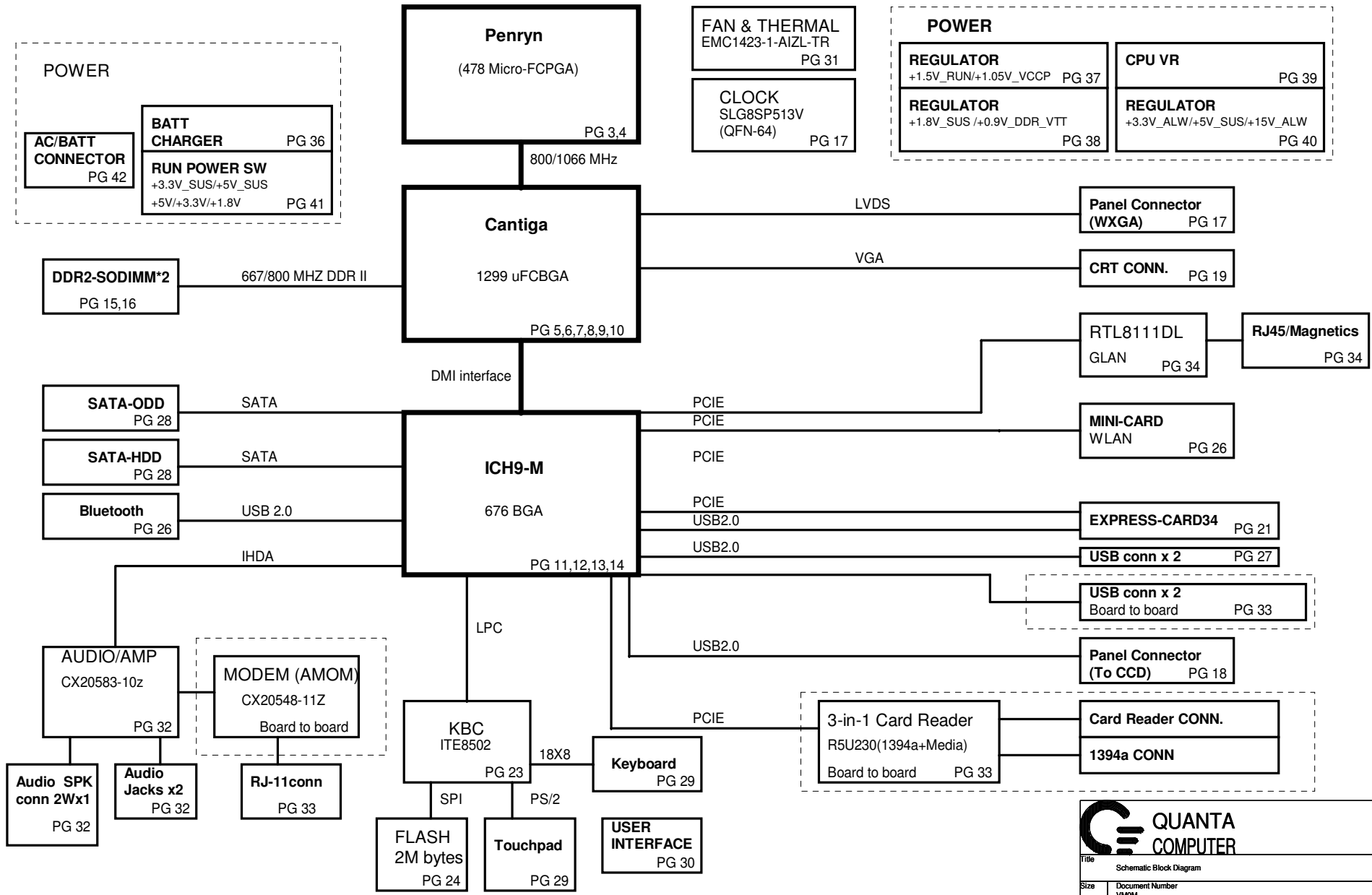


# VM9M Block Diagram Intel UMA

VER : F3B




Title: Schematic Block Diagram		
Size: VM9M	Document Number: VM9M	Rev: 1A
Date: Monday, June 08, 2009	Sheet: 1	of 46

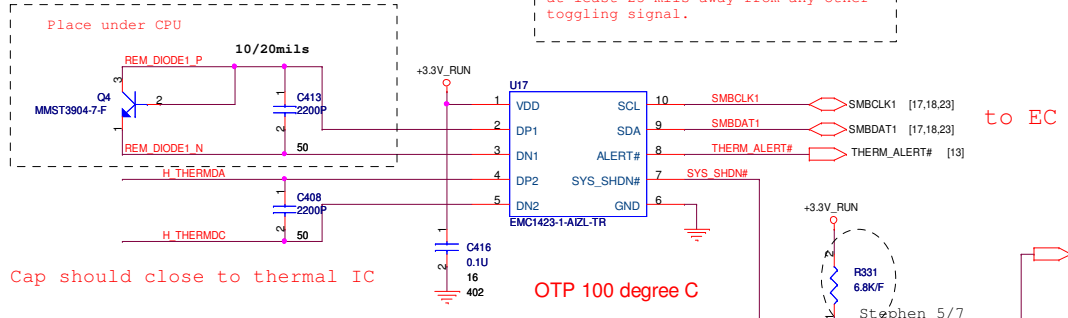
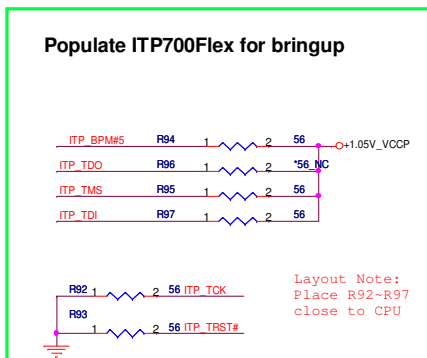
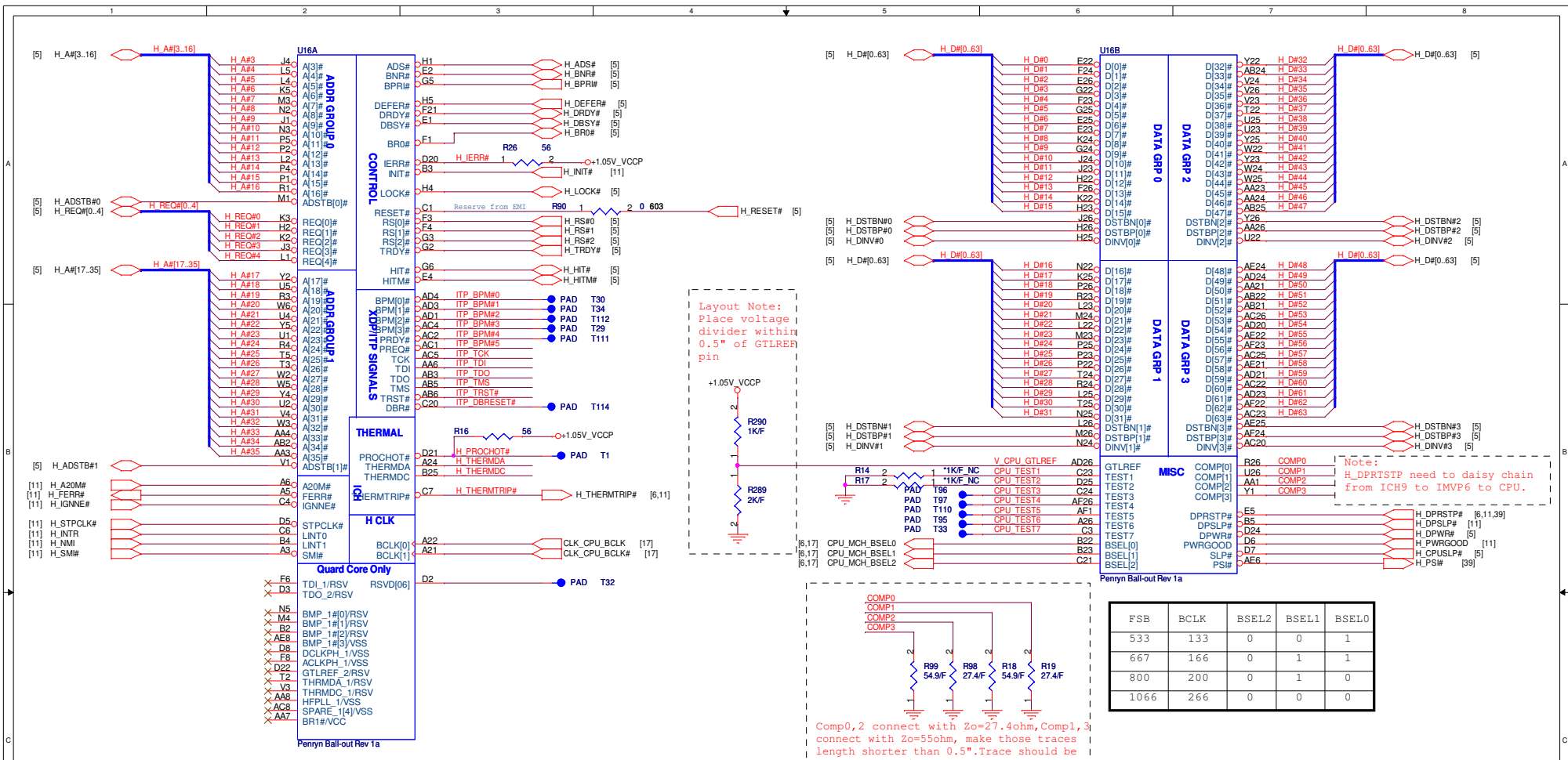
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18	LCD Conn.
19	CRT Conn
21	Express card
23	SIO (ITE8512)
24	FLASH/RTC
25	BLANK PAGE
26	Mini Card / BT
27	USB
28	SATA Conn
29	TP / KEYBOARD
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33	Board To Board
34	LAN / TRANSFORM
35	BLANK PAGE
36	Battery Selector & Charger
37	1.05VCCP / 1.5VRUJN
38	DDR2_1.8VSUS, 0.9V
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42	DCIN,Batt
43	PAD& SCREW
44	EMI CAP
45	SMBUS BLOCK
46	Power Block Dianram

**Power States**

POWER PLANE	VOLTAGE	PAGE	DESCRIPTION	CONTROL SIGNAL	ACTIVE IN
+PWR_SRC	10V~+19V	4,18,24,36,37,3,8,39,40,44	MAIN POWER		S0~S5
+RTC_CELL	+3.0V~+3.3V	11,14,23,24	RTC		S0~S5
+3.3V_ALW	+3.3V	3,23,24,30,35,36,38,40,41,42,45	8051 POWER	ALWON	S0~S5
+5V_ALW2	+5V	37,38,40,41,42	LCD/CHARGE POWER	ALWON	S0~S5
+15V_ALW	+15V	11,18,40,41	LARGE POWER	+5V_ALW	S0~S5
+3.3V_LAN	+3.3V	34	LAN POWER		
+5V_SUS	+5V	14,27,30,39,40,41,44	SLP_S5# CTRLD POWER	SUS_ON	
+3.3V_SUS	+3.3V	3,11,12,13,14,18,25,30,37,39,41,45	SLP_S5# CTRLD POWER	3.3V_SUS_ON	
+1.8V_SUS	+1.8V	6,8,9,15,37,38,41	SODIMM POWER	DDR_ON	
+0.9V_DDR_VTT	+0.9V	16,38,41	SODIMM POWER	0.9V_DDR_VTT_ON	
+5V_RUN	+5V	14,18,19,21,25,28,29,30,31,32,41,44	SLP_S3# CTRLD POWER	RUN_ON	
+3.3V_RUN	+3.3V	3,6,8,9,11,12,13,14,15,17,30,31,32,34,18,19,20,21,23,25,26,28,41,44,45	SLP_S3# CTRLD POWER	3.3V_RUN_ON	
+1.5V_RUN	+1.5V	4,9,14,26,37,41,44	CALISTOGA/ICH8 POWER	1.5V_RUN_ON	
+1.05V_VCCP	+1.05V	3,4,6,8,9,11,14,37,44	CPU/CALISTOGA/ICH8 POWER	1.05V_RUN_ON	
+VCC_CORE	+0.7V~+1.77V	4,39	CPU CORE POWER	IMVP_VR_ON	
+LCDVCC	+3.3V	18	LCD Power	LCDVCC_TST_EN & ENVDD	
+5V_MOD	+5V	28	Module Power		
+5V_HDD	+5V	28	HDD Power		
+PBATT	+10V~+17V	42	MAIN BATTERY	CHG_PBATT	

GND PLANE	PAGE	DESCRIPTION
 GND	ALL	

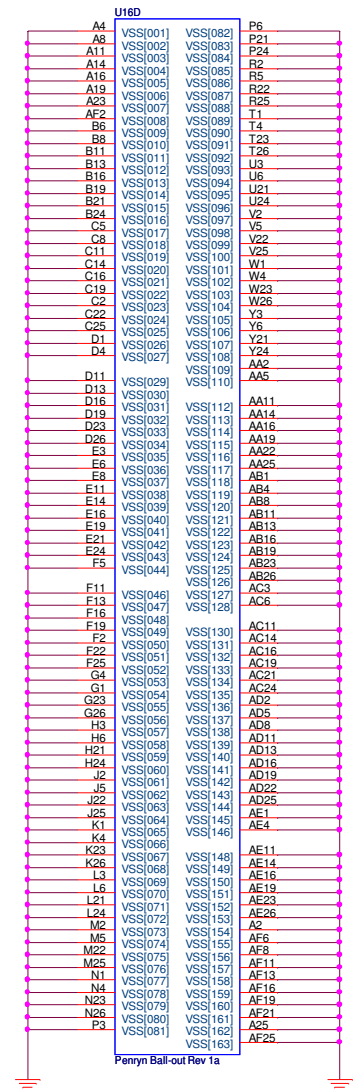
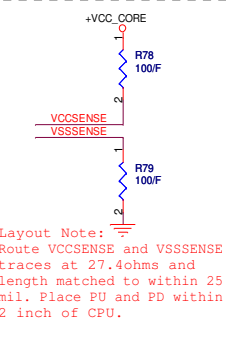
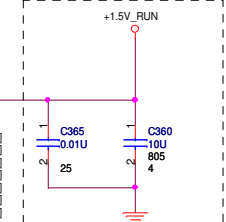
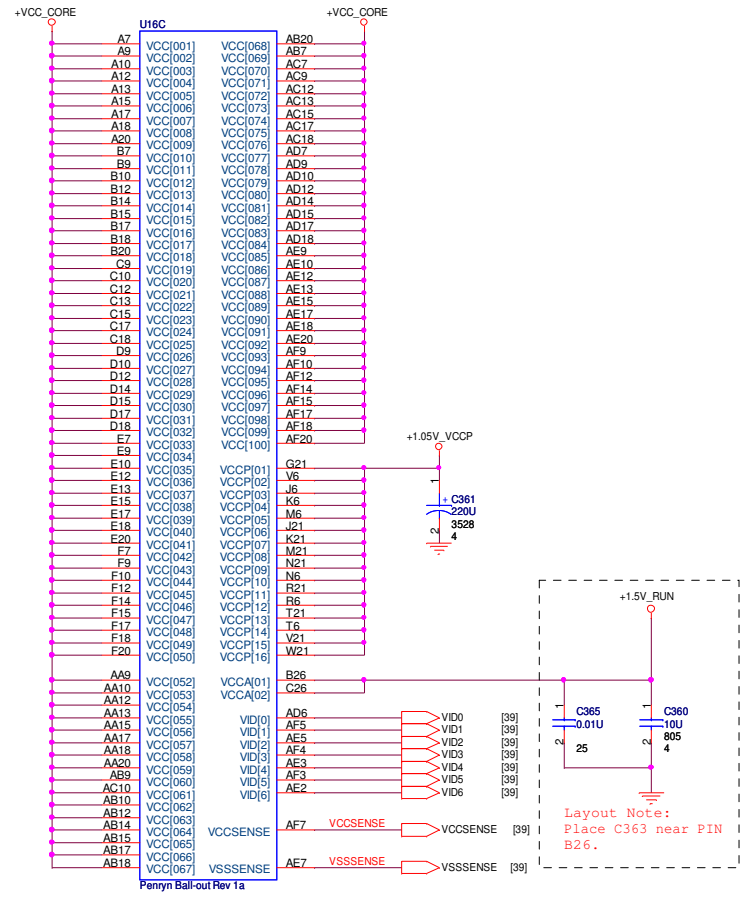
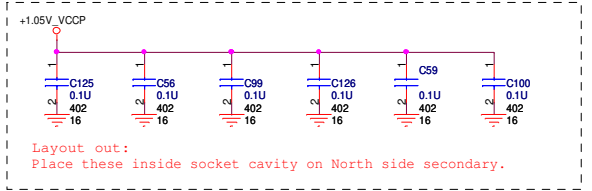
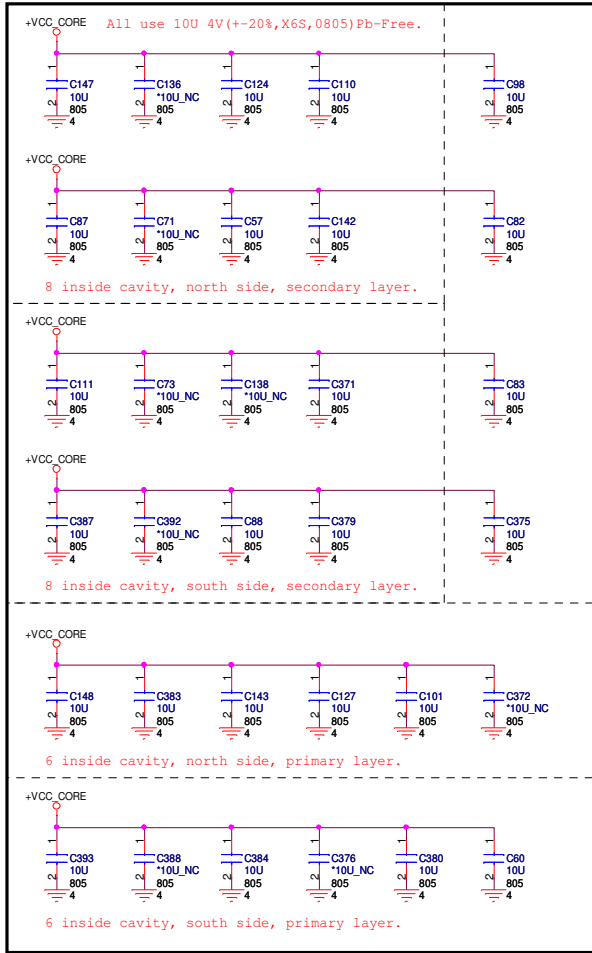


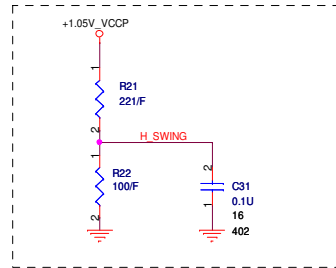
**QUANTA COMPUTER**

Title: Penryn Processor (HOST BUS)

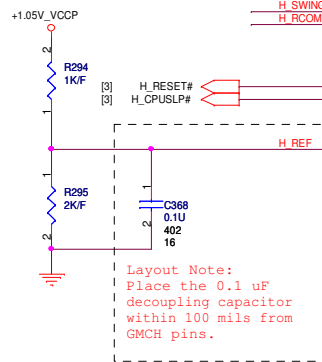
Size: Document Number VMSM Rev 1A

Date: Saturday, June 06, 2009 Sheet 3 of 46

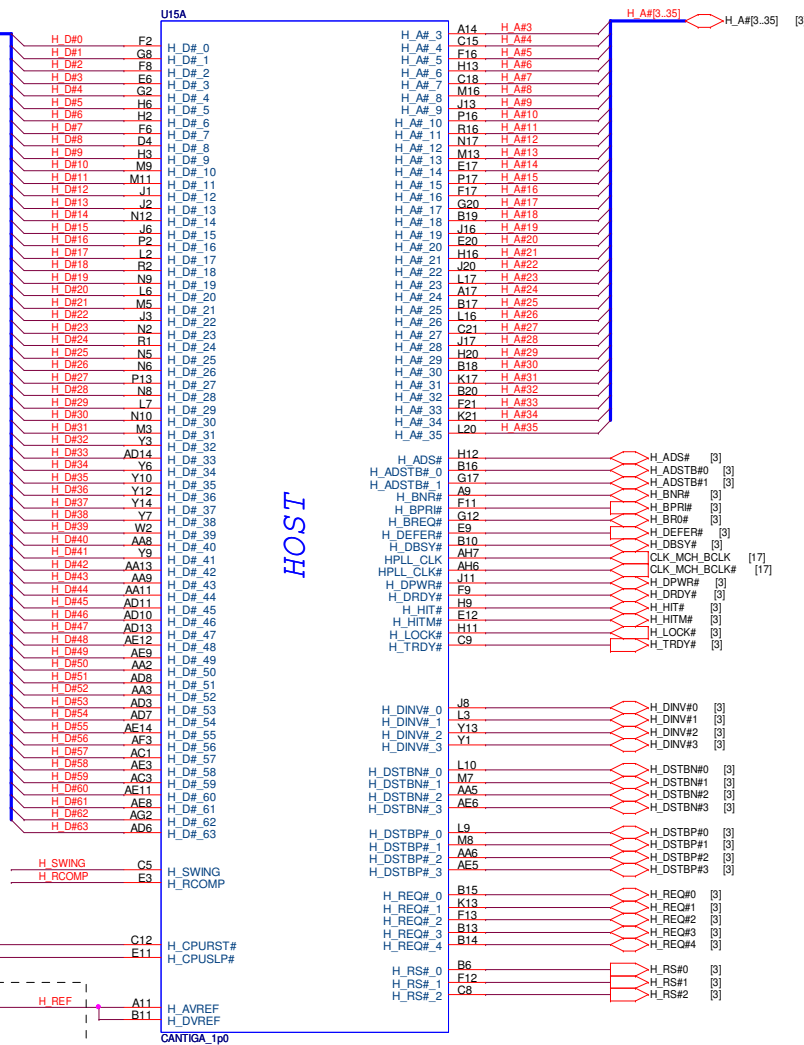




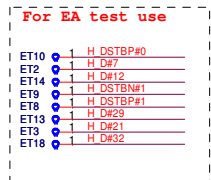
Layout Note:  
H\_RCOMP trace should be  
10-mil wide with 20-mil  
spacing.



Layout Note:  
Place the 0.1 uF  
decoupling capacitor  
within 100 mils from  
GMCH pins.



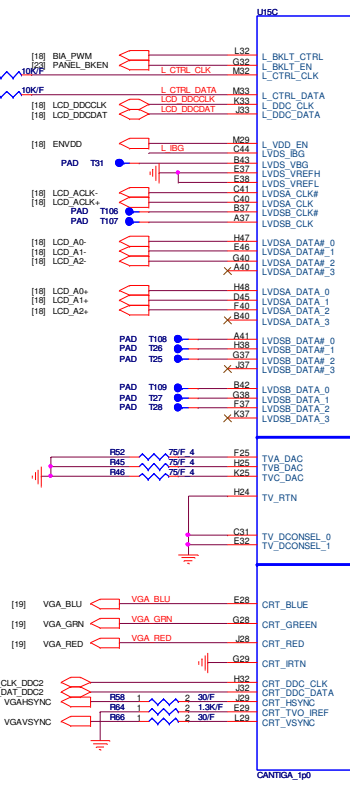
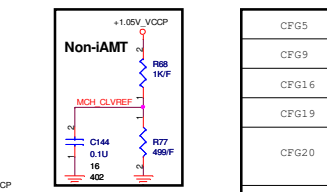
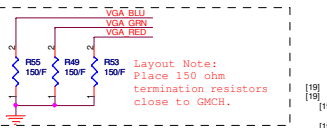
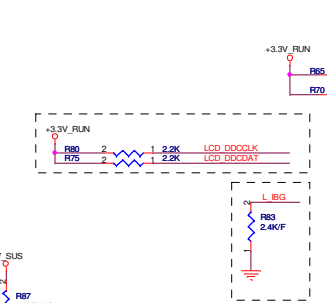
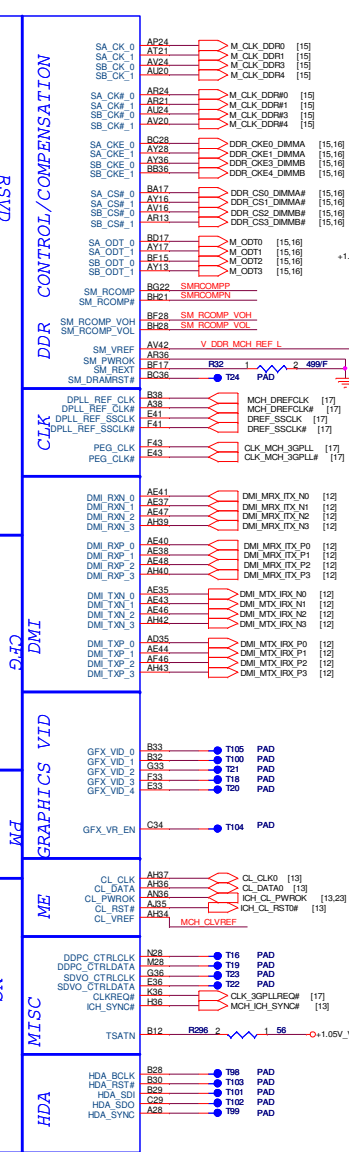
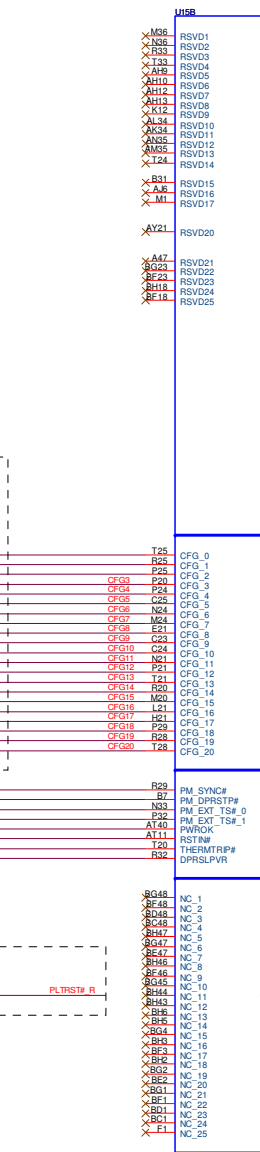
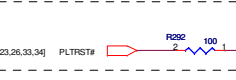
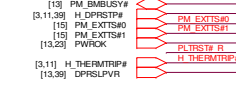
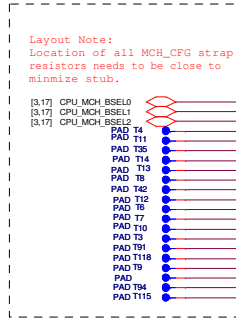
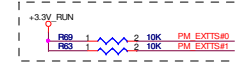
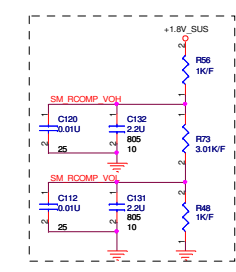
HOST



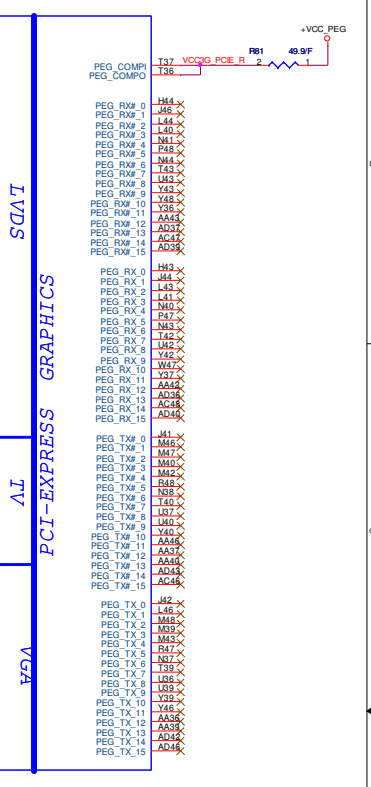
Title: Cantiga (HOST)

Size	Document Number VMSM	Rev 1A
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Date: Wednesday, June 03, 2009 Sheet 5 of 46



CFG5	DMI X2 Select	Low=DMIx2 High=DMIx4(Default)
CFG9	PCI Express Graphic Lane	Low= Reverse 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 PCIe is operational (defaults) High=SDVO and PCIe are operating simultaneously via PEG port
SDVO_CRTL_DATA	SDVO Present	Low=No SDVO Device Present (default) High=SDVO Device Present



CFG5	DMI X2 Select	Low=DMIx2 High=DMIx4(Default)
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[15] DDR\_A\_D0[0..63]

DDR A D0	AJ38	SA DO_0
DDR A D1	AJ41	SA DO_1
DDR A D2	AN38	SA DO_2
DDR A D3	AM38	SA DO_3
DDR A D4	AJ36	SA DO_4
DDR A D5	AJ46	SA DO_5
DDR A D6	AM44	SA DO_6
DDR A D7	AM42	SA DO_7
DDR A D8	AN43	SA DO_8
DDR A D9	AN44	SA DO_9
DDR A D10	AU40	SA DO_10
DDR A D11	AT38	SA DO_11
DDR A D12	AN41	SA DO_12
DDR A D13	AN39	SA DO_13
DDR A D14	AU44	SA DO_14
DDR A D15	AU42	SA DO_15
DDR A D16	AV39	SA DO_16
DDR A D17	AY44	SA DO_17
DDR A D18	BA40	SA DO_18
DDR A D19	BD43	SA DO_19
DDR A D20	AV41	SA DO_20
DDR A D21	AY43	SA DO_21
DDR A D22	BC41	SA DO_22
DDR A D23	BC40	SA DO_23
DDR A D24	AY37	SA DO_24
DDR A D25	BD38	SA DO_25
DDR A D26	AV37	SA DO_26
DDR A D27	AT36	SA DO_27
DDR A D28	AY39	SA DO_28
DDR A D29	BB38	SA DO_29
DDR A D30	AV36	SA DO_30
DDR A D31	AW36	SA DO_31
DDR A D32	BD13	SA DO_32
DDR A D33	AU11	SA DO_33
DDR A D34	BC11	SA DO_34
DDR A D35	BA12	SA DO_35
DDR A D36	AU13	SA DO_36
DDR A D37	AV13	SA DO_37
DDR A D38	BD12	SA DO_38
DDR A D39	BC12	SA DO_39
DDR A D40	BB9	SA DO_40
DDR A D41	BA9	SA DO_41
DDR A D42	AU10	SA DO_42
DDR A D43	AV9	SA DO_43
DDR A D44	BA11	SA DO_44
DDR A D45	BD9	SA DO_45
DDR A D46	AV8	SA DO_46
DDR A D47	BA6	SA DO_47
DDR A D48	AV5	SA DO_48
DDR A D49	AV7	SA DO_49
DDR A D50	AT9	SA DO_50
DDR A D51	AN8	SA DO_51
DDR A D52	AU5	SA DO_52
DDR A D53	AU6	SA DO_53
DDR A D54	AT5	SA DO_54
DDR A D55	AN10	SA DO_55
DDR A D56	AM11	SA DO_56
DDR A D57	AM5	SA DO_57
DDR A D58	AJ9	SA DO_58
DDR A D59	AJ8	SA DO_59
DDR A D60	AN12	SA DO_60
DDR A D61	AM13	SA DO_61
DDR A D62	AJ11	SA DO_62
DDR A D63	AJ12	SA DO_63

U150

DDR SYSTEM MEMORY A

SA_BS_0	BD21	DDR A BS0
SA_BS_1	BG18	DDR A BS1
SA_BS_2	AT25	DDR A BS2
SA_RAS#	BB20	DDR A RAS#
SA_CAS#	BD20	DDR A CAS#
SA_WE#	AY20	DDR A WE#
SA_DM_0	AM37	DDR A DM0
SA_DM_1	AT41	DDR A DM1
SA_DM_2	AJ39	DDR A DM2
SA_DM_3	BB12	DDR A DM3
SA_DM_4	AY6	DDR A DM4
SA_DM_5	AT7	DDR A DM5
SA_DM_6	AJ5	DDR A DM7
SA_DQS_0	AJ44	DDR A DQS0
SA_DQS_1	AT44	DDR A DQS1
SA_DQS_2	BA43	DDR A DQS2
SA_DQS_3	BC37	DDR A DQS3
SA_DQS_4	AW12	DDR A DQS4
SA_DQS_5	BC8	DDR A DQS5
SA_DQS_6	AU8	DDR A DQS6
SA_DQS_7	AM7	DDR A DQS7
SA_DQS#_0	AJ43	DDR A DQS#0
SA_DQS#_1	AT43	DDR A DQS#1
SA_DQS#_2	BA44	DDR A DQS#2
SA_DQS#_3	BD37	DDR A DQS#3
SA_DQS#_4	AY12	DDR A DQS#4
SA_DQS#_5	BD8	DDR A DQS#5
SA_DQS#_6	AU9	DDR A DQS#6
SA_DQS#_7	AM8	DDR A DQS#7
SA_MA_0	BA21	DDR A MA0
SA_MA_1	BC24	DDR A MA1
SA_MA_2	BG24	DDR A MA2
SA_MA_3	BH24	DDR A MA3
SA_MA_4	BG25	DDR A MA4
SA_MA_5	BA24	DDR A MA5
SA_MA_6	BD24	DDR A MA6
SA_MA_7	BG27	DDR A MA7
SA_MA_8	BF25	DDR A MA8
SA_MA_9	AN24	DDR A MA9
SA_MA_10	BC21	DDR A MA10
SA_MA_11	BG26	DDR A MA11
SA_MA_12	BH26	DDR A MA12
SA_MA_13	BH17	DDR A MA13
SA_MA_14	AY25	DDR A MA14

[15] DDR\_B\_D0[0..63]

DDR B D0	AK47	SB DO_0
DDR B D1	AH46	SB DO_1
DDR B D2	AP47	SB DO_2
DDR B D3	AP46	SB DO_3
DDR B D4	AP44	SB DO_4
DDR B D5	AJ48	SB DO_5
DDR B D6	AM48	SB DO_6
DDR B D7	AP48	SB DO_7
DDR B D8	AU47	SB DO_8
DDR B D9	AJ46	SB DO_9
DDR B D10	BA48	SB DO_10
DDR B D11	AY48	SB DO_11
DDR B D12	AT47	SB DO_12
DDR B D13	AP47	SB DO_13
DDR B D14	BA47	SB DO_14
DDR B D15	BC47	SB DO_15
DDR B D16	BC46	SB DO_16
DDR B D17	BC44	SB DO_17
DDR B D18	BC43	SB DO_18
DDR B D19	BF43	SB DO_19
DDR B D20	BE45	SB DO_20
DDR B D21	BC41	SB DO_21
DDR B D22	BF40	SB DO_22
DDR B D23	BF41	SB DO_23
DDR B D24	BG38	SB DO_24
DDR B D25	BF38	SB DO_25
DDR B D26	BH35	SB DO_26
DDR B D27	BG35	SB DO_27
DDR B D28	BH40	SB DO_28
DDR B D29	BG39	SB DO_29
DDR B D30	BG34	SB DO_30
DDR B D31	BH34	SB DO_31
DDR B D32	BH14	SB DO_32
DDR B D33	BG12	SB DO_33
DDR B D34	BH11	SB DO_34
DDR B D35	BG8	SB DO_35
DDR B D36	BH12	SB DO_36
DDR B D37	BF11	SB DO_37
DDR B D38	BF8	SB DO_38
DDR B D39	BG7	SB DO_39
DDR B D40	BC5	SB DO_40
DDR B D41	BC6	SB DO_41
DDR B D42	AV3	SB DO_42
DDR B D43	AY1	SB DO_43
DDR B D44	BF6	SB DO_44
DDR B D45	BF5	SB DO_45
DDR B D46	BA1	SB DO_46
DDR B D47	BD3	SB DO_47
DDR B D48	AV2	SB DO_48
DDR B D49	AJ3	SB DO_49
DDR B D50	AR3	SB DO_50
DDR B D51	AV2	SB DO_51
DDR B D52	AY2	SB DO_52
DDR B D53	AV1	SB DO_53
DDR B D54	AP3	SB DO_54
DDR B D55	AL1	SB DO_55
DDR B D56	AL1	SB DO_56
DDR B D57	AL2	SB DO_57
DDR B D58	AJ1	SB DO_58
DDR B D59	AH1	SB DO_59
DDR B D60	AM2	SB DO_60
DDR B D61	AM3	SB DO_61
DDR B D62	AH3	SB DO_62
DDR B D63	AJ3	SB DO_63

U15E

DDR SYSTEM MEMORY B

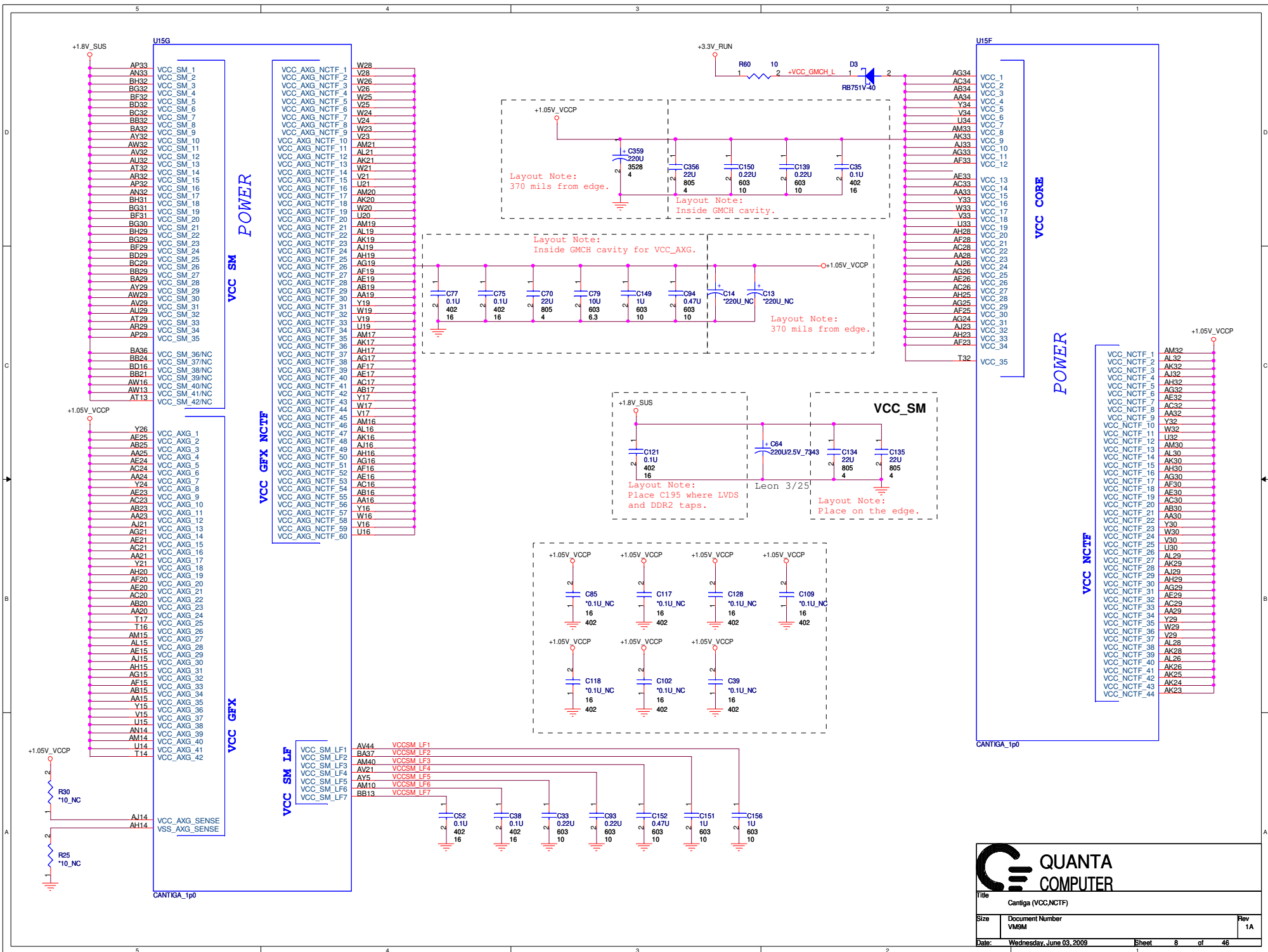
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SB_BS_1	BB17	DDR B BS1
SB_BS_2	BB33	DDR B BS2
SB_RAS#	AU17	DDR B RAS#
SB_CAS#	BG16	DDR B CAS#
SB_WE#	BF14	DDR B WE#
SB_DM_0	AM47	DDR B DM0
SB_DM_1	AV47	DDR B DM1
SB_DM_2	BD40	DDR B DM2
SB_DM_3	BF35	DDR B DM3
SB_DM_4	BG11	DDR B DM4
SB_DM_5	BA3	DDR B DM5
SB_DM_6	AP1	DDR B DM6
SB_DM_7	AK2	DDR B DM7
SB_DQS_0	AL47	DDR B DQS0
SB_DQS_1	AV48	DDR B DQS1
SB_DQS_2	BC41	DDR B DQS2
SB_DQS_3	BG37	DDR B DQS3
SB_DQS_4	BH9	DDR B DQS4
SB_DQS_5	BB2	DDR B DQS5
SB_DQS_6	AU1	DDR B DQS6
SB_DQS_7	AN6	DDR B DQS7
SB_DQS#_0	AL46	DDR B DQS#0
SB_DQS#_1	AV47	DDR B DQS#1
SB_DQS#_2	BH41	DDR B DQS#2
SB_DQS#_3	BH37	DDR B DQS#3
SB_DQS#_4	BG9	DDR B DQS#4
SB_DQS#_5	BC2	DDR B DQS#5
SB_DQS#_6	AT2	DDR B DQS#6
SB_DQS#_7	AN5	DDR B DQS#7
SB_MA_0	AV17	DDR B MA0
SB_MA_1	BA25	DDR B MA1
SB_MA_2	BC25	DDR B MA2
SB_MA_3	AU25	DDR B MA3
SB_MA_4	AV25	DDR B MA4
SB_MA_5	BB28	DDR B MA5
SB_MA_6	AU28	DDR B MA6
SB_MA_7	AT33	DDR B MA7
SB_MA_8	BD33	DDR B MA8
SB_MA_9	BB16	DDR B MA9
SB_MA_10	AW33	DDR B MA10
SB_MA_11	AY33	DDR B MA11
SB_MA_12	BH15	DDR B MA12
SB_MA_13	AJ33	DDR B MA13
SB_MA_14	AJ33	DDR B MA14

DDR B BS0	[15,16]
DDR B BS1	[15,16]
DDR B BS2	[15,16]
DDR B RAS#	[15,16]
DDR B CAS#	[15,16]
DDR B WE#	[15,16]
DDR B DM0	[15]
DDR B DM1	[15]
DDR B DM2	[15]
DDR B DM3	[15]
DDR B DM4	[15]
DDR B DM5	[15]
DDR B DM6	[15]
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DDR B DQS0	[15]
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DDR B DQS3	[15]
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DDR B DQS7	[15]
DDR B DQS#0	[15]
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DDR B MA0	[15,16]
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DDR B MA12	[15,16]
DDR B MA13	[15,16]
DDR B MA14	[15,16]

CANTIGA\_Tp0

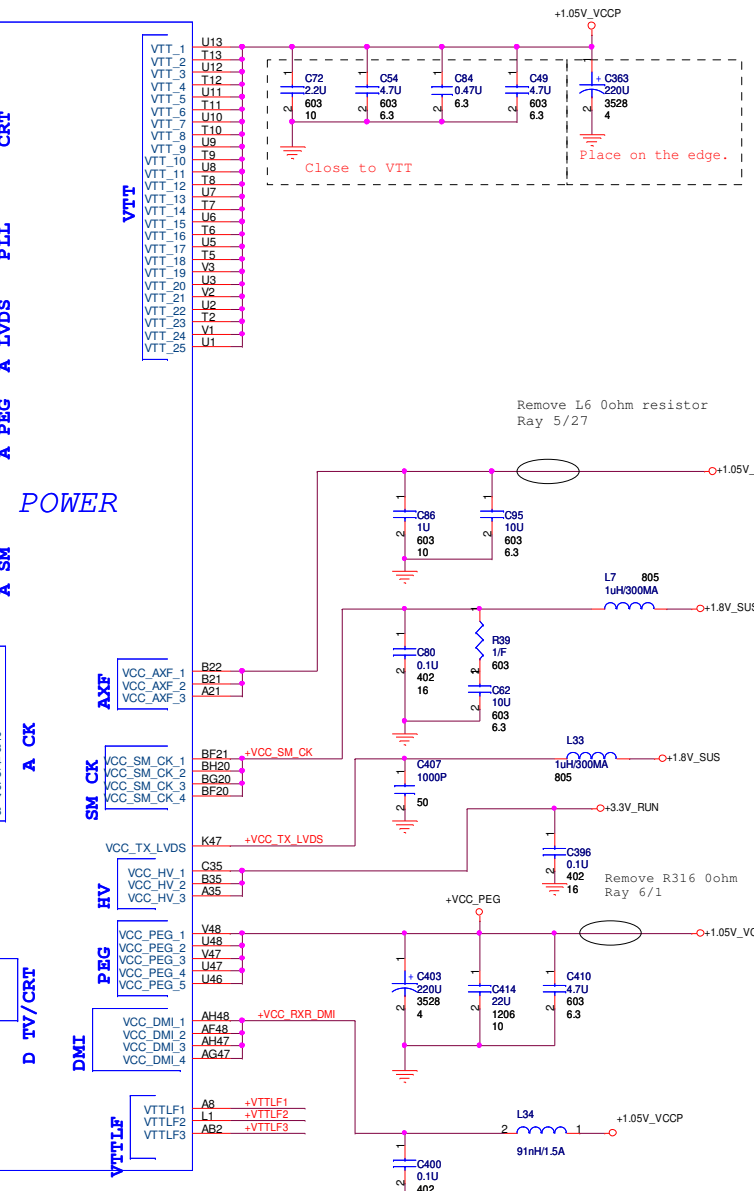
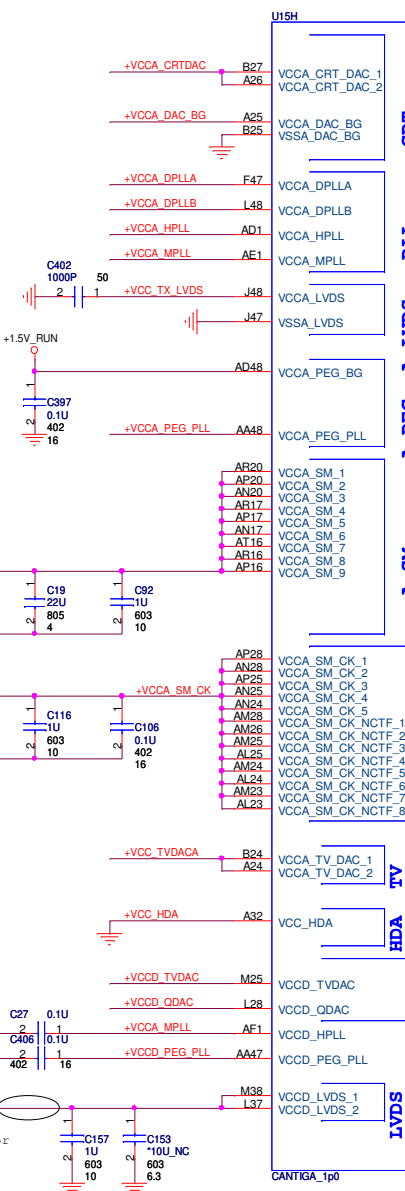
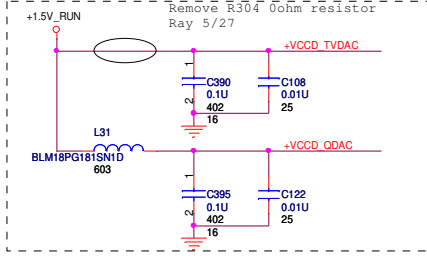
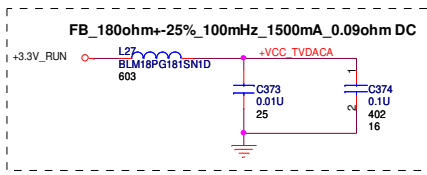
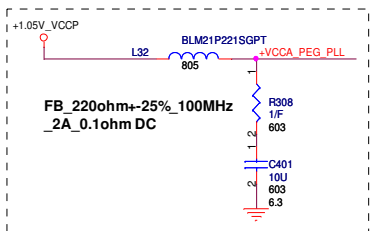
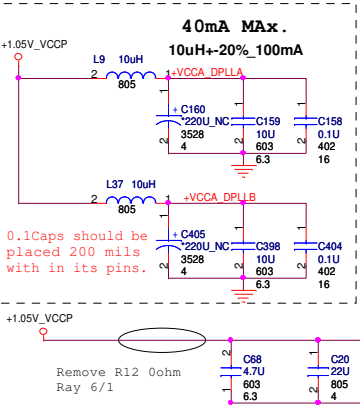
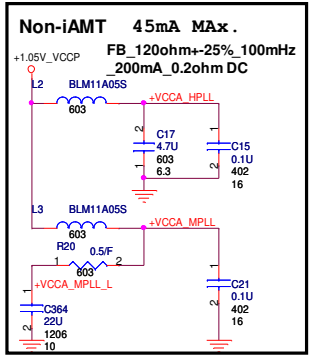
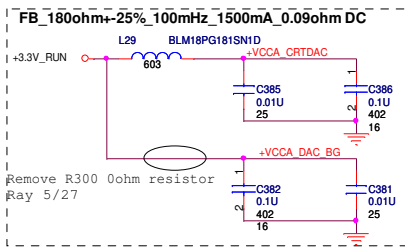


Title Cantiga (DDR2)		
Size	Document Number VMSM	Rev 1A
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Title Cantiga (VCC,NCTF)		
Size	Document Number VMSM	Rev 1A
Date:	Wednesday, June 03, 2009	Sheet 8 of 46

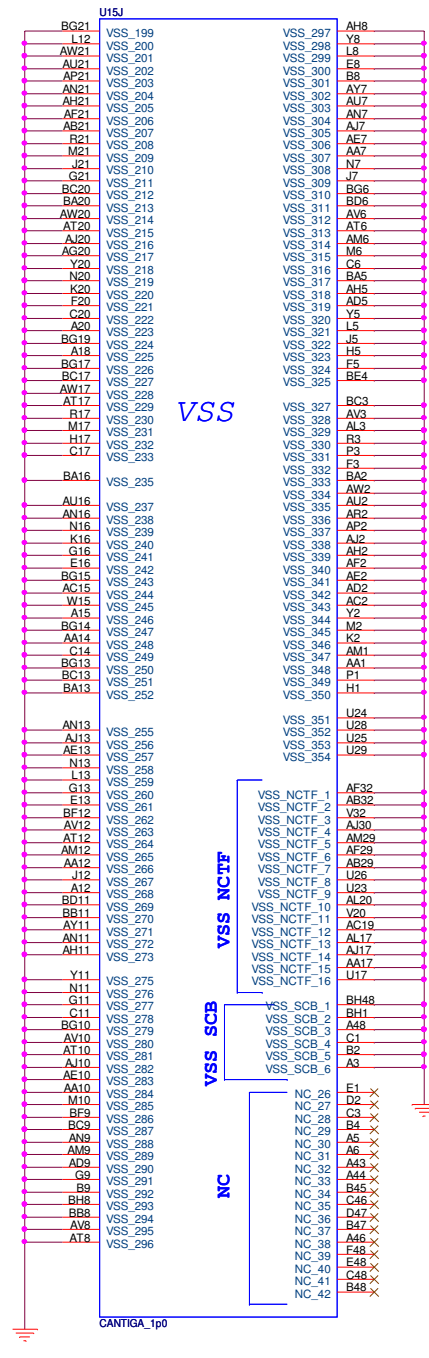
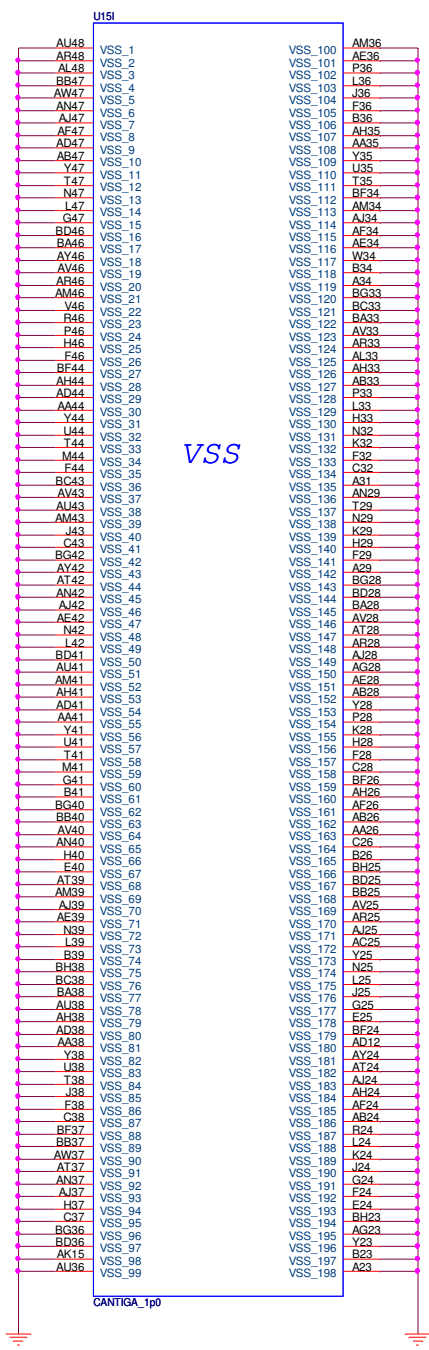




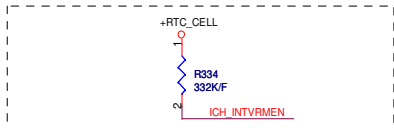
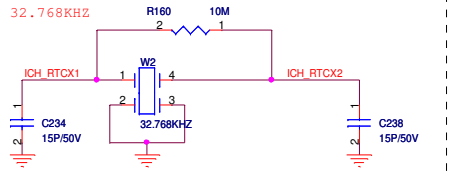
**POWER**



Title: Cantiga (POWER)		
Size: VMSM	Document Number:	Rev: 1A
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Title Cantiga (VSS)		
Size	Document Number VMSM	Rev 1A
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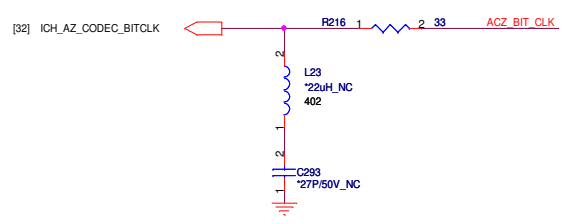
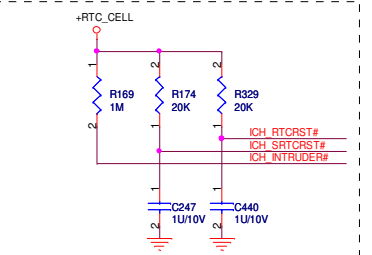


**ICH9M Internal VR Enable Strap**  
(Internal VR for VccSus1.05, VccSus1.5, VccCL1.5)

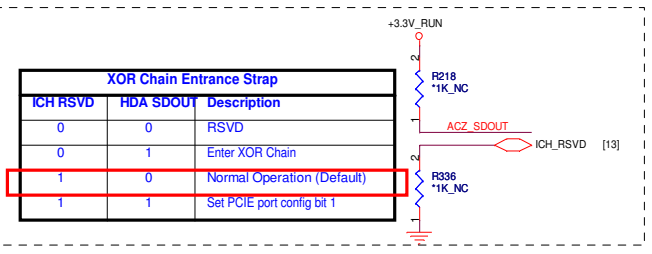
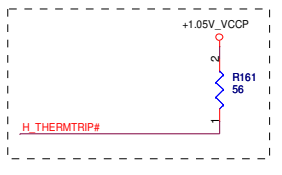
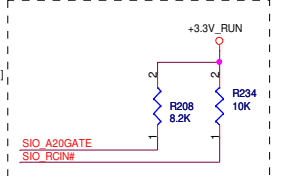
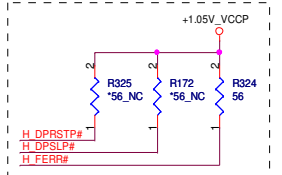
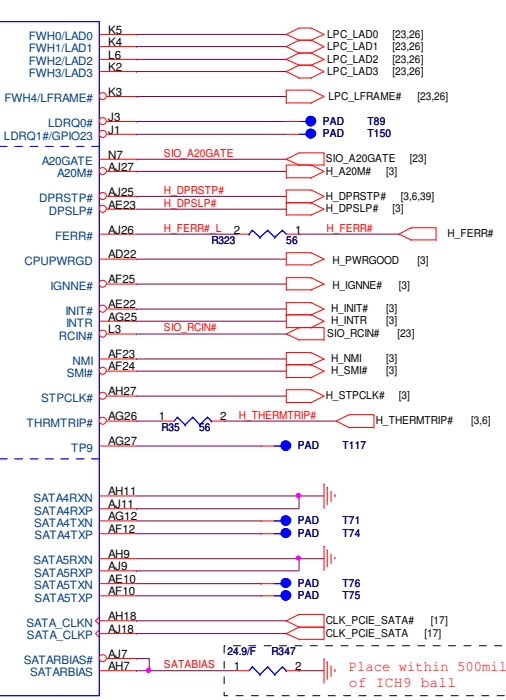
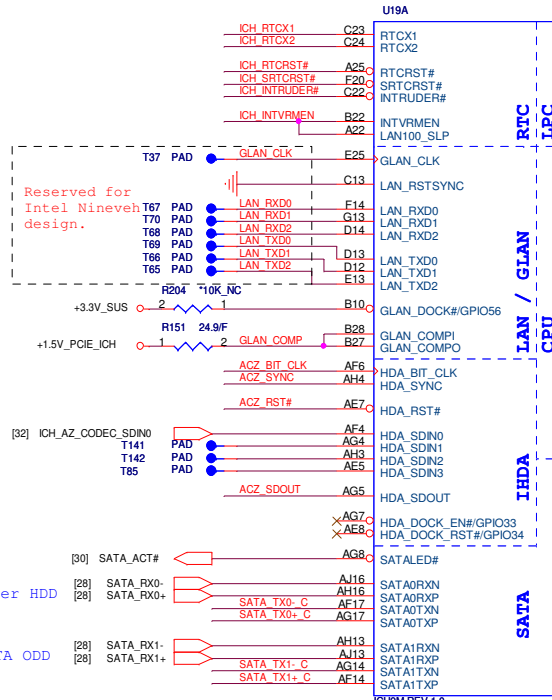
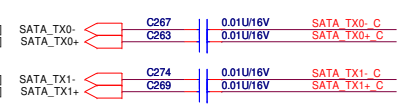
Low = Internal VR Disabled  
High = Internal VR Enabled(Default)

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

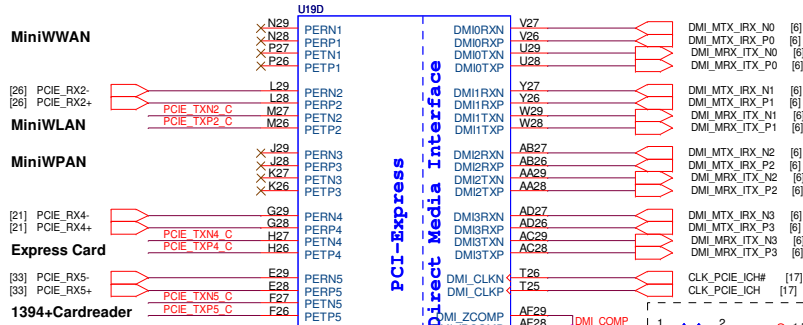
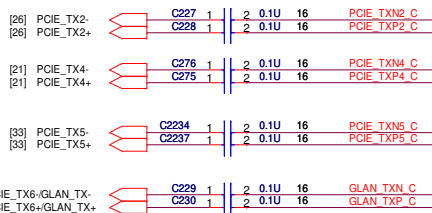
Low = Internal VR Disabled  
High = Internal VR Enabled(Default)



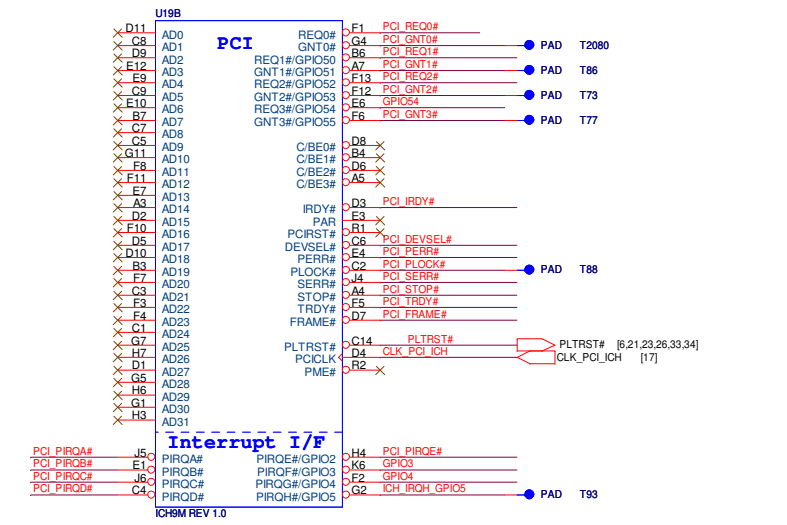
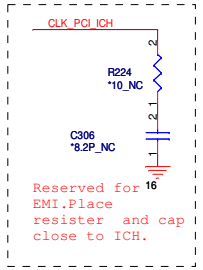
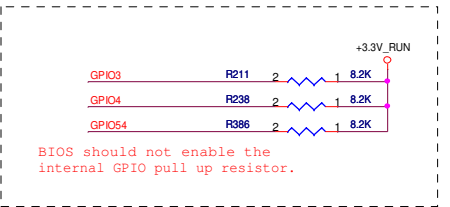
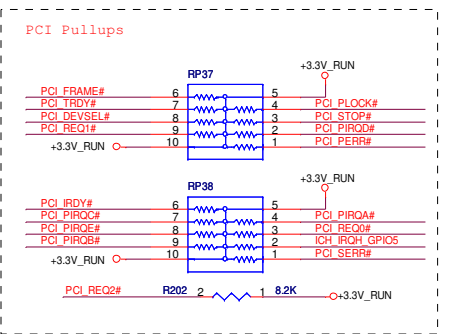
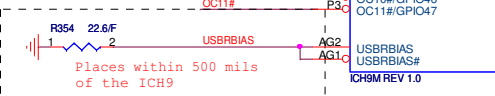
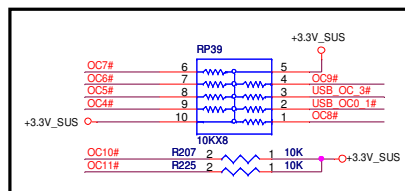
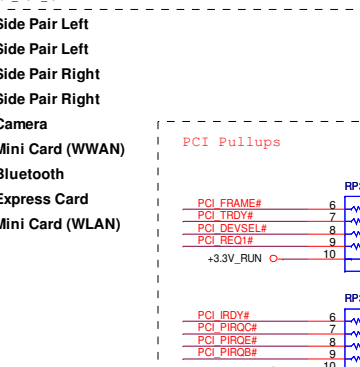
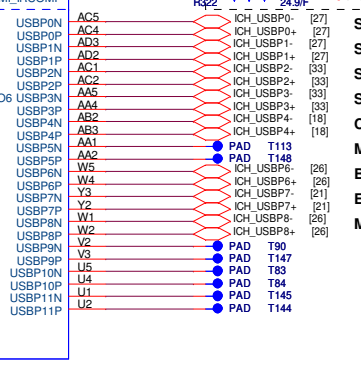
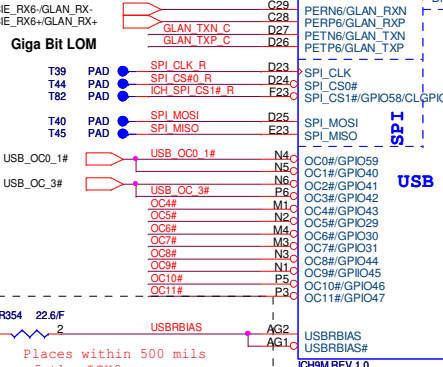
Place all series terms close to ICH9 except for SDIN input lines, which should be close to source.



Place TX DC blocking caps close ICH9.



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

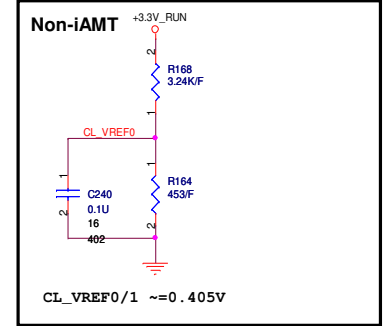
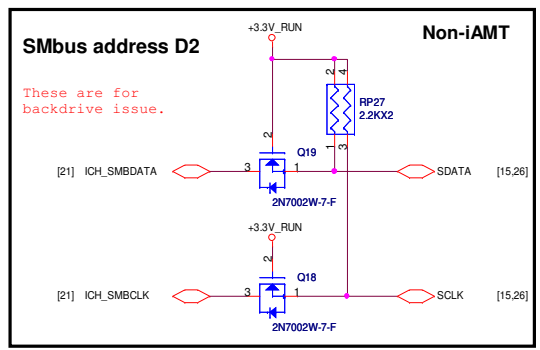
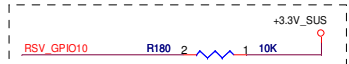
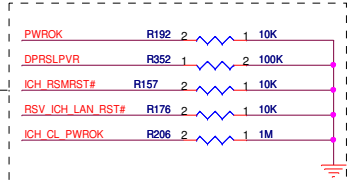
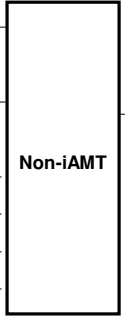
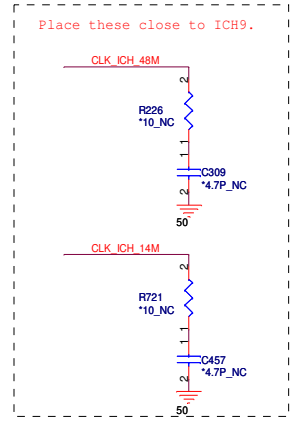
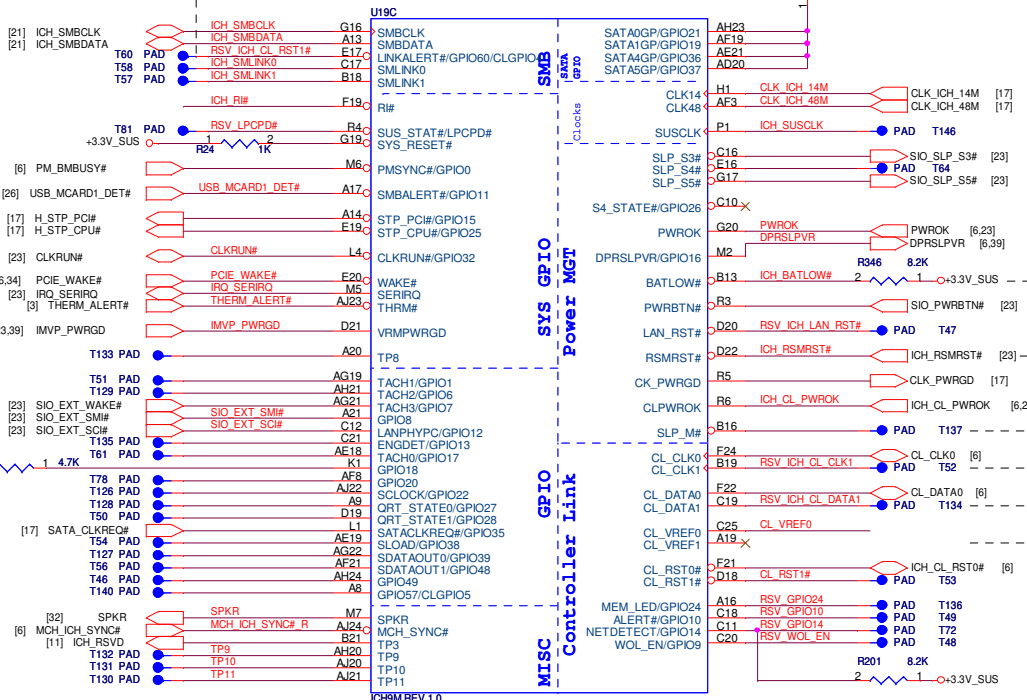
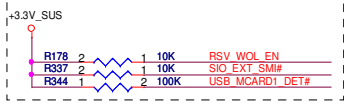
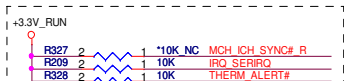
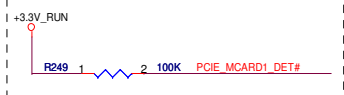
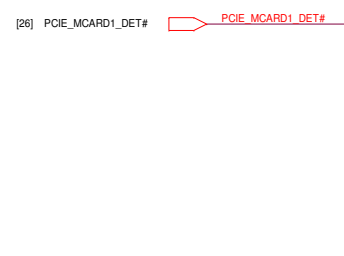
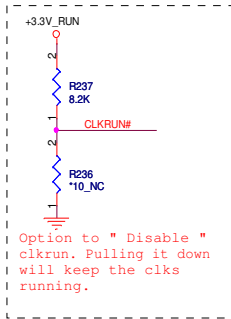
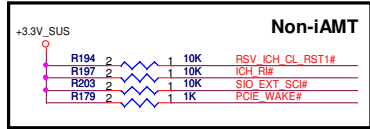
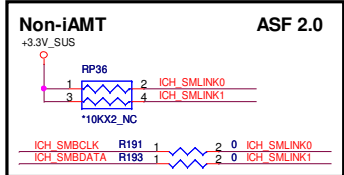
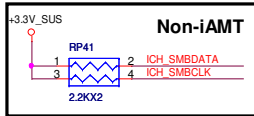


**QUANTA COMPUTER**

Title: ICH9-M (USB,DM,PCI,PCI)

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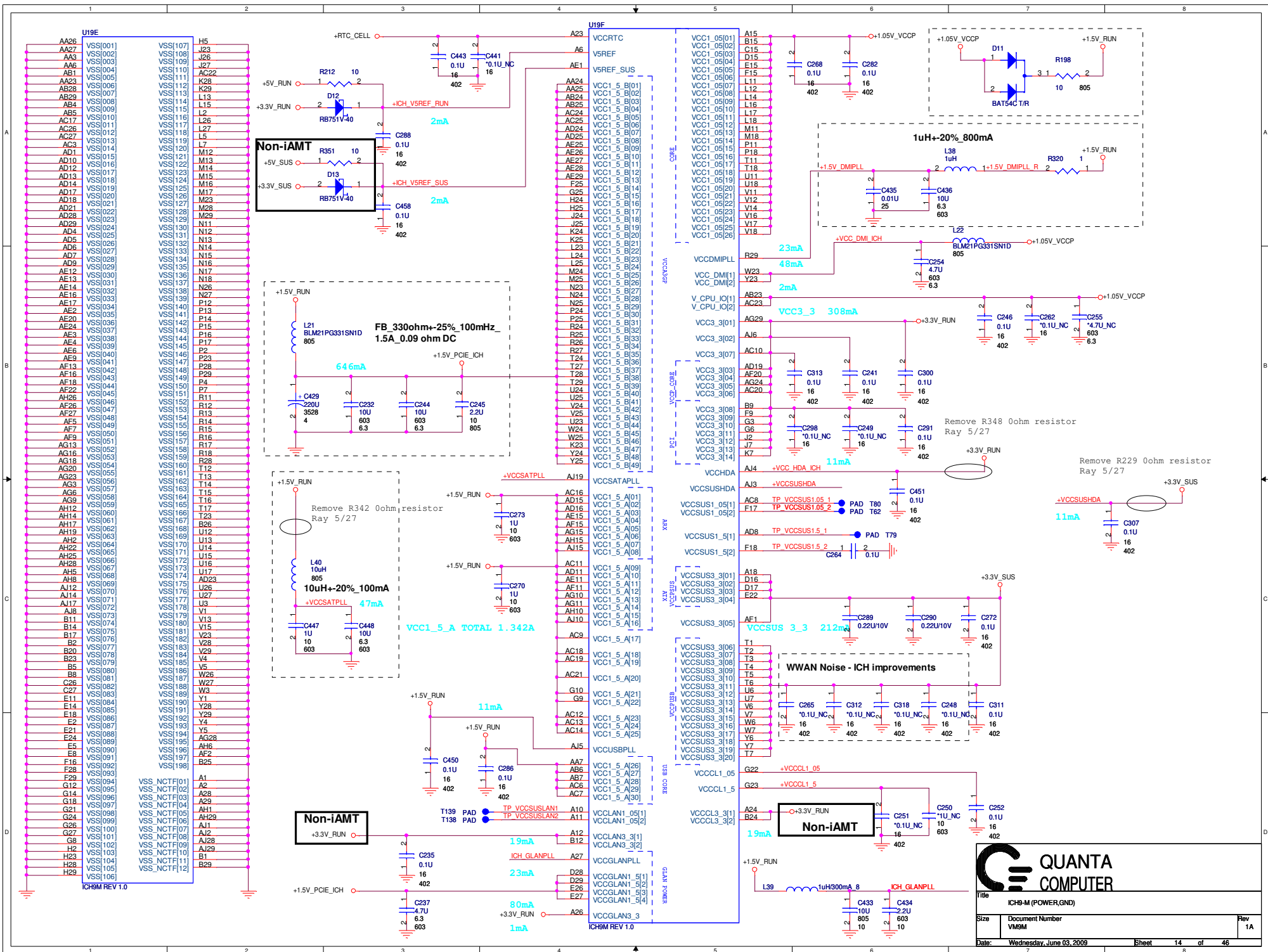


QUANTA COMPUTER

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

Size: Document Number VMSM Rev 1A

Date: Saturday, June 06, 2009 Sheet 13 of 46



**U19E**

AA26	VSS1001	VSS107	H5
AA27	VSS1002	VSS108	J23
AA3	VSS1003	VSS109	J26
AA6	VSS1004	VSS110	J27
AB1	VSS1005	VSS111	AC22
AA3	VSS1006	VSS112	K28
AB28	VSS1007	VSS113	L13
AB29	VSS1008	VSS114	L15
AB4	VSS1009	VSS115	L2
AB5	VSS1010	VSS116	L26
AC17	VSS1011	VSS117	L27
AC26	VSS1012	VSS118	L5
AC27	VSS1013	VSS119	L7
AC3	VSS1014	VSS120	L12
AD1	VSS1015	VSS121	M12
AD10	VSS1016	VSS122	M13
AD12	VSS1017	VSS123	M14
AD13	VSS1018	VSS124	M15
AD14	VSS1019	VSS125	M16
AD17	VSS1020	VSS126	M17
AD18	VSS1021	VSS127	M28
AD21	VSS1022	VSS128	M29
AD28	VSS1023	VSS129	M29
AD29	VSS1024	VSS130	N11
AD4	VSS1025	VSS131	N13
AD5	VSS1026	VSS132	N14
AD6	VSS1027	VSS133	N15
AD7	VSS1028	VSS134	N17
AD9	VSS1029	VSS135	N17
AE12	VSS1030	VSS136	N18
AE13	VSS1031	VSS137	N26
AE14	VSS1032	VSS138	N27
AE16	VSS1033	VSS139	P12
AE17	VSS1034	VSS140	P13
AE2	VSS1035	VSS141	P14
AE20	VSS1036	VSS142	P15
AE24	VSS1037	VSS143	P16
AE3	VSS1038	VSS144	P17
AE4	VSS1039	VSS145	P2
AE6	VSS1040	VSS146	P2
AE9	VSS1041	VSS147	P23
AF13	VSS1042	VSS148	P28
AF18	VSS1043	VSS149	P4
AF18	VSS1044	VSS150	P7
AF22	VSS1045	VSS151	R11
AH26	VSS1046	VSS152	R12
AF26	VSS1047	VSS153	R13
AF27	VSS1048	VSS154	R14
AF5	VSS1049	VSS155	R15
AF7	VSS1050	VSS156	R16
AF9	VSS1051	VSS157	R17
AG13	VSS1052	VSS158	R18
AG16	VSS1053	VSS159	R28
AG20	VSS1054	VSS160	T12
AG23	VSS1055	VSS161	T14
AG3	VSS1056	VSS162	T15
AG6	VSS1057	VSS163	T16
AG9	VSS1058	VSS164	T17
AG12	VSS1059	VSS165	T22
AH12	VSS1060	VSS166	T27
AH14	VSS1061	VSS167	T28
AH17	VSS1062	VSS168	U12
AH19	VSS1063	VSS169	U13
AH2	VSS1064	VSS170	U14
AH22	VSS1065	VSS171	U15
AH25	VSS1066	VSS172	U16
AH28	VSS1067	VSS173	U17
AH5	VSS1068	VSS174	U27
AH8	VSS1069	VSS175	AD23
AJ12	VSS1070	VSS176	U26
AJ14	VSS1071	VSS177	U27
AJ17	VSS1072	VSS178	U3
B11	VSS1073	VSS179	V1
B14	VSS1074	VSS180	V13
B17	VSS1075	VSS181	V15
B2	VSS1076	VSS182	V23
B20	VSS1077	VSS183	V29
B23	VSS1078	VSS184	V4
B5	VSS1080	VSS186	V5
B8	VSS1081	VSS187	W27
C26	VSS1082	VSS188	W3
C27	VSS1083	VSS189	Y1
E11	VSS1084	VSS190	Y2
E18	VSS1085	VSS191	Y4
E2	VSS1086	VSS192	Y5
E21	VSS1087	VSS193	AG28
E24	VSS1088	VSS194	AH6
E5	VSS1089	VSS195	AE2
E8	VSS1090	VSS196	B25
F16	VSS1091	VSS197	B25
F28	VSS1093	VSS198	B25
F29	VSS1094	VSS_NCTF[0]	A1
G12	VSS1095	VSS_NCTF[02]	A2
G14	VSS1096	VSS_NCTF[03]	A28
G18	VSS1097	VSS_NCTF[04]	A29
G21	VSS1098	VSS_NCTF[05]	A29
G24	VSS1099	VSS_NCTF[06]	AH1
G26	VSS1100	VSS_NCTF[07]	AH2
G27	VSS1101	VSS_NCTF[08]	AJ28
G8	VSS1102	VSS_NCTF[09]	AJ29
H2	VSS1103	VSS_NCTF[10]	B29
H23	VSS1104	VSS_NCTF[11]	B29
H28	VSS1105	VSS_NCTF[12]	B29
H29	VSS1106	VSS_NCTF[12]	B29

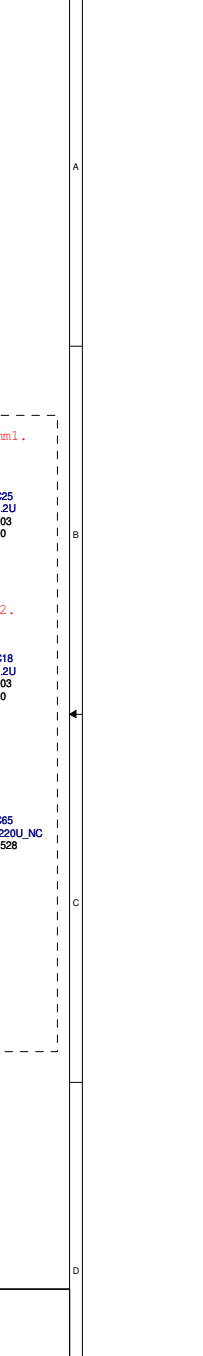
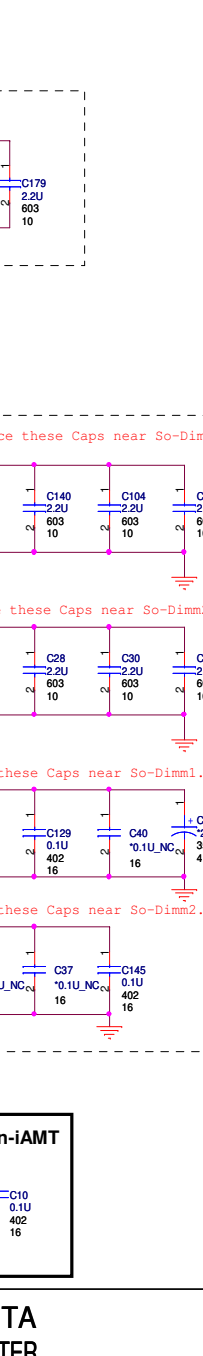
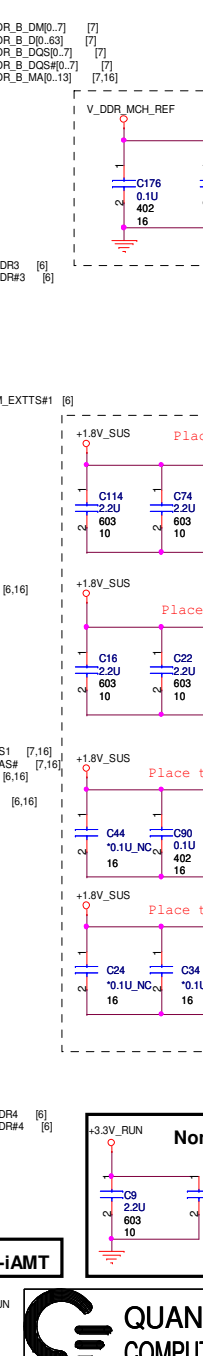
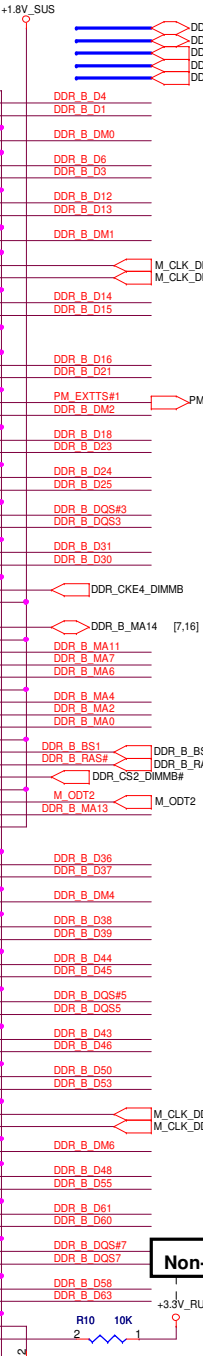
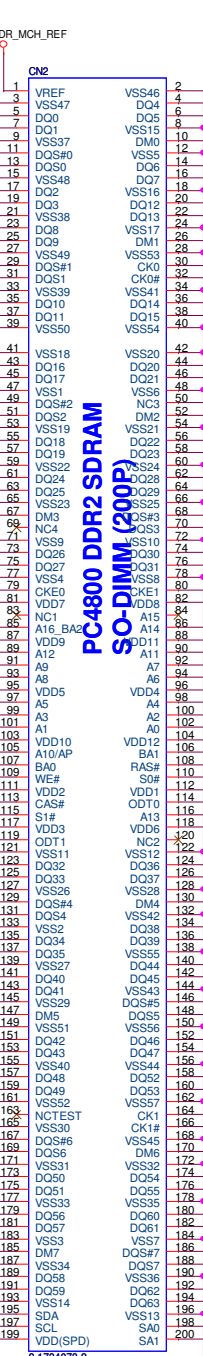
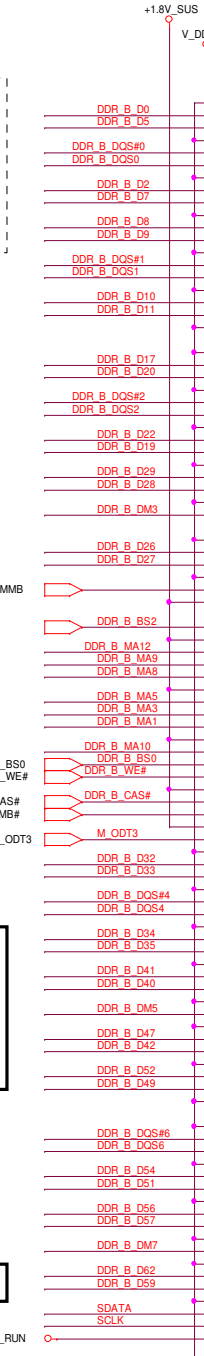
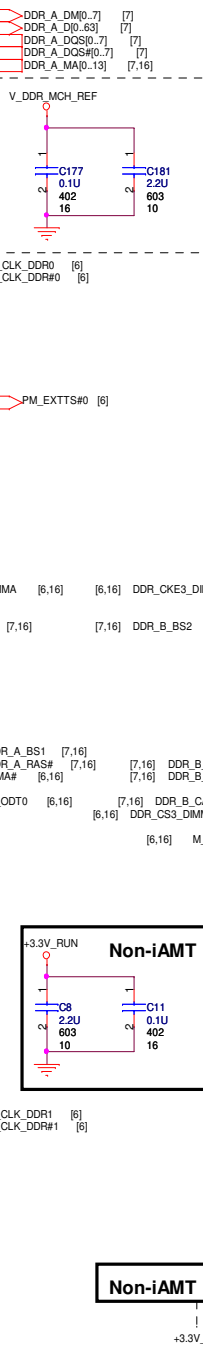
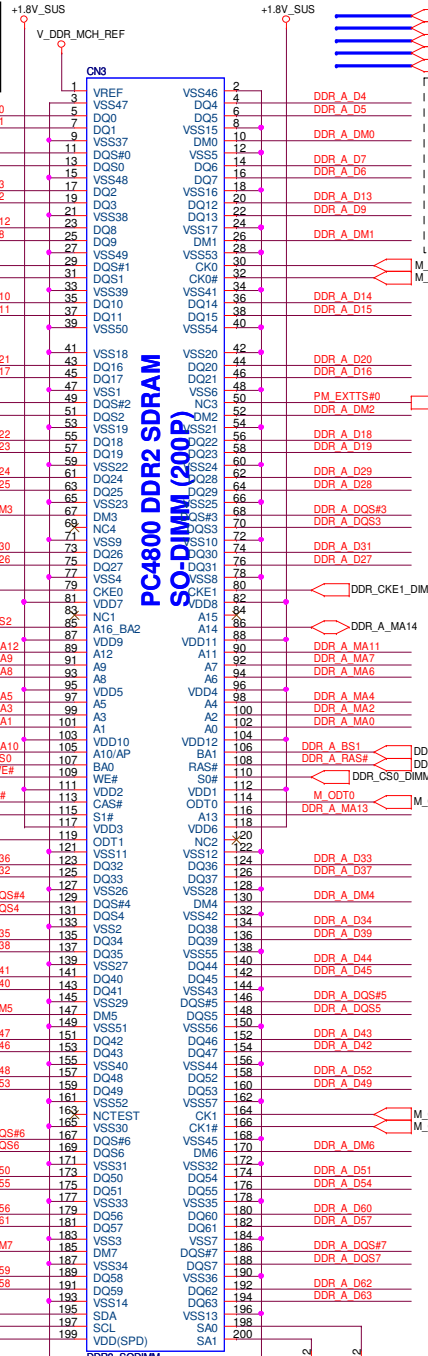
**QUANTA COMPUTER**

Title: ICH9M (POWER.GND)

Size: Document Number VMSM Rev 1A

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



Non-iAMT  
SMbus address A0  
CLOCK 0,1  
CKE 0,1

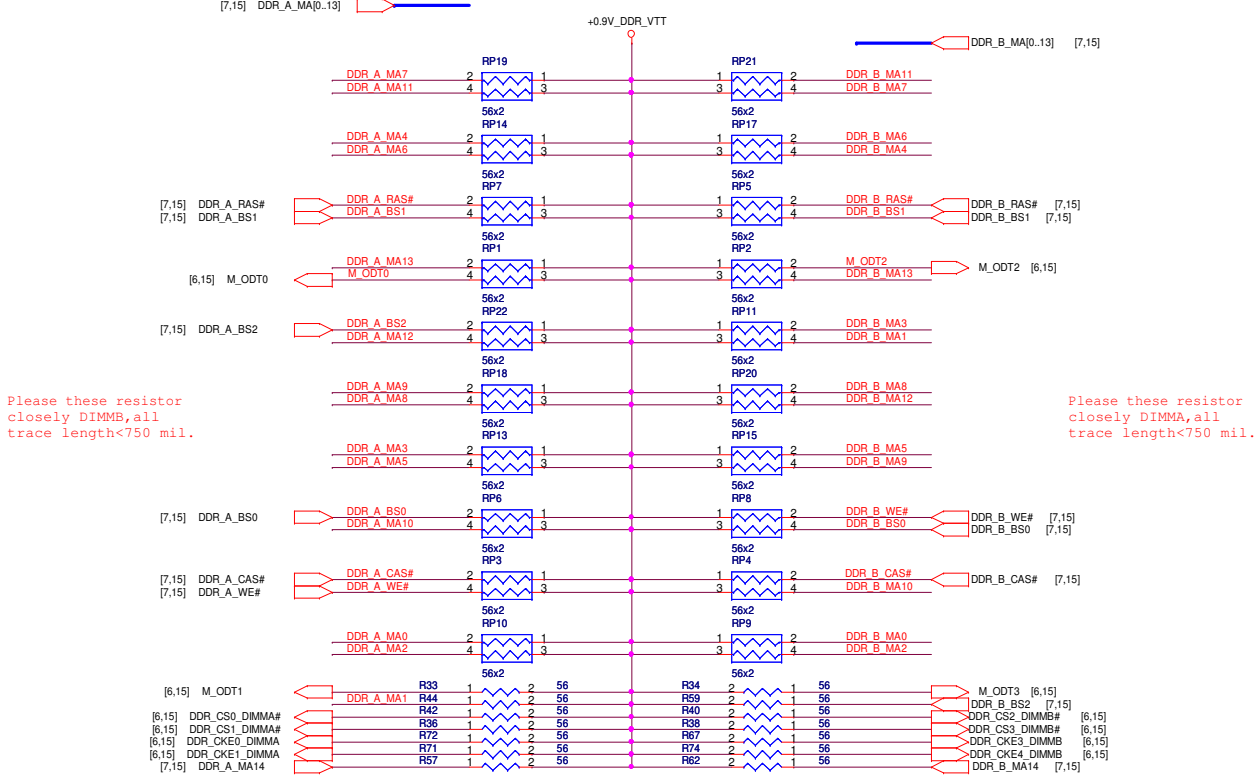
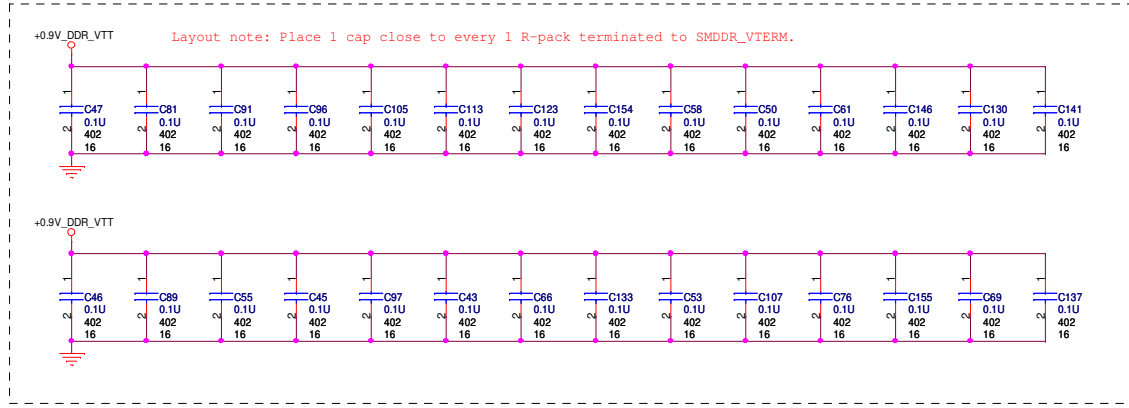
Non-iAMT  
SMbus address A4  
CLOCK 2,3  
CKE 2,3

**QUANTA COMPUTER**

Title: DDR2 SDRAM (200P) X 2

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**QUANTA  
COMPUTER**

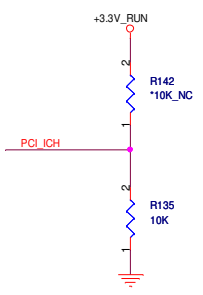
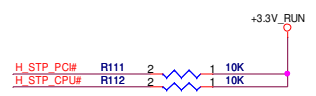
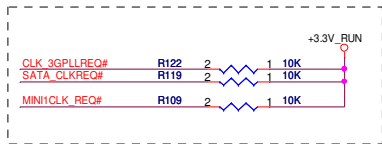
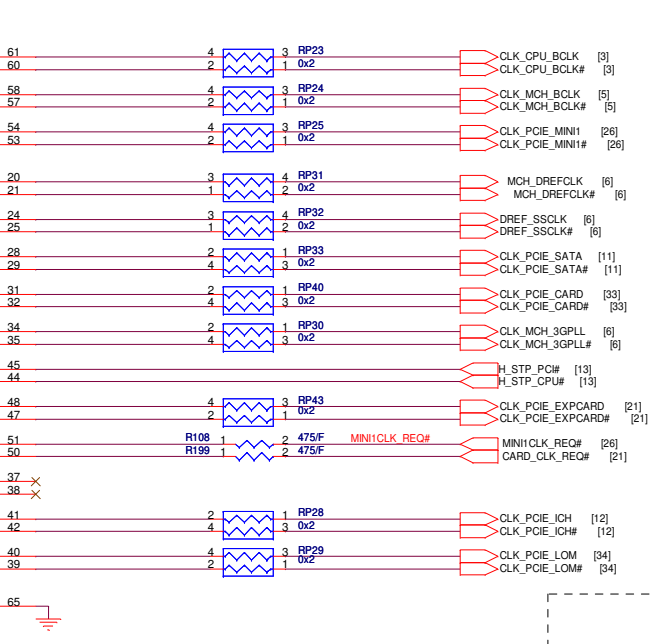
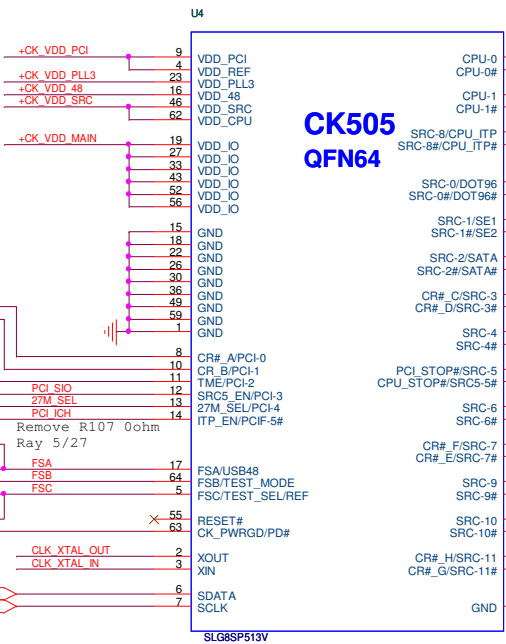
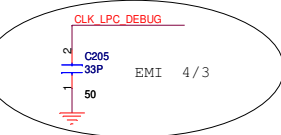
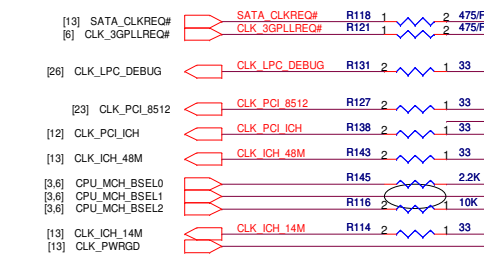
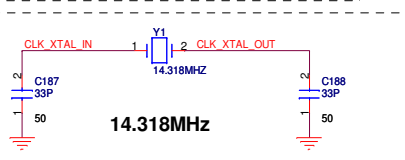
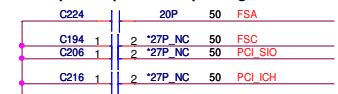
Title: DDR2 RES ARRAY

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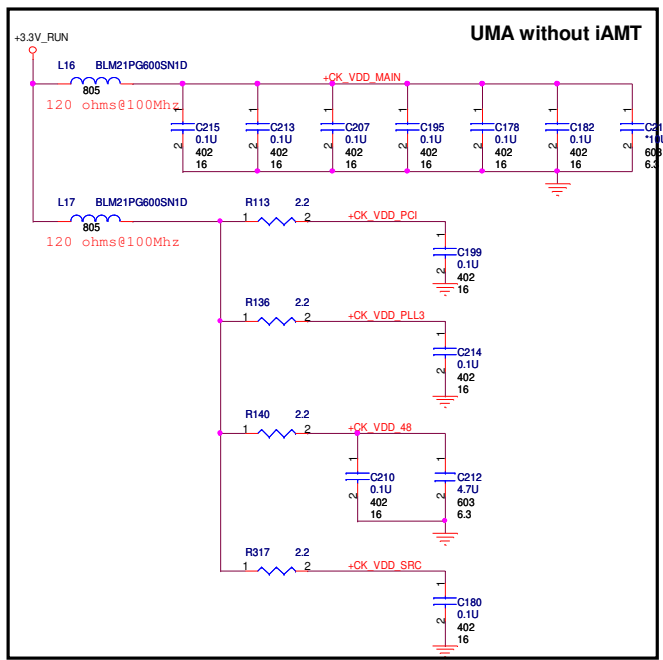
Add capacitor pads for improving WWAN.



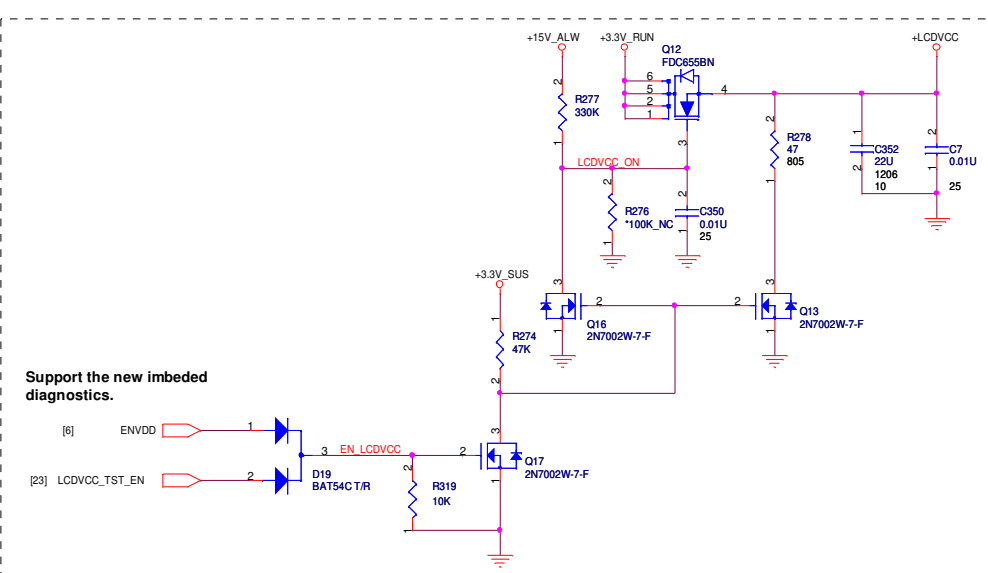
FSC	FSB	FSA	CPU	SRC	PCI
1	0	1	100	100	33
0	0	1	133	100	33
0	1	1	166	100	33
0	1	0	200	100	33
0	0	0	266	100	33
1	0	0	333	100	33
1	1	0	400	100	33
1	1	1	RSVD	100	33

27M\_SEL

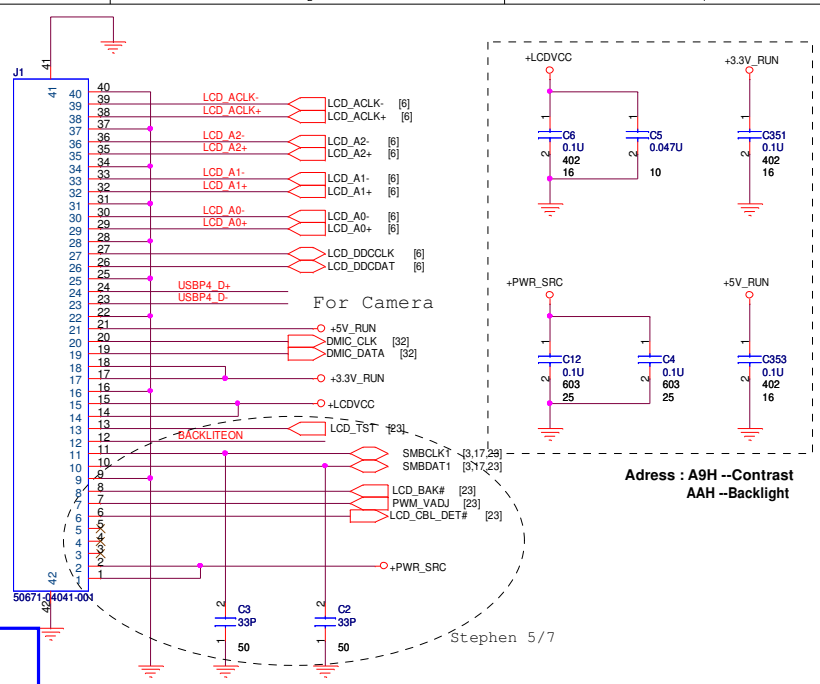
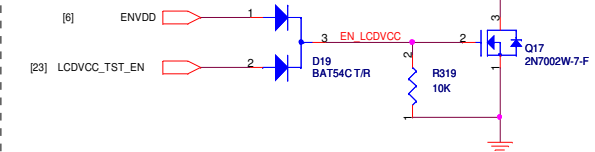
27M_SEL (PIN13)	PIN20	PIN21	PIN24	PIN25
0=UMA	DOT96T	DOT96C	96/100M_T	96/100M_C
1 = Disc. GRFX down	SRCT0	SRCC0	27Mout	27MSSout



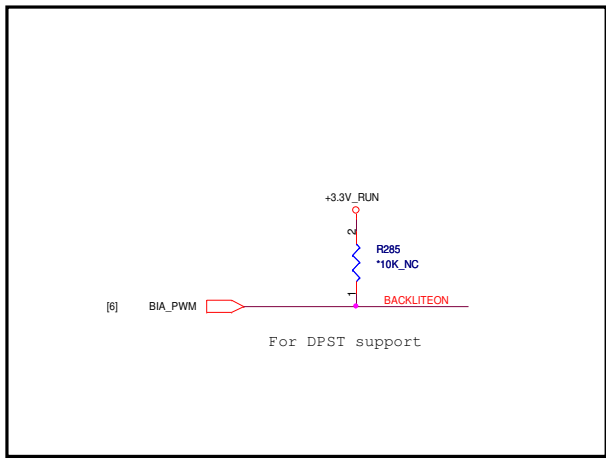
Title			CLOCK GENERATOR
Size	Document Number	Rev	
	VMSM	1A	
Date:	Saturday, June 06, 2009	Sheet	17 of 46



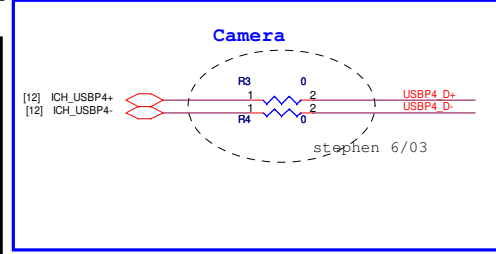
Support the new imbedded diagnostics.



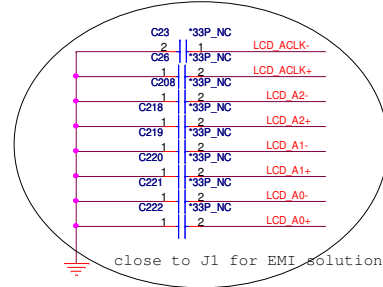
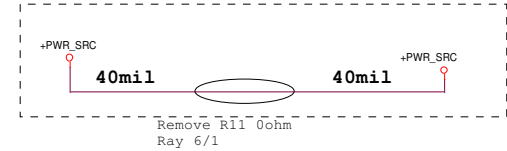
Address : A9H --Contrast  
AAH --Backlight



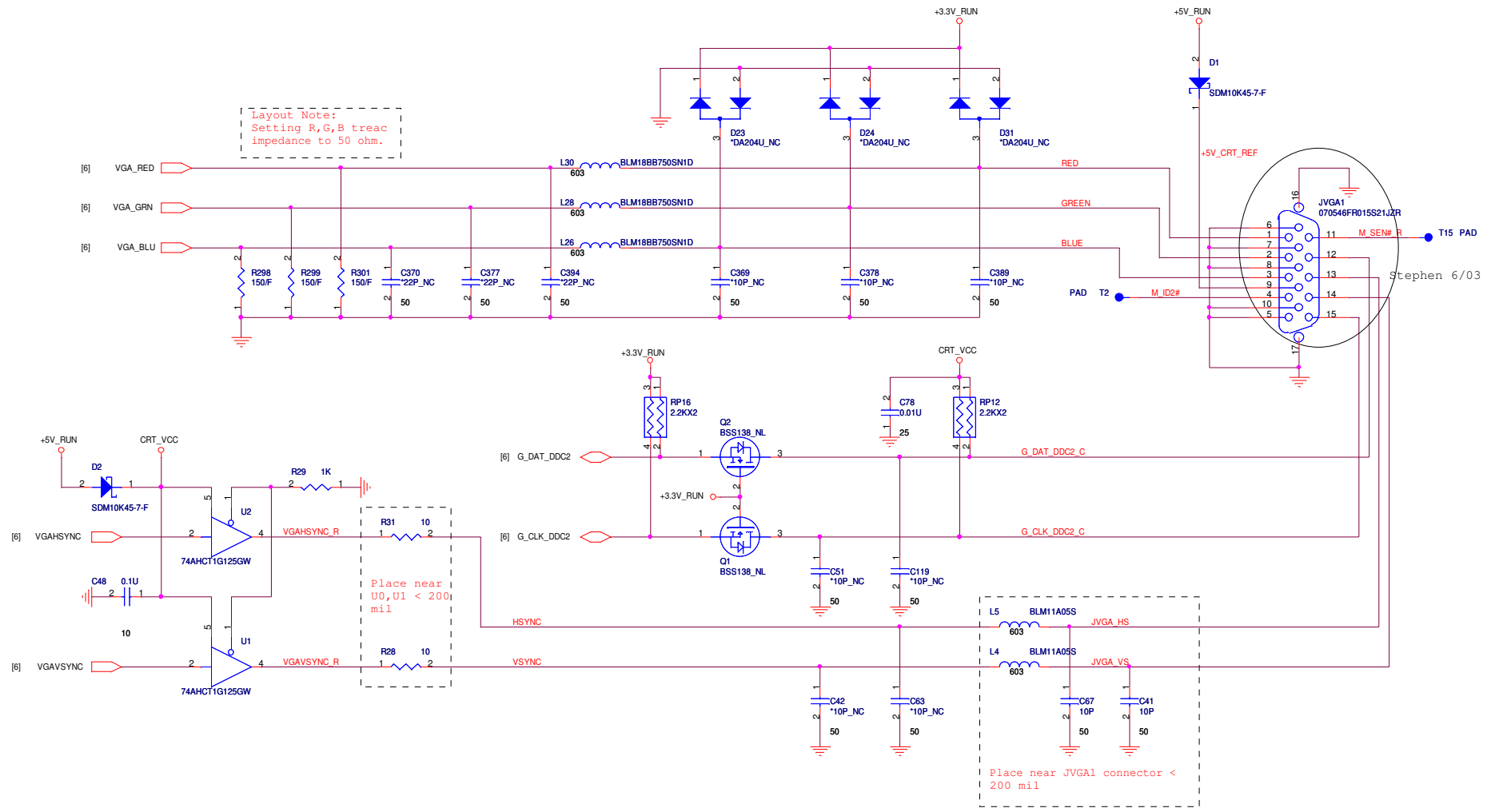
For DPST support



stephen 6/03



Layout Note:  
Setting R,G,B treac  
impedance to 50 ohm.



Stephen 6/03



Title CRT&TV CONN		
Size VMSM	Document Number VMSM	Rev 1A
Date: Wednesday, June 03, 2009	Sheet 19	of 46

A

B

C

D

E

1

1

2


2

3

3

4

4

 <b>QUANTA COMPUTER</b>		
Title	Card Reader-RTS5158E	
Size	Document Number VM9M	Rev 1A
Date:	Wednesday, June 03, 2009	Sheet 20 of 46

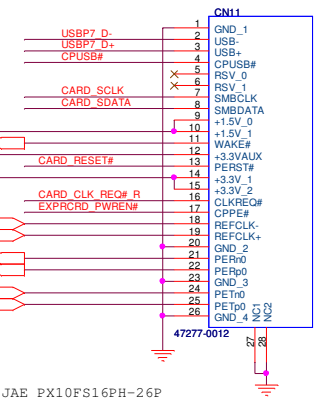
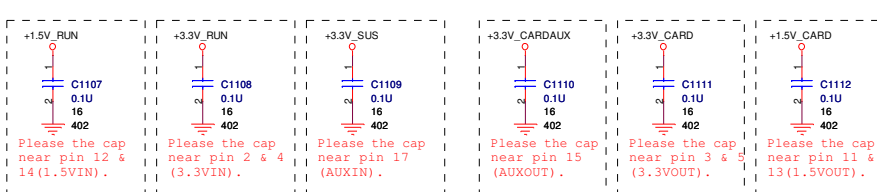
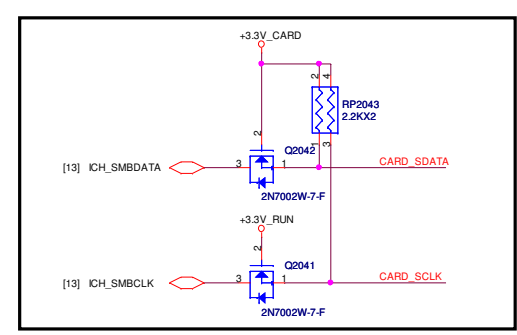
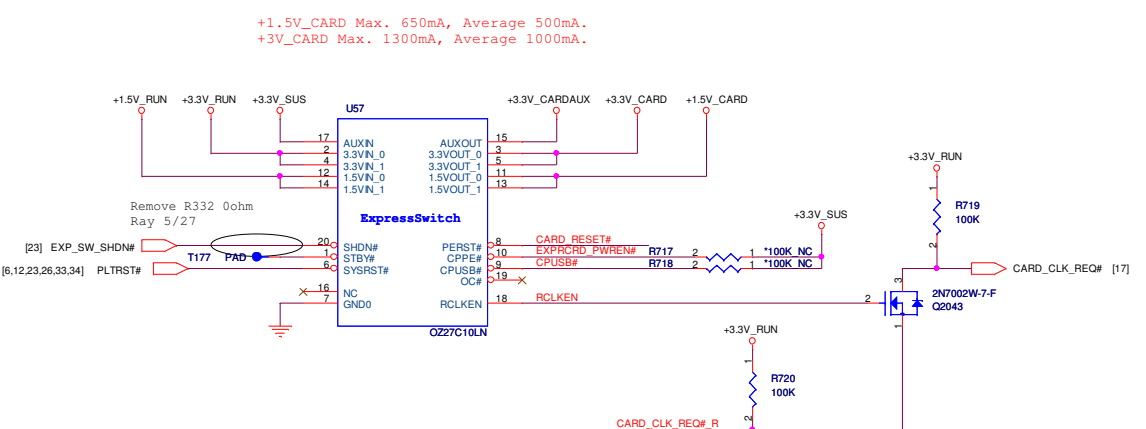
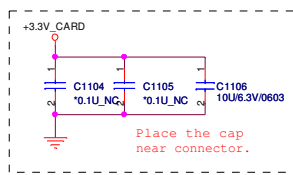
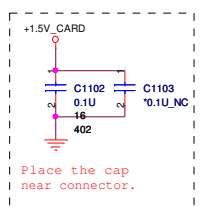
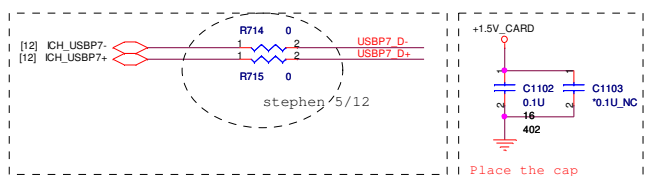
A

B

C

D

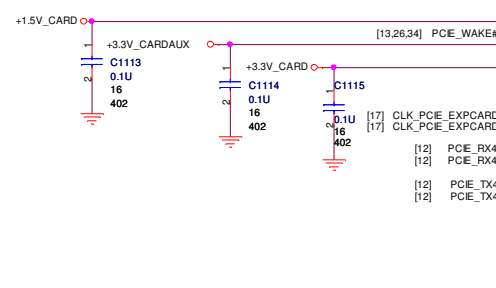
E



## Express Card

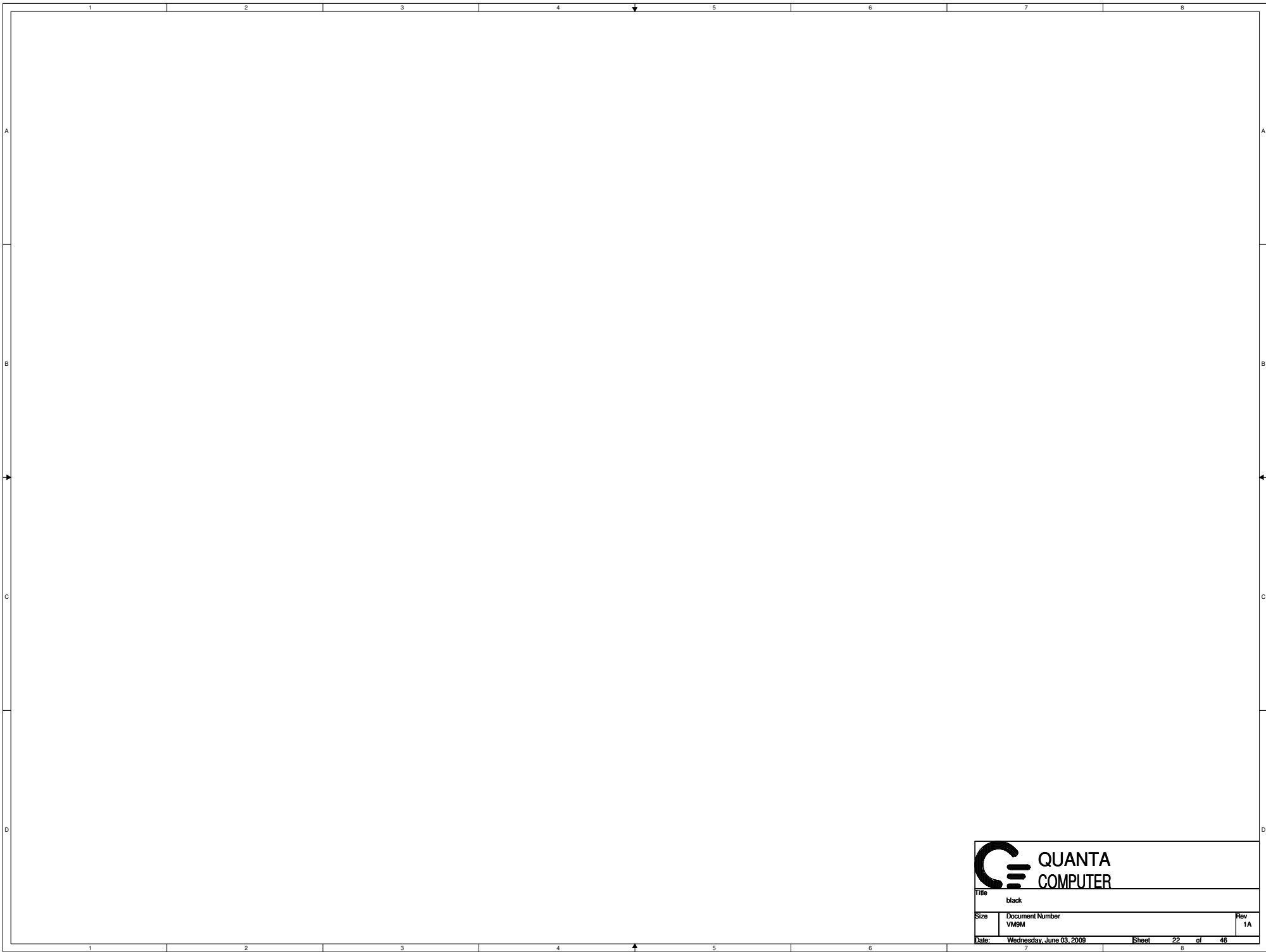


Express Card cage



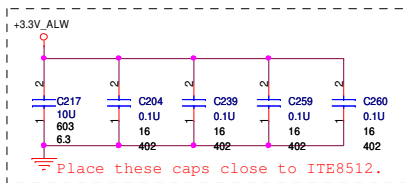
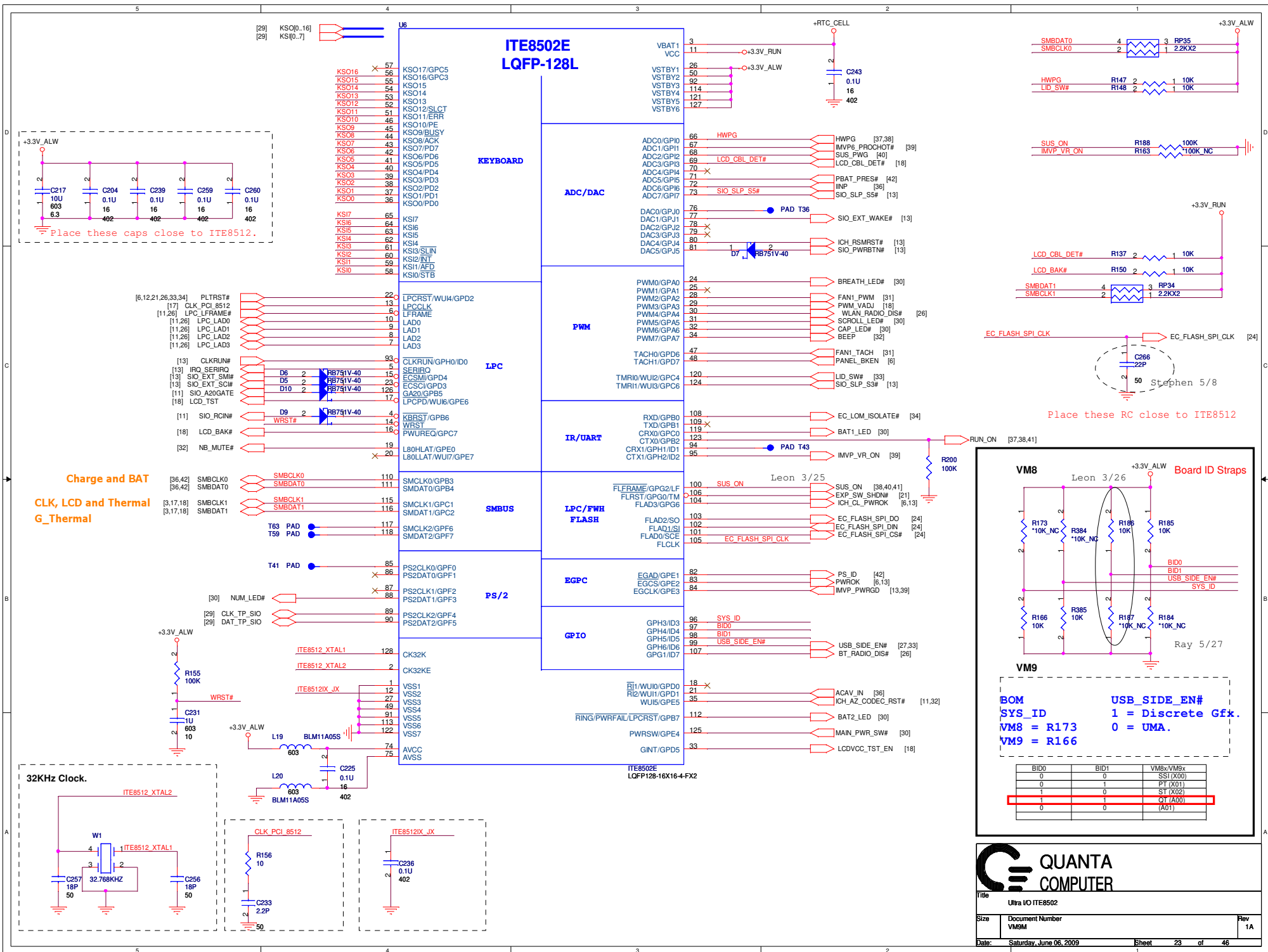
JAE PX10FS16PH-26P

		Title	
		Express Card	
Size	Document Number	Rev	
	VMM	1A	
Date:	Saturday, June 06, 2009	Sheet	21 of 46

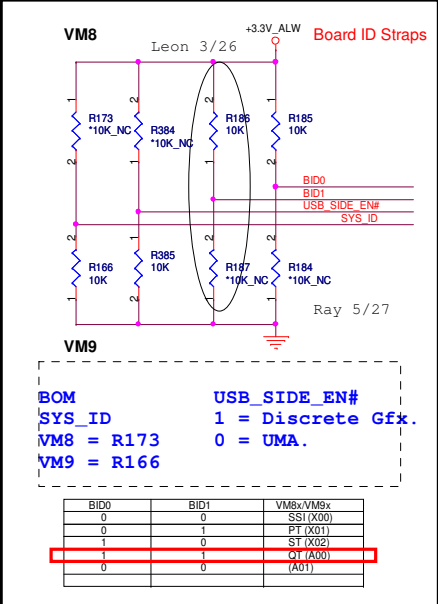
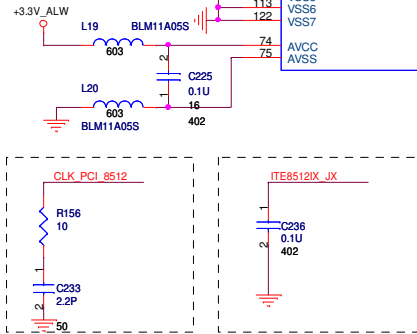
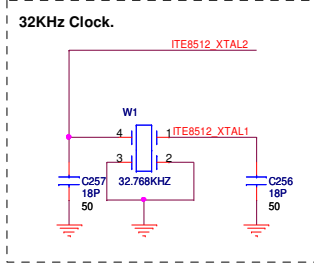


QUANTA  
COMPUTER

Title black		
Size	Document Number VMSM	Rev 1A
Date:	Wednesday, June 03, 2009	Sheet 22 of 46



**Charge and BAT  
CLK, LCD and Thermal  
G\_Thermal**

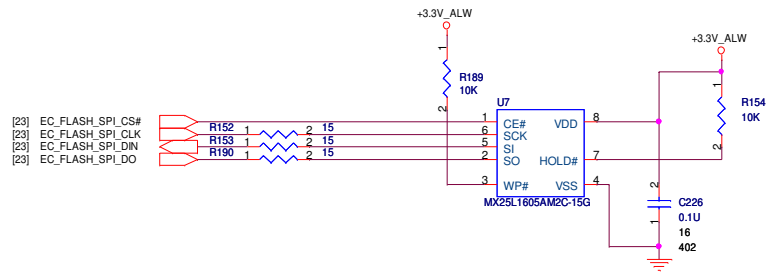


**BOM**                      **USB\_SIDE\_EN#**  
**SYS\_ID**                      1 = Discrete Gfx.  
**VM8 = R173**                      0 = UMA.  
**VM9 = R166**

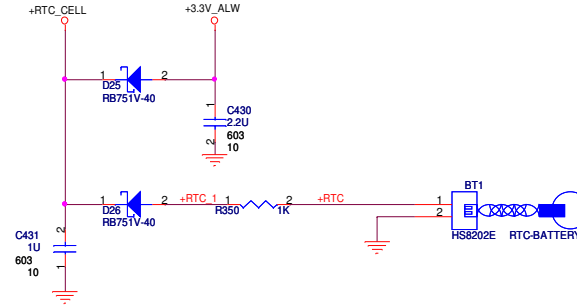
BID0	BID1	VM8x/VM9x
0	0	SSI (X00)
0	1	PT (X01)
1	0	ST (X02)
1	1	OT (A00)
0	0	(A01)



### 16Mbit (2M Byte), SPI




### RTC BATTERY

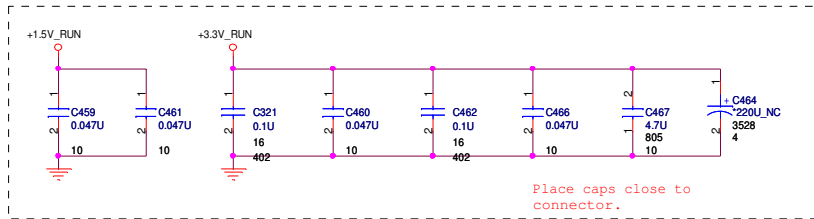
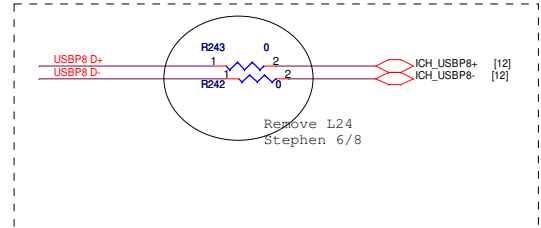
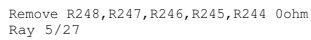
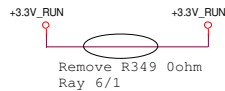
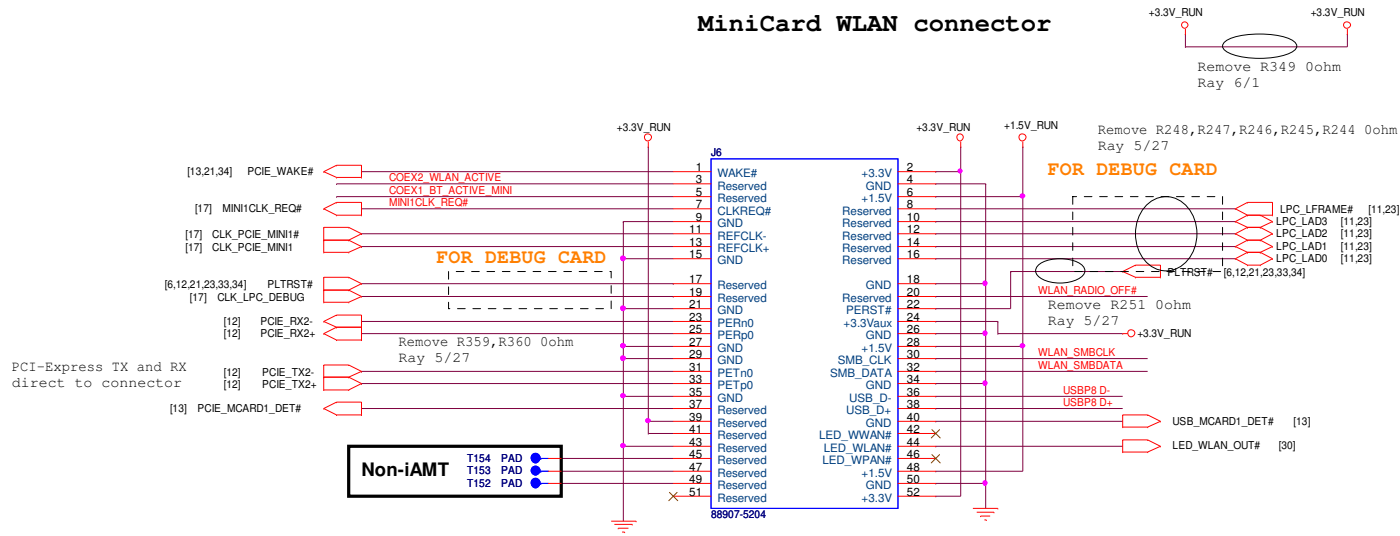




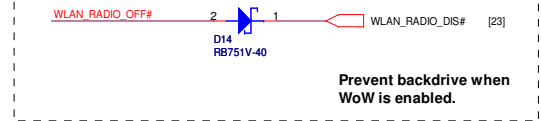
	1	2	3	4	5	6	7	8
A								
B								
C								
D								
	1	2	3	4	5	6	7	8

 <b>QUANTA COMPUTER</b>		
Title	Black	
Size	Document Number	Rev
	VMSM	1A
Date:	Wednesday, June 03, 2009	Sheet 25 of 46

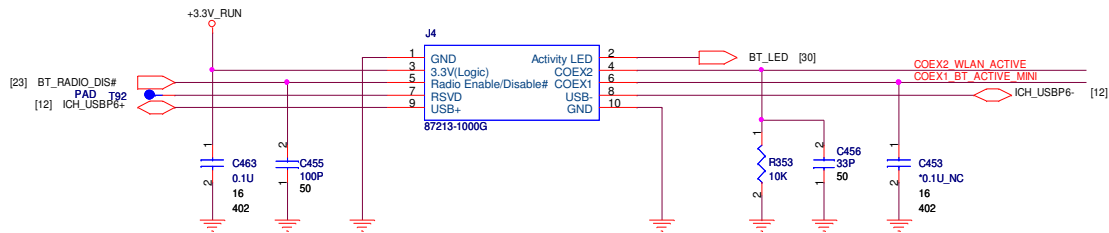
# MiniCard WLAN connector



## Support for WoW



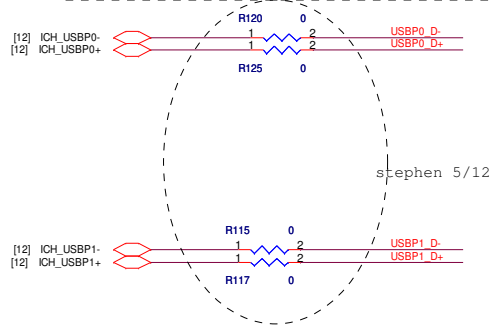
## Bluetooth



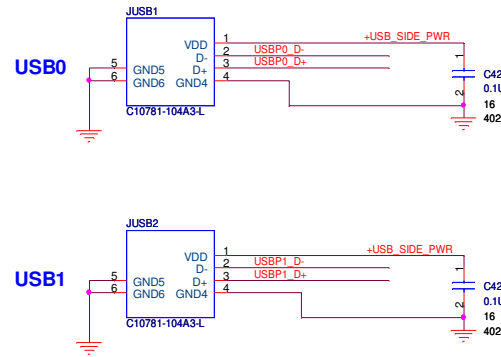
**QUANTA COMPUTER**

Title: MDC CONN.		
Size: VMSM	Document Number: VMSM	Rev: 1A
Date: Monday, June 08, 2009	Sheet: 26 of 46	

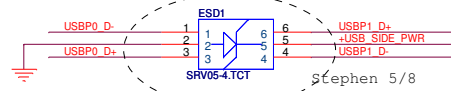
External USB PORT hookup reference. Your design may need more or less external ports and may be mapped differently



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

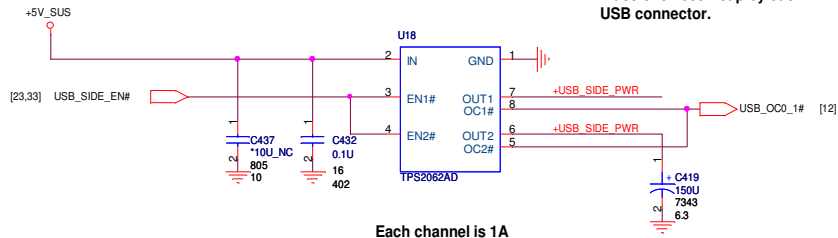


Place ESD diodes as close as USB connector.




stephen 5/8

Place one 150uF cap by each USB connector.

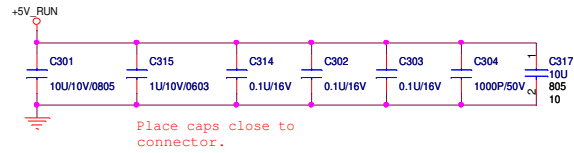
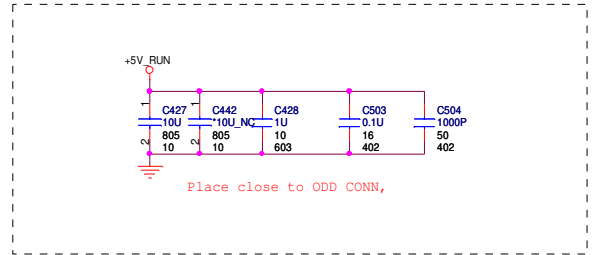
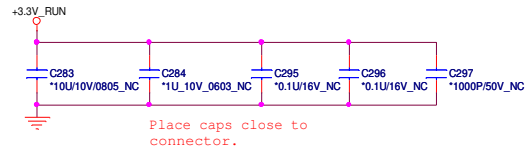
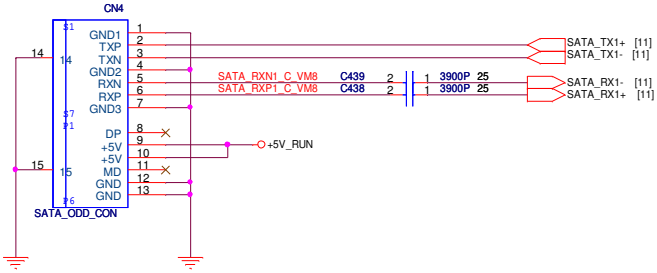
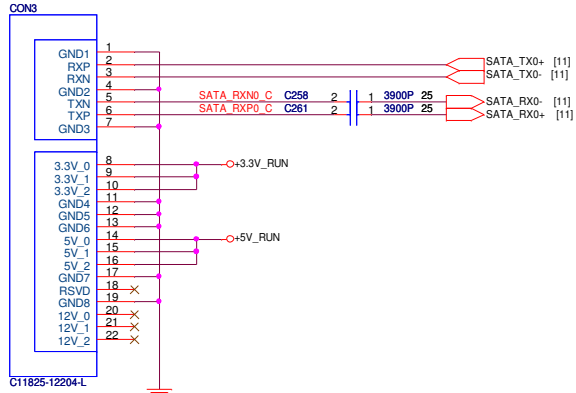


Each channel is 1A

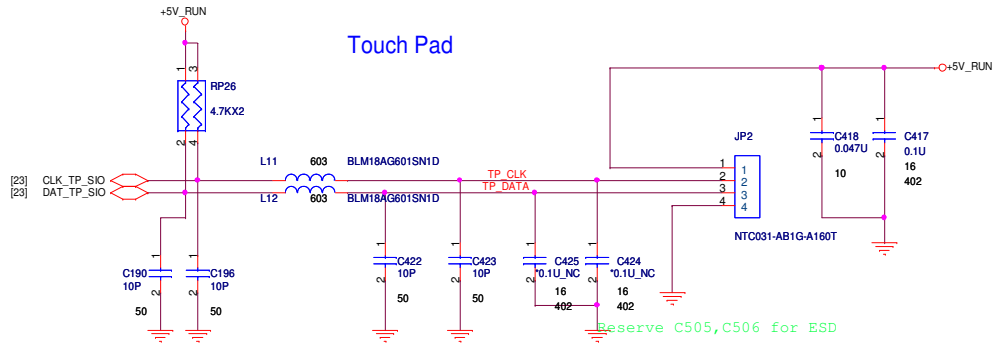
 <b>QUANTA COMPUTER</b>		
Title SERIAL PORT & USB		
Size	Document Number VM9M	Rev 1A
Date: Wednesday, June 03, 2009 Sheet 27 of 46		

SATA HDD Connector.

SATA ODD Connector.

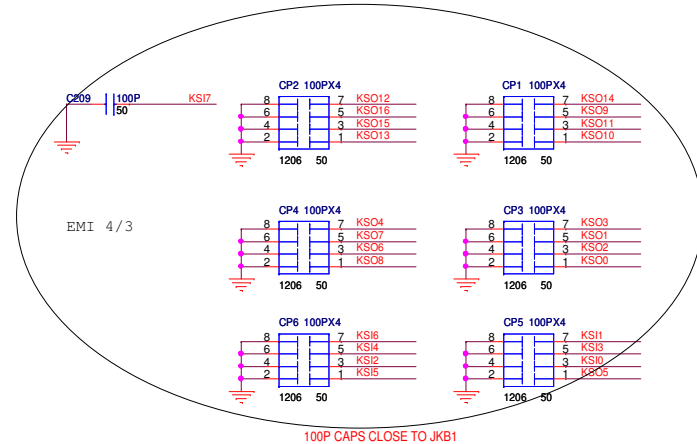
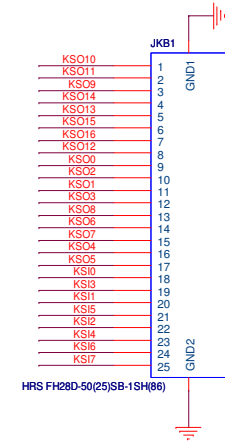


### Touch Pad



### KEYBOARD CONNECTOR

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

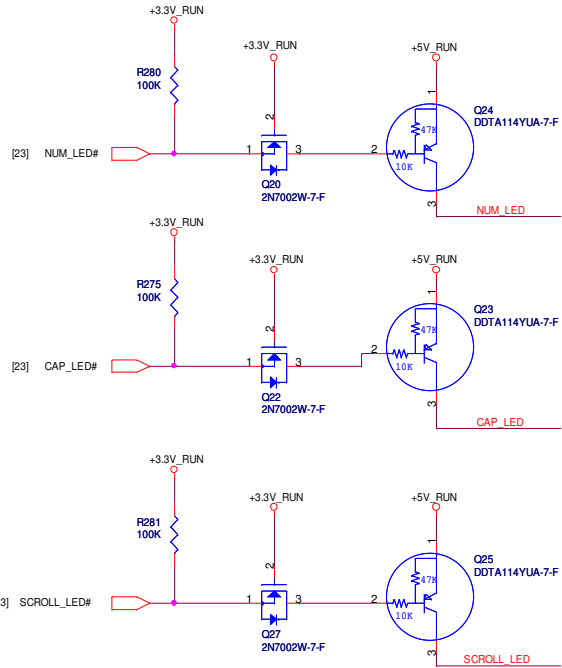


**QUANTA COMPUTER**

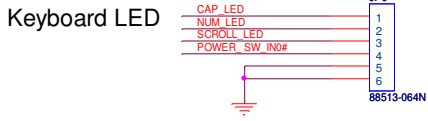
Title: TOUCH PAD, BULE TOOTH & FIR

Size	Document Number VMSM	Rev 1A
Date:	Wednesday, June 03, 2009	Sheet 29 of 46

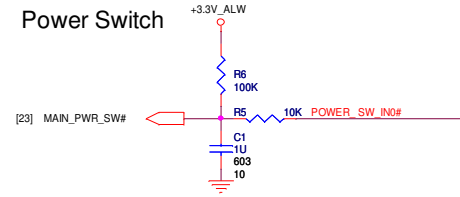
### Keyboard LED



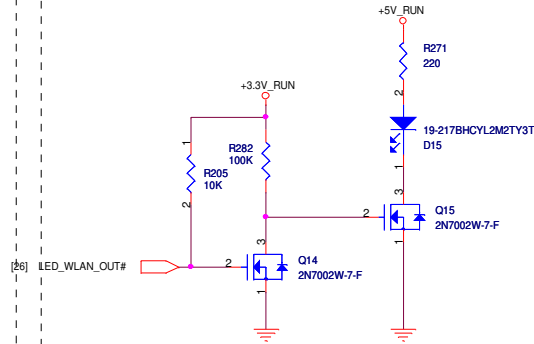
### Dash board connector



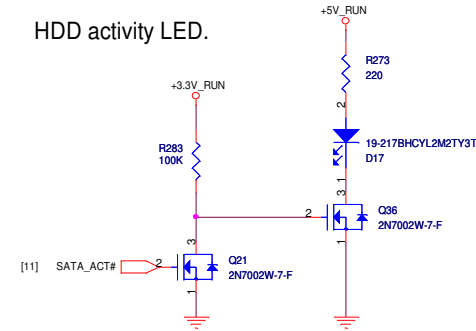
### Power Switch



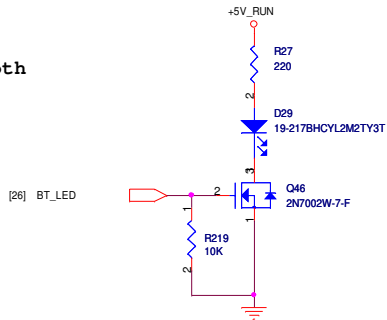
### WLAN



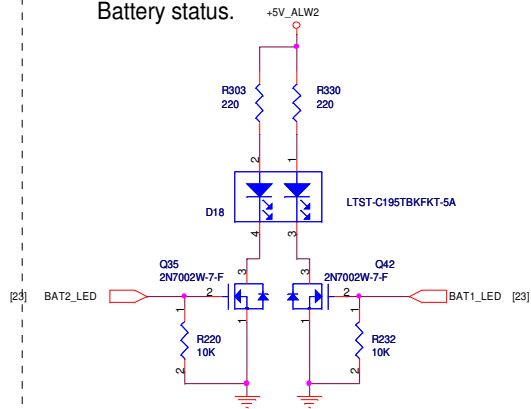
### HDD activity LED.



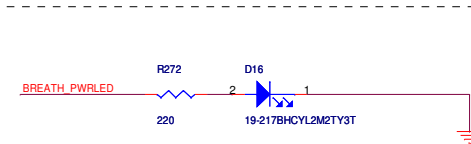
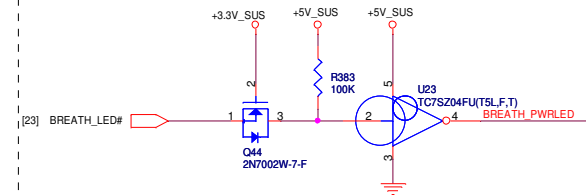
### Bluetooth

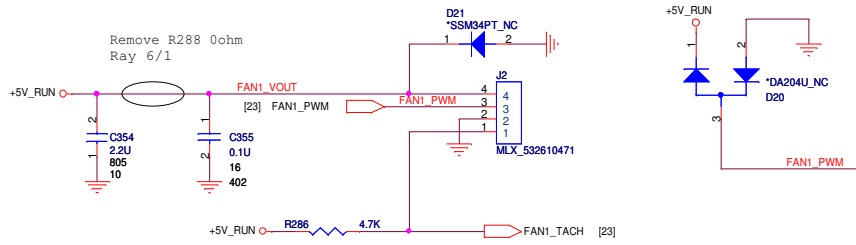



### Battery status.

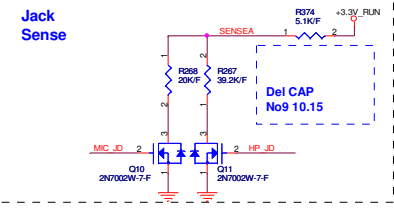
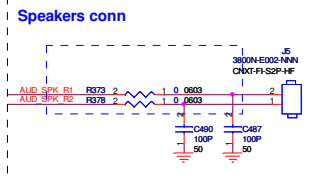
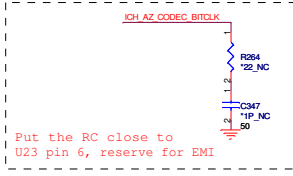


### Power & Suspend.



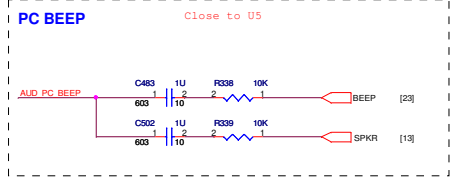
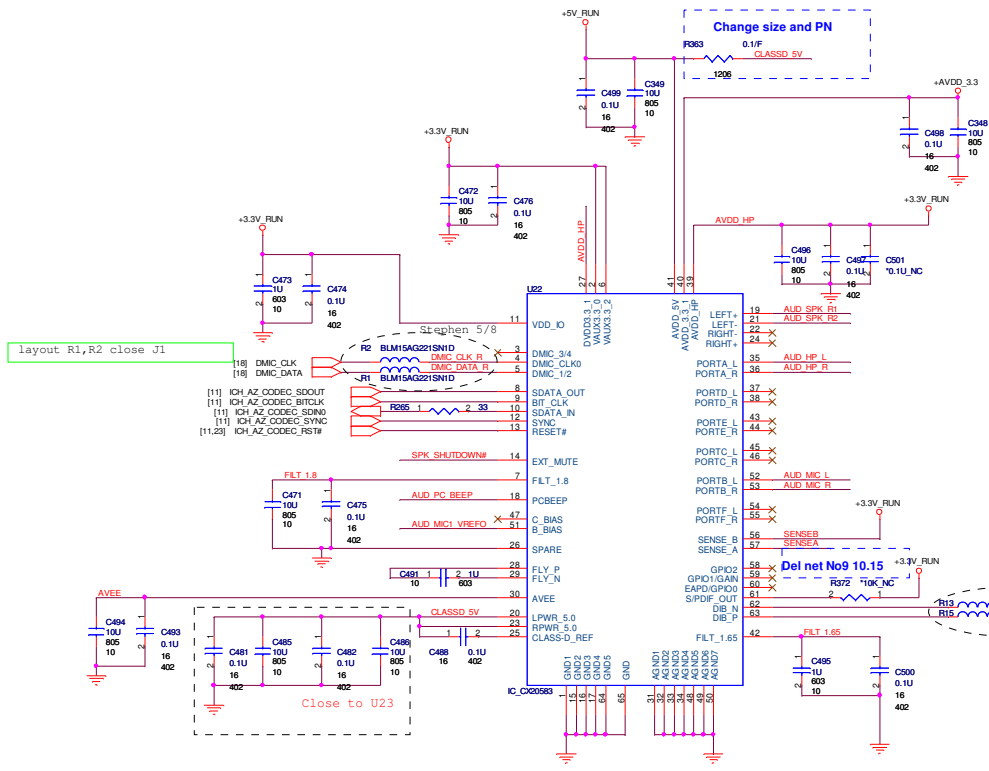


 <b>QUANTA COMPUTER</b>		
Title: FAN & THERMAL		
Size: VMSM	Document Number: VMSM	Rev: 1A
Date: Wednesday, June 03, 2009	Sheet: 31 of 46	

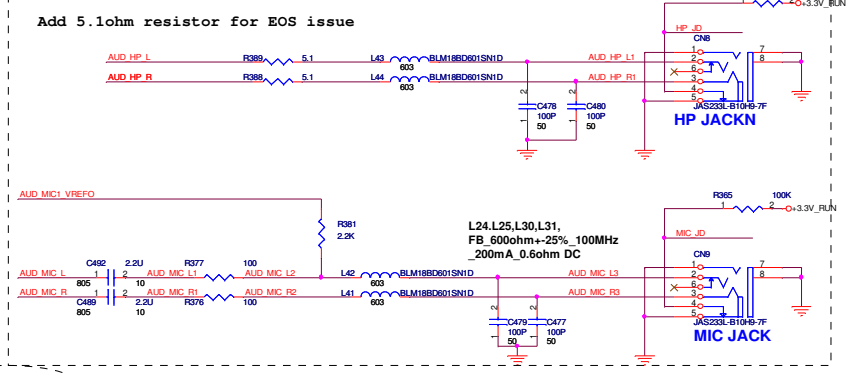


Add PC beep for system error circuit No9 10.14  
Del PC beep No9 10.15

### AUDIO CODEC

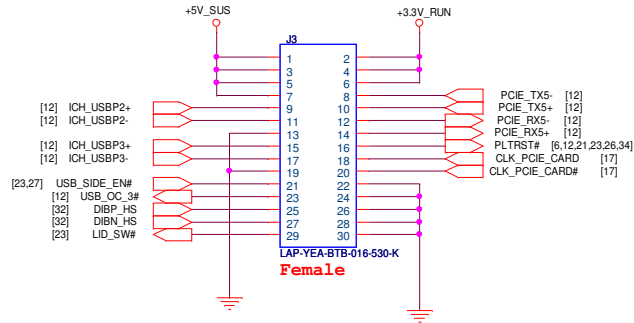
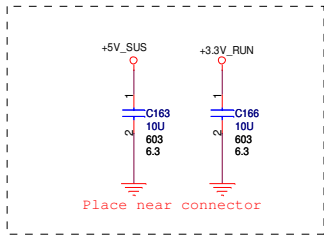


### Audio Jacks



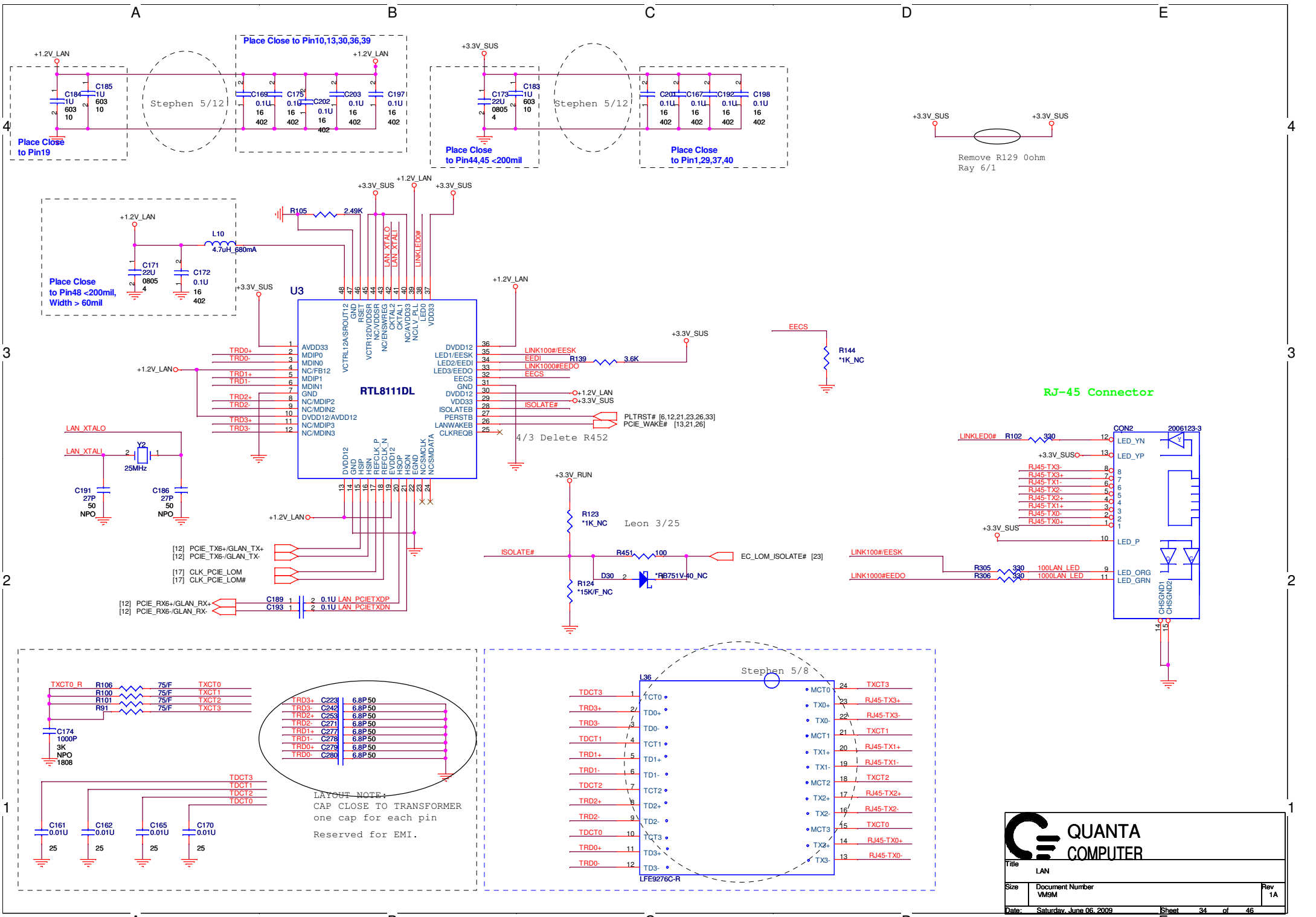
Title		
Size	Document Number	Rev
	VMSM	1A
Date:	Saturday, June 06, 2009	Sheet 32 of 46





## Board to board connector (Modem Card + Cardreader+1394a+ 2 USB Port)

<b>QUANTA COMPUTER</b>		
Title		
Size	Document Number	Rev
Date:	Date:	Rev
7	Wednesday, June 03, 2009	1A
Sheet	33 of 46	



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Stephen 5/12

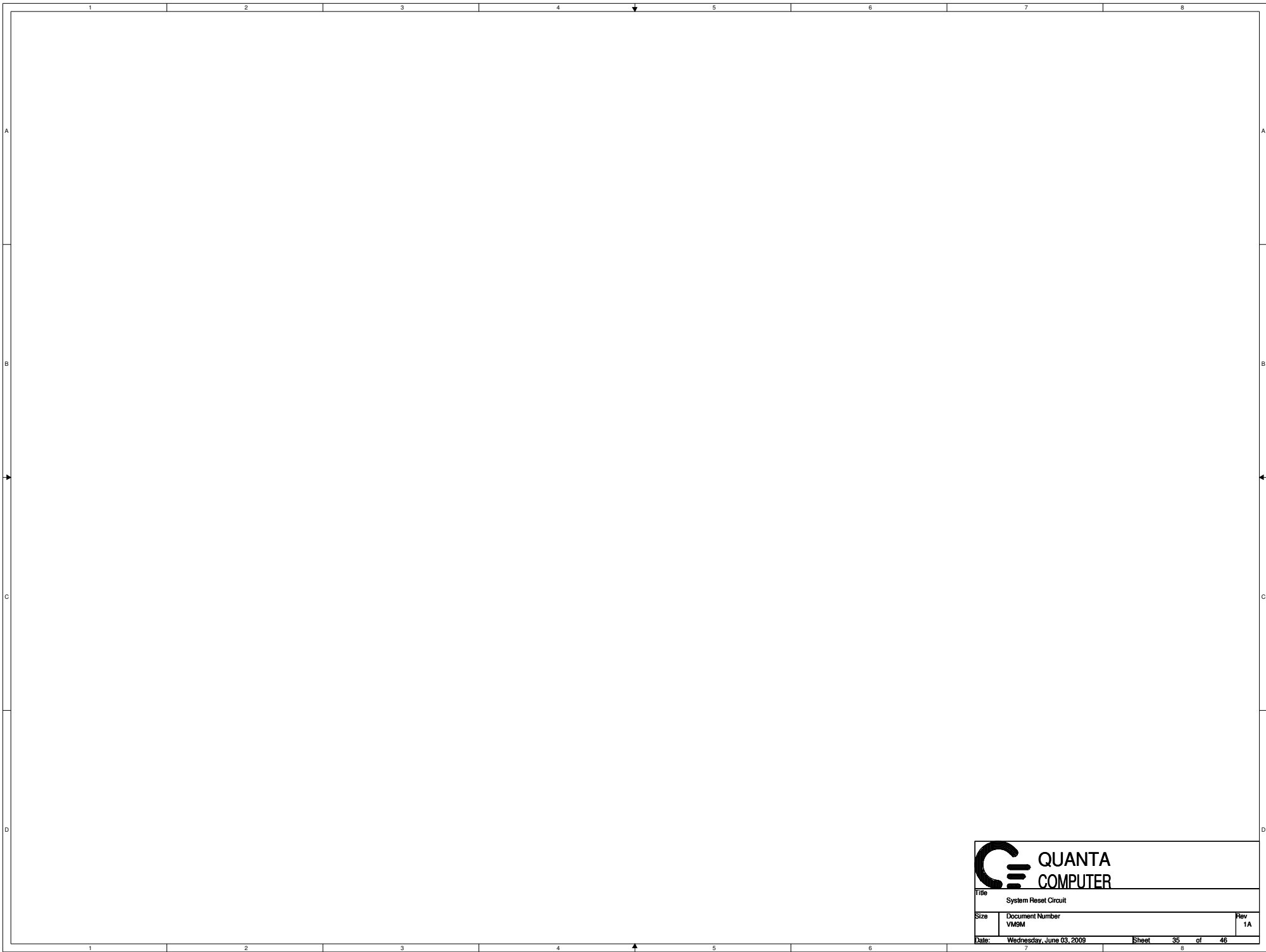
Stephen 5/8


LAYOUT NOTE:  
CAP CLOSE TO TRANSFORMER  
one cap for each pin  
Reserved for EMI.

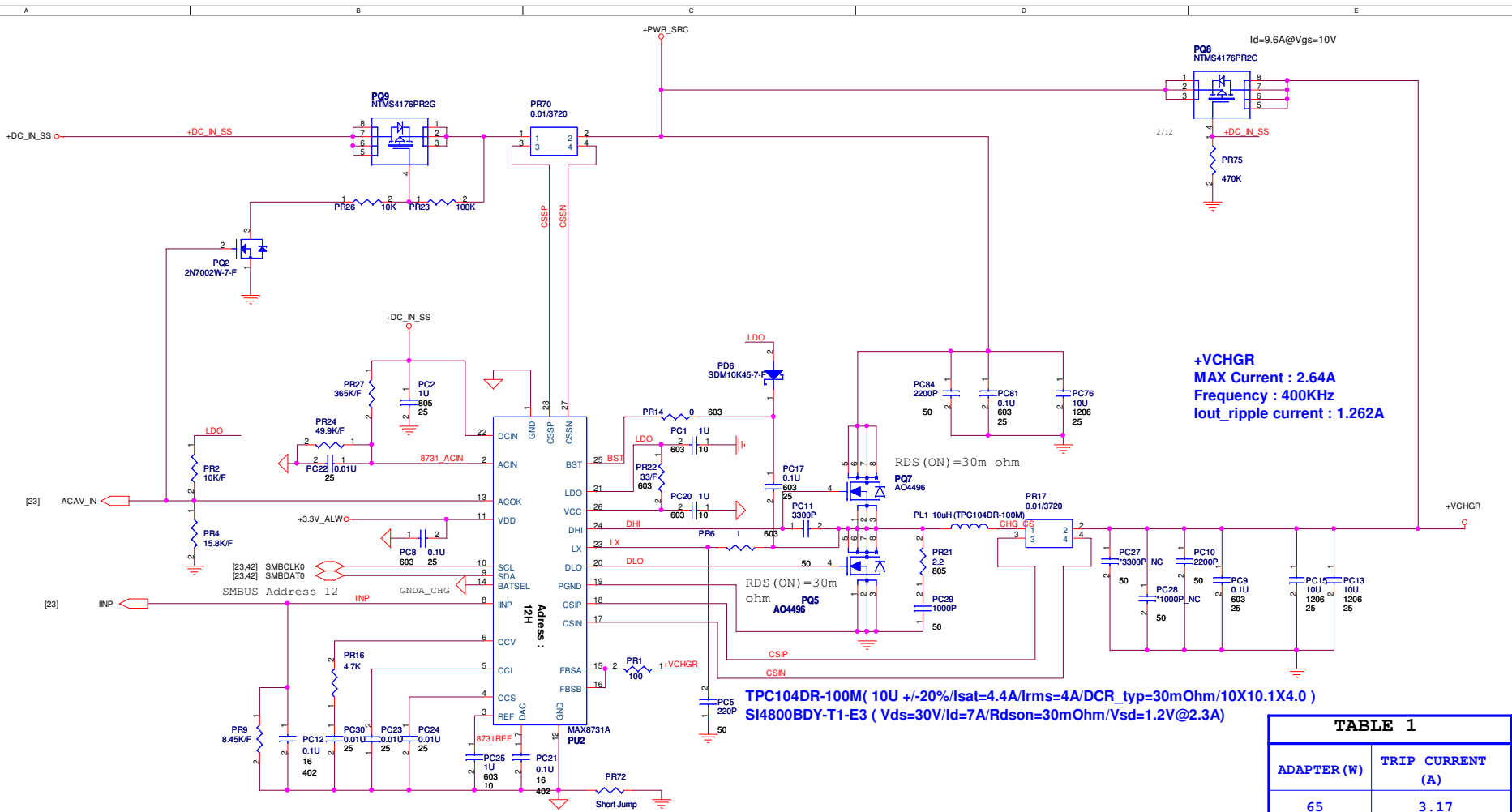
RJ-45 Connector

**QUANTA COMPUTER**

Title: LAN  
 Size: Document Number VM9M Rev: 1A  
 Date: Saturday, June 06, 2009 Sheet: 34 of 46



 <b>QUANTA COMPUTER</b>		
Title: System Reset Circuit		
Size: VMSM	Document Number:	Rev: 1A
Date: Wednesday, June 03, 2009		Sheet: 35 of 46



**TABLE 1**

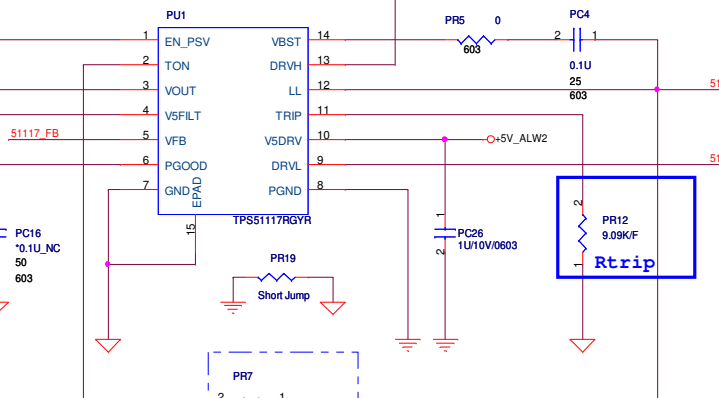
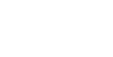
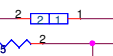
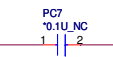
ADAPTER (W)	TRIP CURRENT (A)
65	3.17
90	4.43
130	6.43
150	7.43
200	9.75
230	11.28

Remove PR3 0ohm  
Ray 6/3

[23.38.41] RUN\_ON

[23.38] HWPG

Remove PR18 0ohm  
Ray 6/3



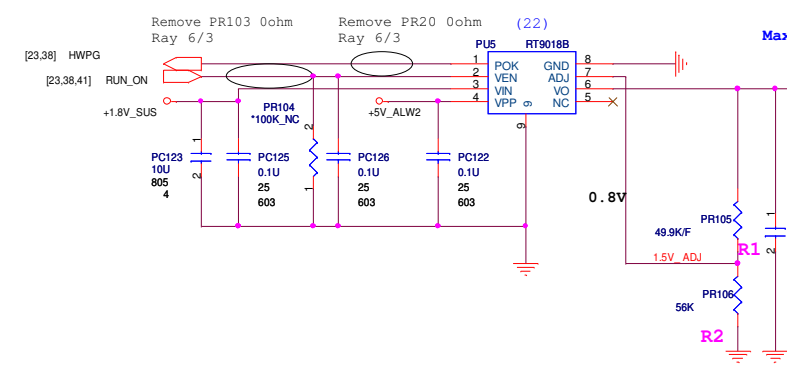
Current Limiting Setting :  
 $R_{trip}(Kohm) = 100 * (I_{ocp} - 0.5 * I_{ripple}) * R_{ds(on)}$

**+1.05V\_VCCP**  
**TDC : 14.947A**  
**OCP: 21.354A**  
**Frequency : 300KHz**  
**I<sub>out\_ripple</sub> current : 3.3207A**

$V_{OUT} = (1 + R1/R2) * 0.75$   
 The recommended R2 value is 10 K to 100 K.

**APXE2R5ARA561MF61G (560uF/2.5V/ESR16)**  
**MPO104-1R0 (1.00 +/- 20% I<sub>sat</sub>=30A/DCR<sub>max</sub>=3m Ohm/11.5X10X4)**  
**NTMFS4921NT1G ( V<sub>ds</sub>=30V/I<sub>d</sub>=10.2A@85deg/R<sub>ds(on)</sub>=10.5mOhm )**  
**NTMFS4946NT1G ( V<sub>ds</sub>=30V/ I<sub>D</sub>=14.6A@85deg/R<sub>ds(on)</sub>=5.1mOhm/V<sub>sd</sub>=1.0V@30A)**

Max current (TDC) -> 1.505A



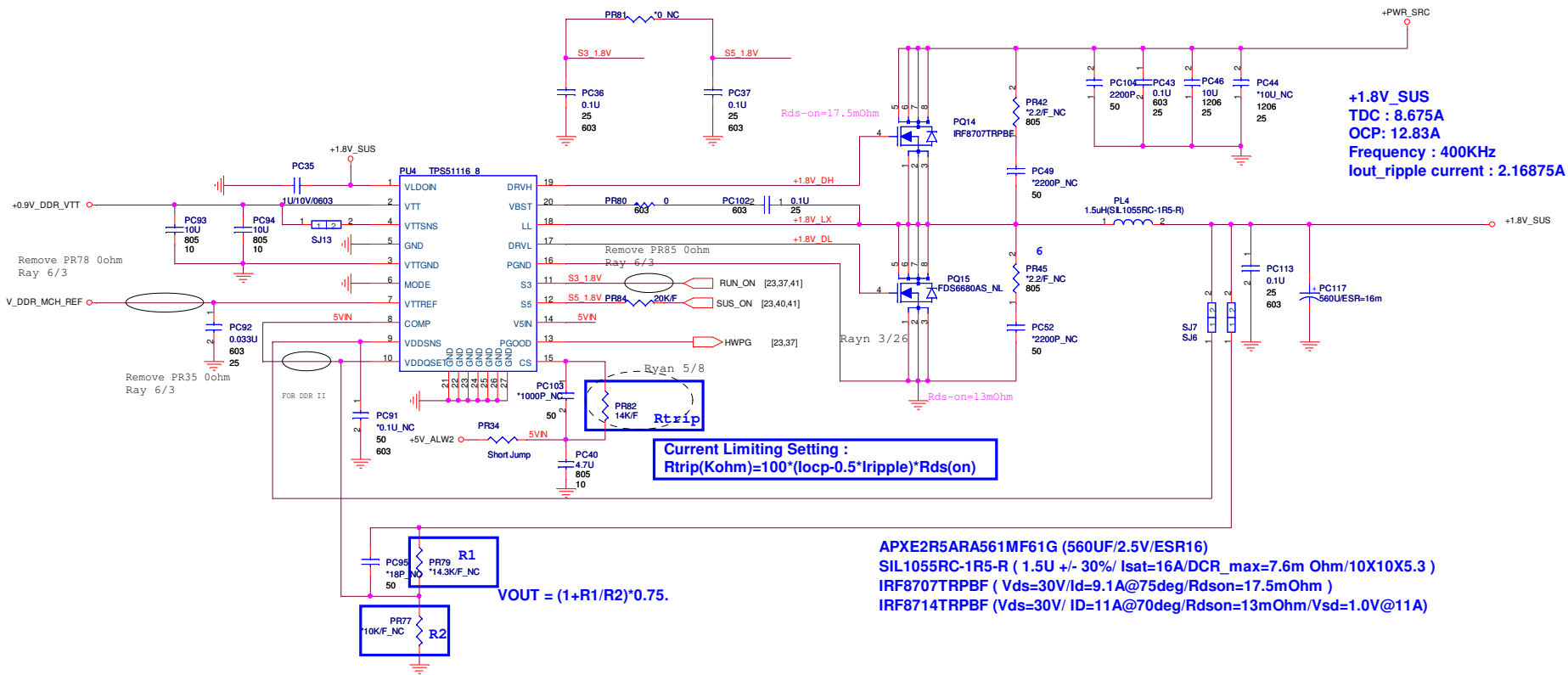
$V_{out} = 0.8 (1 + R1/R2)$   
 $= 1.5V$

**QUANTA COMPUTER**

Title: 1.05\_VCCP & 1.5V\_RUN(TPS51117)

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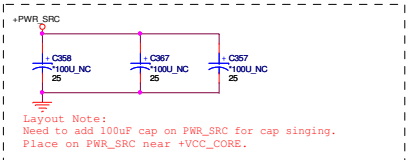


**+1.8V\_SUS**  
**TDC : 8.675A**  
**OCP: 12.83A**  
**Frequency : 400KHz**  
**lout\_ripple current : 2.16875A**

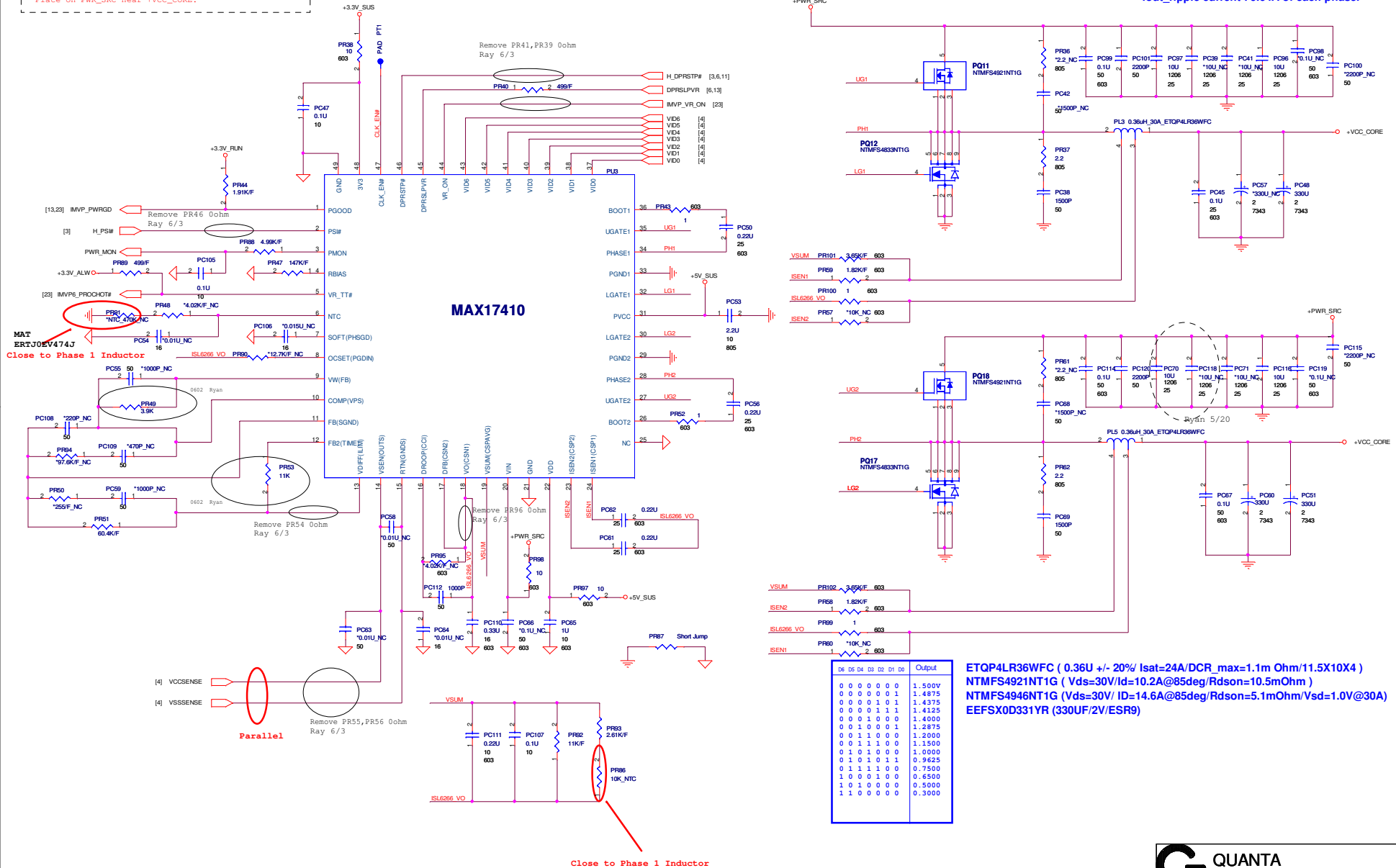
**Current Limiting Setting :**  
 $R_{trip}(Kohm)=100*(I_{ocp}-0.5*I_{ripple})*R_{ds(on)}$

$V_{OUT} = (1+R1/R2)*0.75.$

APXE2R5ARA561MF61G (560UF/2.5V/ESR16)  
 SIL1055RC-1R5-R ( 1.5U +/- 30%/ Isat=16A/DCR\_max=7.6m Ohm/10X10X5.3 )  
 IRF8707TRPBF ( Vds=30V/Id=9.1A@75deg/Rdson=17.5mOhm )  
 IRF8714TRPBF ( Vds=30V/ ID=11A@70deg/Rdson=13mOhm/Vsd=1.0V@11A)



**+VCC\_CORE**  
**TDC : 35A**  
**MAX:47A**  
**Frequency : 300KHz**  
**Iout\_ripple current : 9.64A of each phase.**



**MAX17410**

Close to Phase 1 Inductor

Parallel

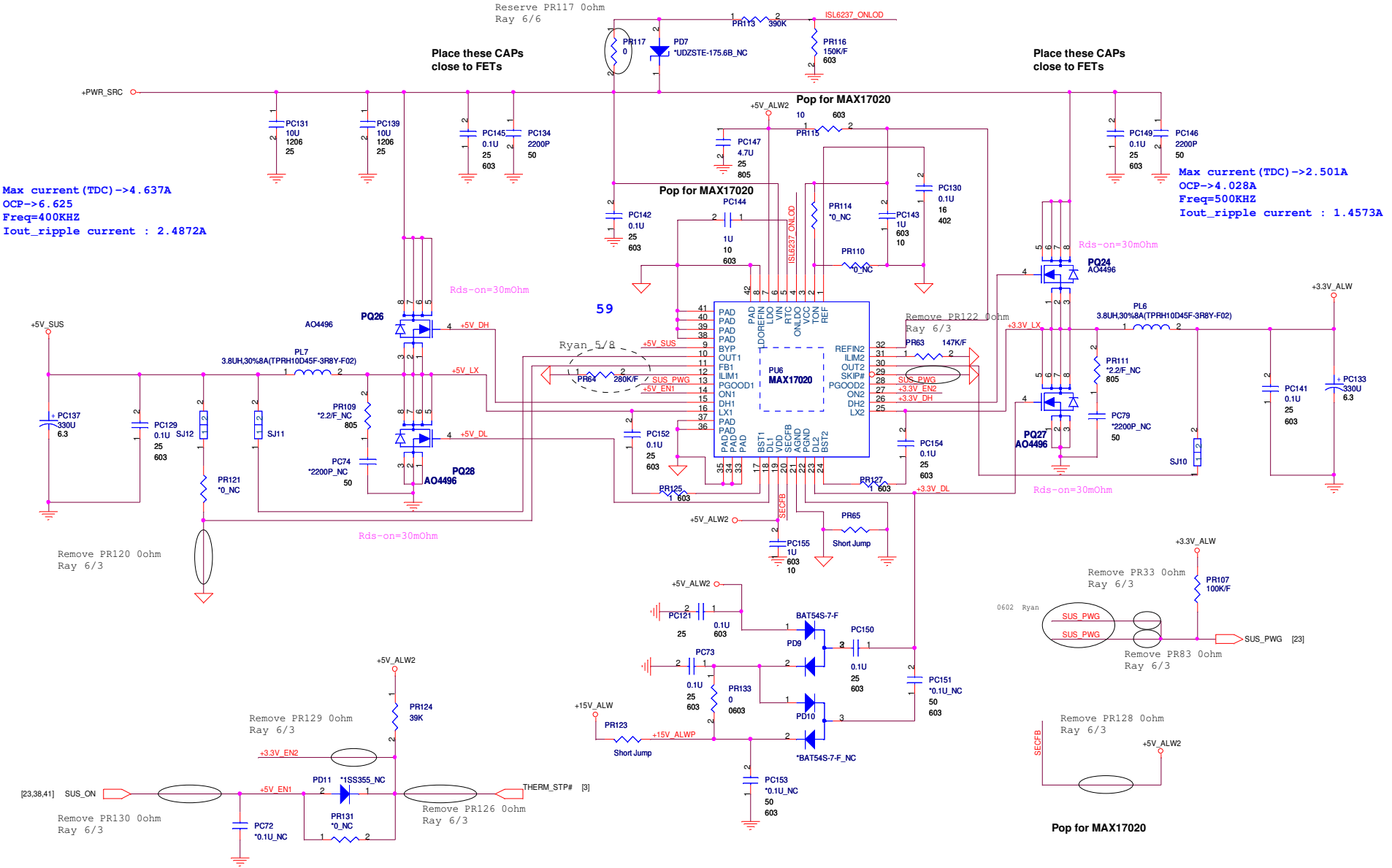
Close to Phase 1 Inductor

D6	D5	D4	D3	D2	D1	D0	Output
0	0	0	0	0	0	0	1.500V
0	0	0	0	0	0	1	1.4875
0	0	0	0	1	0	1	1.4375
0	0	0	1	0	0	1	1.4125
0	0	0	1	1	0	1	1.4000
0	0	1	0	0	0	1	1.2875
0	0	1	0	0	1	0	1.2000
0	0	1	1	1	0	0	1.1500
0	1	0	1	0	0	0	1.0000
0	1	0	1	0	1	1	0.9625
0	1	1	1	0	0	0	0.7500
1	0	0	1	0	0	0	0.6500
1	0	1	0	0	0	0	0.5000
1	1	0	0	0	0	0	0.3000


ETQP4LR36WFC ( 0.36µ +/- 20% / Isat=24A/DCR\_max=1.1m Ohm/11.5X10X4 )  
 NTMFS4921NT1G ( Vds=30V/Id=10.2A@85deg/Rdson=10.5mOhm )  
 NTMFS4946NT1G ( Vds=30V/ ID=14.6A@85deg/Rdson=5.1mOhm/Vsd=1.0V@30A )  
 EEF5X0D331YR (330UF/2V/ESR9)



# DC/DC +3V\_ALW/+5V\_SUS/+5V\_ALW /+15V\_ALW



**APX6R3ARA331MF61G (330UF/6.3V/ESR17)**  
**TPC104DR-3R8Y( 3.8U +/- 30%/ Isat=6A/DCR\_max=12m Ohm/10X10X4)**  
**SI4800BDY-T1-E3 ( Vds=30V/Id=7A/Rdson=30mOhm/Vsd=1.2V@2.3A)**



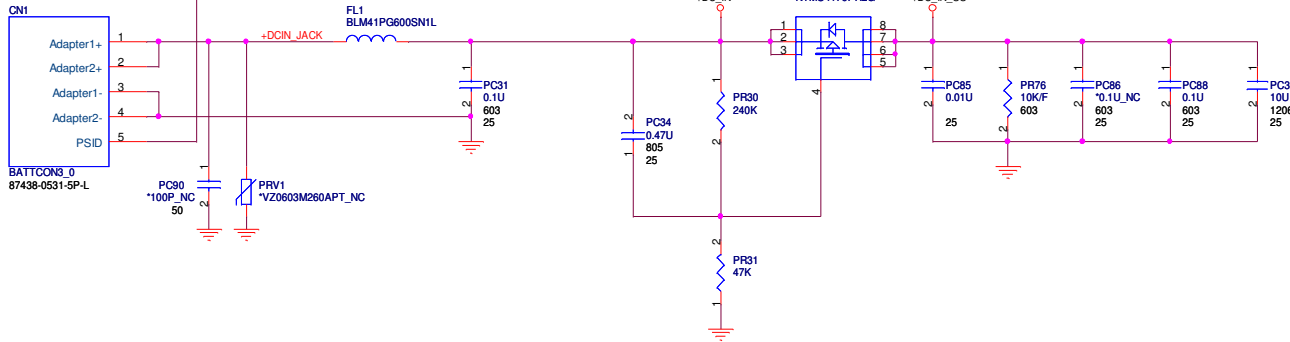
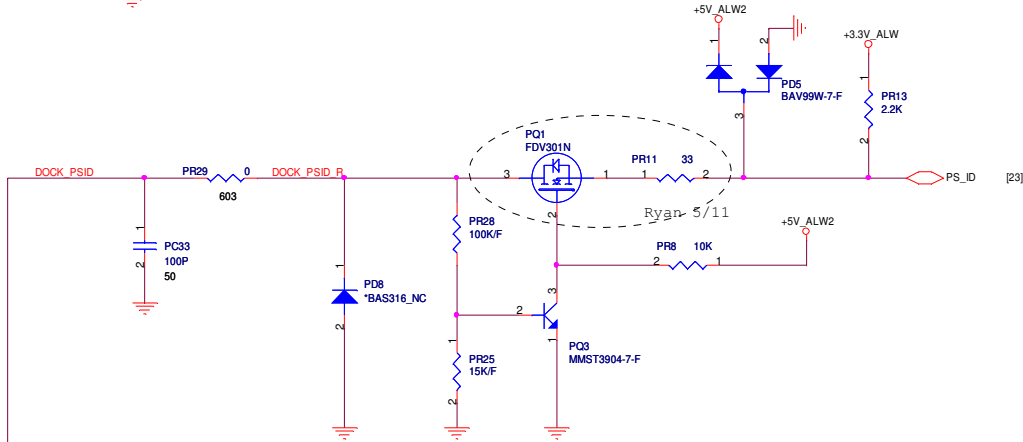
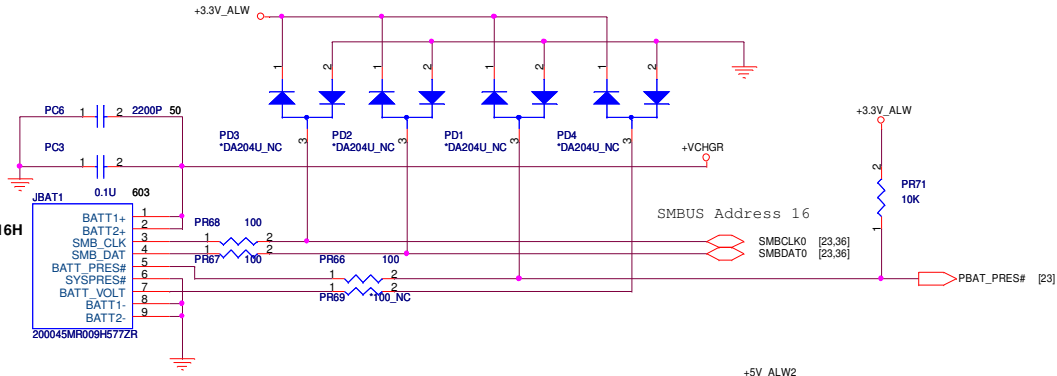
**QUANTA  
COMPUTER**


Title		
3VALW.5V.3V.(MAX17020)		
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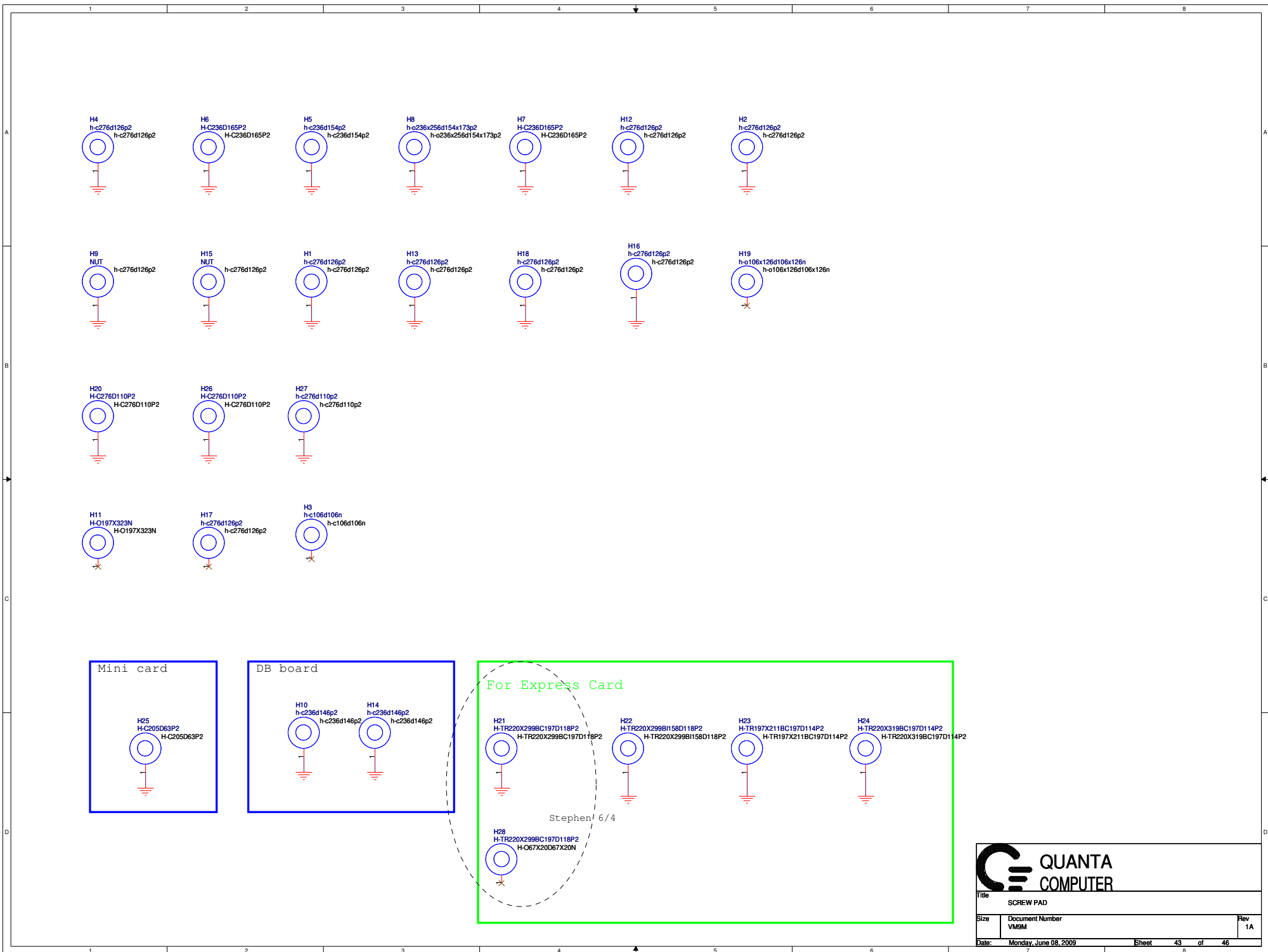




Adress : 16H



 <b>QUANTA COMPUTER</b>		
File: DCINBATT CONNECTOR		
Size: VM9M	Document Number: VM9M	Rev: 1A
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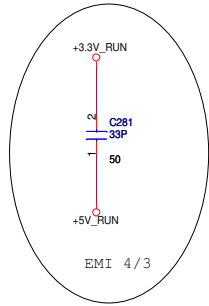
**QUANTA COMPUTER**


Title: SCREW PAD

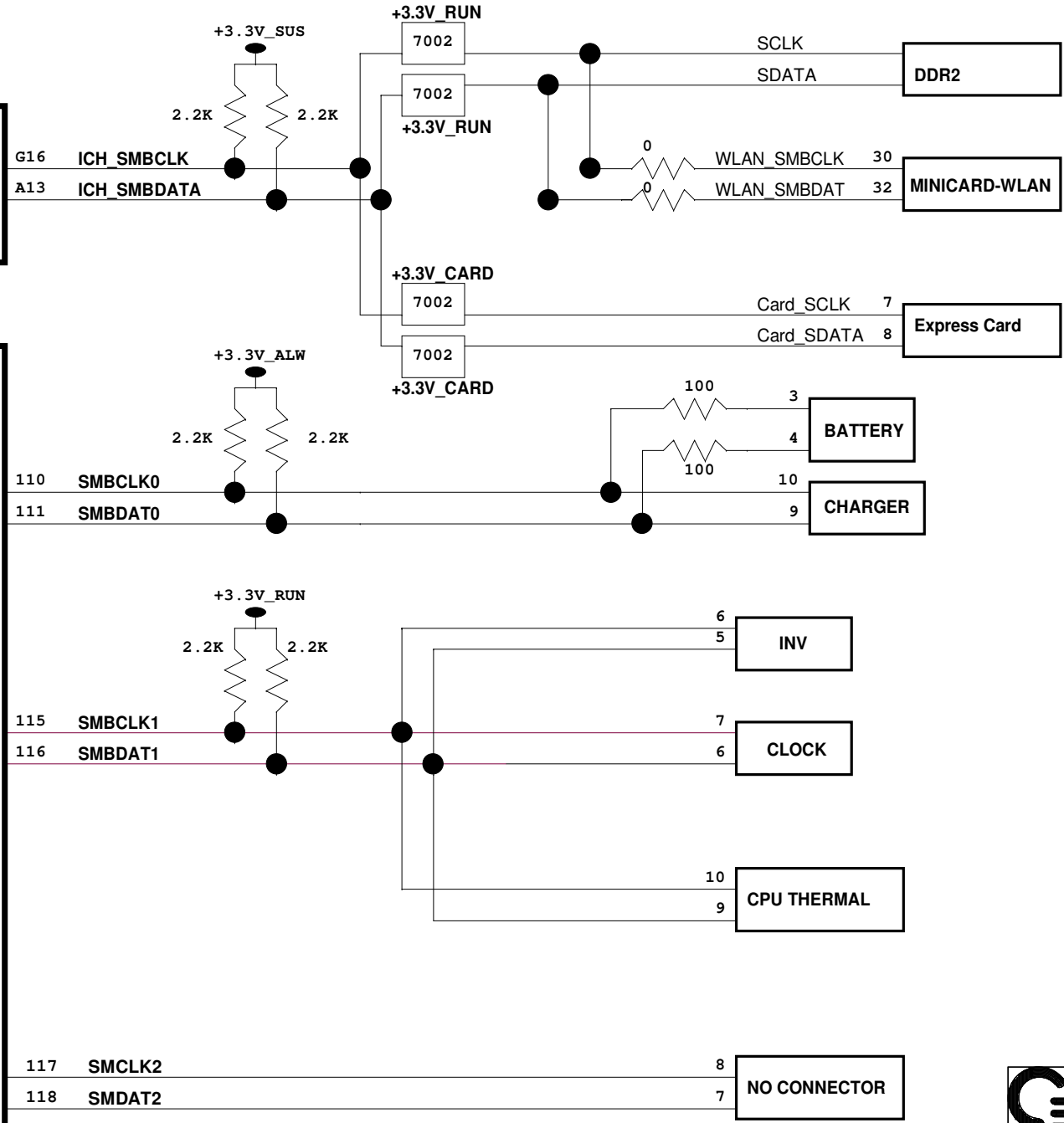
Size: VMSM	Document Number: VMSM	Rev: 1A
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Reserved for EMI.



 <b>QUANTA COMPUTER</b>		
Title: EMI CAP		
Size:	Document Number: VM5M	Rev: 1A
Date: Wednesday, June 03, 2009 Sheet 44 of 46		



Title: SMBUS BLOCK		
Size:	Document Number: VM5M	Rev: 1A
Date: Wednesday, June 03, 2009		
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