

RM3 (Paltrow MLK) Block Diagram

VER : 3A

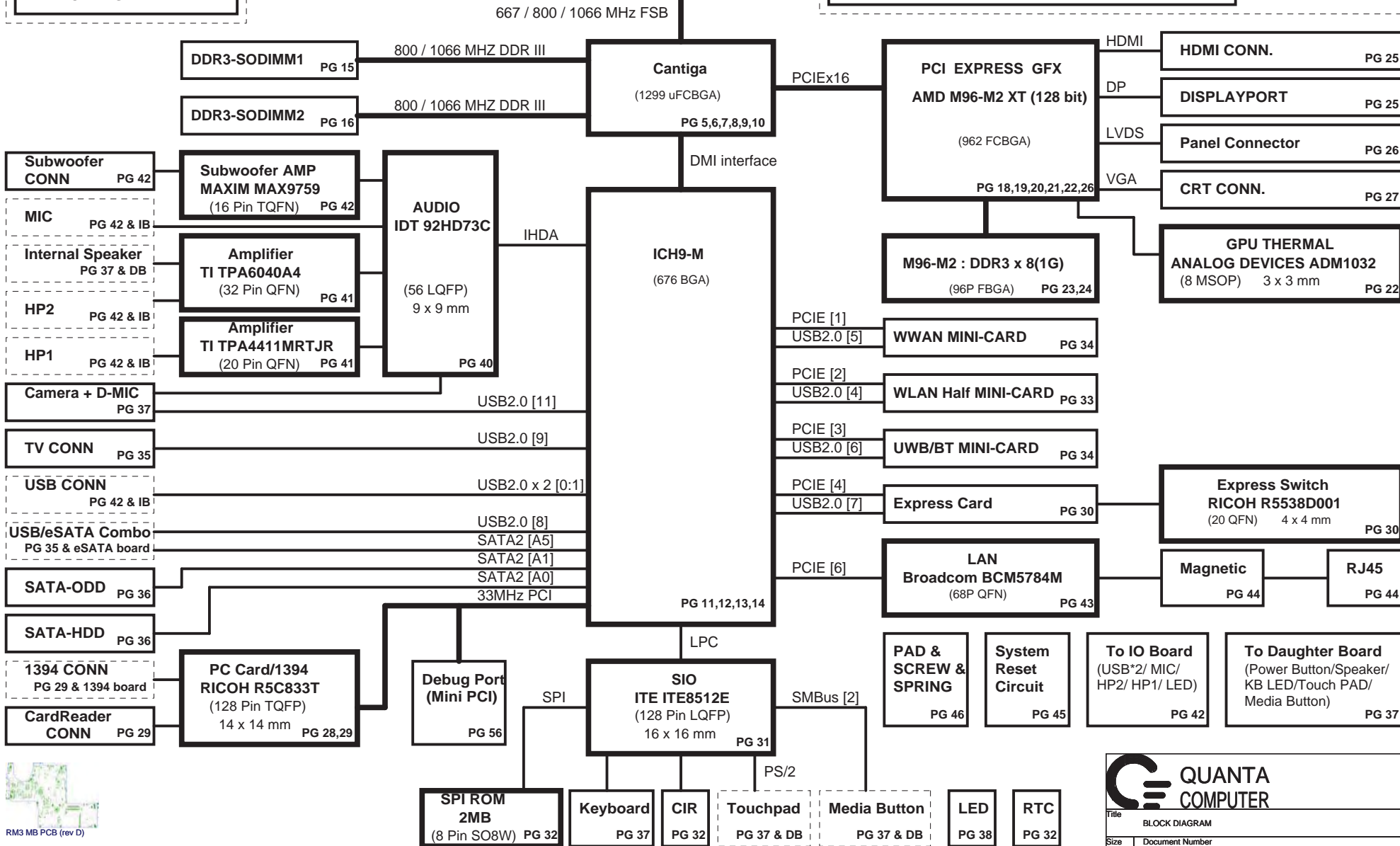
PWA : Y503R/Y504R(TV)
PWB : Y505R
SCH : Y506R

SYSTEM POWER

REGULATOR +1.5V_RUN/+1.05V_VCCP PG 48	SYS VR +5V_ALW2/+3.3V_ALW +5V_ALW/+15V_ALW PG 50	VGA Core +VCC_GFX_CORE +1.1V_GFX_PCIE PG 52
DDR3 VR +1.5V_DDR/+0.75V_DDR_VTT +V_DDR_MCH_REF PG 49	CPU VR +VCC_CORE PG 51	REGULATOR +1.8V_SUS PG 53
Load Switch +5V_SUS/+3.3V_SUS/+5V_RUN/+3.3V_RUN/+1.8V_RUN PG 55		

POWER PG 54
AC/BATT CONNECTOR PG 47
BATT CHARGER

CLOCK SLG8SP513V (QFN-64) PG 17	FAN & THERMAL EMC1423 (10P TSSOP) PG 39	Penryn (478 Micro-FCPGA) PG 3,4
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QUANTA COMPUTER		
Title BLOCK DIAGRAM		
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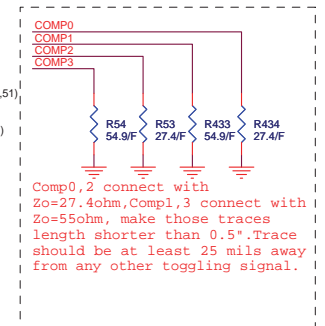
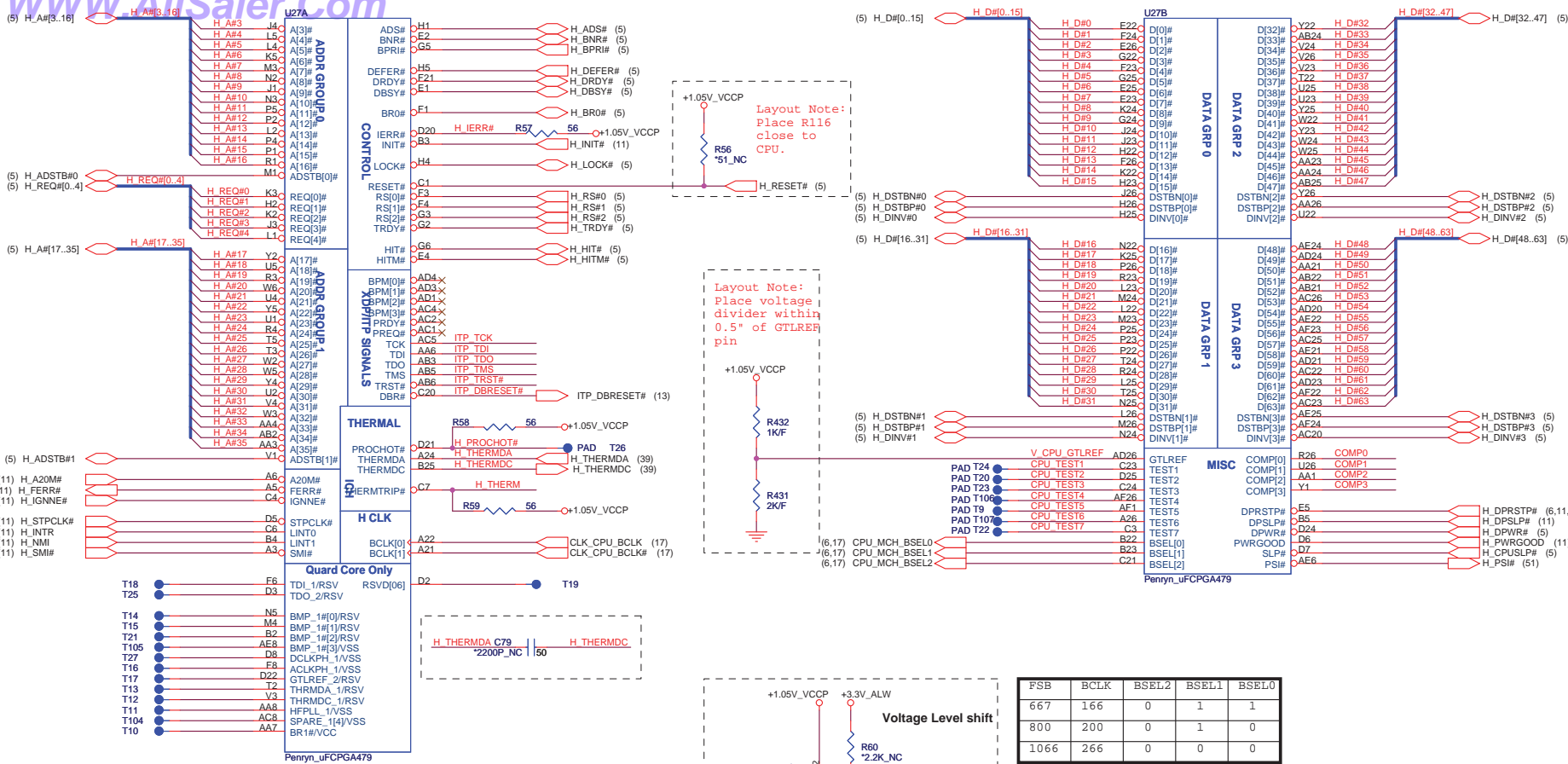
PAGE	DESCRIPTION
1	Block Diagram
2	Front Page
3-4	CPU (Penryn)
5-10	NB (Cantiga)
11-14	SB (ICH9-M)
15-16	DDR3 SO-DIMM(204P)
17	Clock Generator
18-24	GPU (M96XT)
25	HDMI & DP
26	LCD connector
27	CRT
28	Card reader PCI interface
29	Card reader & 1394 CONN
30	Express card
31	SIO (IT8512)
32	Flash/RTC/CIR
33	WLAN
34	WWAN/WPAN
35	USB & eSATA & TV
36	SATA HDD & ODD
37	KB/CCD/UI
38	LED
39	FAN/Thermal
40-42	Audio/CONN/Subwoofer (92HD73C).
43-44	LAN/RJ45 (BCM5784M)
45	System Reset Circuit
46	PAD & SCREW & SPRING
47	CHARGER (MAX8731A)
48	1.05VCCP & 1.5VRUN
49	1.5_DDR/0.75(TPS51116)
50	3.3V/5V/15V (MAX17020)
51	CPU_POWER (ISL6262A) - 2 phase
52	VGA_M86 (MAX8632)
53	1.8V_SUS (TPS51117)
54	DCIN & Batt
55	Load Switch
56	Debug Port (Mini PCI)
57	SMBUS BLOCK
58	Power statu
59	Power Block Diagram

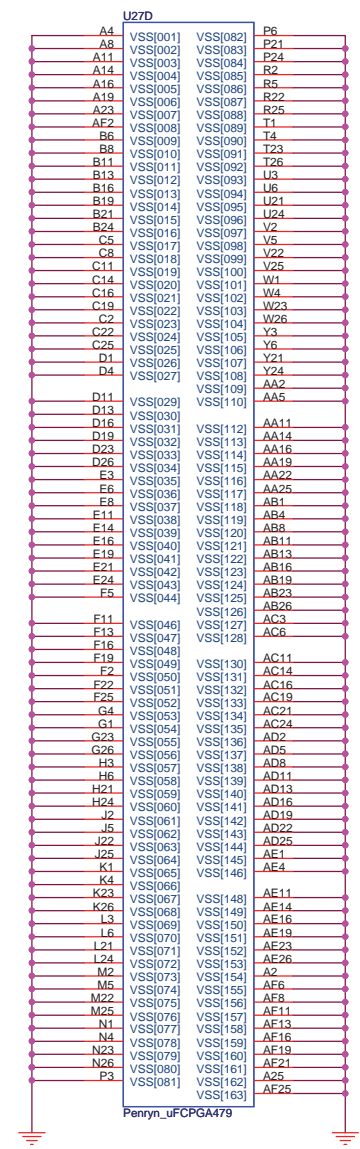
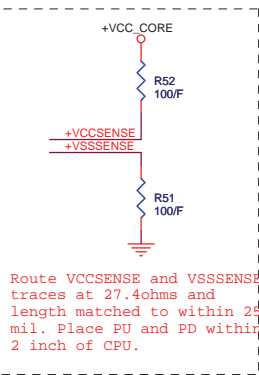
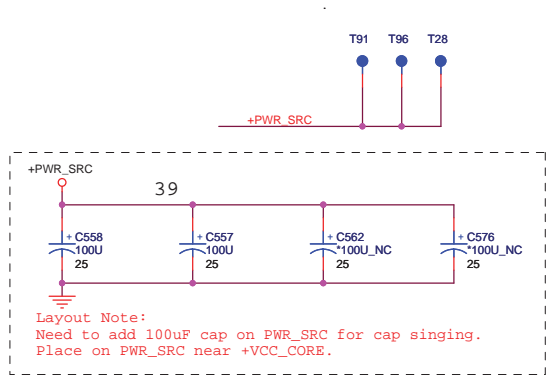
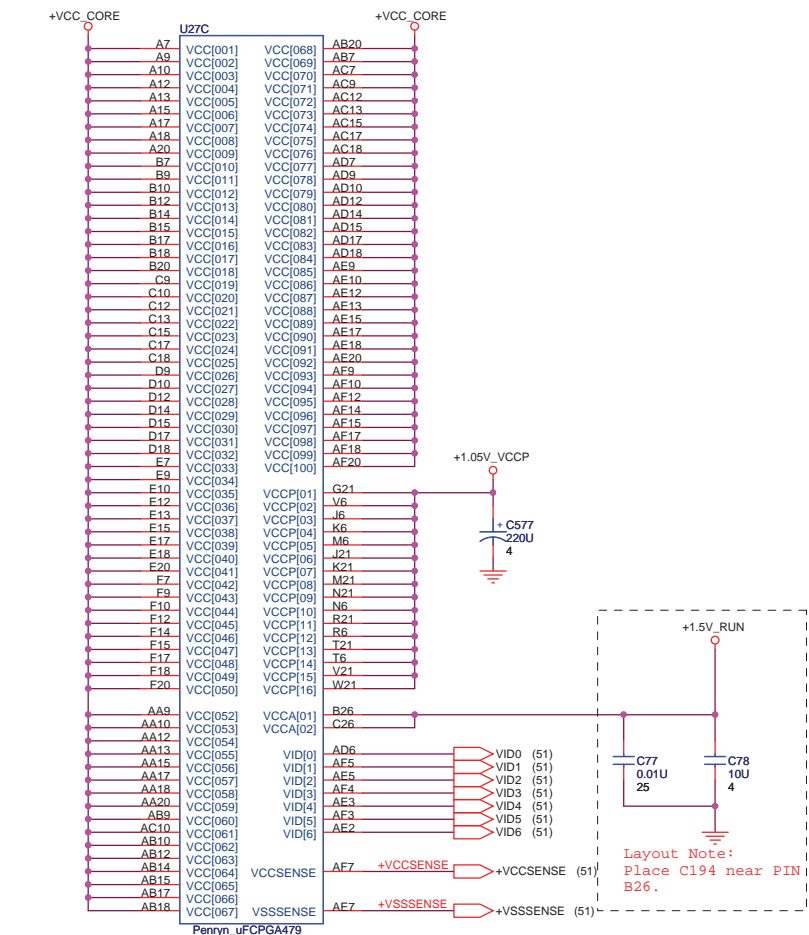
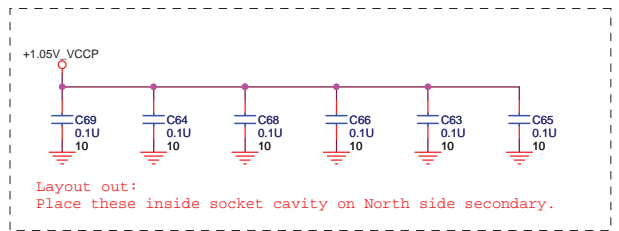
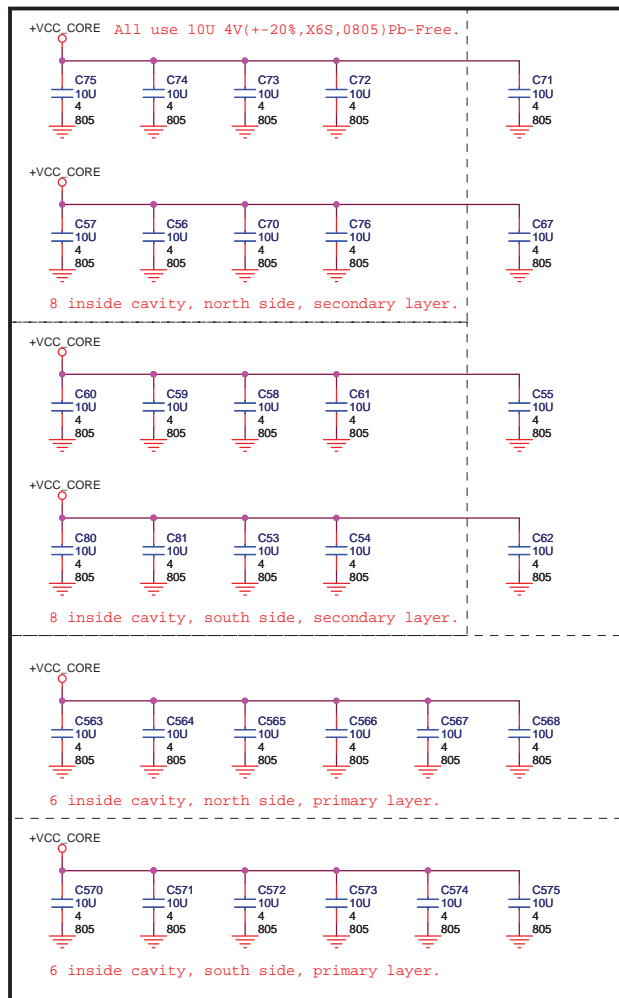
Power States

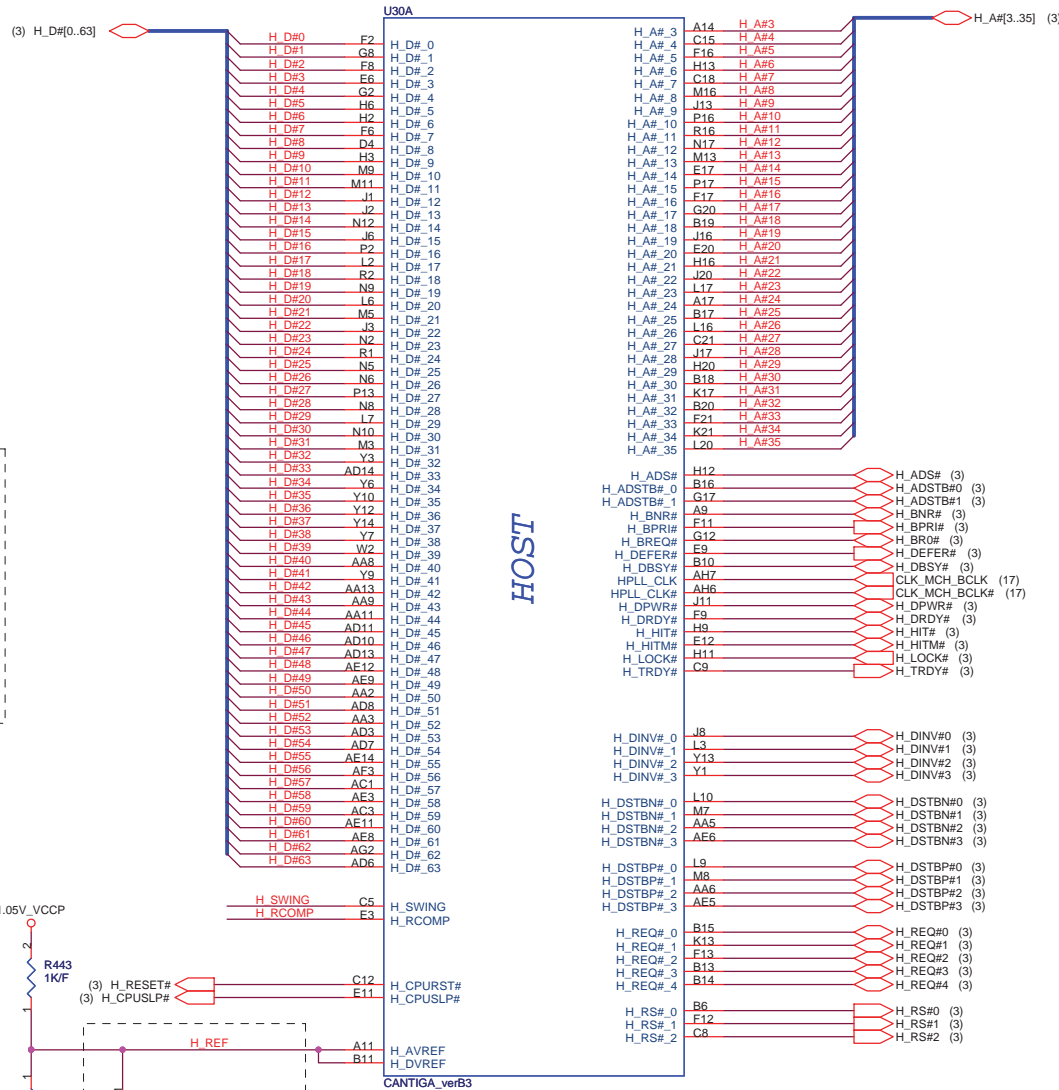
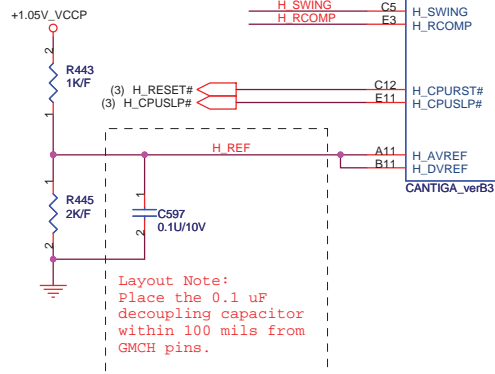
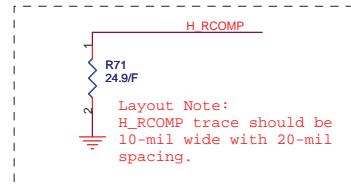
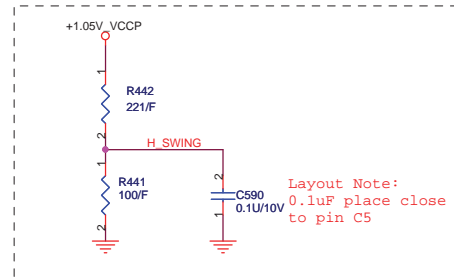
POWER PLANE	VOLTAGE	PAGE	DESCRIPTION	CONTROL SIGNAL	ACTIVE IN
+PWR_SRC	10V~+19V	4,26,32,34,48,49,50,51,52,55	MAIN POWER		S0~S5
+RTC_CELL	+3.0V~+3.3V	11,14,31,32	RTC		S0~S5
+3.3V_ALW	+3.3V	3,13,26,31,32,34,36,37,38,44,46,49,52,53,54	8051 POWER	ALWON	S0~S5
+5V_ALW	+5V	35,36,46,48,49,52,53,54	LCD/CHARGE POWER	ALWON	S0~S5
+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	14,38,50,51,53	SLP_S5# CTRLD POWER	SUS_ON	
+3.3V_SUS	+3.3V	3,11,12,13,14,20,30,37,38,43,48,49,50,51,53	SLP_S5# CTRLD POWER	3.3V_SUS_ON	
+1.8V_SUS	+1.8V	6,8,9,15,48,49,50,53,55	SODIMM POWER	DDR_ON	
+0.9V_DDR_VTT	+0.9V	16,49,53	SODIMM POWER	0.9V_DDR_VTT_ON	
+5V_RUN	+5V	14,20,25,27,36,37,38,39,40,41,53	SLP_S3# CTRLD POWER	RUN_ON	
+3.3V_RUN	+3.3V	6,8,9,11,12,13,14,15,17,19,20,22,25,26,27,28,30,33,34,36,38,39,40,41,42,53,55	SLP_S3# CTRLD POWER	3.3V_RUN_ON	
+1.8V_RUN	+1.8V	19,20,21,22,23,24,25,38,53	SDVO POWER	RUN_ON	
+1.5V_RUN	+1.5V	4,9,14,30,33,34,48,,53,55	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	3,4,5,6,8,9,11,14,37,48,55	CPU/CALISTOGA/ICH8 POWER	1.05V_RUN_ON	
+VCC_CORE	+0.7V~+1.5V	4,51	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#	
+5V_ALW2	+5V	37,38,52,53	LED power source	LDO output	

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 FRONTPAGE		
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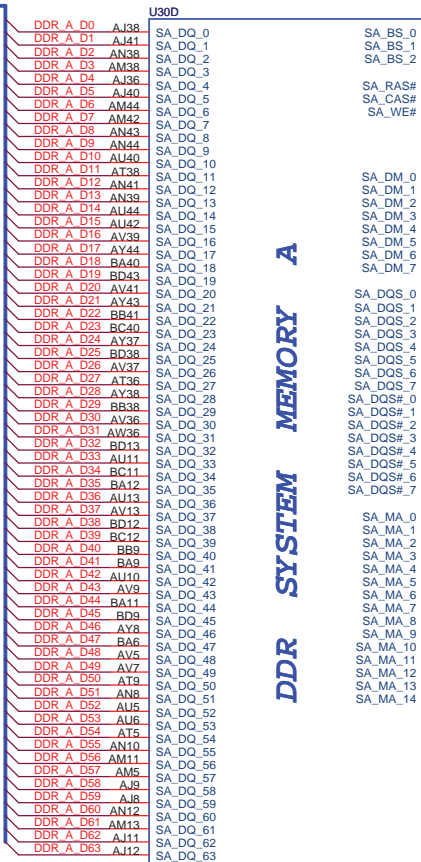




Title Cantiga_A (HOST)		
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(15) DDR_A_D[0..63]



CANTIGA_verB3

DDR SYSTEM MEMORY A

SA_BS_0
 SA_BS_1
 SA_BS_2

SA_RAS#
 SA_CAS#
 SA_WE#

SA_DM_0
 SA_DM_1
 SA_DM_2
 SA_DM_3
 SA_DM_4
 SA_DM_5
 SA_DM_6
 SA_DM_7

SA_DQS_0
 SA_DQS_1
 SA_DQS_2
 SA_DQS_3
 SA_DQS_4
 SA_DQS_5
 SA_DQS_6
 SA_DQS_7

SA_DQS#_0
 SA_DQS#_1
 SA_DQS#_2
 SA_DQS#_3
 SA_DQS#_4
 SA_DQS#_5
 SA_DQS#_6
 SA_DQS#_7

SA_MA_0
 SA_MA_1
 SA_MA_2
 SA_MA_3
 SA_MA_4
 SA_MA_5
 SA_MA_6
 SA_MA_7
 SA_MA_8
 SA_MA_9
 SA_MA_10
 SA_MA_11
 SA_MA_12
 SA_MA_13
 SA_MA_14

BD21 DDR A BS0
 BG18 DDR A BS1
 AT25 DDR A BS2

BB20 DDR A RAS#
 BD20 DDR A CAS#
 AY20 DDR A WE#

AM37 DDR A DM0
 AT41 DDR A DM1
 AY41 DDR A DM2
 AU39 DDR A DM3
 BB12 DDR A DM4
 AY6 DDR A DM5
 AT7 DDR A DM6
 AJ6 DDR A DM7

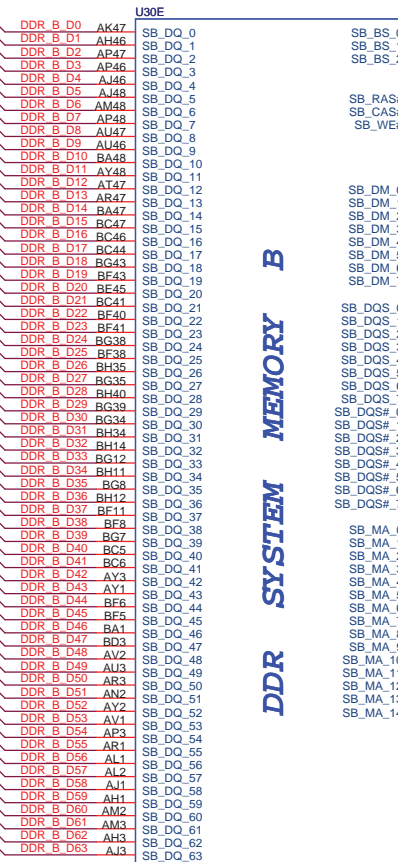
AJ44 DDR A DQS0
 AT44 DDR A DQS1
 BA43 DDR A DQS2
 BC37 DDR A DQS3
 AW12 DDR A DQS4
 BC8 DDR A DQS5
 AU8 DDR A DQS6
 AM7 DDR A DQS7
 AJ43 DDR A DQS8

AT43 DDR A DQS#0
 BA44 DDR A DQS#1
 BD37 DDR A DQS#2
 AY12 DDR A DQS#3
 BD8 DDR A DQS#4
 AU9 DDR A DQS#5
 AM8 DDR A DQS#6
 AM8 DDR A DQS#7

BA21 DDR A MA0
 BC24 DDR A MA1
 BG24 DDR A MA2
 BH24 DDR A MA3
 BG25 DDR A MA4
 BA24 DDR A MA5
 BD24 DDR A MA6
 BG27 DDR A MA7
 BC25 DDR A MA8
 AW24 DDR A MA9
 BC21 DDR A MA10
 BG26 DDR A MA11
 BH26 DDR A MA12
 BH17 DDR A MA13
 AY25 DDR A MA14

DDR A_DM[0..7] (15)
 DDR A_DQS[0..7] (15)
 DDR A_DQS# [0..7] (15)
 DDR A_MA [0..14] (15)

(16) DDR_B_D[0..63]



CANTIGA_verB3

DDR SYSTEM MEMORY B

SB_BS_0
 SB_BS_1
 SB_BS_2

SB_RAS#
 SB_CAS#
 SB_WE#

SB_DM_0
 SB_DM_1
 SB_DM_2
 SB_DM_3
 SB_DM_4
 SB_DM_5
 SB_DM_6
 SB_DM_7

SB_DQS_0
 SB_DQS_1
 SB_DQS_2
 SB_DQS_3
 SB_DQS_4
 SB_DQS_5
 SB_DQS_6
 SB_DQS_7

SB_DQS#_0
 SB_DQS#_1
 SB_DQS#_2
 SB_DQS#_3
 SB_DQS#_4
 SB_DQS#_5
 SB_DQS#_6
 SB_DQS#_7

SB_MA_0
 SB_MA_1
 SB_MA_2
 SB_MA_3
 SB_MA_4
 SB_MA_5
 SB_MA_6
 SB_MA_7
 SB_MA_8
 SB_MA_9
 SB_MA_10
 SB_MA_11
 SB_MA_12
 SB_MA_13
 SB_MA_14

BC16 DDR B BS0
 BB17 DDR B BS1
 BB33 DDR B BS2

AU17 DDR B RAS#
 BG16 DDR B CAS#
 BF14 DDR B WE#

AM47 DDR B DM0
 AY47 DDR B DM1
 BD40 DDR B DM2
 BF35 DDR B DM3
 BG11 DDR B DM4
 BA3 DDR B DM5
 AP1 DDR B DM6
 AK2 DDR B DM7

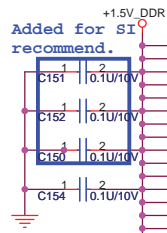
AL47 DDR B DQS0
 AV48 DDR B DQS1
 BG41 DDR B DQS2
 BG37 DDR B DQS3
 BH9 DDR B DQS4
 BB2 DDR B DQS5
 AU1 DDR B DQS6
 AN6 DDR B DQS7
 AL46 DDR B DQS#0
 AV47 DDR B DQS#1
 BH41 DDR B DQS#2
 BH37 DDR B DQS#3
 BG9 DDR B DQS#4
 BC2 DDR B DQS#5
 AT2 DDR B DQS#6
 AN5 DDR B DQS#7

AV17 DDR B MA0
 BA25 DDR B MA1
 BC25 DDR B MA2
 AU25 DDR B MA3
 AW25 DDR B MA4
 BB28 DDR B MA5
 AU28 DDR B MA6
 AW28 DDR B MA7
 AT33 DDR B MA8
 BD33 DDR B MA9
 BB16 DDR B MA10
 AW33 DDR B MA11
 AY33 DDR B MA12
 BH15 DDR B MA13
 AU33 DDR B MA14

DDR B_DM[0..7] (16)
 DDR B_DQS[0..7] (16)
 DDR B_DQS# [0..7] (16)
 DDR B_MA [0..14] (16)



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2600mA

U30G

VCC_SM_1
VCC_SM_2
VCC_SM_3
VCC_SM_4
VCC_SM_5
VCC_SM_6
VCC_SM_7
VCC_SM_8
VCC_SM_9
VCC_SM_10
VCC_SM_11
VCC_SM_12
VCC_SM_13
VCC_SM_14
VCC_SM_15
VCC_SM_16
VCC_SM_17
VCC_SM_18
VCC_SM_19
VCC_SM_20
VCC_SM_21
VCC_SM_22
VCC_SM_23
VCC_SM_24
VCC_SM_25
VCC_SM_26
VCC_SM_27
VCC_SM_28
VCC_SM_29
VCC_SM_30
VCC_SM_31
VCC_SM_32
VCC_SM_33
VCC_SM_34
VCC_SM_35
VCC_SM_36/NC
VCC_SM_37/NC
VCC_SM_38/NC
VCC_SM_39/NC
VCC_SM_40/NC
VCC_SM_41/NC
VCC_SM_42/NC

POWER

VCC SM

VCC GFX NCTF

V26
AE25
AB25
AA25
AE24
AC24
AA24
Y24
AE23
AC23
AB23
AA23
AJ21
AG21
AE21
AC21
AA21
Y21
AH20
AF20
AE20
AC20
AB20
AA20
T17
T16
AM15
AL15
AE15
AJ15
AH15
AG15
AF15
AB15
AA15
Y15
V15
U15
AM14
U14
T14

VCC GFX

✗A114
✗H114

VCC_AXG_SENSE
VSS_AXG_SENSE

CANTIGA_verB3

VCC SM LF

VCC_SM_LF1
VCC_SM_LF2
VCC_SM_LF3
VCC_SM_LF4
VCC_SM_LF5
VCC_SM_LF6
VCC_SM_LF7

AV44
BA37
AM40
AV21
AY5
AM10
BB13

VCCSM LF1
VCCSM LF2
VCCSM LF3
VCCSM LF4
VCCSM LF5
VCCSM LF6
VCCSM LF7

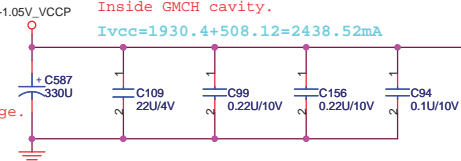


VCC AXG NCTF_1
VCC AXG NCTF_2
VCC AXG NCTF_3
VCC AXG NCTF_4
VCC AXG NCTF_5
VCC AXG NCTF_6
VCC AXG NCTF_7
VCC AXG NCTF_8
VCC AXG NCTF_9
VCC AXG NCTF_10
VCC AXG NCTF_11
VCC AXG NCTF_12
VCC AXG NCTF_13
VCC AXG NCTF_14
VCC AXG NCTF_15
VCC AXG NCTF_16
VCC AXG NCTF_17
VCC AXG NCTF_18
VCC AXG NCTF_19
VCC AXG NCTF_20
VCC AXG NCTF_21
VCC AXG NCTF_22
VCC AXG NCTF_23
VCC AXG NCTF_24
VCC AXG NCTF_25
VCC AXG NCTF_26
VCC AXG NCTF_27
VCC AXG NCTF_28
VCC AXG NCTF_29
VCC AXG NCTF_30
VCC AXG NCTF_31
VCC AXG NCTF_32
VCC AXG NCTF_33
VCC AXG NCTF_34
VCC AXG NCTF_35
VCC AXG NCTF_36
VCC AXG NCTF_37
VCC AXG NCTF_38
VCC AXG NCTF_39
VCC AXG NCTF_40
VCC AXG NCTF_41
VCC AXG NCTF_42
VCC AXG NCTF_43
VCC AXG NCTF_44
VCC AXG NCTF_45
VCC AXG NCTF_46
VCC AXG NCTF_47
VCC AXG NCTF_48
VCC AXG NCTF_49
VCC AXG NCTF_50
VCC AXG NCTF_51
VCC AXG NCTF_52
VCC AXG NCTF_53
VCC AXG NCTF_54
VCC AXG NCTF_55
VCC AXG NCTF_56
VCC AXG NCTF_57
VCC AXG NCTF_58
VCC AXG NCTF_59
VCC AXG NCTF_60

W28
V28
W26
V26
W25
V25
W24
V24
W23
V23
AM21
AL21
AK21
W21
V21
U21
AM20
AL20
W20
V20
U20
AM19
AL19
AK19
AH19
AG19
AF19
AE19
AB19
AA19
Y19
W19
V19
U19
AM17
AL17
AK17
AH17
AG17
AF17
AE17
AB17
AC17
Y17
W17
V17
U17
AM16
AL16
AK16
AH16
AG16
AF16
AE16
AB16
AA16
Y16
W16
V16
U16

Layout Note:
370 mils from edge.

Layout Note:
Inside GMCH cavity.
 $I_{vcc} = 1930.4 + 508.12 = 2438.52mA$



+1.5V_DDR

C142
0.1u/10V

C245
330u/2.5V

C140
22u/4V

C153
22u/4V

VCC_SM

Layout Note:
Place C233 where LVDS
and DDR2 taps.

Layout Note:
Place on the edge.

+3.3V_RUN

R440
10

+VCC_GMCH_L

D25
SDMK0340L-7-F

U30F

AG34
AC34
AB34
AA34
Y34
V34
U34
AM33
AK33
AJ33
AG33
AF33
AE33
AC33
Y33
V33
W33
V33
U33
AH28
AF28
AC28
AA28
AJ26
AG26
AE26
AC26
AH25
AG25
AF25
AG24
AJ23
AH23
AE23
T32
VCC_1
VCC_2
VCC_3
VCC_4
VCC_5
VCC_6
VCC_7
VCC_8
VCC_9
VCC_10
VCC_11
VCC_12
VCC_13
VCC_14
VCC_15
VCC_16
VCC_17
VCC_18
VCC_19
VCC_20
VCC_21
VCC_22
VCC_23
VCC_24
VCC_25
VCC_26
VCC_27
VCC_28
VCC_29
VCC_30
VCC_31
VCC_32
VCC_33
VCC_34
VCC_35

POWER

VCC CORE

VCC NCTF

VCC_NCTF_1
VCC_NCTF_2
VCC_NCTF_3
VCC_NCTF_4
VCC_NCTF_5
VCC_NCTF_6
VCC_NCTF_7
VCC_NCTF_8
VCC_NCTF_9
VCC_NCTF_10
VCC_NCTF_11
VCC_NCTF_12
VCC_NCTF_13
VCC_NCTF_14
VCC_NCTF_15
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VCC_NCTF_38
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VCC_NCTF_42
VCC_NCTF_43
VCC_NCTF_44

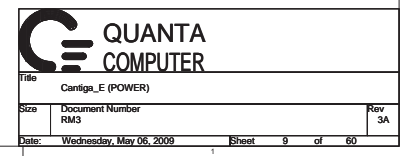
+1.05V_VCCP

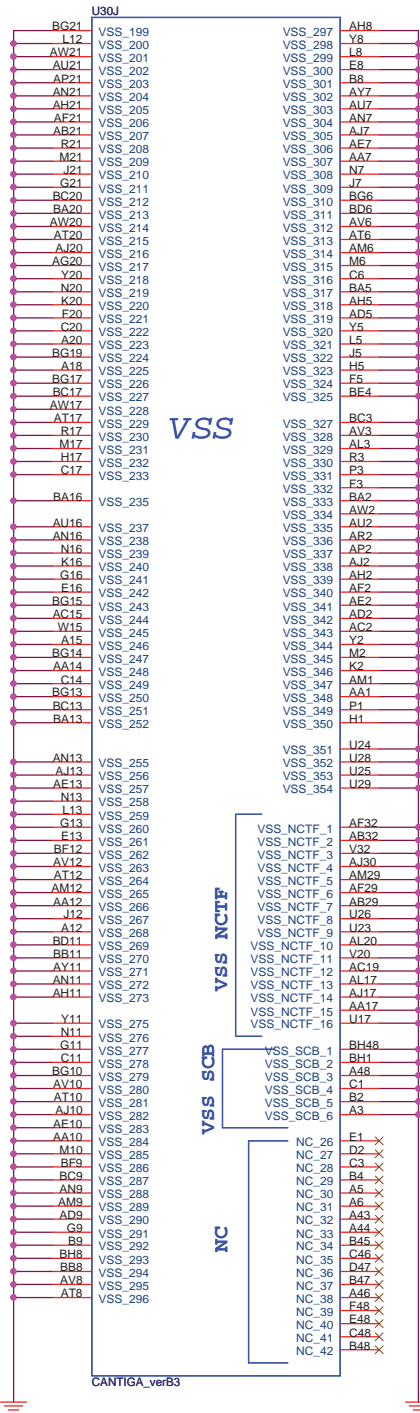
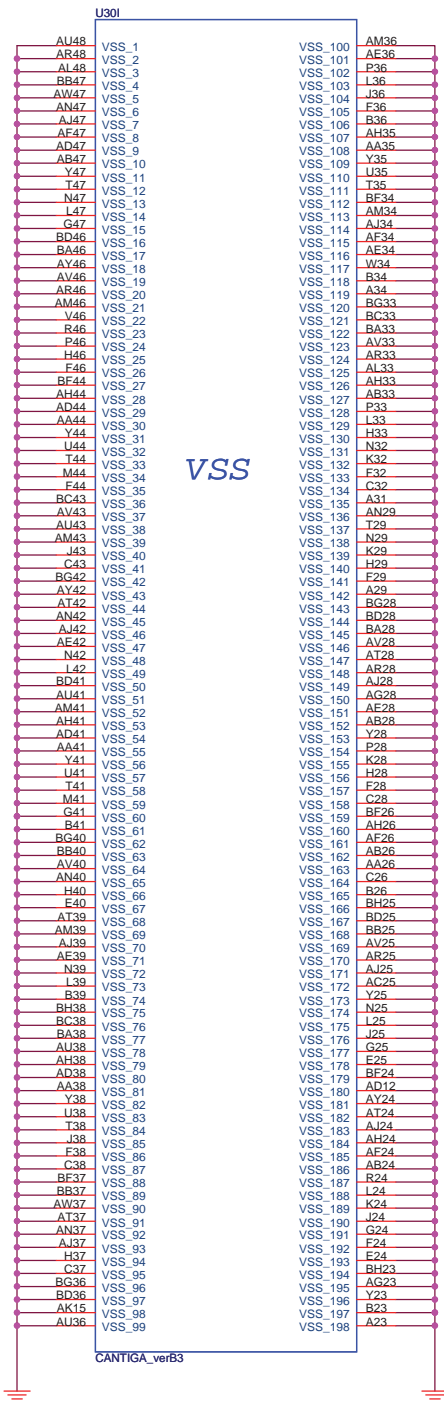
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AL32
AK32
AJ32
AH32
AG32
AE32
AC32
Y32
W32
V32
U32
AM30
AL30
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AH30
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AF30
AE30
AC30
Y30
W30
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AE29
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AA29
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AC28
AA28
Y28
W28
V28
U28
AL26
AK26
AJ26
AH26
AG26
AE26
AC26
AA26
Y26
W26
V26
U26
AL25
AK25
AJ25
AH25
AG25
AE25
AC25
AA25
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CANTIGA_verB3

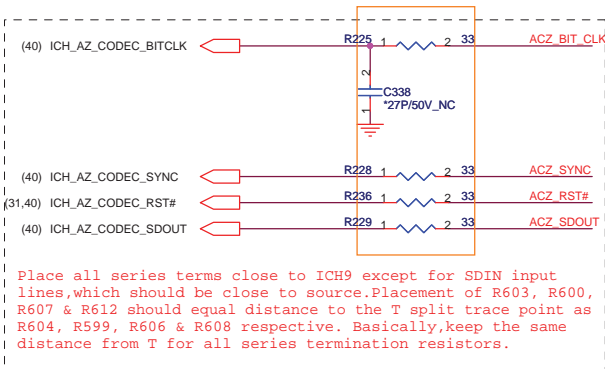
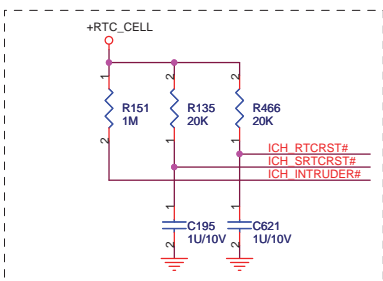


Title Cantiga_D (VCC,NCTF)		
Size RM3	Document Number	Rev 3A
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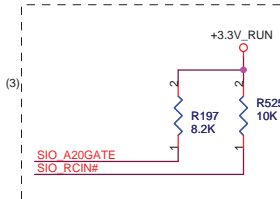
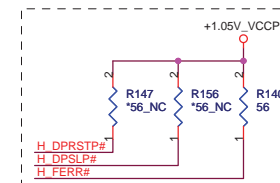
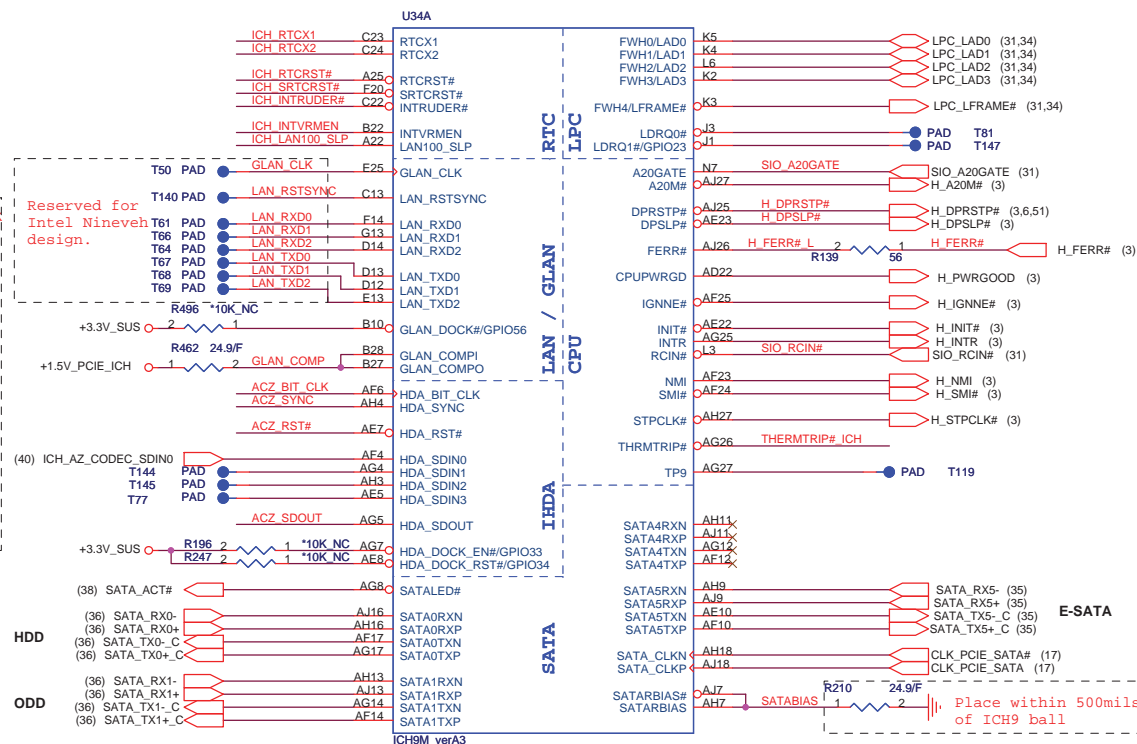
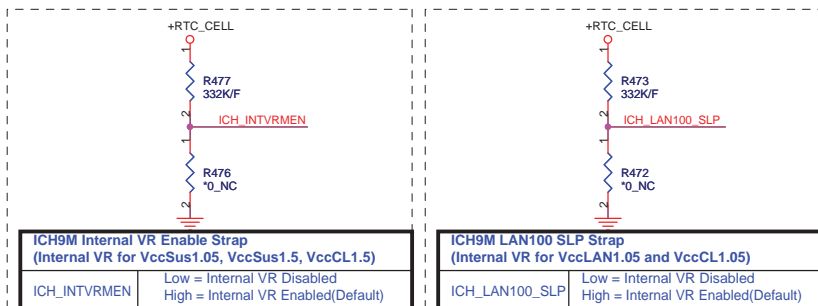




 QUANTA COMPUTER		
Title Cantiga_F (VSS)		
Size RM3	Document Number	Rev 3A
Date: Wednesday, May 06, 2009	Sheet 10	of 60

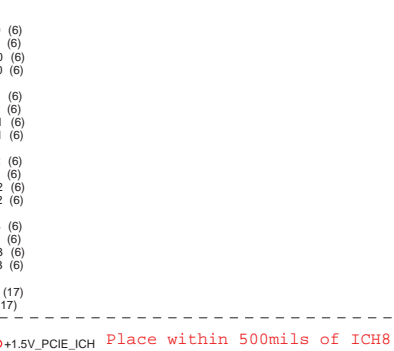
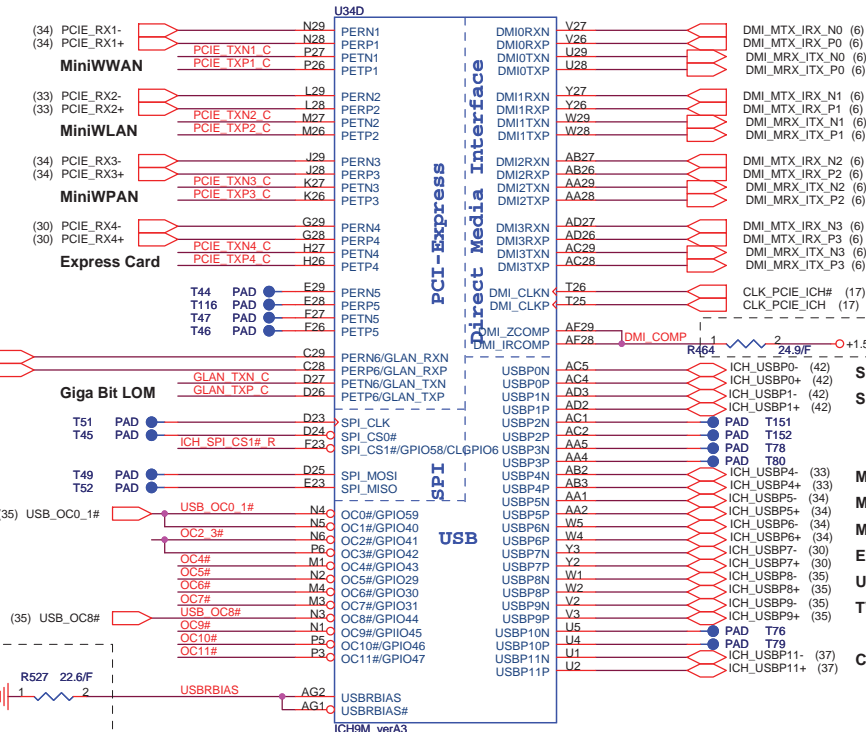
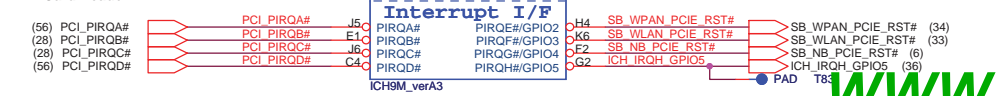
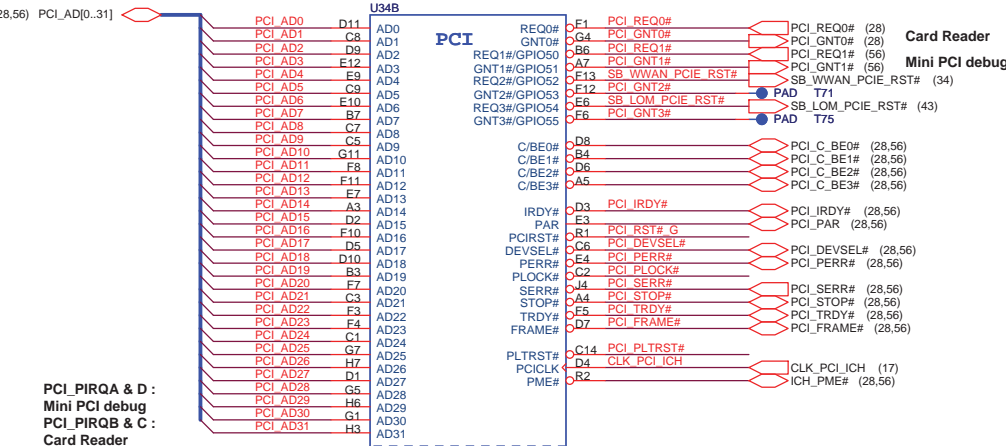
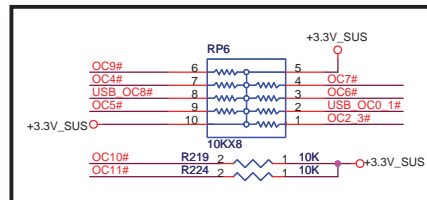
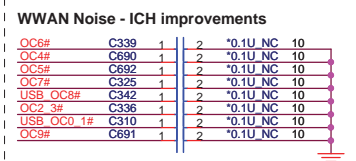
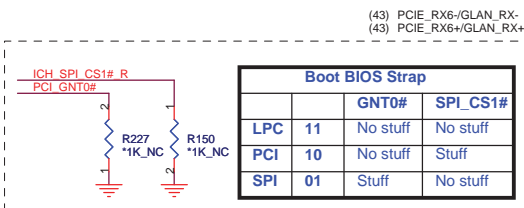
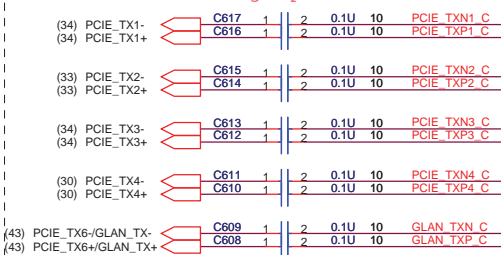


Place all series terms close to ICH9 except for SDIN input lines, which should be close to source. Placement of R603, R600, R607 & R612 should equal distance to the T split trace point as R604, R599, R606 & R608 respective. Basically, keep the same distance from T for all series termination resistors.



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

Place TX DC blocking caps close ICH8.



Side pair (Top / left, IB)

Side pair (Bottom / left, IB)

Mini Card (WLAN)

Mini Card (WWAN)

Mini Card (WPAN)

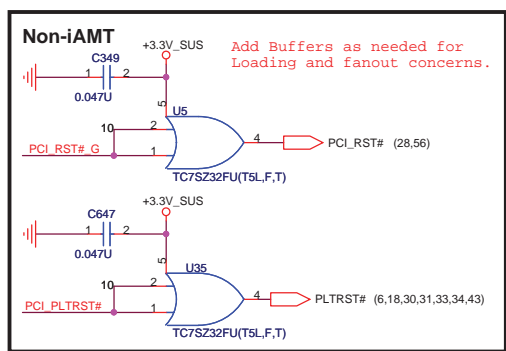
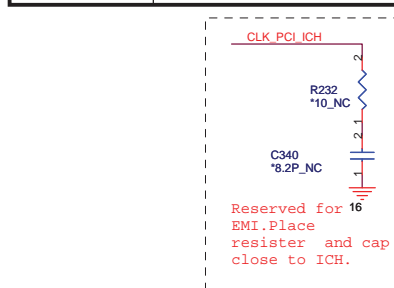
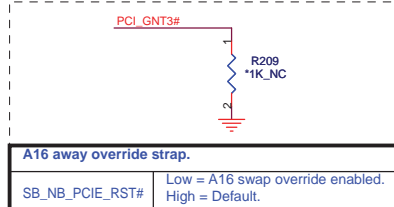
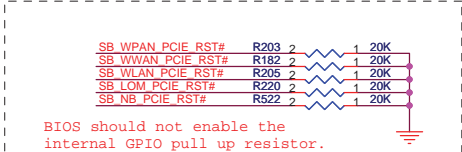
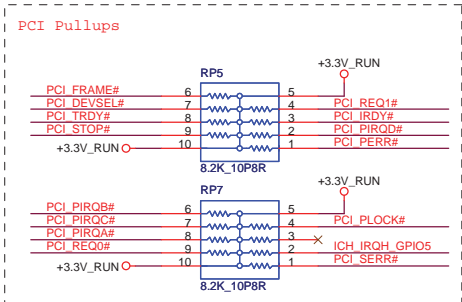
Express Card

USB W/ E SATA port

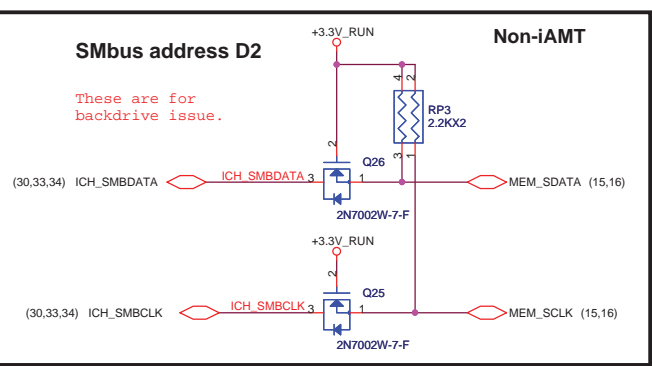
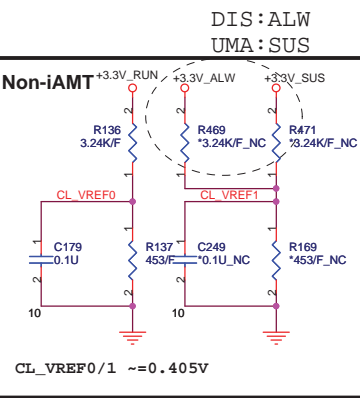
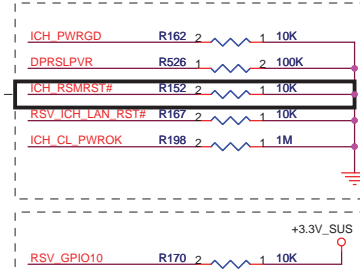
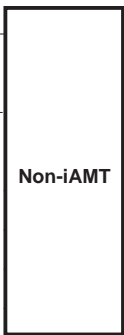
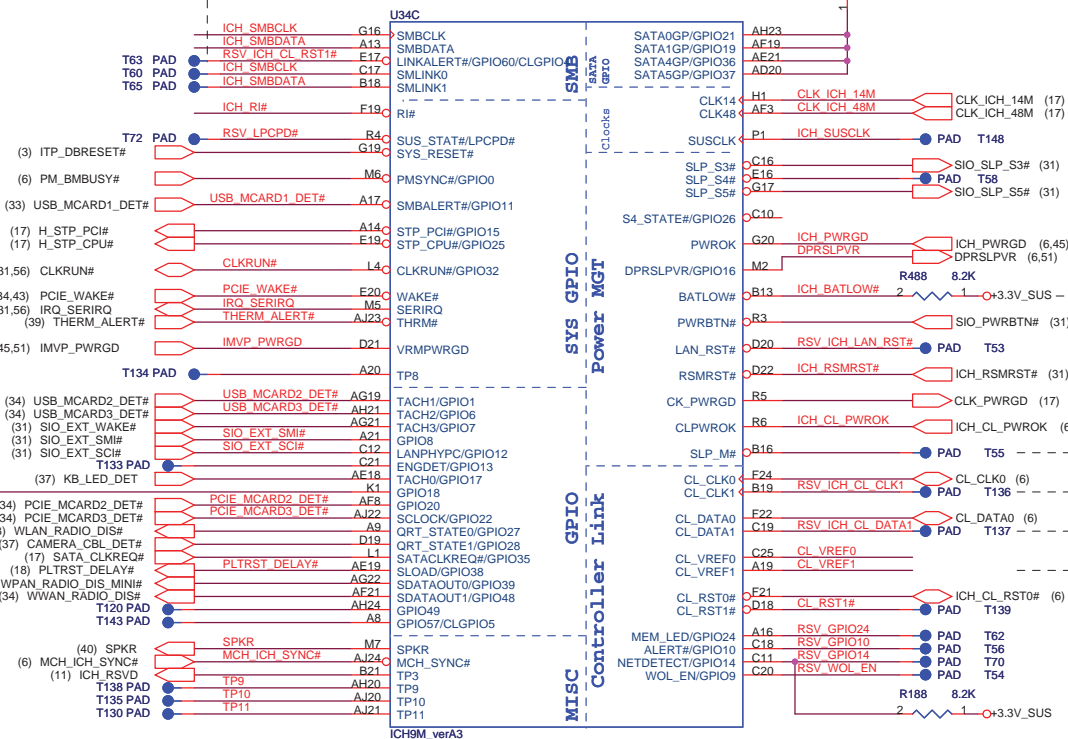
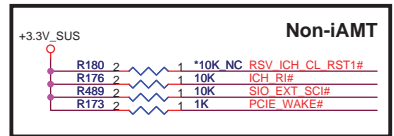
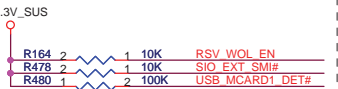
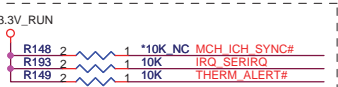
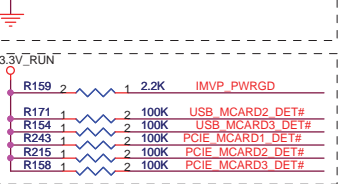
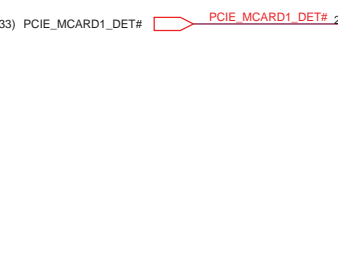
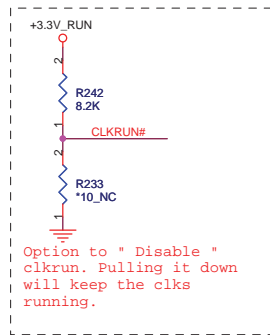
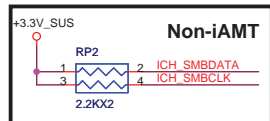
USB W/ E-SATA port

IV

Camera



Title		ICH9-M(USB,PCIE,DMI)	
Size	Document Number RM3	Rev 3A	
Date:	Wednesday, May 06, 2009	Sheet	12 of 60

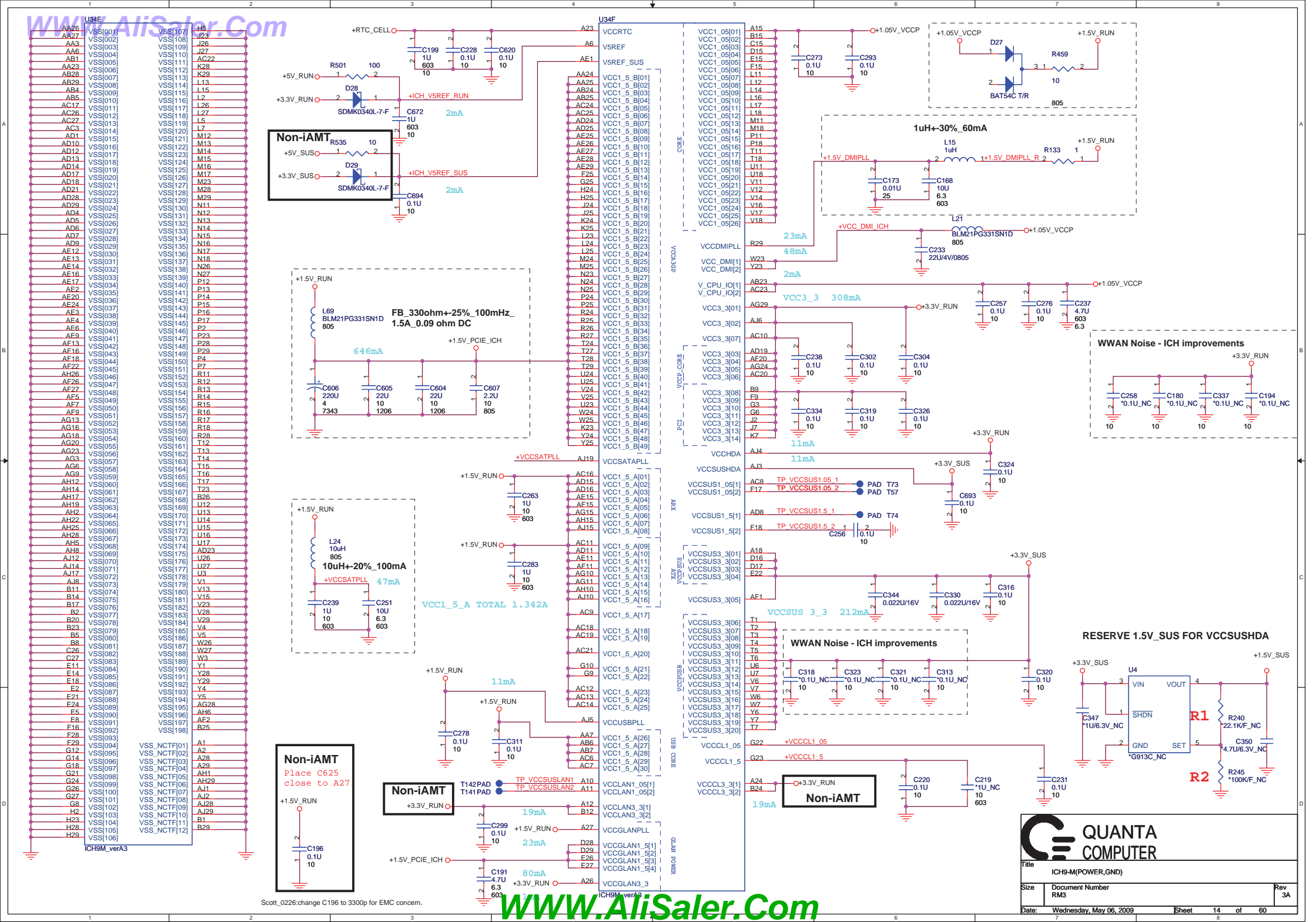


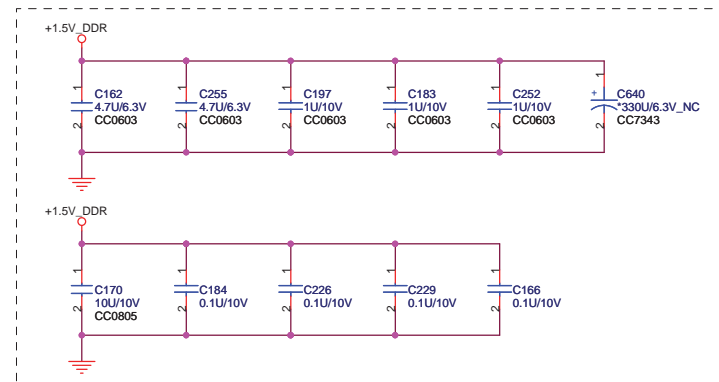
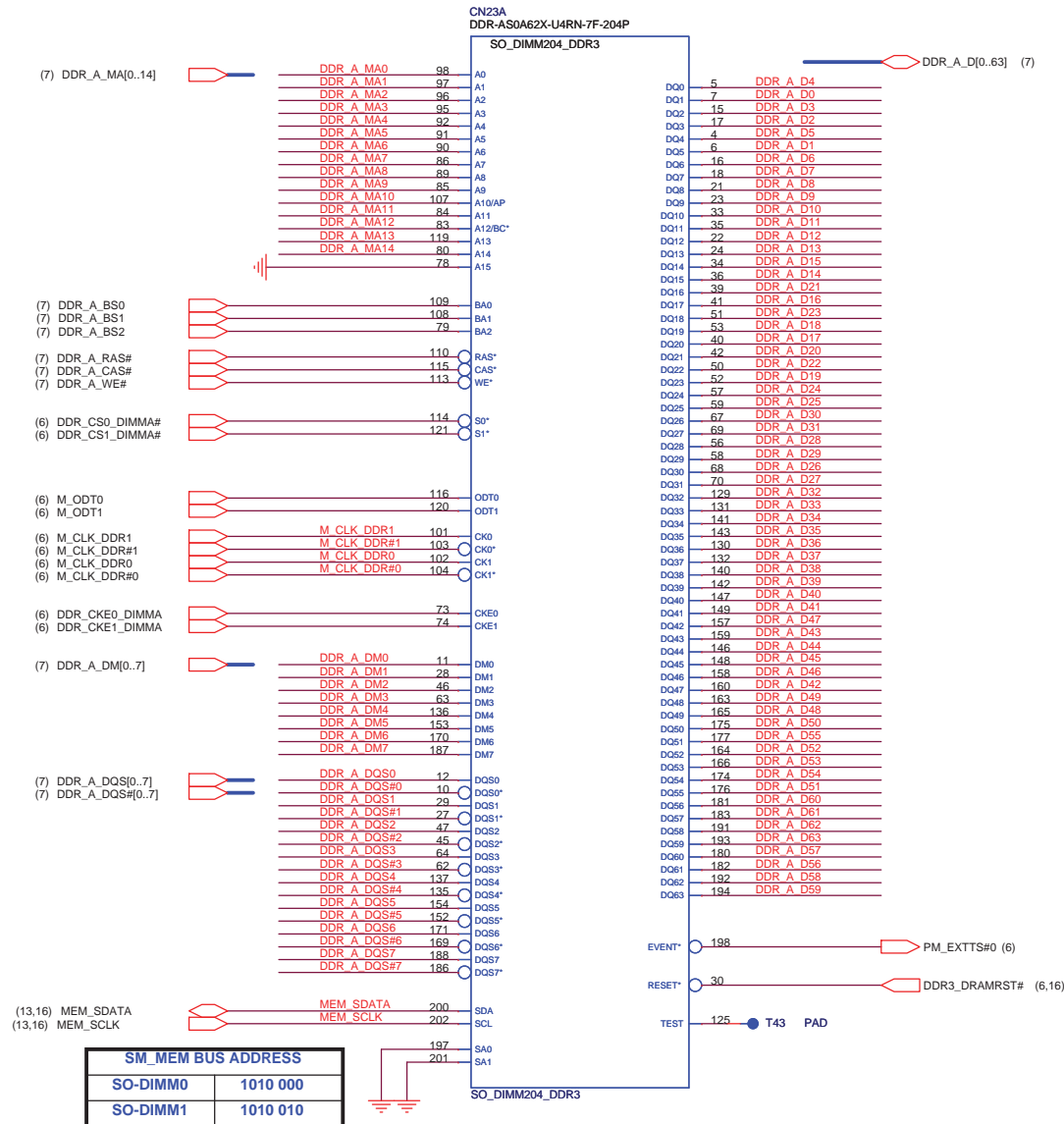
QUANTA COMPUTER

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

Size: Document Number Rev 3A

Date: Wednesday, May 06, 2009 Sheet 13 of 60



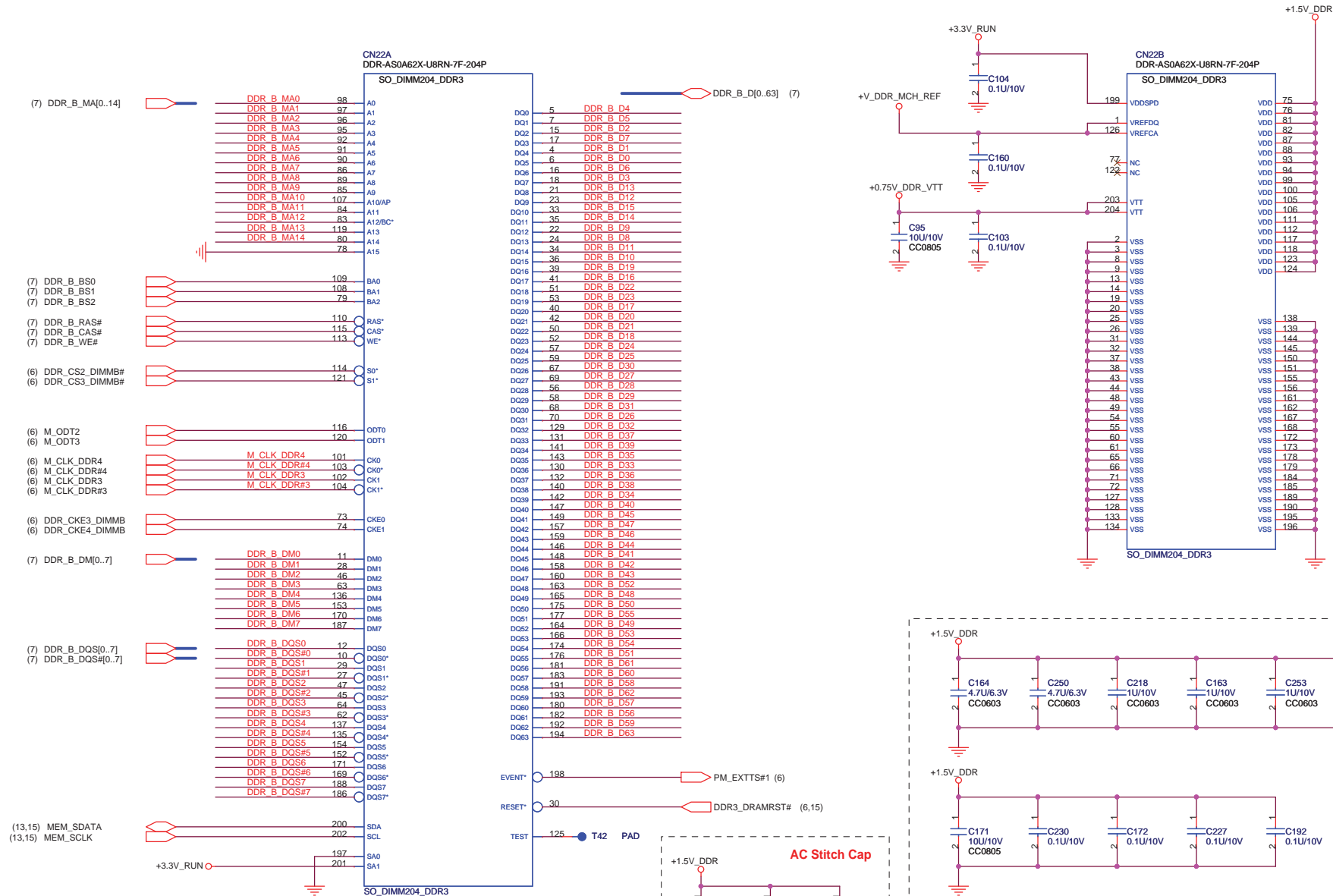


QUANTA COMPUTER

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Size: Document Number RM3 Rev 3A

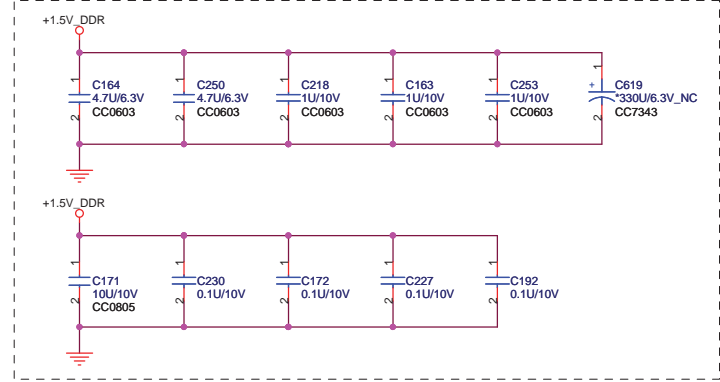
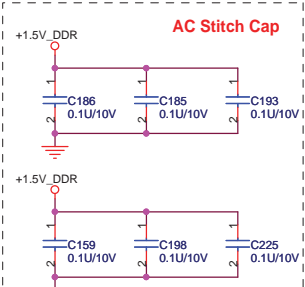
Date: Wednesday, May 06, 2009 Sheet 15 of 60



For EMI Reserved

M CLK_DDR4 R138 1 2 *200/F NC M CLK_DDR#4

M CLK_DDR3 R142 1 2 *200/F NC M CLK_DDR#3



QUANTA COMPUTER

Title: DDR3 SO-DIMM2 (204P)

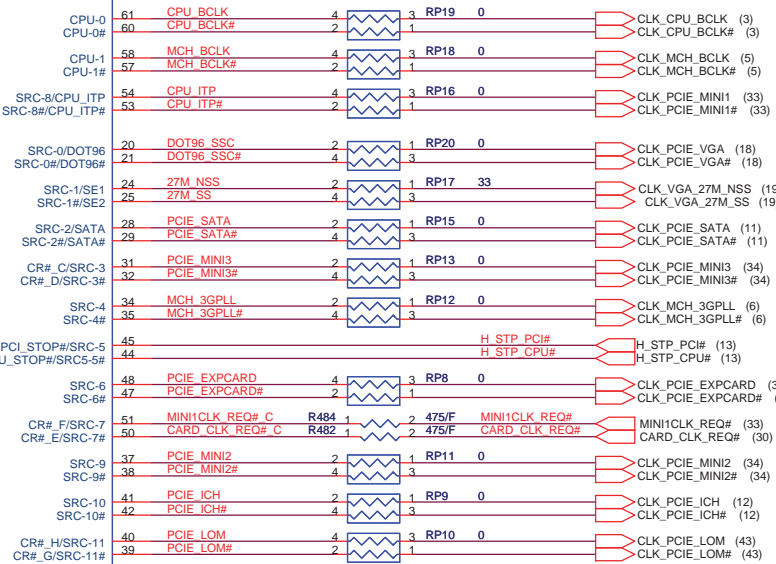
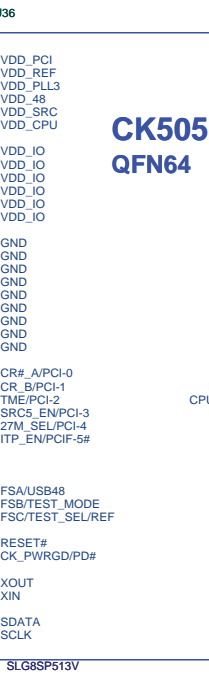
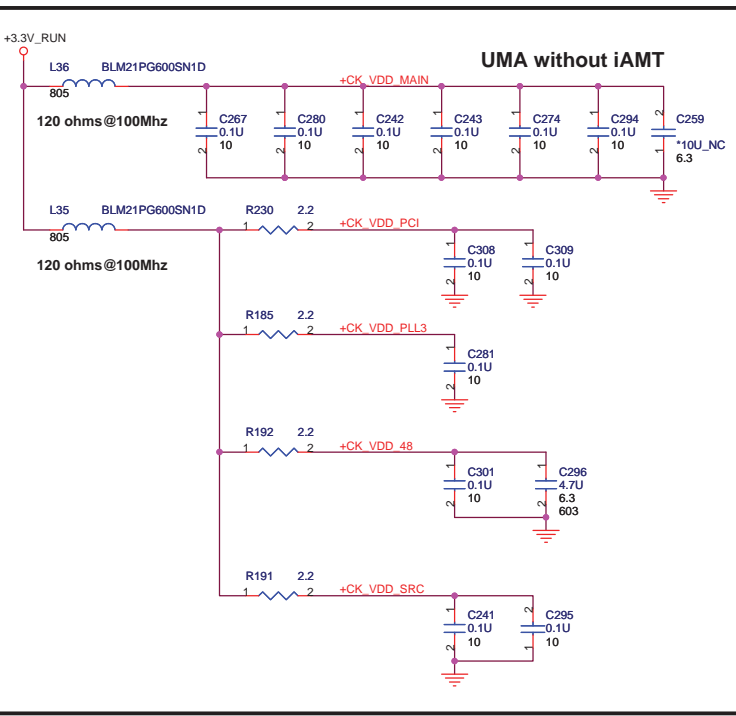
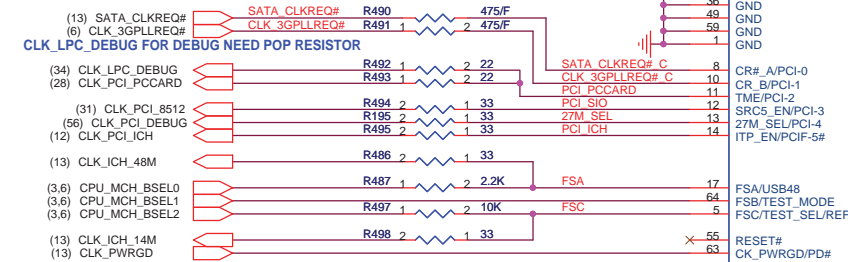
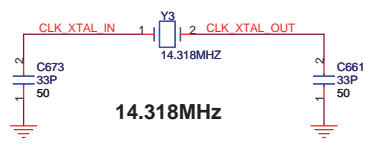
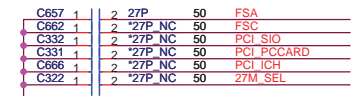
Size: RM3

Document Number: Rev 3A

Date: Wednesday, May 06, 2009

Sheet: 16 of 60

Add capacitor pads for improving WWAN.

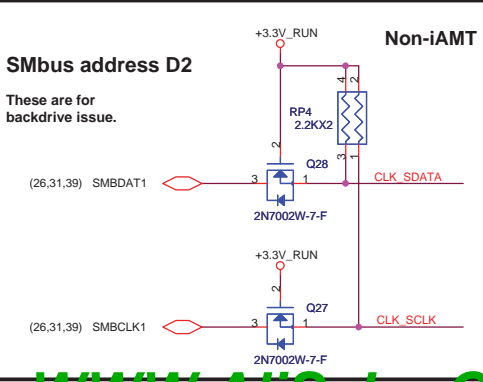
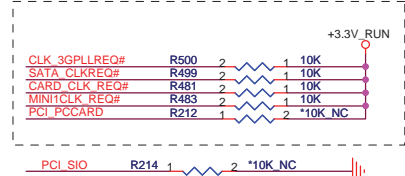


Mini Card (WLAN)

to ATI VGA

Mini Card (WPAN)

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

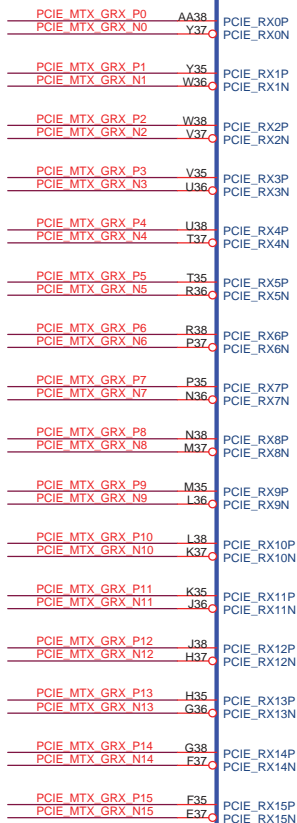
QUANTA COMPUTER

Title: CLOCK GENERATOR

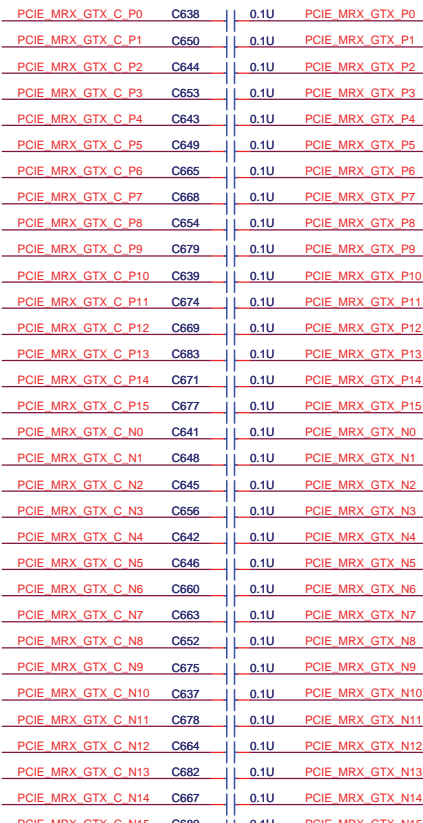
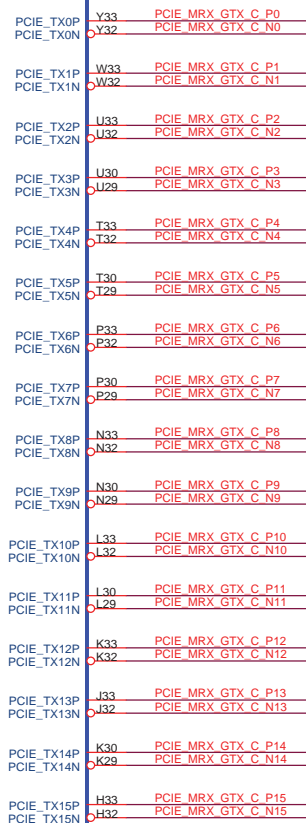
Size: Document Number RM3 Rev 3A

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(6) PCIE_MTX_GRX_P[0..15]
(6) PCIE_MTX_GRX_N[0..15]



PCI EXPRESS INTERFACE



(6) PCIE_MRX_GTX_P[0..15]
(6) PCIE_MRX_GTX_N[0..15]

(17) CLK_PCIE_VGA#

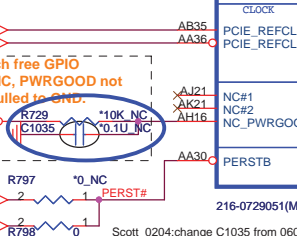
(17) CLK_PCIE_VGA#

!!! M97 Only, M97 glitch free GPIO feature. For future ASIC, PWRGGOOD not required, should be pulled to GND.

Gur! 0131 : add Cap to reserve M97 PWRGGOOD timing time

(13) PLTRST_DELAY#

(6,12,30,31,33,34,43) PLTRST#



216-0729051(M96-M2 XT)

Scott_0204:change C1035 from 0603 to 0402 for layout request.

CALIBRATION

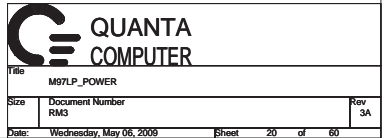
PCIE_CALRP


PCIE_CALRN

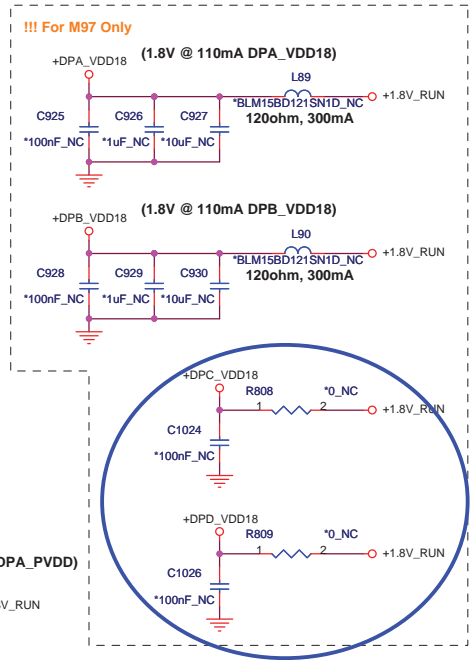


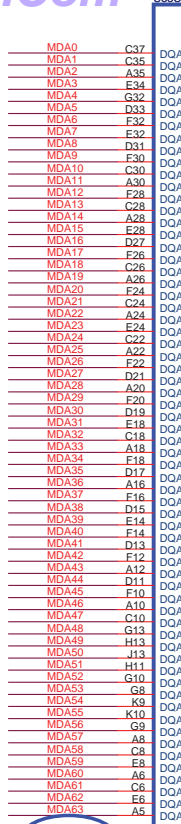
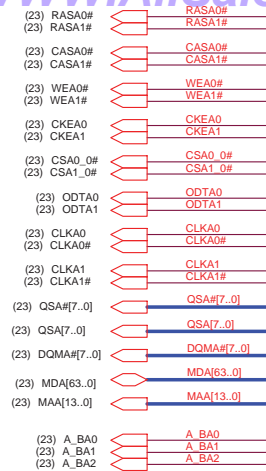
Title		
M97LP_PCIE		
Size	Document Number	Rev
RM3		3A
Date:	Wednesday, May 06, 2009	Sheet 18 of 60

Note : Required Frequency = 800 MHz

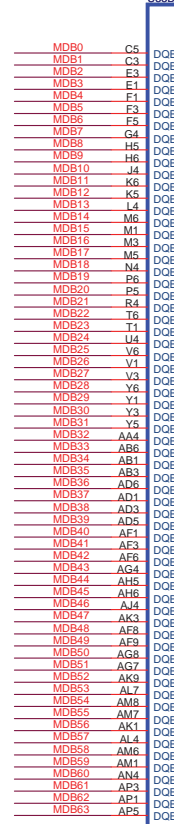
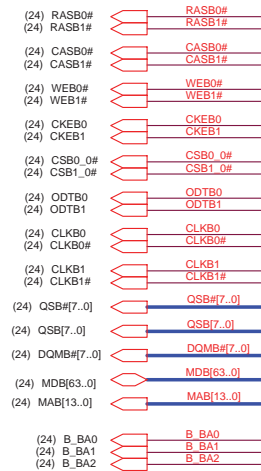
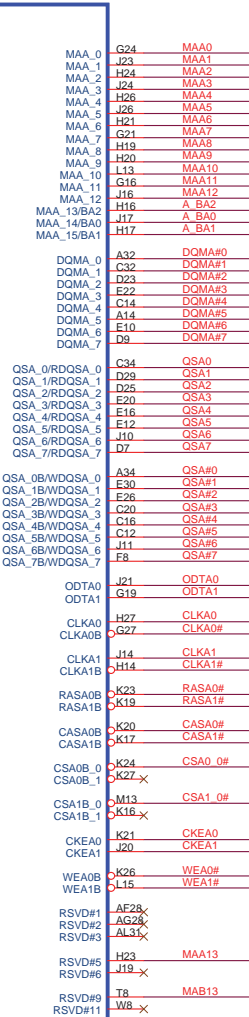


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Title M97LP_DP POWER			
Size	Document Number RM3		Rev 3A
Date:	Wednesday, May 06, 2009	Sheet 21 of 60	

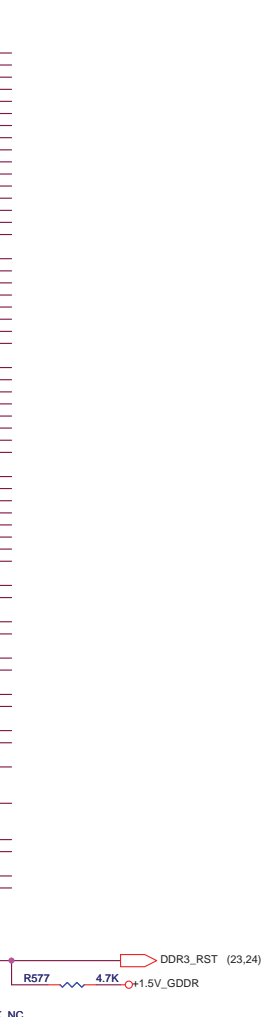
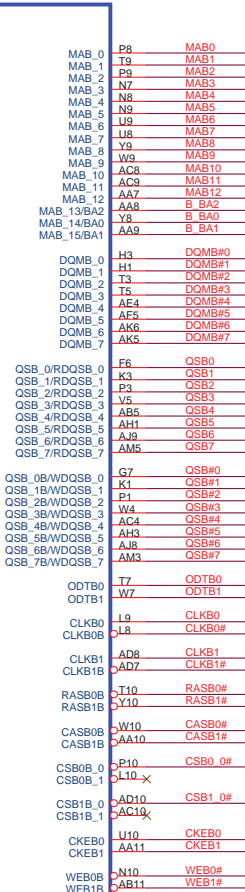




MEMORY INTERFACE A

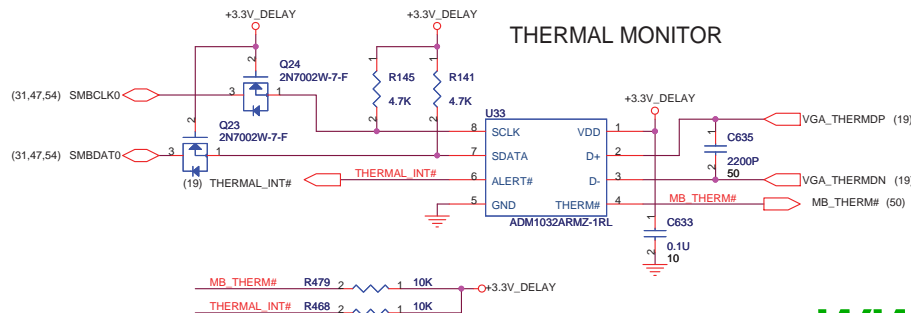


MEMORY INTERFACE B

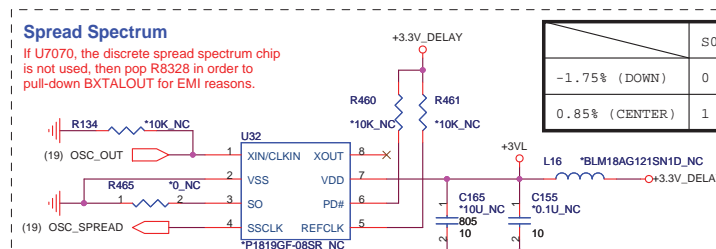


Scott_0406:Change C934 from 1uF to 1nF as AMD suggest.

	GDDR3	DDR3
MVDDQ	1.8V	1.5V
Ra	40.2R	100R
Rb	100R	100R

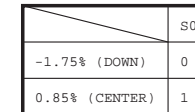
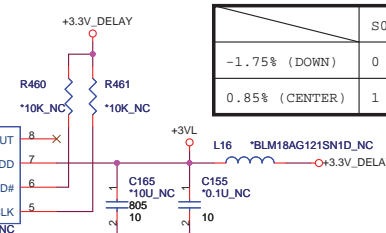


THERMAL MONITOR



Spread Spectrum

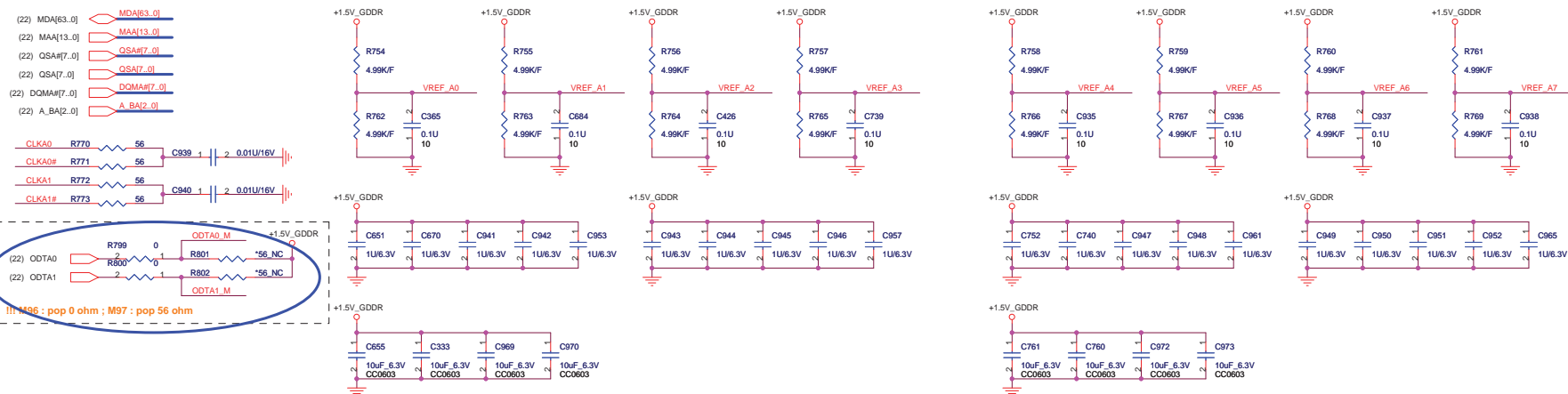
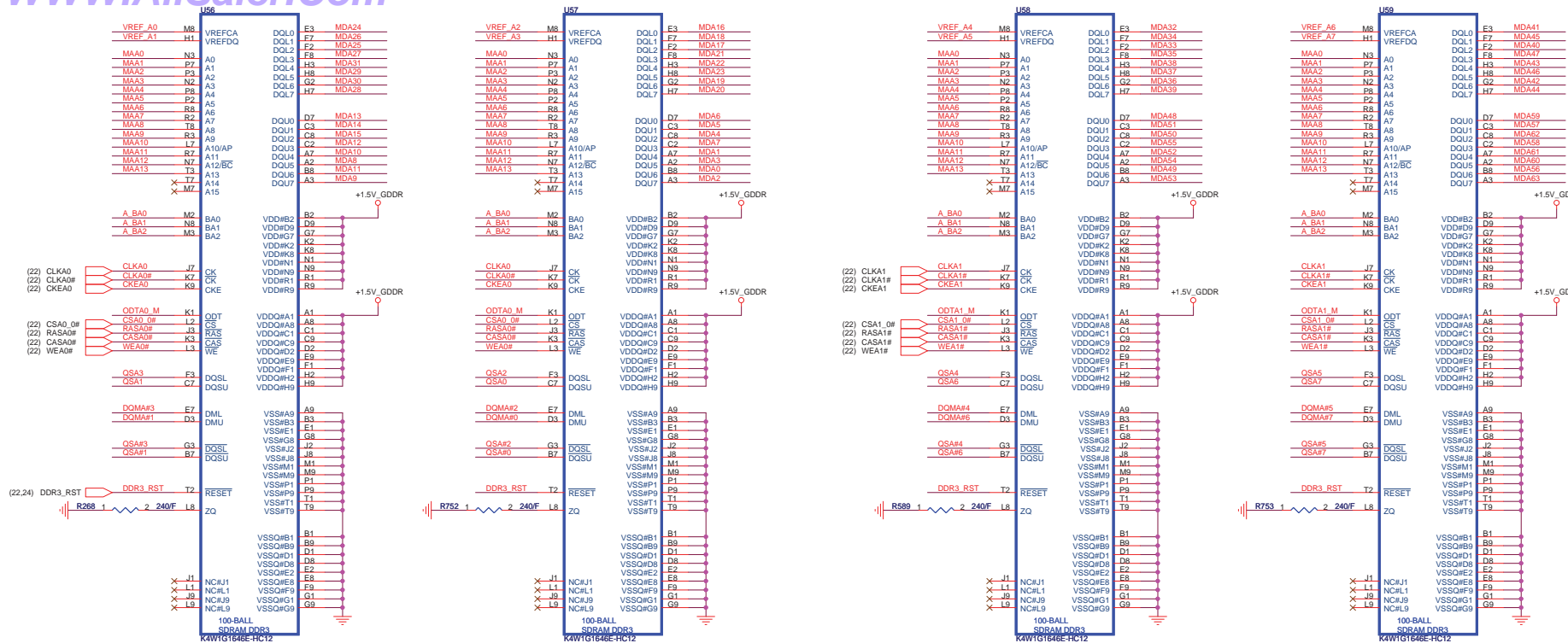
If U7070, the discrete spread spectrum chip is not used, then pop R8328 in order to pull-down BXTALOUT for EMI reasons.

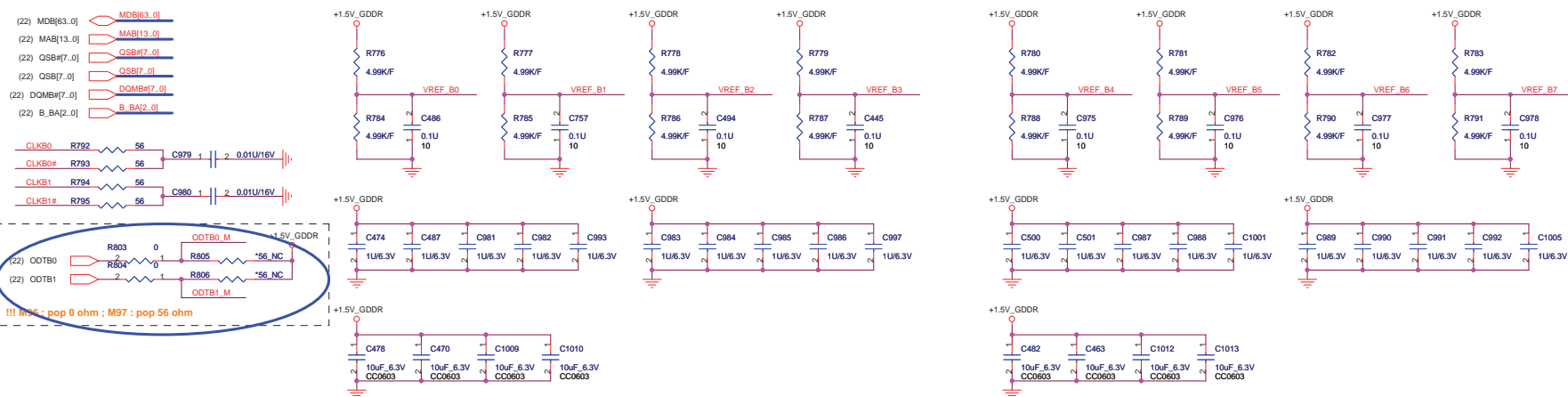


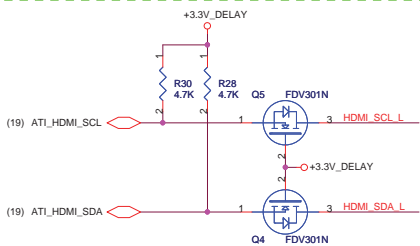
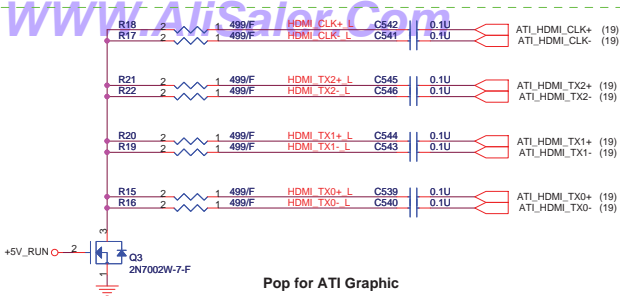
QUANTA
COMPUTER

Title	M97LP MEMORY/THERM
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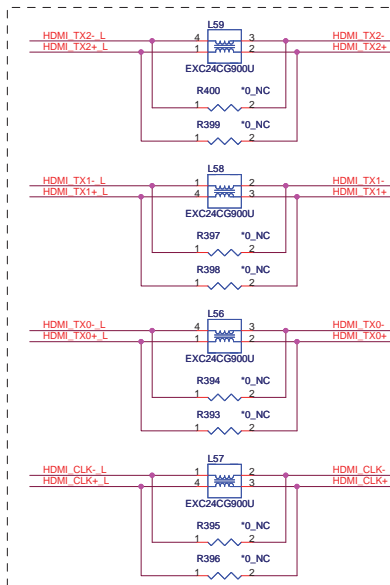
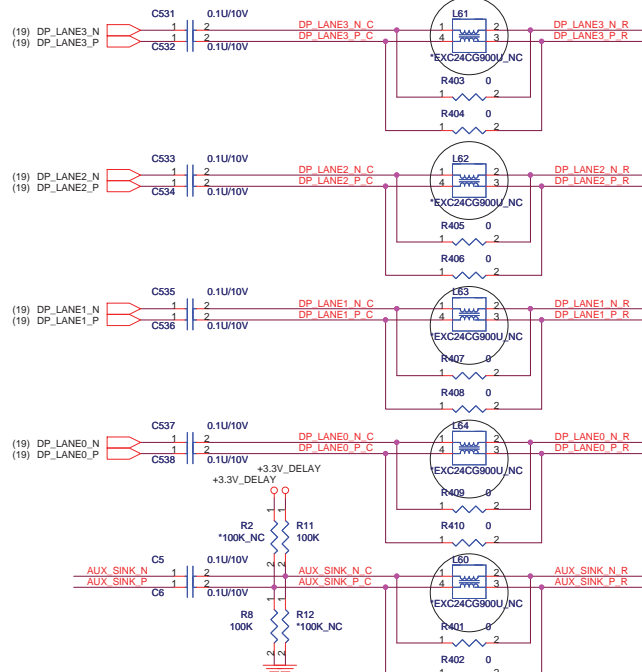
Size	Document Number	Rev
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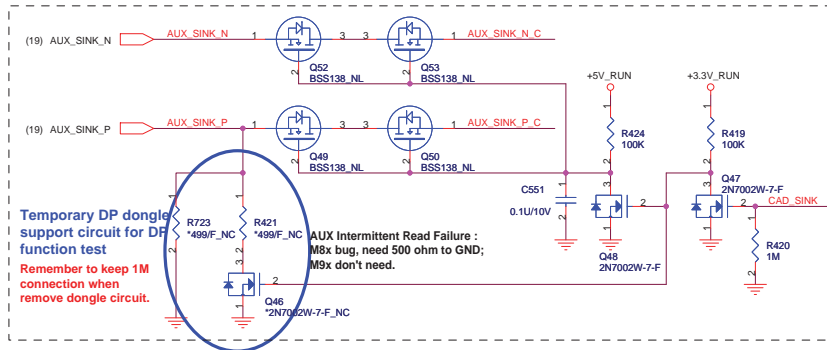
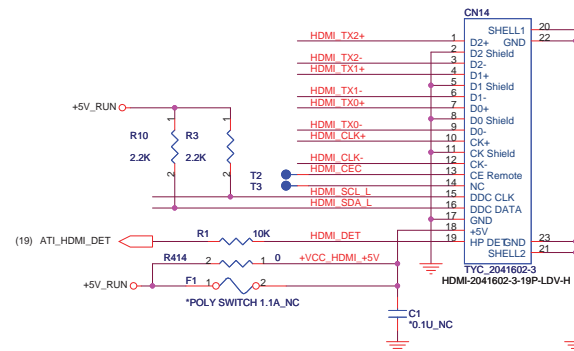
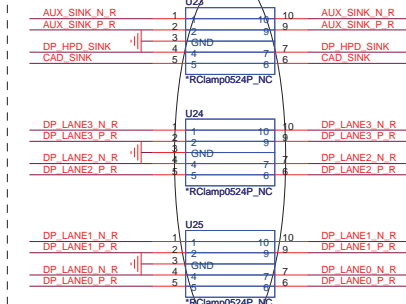


Reserve For EMI



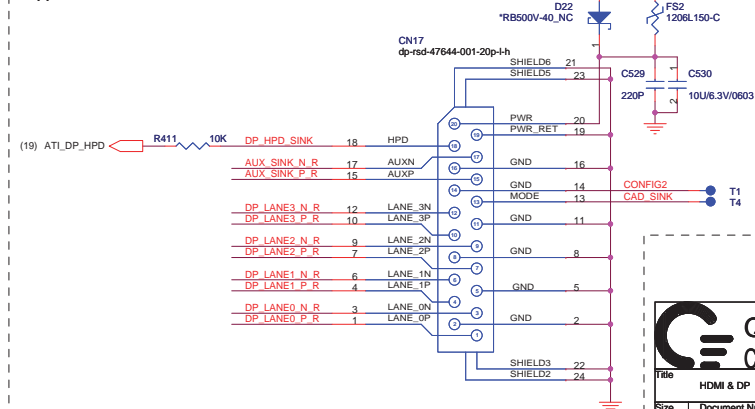
Delete EMI ESD IC for EMI asked HDMI signals link to CONN directly.

Reserve For ESD



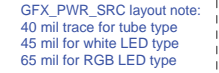
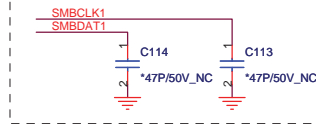
DISPLAY PORT CONNECTOR

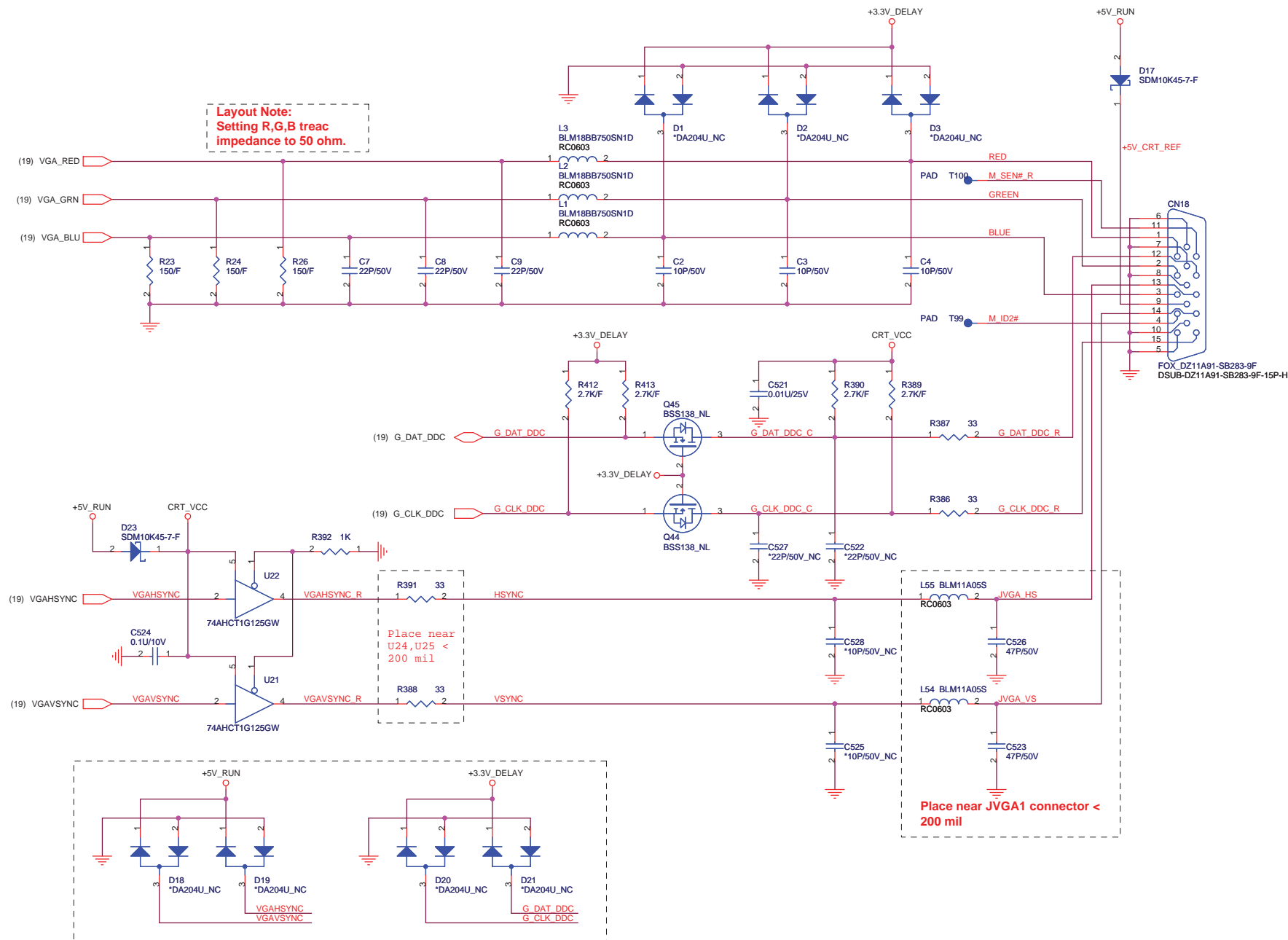
DP only, no dongle support DVI or HDMI



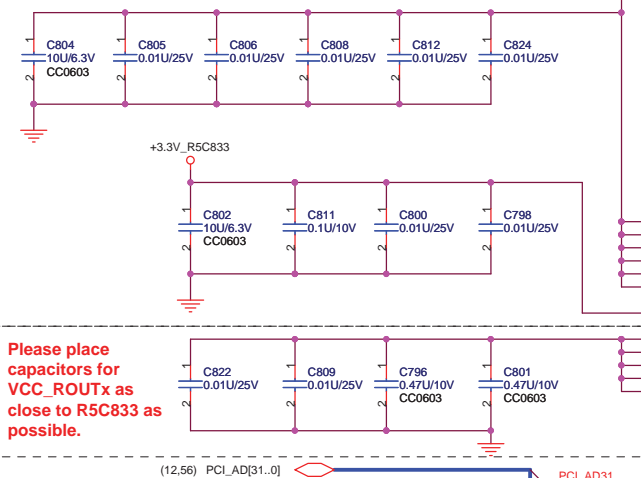
QUANTA COMPUTER

File	HDMI & DP	
Size	Document Number RM3	Rev 3A
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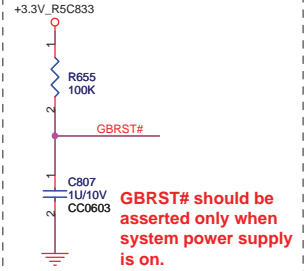
Place the power caps close to the relation pins.



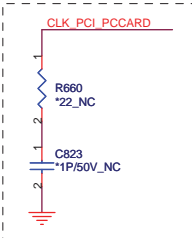
Please place capacitors for VCC_ROUTx as close to R5C833 as possible.



Place the power caps close to the relation pins.



GBRST# should be asserted only when system power supply is on.



(12,56) PCI_PAR
(12,56) PCI_C_BE3#
(12,56) PCI_C_BE2#
(12,56) PCI_C_BE1#
(12,56) PCI_C_BE0#

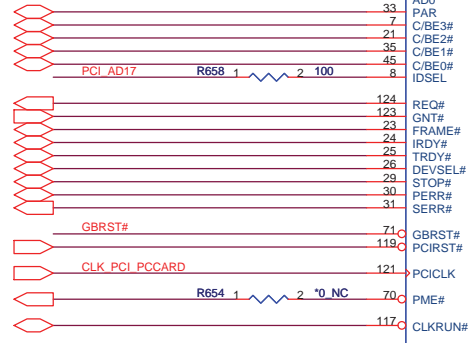
(12) PCI_REQ0#
(12) PCI_GNT0#
(12,56) PCI_FRAME#
(12,56) PCI_IRDY#
(12,56) PCI_TRDY#
(12,56) PCI_DEVSEL#
(12,56) PCI_STOP#
(12,56) PCI_PERR#
(12,56) PCI_SERR#

(12,56) PCI_RST#

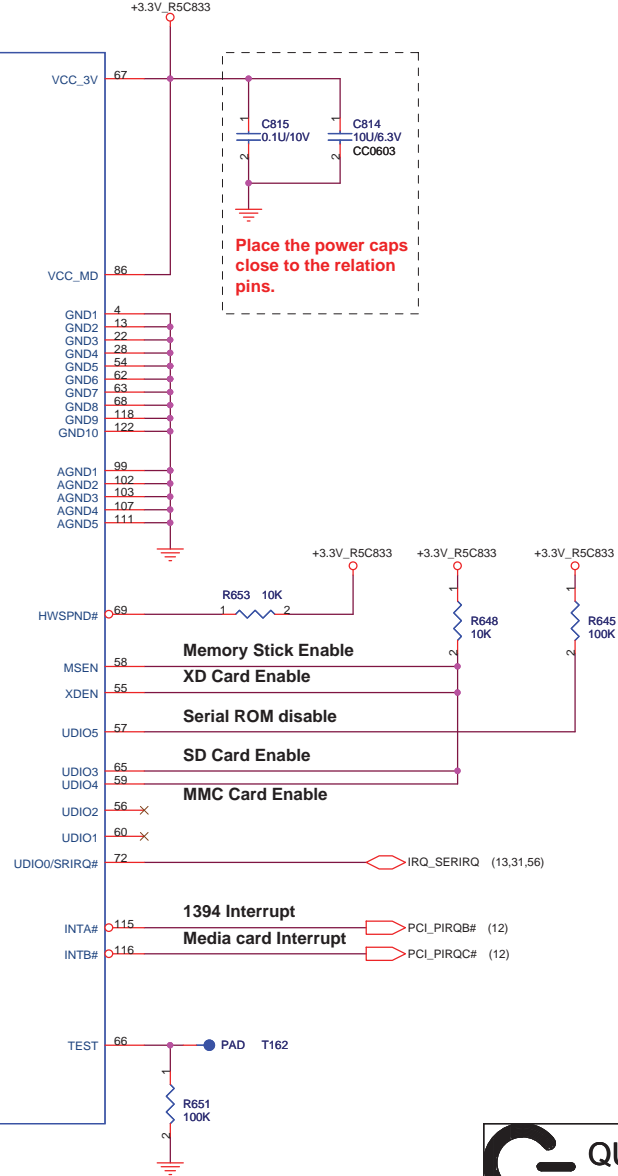
(17) CLK_PCI_PCCARD

(12,56) ICH_PME#

(13,31,56) CLKRUN#



PCI / OTHER



Memory Stick Enable

XD Card Enable

Serial ROM disable

SD Card Enable

MMC Card Enable

1394 Interrupt

Media card Interrupt

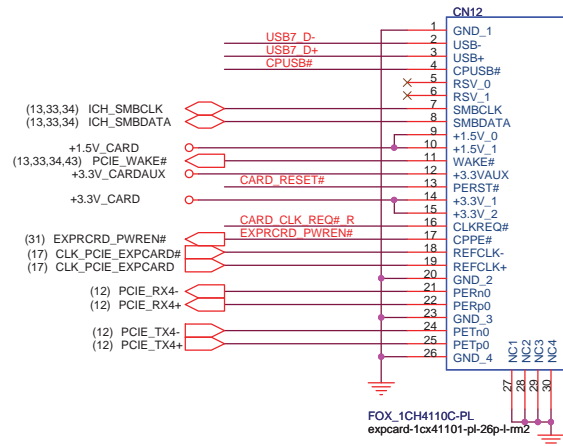
PCI_PIRQB# (12)

PCI_PIRQC# (12)



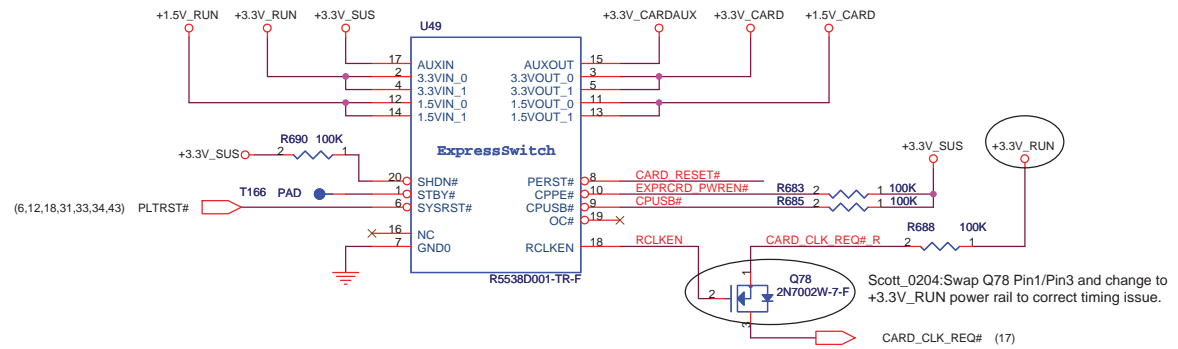
Title			CardReader (5C833)
Size	Document Number	Rev	
	RM3	3A	
Date:	Wednesday, May 06, 2009	Sheet	28 of 60

Express Card

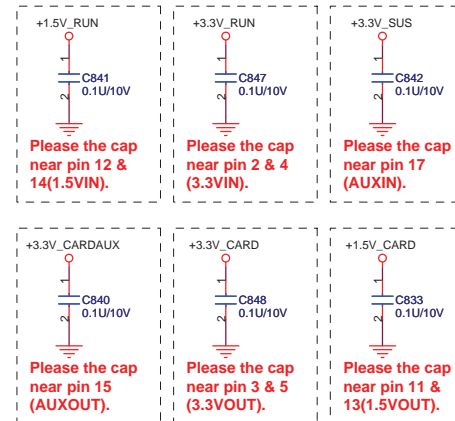
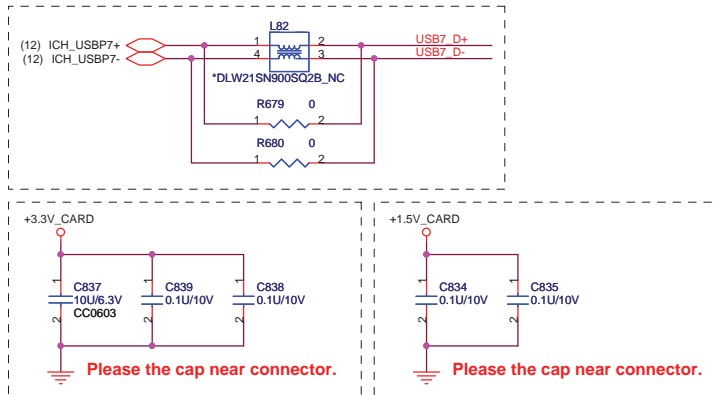


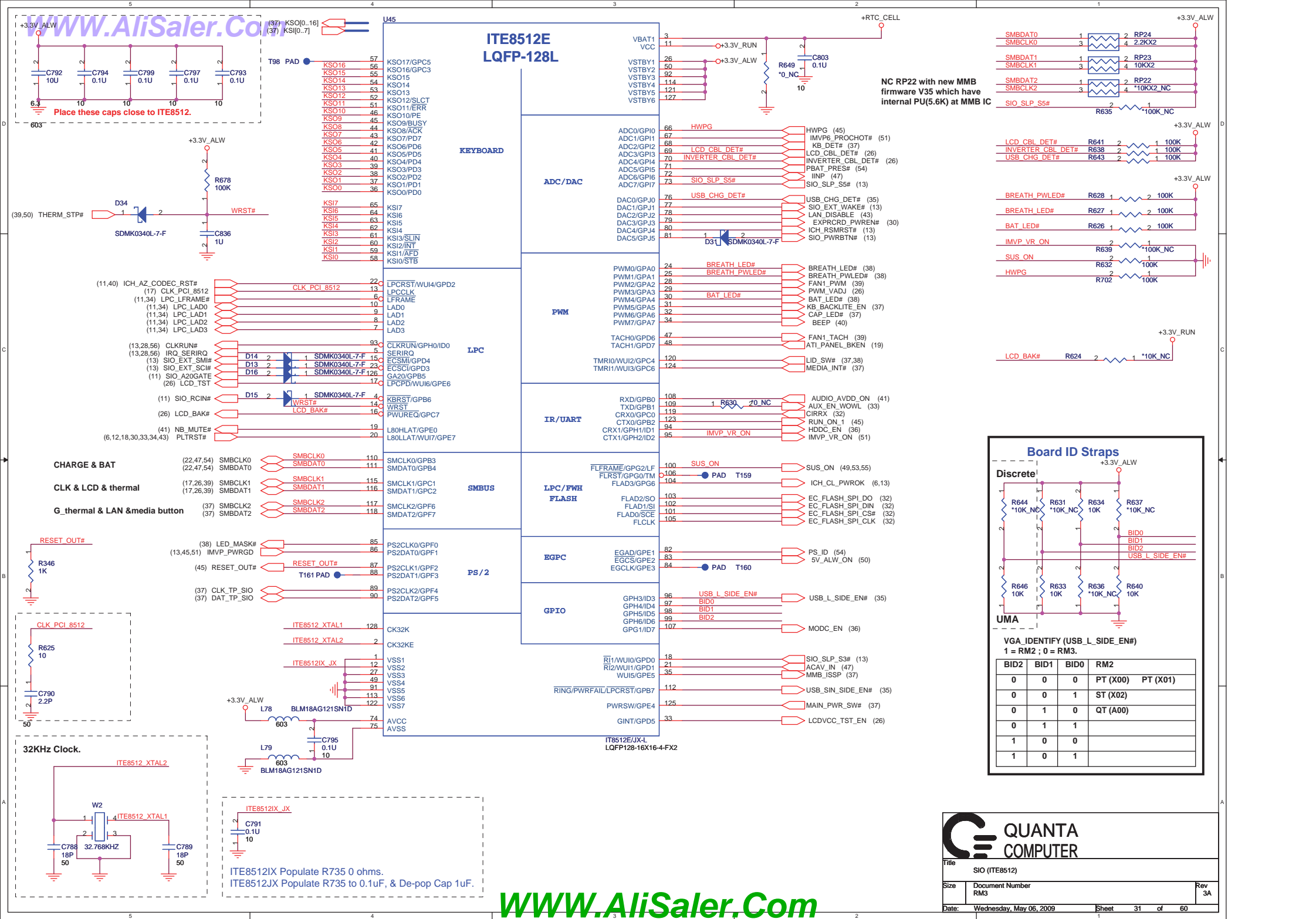
FOX_1CH4110C-PL
expcard-1cx41101-pl-26p-1-m2

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

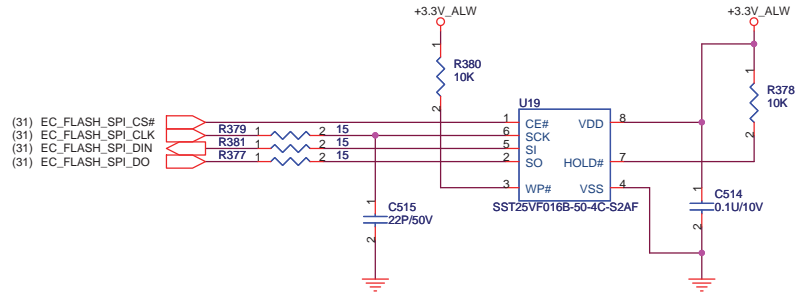


PCI-Express TX and RX direct to connector.

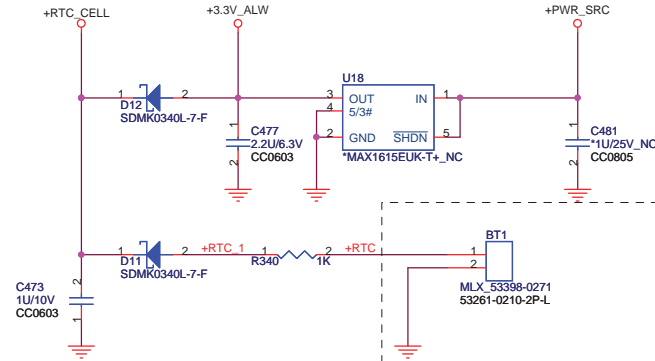




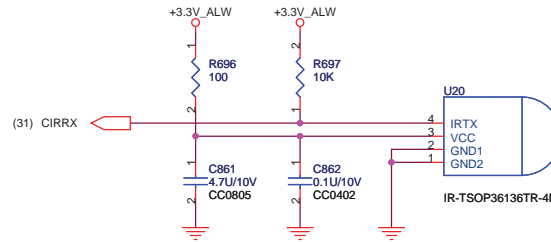
16Mbit (2M Byte), SPI



RTC BATTERY

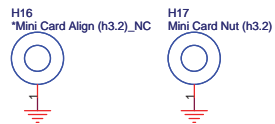


Consumer IR

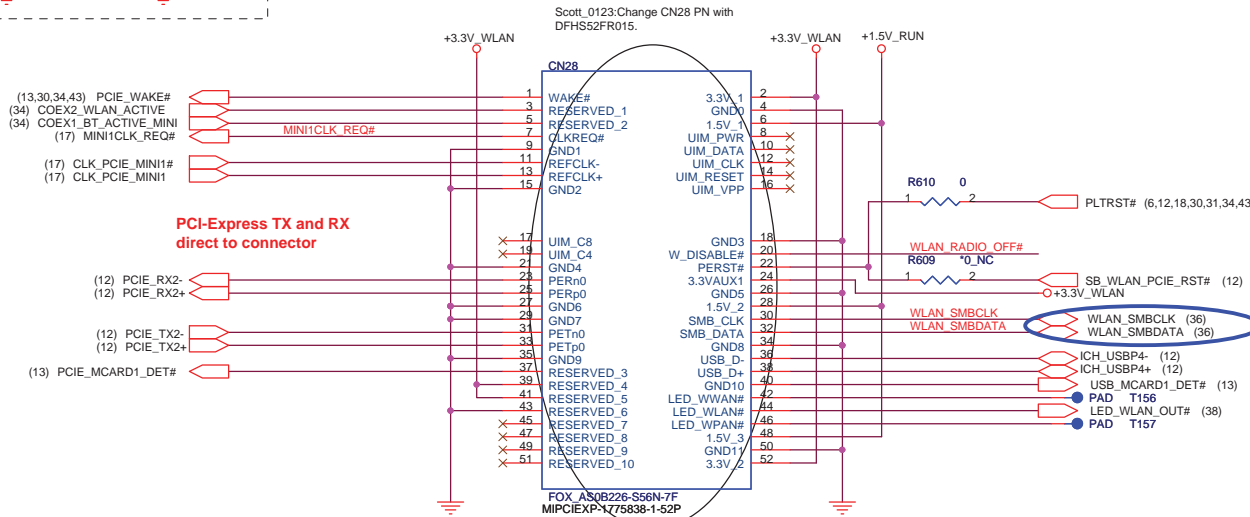


Title		
FLASH/ RTC/ CIR		
Size	Document Number	Rev
RM3		3A
Date:	Wednesday, May 06, 2009	Sheet 32 of 60

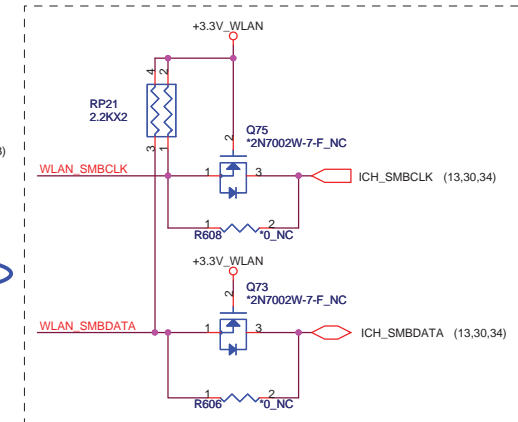
Mini Card Nut



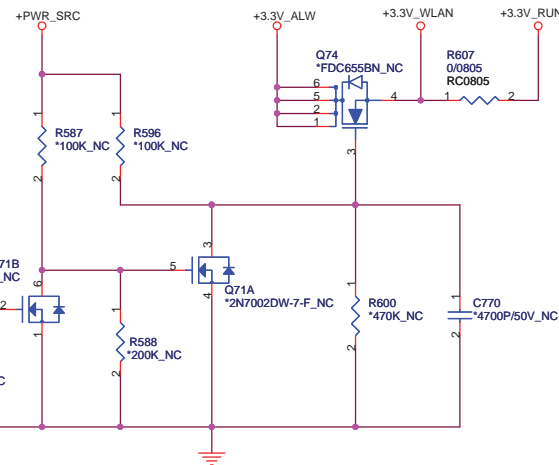
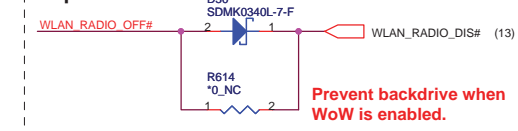
MiniCard WLAN Connector



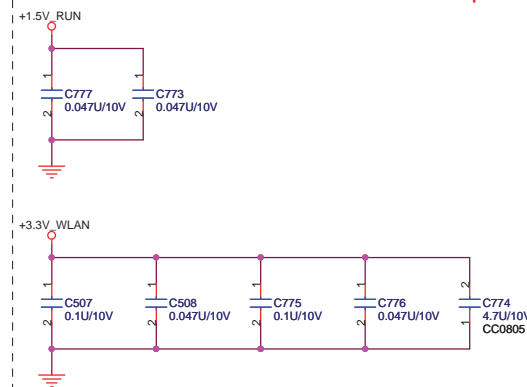
PCI-Express TX and RX
direct to connector



Support for WoW

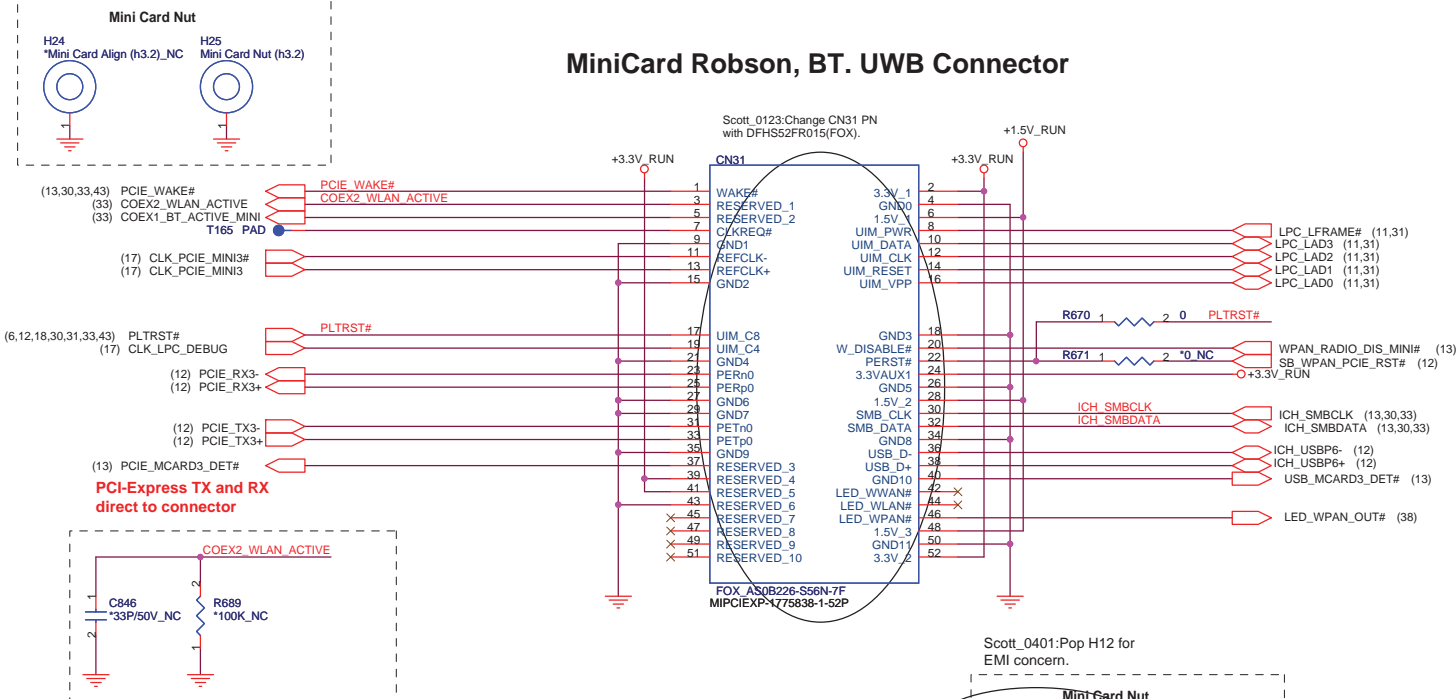


Place caps close to connector.

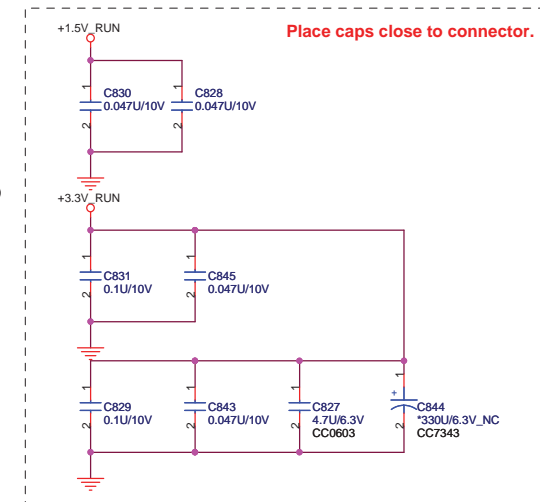


Title MINI-CARD (WLAN)		
Size RM3	Document Number	Rev 3A
Date: Wednesday, May 06, 2009	Sheet 33	of 60

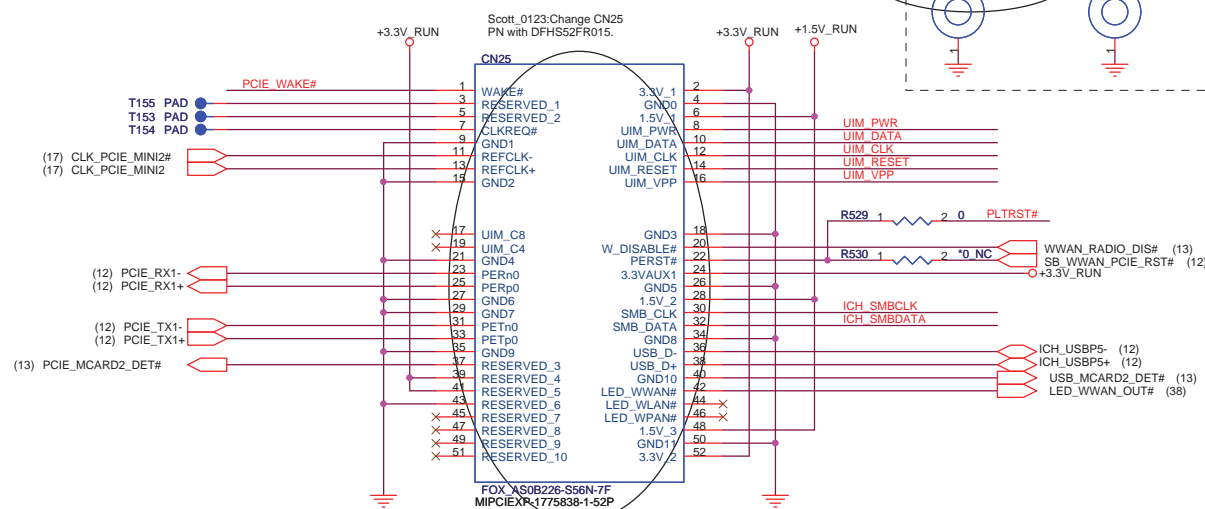
MiniCard Robson, BT. UWB Connector



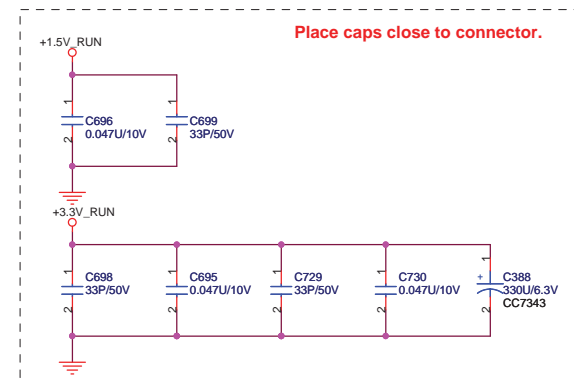
Layout Note:
R240 and R244 close to choke as possible to minimize stubs.



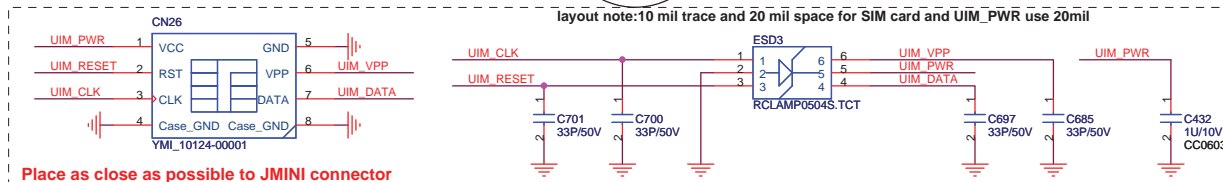
MiniCard WWAN Connector




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

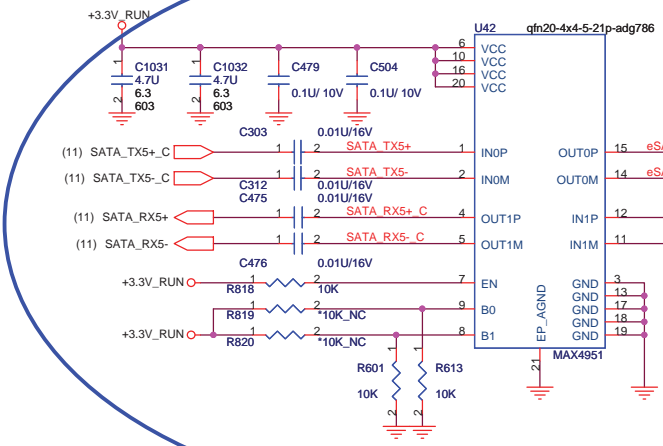


layout note:10 mil trace and 20 mil space for SIM card and UIM_PWR use 20mil



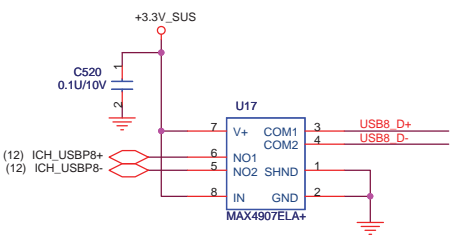
 QUANTA COMPUTER		
Title: MINI-CARD (WPAN,WWAN)		
Size: RM3	Document Number:	Rev: 3A
Date: Wednesday, May 06, 2009	Sheet: 34	of: 60

eSATA Re-driver IC

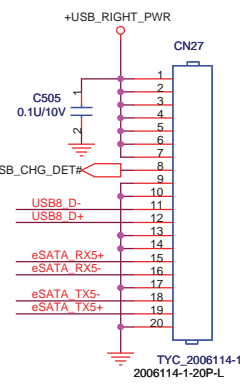


EN	B0	B1	FUNCTION
0	X	X	Standby
1	0	0	Standard SATA Output
1	1	0	Ch 0 Boost Output
1	0	1	Ch 1 Boost Output
1	1	1	Ch 0,1 Boost Output

USB BUS SW

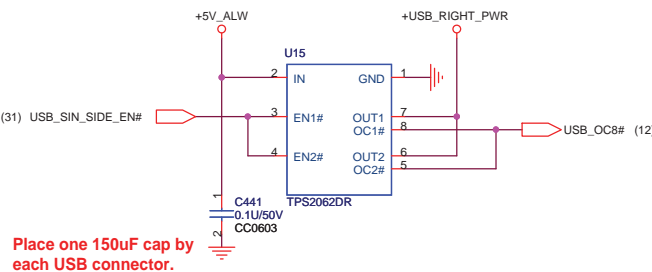


eSATA CONN



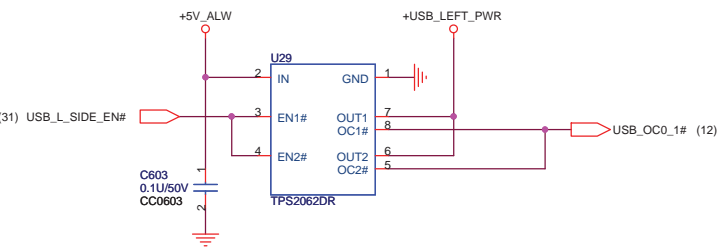
USB POWER SW

Each channel is 1A

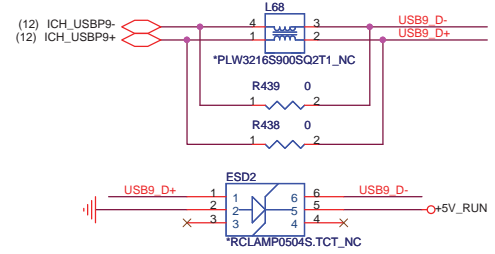


USB POWER SW

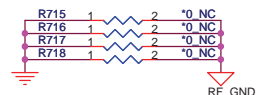
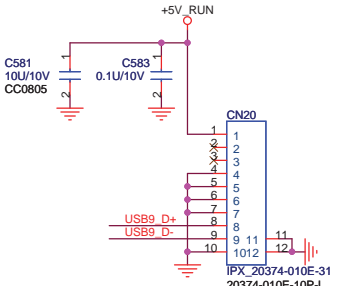
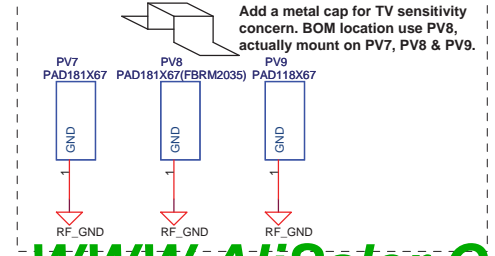
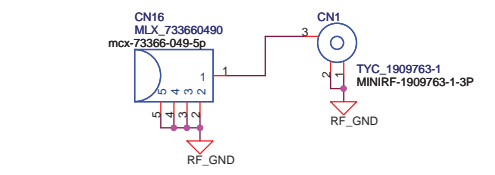
Each channel is 1A



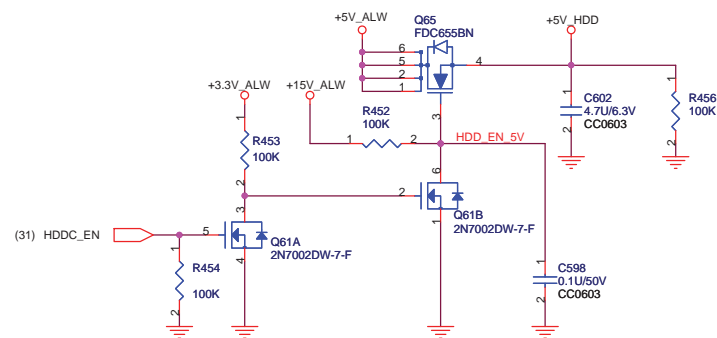
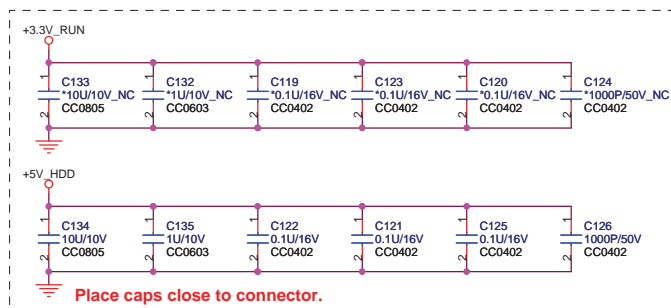
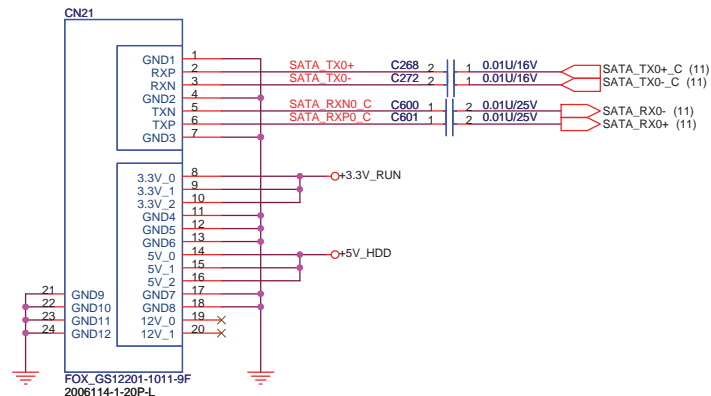
TV module



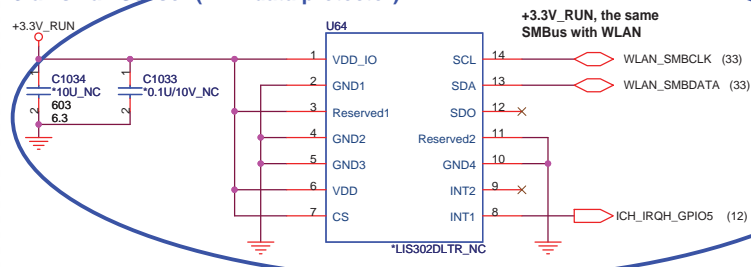
TV RF Jack & Microwave connector



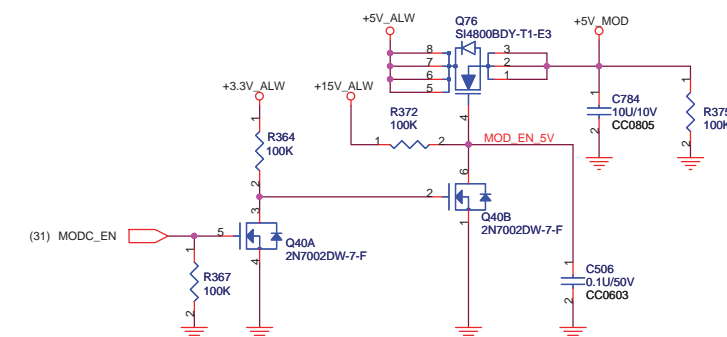
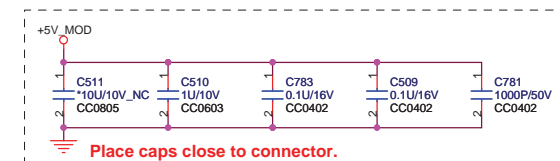
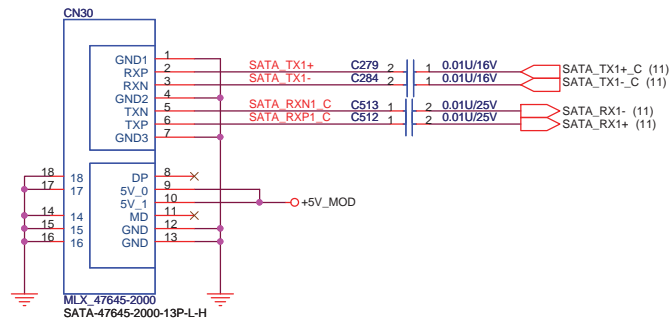
SATA Connector



3-axis Fall Sensor (HDD data protector)



ODD Connector



To Daughter Board connector
Solid White = System On, Normal Activity
Off= System off (system off or hibernate);
"Breathing White" = System in Standby (S3);

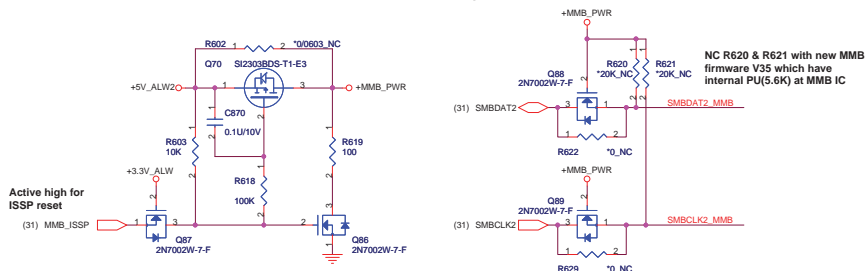
Power Button

Speaker

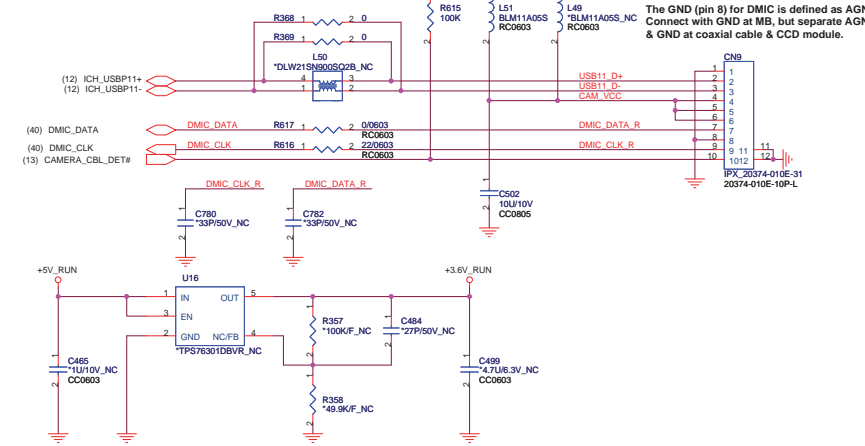
KB LED

Touch Pad

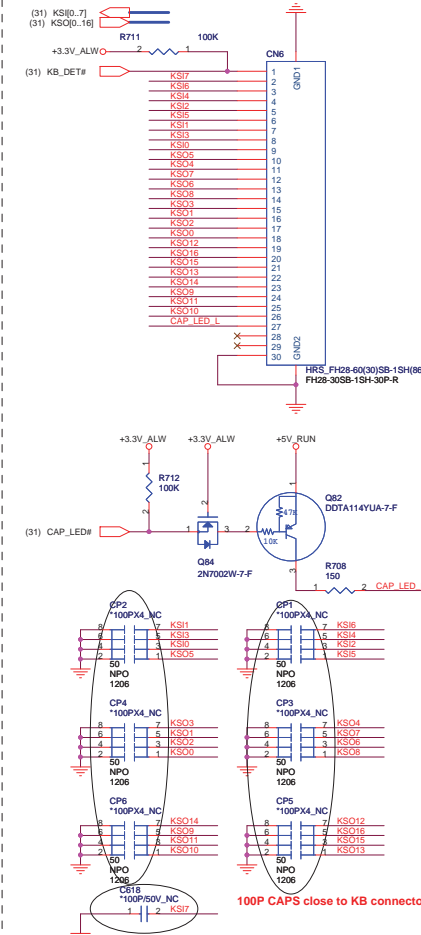
Media Button



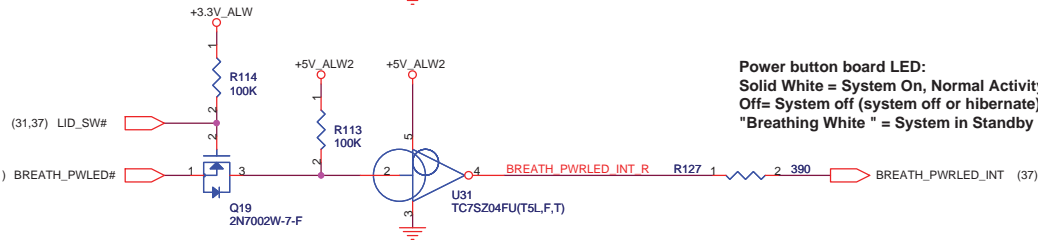
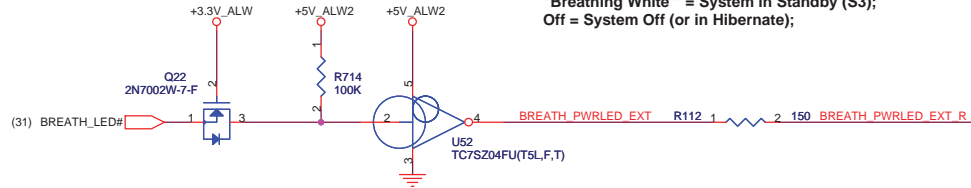
Array Microphone & Camera



KEYBOARD CONNECTOR

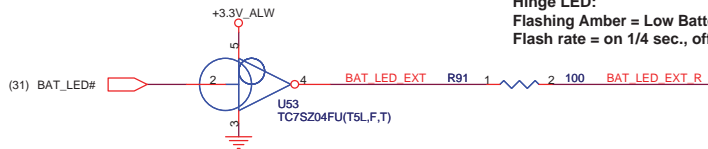


Hinge LED
 Solid White= System On, Normal Activity
 Solid White= Charging (system on);
 Off= Charging (system off or hibernate and battery charge <90%);
 "Breathing White " = System in Standby (S3);
 Off = System Off (or in Hibernate);



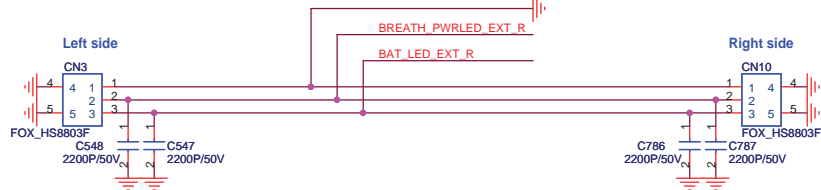
Power button board LED:
 Solid White = System On, Normal Activity
 Off= System off (system off or hibernate);
 "Breathing White " = System in Standby (S3)

Hinge LED:
 Flashing Amber = Low Battery (S0 and S3 and no AC) when battery charge <10%
 Flash rate = on 1/4 sec., off 3/4 sec.



Hinge LED (PWR/Battery indicator)

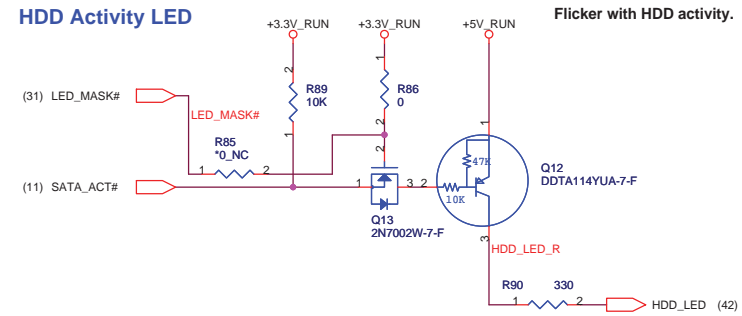
L-C filter (reserve R-C) for EMI



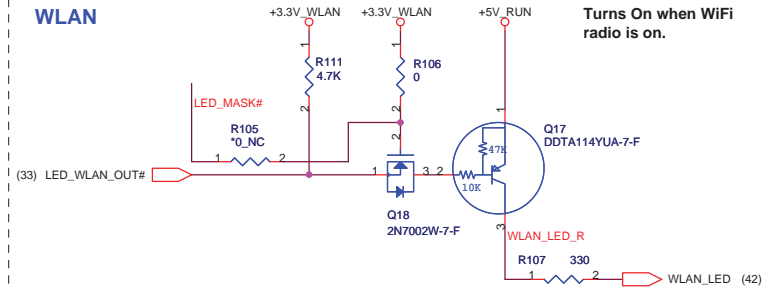
Solid White= System On, Normal Activity
Solid White= Charging (system on);
Solid White= Charging (system off or hibernate and battery charge <90%);
Off= Charging (system off or hibernate and battery charge > 90%);
"Breathing White " = System in Standby (S3);
Off = System Off (or in Hibernate);

Flashing Amber = Low Battery (S0 and S3 and no AC) when battery charge <10%
Flash rate = on 1/4 sec., off 3/4 sec.

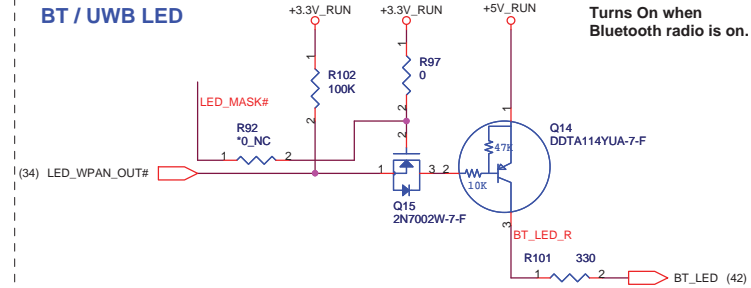
HDD Activity LED



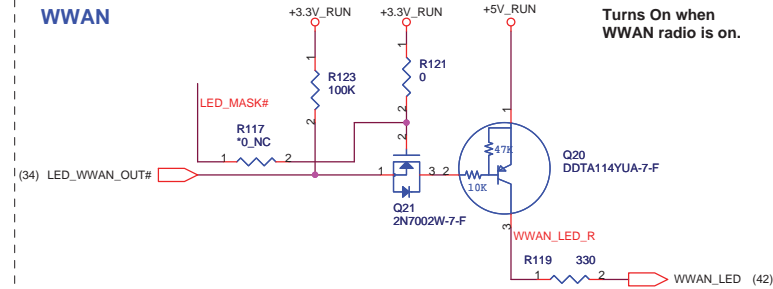
WLAN



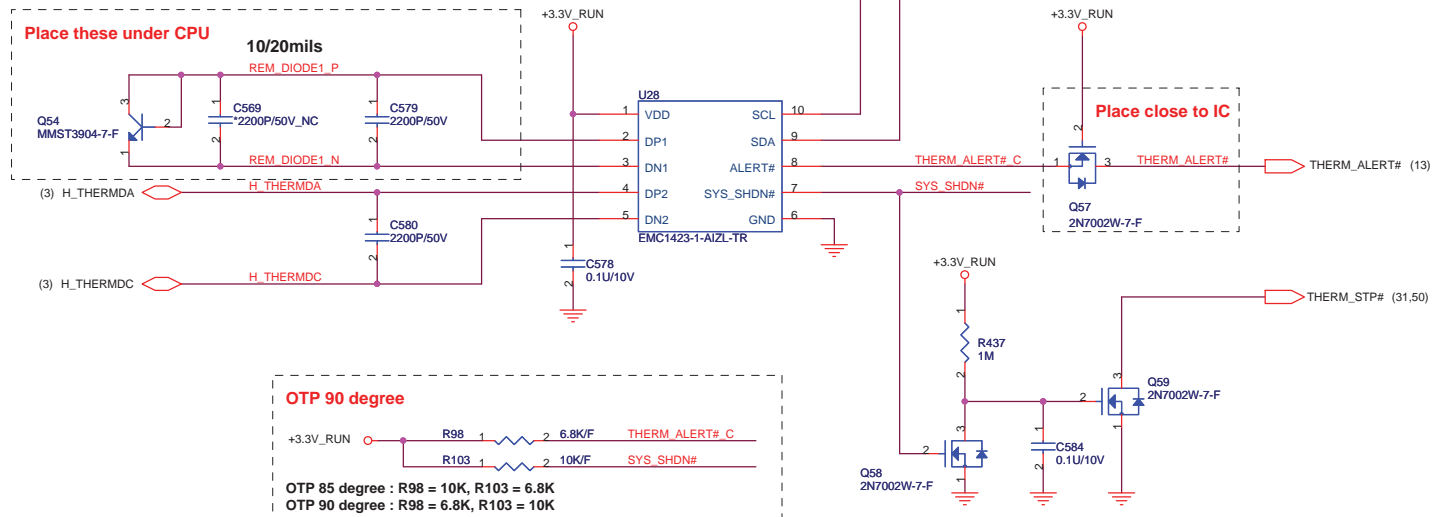
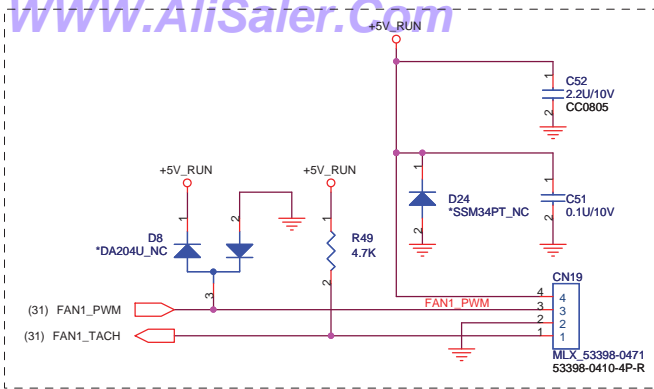
BT / UWB LED

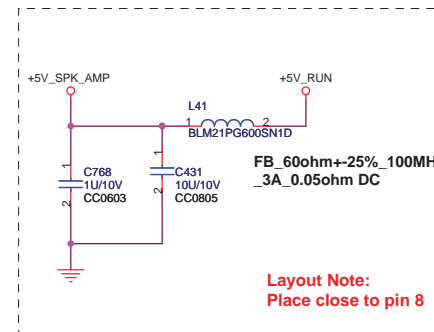
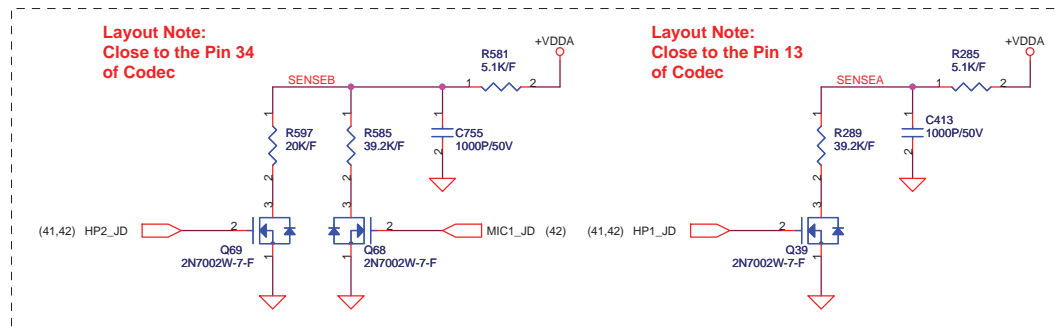


WWAN

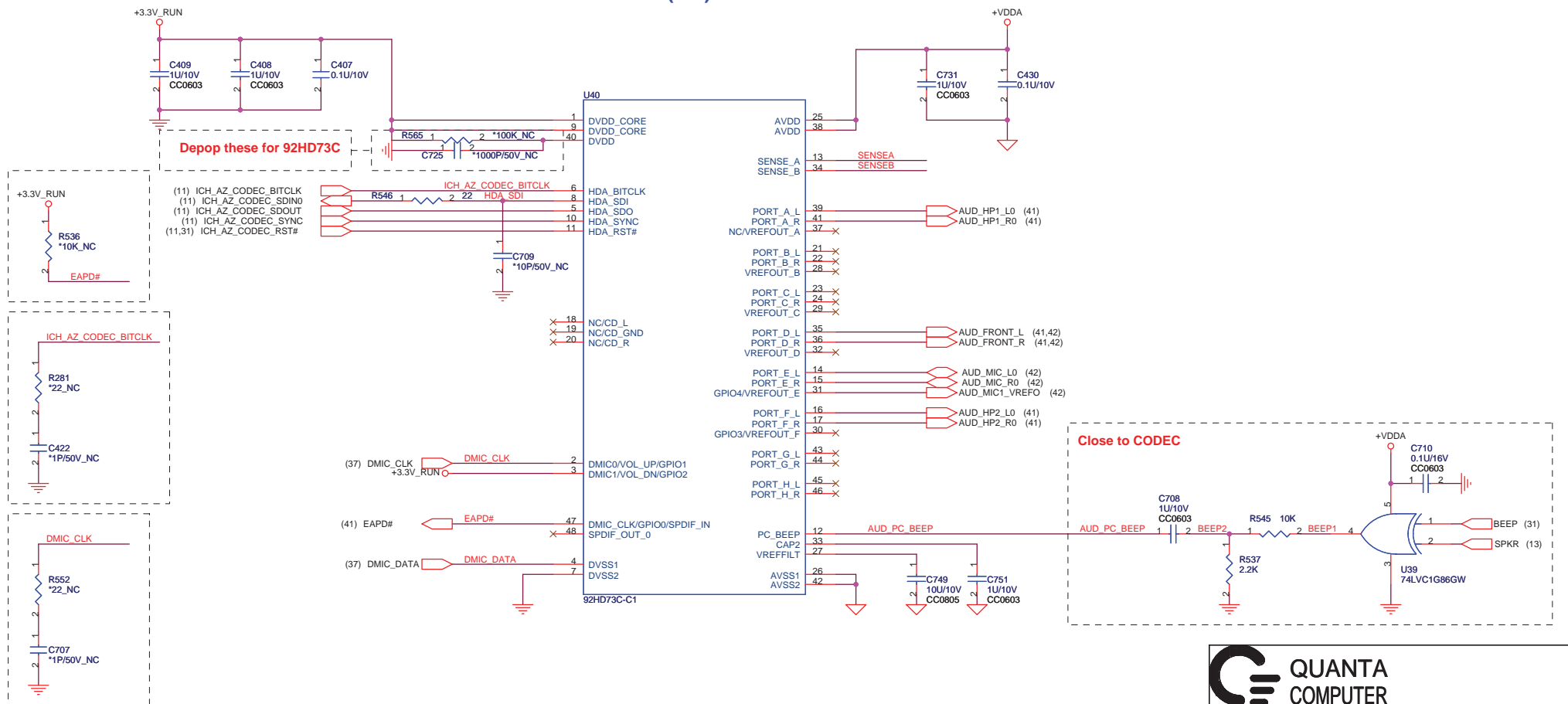


Title		
LED		
Size	Document Number	Rev
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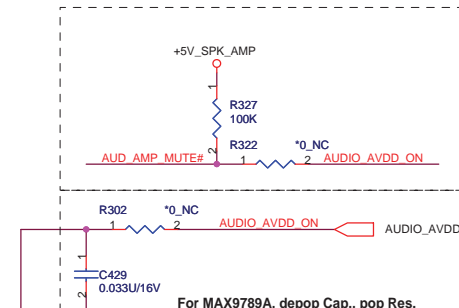
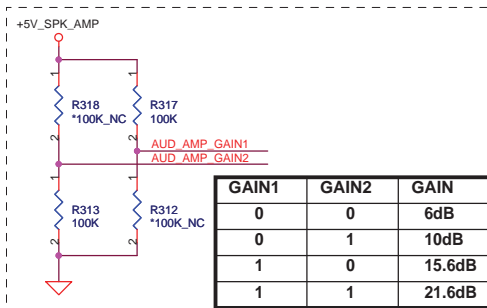
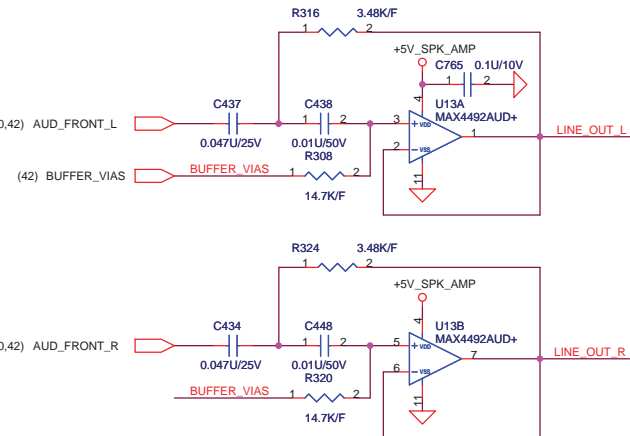
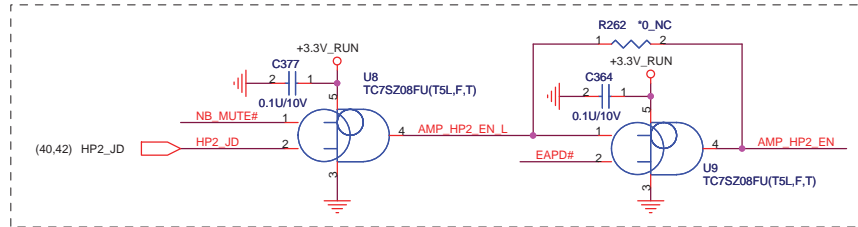
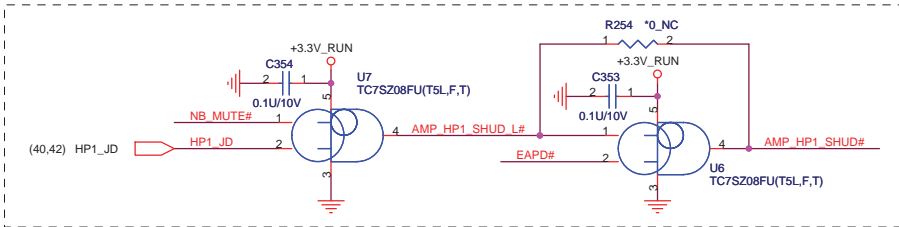
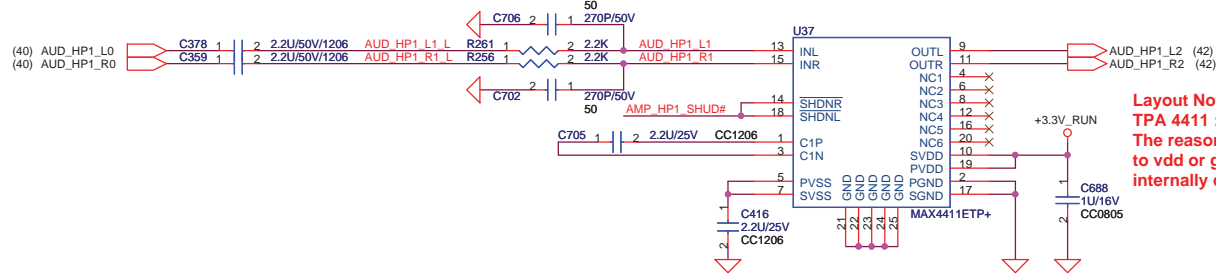
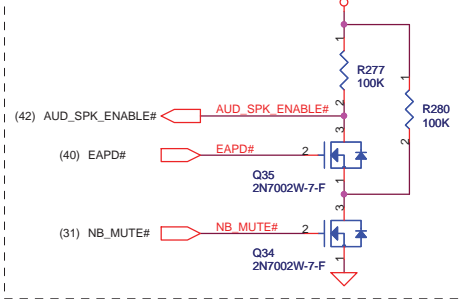




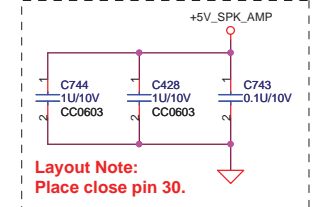
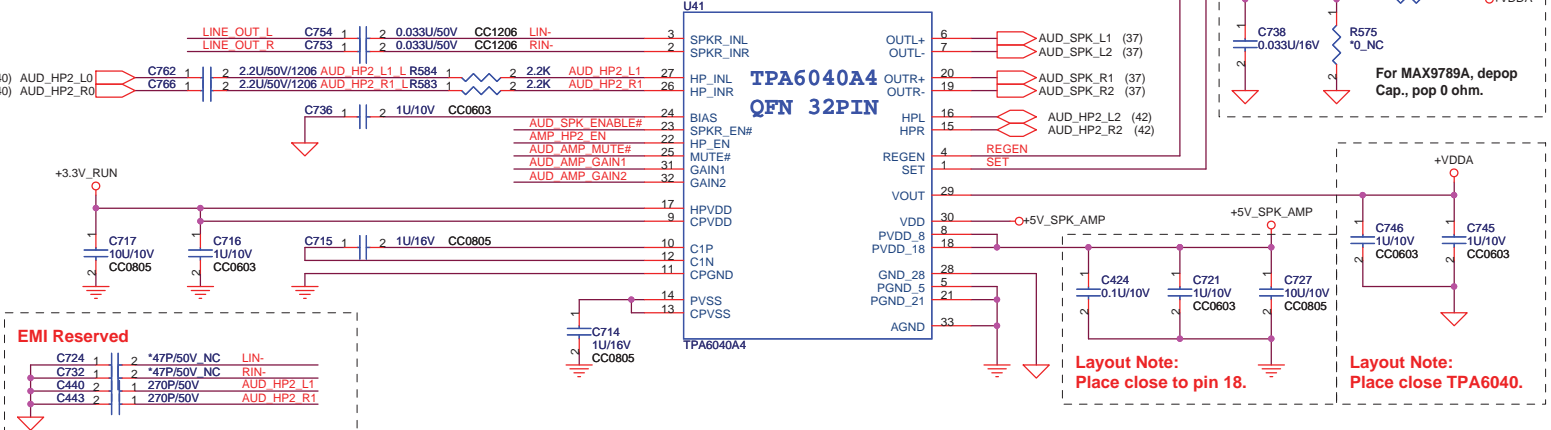
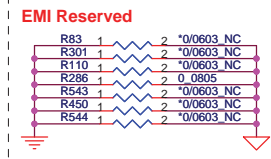
AZALIA (HD) CODEC



INTERNAL SPEAKER AMP

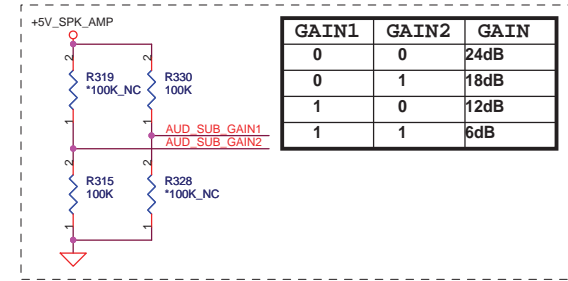
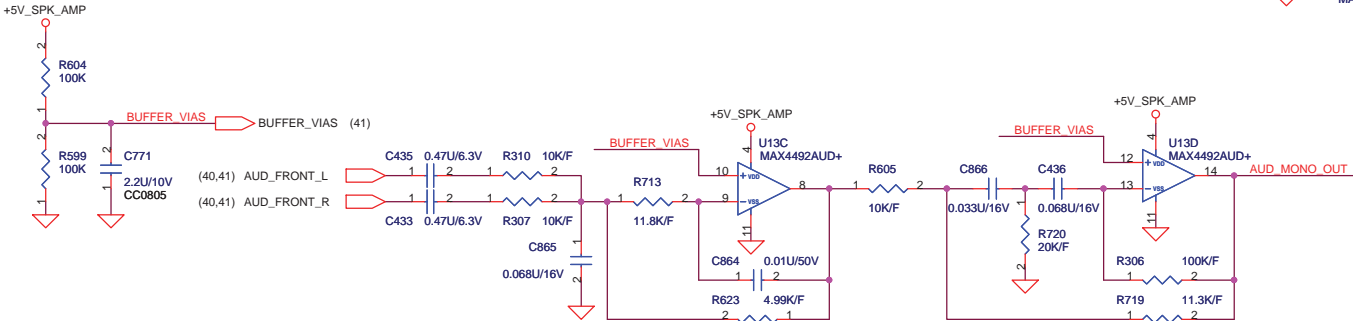
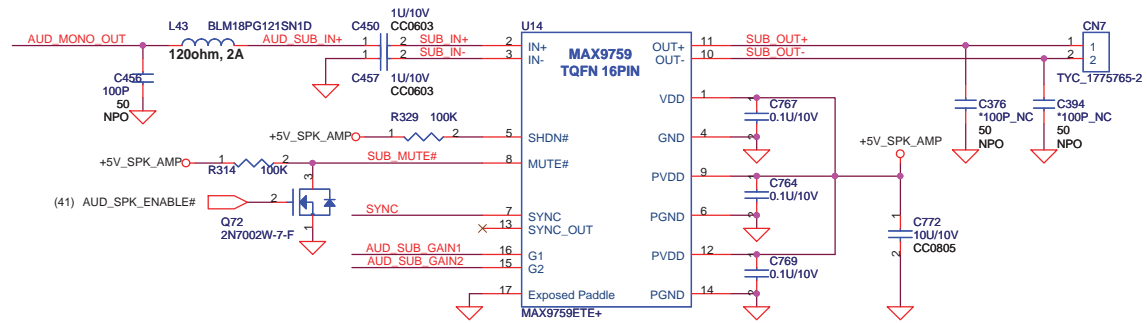
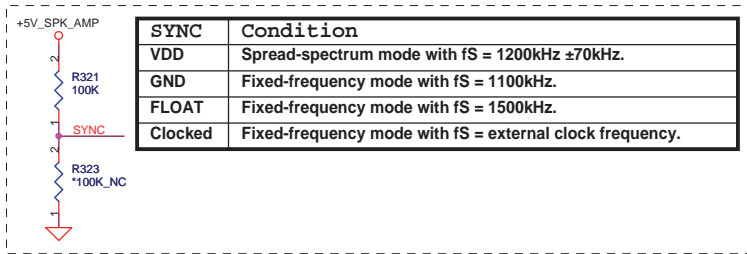


Layout Note:
MAX9789A/TPA6040A : need to connect EP (exposed paddle) to GND.
TPA 4411 : cannot connect EP to GND.
MAX 4411 : can connect EP to GND.



QUANTA
COMPUTER

Title AUDIO AMP		
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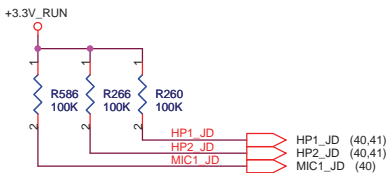
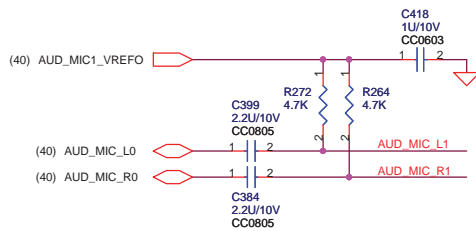
Ambient Parts of Headphone & MIC Jack

(41) AUD_HP1_L2

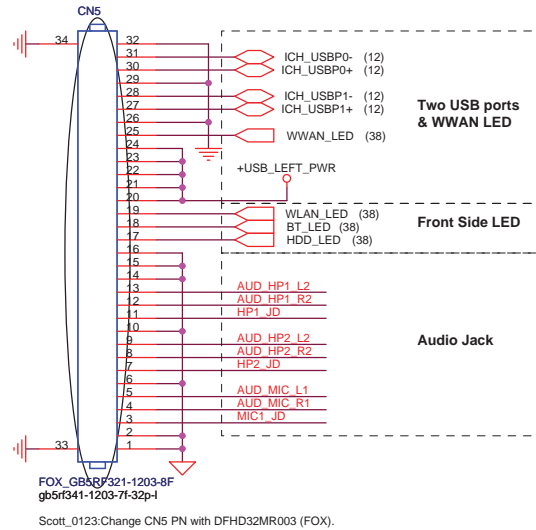
(41) AUD_HP1_R2

(41) AUD_HP2_L2

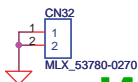
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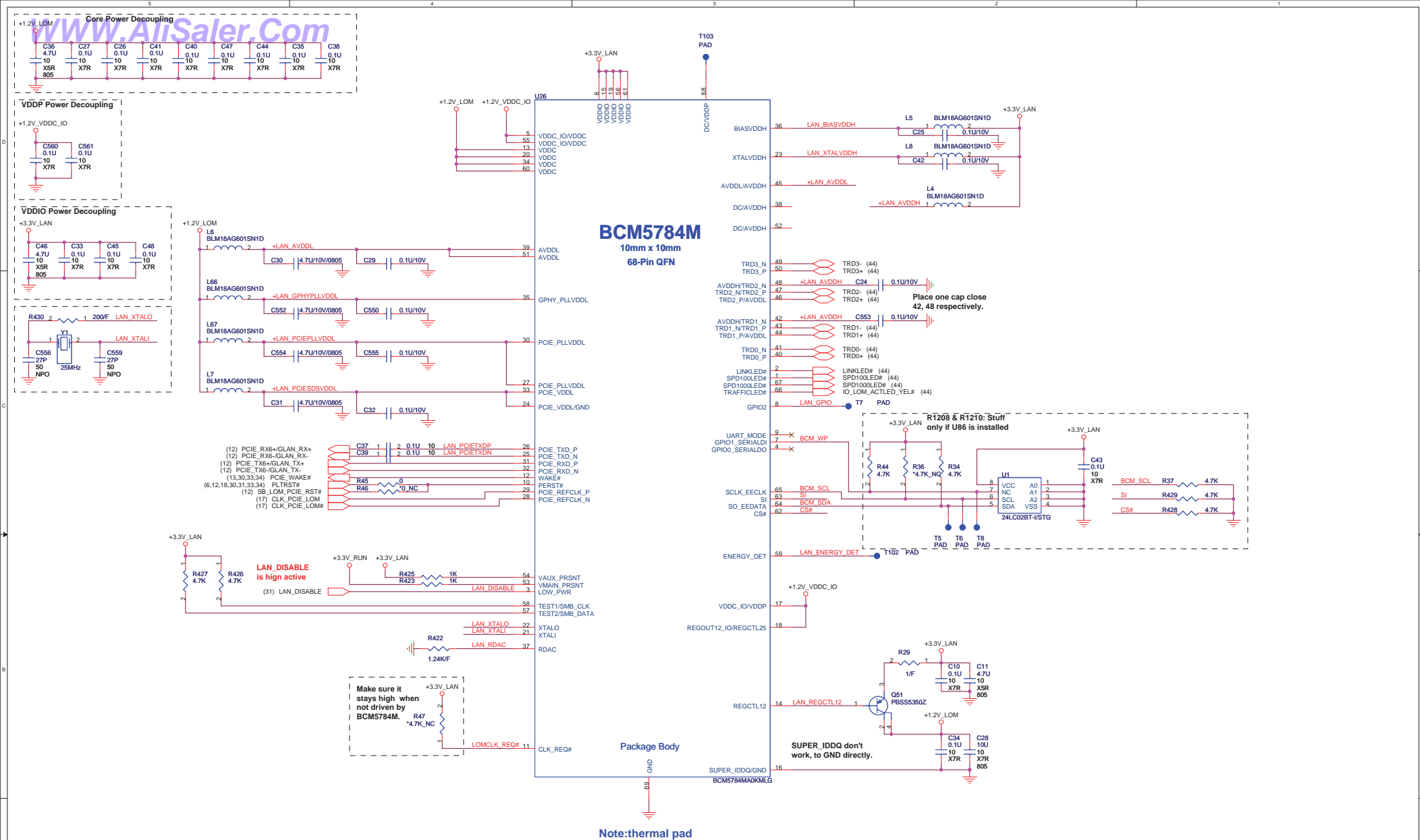


To IB(IO Board) connector

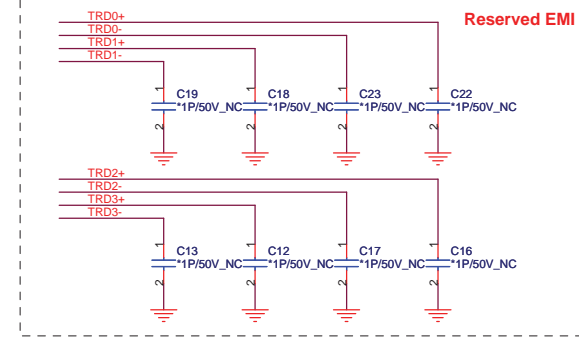
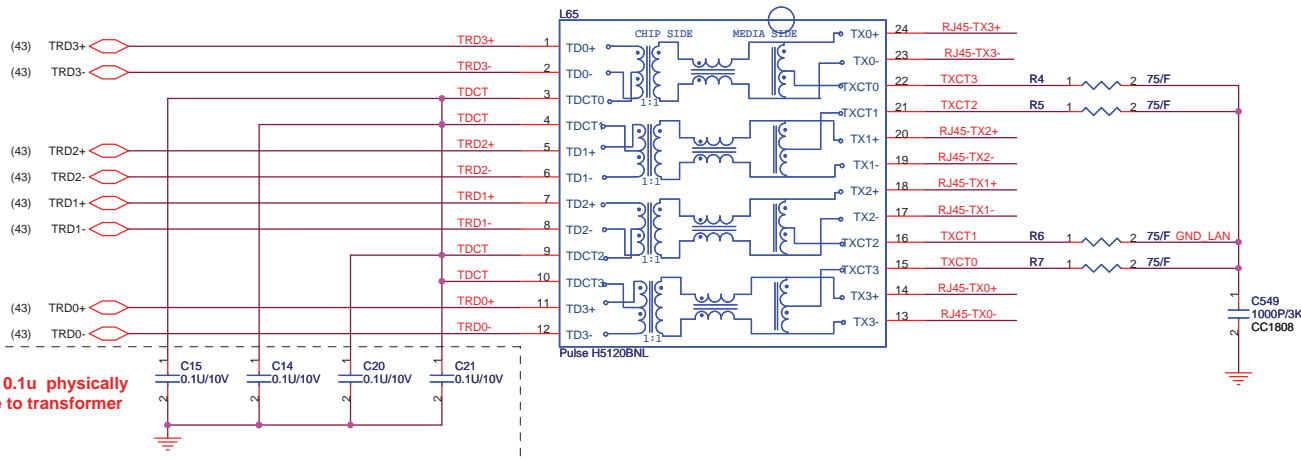


Adding additional AGND

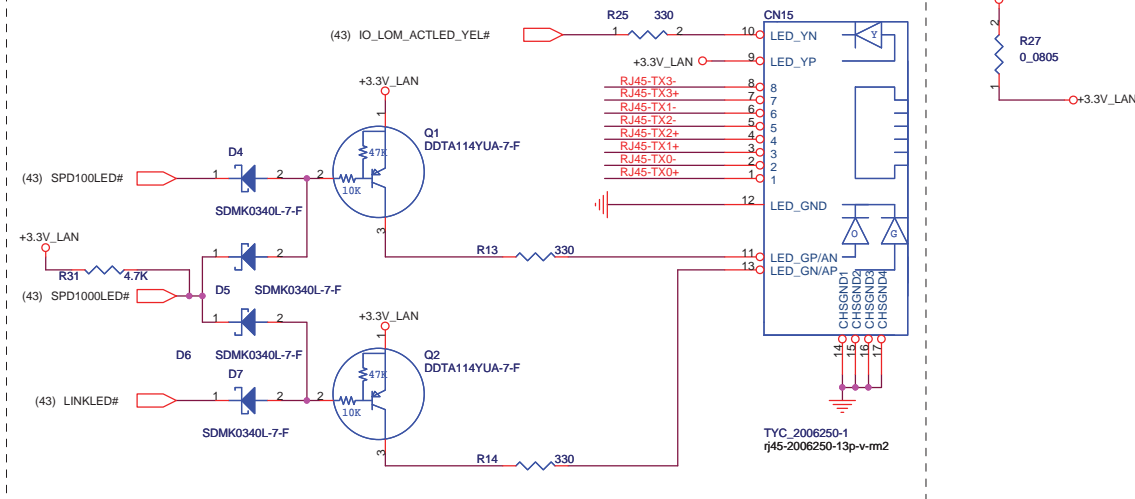


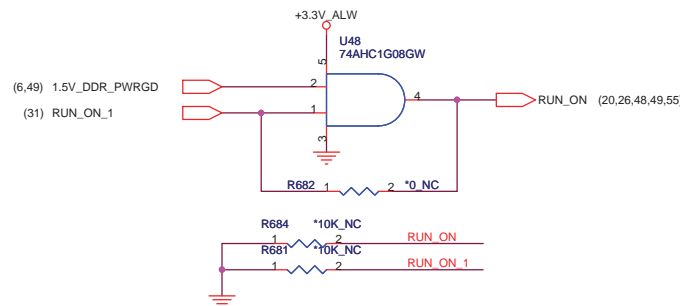
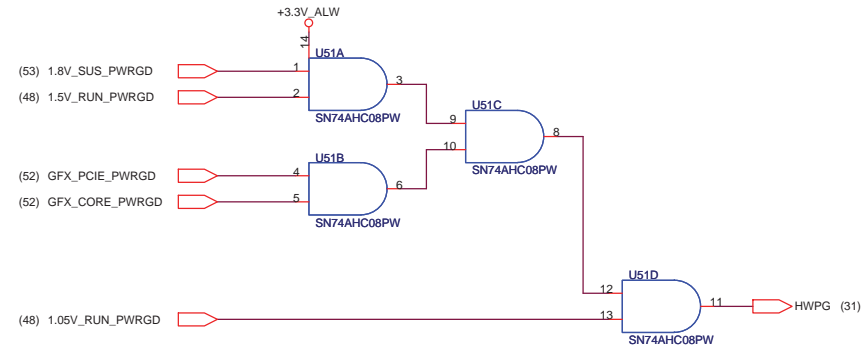
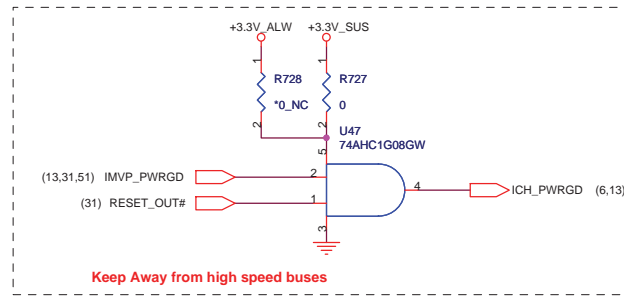


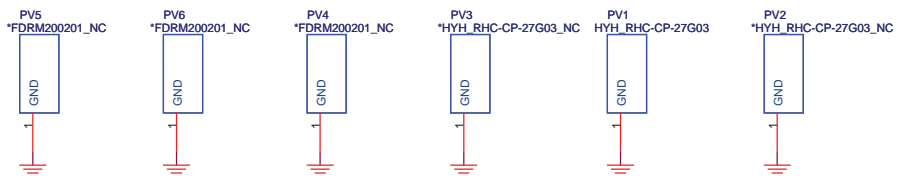
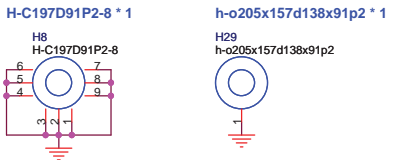
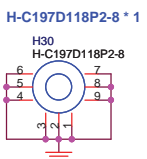
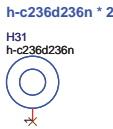
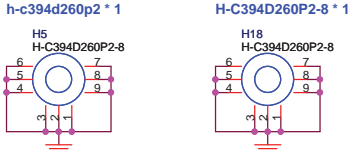
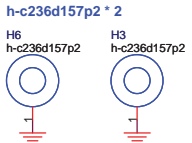
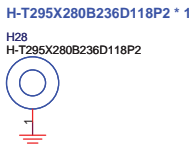
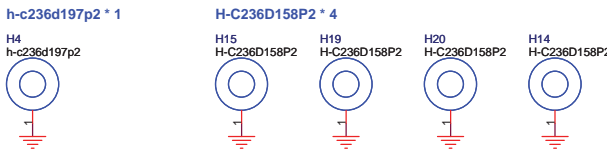
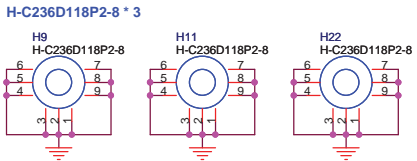
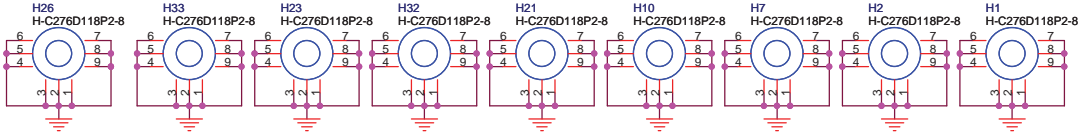
Layout Note:
Route TRD+/- pairs with 100 ohm differential trace impedance.

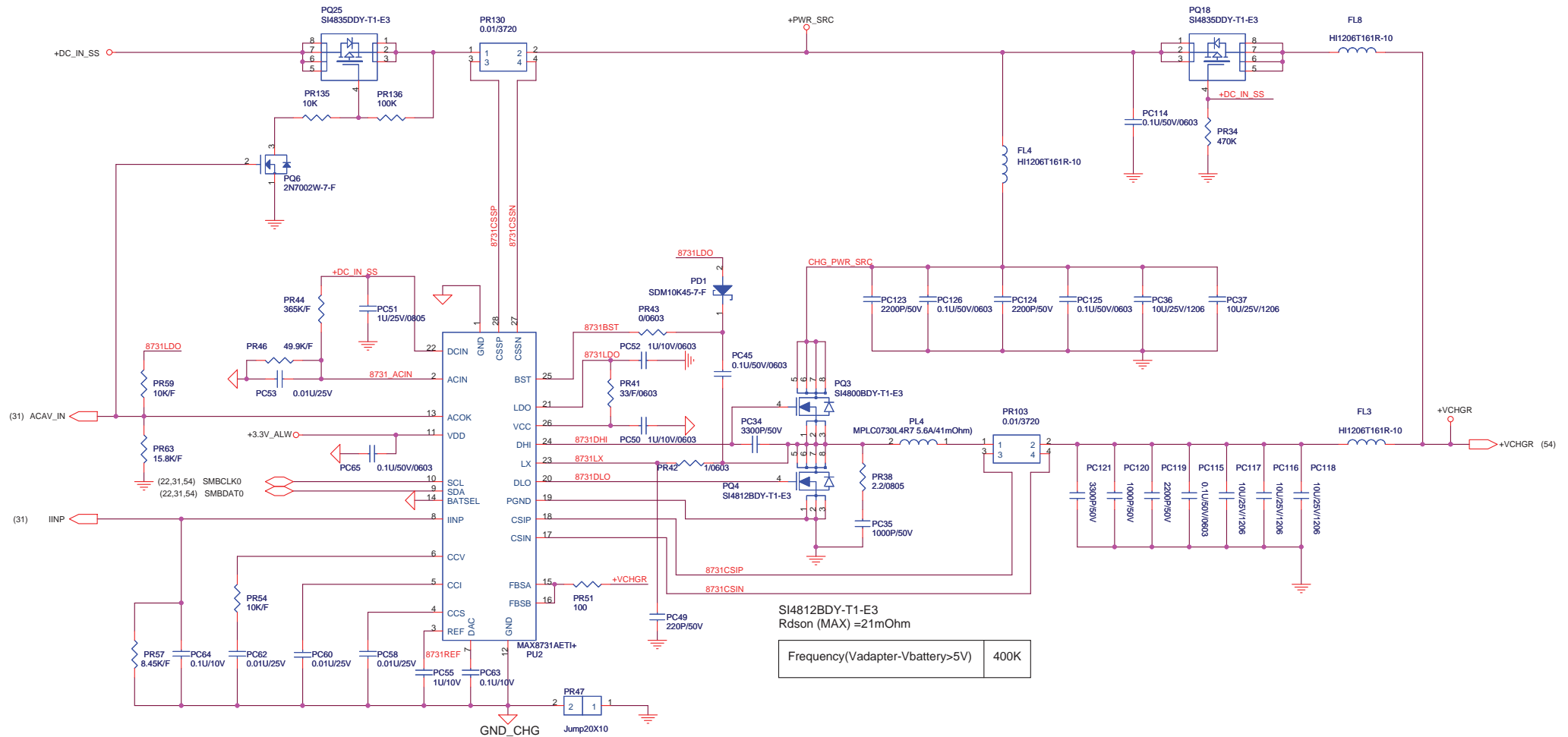


RJ-45 Connector









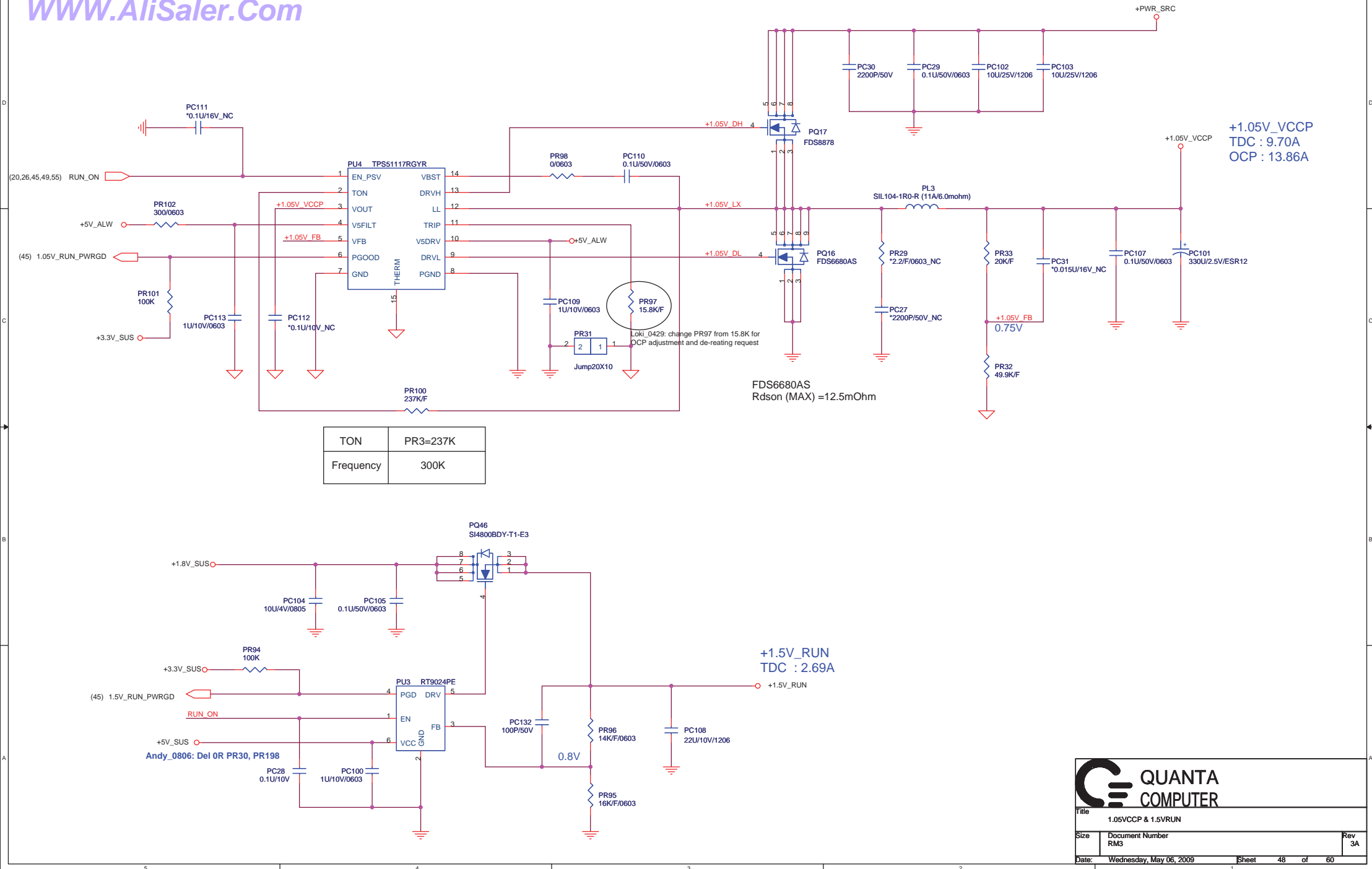
QUANTA COMPUTER

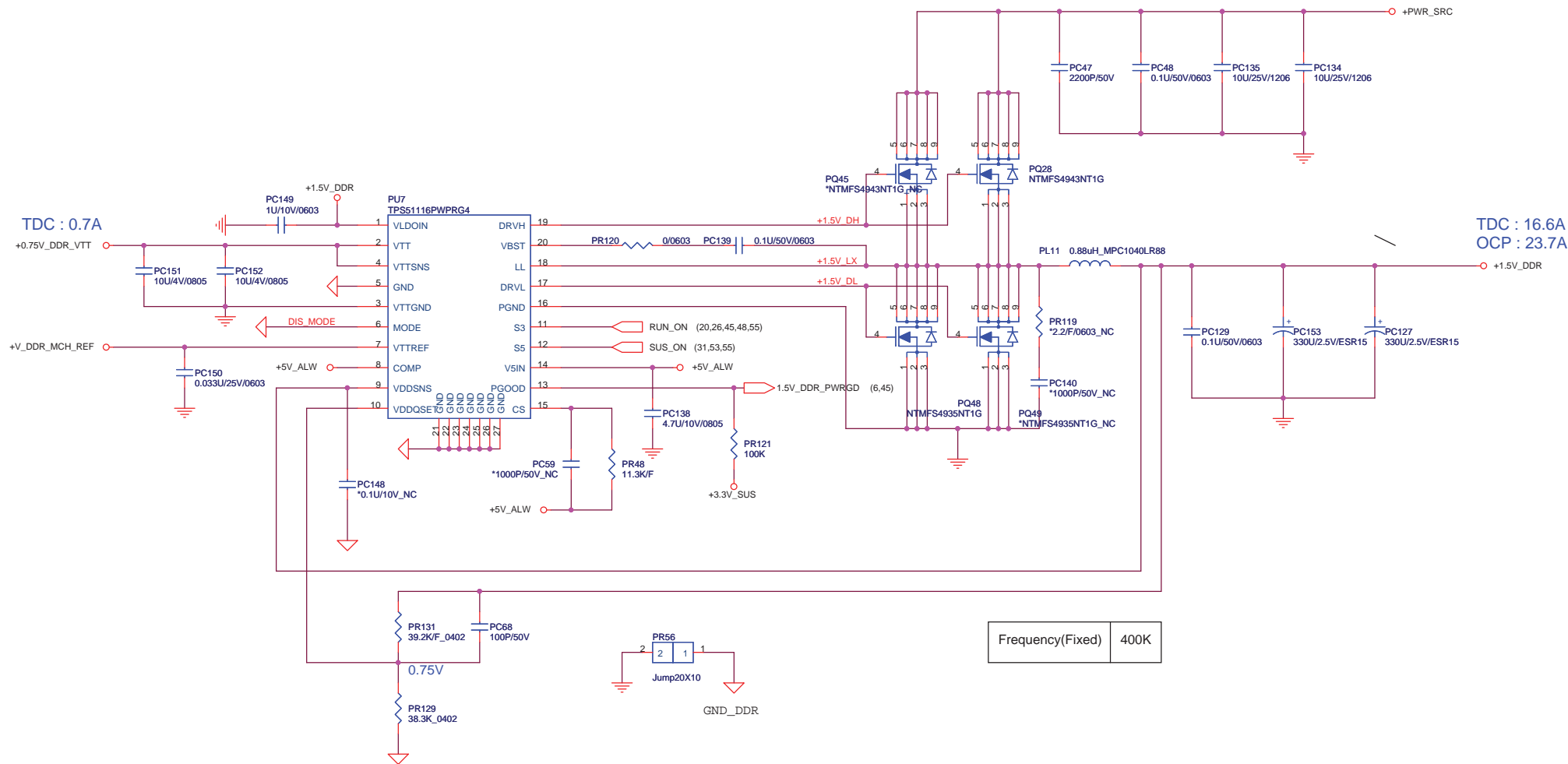
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Size: Document Number
RMS

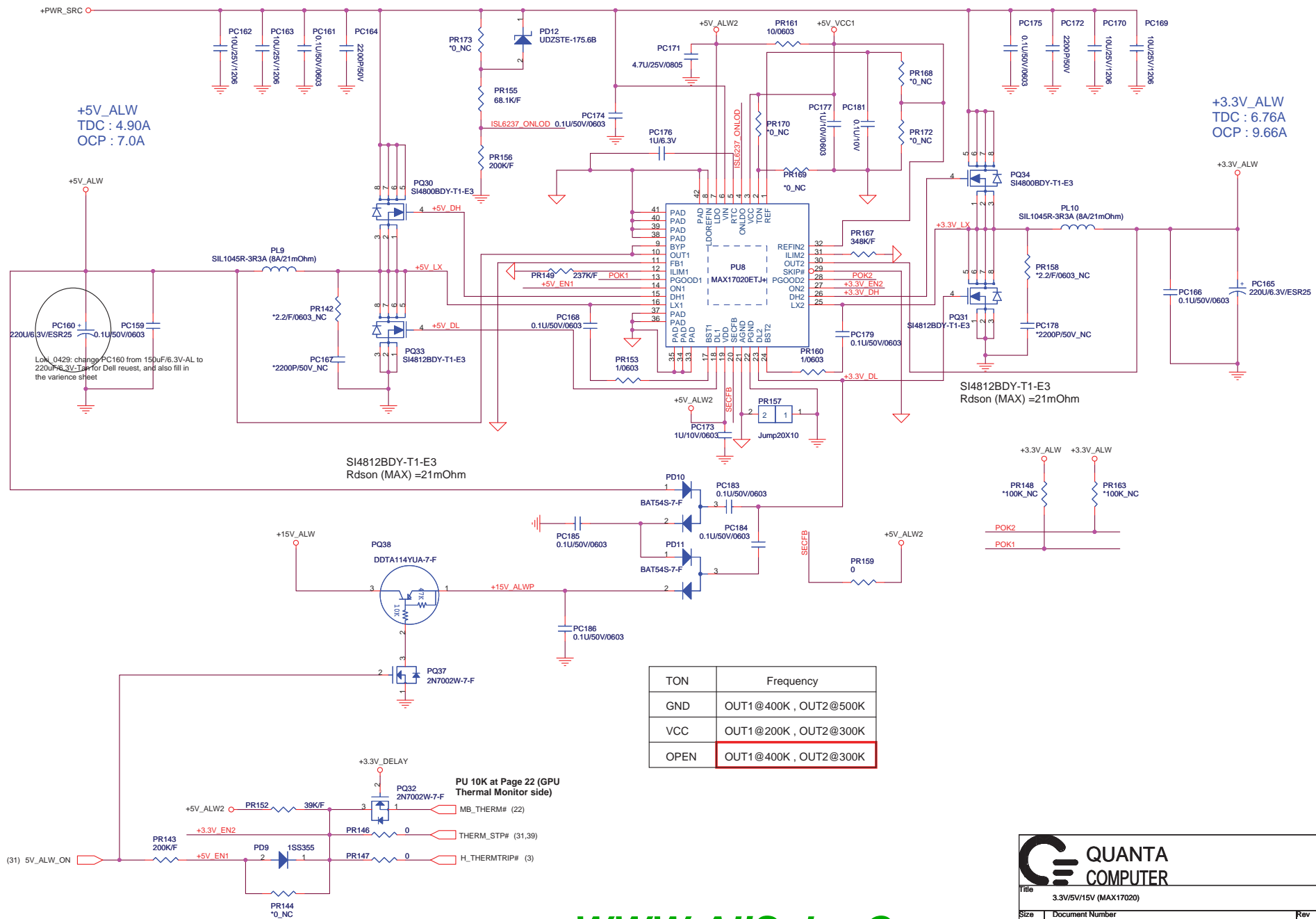
Rev: 3A

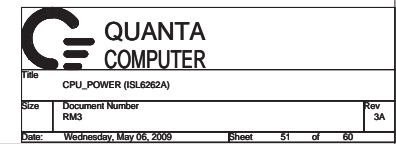
Date: Sheet 47 of 60

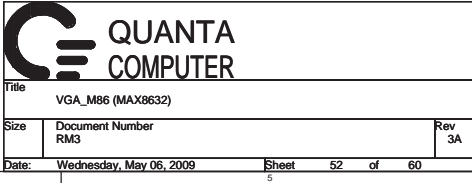




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Size	Document Number RM3	Rev 3A	
Date:	Wednesday, May 06, 2009	Sheet 49	of 60

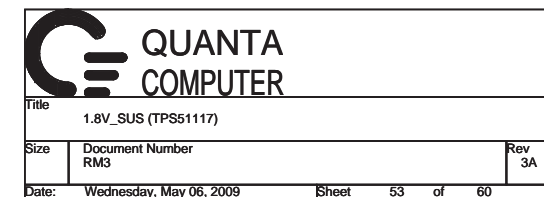


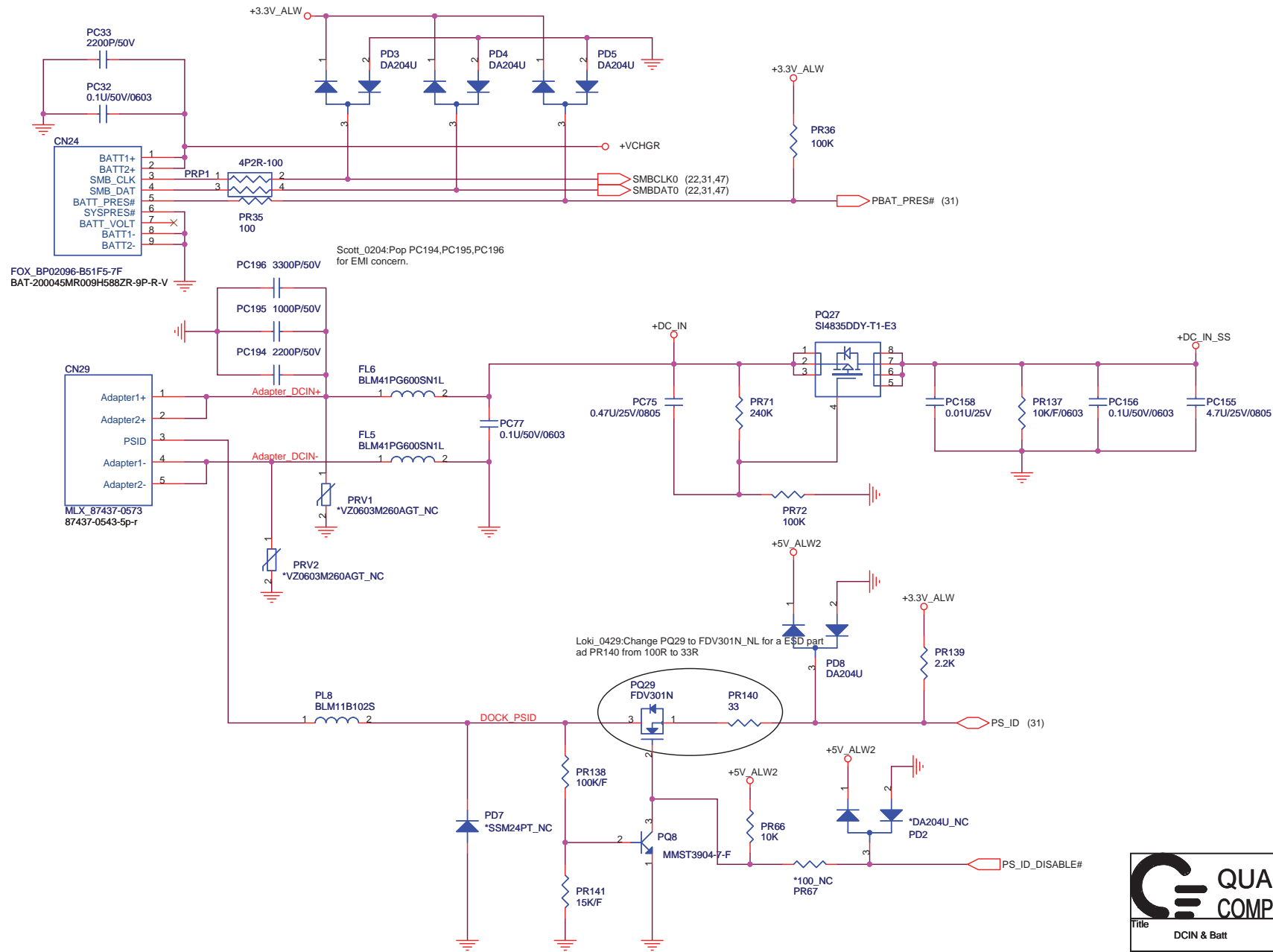




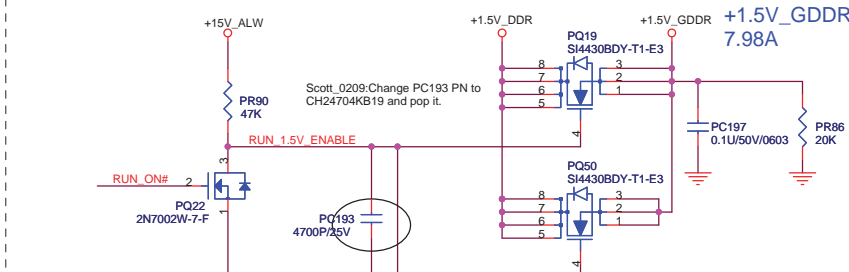
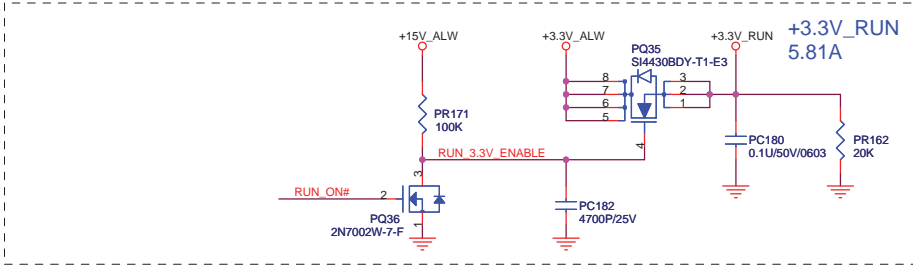
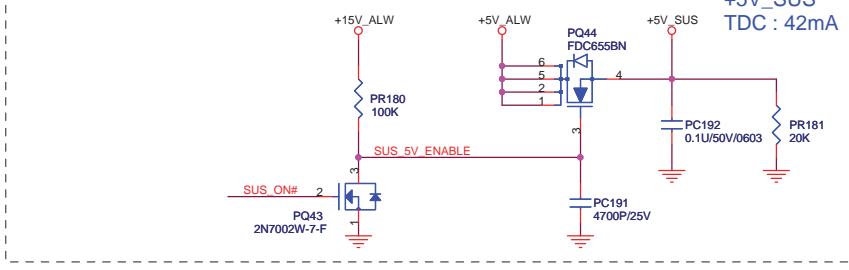
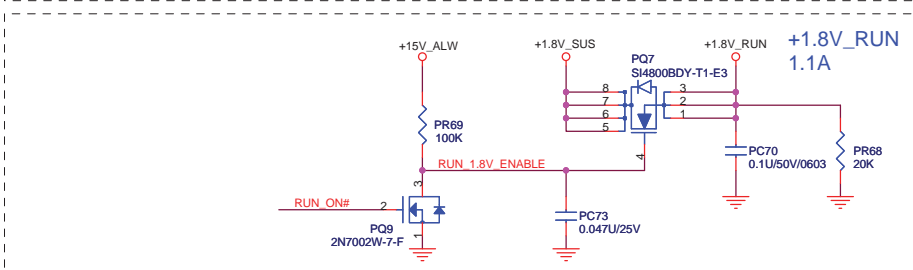
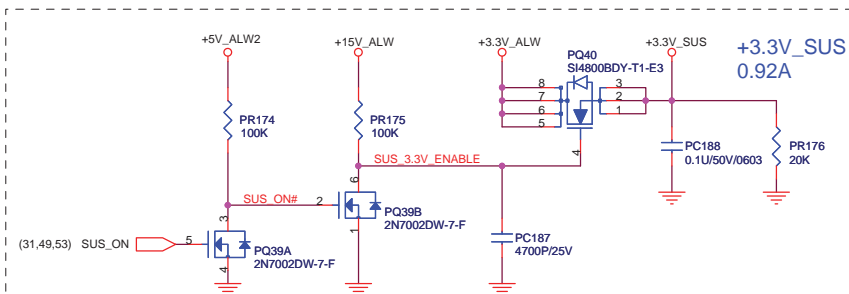
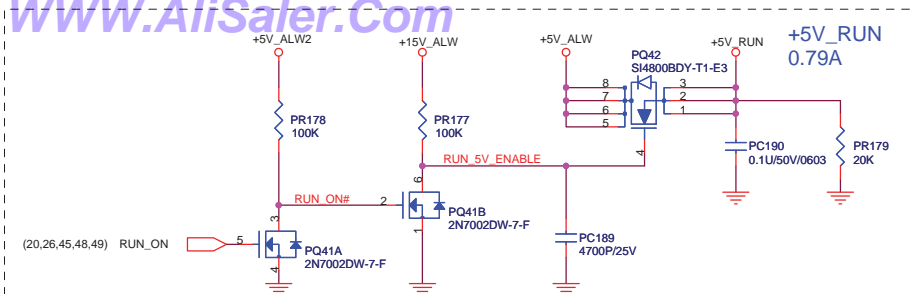
GFX_CORE_CNTRL0	GFX_CORE_CNTRL1	GFX_CORE_CNTRL2	+VCC_GFX_CORE
LOW	LOW	LOW	0.9V
HIGH	LOW	LOW	1.0V
HIGH	HIGH	LOW	1.1V
HIGH	HIGH	HIGH	1.2V

ILIM	$I_{OVP} = (2 * (R_b / (R_a + R_b)) * 0.1 * (1 / R_{DS(on)}) + (I_{DELTA} / 2)$
SKIP#	AVDD = Low-noise, forced-PWM mode. GND = Pulse-skipping operation.
OVP/UVFP	The overvoltage limit is 116% of Vout. The undervoltage limit is 70% of Vout.

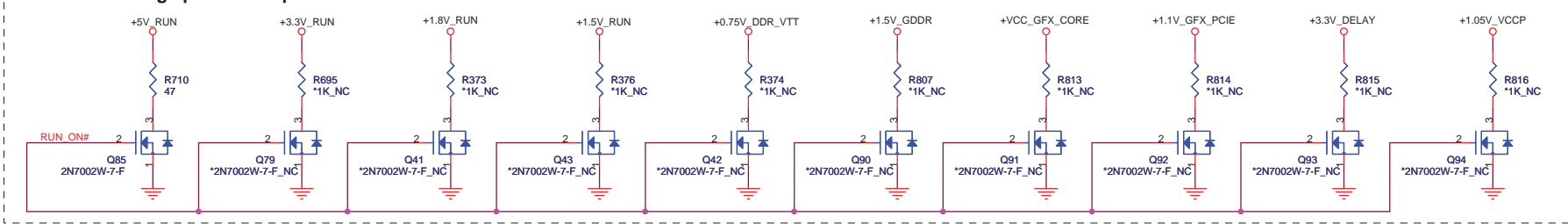




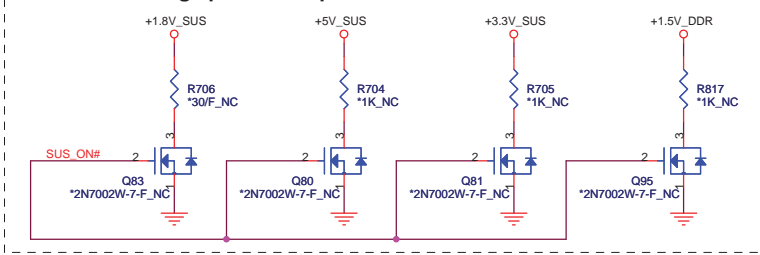
Title			DCIN & Batt
Size	Document Number	Rev	
	RM3	3A	
Date:	Wednesday, May 06, 2009	Sheet	54 of 60



Reserve discharge path - RUN plane



Reserve discharge path - SUS plane



QUANTA
COMPUTER

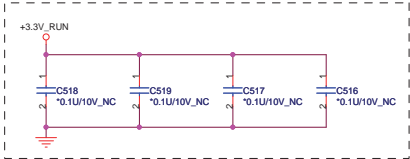
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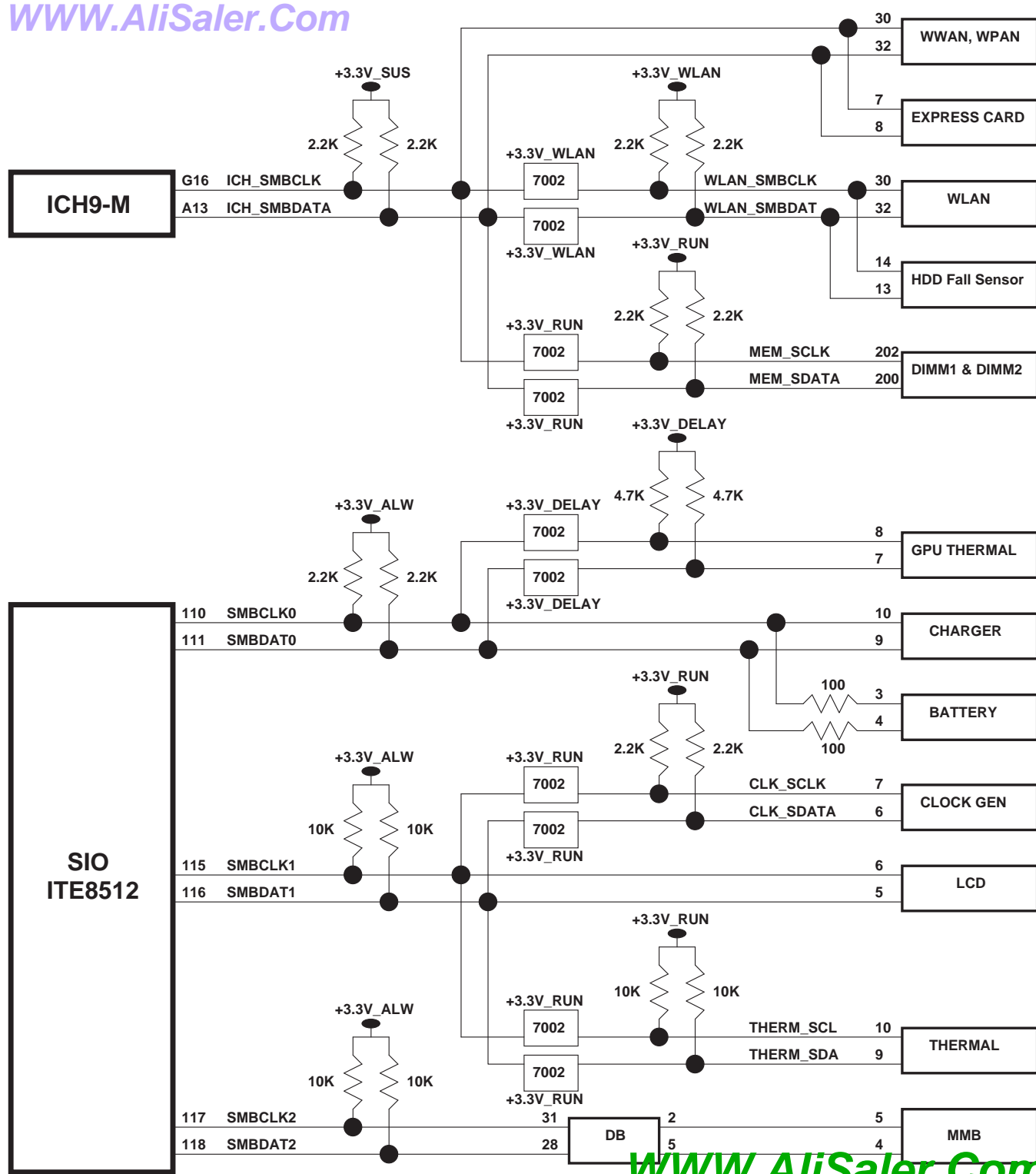
Size: RM3

Document Number: Rev 3A

Date: Wednesday, May 06, 2009

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POWER STATES

State \ Signal	SLP_S3#	SLP_S4#	SLP_S5#	S4_STATE#	ALWAYS PLANE	SUS PLANE	RUN PLANE	CLOCKS
S0 (Full ON) / M0	HIGH	N/A	HIGH	N/A	ON	ON	ON	ON
S3 (Suspend to RAM) / M-OFF	LOW	N/A	HIGH	N/A	ON	ON	OFF	OFF
S4 (Suspend to DISK) / M-OFF	LOW	N/A	HIGH	N/A	ON	OFF	OFF	OFF
S5 (SOFT OFF) / M-OFF	LOW	N/A	LOW	N/A	ON	OFF	OFF	OFF

PM TABLE

power plane \ State	+RTC_CELL	+DC_IN +DC_IN_SS +PWR_SRC +CPU_PWR_SRC +5V_ALW2 +MMB_PWR +3.3V_ALW	+5V_ALW +15V_ALW +5V_SUS +3.3V_SUS +3.3V_LAN +3.3V_CARDAUX +1.8V_SUS +1.5V_DDR	+VCC_CORE +0.75V_DDR_VTT +1.05V_VCCP +1.1V_GFX_PCIE +1.2V_LOM +1.5V_RUN +1.5V_CARD +1.8V_RUN +3.3V_RUN +3.3V_DELAY +3.3V_R5C833	+3.3V_RUN_CARD +3.3V_CARD +3.3V_WLAN +5V_RUN +LCDVCC +5V_HDD +5V_MOD +5V_SPK_AMP +VDDA +GFX_PWR_SRC
S0	ON	ON	ON	ON	ON
S3	ON	ON	ON	OFF	OFF
S5 & S4 with AC or BAT	ON	ON	OFF	OFF	OFF
no AC/Battery	ON	OFF	OFF	OFF	OFF

PCI TABLE

PCI DEVICE	IDSEL	REQ#/GNT#	PIRQ
R5C833	AD17	REQ#0 / GNT#0	PIRQB: 1394 PIEQC: Card reader

ICH9-M	USB PORT#	DESTINATION
	0	Side pair Top / left
	1	Side pair Bottom / left
	2	Reserved
	3	Reserved
	4	Mini Card (WLAN)
	5	Mini Card (WWAN)
	6	Mini Card (WPAN)
	7	Express Card
	8	USB W/ E-SATA port
	9	TV
	10	Reserved
11	Camera	

ICH9-M	PCI EXPRESS	DESTINATION
	Lane 1	Mini Card-1 WWAN
	Lane 2	Mini Card-2 WLAN
	Lane 3	Mini Card-3 WPAN
	Lane 4	Express Card
	Lane 5	None
	Lane 6	LOM

