100K
R312 100K

C322 0.1U 10 Please the cap near pin 12 & 14(1.5VIN).
C324 0.1U 10 Please the cap near pin 2 & 4 (3.3VIN).
C333 0.1U 10 Please the cap near pin 17 (AUXIN).
C327 0.1U 10 Please the cap near pin 15 (AUXOUT).
C310 0.1U 10 Please the cap near pin 3 & 5 (3.3VOUT).
C331 0.1U 10 Please the cap near pin 11 & 13(1.5VOUT).

CON5 144-2400002900
R535 0
R537 0
C242 *270P_NC
C851 27P 50 NPO
C604 2.2U 0603 6.3
C241 *270P_NC
C605 270P

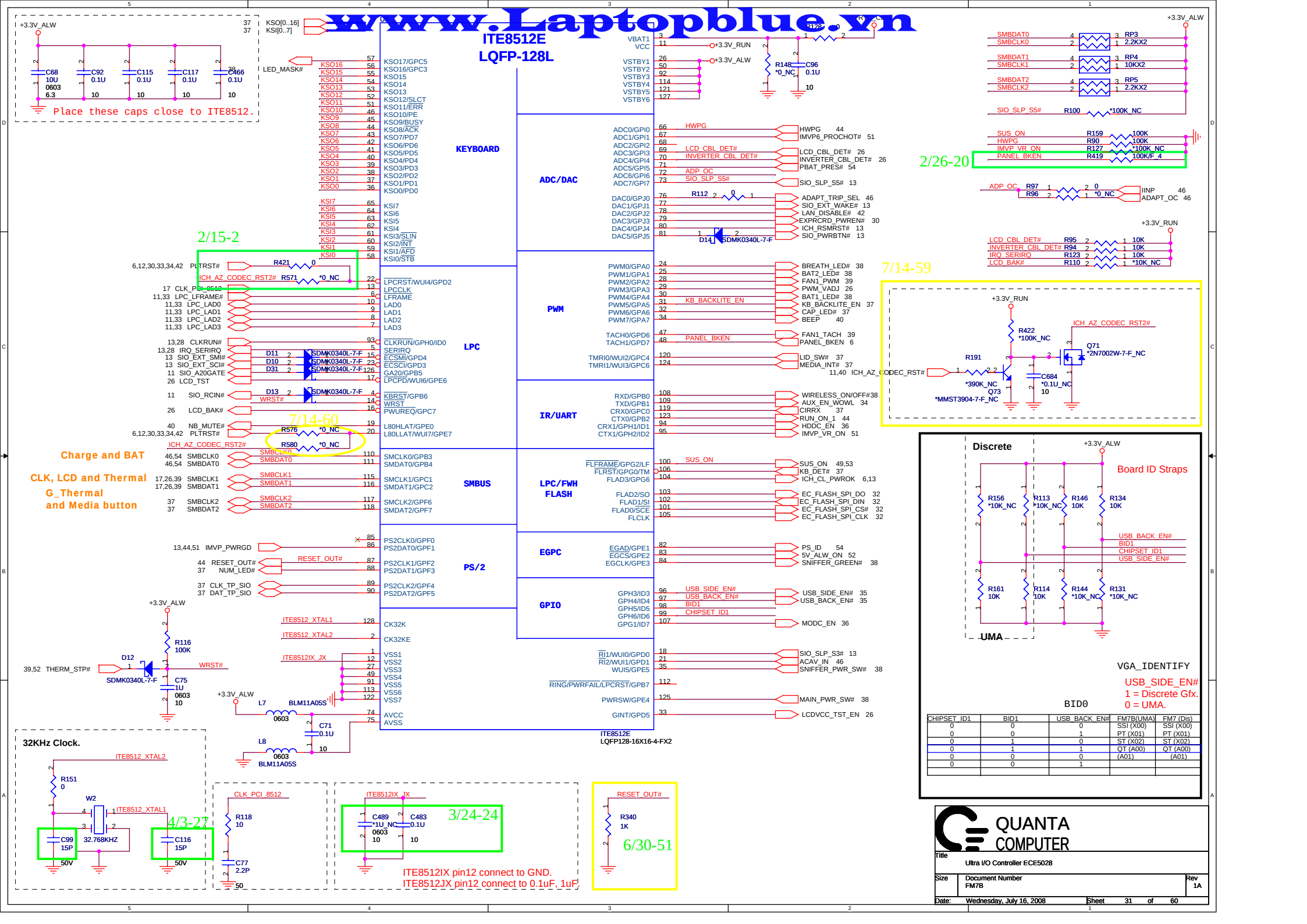
8 IN1 CARD READER

4/17-31

C603 0.01U
C613 0.01U
C586 0.01U
R538 150K
R536 *0_NC
Q58 2N7002W-7-F
U32 TPS2051BDBV
C628 0.1U
C640 1U 0603

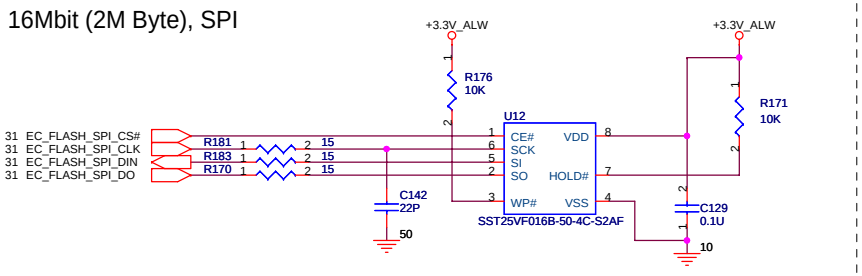
QUANTA COMPUTER

Title	ExpressCard/SmartCard	
Size	Document Number FM7B	Rev 1A
Date: Monday, July 14, 2008	Sheet 30 of 60	

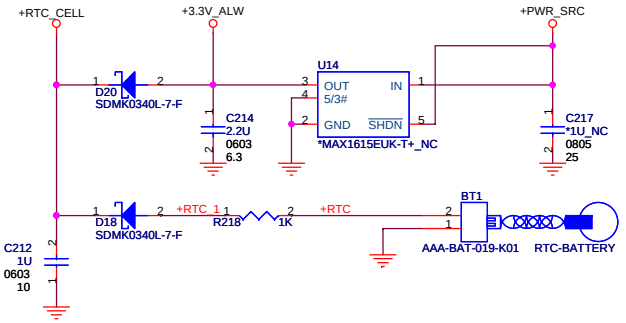


CHIPSET_ID1	BID1	USB_BACK_EN#	FM7B(UMA)	FM7 (Dis)
0	0	0	SSI (X00)	SSI (X00)
0	0	1	PT (X01)	PT (X01)
0	1	0	ST (X02)	ST (X02)
0	1	1	QT (A00)	QT (A00)
0	0	0	(A01)	(A01)
0	0	1		

16Mbit (2M Byte), SPI



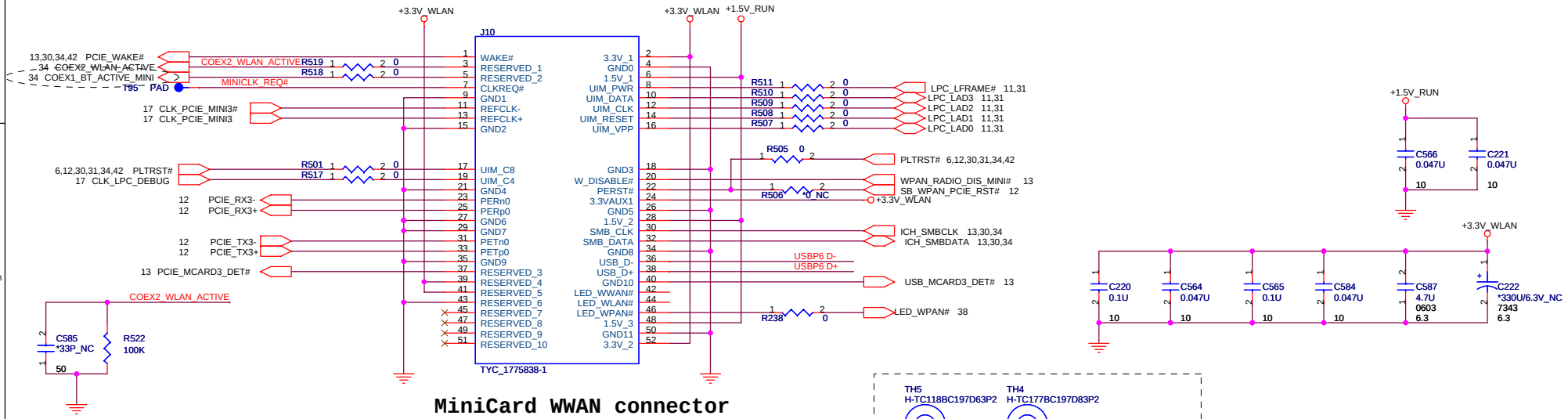
RTC BATTERY

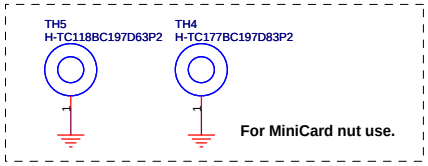


QUANTA COMPUTER

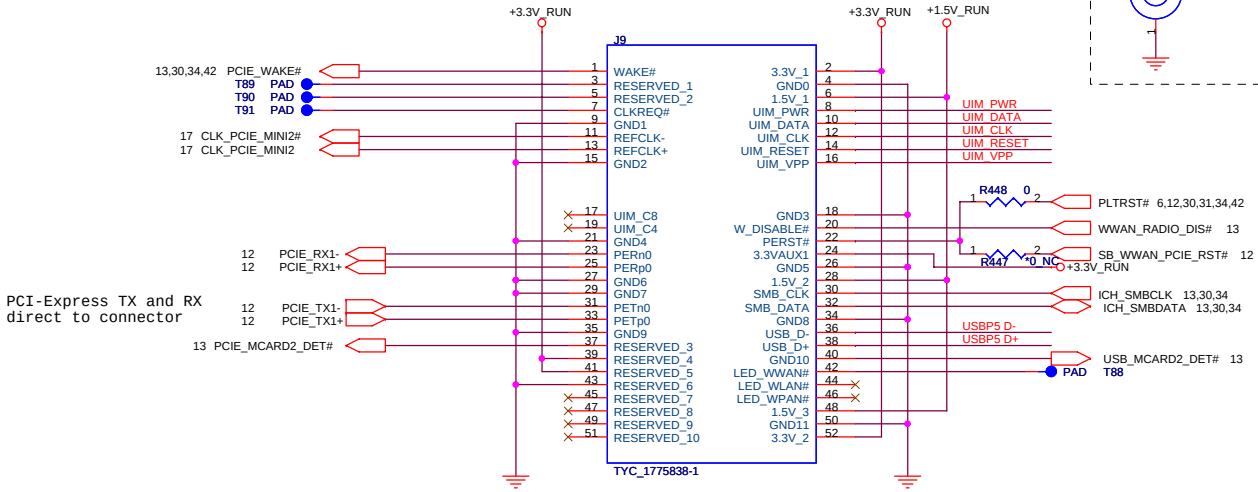
Title	Ultra I/O Controller ECE5028	
Size	Document Number FM7B	Rev 1A
Date: Monday, June 30, 2008	Sheet 32 of 60	

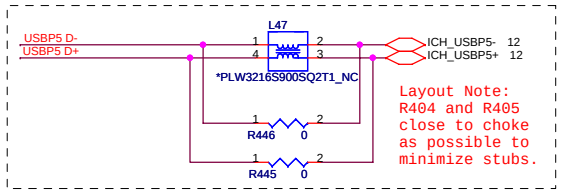
MiniCard Robson, BT. UWB connector

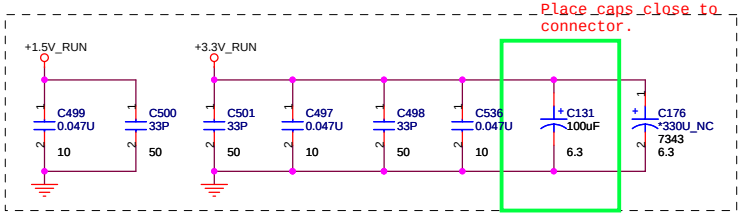


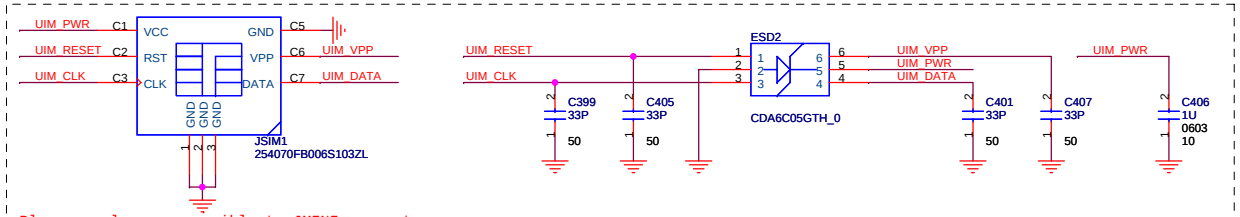


MiniCard WWAN connector









QUANTA COMPUTER		
Title: MINI-PCI		
Size	Document Number FM7B	Rev 1A
Date: Monday, June 30, 2008	Sheet 33 of 60	

MiniCard WLAN connector

TH3 H-TC177BC197D83P2
TH2 H-TC177BC197D83P2
For MiniCard nut use.

J11 TYC_1775838-1

13,30,33,42 PCIE_WAKE#
33 COEX2_WLAN_ACTIVE
33 COEX1_BT_ACTIVE_MIN
17 MINI1CLK_REQ#
MINI1CLK_REQ#
17 CLK_PCIE_MINI1#
17 CLK_PCIE_MINI1

C583 220P 50

PCI-Express TX and RX direct to connector
12 PCIE_RX2-
12 PCIE_RX2+
12 PCIE_TX2-
12 PCIE_TX2+
13 PCIE_MCARD1_DET#

Non-iAMT
T92 PAD
T94 PAD
T93 PAD

+3.3V_WLAN
+1.5V_RUN

R521 0
R520 0

1	WAKE#	3.3V_1	2
3	RESERVED_1	GND0	4
5	RESERVED_2	1.5V_1	6
7	CLKREQ#	UIM_PWR	8
9	GND1	UIM_DATA	10
11	REFCLK-	UIM_CLK	12
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
23	PERn0	3.3VAUX1	24
25	PERp0	GND5	26
27	GND6	1.5V_2	28
29	GND7	SMB_CLK	30
31	PETn0	SMB_DATA	32
33	PETp0	GND8	34
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

R504 0 → PLTRST# 6,12,30,31,33,42
WLAN_RADIO_OFF#
R514 *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

USBP4 D-
USBP4 D+
L27 *PLW3216S900SQ2T1_NC 1206
ICH_USBP4- 12
ICH_USBP4+ 12
R244 0
R243 0

+3.3V_WLAN
RP47 2.2KX2
Q55 *2N7002W-7-F_NC
WLAN_SMBCLK
ICH_SMBCLK 13,30,33
R500 *0_NC
+3.3V_WLAN
Q56 *2N7002W-7-F_NC
WLAN_SMBDATA
ICH_SMBDATA 13,30,33
R512 *0_NC

Suport for WoW

WLAN_RADIO_OFF#
D32 SDMK0340L-7-F
WLAN_RADIO_DIS# 13
R515 *0_NC
Prevent backdrive when WoW is enabled.

+PWR_SRC
+3.3V_ALW
+3.3V_WLAN
+3.3V_RUN
Q31 *FDC655BN_NC
R260 0 0805
R258 *100K_NC
R265 *100K_NC
Q30B *2N7002DW-7-F_NC
Q30A *2N7002DW-7-F_NC
31 AUX_EN_WOWL
R259 *200K_NC
R267 *470K_NC
C251 *4700P_NC 0603 50
R274 *100K_NC

+1.5V_RUN
+3.3V_WLAN
Place caps close to connector.

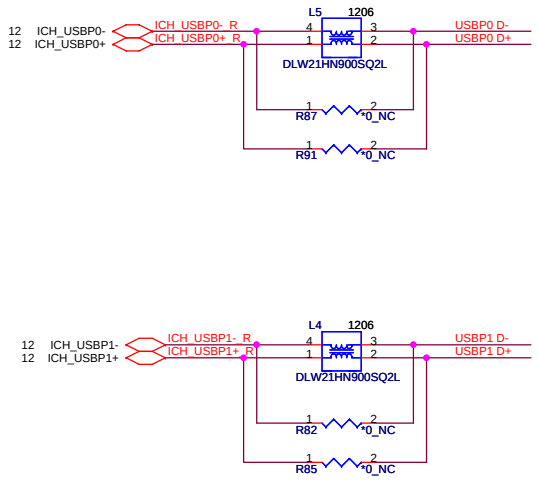
C570 0.047U 10	C561 0.047U 10	C571 0.1U 10	C562 0.047U 10	C569 0.1U 10	C588 0.047U 10	C567 4.7U 0805 10	C560 *330U/6.3V_NC 7343 6.3

QUANTA COMPUTER

Title	MDC CONN.	
Size	Document Number FM7B	Rev 1A
Date: Monday, July 14, 2008	Sheet 34 of 60	

2/22-14
4/17-31

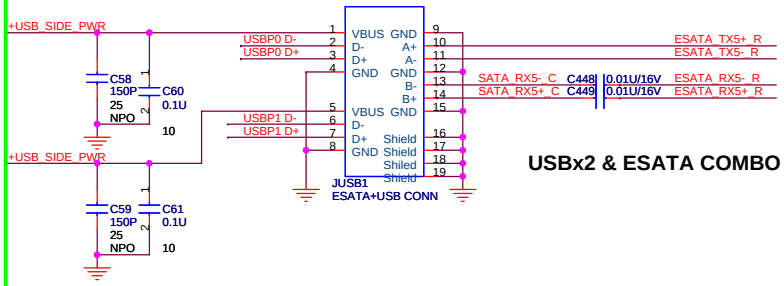
External USB PORT hookup reference. Your design may need more or less external ports and may be mapped differently



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

Side External USBX2

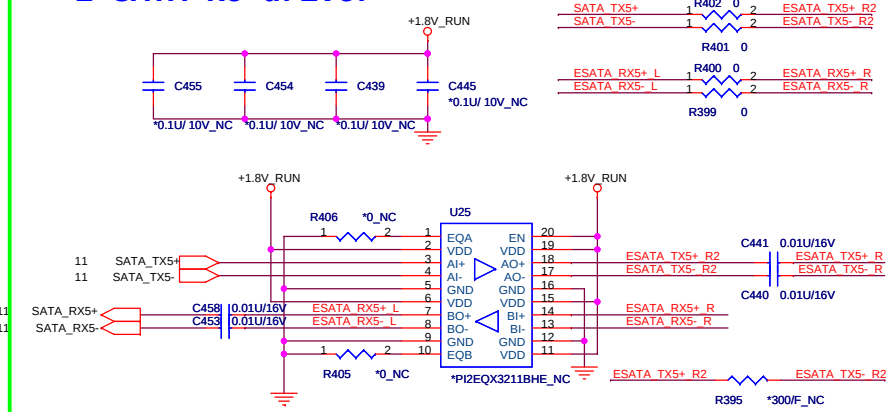
2/15-1



USBx2 & ESATA COMBO

2/20-11
5/29-41

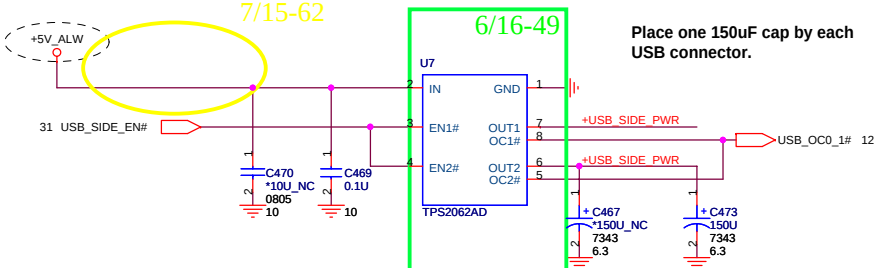
E-SATA Re-driver



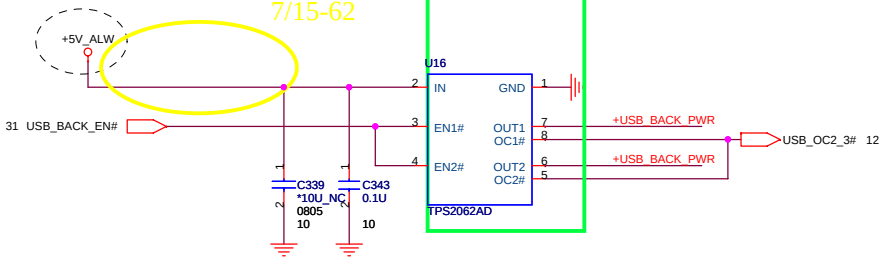
7/15-62

6/16-49

Place one 150uF cap by each USB connector.

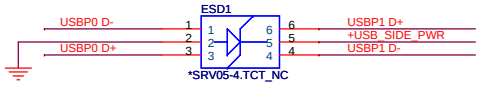


7/15-62

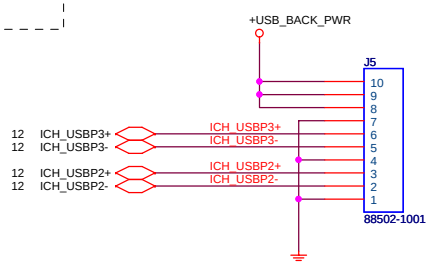


Each channel is 1A

Place ESD diodes as close as USB connector.



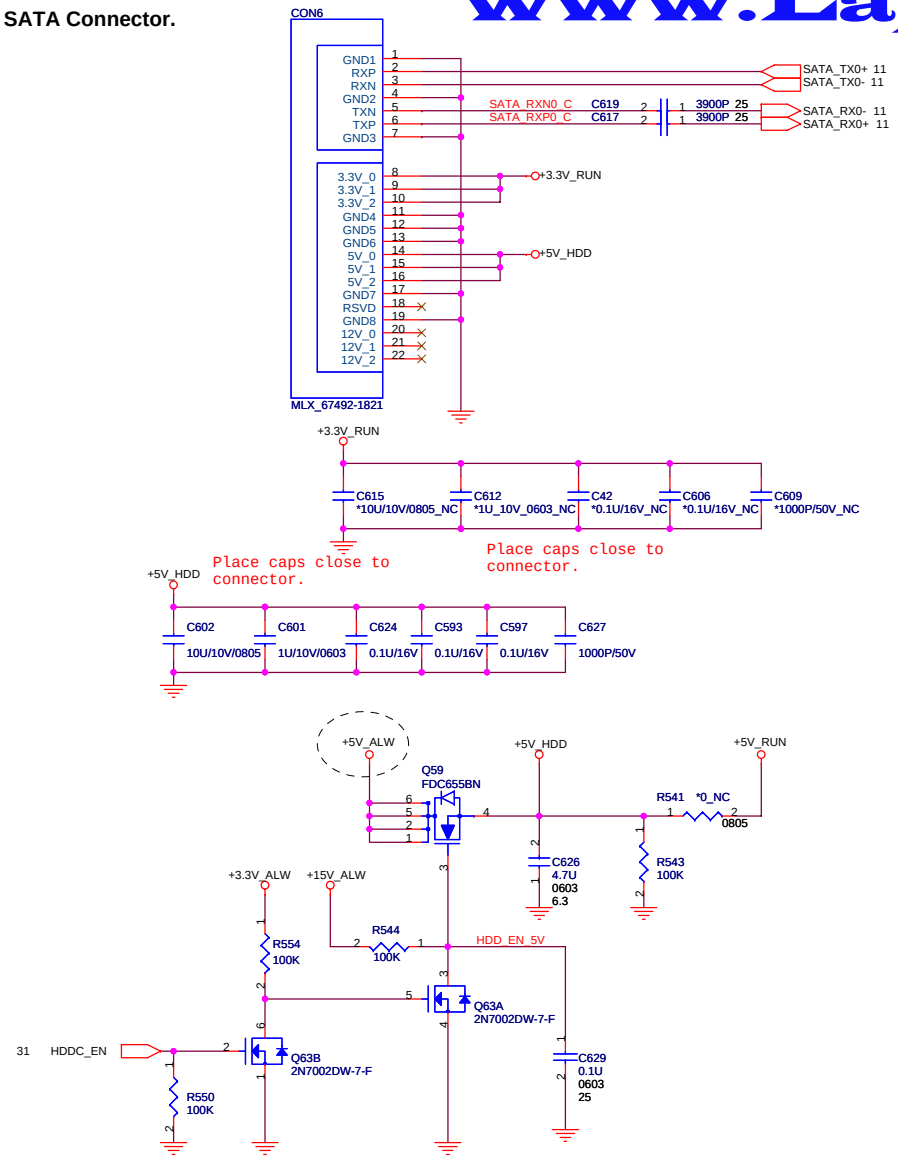
MB side



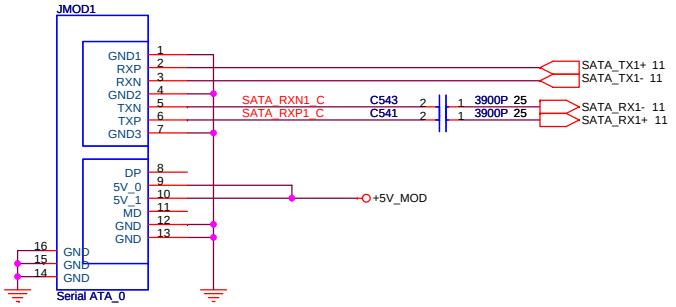
QUANTA COMPUTER

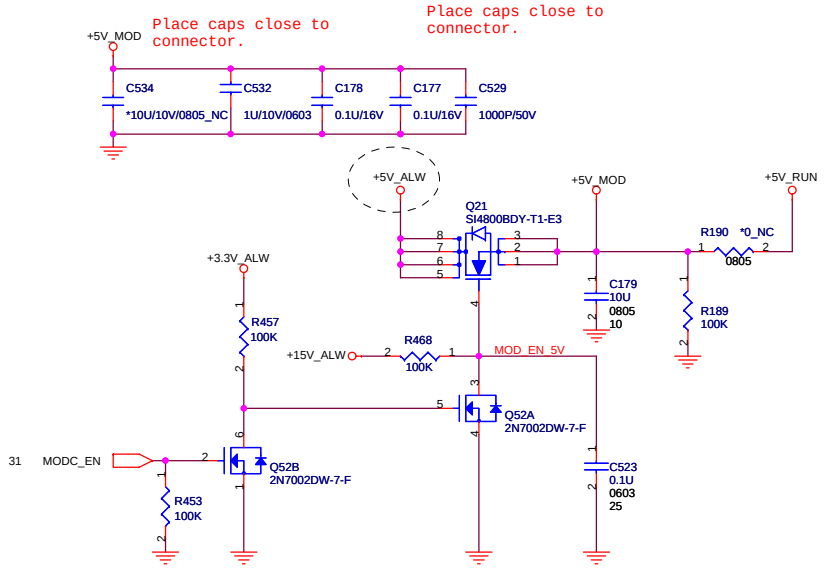
Title	SERIAL PORT & USB	
Size	Document Number FM7B	Rev 1A
Date: Tuesday, July 15, 2008	Sheet 35 of 60	

SATA Connector.



ODD Connector

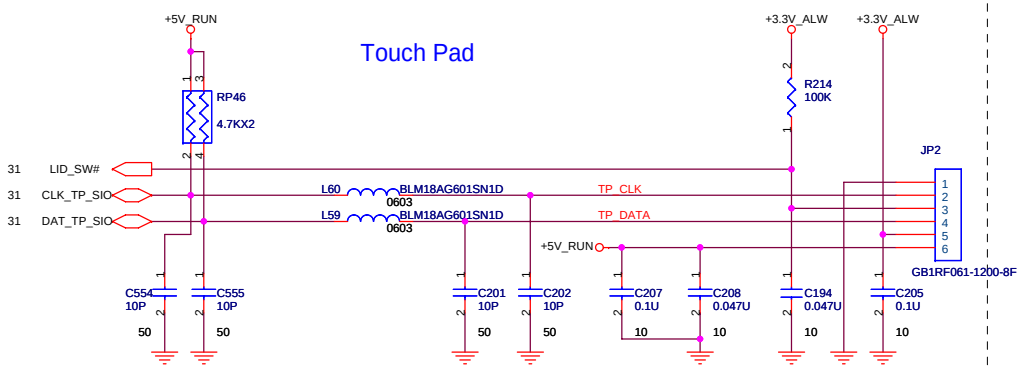




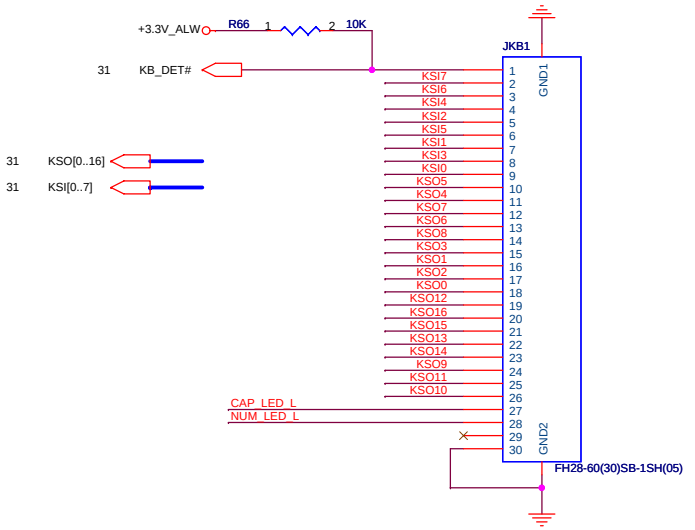
QUANTA COMPUTER

Title	SATA (HDD&CD_ROM)	
Size	Document Number FM7B	Rev 1A
Date: Monday, July 14, 2008	Sheet 36 of 60	

Touch Pad

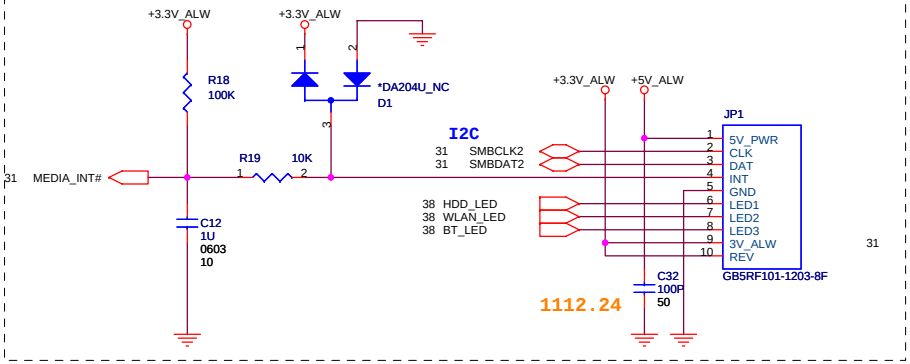


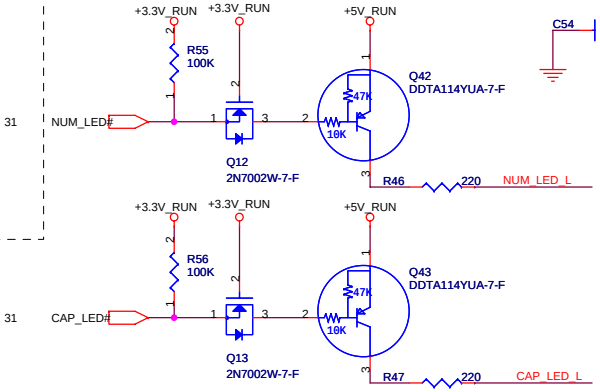
KEYBOARD CONNECTOR

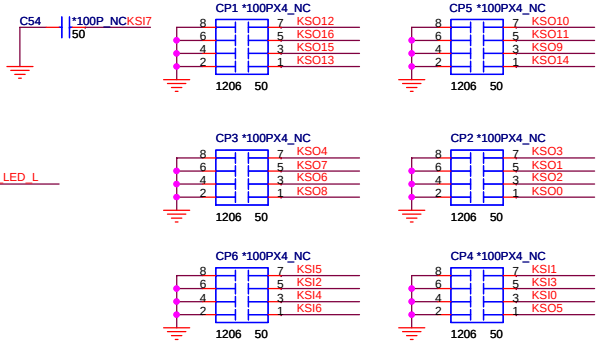


Media Button

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

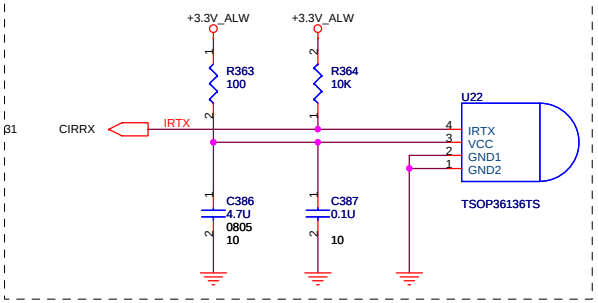




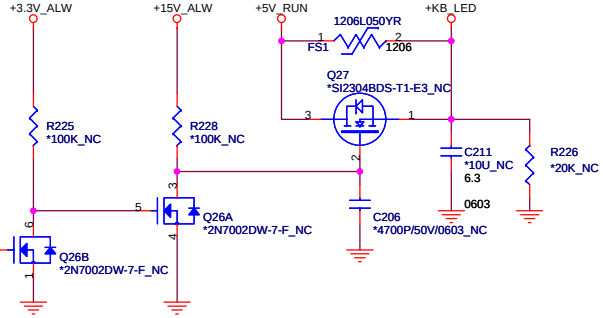


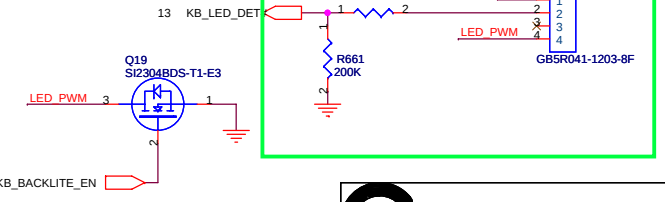
100P CAPS CLOSE TO JKB1

Consumer IR



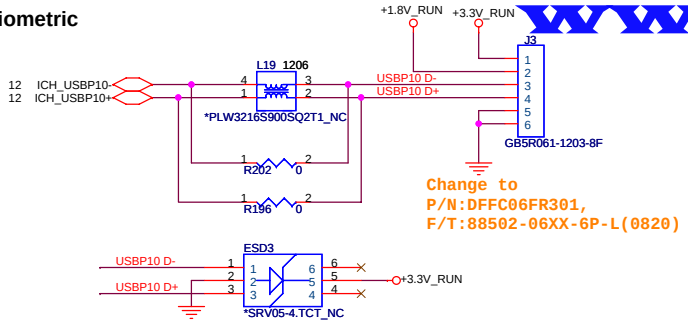
Key board Illumination



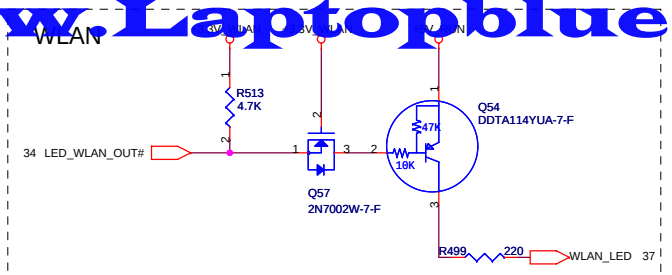


QUANTA COMPUTER		
Title: TOUCH PAD, BULE TOOTH & FIR		
Size	Document Number FM7B	Rev 1A
Date: Monday, June 30, 2008	Sheet 37 of 60	

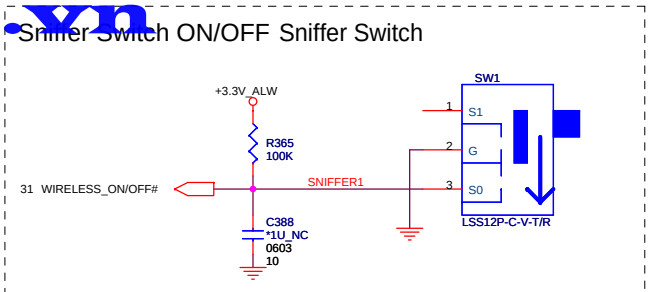
Biometric



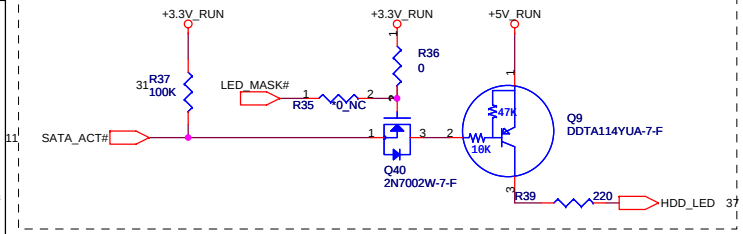
WLAN



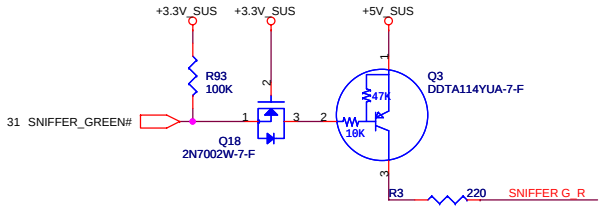
Sniffer Switch ON/OFF Sniffer Switch



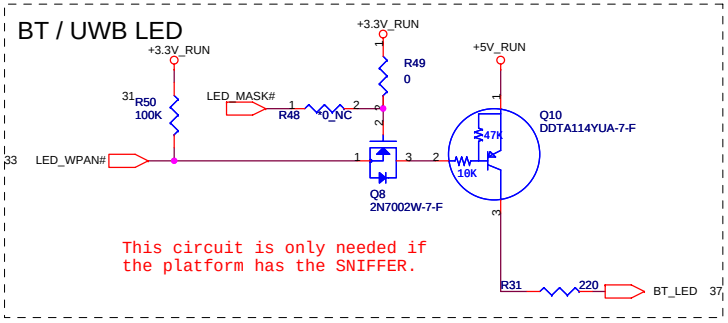
HDD activity LED.

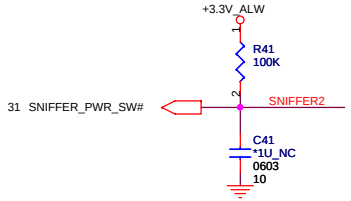


Sniffer Buttom

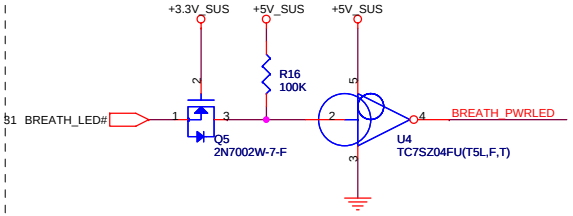


BT / UWB LED

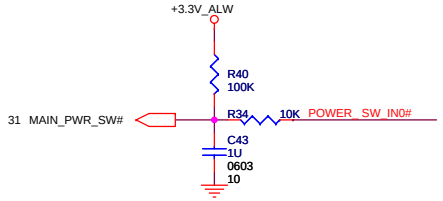




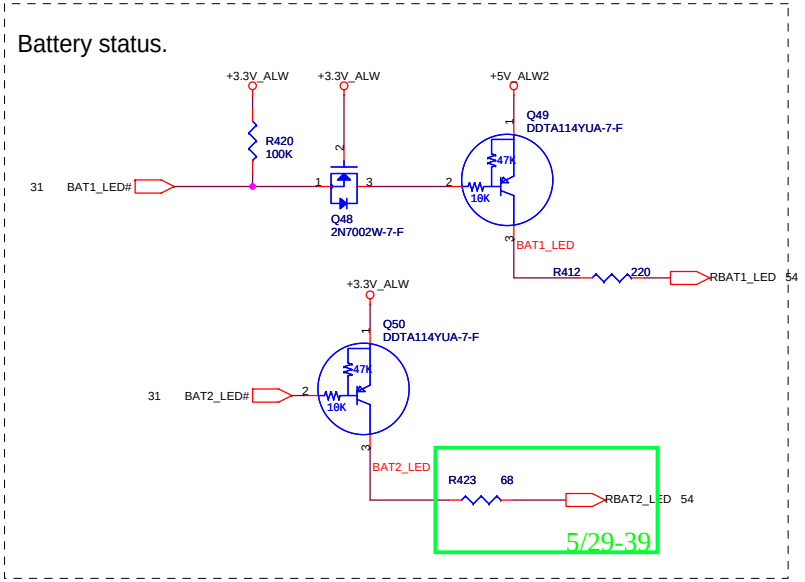
Power & Suspend.

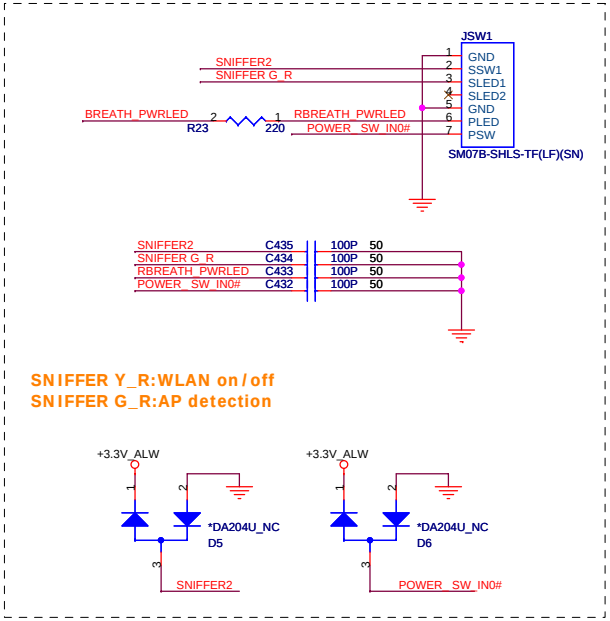


Power Switch

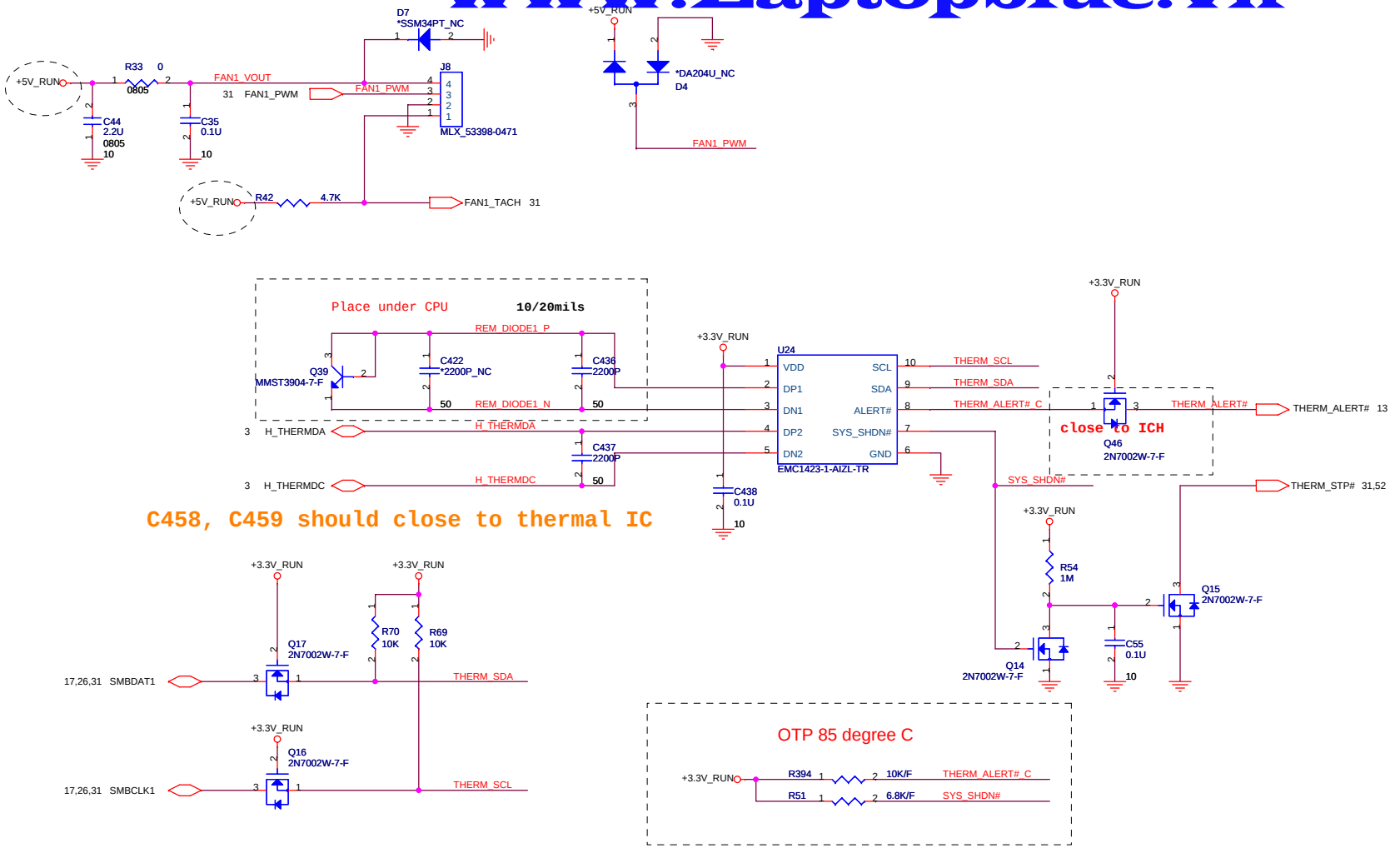


Battery status.





QUANTA COMPUTER		
Title: SWITCH, KEYBOARD & LED		
Size	Document Number: FM7B	Rev: 1A
Date: Monday, June 30, 2008	Sheet 38 of 60	



QUANTA COMPUTER		
Title	FAN & THERMAL	
Size	Document Number FM7B	Rev 1A
Date: Monday, July 14, 2008	Sheet 39 of 60	

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

INTERNAL SPEAKER AMP

TPA6040A4
QFN 32PIN

Layout Note: Place close U27 pin 23.

Layout Note: Close to U28 Pin 34

Layout Note: Close to U28 Pin 13

Layout Note: Place close to pin 18.

Layout Note: Place close U27.

AZALIA (HD) CODEC

92HD73C/STAC9228

Depop R494,C651 for using 92HD73C

Depop R543, R549, R498,R548
Pop R542, R551, R495 ,R541
for using 92HD73C
R542,R549 close to U28, Let DVDD width be 10-mils

Layout Note: Place close to pin 8.

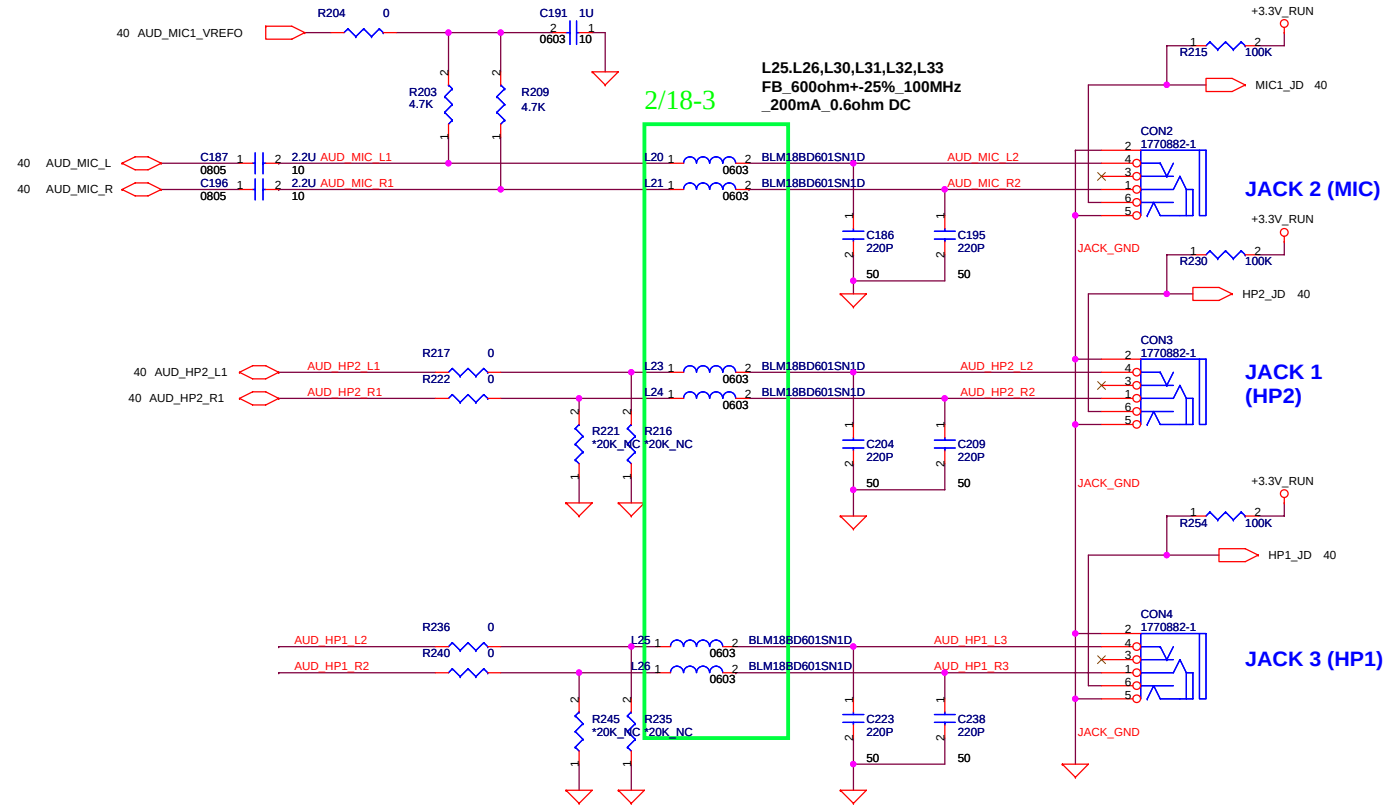
Close to U1

EMI Request

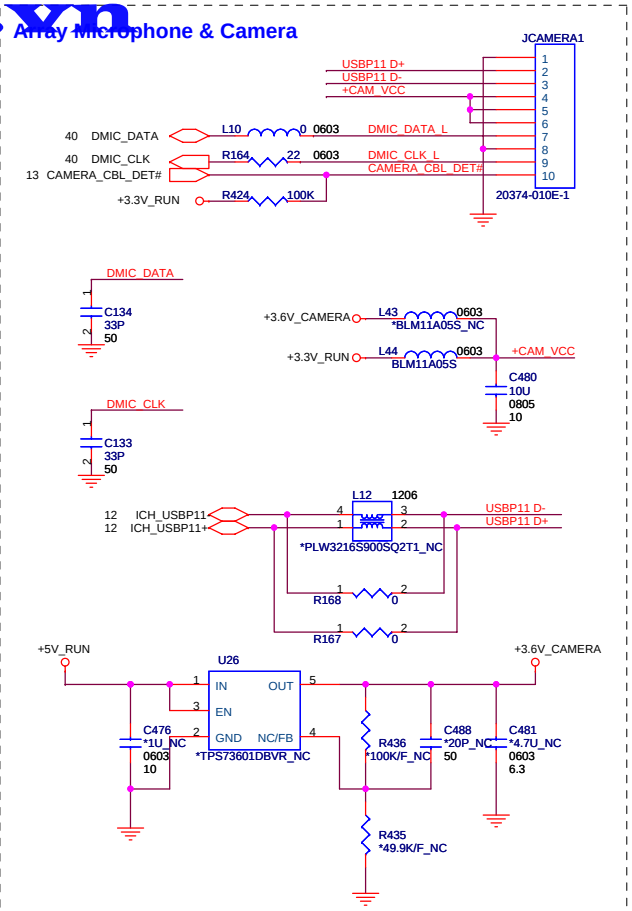
Title	Azelia CODEC
Size	Document Number FM7B
Rev	1A
Date:	Thursday, July 10, 2008
Sheet	40 of 60

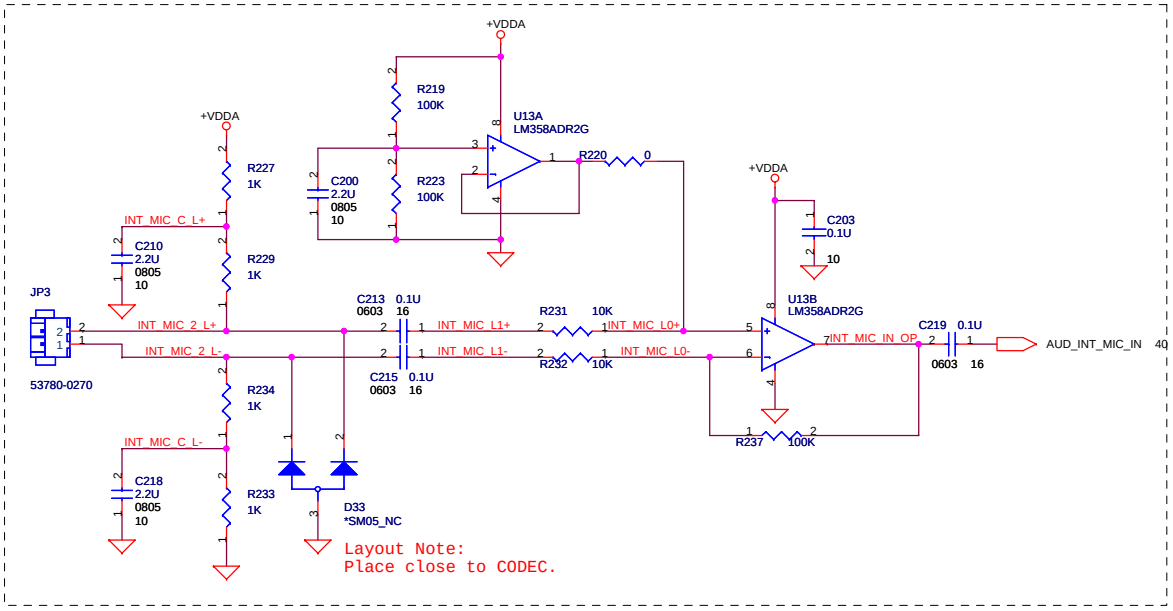
QUANTA COMPUTER

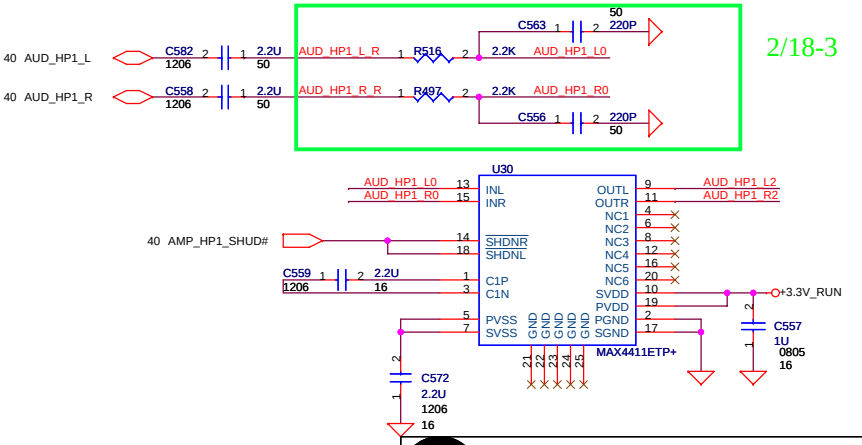
Headphone Jack
Stereo MIC Jack



Array Microphone & Camera







QUANTA COMPUTER

Title	AUDIO CONN	
Size	Document Number FM7B	Rev 1A
Date: Thursday, July 10, 2008	Sheet 41 of 60	

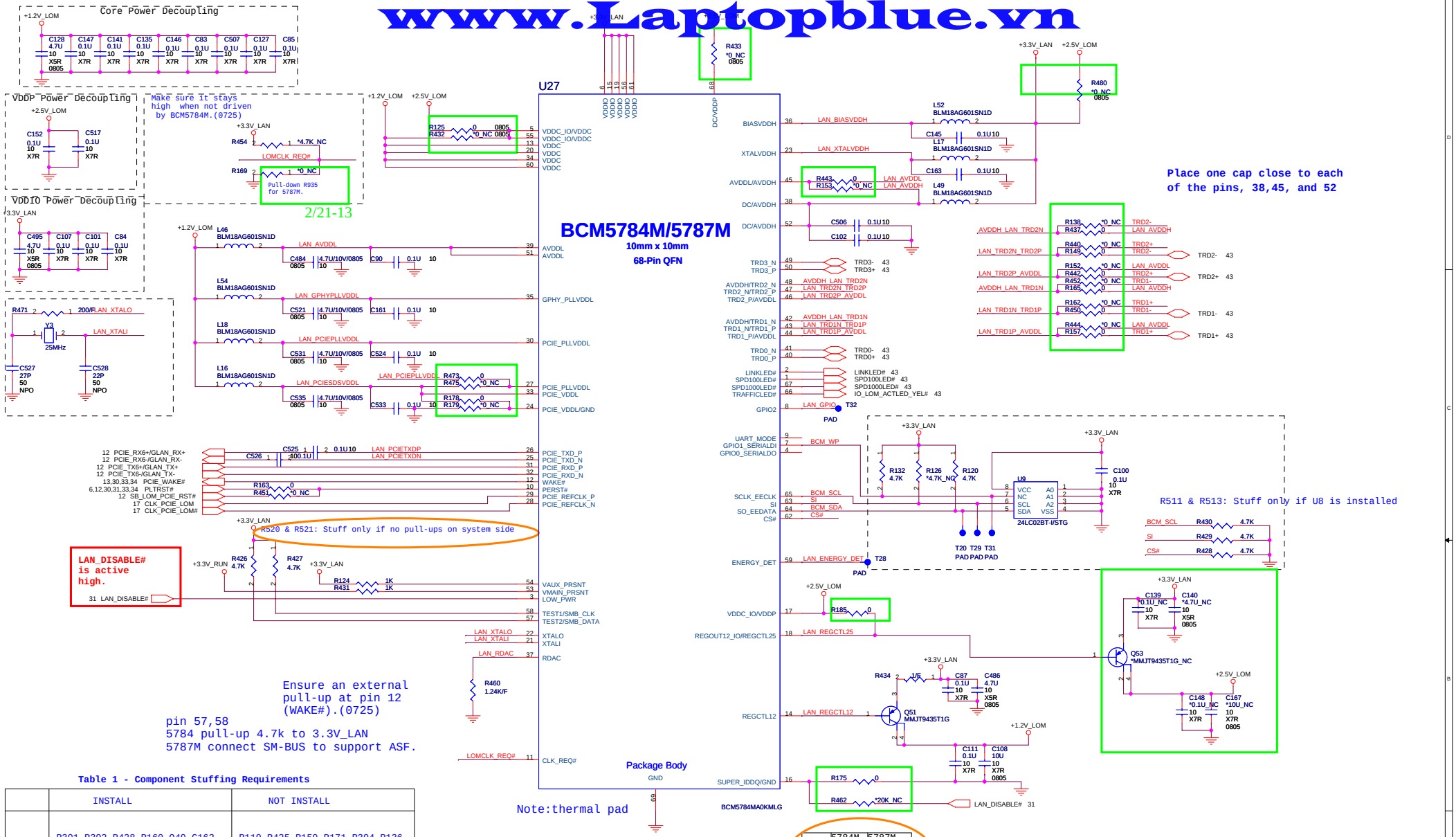


Table 1 - Component Stuffing Requirements

	INSTALL	NOT INSTALL
5787M	R391,R392,R428,R160,Q49,C162, C163,C179,C191,R132,R397,R139, R411,R149,R403,R141,R433	R119,R425,R159,R171,R394,R136, R401,R151,R409,R143,R402,R177
5784	R119,R425,R159,R171,R394,R136, R401,R151,R409,R143,R402,R177	R391,R392,R428,R160,Q49,C162, C163,C179,C191,R132,R397,R139, R411,R149,R403,R141,R433

	5784M	5787M
R157	39k	0
R418	20k	*20k_NC

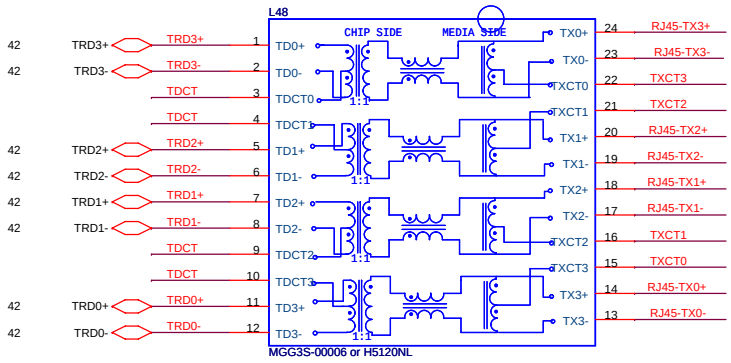
QUANTA COMPUTER

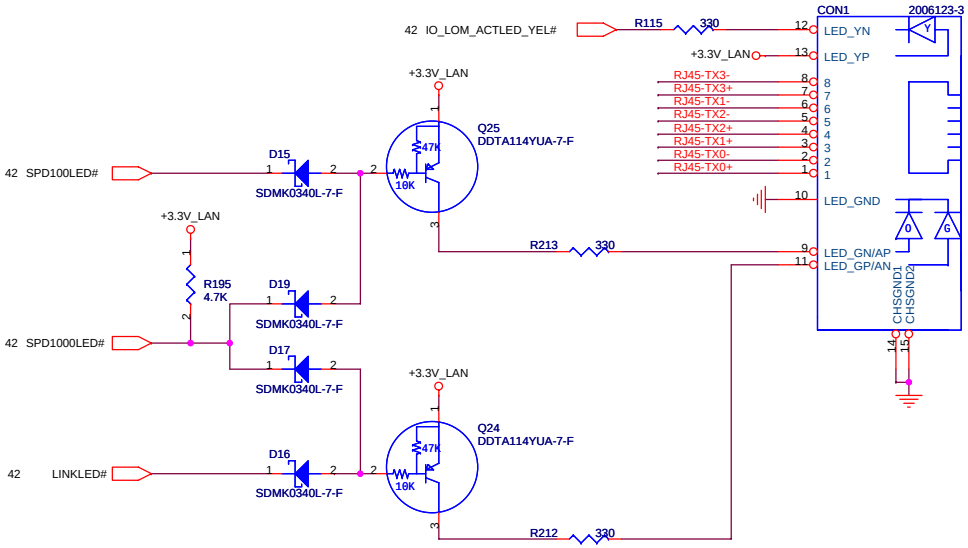
Title	LAN	
Size	Document Number FM7B	Rev 1A
Date: Monday, June 30, 2008	Sheet 42 of 60	

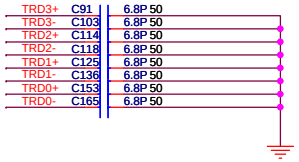
RJ-45 Connector

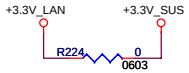
TRANSFORM

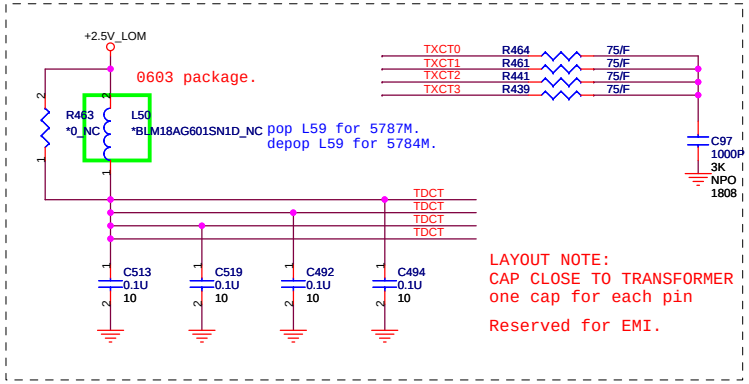
TRANSFORM



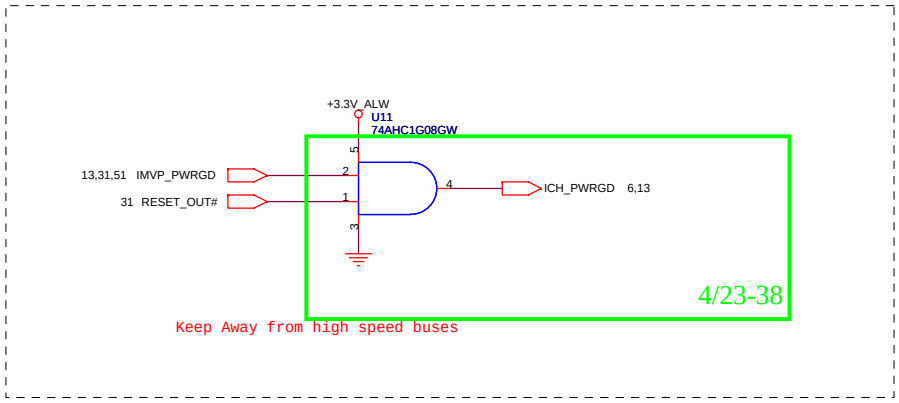


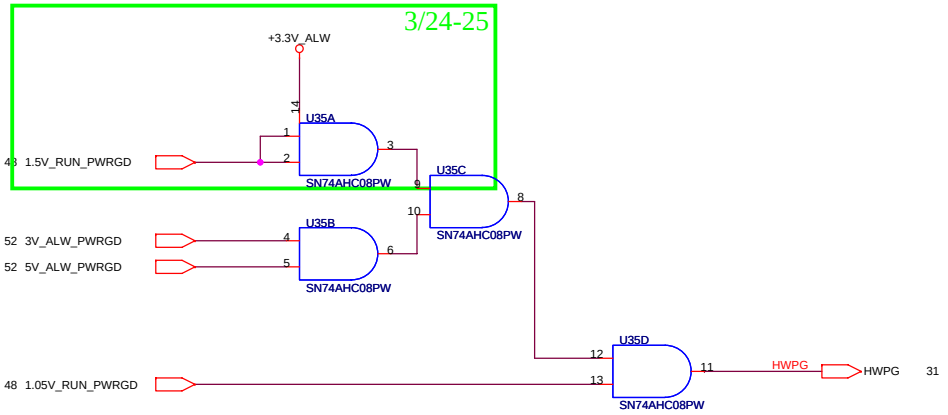


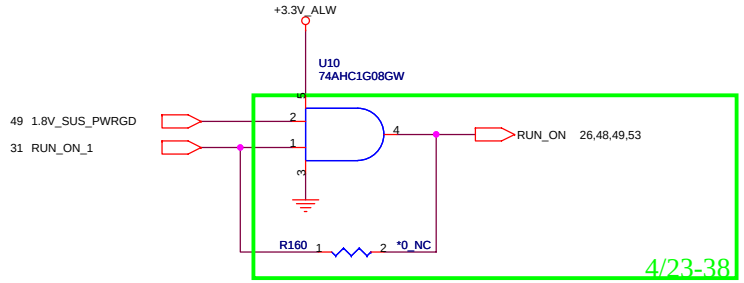


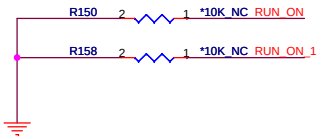


QUANTA COMPUTER		
Title	LAN SWITCH	
Size	Document Number FM7B	Rev 1A
Date: Monday, June 30, 2008	Sheet 43 of 60	









QUANTA COMPUTER

Title	System Reset Circuit	
Size	Document Number FM7B	Rev 1A
Date: Monday, June 30, 2008	Sheet 44 of 60	

QUANTA COMPUTER

Title	Docking Q-SWITCH	
Size	Document Number FM6B	Rev 1A
Date: Monday, June 30, 2008	Sheet 45 of 60	

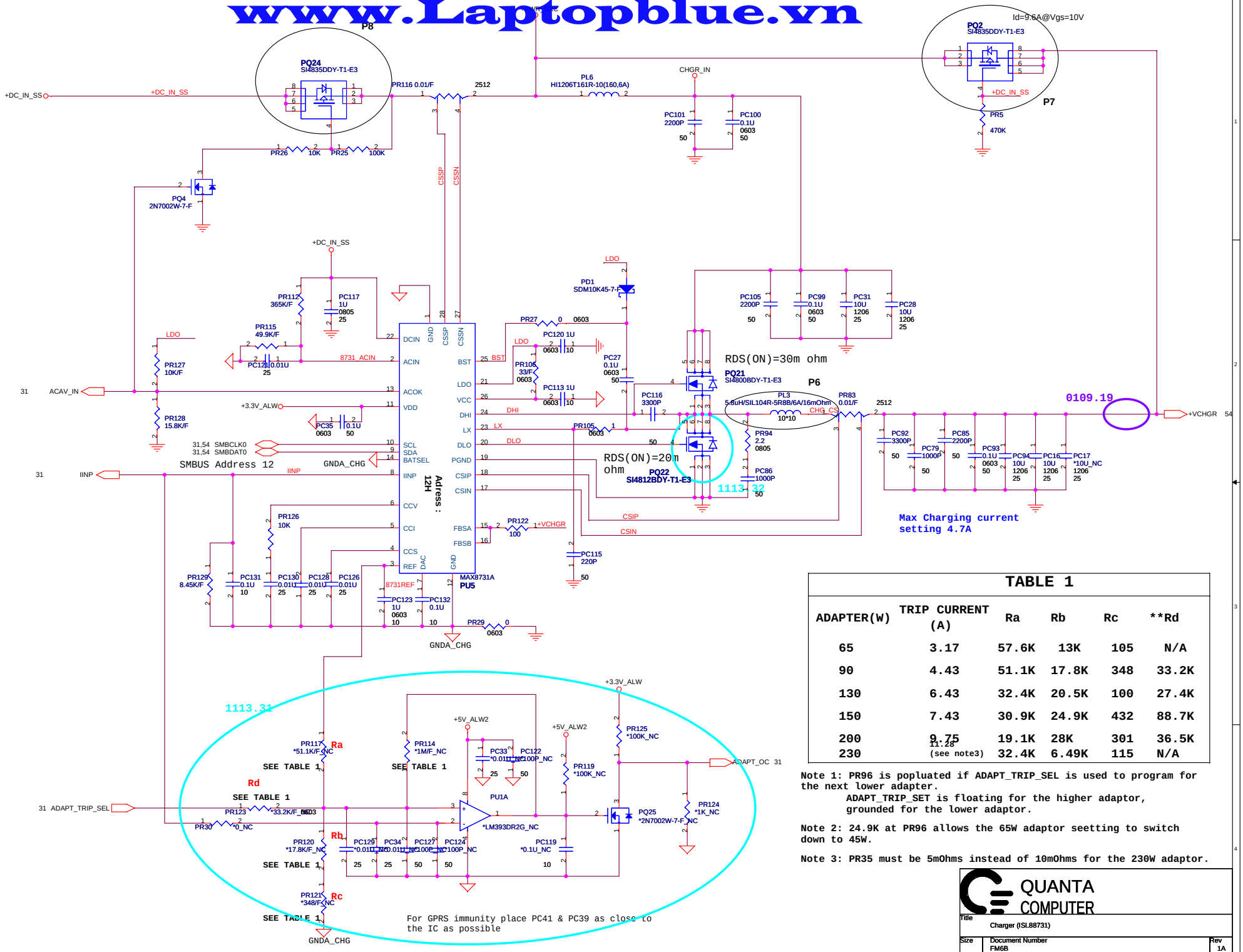


TABLE 1

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.

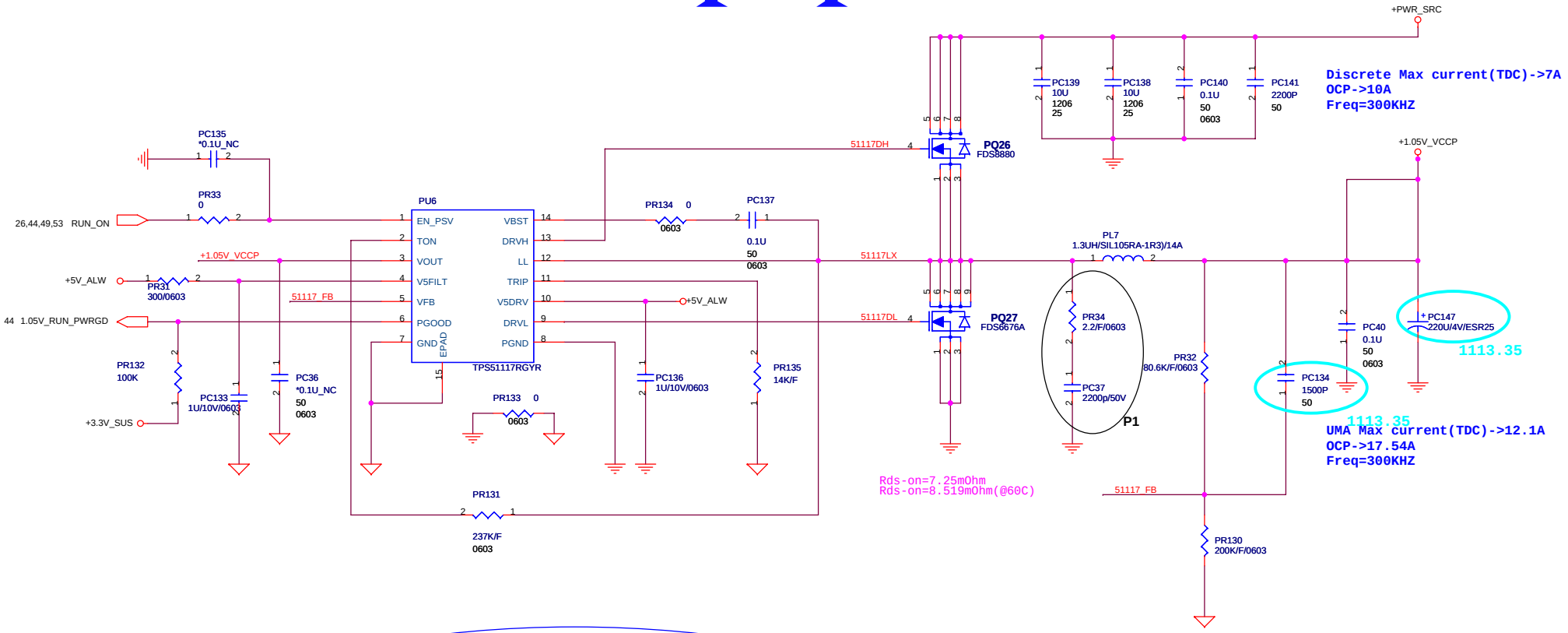
QUANTA COMPUTER

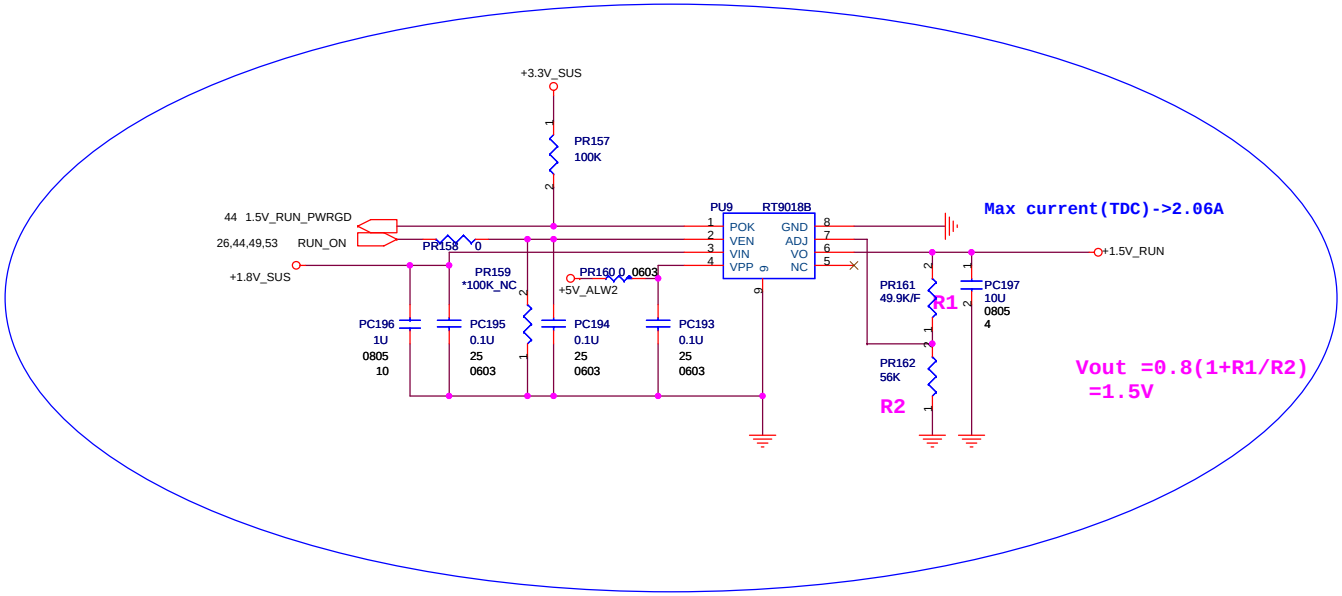
Title	Charger (ISL88731)	
Size	Document Number FM6B	Rev 1A
Date: Monday, July 14, 2008	Sheet 46 of 60	

BLANK PAGE FOR PAGE NUMBER SAME AS DISCRETE

QUANTA COMPUTER

Title		
Size	Document Number FM6B	Rev 1A
Date: Monday, June 30, 2008	Sheet 47 of 60	

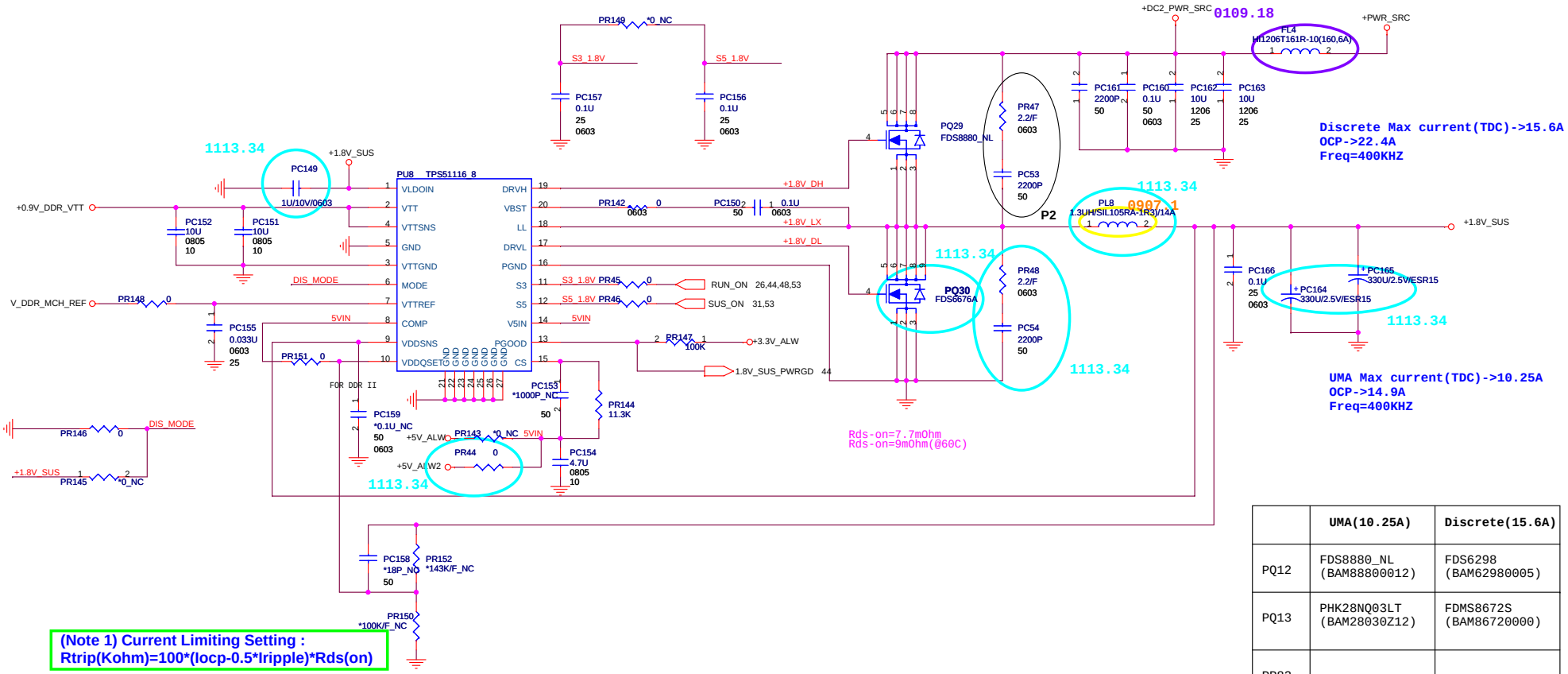




	UMA(12.1A)	Discrete(7A)
PQ22	FDS8880_NL (BAM88800012)	FDS8878 (BAM88780020)
PQ25	FDS6676AS_NL (BAM66760026)	FDS6680AS (BAM66800061)
PL25	SIL105RA-1R5-R (CV-15F0MZ08)	SIL104R-1R5PF (DC-15A00010)
PR452		

QUANTA COMPUTER

Title	1.05_VCCP & 1.5V_RUN	
Size	Document Number FM6B	Rev 1A
Date: Tuesday, July 15, 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		

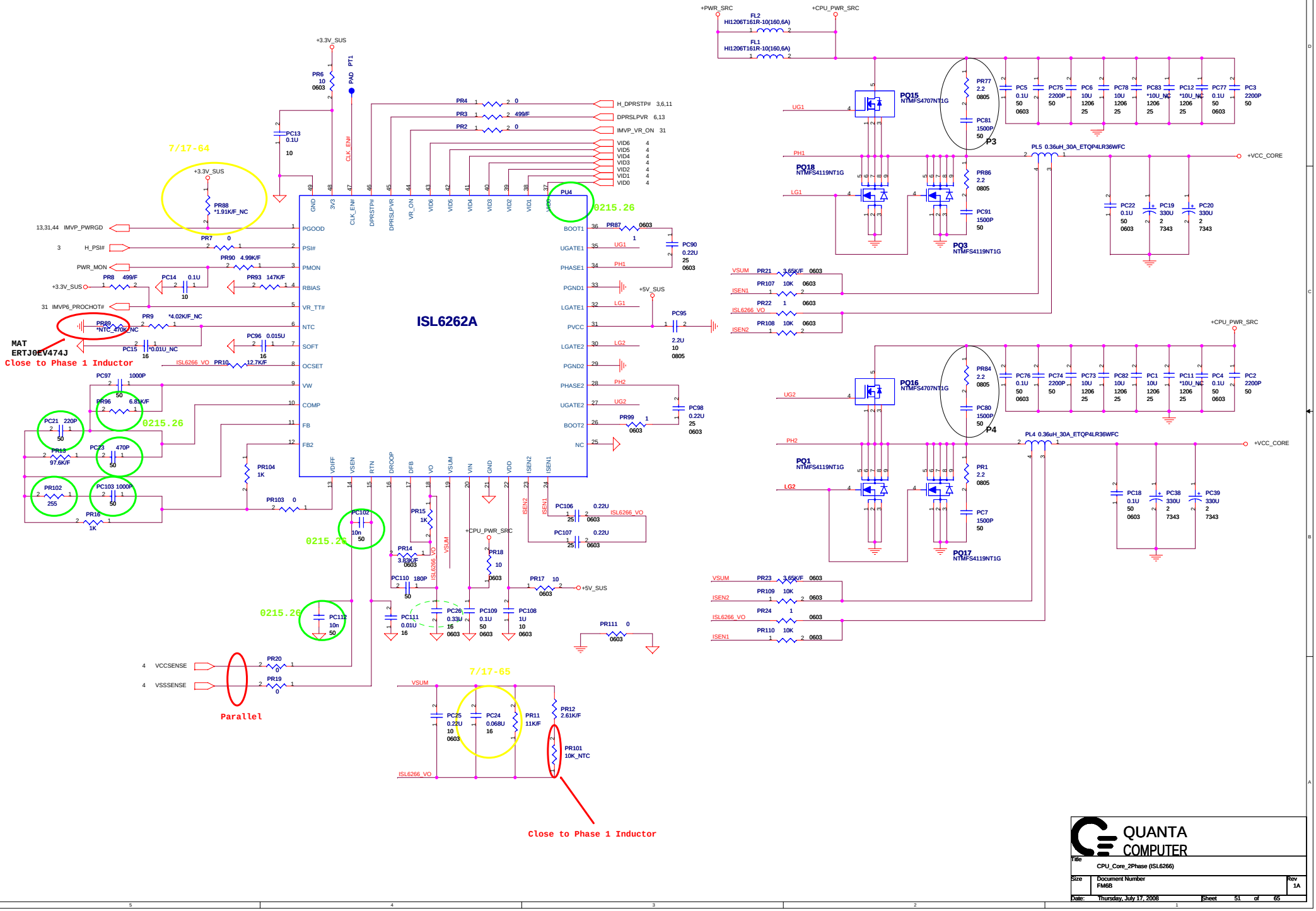
QUANTA COMPUTER

Title	1.8VSUS & 0.9VTT (TPS51116)	
Size	Document Number FM6B	Rev 1A
Date: Tuesday, July 15, 2008	Sheet 49 of 60	

BLANK PAGE FOR PAGE NUMBER SAME AS DISCRETE

QUANTA COMPUTER

Title		
Size	Document Number FM6B	Rev 1A
Date: Monday, June 30, 2008	Sheet 50 of 60	



QUANTA COMPUTER		
Title	CPU_Core_2Phase (ISL6266)	
Size	Document Number FM6B	Rev 1A
Date: Thursday, July 17, 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(TDC)->6A
OCP->8.3A
Freq=400KHZ

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

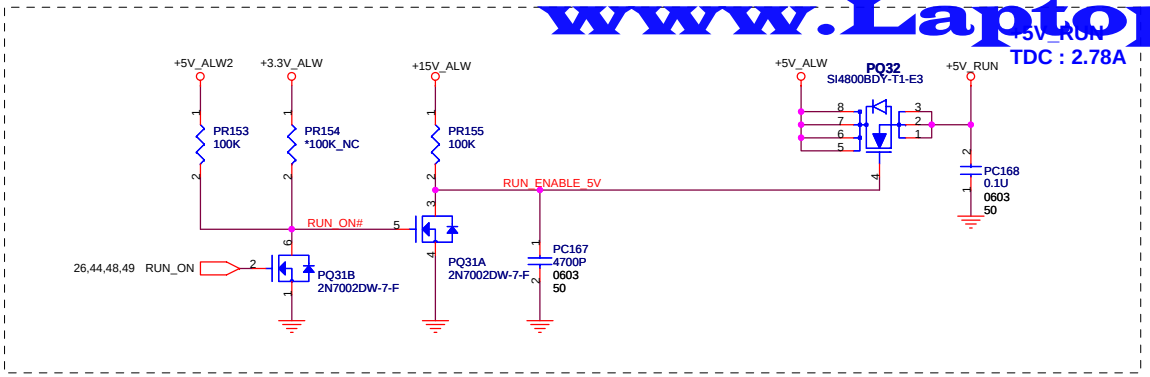
Rds-on=20mOhm
Rds-on=23.5mOhm(@60C)

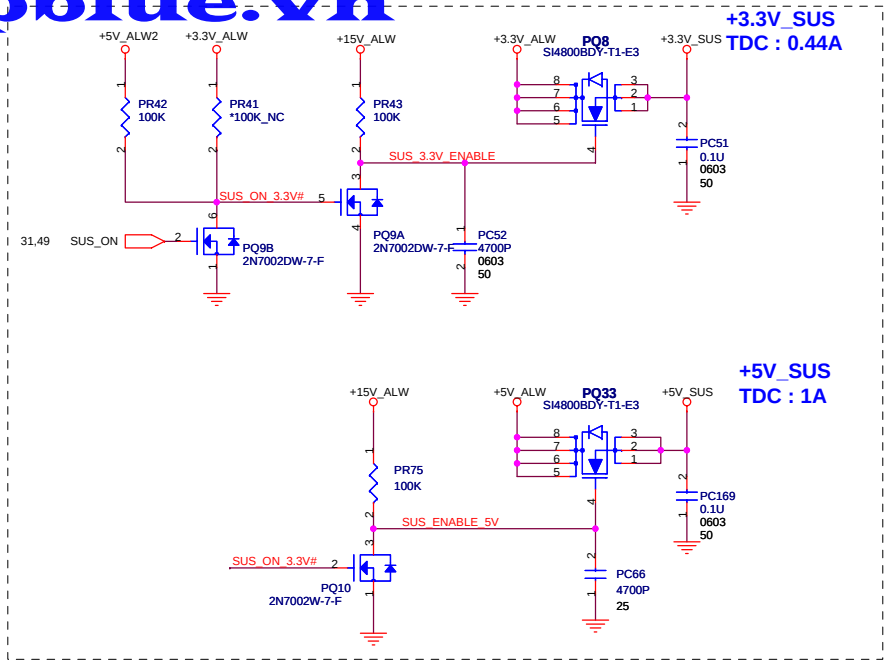
Rds-on=20mOhm
Rds-on=23.5mOhm(@60C)

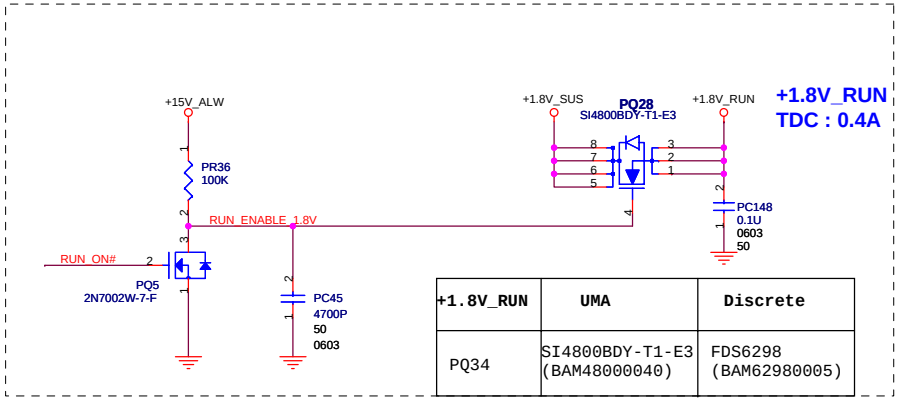
1105.12

Title	3VALW,5V,3V, Power On
Size	Document Number FM6B
Rev	1A
Date:	Tuesday, July 15, 2008
Sheet	52 of 60

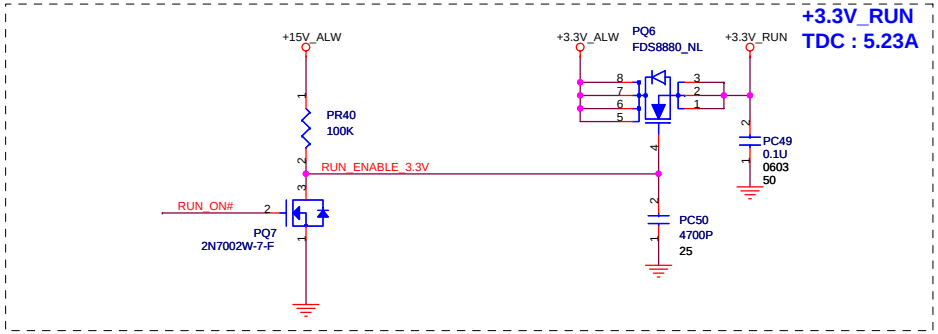
QUANTA COMPUTER

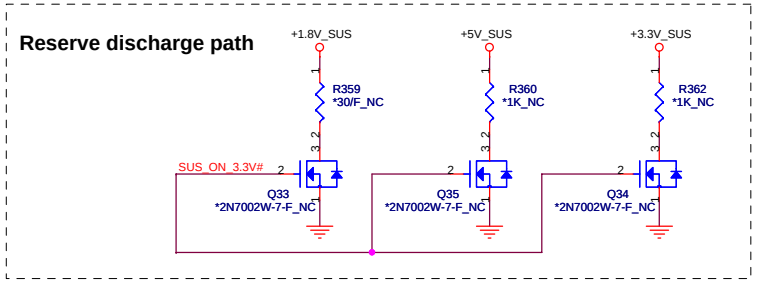


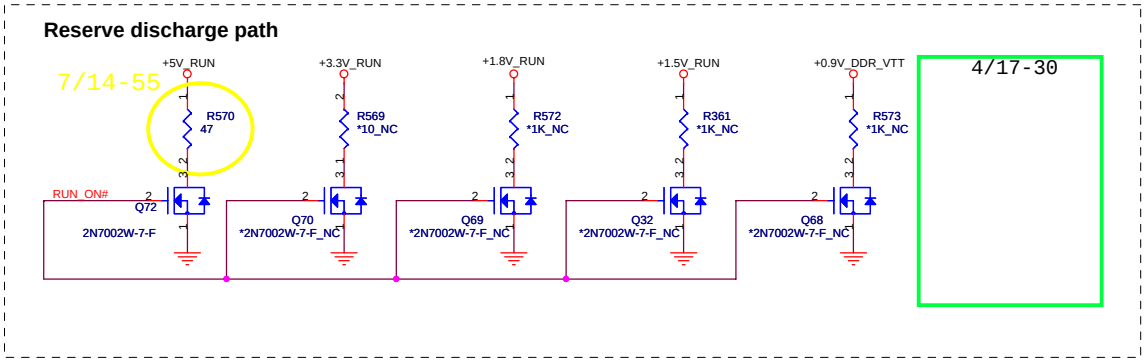




+1.8V_RUN	UMA	Discrete
PQ34	SI4800BDY-T1-E3 (BAM48000040)	FDS6298 (BAM62980005)

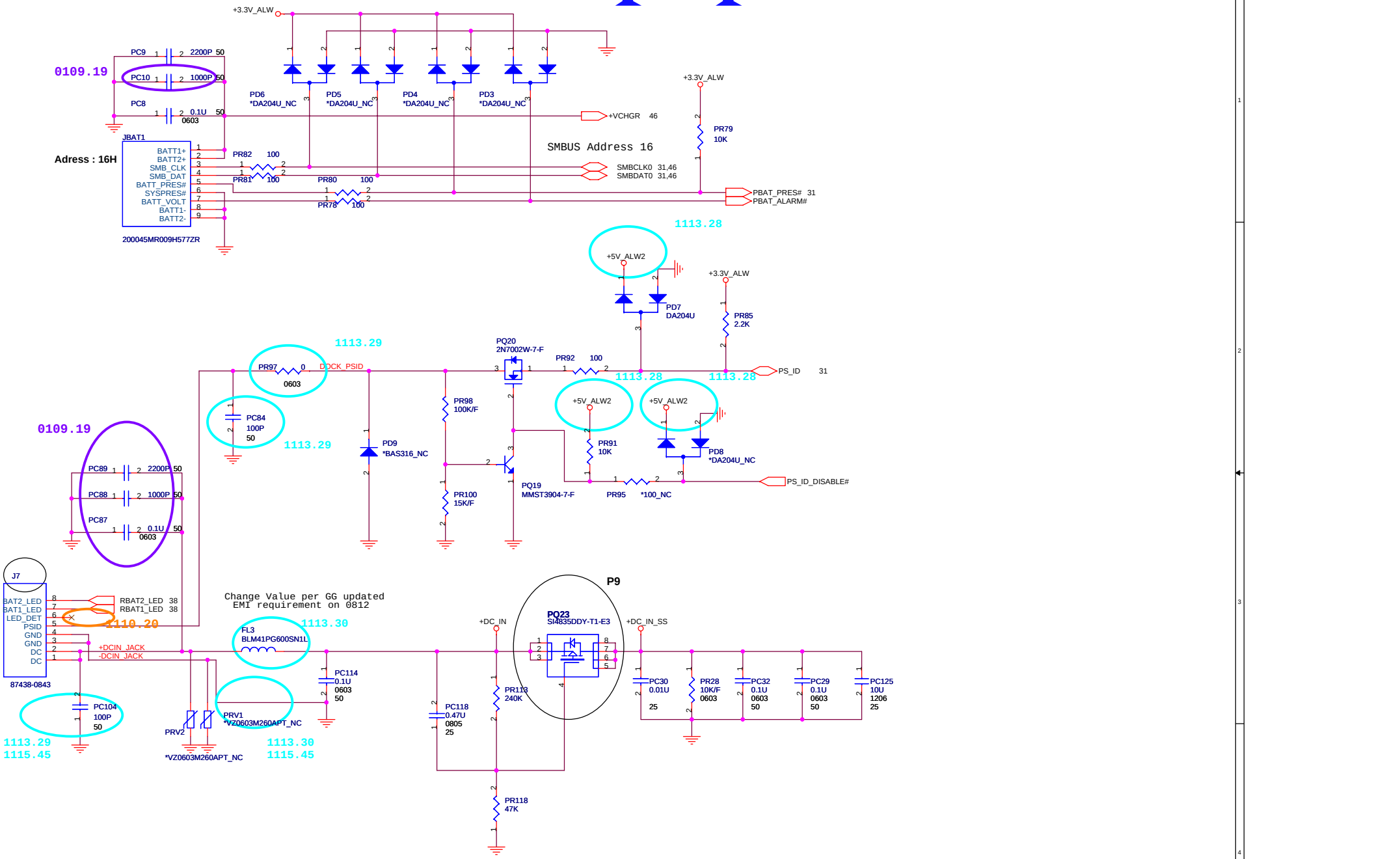






QUANTA COMPUTER

Title	RUN POWER SW	
Size	Document Number FM6B	Rev 1A
Date: Monday, July 14, 2008	Sheet 53 of 60	



QUANTA COMPUTER

Title	DCIN,BATT CONNECTOR	
Size	Document Number FM6B	Rev 1A
Date: Wednesday, July 16, 2008	Sheet 54 of 60	

H8
H-C126D126N
H-C126D126N

H16
H-O126X157D126X157N
H-O126X157D126X157N

H2
H-TC197BC236D110P2
H-TC197BC236D110P2

H21
H-O126X157D126X157N
h-o165x87d165x87n

H24
H-O126X157D126X157N
H-C118D118N

PAD138X98XH
GND

PAD158X98XH
GND

3/3-21 6/12-45

TH34
h-o71x118d32x79p2

TH35
h-o71x118d32x79p2

6/12-46

H20
H-TC354BS335D110P2-V4
H-TC354BS335D110P2-V4

H6
H-TC276BC315D110P2-V4
H-TC276BC315D110P2-V4

H3
H-TC197BC236D110P2-V4
H-TC197BC236D110P2-V4

H18
H-TSBC315D110P2-V4
H-TSBC315D110P2-V4

H7
H-TC197BC217D110P2-V4
H-TC197BC217D110P2-V4

H11
H-TC216BC236D110P2-V4
H-TC216BC236D110P2-V4

H17
H-TSBC315D126P2-V4
H-TSBC315D126P2-V4

H15
H-TC197BC236D110P2-V4
H-TC197BC236D110P2-V4

H13
H-C315D110P2-V4
H-C315D110P2-V4

H19
H-TC335BS335D110P2-V4
H-TC335BS335D110P2-V4

FOR CPU use

H10
H-C276D157P2
H-C276D157P2

H5
H-C276D177P2
H-C276D177P2

H9
H-C276D157P2
H-C276D157P2

H4
H-C276D157P2
H-C276D157P2

For FAN nut use.

TH1
H-TC138BC205D83P2

H1
H-TC197BC236D110P2-V4
H-TC197BC236D110P2-V4

H14
H-C236D110P2-V4
H-C236D110P2-V4

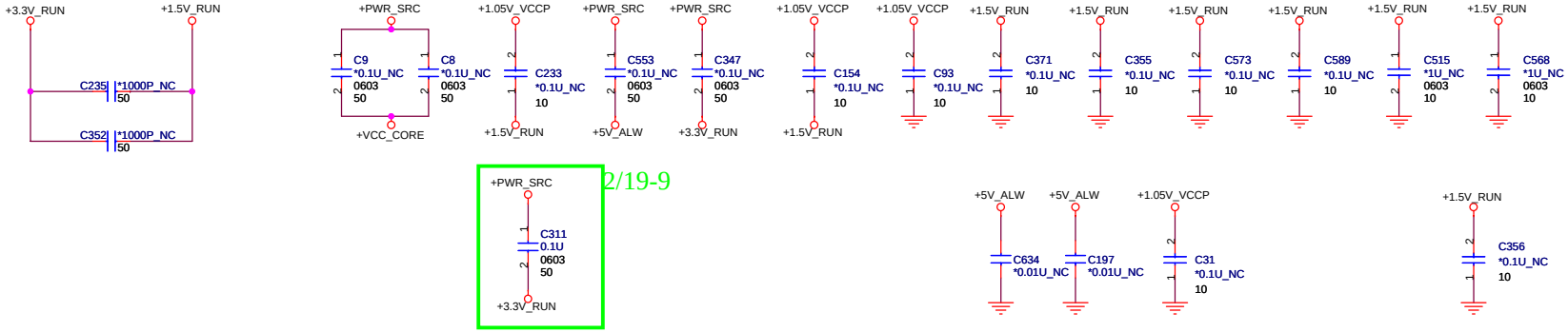
H12
H-C236D110P2-V4
H-C236D110P2-V4

QUANTA COMPUTER

Title	SCREW PAD	
Size	Document Number FM6B	Rev 1A
Date: Monday, June 30, 2008	Sheet 55 of 60	

Reserved for EMI.

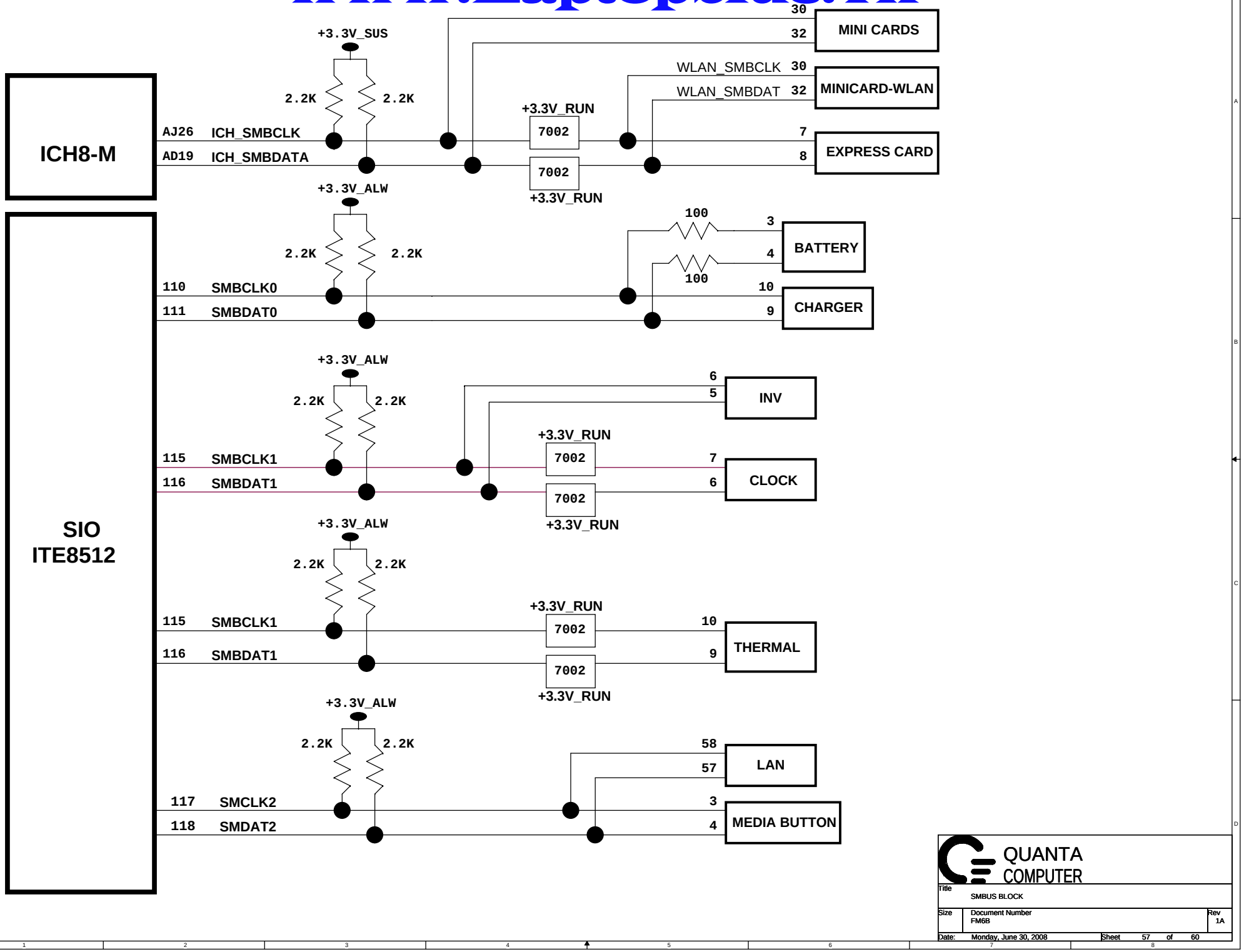
Stitching caps.



2/19-9

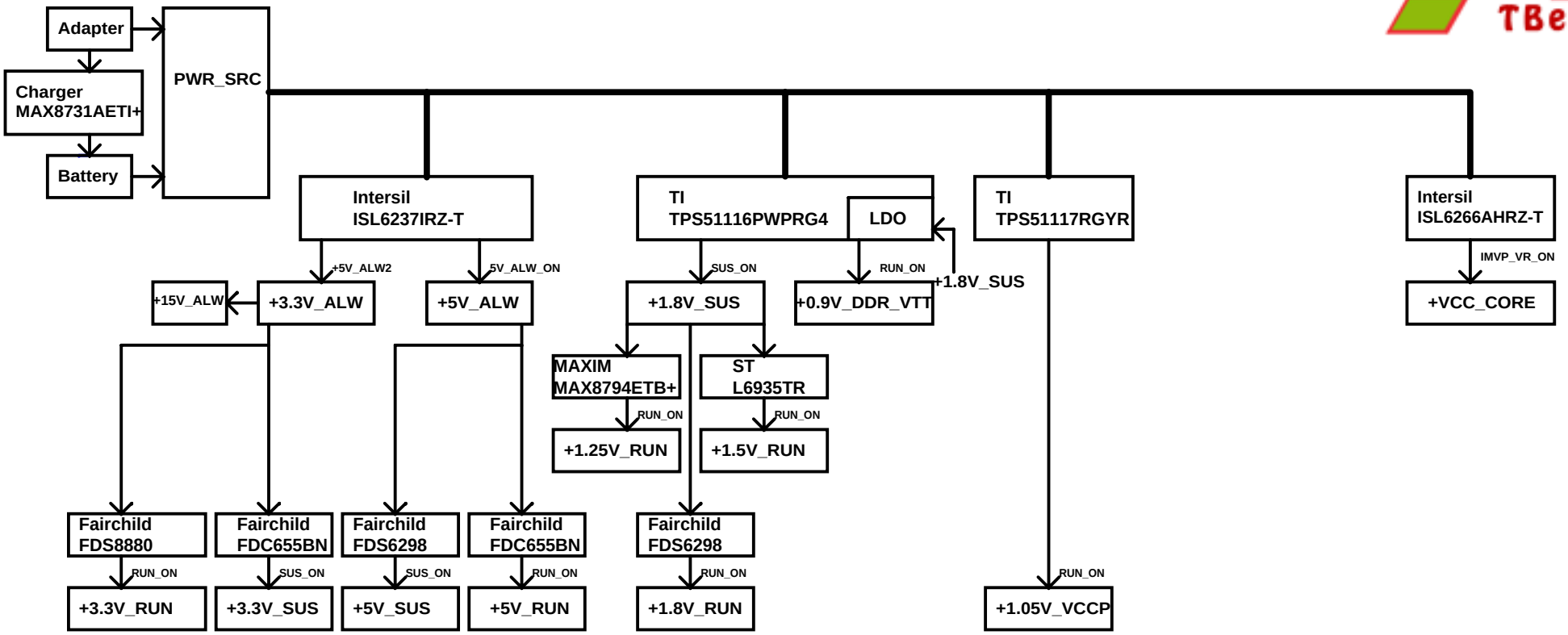
QUANTA COMPUTER

Title	EMI CAP	
Size	Document Number FM6B	Rev 1A
Date: Monday, June 30, 2008	Sheet 56 of 60	



QUANTA COMPUTER

Title	SMBUS BLOCK	
Size	Document Number FM6B	Rev 1A
Date: Monday, June 30, 2008	Sheet 57 of 60	



QUANTA COMPUTER

Title	Schematic Block Diagram1	
Size	Document Number FM6B	Rev 1A
Date: Monday, June 30, 2008	Sheet 58 of 60	