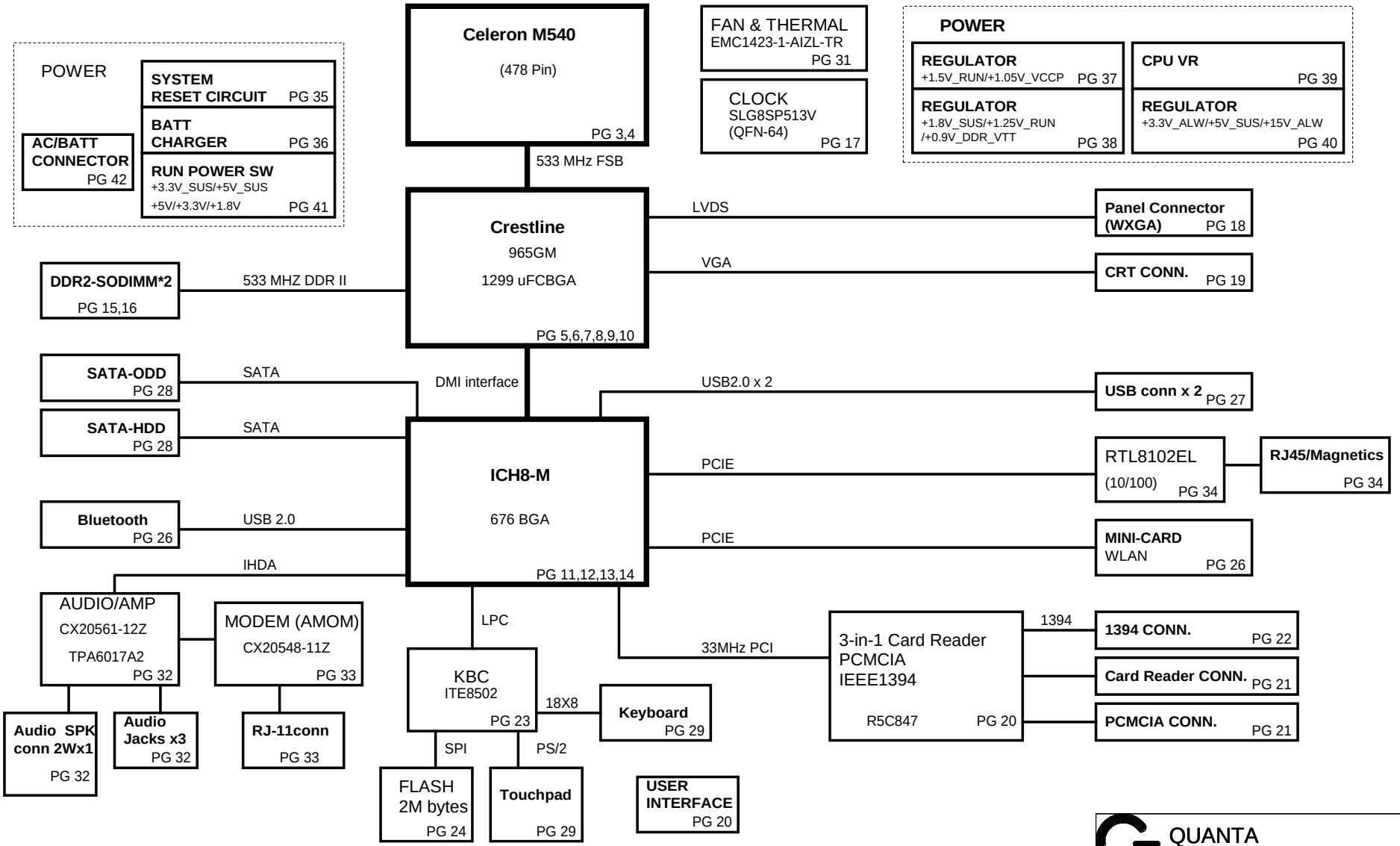
VM9/VM8 Block Diagram

VER : 1A



QUANTA COMPUTER

Title	Schematic Block Diagram	
Size	Document Number VM9/VM8	Rev 1A
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Table of Contents

Power States

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	
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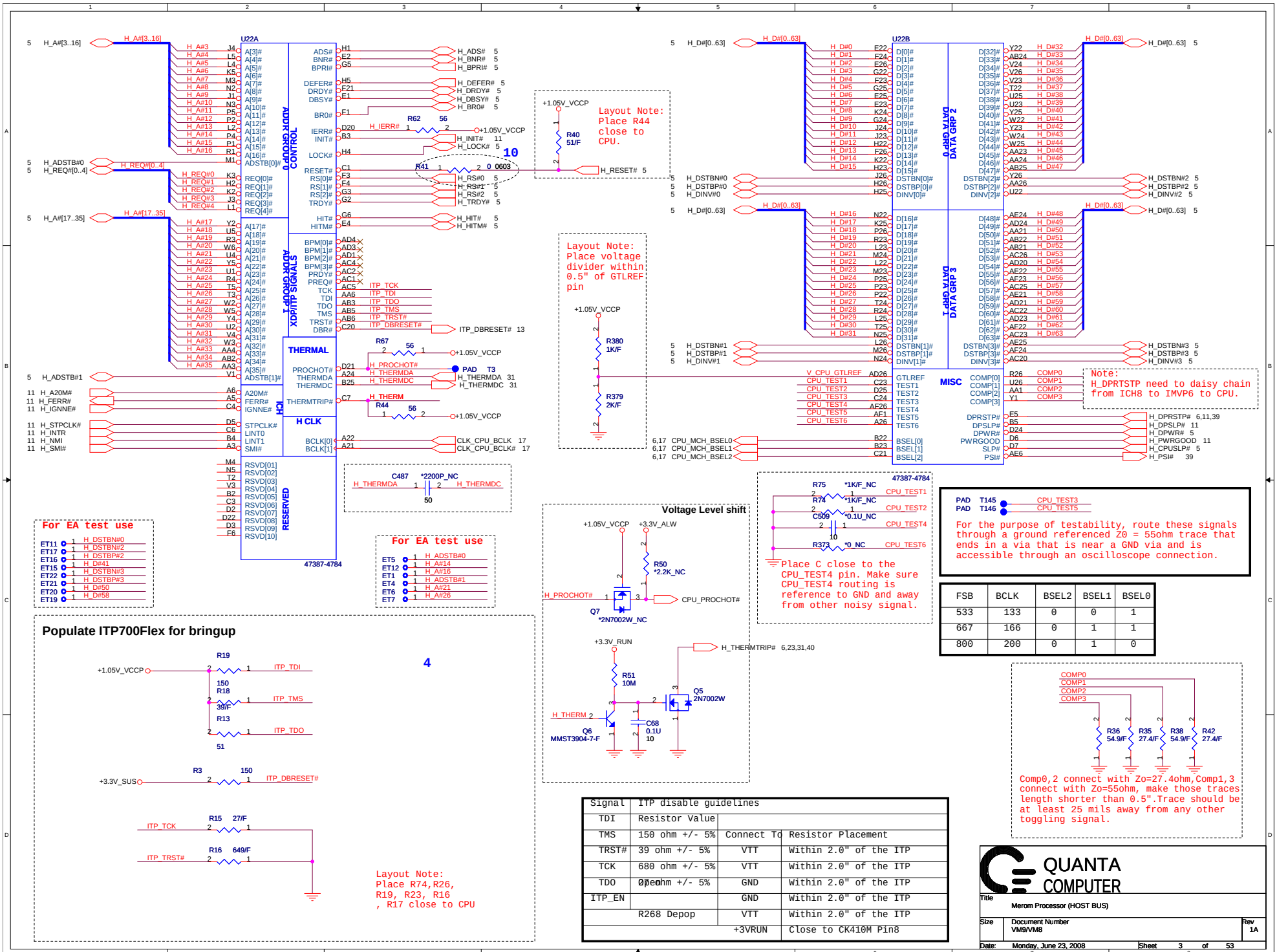
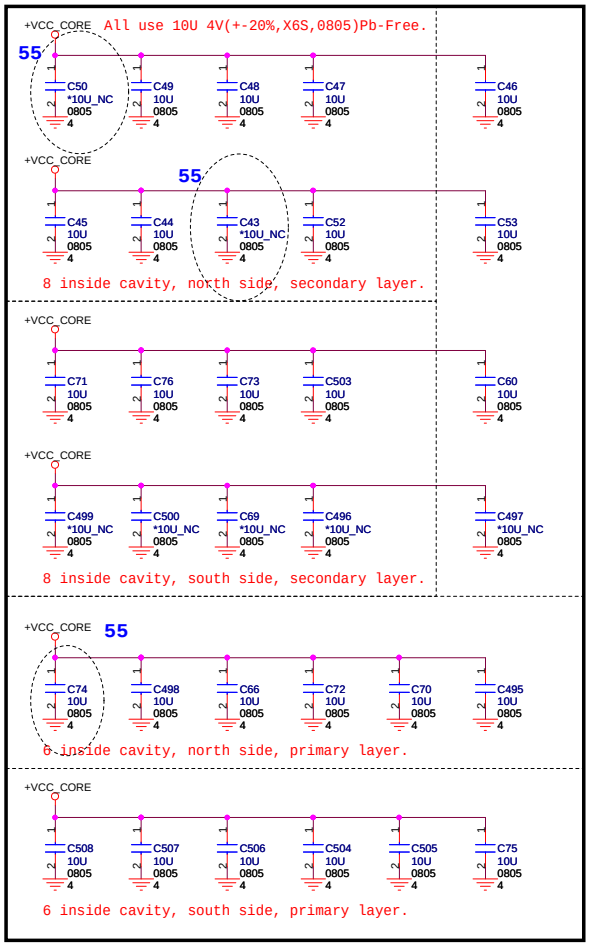
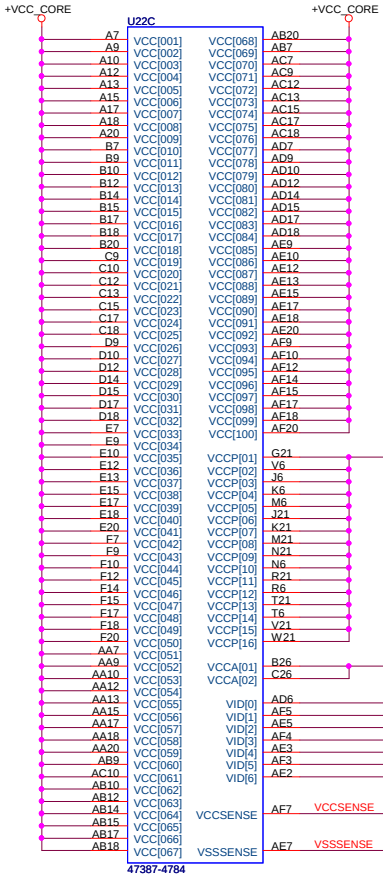
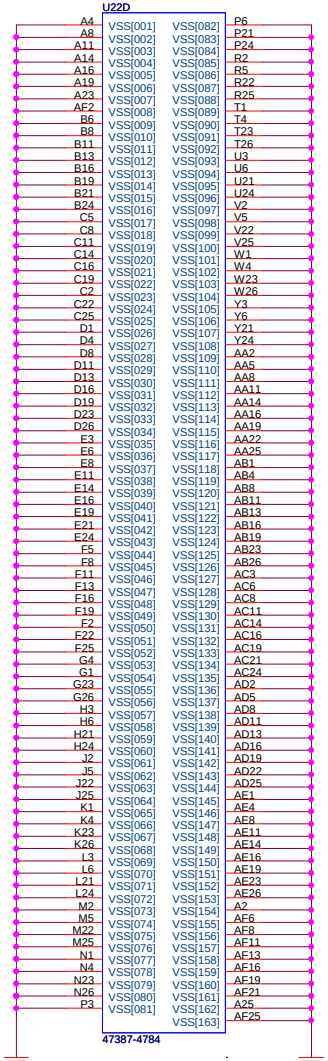


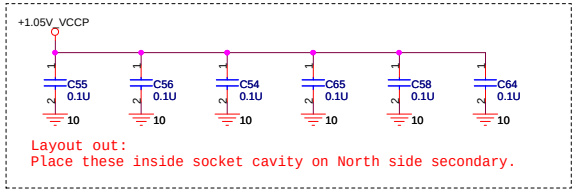
FSB	BCLK	BSEL2	BSEL1	BSEL0
533	133	0	0	1
667	166	0	1	1
800	200	0	1	0

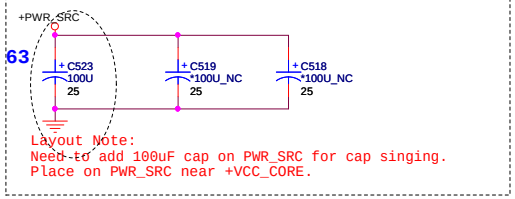
Signal	ITP disable guidelines		
TDI	Resistor Value		
TMS	150 ohm +/- 5%	Connect To	Resistor Placement
TRST#	39 ohm +/- 5%	VTT	Within 2.0" of the ITP
TCK	680 ohm +/- 5%	VTT	Within 2.0" of the ITP
TDO	Open	GND	Within 2.0" of the ITP
ITP_EN		GND	Within 2.0" of the ITP
	R268 Depop	VTT	Within 2.0" of the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

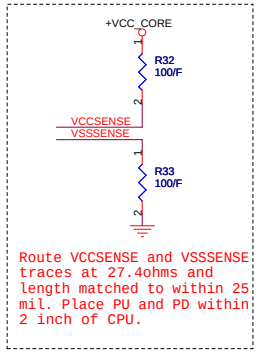












QUANTA COMPUTER

Title	Merom Processor (POWER)	
Size	Document Number VM9/VM8	Rev 1A
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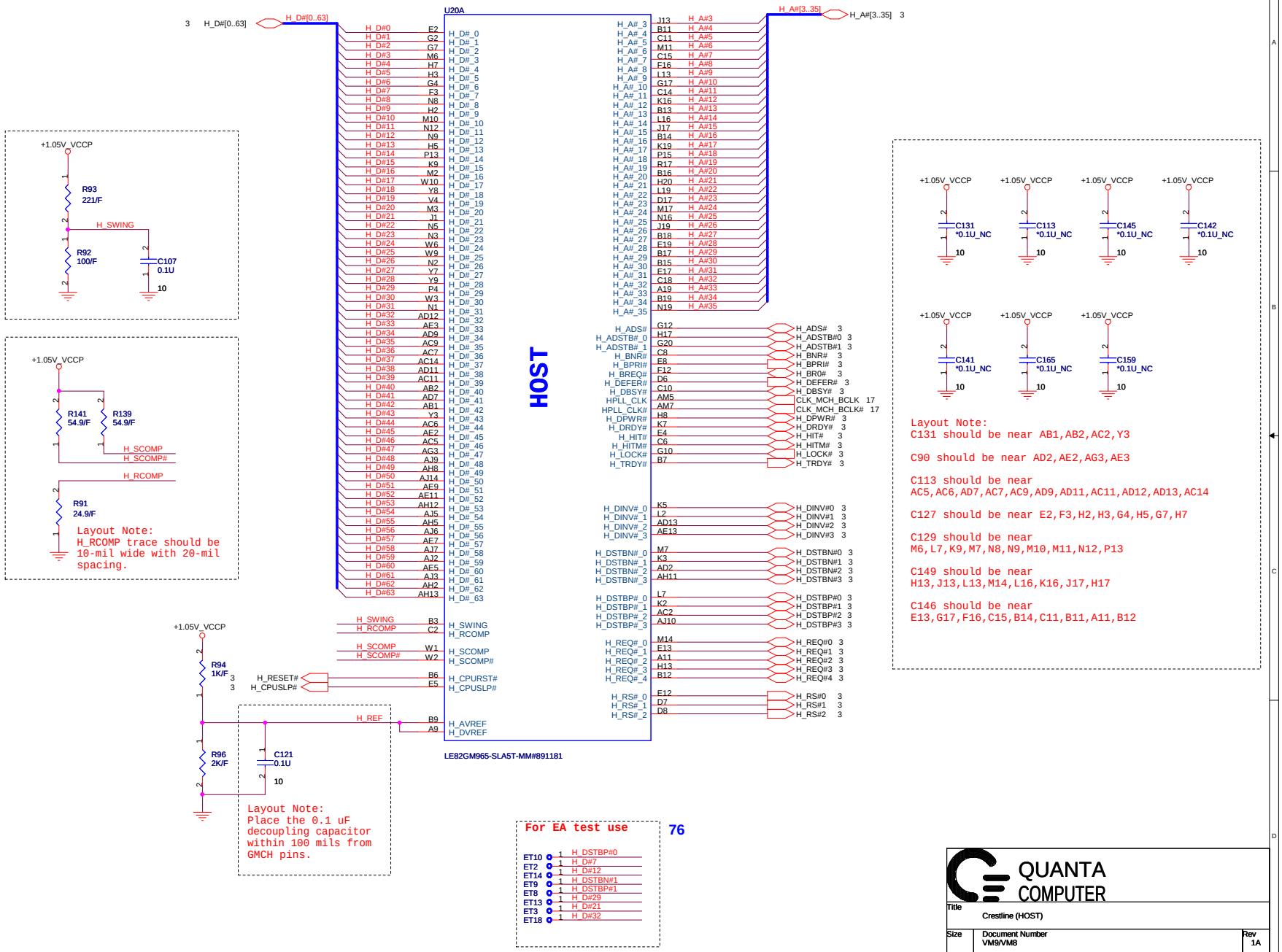
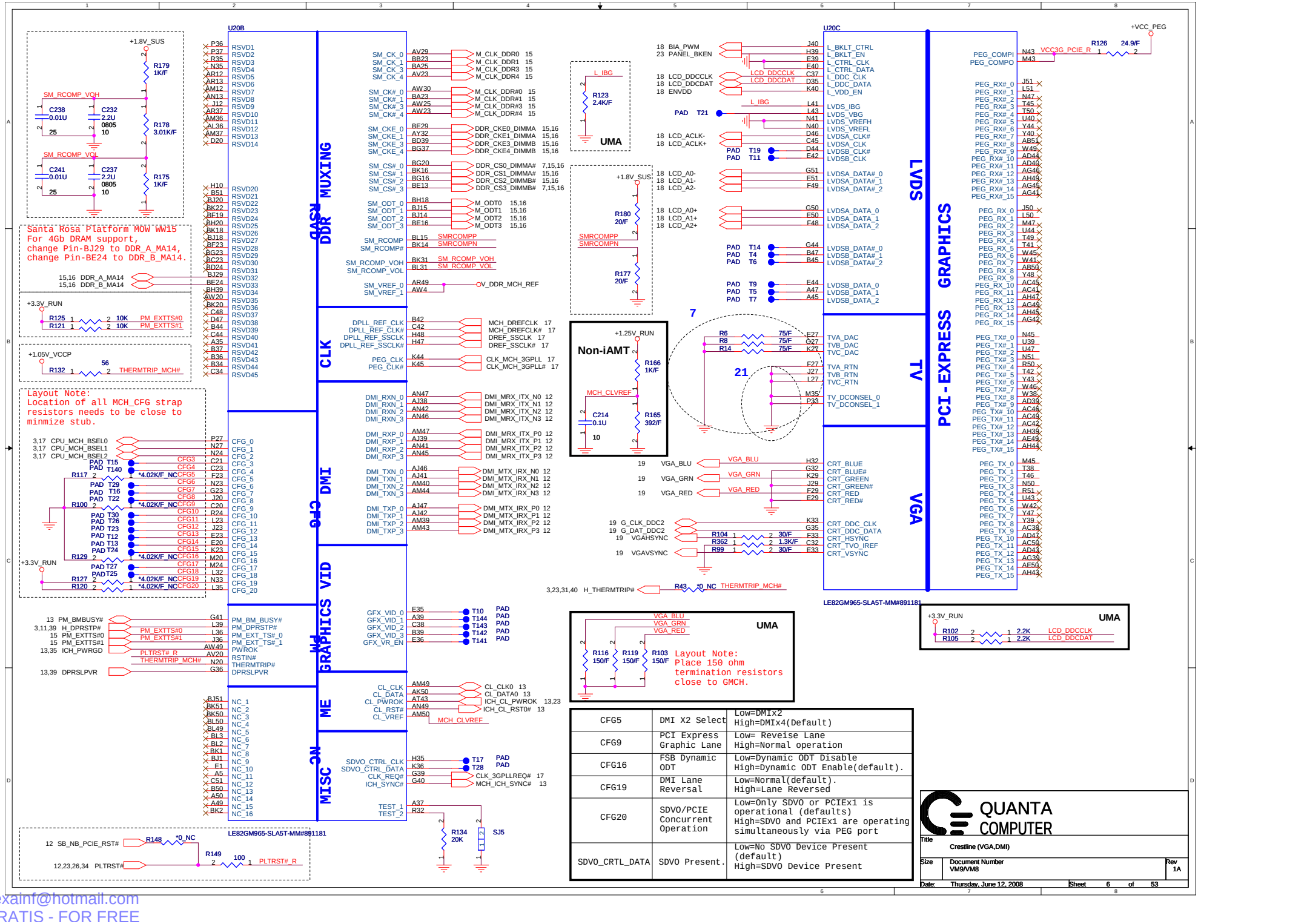
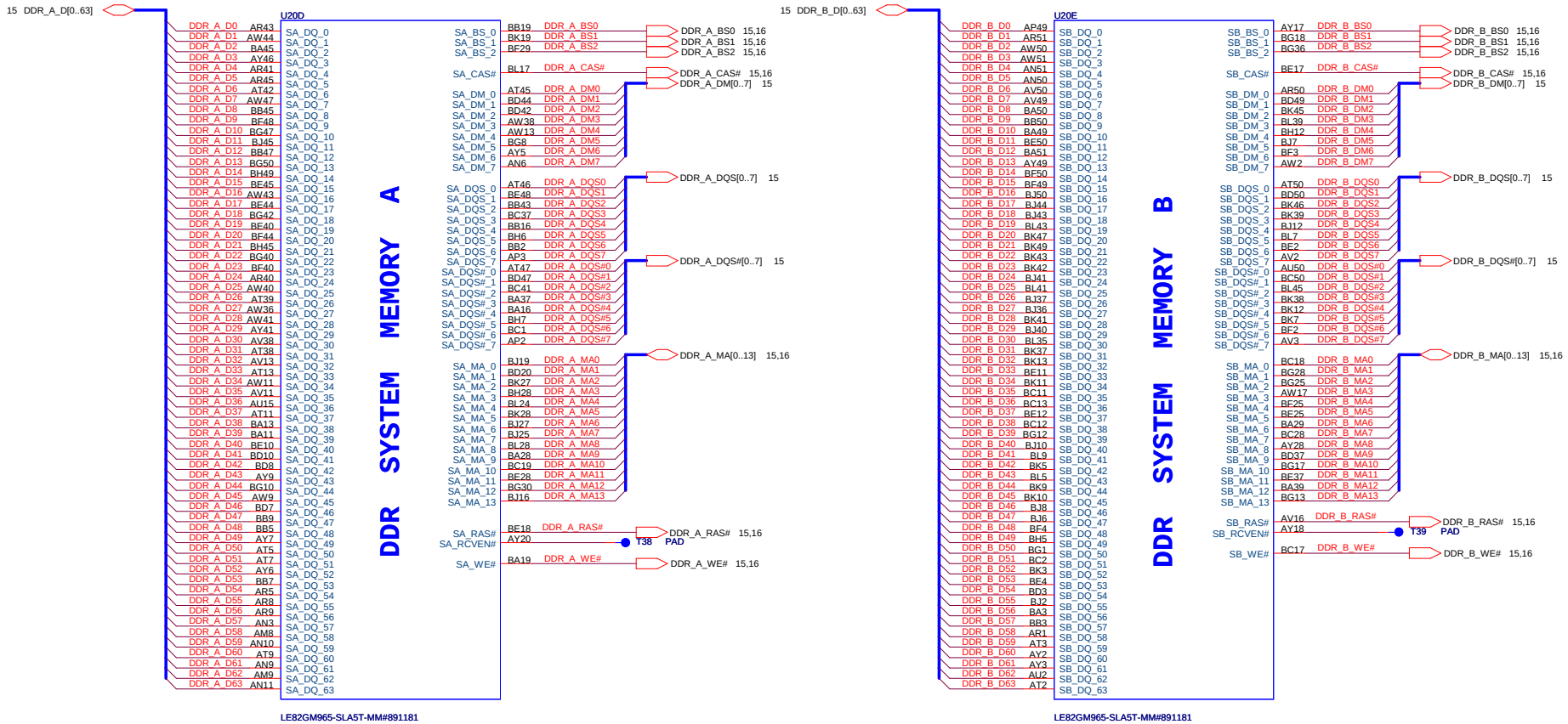




CFG5	DMI X2 Select	Low=DMIx2 High=DMIx4(Default)
CFG9	PCI Express Graphic Lane	Low= Reveise Lane High=Normal operation
CFG16	FSB Dynamic ODT	Low=Dynamic ODT Disable High=Dynamic ODT Enable(default).
CFG19	DMI Lane Reversal	Low=Normal(default). High=Lane Reversed
CFG20	SDVO/PCIE Concurrent Operation	Low=Only 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 (DDR2)	
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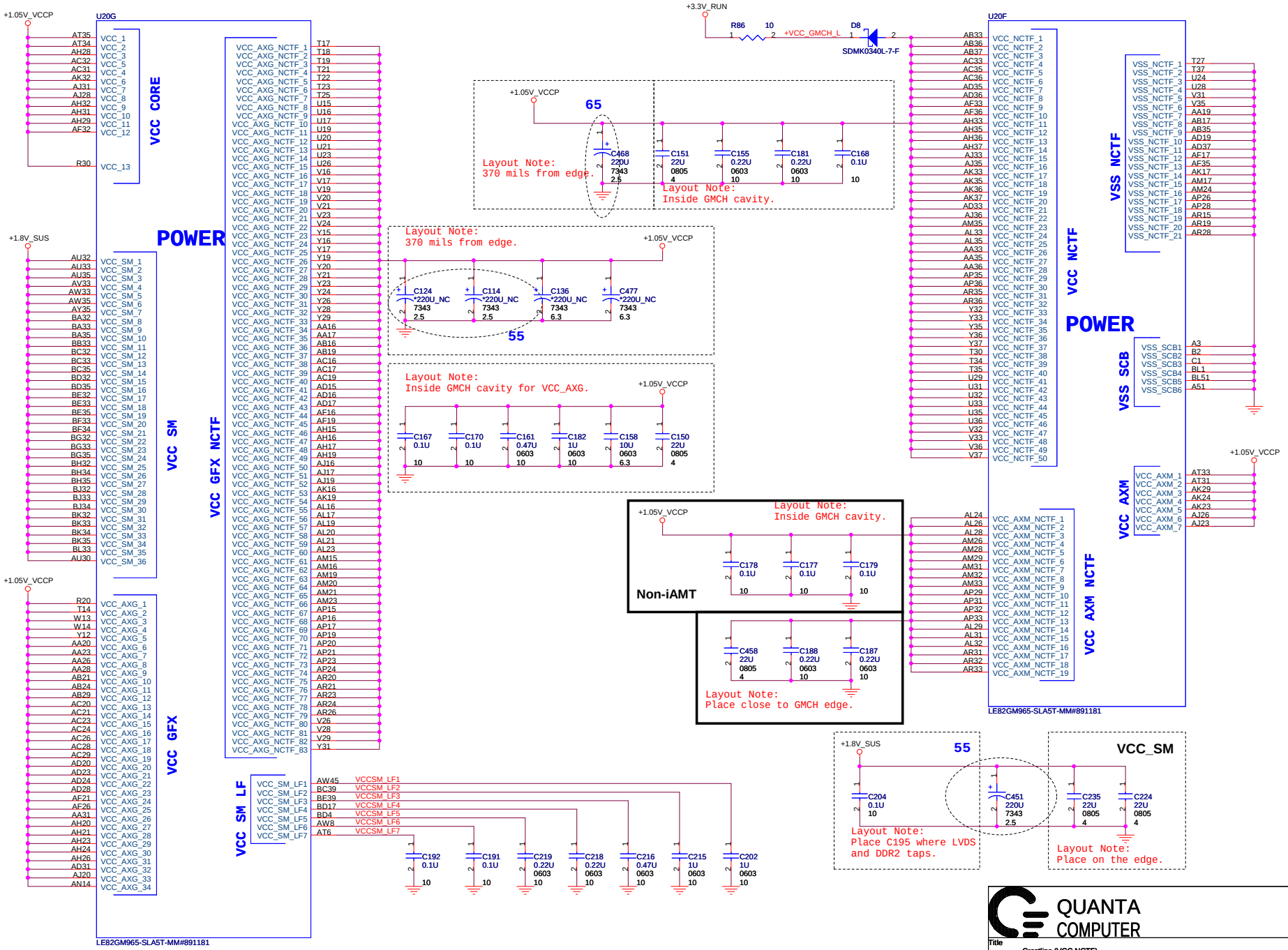
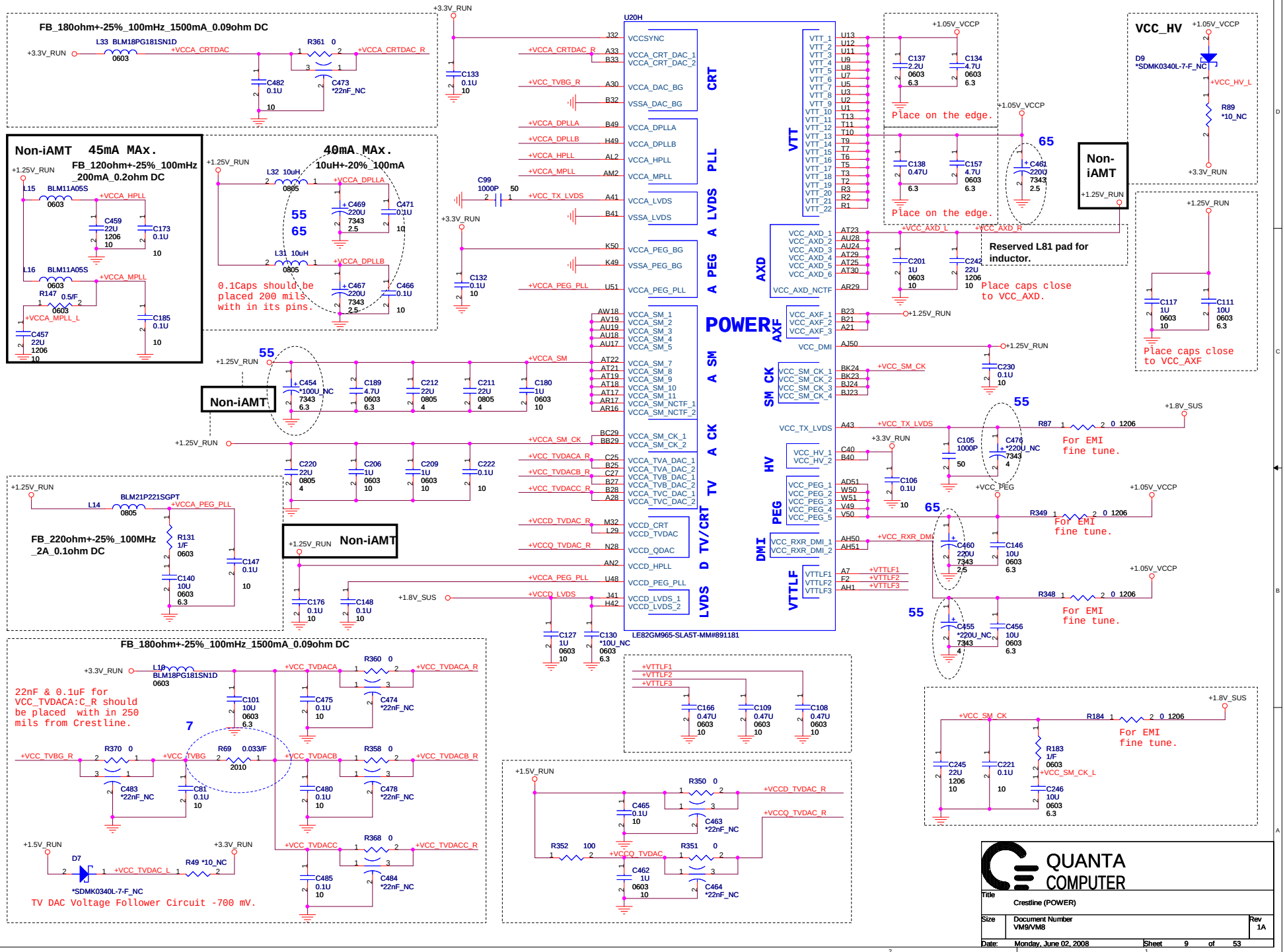
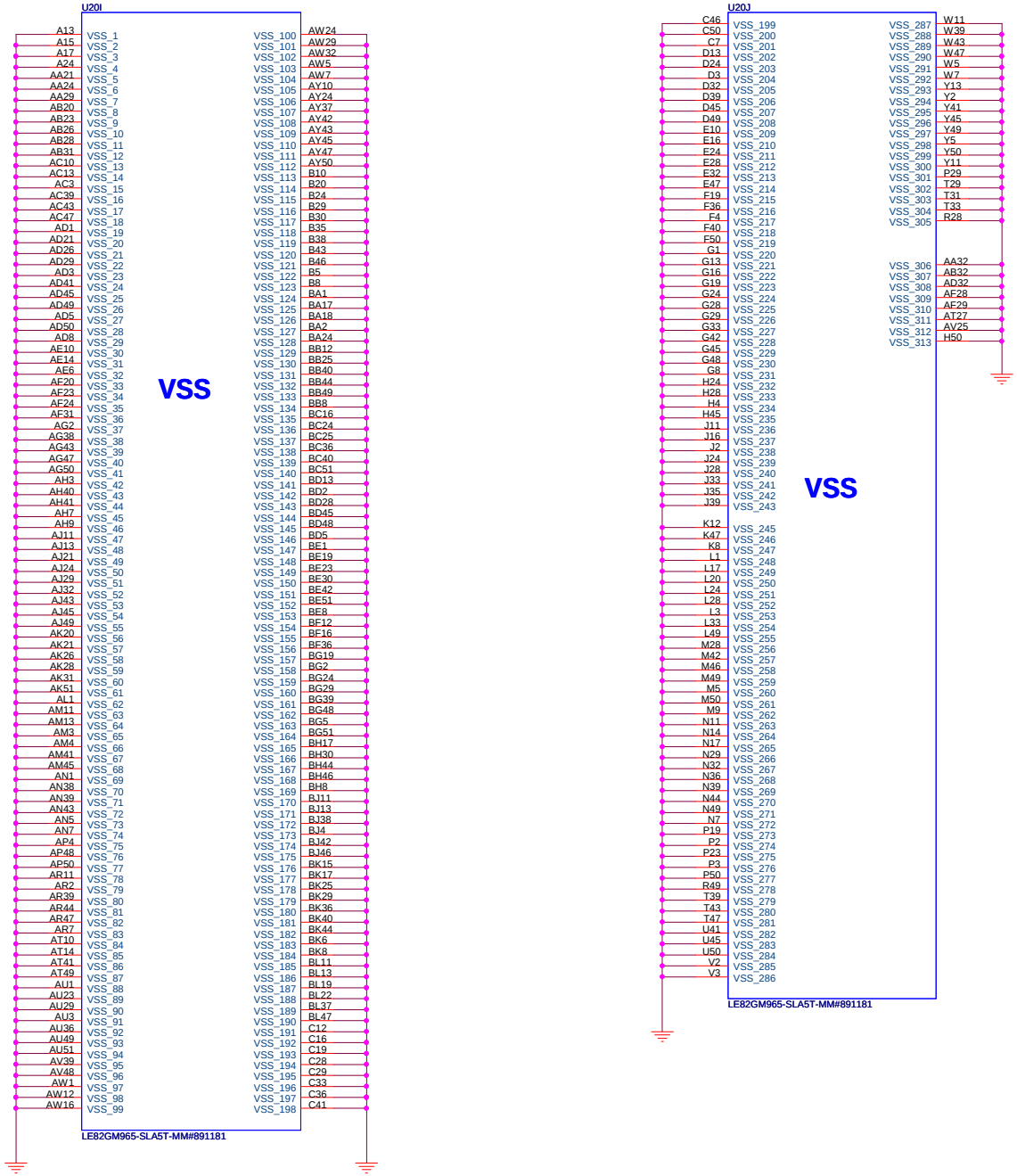
Date: Friday, May 30, 2008	Sheet 7 of 53	







Title	Crestline (VSS)
Size	Document Number VM9/VM8 — Rev 1A
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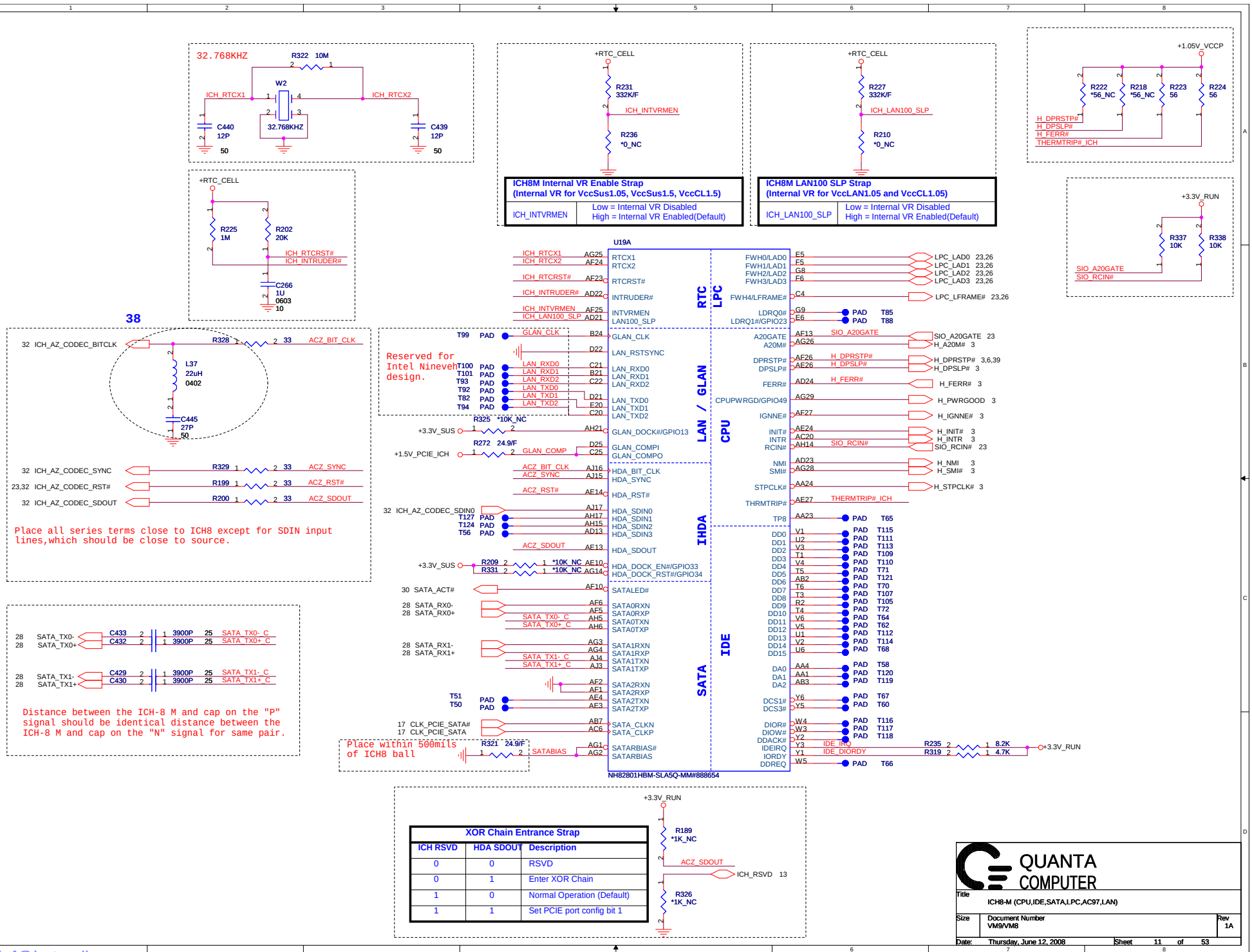

Place TX DC blocking caps close ICH8.

26 PCIE_TX2-
26 PCIE_TX2+
C323 0.1U 10 PCIE_TXN2_C
C324 0.1U 10 PCIE_TXP2_C

34 PCIE_TX6-/GLAN_TX-
34 PCIE_TX6+/GLAN_TX+
C333 0.1U 10 GLAN_TXN_C
C326 0.1U 10 GLAN_TXP_C

For EA test use

76

ET45 PCIE_RX2+
ET51 PCIE_RX6-/GLAN_RX-
ET50 PCIE_RX6+/GLAN_RX+

ICH_SPI_CS1# R
PCI_GNT0#
R264 *1K_NC
R259 *1K_NC

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

MiniWWAN
26 PCIE_RX2-
26 PCIE_RX2+
PCIE_TXN2_C
PCIE_TXP2_C

MiniWLAN

MiniWPAN

Express Card

34 PCIE_RX6-/GLAN_RX-
34 PCIE_RX6+/GLAN_RX+
GLAN_TXN_C
GLAN_TXP_C

10/100 LOM

T91 PAD
T98 PAD
ICH_SPI_CS1# R
T87 PAD
T95 PAD

27 USB_OC0_1#

U19D

PCI-Express Direct Media Interface

P27 PERN1
P26 PERP1
N29 PETN1
N28 PETP1
M27 PERN2
M26 PERP2
L29 PETN2
L28 PETP2
K27 PERN3
K26 PERP3
J29 PETN3
J28 PETP3
H27 PERN4
H26 PERP4
G29 PETN4
G28 PETP4
F27 PERN5
F26 PERP5
E29 PETN5
E28 PETP5
D27 PERN6/GLAN_RXN
D26 PERP6/GLAN_RXP
C29 PETN6/GLAN_TXN
C28 PETP6/GLAN_TXP

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 AB26 DMI_MTX_IRX_N2 6
DMI2RXP AB25 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
DMI_IRCOMP
Y23
Y24 DMI_COMP
R242 24.9/F
+1.5V_PCIE_ICH

Place within 500mils of ICH8

SPI

SPI_CLK
SPI_CS0#
SPI_CS1#
SPI_MOSI
SPI_MISO

USB

USBP0N G3 ICH_USBP0- 27
USBP0P G2 ICH_USBP0+ 27
USBP1N H5 ICH_USBP1- 27
USBP1P H4 ICH_USBP1+ 27
USBP2N H2 PAD T78
USBP2P H1 PAD T102
USBP3N J3 PAD T76
USBP3P J2 PAD T77
USBP4N K5 ICH_USBP4- 18
USBP4P K4 ICH_USBP4+ 18
USBP5N K2 PAD T104
USBP5P K1 PAD T103
USBP6N L3 ICH_USBP6- 26
USBP6P L2 ICH_USBP6+ 26
USBP7N M5 PAD T74
USBP7P M4 PAD T73
USBP8N M2 ICH_USBP8- 26
USBP8P M1 ICH_USBP8+ 26
USBP9N N3 PAD T106
USBP9P N2 PAD T108
USBRBIAS# F2
USBRBIAS F3 USBRBIAS
R260 22.6/F

OC0#
OC1#/GPIO40
OC2#/GPIO41
OC3#/GPIO42
OC4#/GPIO43
OC5#/GPIO29
OC6#/GPIO30
OC7#/GPIO31
OC8#
OC9#

USB_OC0_1# AJ19
OC2# AG16
OC3# AG15
OC4# AE15
OC5# AF15
OC6# AG17
OC7# AD12
OC8# AJ18
OC9# AD14 AH18

NH82801HBM-SLA5Q-MM#888654

Short F2 and F3 at the package and keep length to less than 500mils. Trace Impedance should be 60ohms +/- 15%.

Side pair Top / left
Side pair bottom / right
Pair 1 top / left
Pair 1 bottom / right
Camera
Mini Card (WWAN)
Bluetooth
Express Card
Mini Card (WLAN)
Biometric

PCI Pullups

8

RP40 8.2KX8
PCI_STOP#
PCI_DEVSEL#
PCI_REQ1#
PCI_PIRQD#
+3.3V_RUN
PCI_FRAME#
ICH_IRQH_GPIO5
PCI_TRDY#
PCI_SERR#

RP39 8.2KX8
PCI_PIRQE#
PCI_REQ0#
PCI_PLOCK#
PCI_PERR#
PCI_PIRQC#
PCI_PIRQB#
PCI_PIRQA#
PCI_IRDY#

PCI_REQ2# R279 8.2K
PCI_REQ3# R310 8.2K

WWAN Noise - ICH improvements

OC3# C249 *0.1U_NC
OC6# C253 *0.1U_NC
OC4# C251 *0.1U_NC
OC5# C436 *0.1U_NC
OC7# C435 *0.1U_NC
OC8# C252 *0.1U_NC
OC2# C441 *0.1U_NC
USB_OC0_1# C431 *0.1U_NC
OC9# C434 *0.1U_NC

Non-iAMT

RP41 10KX8
OC6# OC5#
OC2# OC7#
OC8# OC9#
OC4# USB_OC0_1#
OC3# R188 10K

SB_WLAN_PCIE_RST# R257 20K
SB_NB_PCIE_RST# R263 20K

BIOS should not enable the internal GPIO pull up resistor.

20,25 PCI_AD[0..31]

U19B

PCI

PCI_AD0 D20 AD0
PCI_AD1 E19 AD1
PCI_AD2 D19 AD2
PCI_AD3 A20 AD3
PCI_AD4 D17 AD4
PCI_AD5 A21 AD5
PCI_AD6 A19 AD6
PCI_AD7 C19 AD7
PCI_AD8 A18 AD8
PCI_AD9 B16 AD9
PCI_AD10 A12 AD10
PCI_AD11 E16 AD11
PCI_AD12 A14 AD12
PCI_AD13 G16 AD13
PCI_AD14 A15 AD14
PCI_AD15 B6 AD15
PCI_AD16 C11 AD16
PCI_AD17 A9 AD17
PCI_AD18 D11 AD18
PCI_AD19 B12 AD19
PCI_AD20 C12 AD20
PCI_AD21 D10 AD21
PCI_AD22 C7 AD22
PCI_AD23 F13 AD23
PCI_AD24 E11 AD24
PCI_AD25 E13 AD25
PCI_AD26 E12 AD26
PCI_AD27 D8 AD27
PCI_AD28 A6 AD28
PCI_AD29 E8 AD29
PCI_AD30 D6 AD30
PCI_AD31 A3 AD31

REQ0# A4 PCI_REQ0# PCI_REQ0# 20
GNT0# D7 PCI_GNT0# PCI_GNT0# 20
REQ1#/GPIO50 E18 PCI_REQ1# PCI_REQ1# 25
GNT1#/GPIO51 C18 PCI_GNT1# PCI_GNT1# 25
REQ2#/GPIO52 B19 PCI_REQ2#
GNT2#/GPIO53 F18 PCI_GNT2# PAD T86
REQ3#/GPIO54 A11 PCI_REQ3#
GNT3#/GPIO55 C10 PCI_GNT3# PAD T89

C/BE0# C17 PCI_C_BE0# 20,25
C/BE1# E15 PCI_C_BE1# 20,25
C/BE2# F16 PCI_C_BE2# 20,25
C/BE3# E17 PCI_C_BE3# 20,25

IRDY# C8 PCI_IRDY# PCI_IRDY# 20,25
PAR D9 PCI_PAR 20,25
PCIRST# G6 PCI_RST# G
DEVSEL# D16 PCI_DEVSEL# PCI_DEVSEL# 20,25
PERR# A7 PCI_PERR# PCI_PERR# 20,25
PLOCK# B7 PCI_PLOCK# PCI_PLOCK#
SERR# F10 PCI_SERR# PCI_SERR# 20,25
STOP# C16 PCI_STOP# PCI_STOP# 20,25
TRDY# C9 PCI_TRDY# PCI_TRDY# 20,25
FRAME# A17 PCI_FRAME# PCI_FRAME# 20,25

PLTRST# AG24 PCI_PLTRST#
PCICLK B10 CLK_PCI_ICH CLK_PCI_ICH 17
PME# G7 ICH_PME# 20,23,25

Interrupt I/F

20 PCI_PIRQA# PCI_PIRQA# F9 PIRQA#
20 PCI_PIRQB# PCI_PIRQB# B5 PIRQB#
20 PCI_PIRQC# PCI_PIRQC# C5 PIRQC#
25 PCI_PIRQD# PCI_PIRQD# A10 PIRQD#

PIRQE#/GPIO2 F8 PCI_PIRQE# PCI_PIRQE# 25
PIRQF#/GPIO3 G11 SB_WLAN_PCIE_RST# SB_WLAN_PCIE_RST# 26
PIRQG#/GPIO4 F12 SB_NB_PCIE_RST# SB_NB_PCIE_RST# 6
PIRQH#/GPIO5 B3 ICH_IRQH_GPIO5 PAD T96

NH82801HBM-SLA5Q-MM#888654

PCI_GNT3#
R271 *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.

C335 0.047U
U14 TC7SZ32FU(T5L,F,T)
PCI_RST# G
PCI_RST# 20,25
C247 0.047U
U13 TC7SZ32FU(T5L,F,T)
PCI_PLTRST#
PLTRST# 6,23,26,34

For EA test use

ET47 PCI_AD1
ET60 PCI_AD3
ET55 PCI_AD7
ET59 PCI_AD14
ET48 PCI_AD29
ET46 PCI_AD13
ET57 PCI_AD19
ET53 PCI_IRDY#
ET56 PCI_TRDY#
ET58 PCI_FRAME#
ET54 PCI_STOP#
ET52 PCI_DEVSEL#
ET49 PCI_GNT0#
ET61 PCI_REQ0#

CLK_PCI_ICH
R275 *10_NC
C344 *8.2P_NC

Reserved for EMI.Place resister and cap close to ICH.

QUANTA COMPUTER

Title	ICH8-M (USB,DMI,PCIE,PCI)		
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Non-iAMT

+3.3V_SUS
RP23
ICH_SMBDATA
ICH_SMBCLK
2.2KX2

Non-iAMT ASF 2.0

+3.3V_SUS
RP22
ICH_SMLINK0
ICH_SMLINK1
*10KX2_NC
ICH_SMBCLK ICH_SMLINK0
ICH_SMBDATA ICH_SMLINK1

+3.3V_RUN
R340 8.2K
CLKRUN#
R333 *10_NC
Option to " Disable " clkrun. Pulling it down will keep the clks running.

Non-iAMT

+3.3V_SUS
R193 *10K_NC RSV_ICH_CL_RST1#
R195 10K ICH_RI#
R238 10K SIO_EXT_SCI#
R190 1K PCIE_WAKE#

U19C

26 ICH_SMBCLK	ICH_SMBCLK	AJ26	SMBCLK	SMB	
26 ICH_SMBDATA	ICH_SMBDATA	AD19	SMBDATA		
T43 PAD	RSV_ICH_CL_RST1#	AG21	LINKALERT#		
T61 PAD	ICH_SMLINK0	AC17	SMLINK0		
T69 PAD	ICH_SMLINK1	AE19	SMLINK1		
	ICH_RI#	AF17	RI#		
T84 PAD	RSV_LPCPD#	F4	SUS_STAT#/LPCPD#	SYS GPIO	
3 ITP_DBRESET#		AD15	SYS_RESET#		
6 PM_BMBUSY#		AG12	BMBUSY#/GPIO0		
26 USB_MCARD1_DET#	USB_MCARD1_DET#	AG22	SMBALERT#/GPIO11		
17 H_STP_PCI#		AE20	STP_PCI#/GPIO15		
17 H_STP_CPU#		AG18	STP_CPU#/GPIO25		
20,23,25 CLKRUN#	CLKRUN#	AH11	CLKRUN#/GPIO32		
26,34 PCIE_WAKE#	PCIE_WAKE#	AE17	WAKE#		
20,23,25 IRQ_SERIRQ	IRQ_SERIRQ	AE12	SERIRQ		
31 THERM_ALERT#	THERM_ALERT#	AC13	THRM#		
23,35,39 IMVP_PWRGD	IMVP_PWRGD	AJ20	VRMPWRGD		
T125 PAD		AJ22	TP7		
T41 PAD		AJ8	TACH1/GPIO1	GPIO	
T128 PAD		AJ9	TACH2/GPIO6		
23 SIO_EXT_WAKE#		AH9	TACH3/GPIO7		
23 SIO_EXT_SMI#	SIO_EXT_SMI#	AE16	GPIO8		
23 SIO_EXT_SCI#	SIO_EXT_SCI#	AC19	GPIO12		
T46 PAD		AG8	TACH0/GPIO17		
26 PCIE_MCARD1_DET#	PCIE_MCARD1_DET#	AH12	GPIO18		
T53 PAD		AE11	GPIO20		
T44 PAD		AG10	SCLOCK/GPIO22		
26 WLAN_RADIO_DIS#		AH25	QRT_STATE0/GPIO27		
T54 PAD		AD16	QRT_STATE1/GPIO28		
17 SATA_CLKREQ#		AG13	SATACLKREQ#/GPIO35		
T49 PAD	PLTRST_DELAY#	AF9	SLOAD/GPIO38		
T126 PAD		AJ11	SDATAOUT0/GPIO39		
T57 PAD		AD10	SDATAOUT1/GPIO48		
32 SPKR	SPKR	AD9	SPKR	MISC	
6 MCH_ICH_SYNC#	MCH_ICH_SYNC#_R	AJ13	MCH_SYNC#		
11 ICH_RSVD		AJ21	TP3		

NH82801HBM-SLA5Q-MM#888654

		AJ12	SATA0GP/GPIO21	SATA GPIO	
		AJ10	SATA1GP/GPIO19		
		AF11	SATA2GP/GPIO36		
		AG11	SATA3GP/GPIO37		
	CLK_ICH_14M	AG9	CLK14	Clocks	CLK_ICH_14M 17
	CLK_ICH_48M	G5	CLK48		CLK_ICH_48M 17
	ICH_SUSCLK	D3	SUSCLK		PAD T90
		AG23	SLP_S3#	Power MGT	SIO_SLP_S3# 23
		AF21	SLP_S4#		PAD T52
		AD18	SLP_S5#		SIO_SLP_S5# 23
		AH27	S4_STATE#/GPIO26		
	ICH_PWRGD	AE23	PWROK		ICH_PWRGD 6,35
	DPRSLPVR	AJ14	DPRSLPVR/GPIO16		DPRSLPVR 6,39
	ICH_BATLOW#	AE21	BATLOW#		R219 8.2K +3.3V_SUS
		C2	PWRBTN#		SIO_PWRBTN# 23
	RSV_ICH_LAN_RST#	AH20	LAN_RST#		PAD T40
	ICH_RSMRST#	AG27	RSMRST#		ICH_RSMRST# 23
		E1	CK_PWRGD		CK_PWRGD 17
	ICH_CL_PWROK	E3	CLPWROK		ICH_CL_PWROK 6,23
		AJ25	SLP_M#		PAD T130
		F23	CL_CLK0	GPIO	CL_CLK0 6
	RSV_ICH_CL_CLK1	AE18	CL_CLK1	Controller Link	PAD T55
		F22	CL_DATA0		CL_DATA0 6
	RSV_ICH_CL_DATA1	AF19	CL_DATA1		PAD T48
	CL_VREF0	D24	CL_VREF0		
	CL_VREF1	AH23	CL_VREF1		PAD T42
		AJ23	CL_RST#		ICH_CL_RST0# 6
		AJ27	MEM_LED/GPIO24		
	RSV_GPIO10	AJ24	ME_EC_ALERT/GPIO10		PAD T131
	RSV_GPIO14	AF22	EC_ME_ALERT/GPIO14		PAD T63
	RSV_WOL_EN	AG19	WOL_EN/GPIO9		PAD T45

R228 8.2K +3.3V_SUS

+3.3V_RUN
R206 8.2K

Non-iAMT

Place these close to ICH8.

CLK_ICH_48M
R256 *10_NC
C321 *4.7P_NC
50

CLK_ICH_14M
R201 *10_NC
C250 *4.7P_NC
50

6

ICH_PWRGD R211 10K
DPRSLPVR R330 100K
ICH_RSMRST# R323 10K
RSV_ICH_LAN_RST# R192 10K
ICH_CL_PWROK R265 1M

+3.3V_SUS
RSV_GPIO10 R187 10K

+3.3V_RUN
R208 *10K_NC PLTRST_DELAY#

+3.3V_RUN
R324 *2.2K_NC IMVP_PWRGD
R339 10K PCIE_MCARD1_DET#

+3.3V_RUN
R327 *10K_NC MCH_ICH_SYNC#_R
R198 10K IRQ_SERIRQ
R197 10K THERM_ALERT#

+3.3V_SUS
R196 10K SIO_EXT_SMI#
R191 10K USB_MCARD1_DET#
R194 10K RSV_WOL_EN

+3.3V_RUN
R220 *1K_NC
SPKR

No Reboot strap.

SPKR	Low = Default. High = No Reboot.

SMbus address D2

These are for backdrive issue.

+3.3V_RUN
RP15 2.2KX2
26 ICH_SMBDATA
Q10 2N7002W
MEM_SDATA 15

+3.3V_RUN
26 ICH_SMBCLK
Q13 2N7002W
MEM_SCLK 15

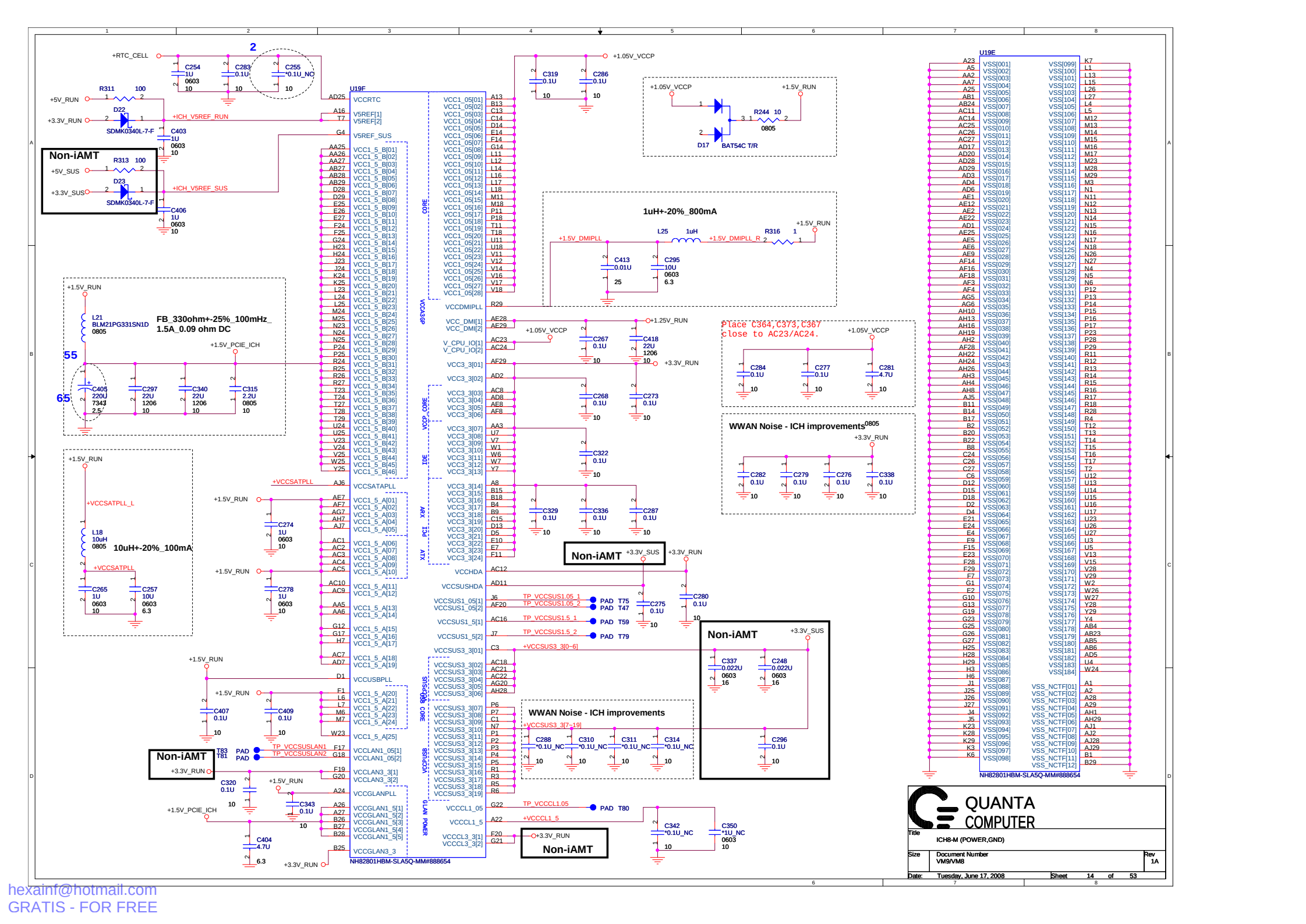
Non-iAMT

+3.3V_RUN
R258 3.24K/F
CL_VREF0
C325 0.1U
10

+3.3V_SUS
R205 *3.24K/F_NC
CL_VREF1
R262 453/F
C256 *0.1U_NC
10
R203 *453/F_NC

QUANTA COMPUTER

Title	ICH8-M (PM,GPIO,SMB,CL)		
Size	Document Number VM9/VM8		Rev 1A
Date:	Saturday, June 21, 2008	Sheet 13 of 53	



QUANTA COMPUTER

Title	ICH8-M (POWER,GND)
Size	Document Number VM9/VM8
Rev	1A
Date:	Tuesday, June 17, 2008
Sheet	14 of 53

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

PC4800 DDR2 SDRAM SO-DIMM (200P)

CN6

DDR2_SODIMM

CN4

2-1734073-2

CLOCK 0,1
CKE 0,1

CLOCK 2,3
CKE 2,3

SMbus address A0

SMbus address A4

Non-iAMT

Place these Caps near So-Dimm1.

Place these Caps near So-Dimm2.

Place these Caps near So-Dimm1.

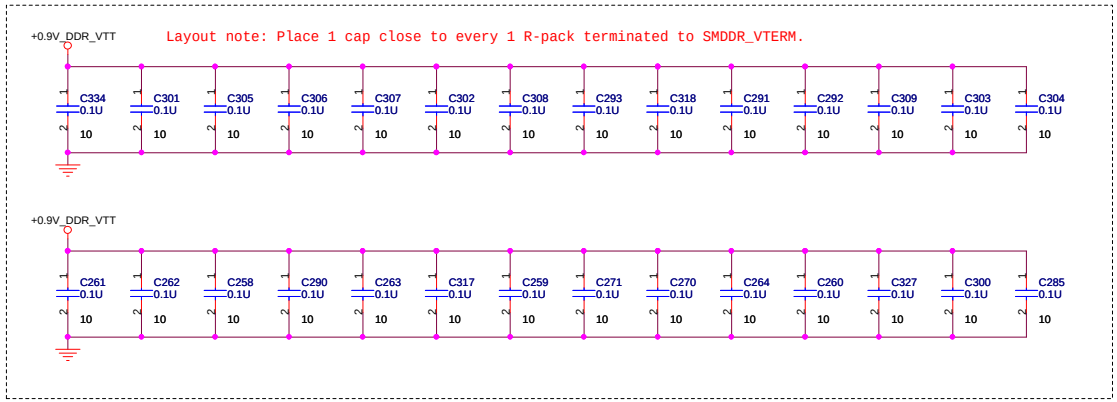
Place these Caps near So-Dimm2.

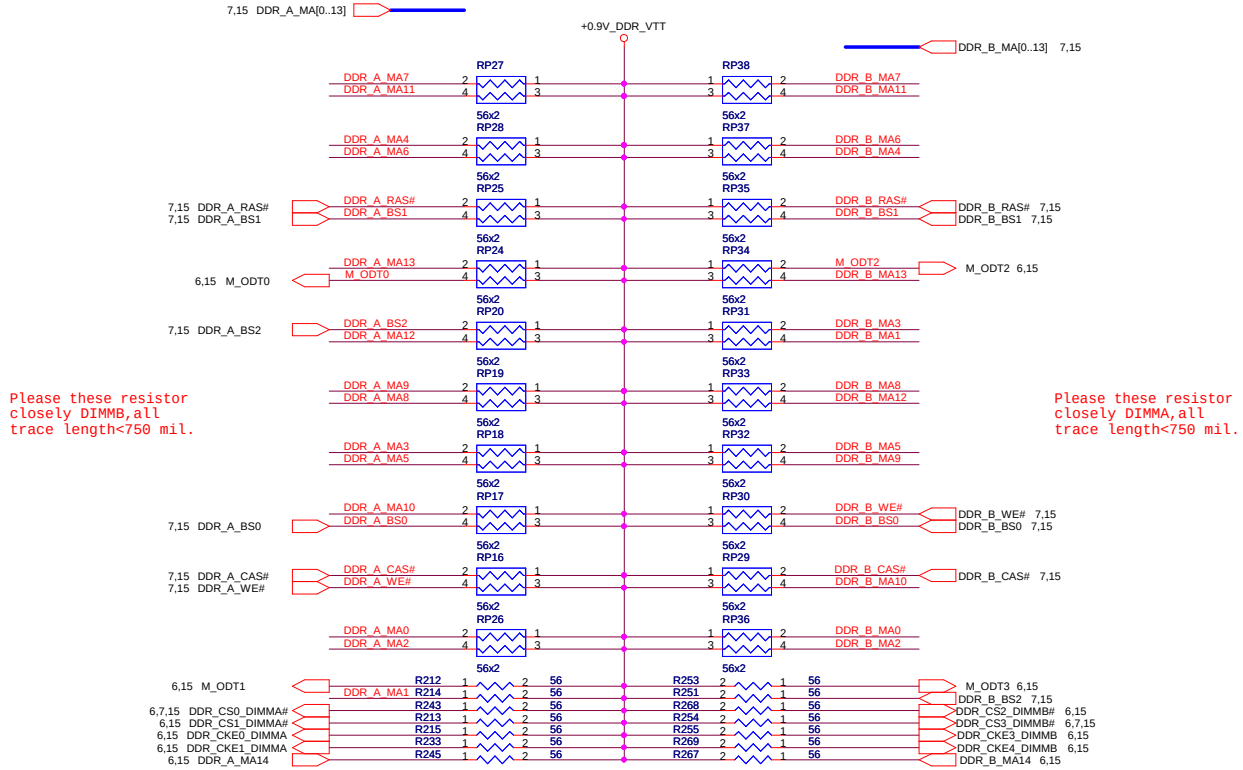
QUANTA COMPUTER

Title: DDR2 SO-DIMM (200P) X 2

Size: Document Number VM9/VM8 Rev 1A

Date: Friday, May 30, 2008 Sheet 15 of 53





QUANTA COMPUTER

Title	DDR2 RES ARRAY		
Size	Document Number VM9/VM8		Rev 1A
Date:	Friday, May 30, 2008	Sheet 16 of 53	

Add capacitor pads for improving WWAN.

C82 20P 50 CLK_ICH_48M
C59 *27P_NC 50 CLK_ICH_14M
C62 *27P_NC 50 CLK_PCI_8512
C61 *27P_NC 50 CLK_PCI_PCCARD
C63 *27P_NC 50 CLK_PCI_ICH

CLK_XTAL_IN Y2 CLK_XTAL_OUT
14.318MHZ
C67 33P 50
C77 33P 50
14.318MHz

U5
CK505
QFN64
SLG8SP513V

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

13 SATA_CLKREQ# SATA_CLKREQ# R60 475/F SATA_CLKREQ# C 8 CR#_A/PCI-0
6 CLK_3GPLLREQ# CLK_3GPLLREQ# R63 475/F CLK_3GPLLREQ# C 10 CR_B/PCI-1
25,26 CLK_LPC_DEBUG CLK_LPC_DEBUG R46 *22_NC 11 TME/PCI-2
20 CLK_PCI_PCCARD CLK_PCI_PCCARD R56 33 PCI_PCCARD 12 SRC5_EN/PCI-3
23 CLK_PCI_8512 CLK_PCI_8512 R64 33 PCI_SIO 13 27M_SEL/PCI-4
12 CLK_PCI_ICH CLK_PCI_ICH R54 33 PCI_ICH 14 ITP_EN/PCIF-5#
13 CLK_ICH_48M CLK_ICH_48M R72 33
3,6 CPU_MCH_BSEL0 L6 BLM18AG601SN1D R68 8.2K FSA 17 FSA/USB48
3,6 CPU_MCH_BSEL1 BLM18AG601SN1D R73 8.2K FSB 64 FSB/TEST_MODE
3,6 CPU_MCH_BSEL2 L5 BLM18AG601SN1D R61 8.2K FSC 5 FSC/TEST_SEL/REF
13 CLK_ICH_14M CLK_ICH_14M R52 33 55 RESET#
13 CLK_PWRGD 63 CK_PWRGD/PD#

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

CPU-0 CPU-0# 61 CPU_BCLK 60 CPU_BCLK# RP5 0x2 CLK_CPU_BCLK 3 CLK_CPU_BCLK# 3
CPU-1 CPU-1# 58 MCH_BCLK 57 MCH_BCLK# RP6 0x2 CLK_MCH_BCLK 5 CLK_MCH_BCLK# 5
SRC-8/CPU_ITP SRC-8#/CPU_ITP# 54 PCIE_MINI1 53 PCIE_MINI1# RP8 0x2 CLK_PCIE_MINI1 26 CLK_PCIE_MINI1# 26
SRC-0/DOT96 SRC-0#/DOT96# 20 DOT96_SSC 21 DOT96_SSC# RP4 0x2 MCH_DREFCLK 6 MCH_DREFCLK# 6
SRC-1/SE1 SRC-1#/SE2 24 27M_SS 25 27M_NSS RP7 0x2 DREF_SSCLK 6 DREF_SSCLK# 6
SRC-2/SATA SRC-2#/SATA# 28 PCIE_SATA 29 PCIE_SATA# RP9 0x2 CLK_PCIE_SATA 11 CLK_PCIE_SATA# 11
CR#_C/SRC-3 CR#_D/SRC-3# 31 32
SRC-4 SRC-4# 34 MCH_3GPLL 35 MCH_3GPLL# RP12 0x2 CLK_MCH_3GPLL 6 CLK_MCH_3GPLL# 6
PCI_STOP#/SRC-5 CPU_STOP#/SRC5-5# 45 44 H_STP_PCI# 13 H_STP_CPU# 13
SRC-6 SRC-6# 48 47
CR#_F/SRC-7 CR#_E/SRC-7# 51 MINI1CLK_REQ# C 50 SRC-7# R76 475/F MINI1CLK_REQ# MINI1CLK_REQ# 26
SRC-9 SRC-9# 37 38
SRC-10 SRC-10# 41 PCIE_ICH 42 PCIE_ICH# RP10 0x2 CLK_PCIE_ICH 12 CLK_PCIE_ICH# 12
CR#_H/SRC-11 CR#_G/SRC-11# 40 PCIE_LOM 39 PCIE_LOM# RP11 0x2 CLK_PCIE_LOM 34 CLK_PCIE_LOM# 34
GND 65

+3.3V_RUN
H_STP_PCI# R80 *10K_NC
H_STP_CPU# R81 *10K_NC

Silego need pull up but other?

+3.3V_RUN
CLK_3GPLLREQ# R55 10K
SATA_CLKREQ# R47 10K
SRC-7# R79 10K
MINI1CLK_REQ# R77 10K
PCI_PCCARD R45 *10K_NC

PCI_SIO R57 *10K_NC

UMA without iAMT

+3.3V_RUN
L8 BLM21PG600SN1D 0805 120 ohms@100Mhz
+CK_VDD_MAIN
C87 0.1U 10
C83 0.1U 10
C90 0.1U 10
C89 0.1U 10
C86 0.1U 10
C88 0.1U 10
C91 *10U_NC 0603 6.3
L9 BLM21PG600SN1D 0805 120 ohms@100Mhz
R65 2.2 +CK_VDD_PCI
C78 0.1U 10
R83 2.2 +CK_VDD_PLL3
C85 0.1U 10
R66 2.2 +CK_VDD_48
C80 0.1U 10
C79 4.7U 0603 6.3
R376 2.2 +CK_VDD_SRC
C84 0.1U 10

Non-iAMT

SMbus address D2

These are for backdrive issue.

+3.3V_RUN
RP3 2.2KX2
18,23,31 SMBDAT1
Q4 2N7002W
CLK_SDATA
+3.3V_RUN
18,23,31 SMBCLK1
Q3 2N7002W
CLK_SCLK

+3.3V_RUN
R59 *10K_NC
PCI_ICH
R53 *10K_NC

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

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

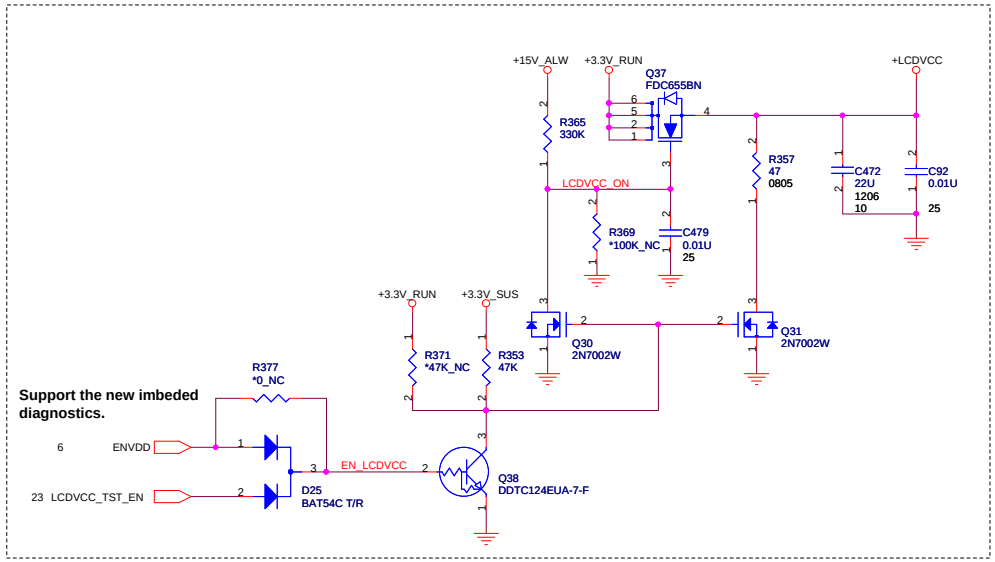
+3.3V_RUN
R48 *10K_NC
27M_SEL
R58 10K

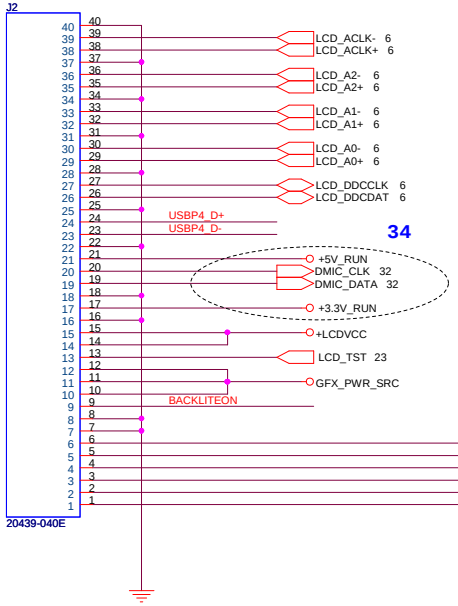
27M_SEL

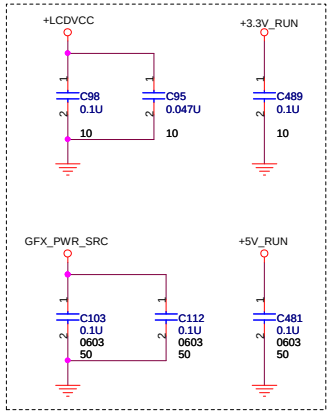
27M_SEL (PIN13)	PIN20	PIN21	PIN24	PIN25
0=UMA	DOT96T	DOT96C	96/ 100M_T	96/ 100M_C
1 = Disc. GRFX down	SRCT0	SRCC0	27Mout	27MSSout

QUANTA COMPUTER

Title: CLOCK GENERATOR
Size: Document Number VM9/VM8 Rev 1A
Date: Friday, May 30, 2008 Sheet 17 of 53







Adress : A9H --Contrast
AAH --Backlight

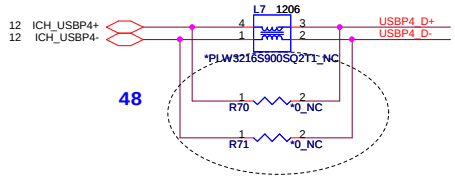
SMBCLK1 17,23,31
SMBDAT1 17,23,31
INVERTER_CBL_DET# 23
LCD_BAK# 23
PWM_VADJ 23
LCD_CBL_DET# 23

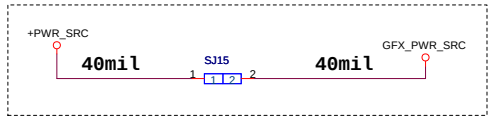
C122 *47P_NC 50
C123 *47P_NC 50

UMA

Populate R351 for DPST implementation only.

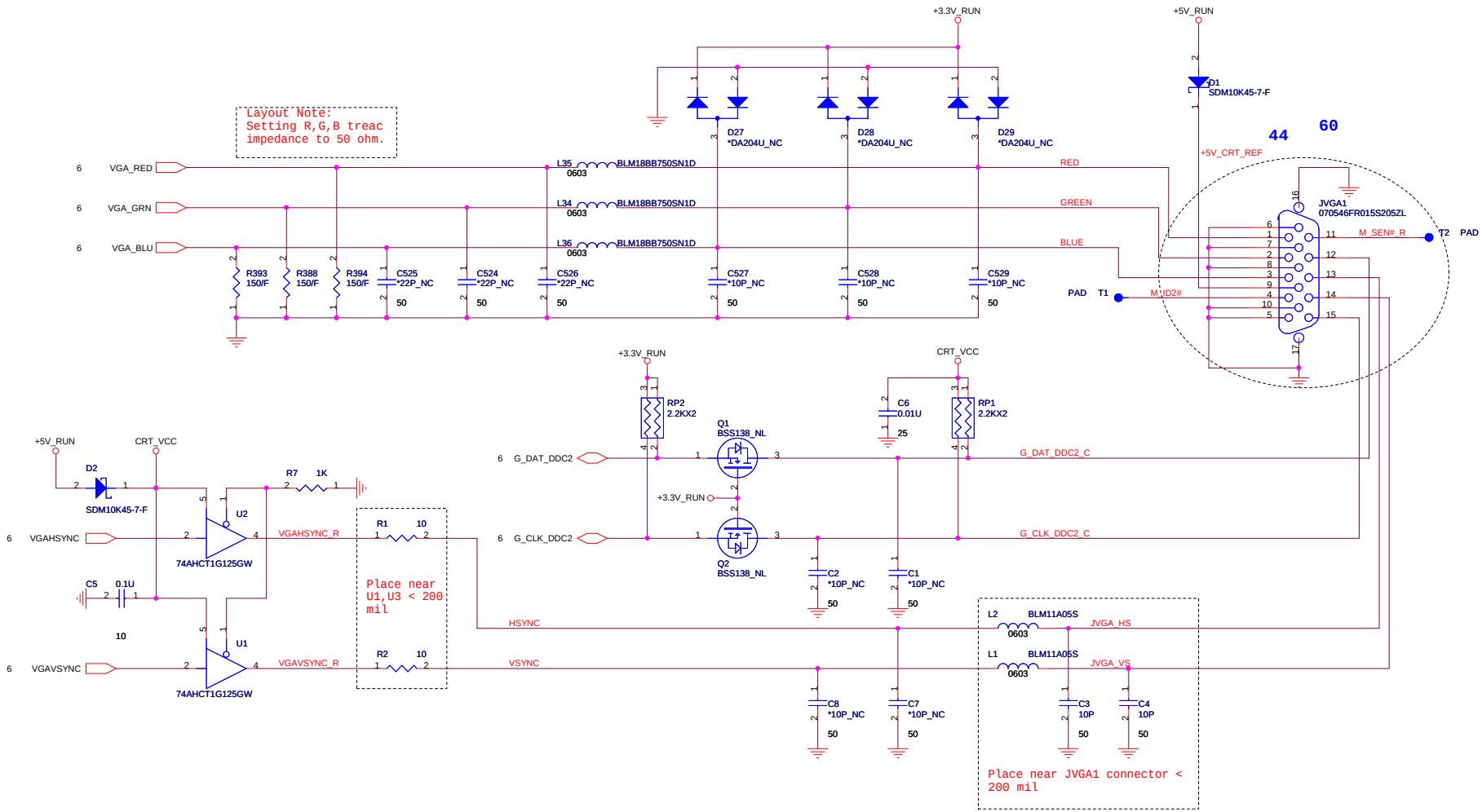
Populate R346 for platform without DPST support. No Stuff for Discrete DSPT support due to back up plan.





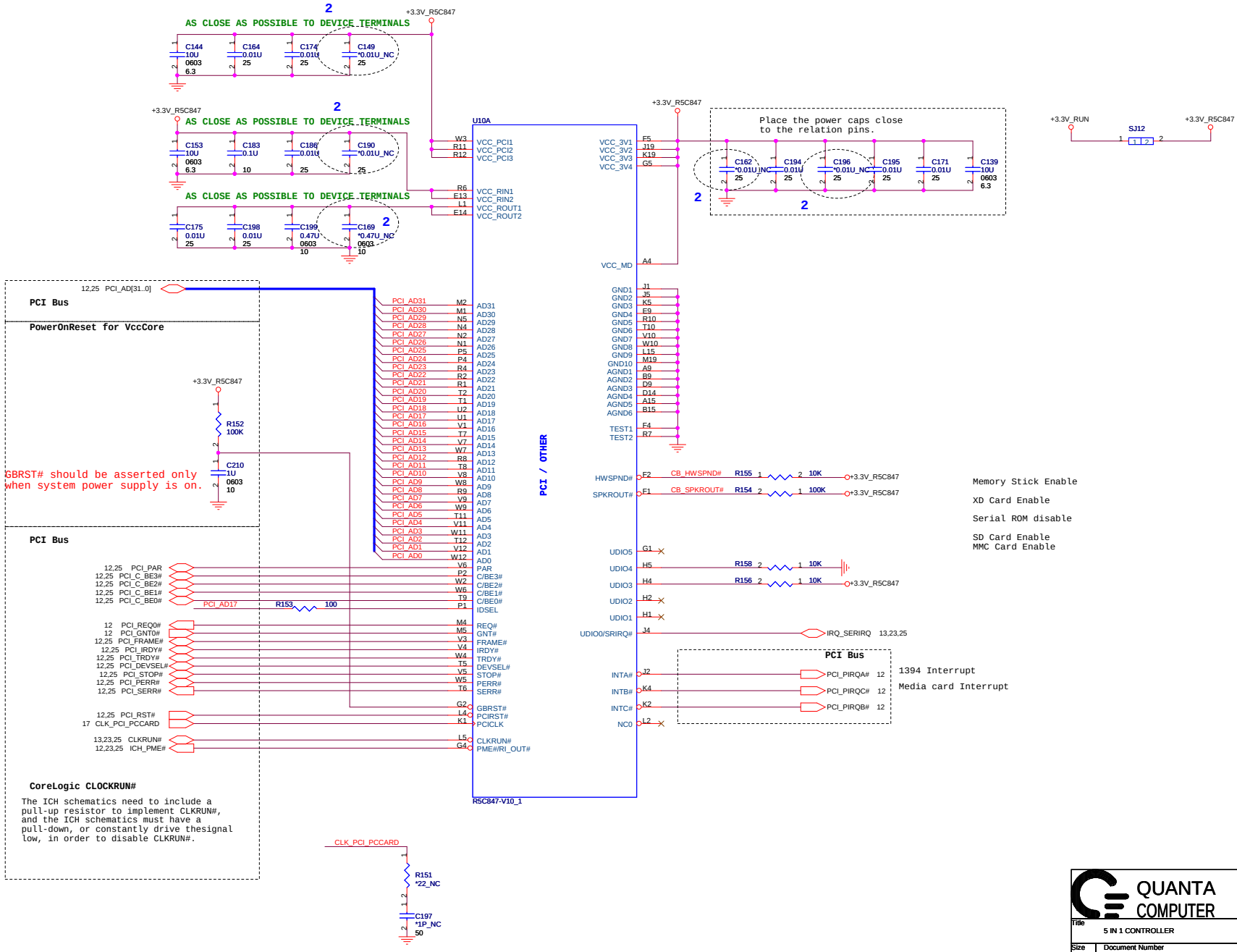
QUANTA COMPUTER

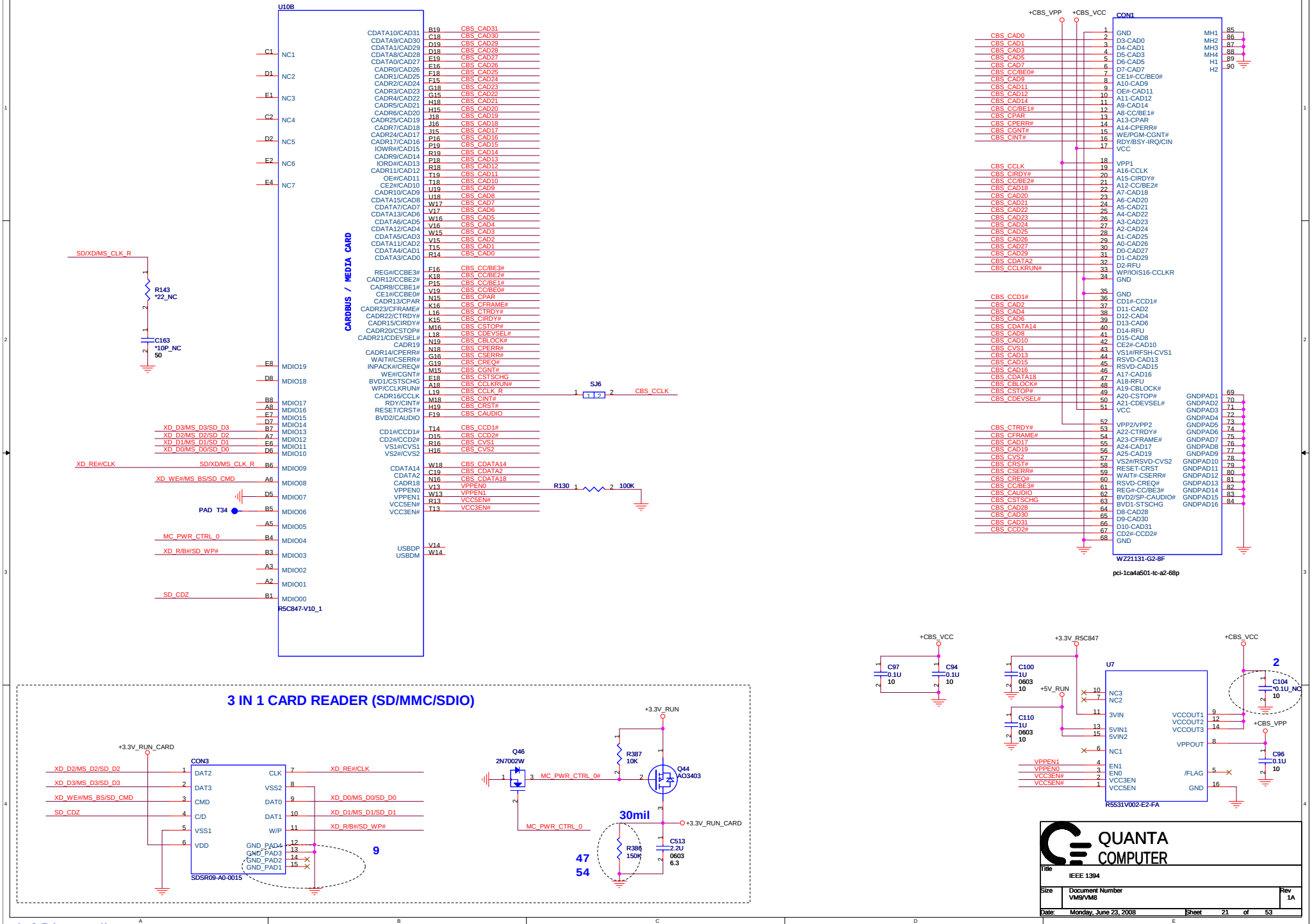
Title	LCD CONN & CK-SSCD		
Size	Document Number VM9/VM8		Rev 1A
Date:	Thursday, June 12, 2008	Sheet 18 of 53	

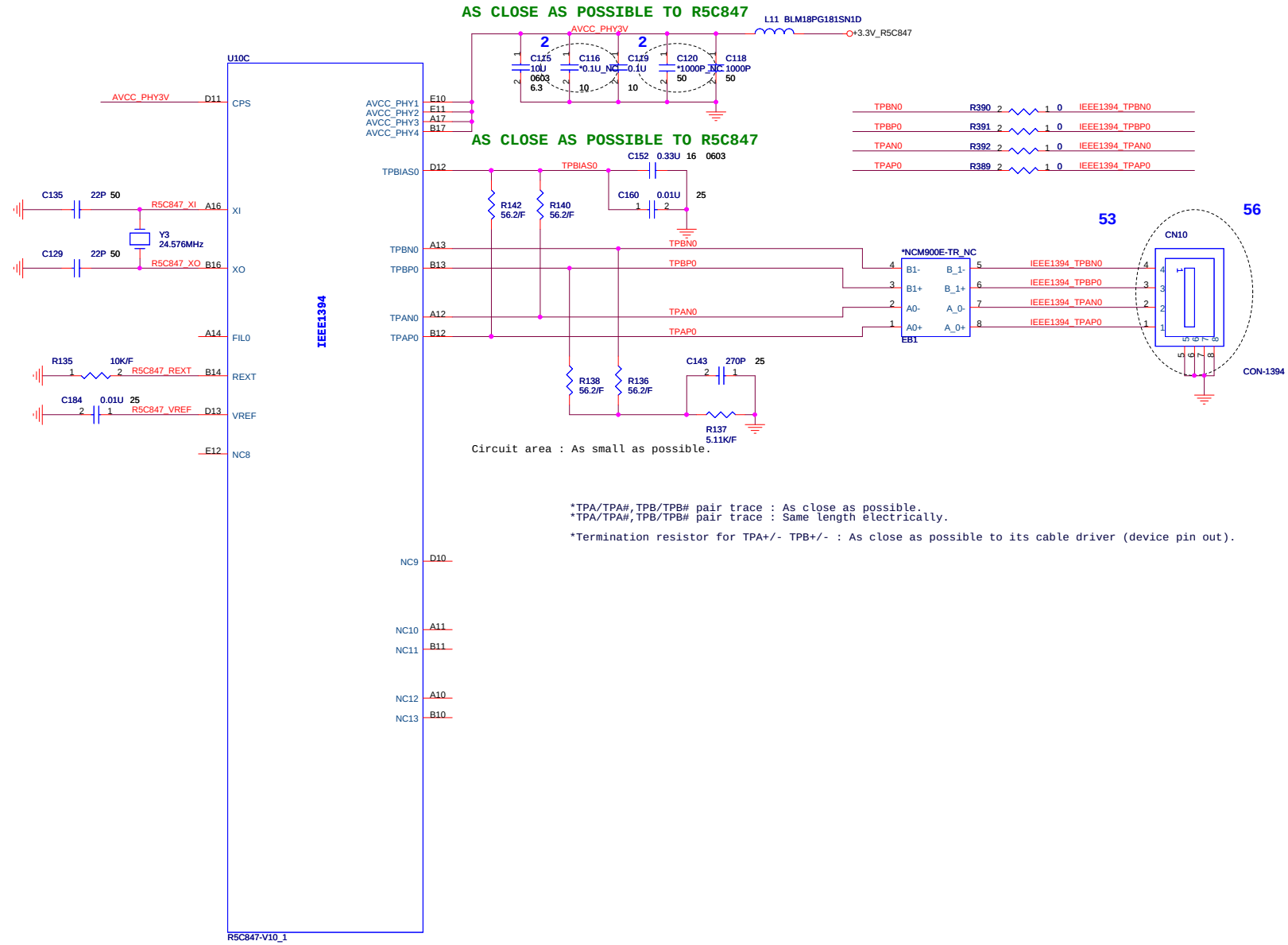


QUANTA COMPUTER

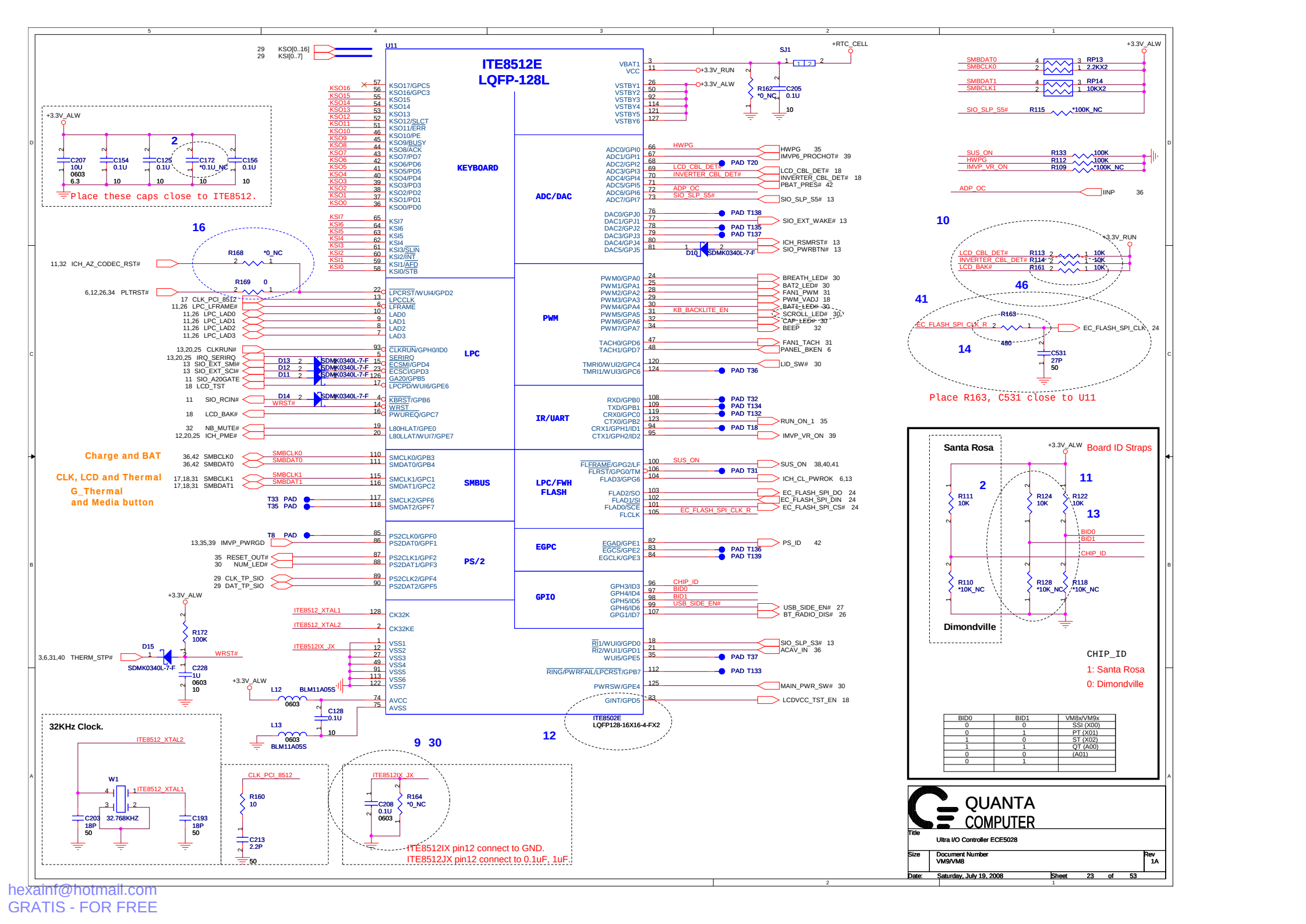
Title	CRT&TV CONN		
Size	Document Number VM9/VM8		Rev 1A
Date:	Friday, May 30, 2008	Sheet 19 of 53	



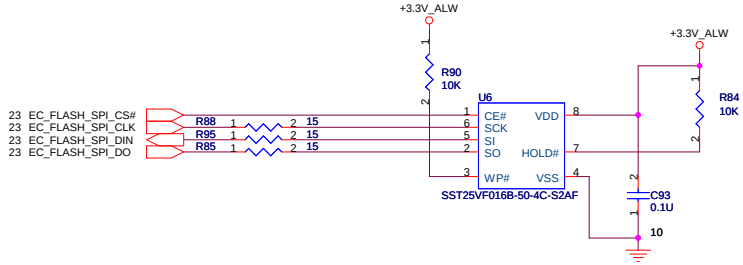




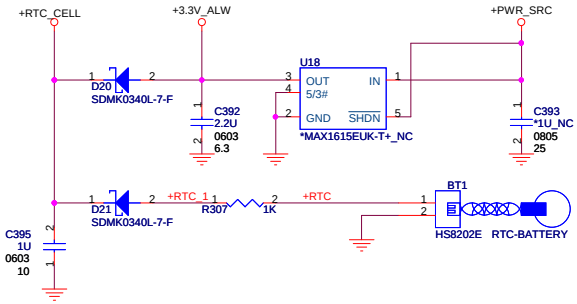
Title	ExpressCard/SmartCard	
Size	Document Number VM9/VM8	Rev 1A
Date: Tuesday, June 17, 2008	Sheet 22 of 53	



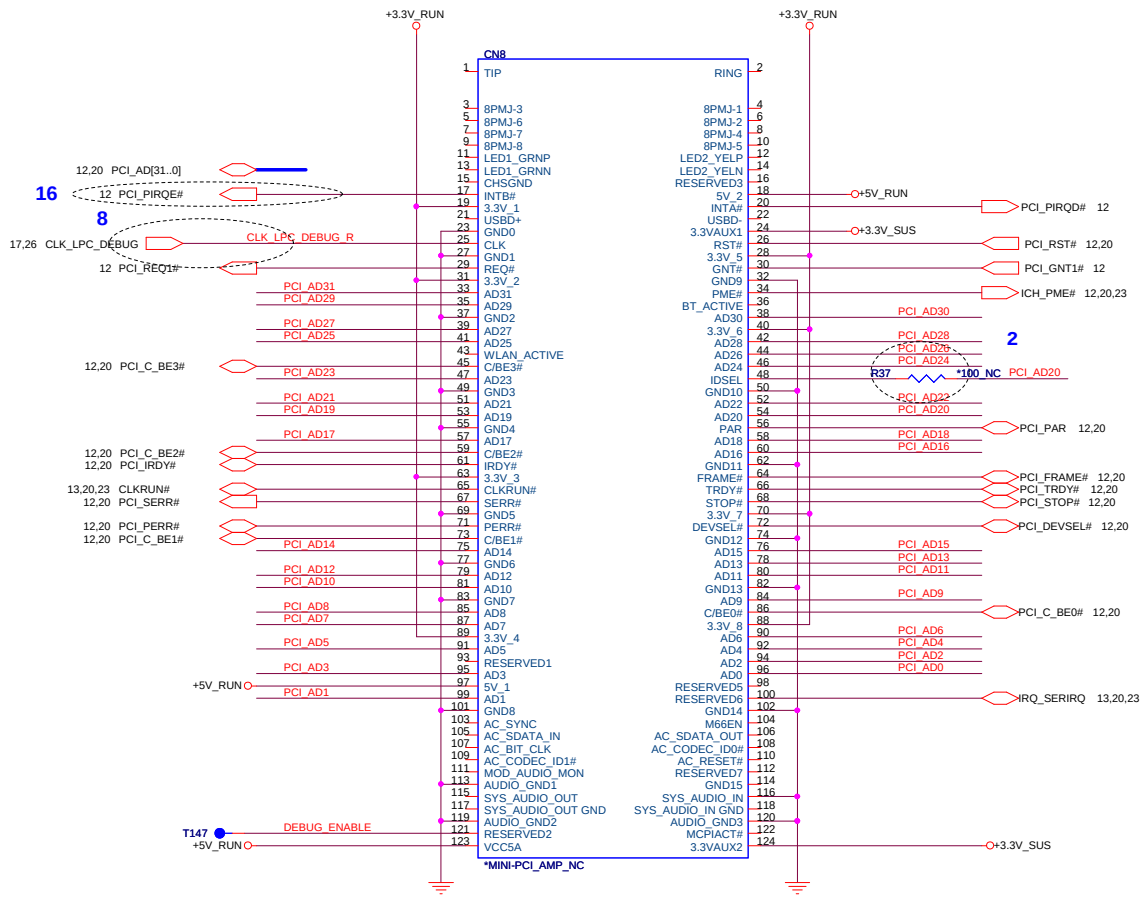
16Mbit (2M Byte), SPI



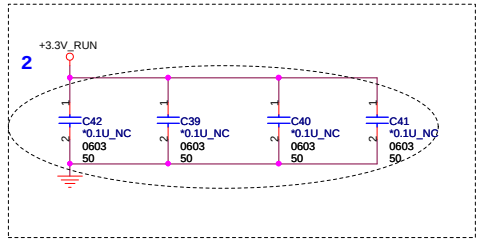
RTC BATTERY

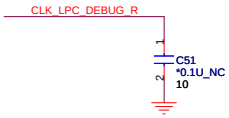


QUANTA COMPUTER			
Title: Ultra I/O Controller ECE5028			
Size	Document Number VM9/VM8		Rev 1A
Date: Friday, May 30, 2008		Sheet 24 of 53	



Place the debug connector on HDD area

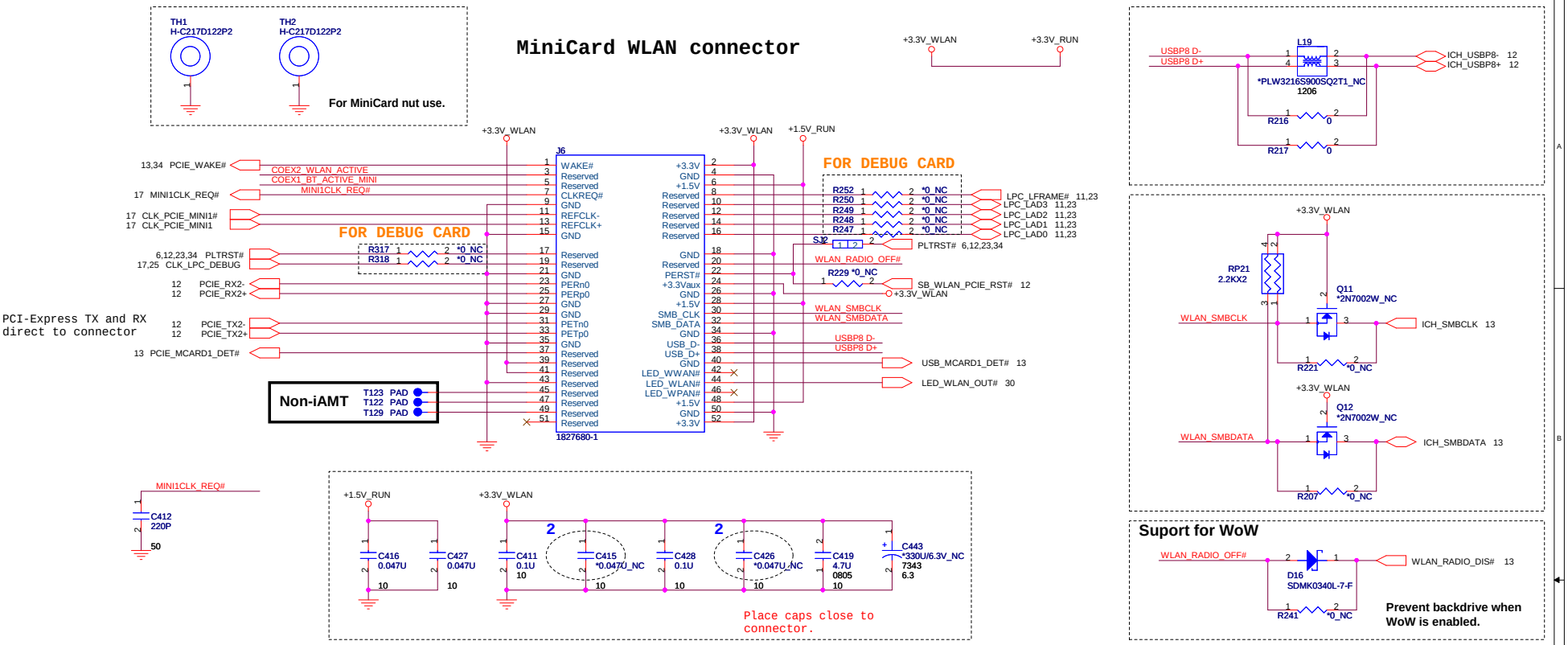




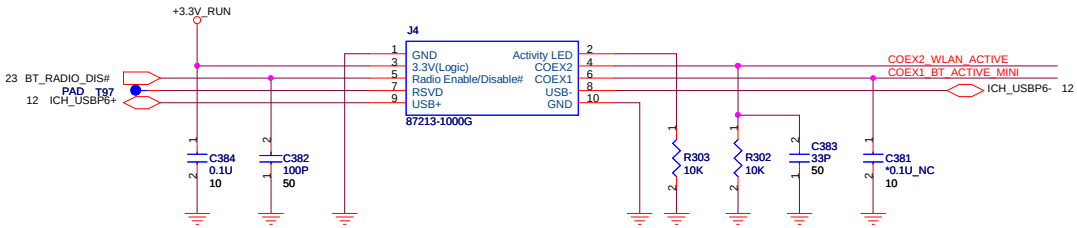
QUANTA COMPUTER

Title	Debug Port (Mini PCI)		
Size	Document Number VM9/VM8		Rev 1A
Date:	Saturday, July 19, 2008	Sheet 25 of 53	

MiniCard WLAN connector

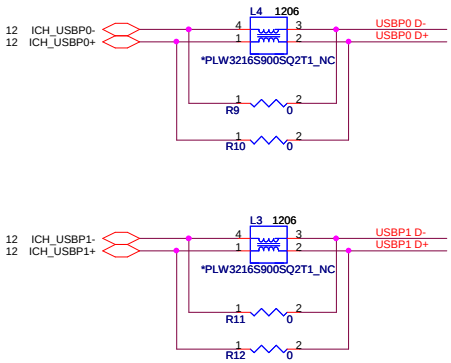


Bluetooth

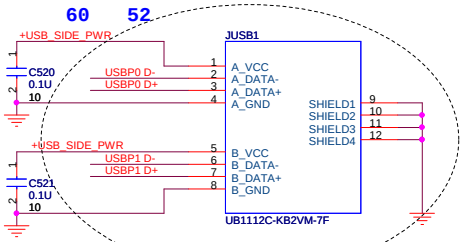


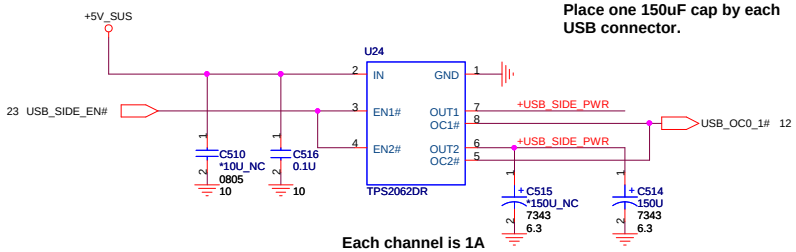
QUANTA COMPUTER		
Title: MDC CONN.		
Size	Document Number VM9/VM8	Rev 1A
Date: Tuesday, June 17, 2008	Sheet 26 of 53	

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



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

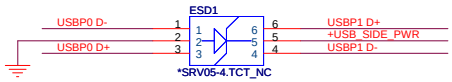




Place one 150uF cap by each USB connector.

Each channel is 1A

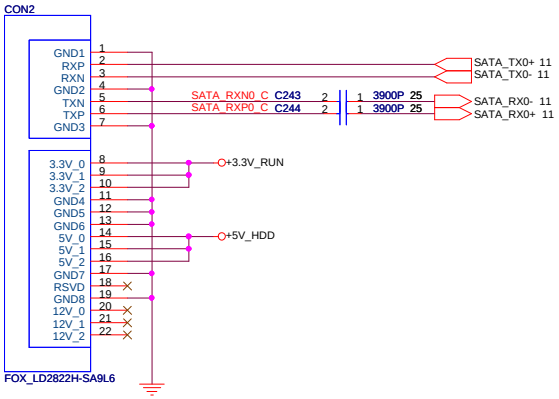
Place ESD diodes as close as USB connector.

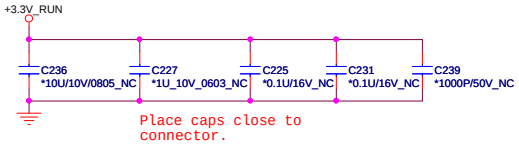


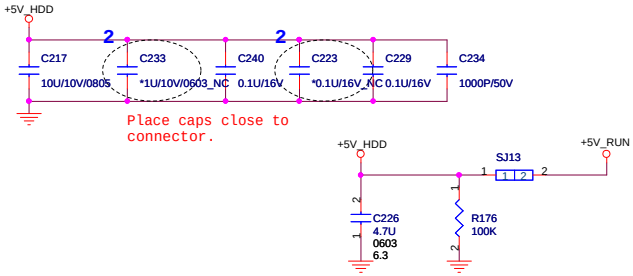
QUANTA COMPUTER

Title	SERIAL PORT & USB	
Size	Document Number VM9/VM8	Rev 1A
Date: Friday, May 30, 2008	Sheet 27 of 53	

SATA HDD Connector.

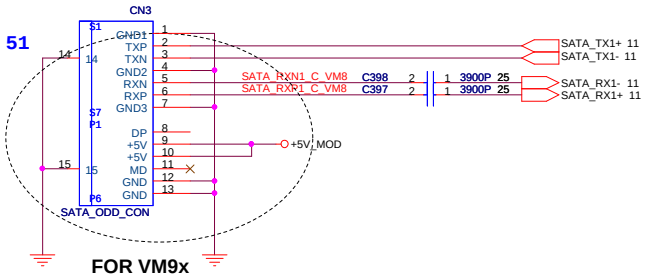




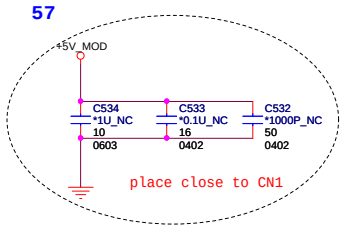


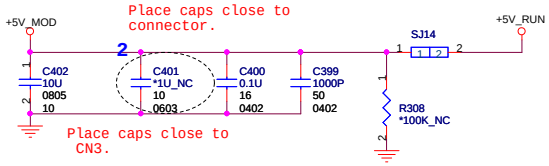
SATA ODD Connector.

FOR VM8x

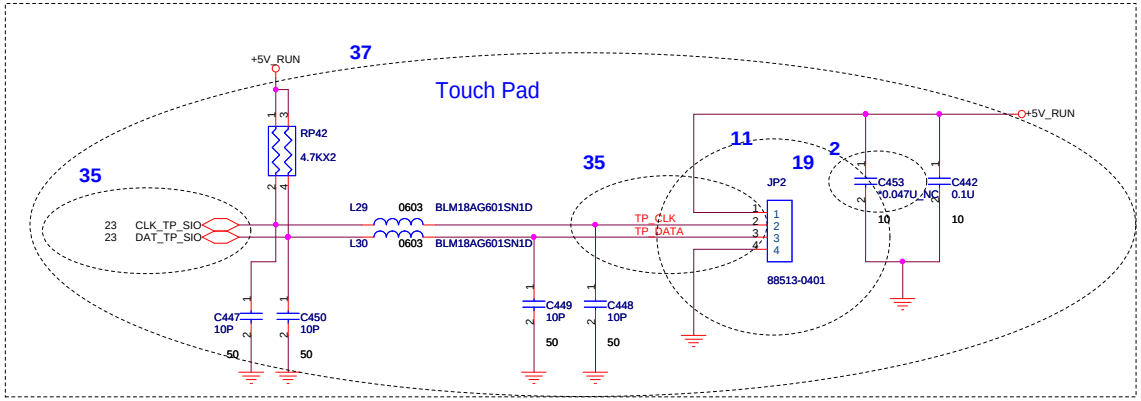


FOR VM9x

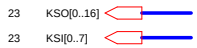


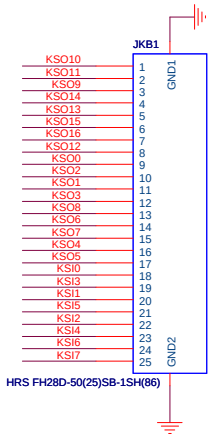


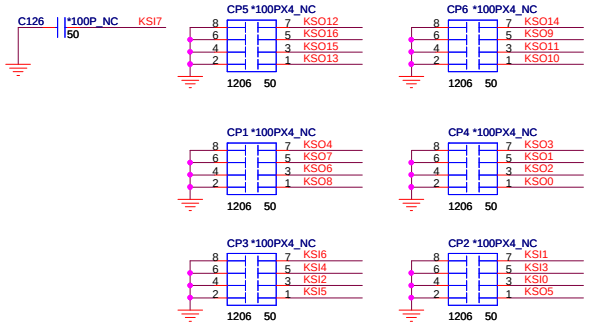
QUANTA COMPUTER		
Title	SATA (HDD&CD_ROM)	
Size	Document Number VM9/VM8	Rev 1A
Date: Tuesday, June 17, 2008	Sheet 28 of 53	



KEYBOARD CONNECTOR





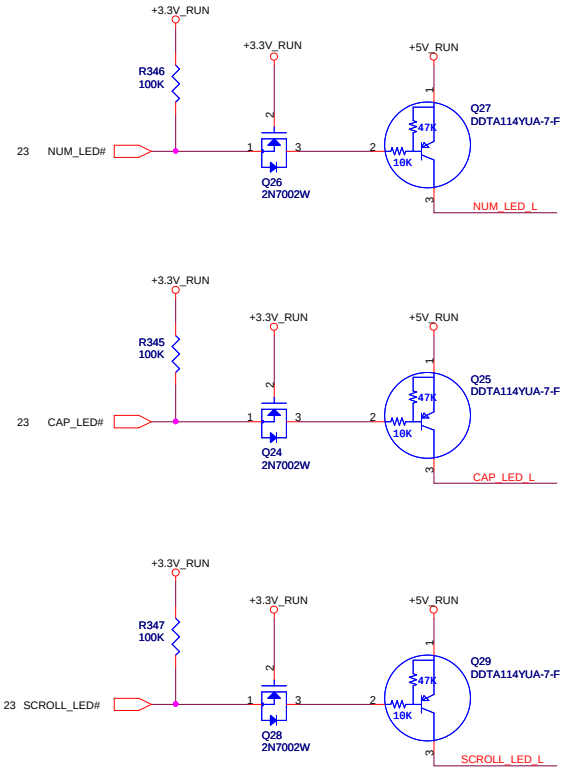


100P CAPS CLOSE TO JKB1

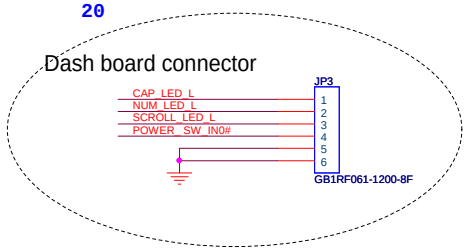
QUANTA COMPUTER

Title	TOUCH PAD, BULE TOOTH & FIR	
Size	Document Number VM9/VM8	Rev 1A
Date: Tuesday, June 17, 2008	Sheet 29 of 53	

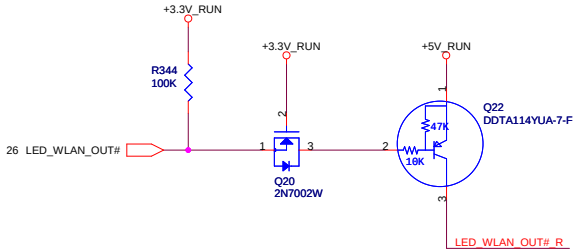
Keyboard LED



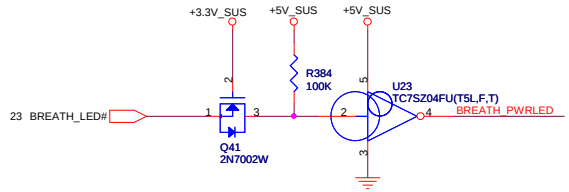
Dash board connector



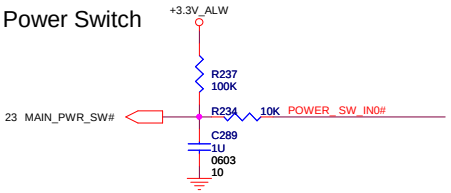
WLAN



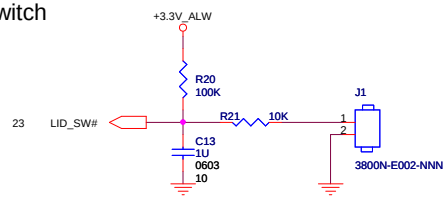
Power & Suspend.



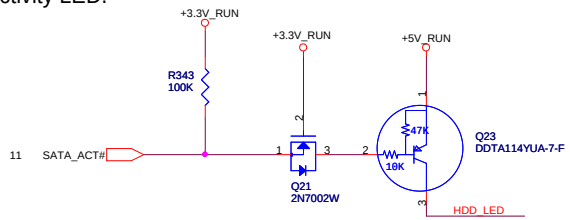
Power Switch



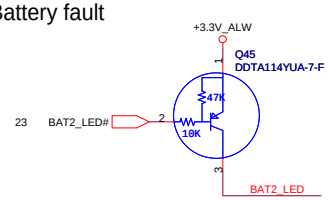
LID Switch



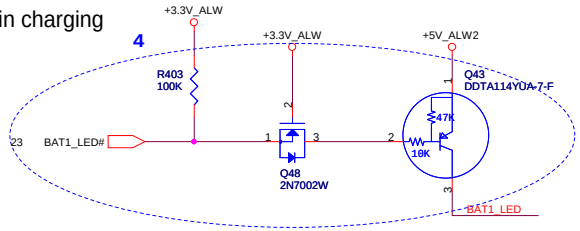
HDD activity LED.

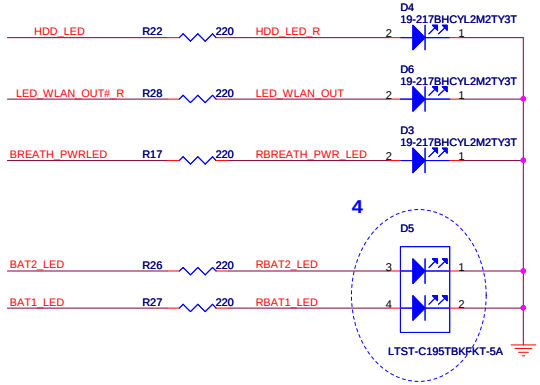


Battery fault



Battery in charging





QUANTA COMPUTER			
Title: SWITCH, KEYBOARD & LED			
Size	Document Number VM9/VM8		Rev 1A
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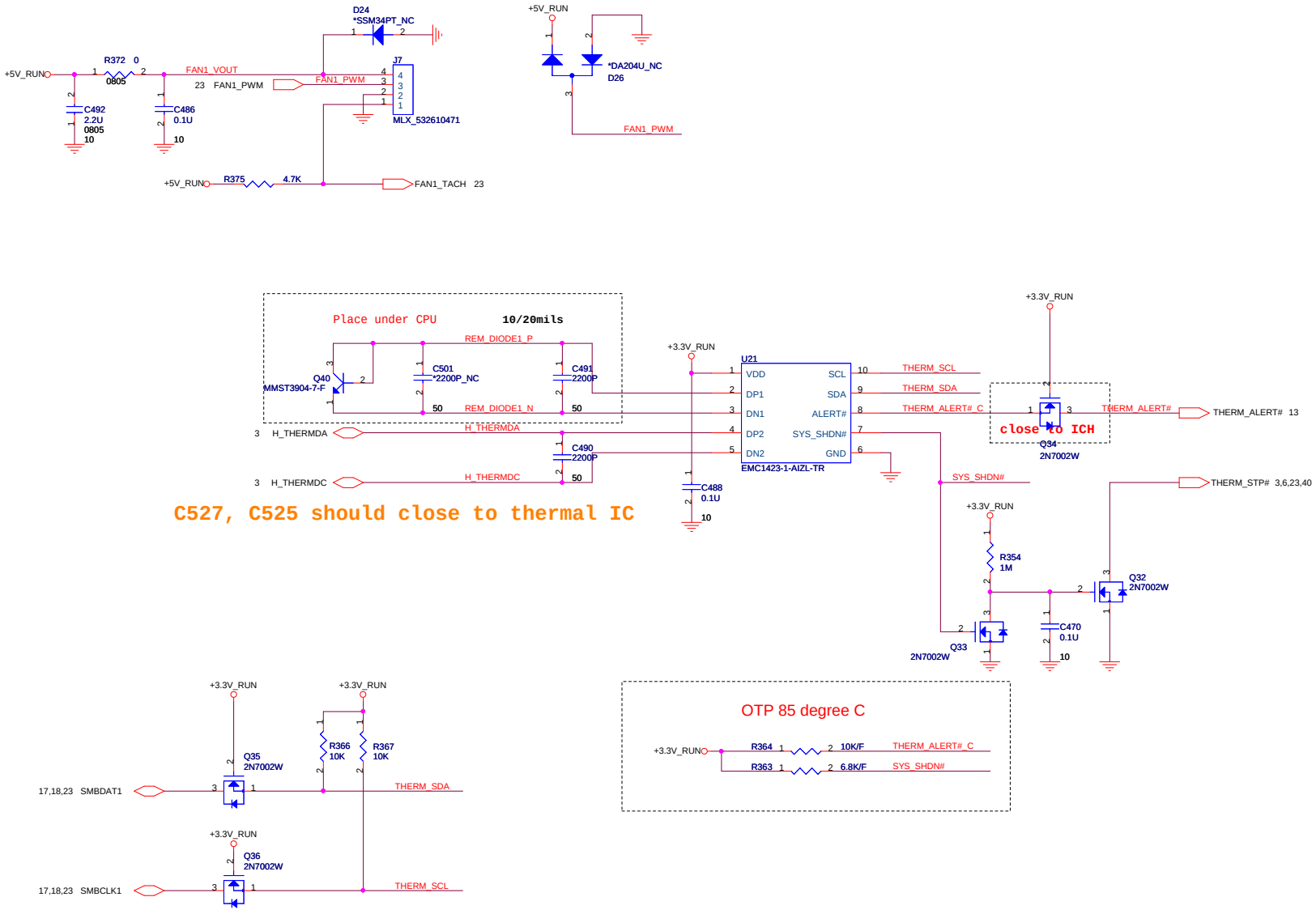
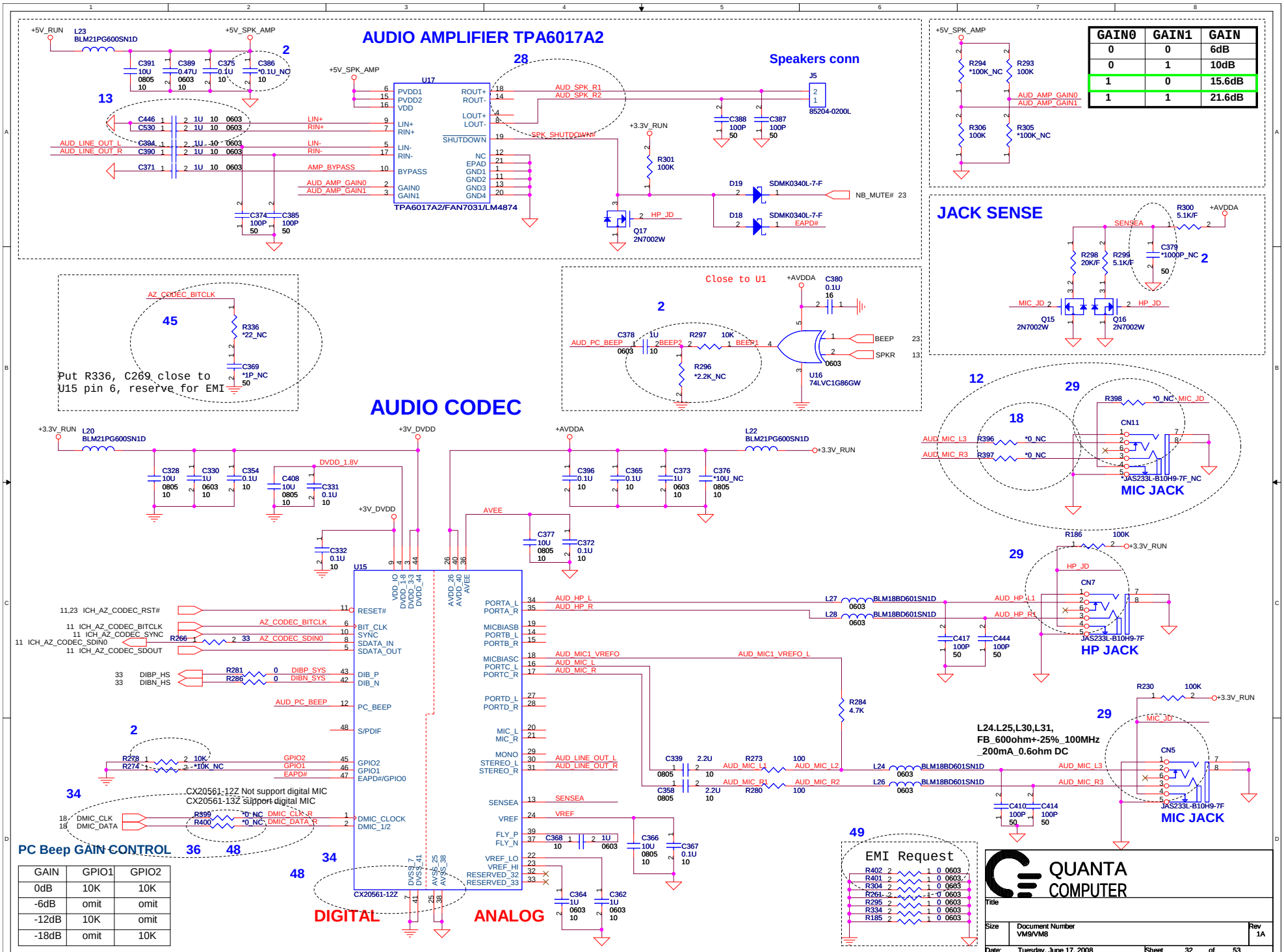


QUANTA COMPUTER

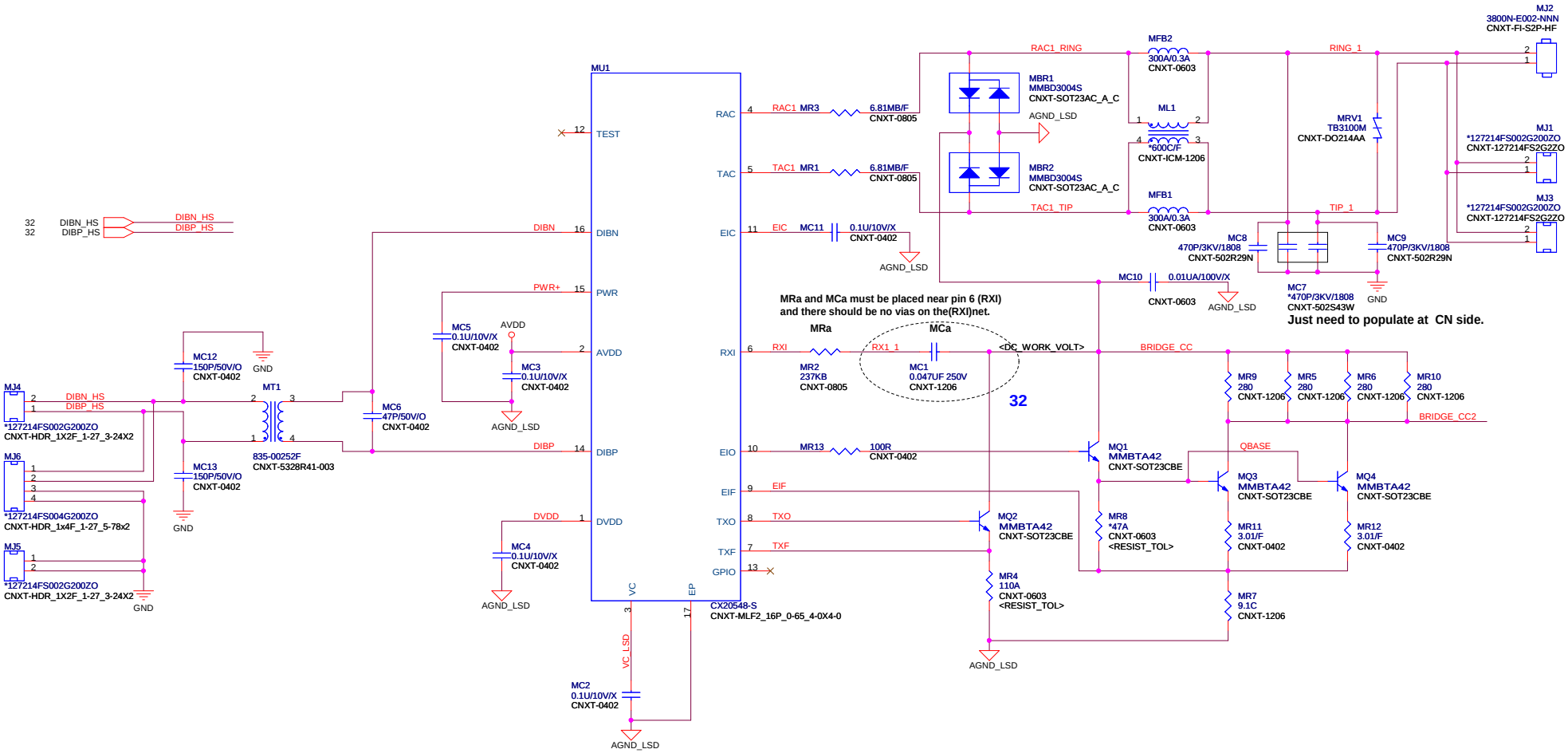
Title	FAN & THERMAL	
Size	Document Number VM9/VM8	Rev 1A
Date: Friday, May 30, 2008	Sheet 31 of 53	



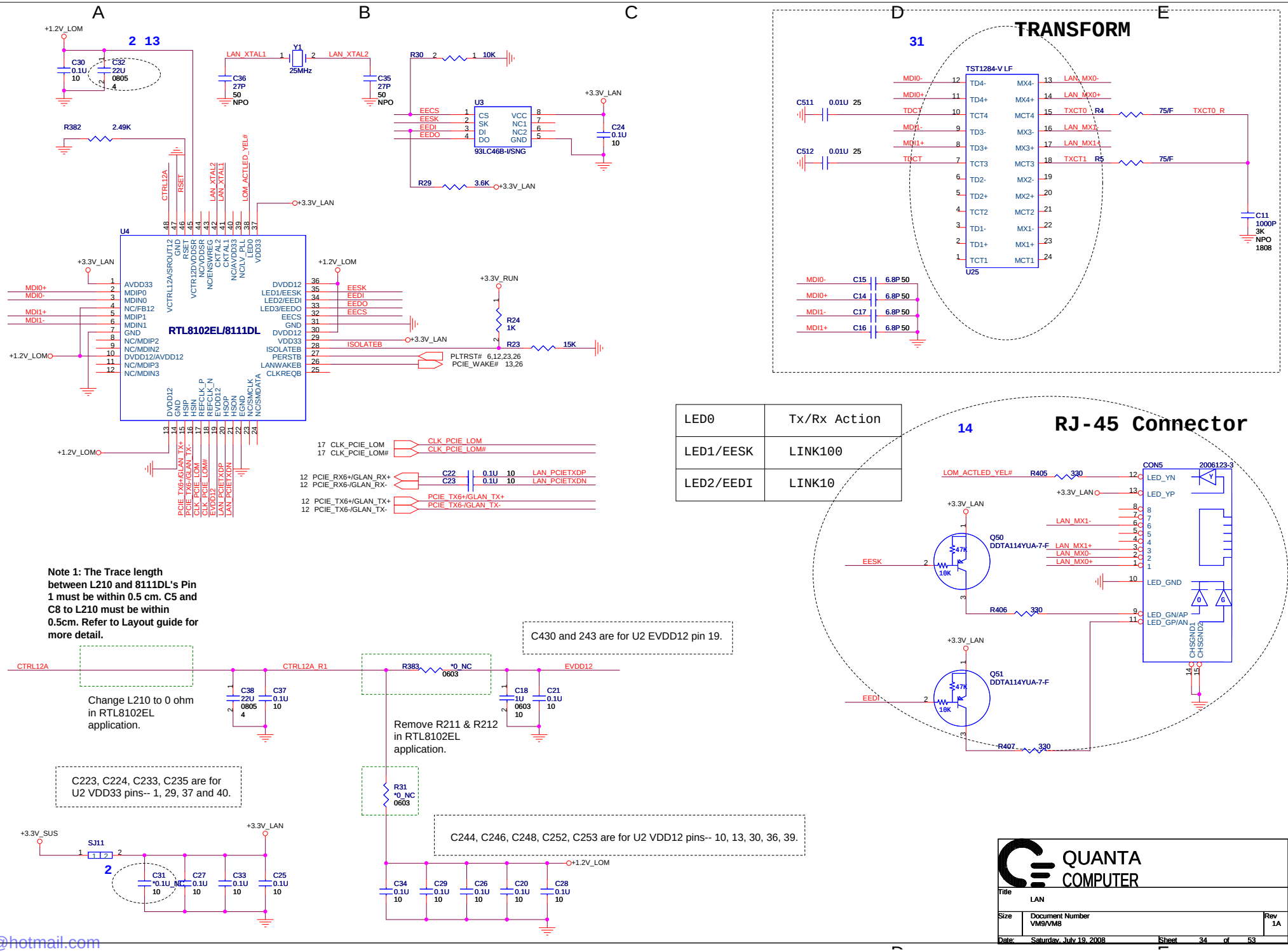
GAIN0	GAIN1	GAIN
0	0	6dB
0	1	10dB
1	0	15.6dB
1	1	21.6dB

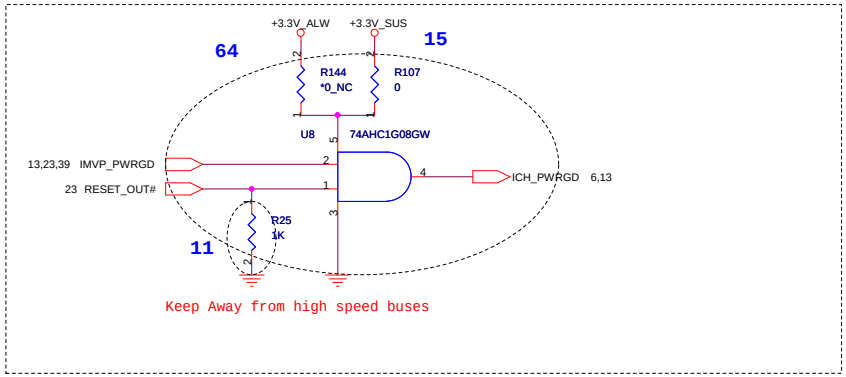
GAIN	GPIO1	GPIO2
0dB	10K	10K
-6dB	omit	omit
-12dB	10K	omit
-18dB	omit	10K

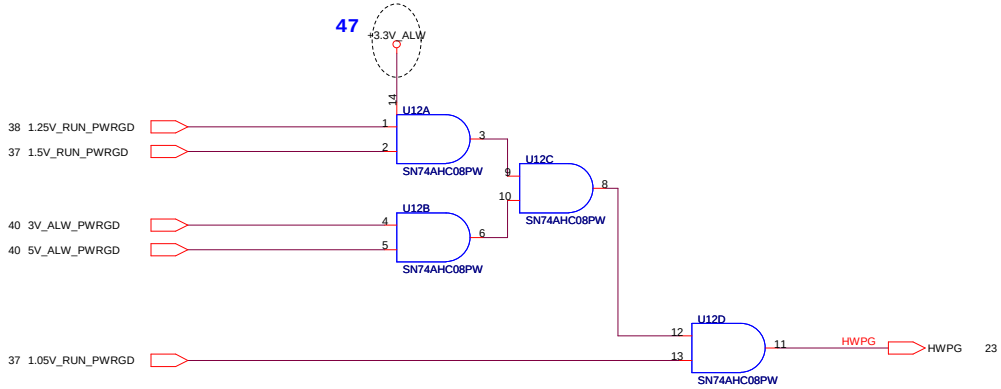
Revision History		
REV	Description	Date
0	Initial Release	April 26, 2005
4		

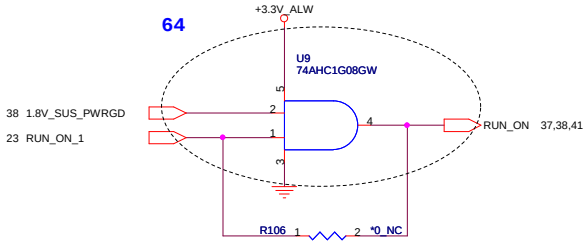


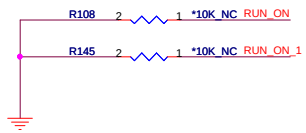
Size	Document Number VM9/VM8		Rev 1A
Date: Friday, May 30, 2008		Sheet 33 of 53	











QUANTA COMPUTER

Title	System Reset Circuit	
Size	Document Number VM9/VM8	Rev 1A
Date: Friday, July 25, 2008	Sheet 35 of 53	

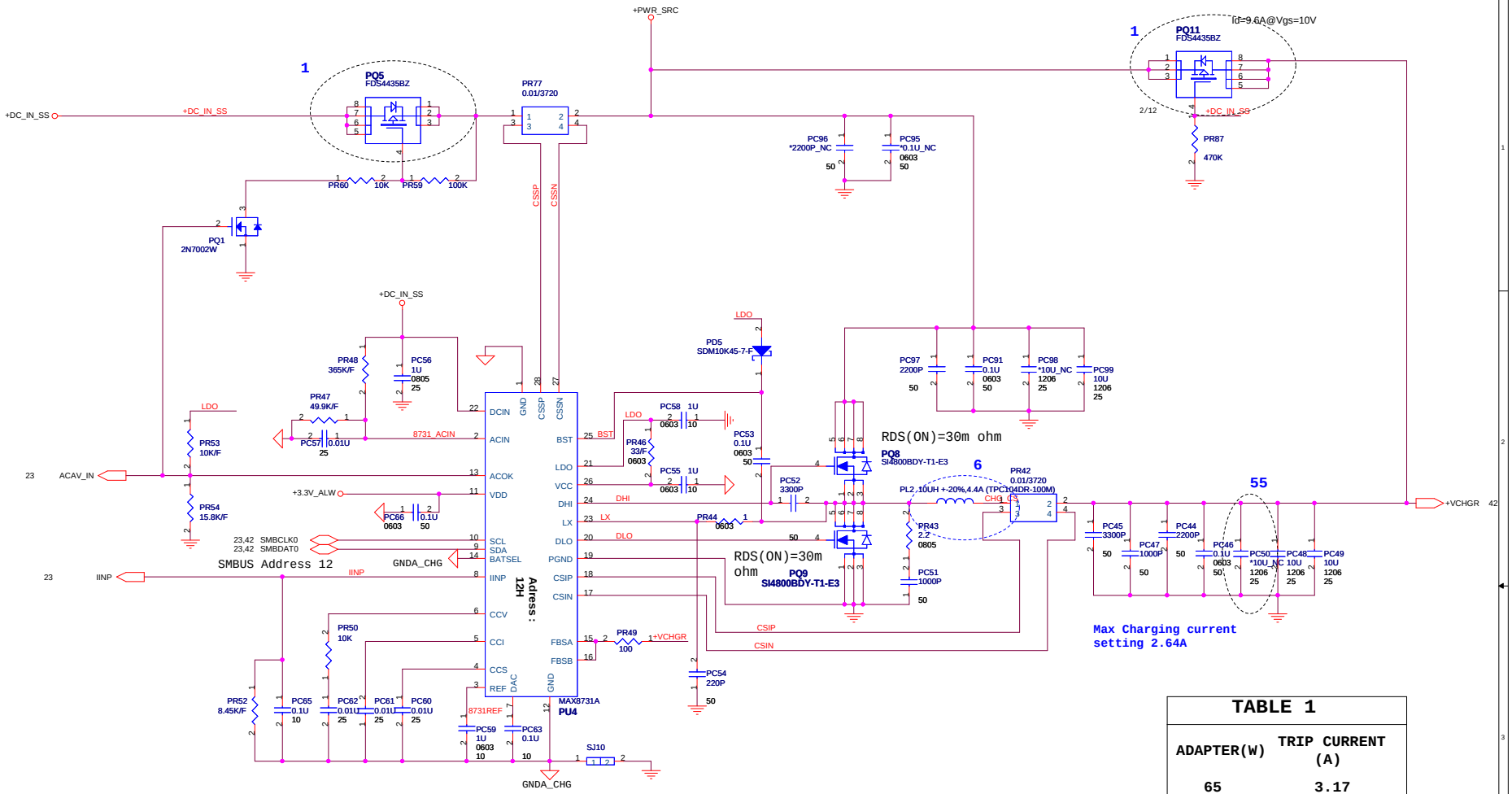
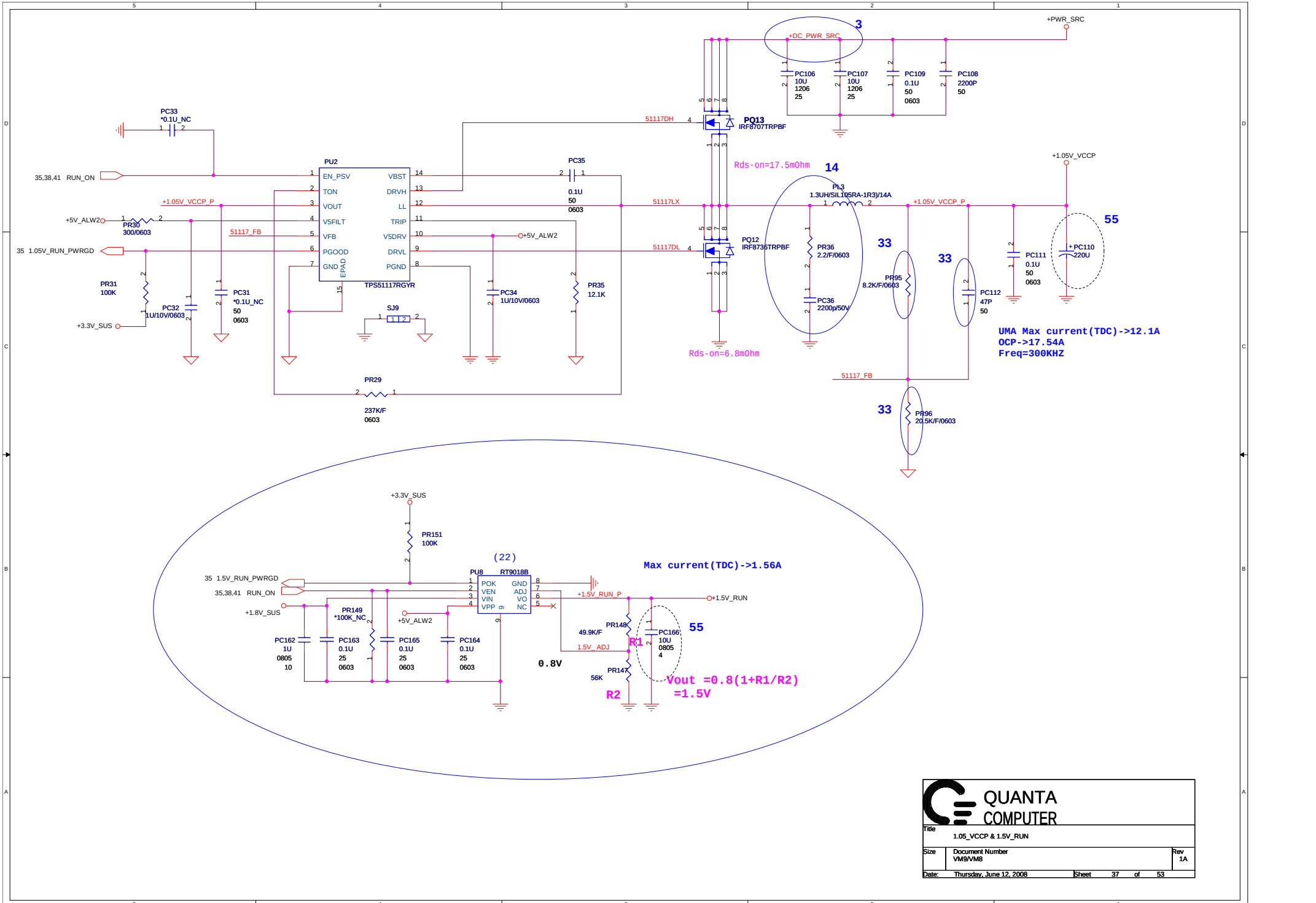


TABLE 1

ADAPTER(W)	TRIP CURRENT (A)
65	3.17
90	4.43
130	6.43
150	7.43
200	9.75
230	11.28 (see note3)

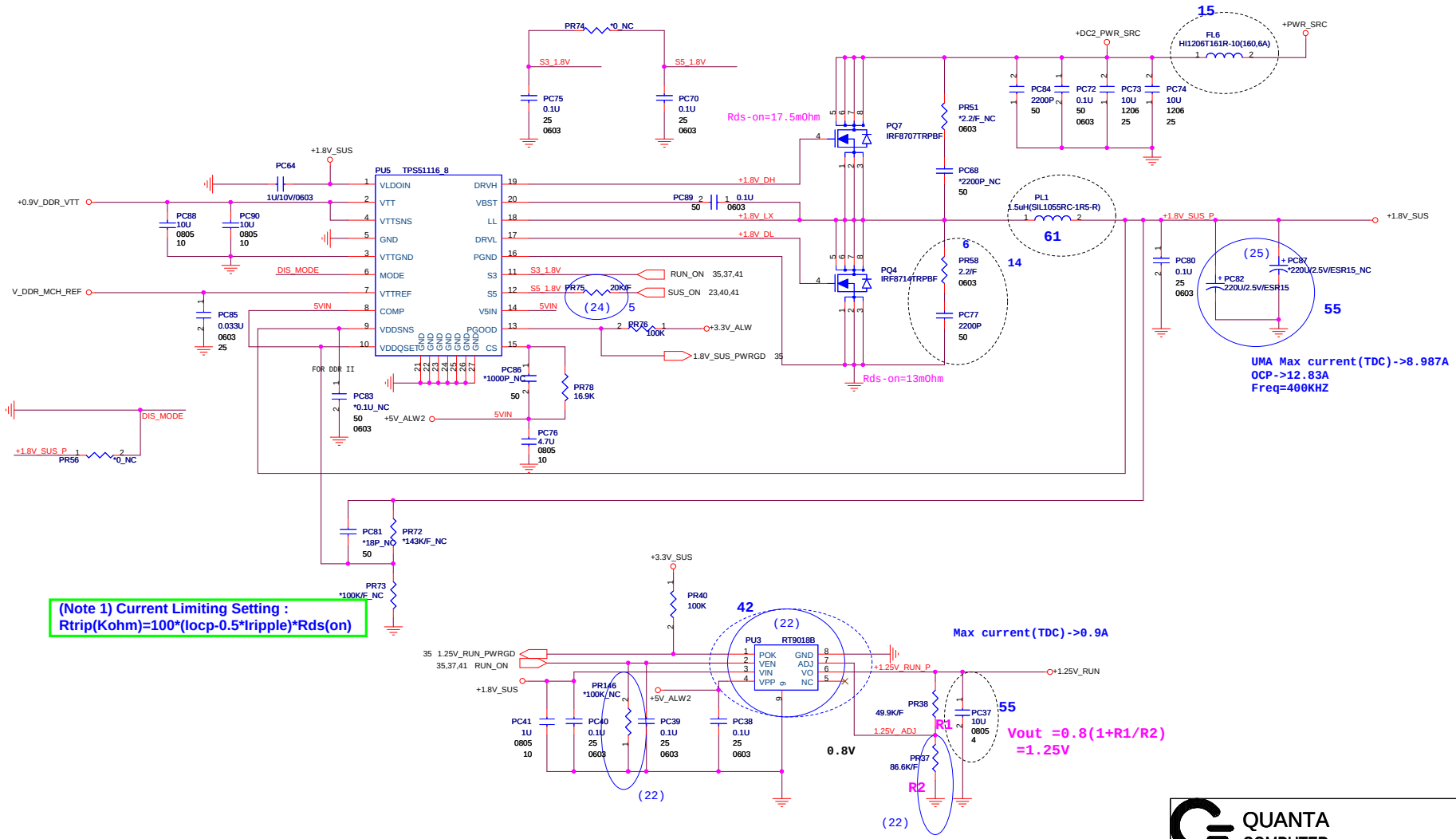
QUANTA COMPUTER

Title	Charger (ISL88731)	
Size	Document Number VM9/VM8	Rev 1A
Date: Tuesday, June 17, 2008	Sheet 36 of 53	



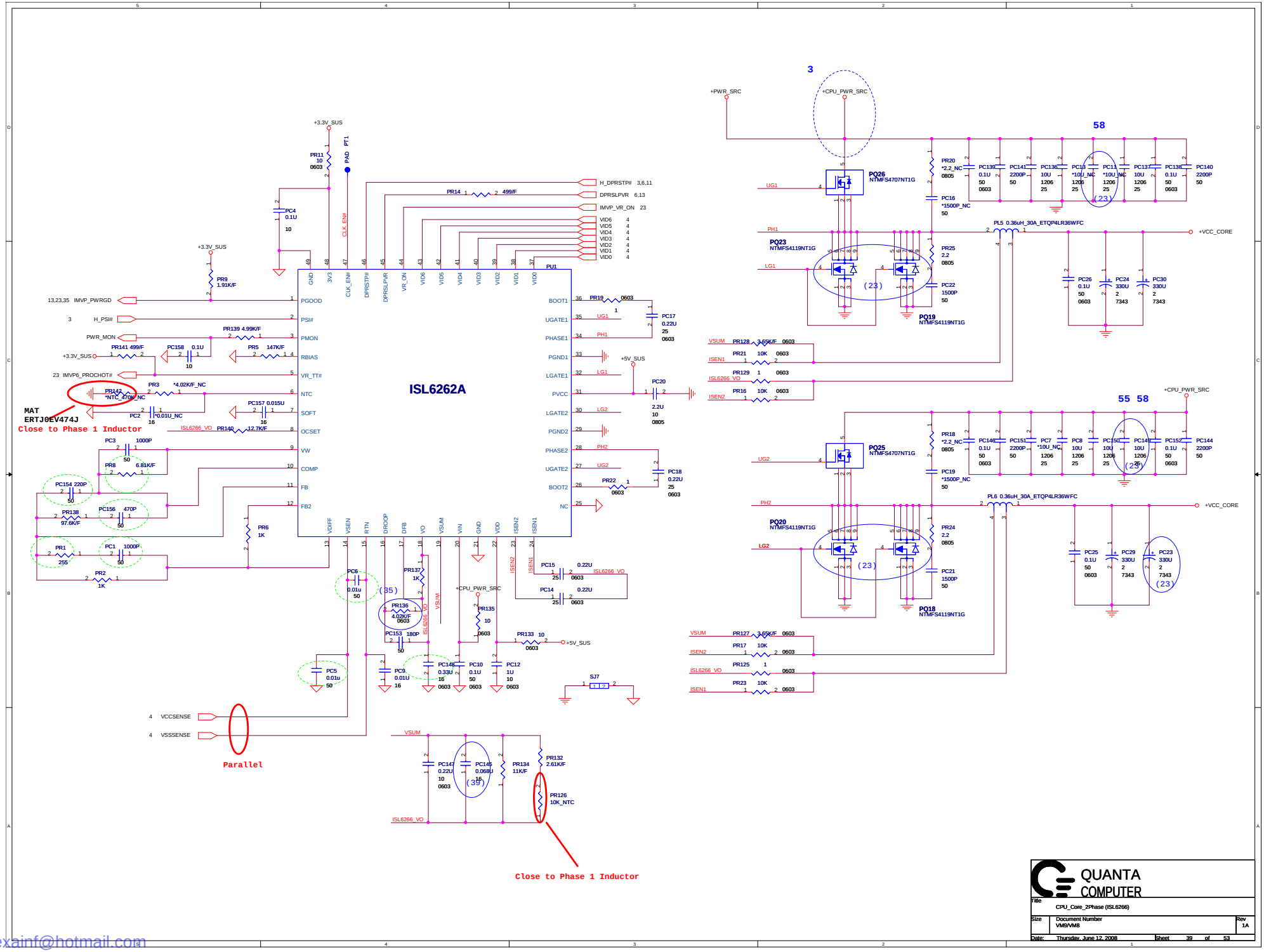
QUANTA COMPUTER

Title	1.05_VCCP & 1.5V_RUN	
Size	Document Number VM9/VM8	Rev 1A
Date: Thursday, June 12, 2008	Sheet 37 of 53	

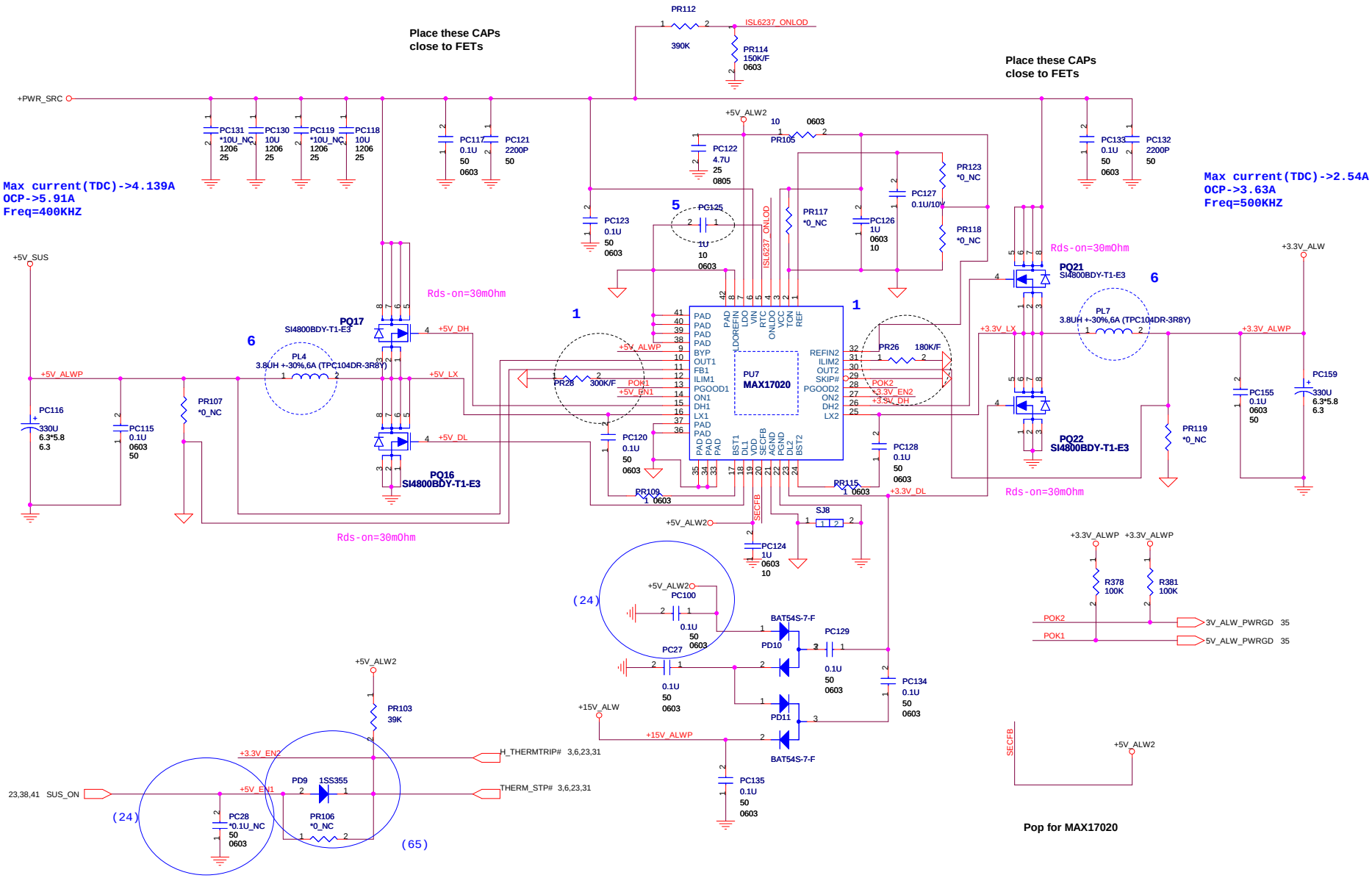


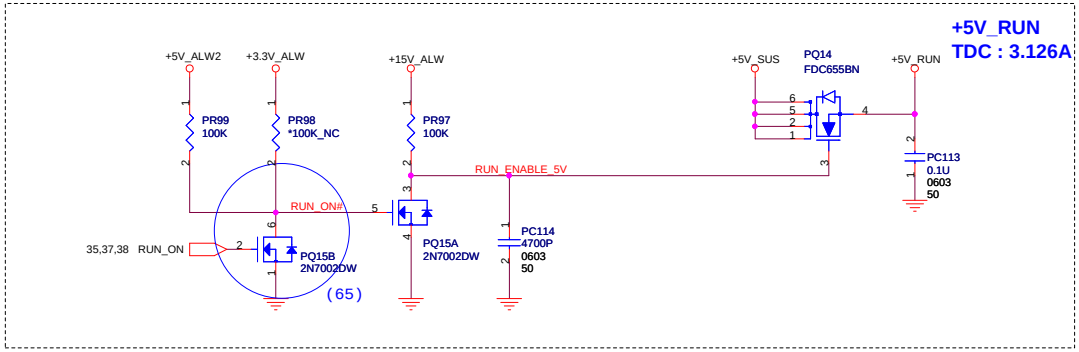
QUANTA COMPUTER

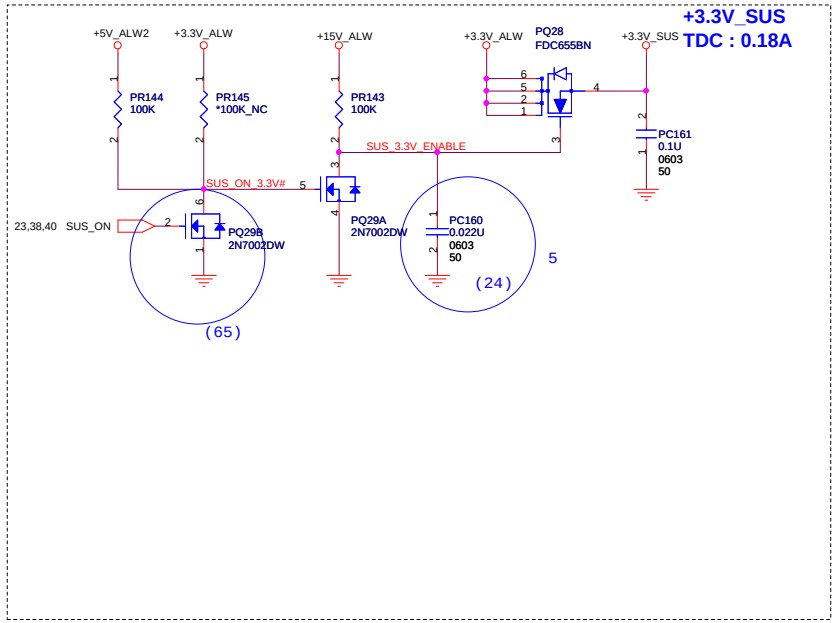
Title	1.8VSUS & 0.9VTT (TPS51116)	
Size	Document Number VM9/VM8	Rev 1A
Date: Tuesday, June 10, 2008	Sheet 38 of 53	

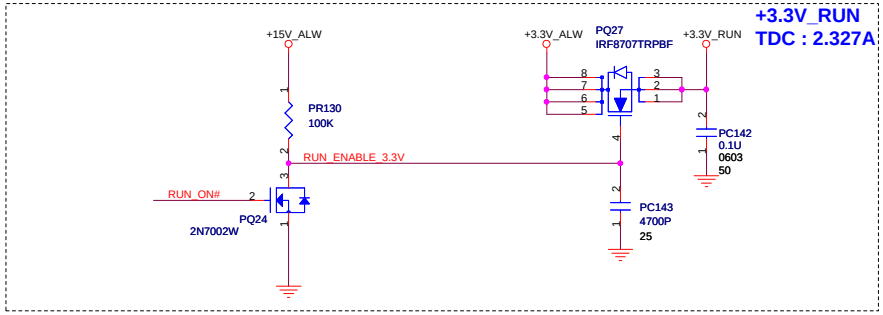

ISL6262A
MAT
ERTJ0EV474J
Close to Phase 1 Inductor
Parallel
Close to Phase 1 Inductor
+3.3V_SUS
+PWR_SRC
+CPU_PWR_SRC
+VCC_CORE
+5V_SUS
PQ26 NTMFS4707NT1G
PQ23 NTMFS4119NT1G
PQ19 NTMFS4119NT1G
PQ25 NTMFS4707NT1G
PQ20 NTMFS4119NT1G
PQ18 NTMFS4119NT1G
PL5 0.36uH_30A_ETQP4LR36WFC
PL6 0.36uH_30A_ETQP4LR36WFC
QUANTA COMPUTER
CPU_Core_2Phase (ISL6266)
VM8/VM8
Thursday, June 12, 2008
Sheet 39 of 53
hexainf@hotmail.com
GRATIS - FOR FREE

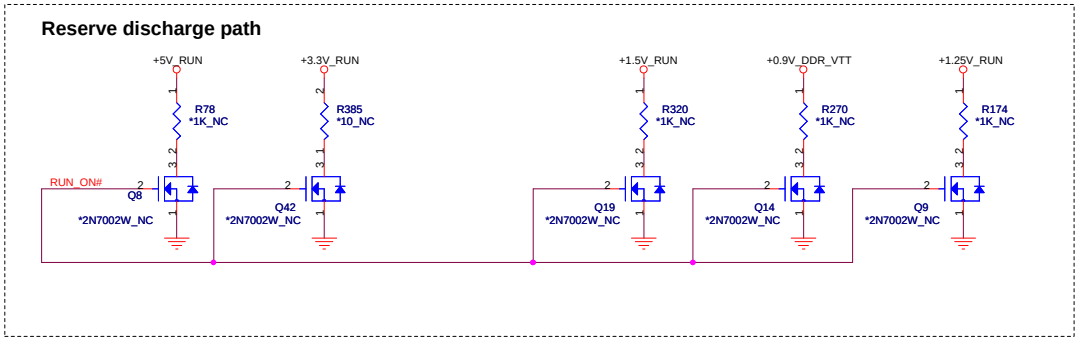
DC/DC +3V_ALW/+5V_SUS/+5V_ALW /+15V_ALW

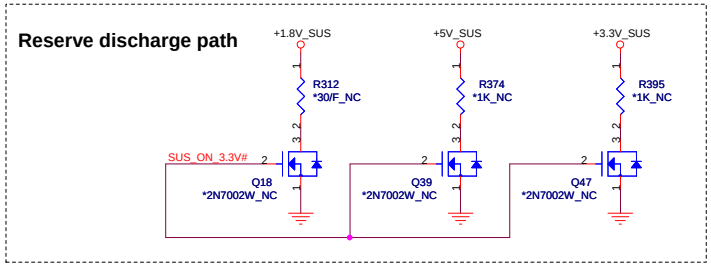






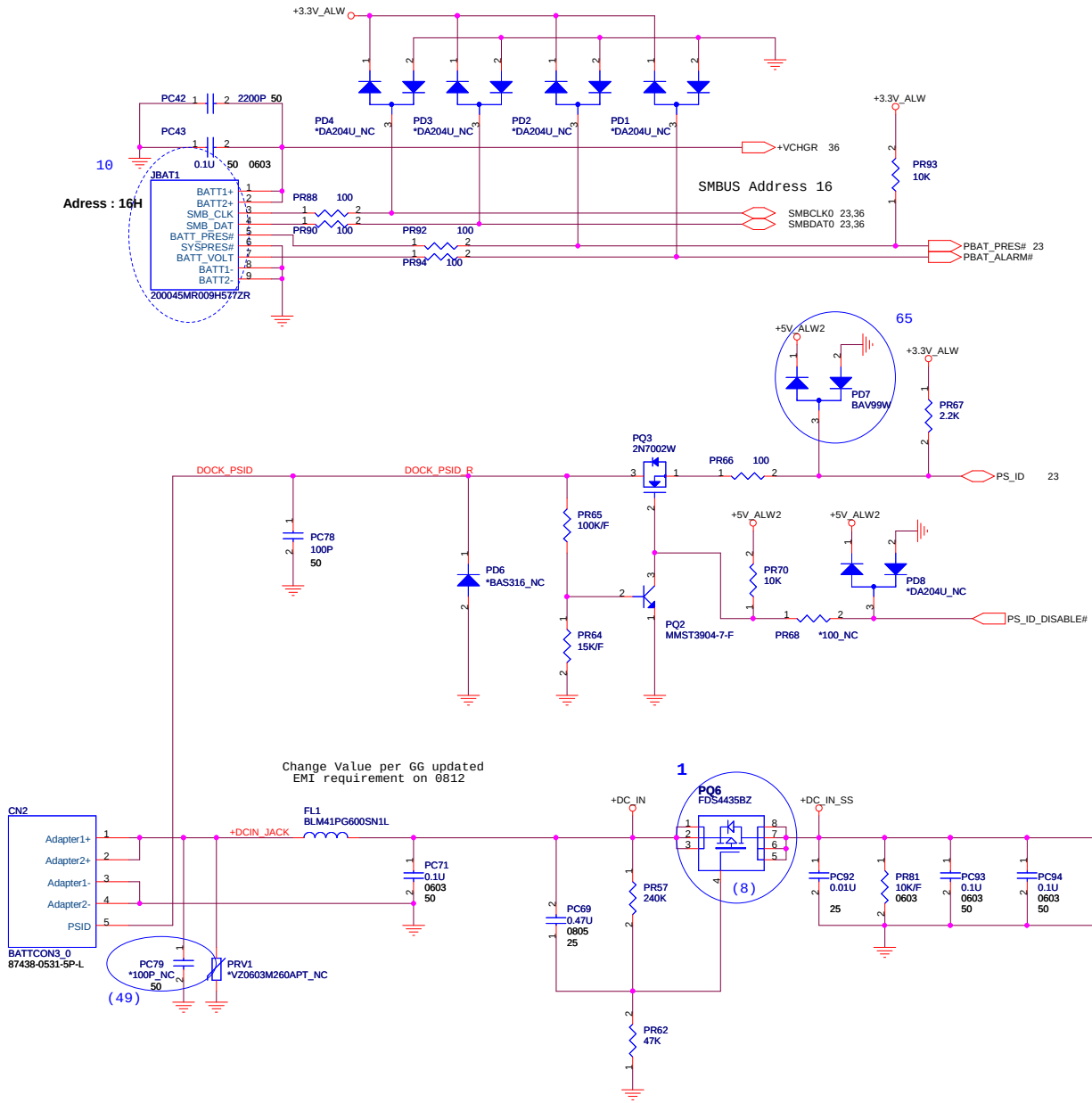






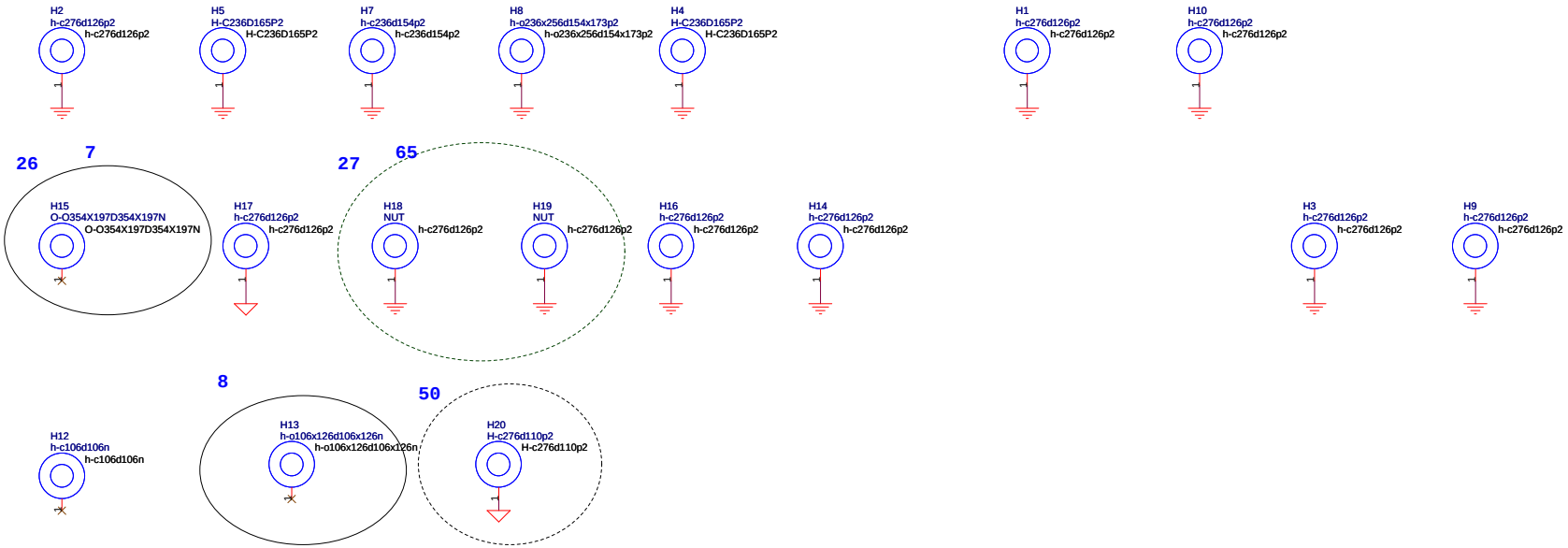
QUANTA COMPUTER

Title	RUN POWER SW	
Size	Document Number VM9/VM8	Rev 1A
Date: Tuesday, June 10, 2008	Sheet 41 of 53	



QUANTA COMPUTER

Title	DCIN,BATT CONNECTOR	
Size	Document Number VM9/VM8	Rev 1A
Date: Tuesday, June 17, 2008	Sheet 42 of 53	

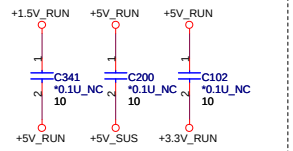


QUANTA COMPUTER

Title	SCREW PAD	
Size	Document Number VM9/VM8	Rev 1A
Date: Monday, June 23, 2008	Sheet 43 of 53	

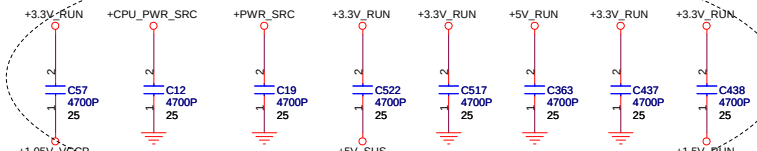
Reserved for EMI.

Stitching caps for PCI bus.



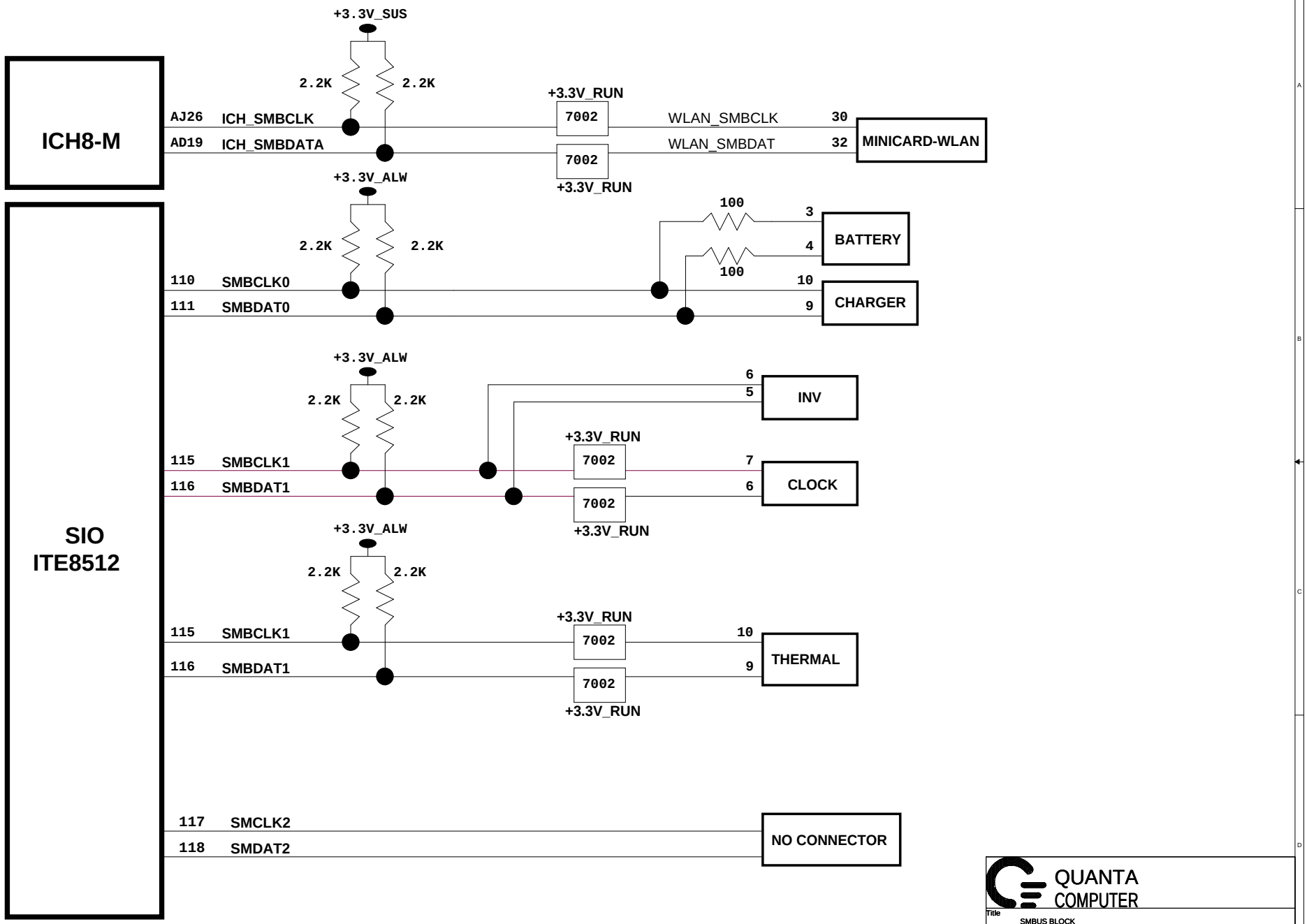
40

Stitching caps for PCI EMC.



QUANTA COMPUTER

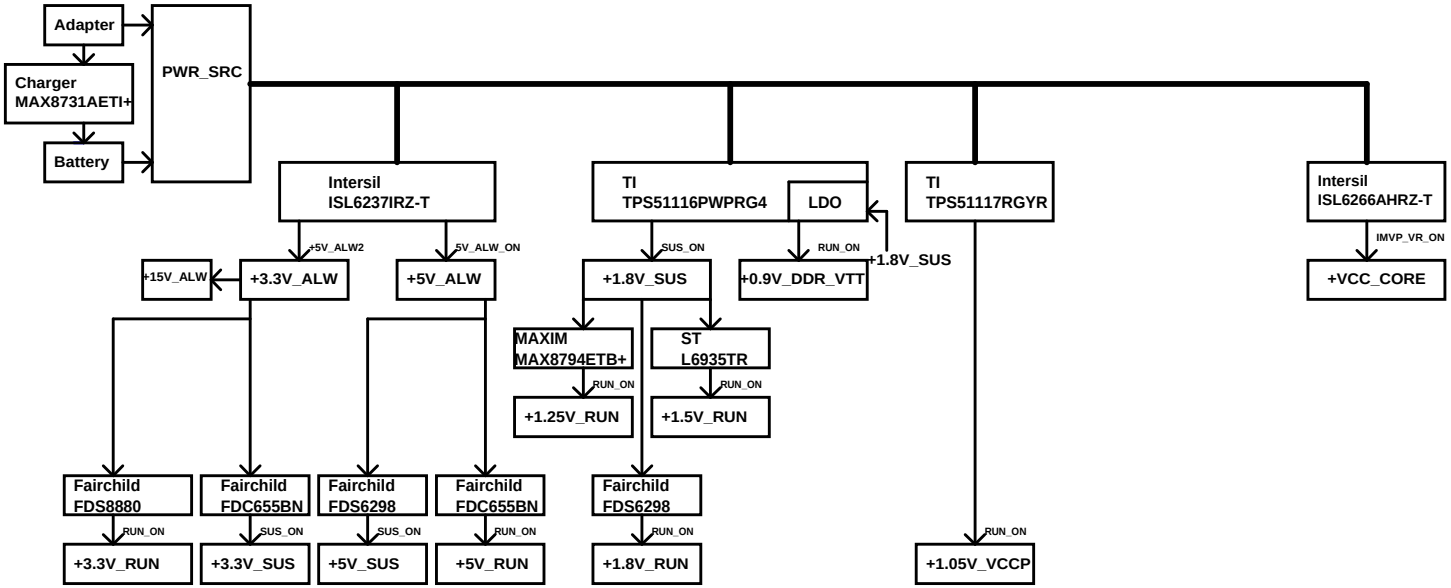
Title	EMI CAP		
Size	Document Number VM9/VM8		Rev 1A
Date:	Tuesday, May 27, 2008	Sheet 44 of 53	



QUANTA COMPUTER

Title	SMBUS BLOCK	
Size	Document Number VM9/VM8	Rev 1A
Date: Tuesday, May 27, 2008	Sheet 45 of 53	

VER : 1A



QUANTA COMPUTER

Title	Schematic Block Diagram1	
Size	Document Number VM9/VM8	Rev 1A
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