

RM3 (Paltrow MLK) Block Diagram

VER : 3A

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

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

667 / 800 / 1066 MHz FSB

DDR3-SODIMM1 PG 15
800 / 1066 MHZ DDR III

DDR3-SODIMM2 PG 16
800 / 1066 MHZ DDR III

Cantiga
(1299 uFCBGA)
PG 5,6,7,8,9,10

DMI interface

PCI EXPRESS GFX
AMD M96-M2 XT (128 bit)
(962 FCBGA)
PG 18,19,20,21,22,26

HDMI

HDMI CONN. PG 25

DP

DISPLAYPORT PG 25

LVDS

Panel Connector PG 26

VGA

CRT CONN. PG 27

M96-M2 : DDR3 x 8(1G)
(96P FBGA) PG 23,24

GPU THERMAL
ANALOG DEVICES ADM1032
(8 MSOP) 3 x 3 mm PG 22

Subwoofer CONN PG 42

Subwoofer AMP
MAXIM MAX9759
(16 Pin TQFN) PG 42

MIC PG 42 & IB

Internal Speaker
PG 37 & DB

HP2 PG 42 & IB

HP1 PG 42 & IB

Camera + D-MIC
PG 37

TV CONN PG 35

USB CONN
PG 42 & IB

USB/eSATA Combo
PG 35 & eSATA board

SATA-ODD PG 36

SATA-HDD PG 36

1394 CONN
PG 29 & 1394 board

CardReader CONN PG 29

PC Card/1394
RICOH R5C833T
(128 Pin TQFP)
14 x 14 mm PG 28,29

Debug Port
(Mini PCI)
PG 56

SIO
ITE ITE8512E
(128 Pin LQFP)
16 x 16 mm PG 31

SPI ROM
2MB
(8 Pin SO8W) PG 32

Keyboard
PG 37

CIR
PG 32

Touchpad
PG 37 & DB

Media Button
PG 37 & DB

LED
PG 38

RTC
PG 32

PCIE [1]

USB2.0 [5]

WWAN MINI-CARD PG 34

PCIE [2]

USB2.0 [4]

WLAN Half MINI-CARD PG 33

PCIE [3]

USB2.0 [6]

UWB/BT MINI-CARD PG 34

PCIE [4]

USB2.0 [7]

Express Card PG 30

PCIE [6]

LAN
Broadcom BCM5784M
(68P QFN) PG 43

Express Switch
RICOH R5538D001
(20 QFN) 4 x 4 mm PG 30

Magnetic
PG 44

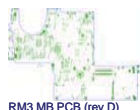
RJ45
PG 44

PAD & SCREW & SPRING
PG 46

System Reset Circuit
PG 45

To IO Board
(USB*2/ MIC/ HP2/ HP1/ LED)
PG 42

To Daughter Board
(Power Button/Speaker/ KB LED/Touch PAD/ Media Button)
PG 37



RM3 MB PCB (rev D)




Title BLOCK DIAGRAM		
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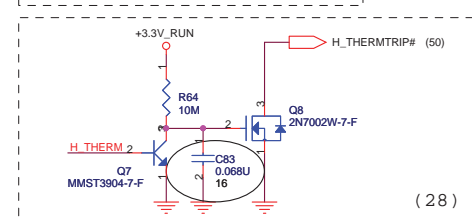
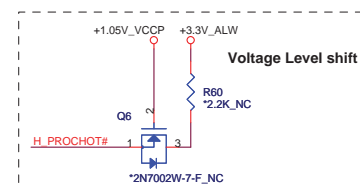
PAGE	DESCRIPTION
1	Block Diagram
2	Front Page
3-4	CPU (Penryn)
5-10	NB (Cantiga)
11-14	SB (ICH9-M)
15-16	DDR3 SO-DIMM(204P)
17	Clock Generator
18-24	GPU (M96XT)
25	HDMI & DP
26	LCD connector
27	CRT
28	Card reader PCI interface
29	Card reader & 1394 CONN
30	Express card
31	SIO (IT8512)
32	Flash/RTC/CIR
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 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	

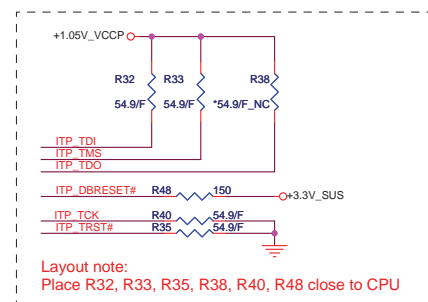
GND PLANE	PAGE	DESCRIPTION
8731AGND	46	
AGND_0.9V	49	
AGND_DC/DC	52	
AGND_DC2	48	
AGND_DDR	49	
AGND_ISL6260	51	
GND	ALL	

 QUANTA COMPUTER			
Title FRONTPAGE			
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FSB	BCLK	BSEL2	BSEL1	BSEL0
667	166	0	1	1
800	200	0	1	0
1066	266	0	0	0



Scott_0403: Change C83 from 0.1U to 0.068U for timing tuning.



Layout note:
Place R32, R33, R35, R38, R40, R48 close to CPU

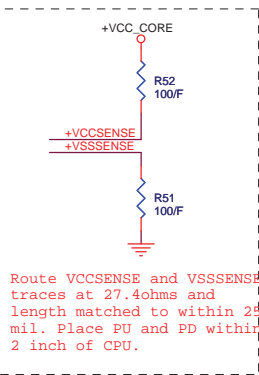
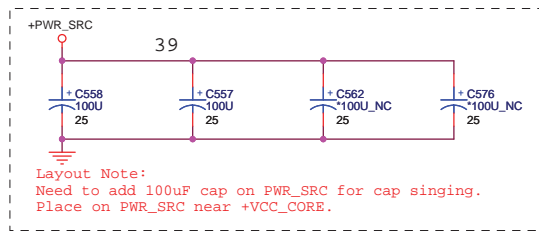
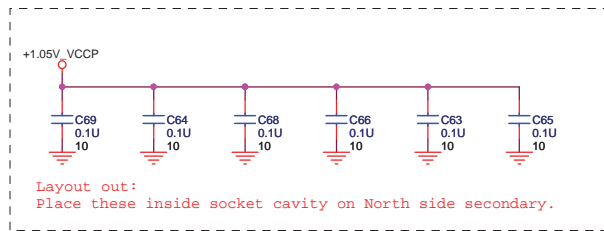
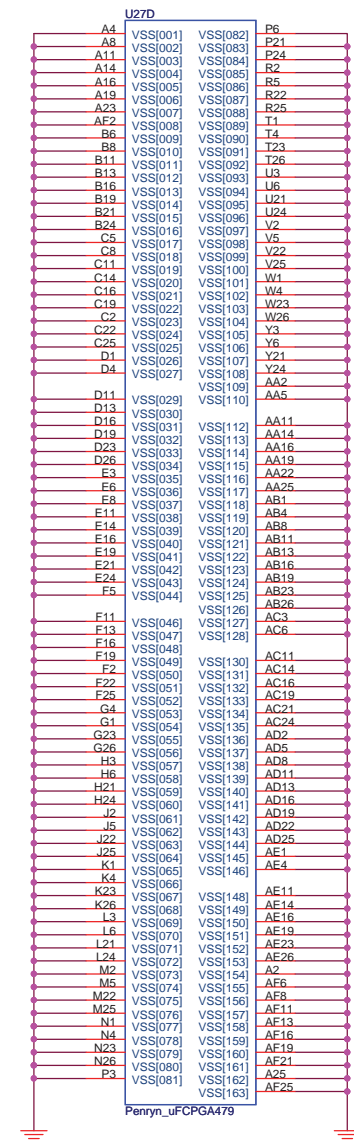
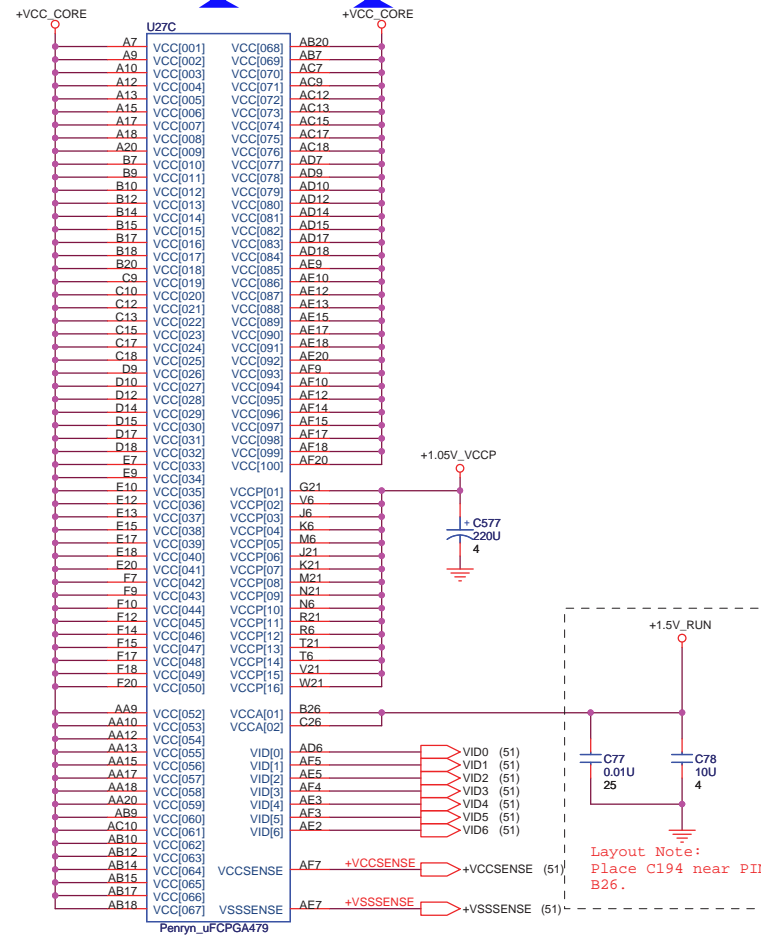
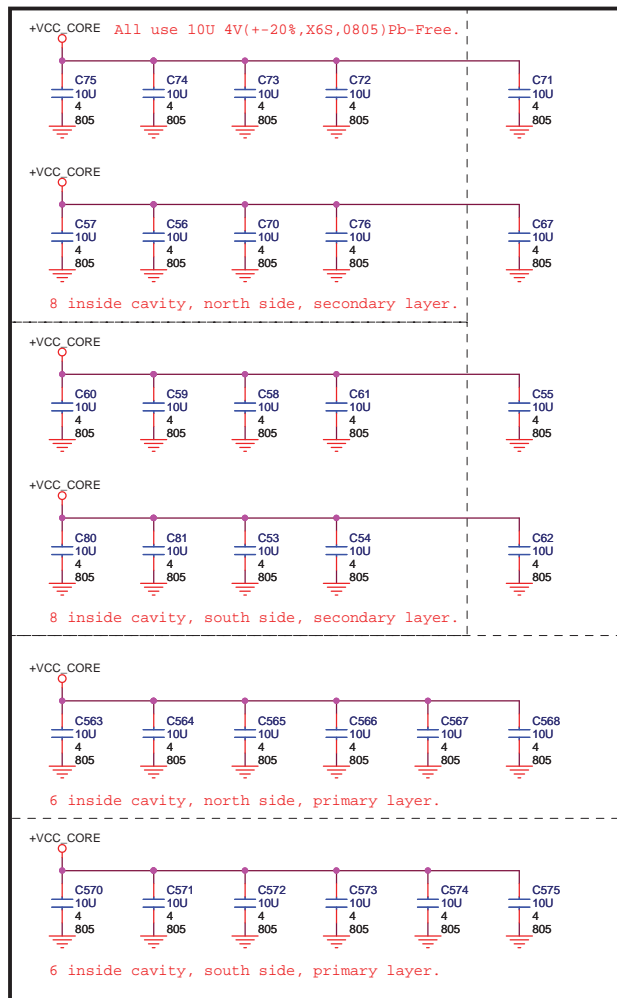


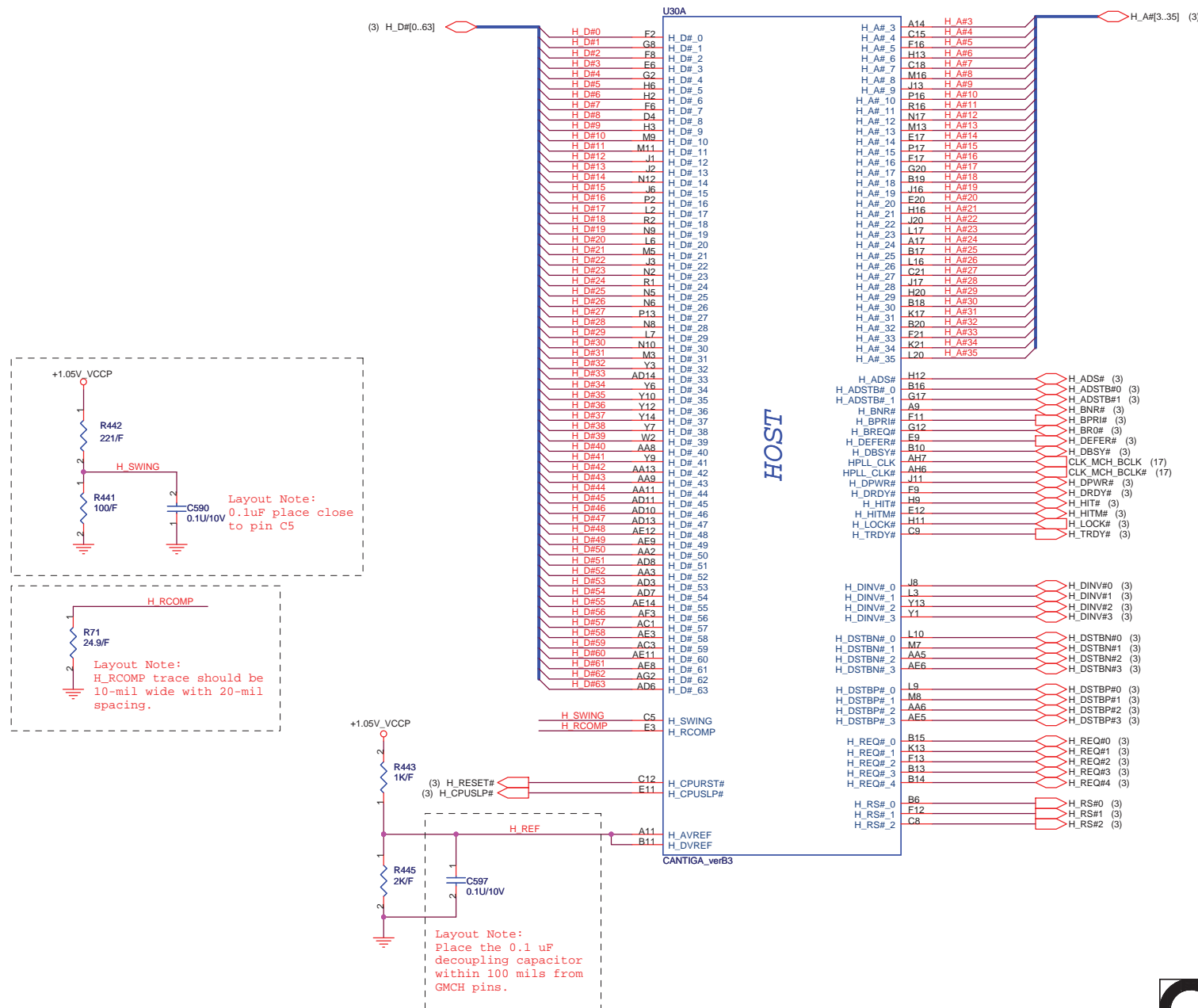
Title	Penryn (HOST BUS)
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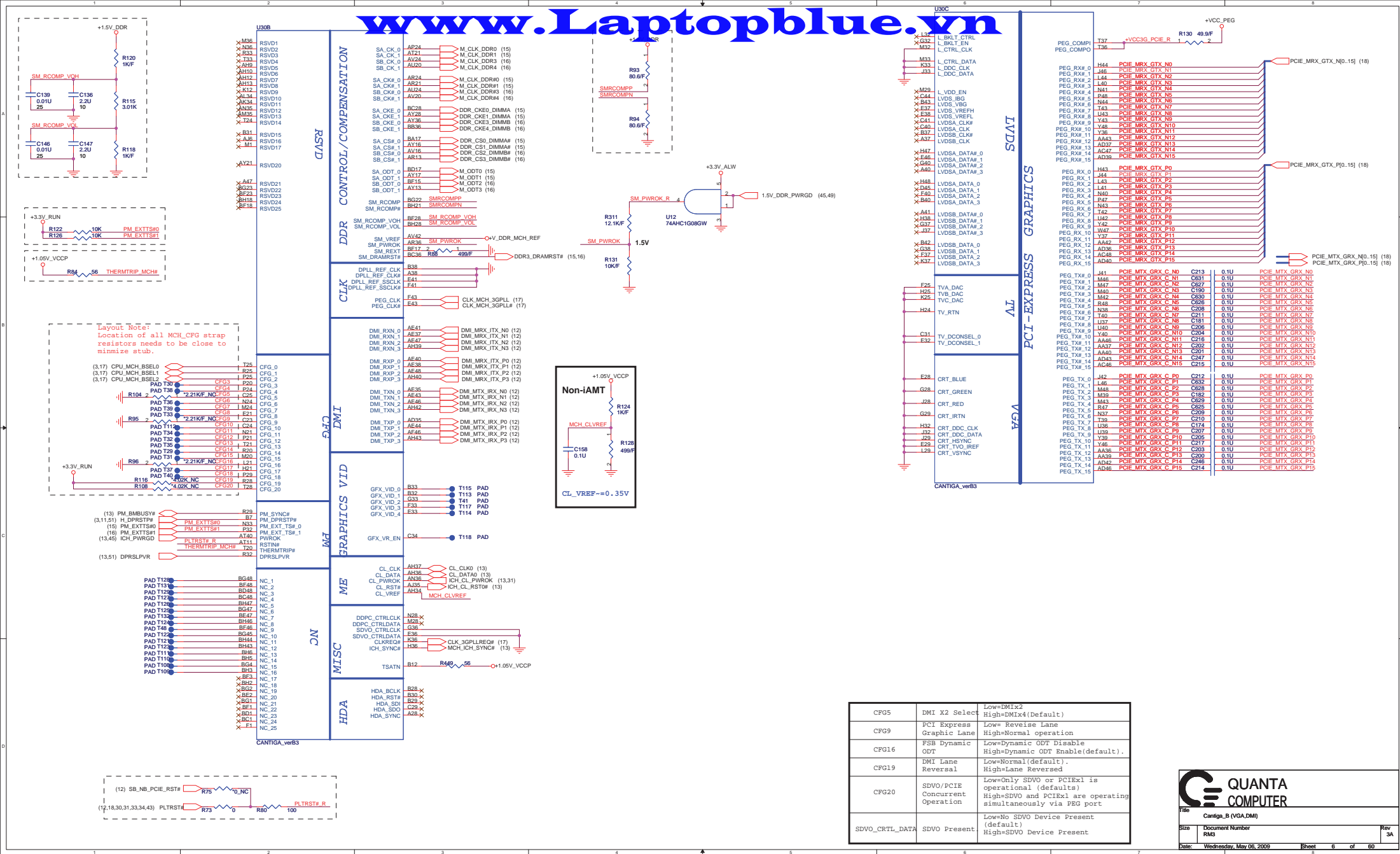
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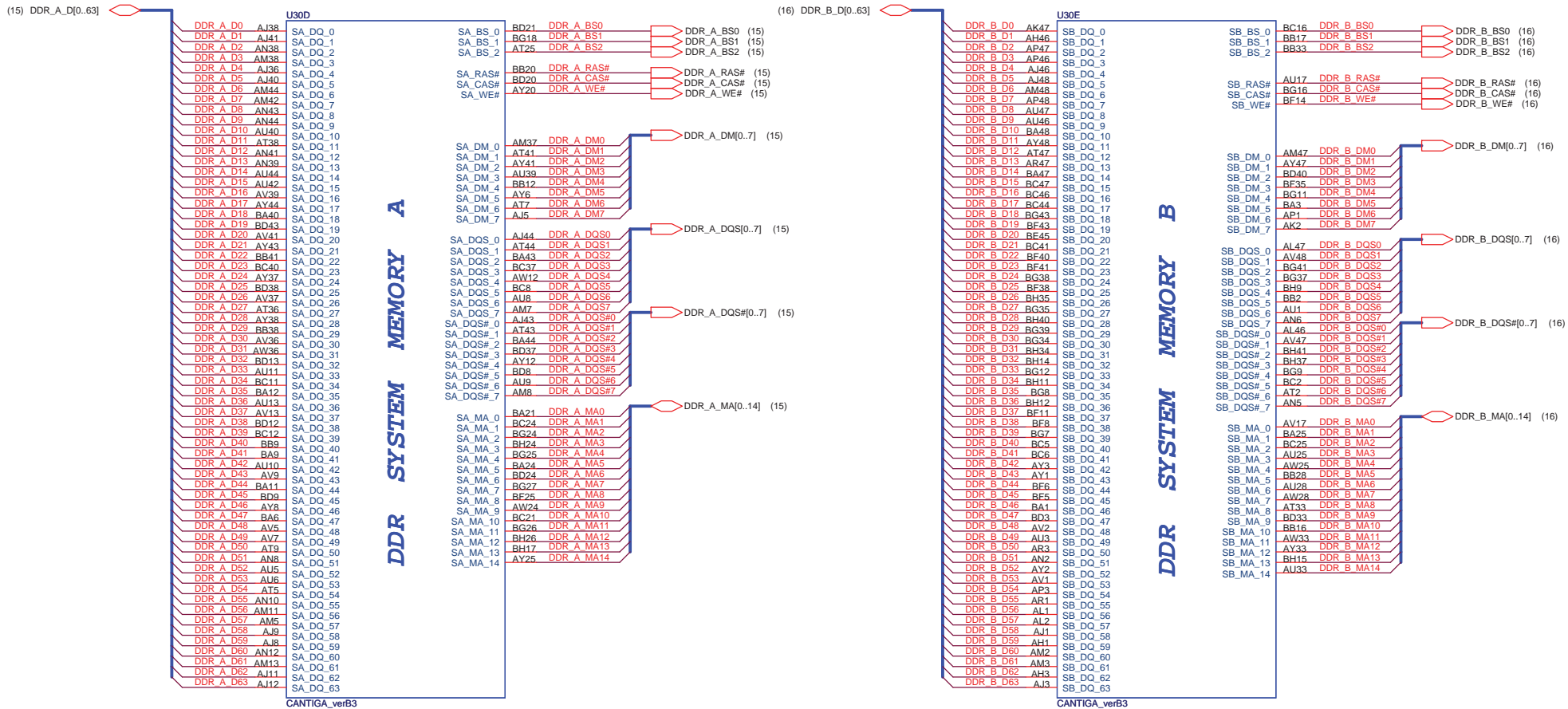
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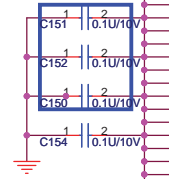








Added for SI recommend.



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

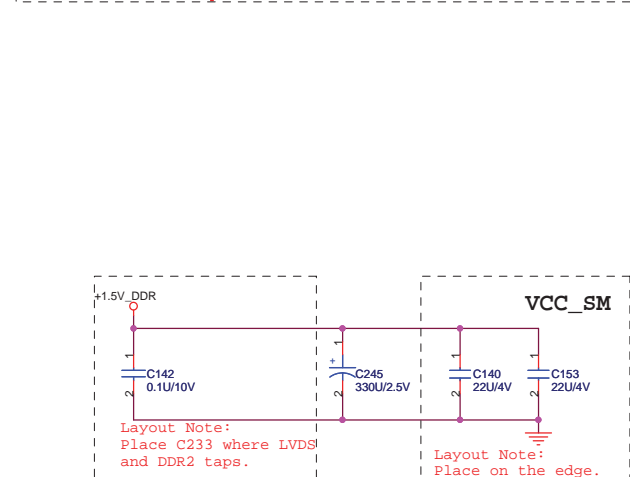
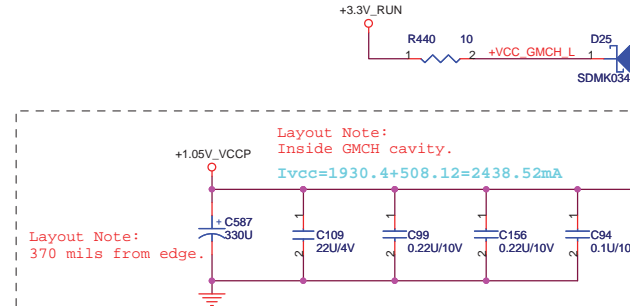
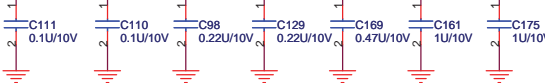
AI14
HI14
VCC_AGX_SENSE
VSS_AGX_SENSE

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



U30F

AG34
AC34
AB34
AA34
Y34
U34
AM33
AK33
AJ33
AG33
AF33
AE33
AC33
Y33
W33
V33
U33
AH28
AF28
AC28
AA28
AJ26
AG26
AE26
AC26
AH25
AG25
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AG24
AJ23
AH23
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T32

POWER

VCC CORE

POWER

VCC NCTF

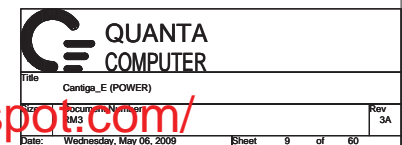
VCC_NCTF_1
VCC_NCTF_2
VCC_NCTF_3
VCC_NCTF_4
VCC_NCTF_5
VCC_NCTF_6
VCC_NCTF_7
VCC_NCTF_8
VCC_NCTF_9
VCC_NCTF_10
VCC_NCTF_11
VCC_NCTF_12
VCC_NCTF_13
VCC_NCTF_14
VCC_NCTF_15
VCC_NCTF_16
VCC_NCTF_17
VCC_NCTF_18
VCC_NCTF_19
VCC_NCTF_20
VCC_NCTF_21
VCC_NCTF_22
VCC_NCTF_23
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VCC_NCTF_25
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VCC_NCTF_27
VCC_NCTF_28
VCC_NCTF_29
VCC_NCTF_30
VCC_NCTF_31
VCC_NCTF_32
VCC_NCTF_33
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VCC_NCTF_35
VCC_NCTF_36
VCC_NCTF_37
VCC_NCTF_38
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VCC_NCTF_42
VCC_NCTF_43
VCC_NCTF_44

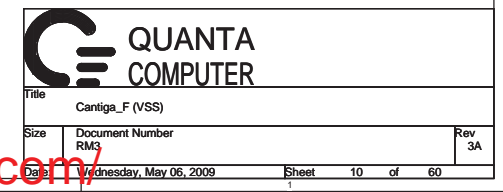
AM32
AL32
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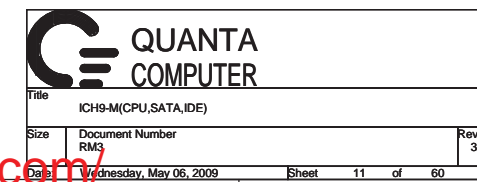
CANTIGA_verB3

QUANTA
COMPUTER

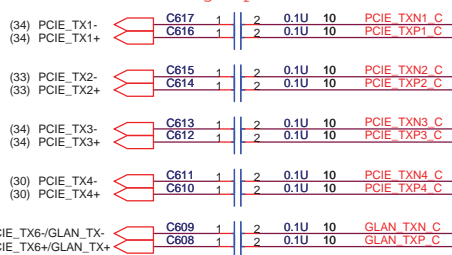
Title Cantiga_D (VCC,NCTF)		
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Place TX DC blocking caps close ICH8.



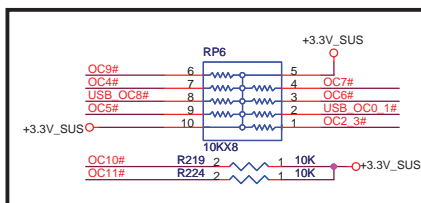
(43) PCIE_RX6+GLAN_RX-
(43) PCIE_RX6+GLAN_RX+

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

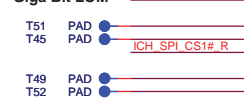
Places within 500 mils of the ICH9

WWAN Noise - ICH improvements

OC5#	C339	1	2	0.1u NC	10
OC4#	C690	1	2	0.1u NC	10
OC5#	C692	1	2	0.1u NC	10
OC7#	C325	1	2	0.1u NC	10
USB_OC8#	C342	1	2	0.1u NC	10
OC2_3#	C336	1	2	0.1u NC	10
USB_OC0_1#	C310	1	2	0.1u NC	10
OC9#	C691	1	2	0.1u NC	10



Giga Bit LOM



(35) USB_OC0_1#

(35) USB_OC8#

USB_OC0_1#

USB_OC8#

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USB_OC8#

USB_OC0_1#

USB_OC8#

USB_OC0_1#

USB_OC8#

USB_OC0_1#

USB_OC8#

USB_OC0_1#

USB_OC8#

USB_OC0_1#

USB_OC8#

USB_OC0_1#

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USB_OC8#

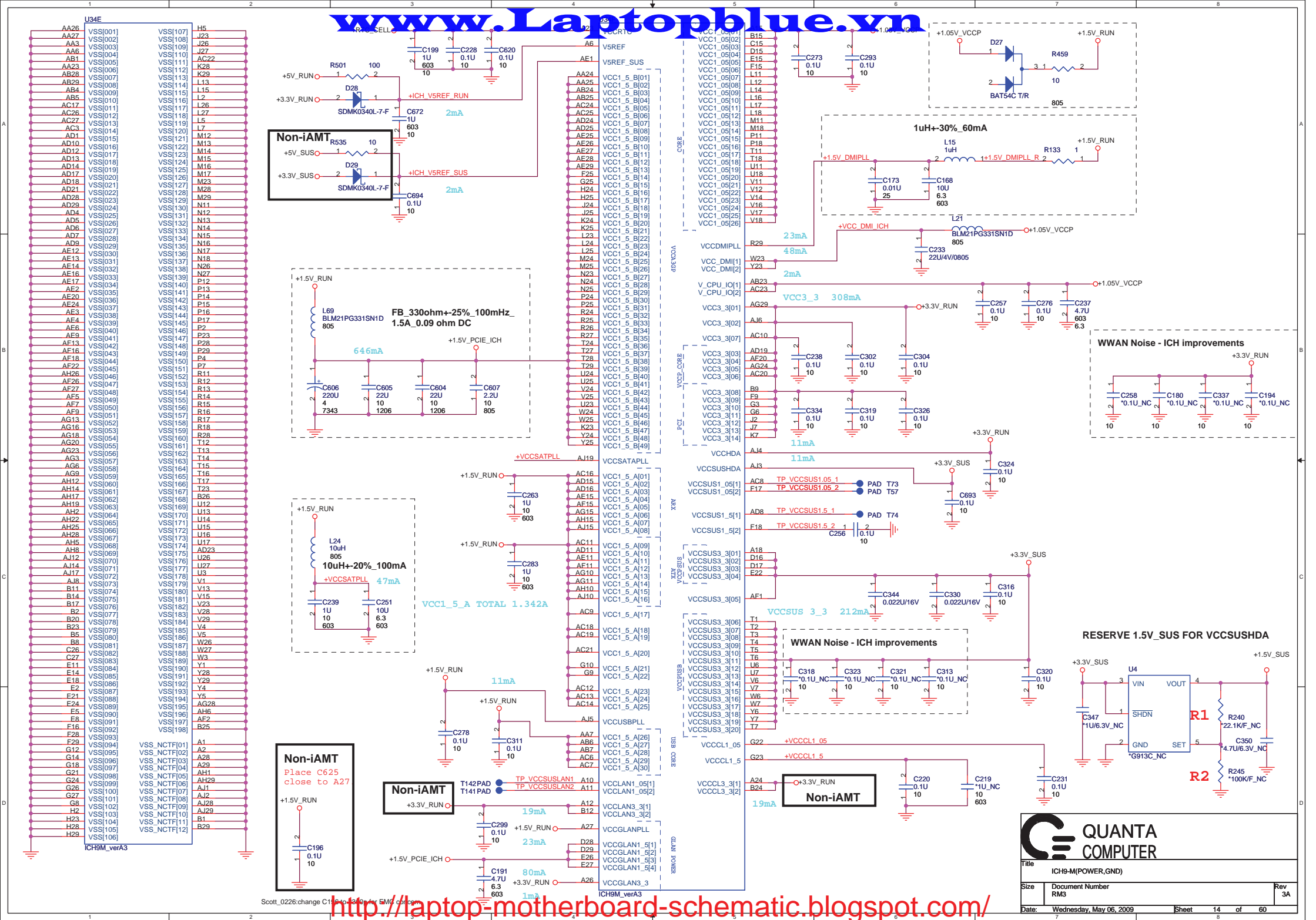
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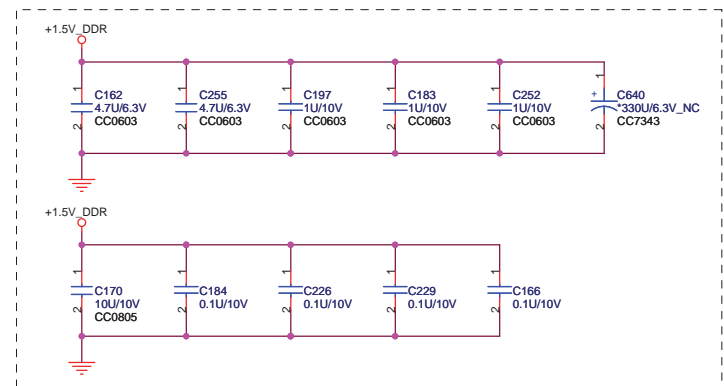
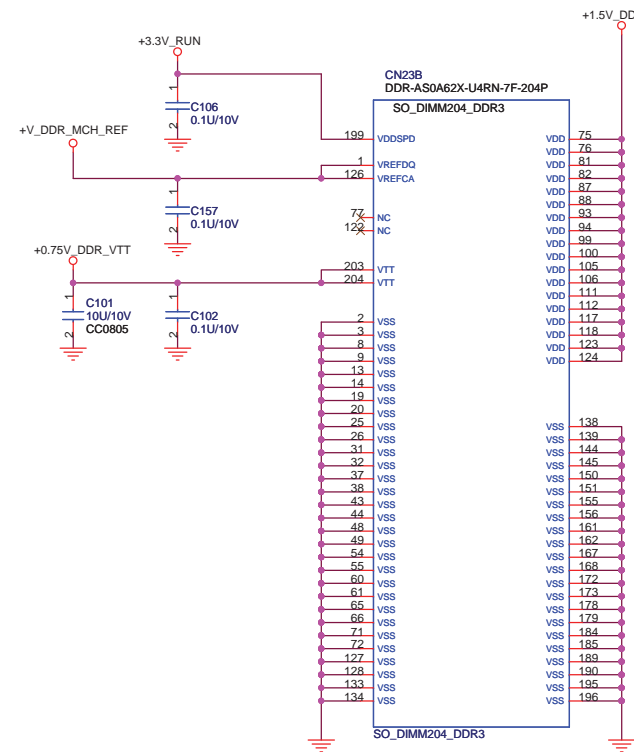
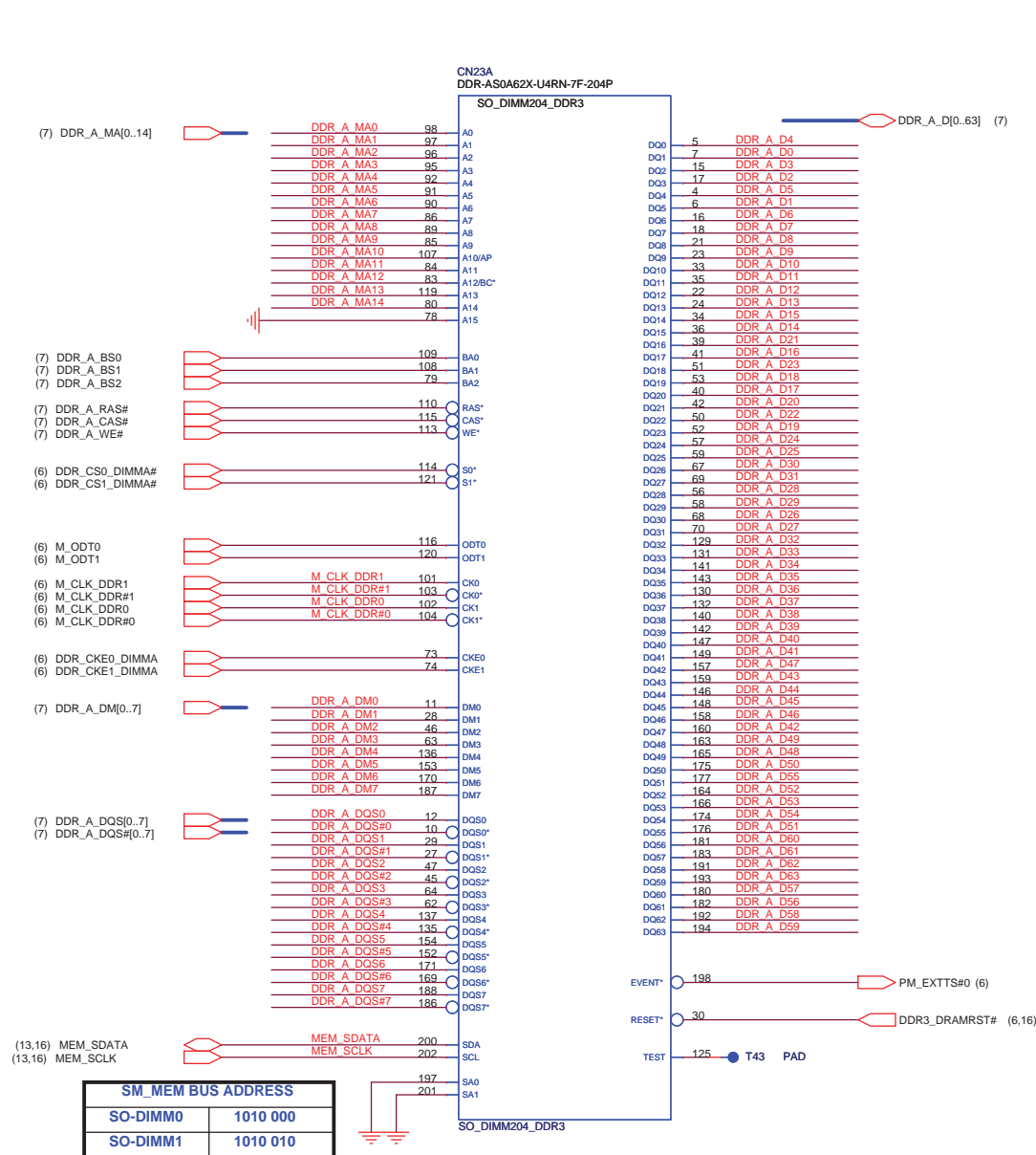
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USB_OC0_1#

USB_OC8#

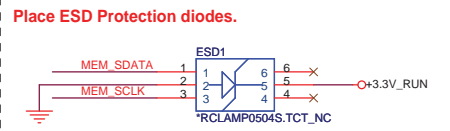
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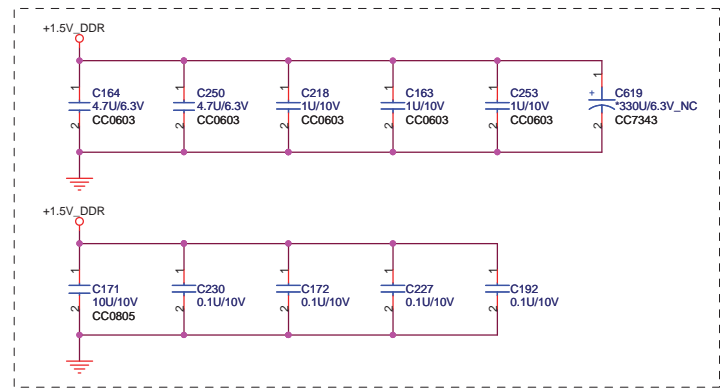
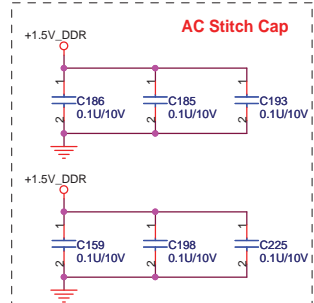
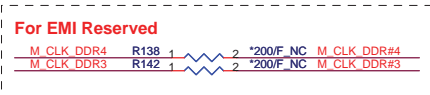
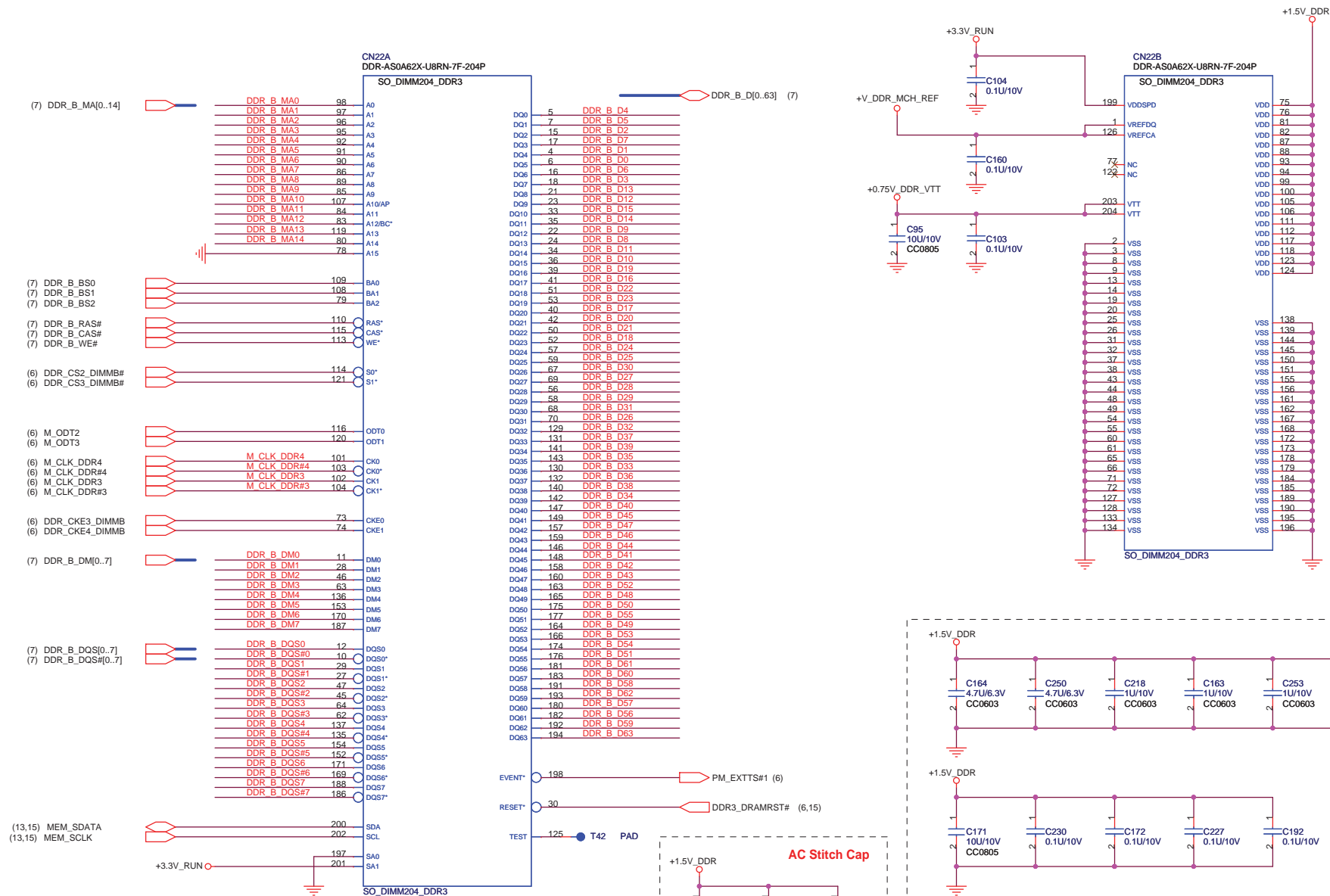


For EMI Reserved

M_CLK_DDR1 R144 1 *200F_NC M_CLK_DDR#1
M_CLK_DDR0 R143 1 *200F_NC M_CLK_DDR#0



Title			DDR3 SO-DIMM1 (204P)
Size	Document Number	Rev	
	RM3	3A	
Date	Wednesday, May 06, 2009	Sheet	15 of 60

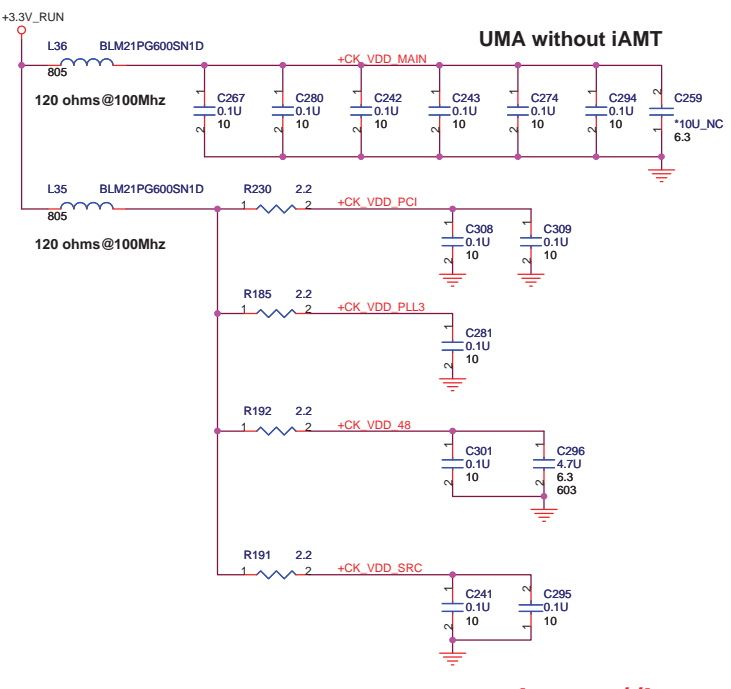
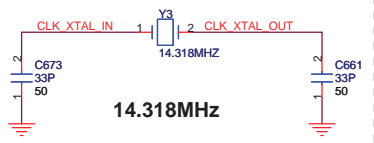


QUANTA COMPUTER

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Size: RM3 Document Number: Rev 3A

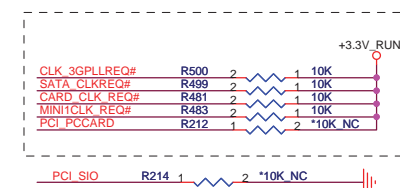
Date: Wednesday, May 06, 2009 Sheet 16 of 60



to ATI VGA

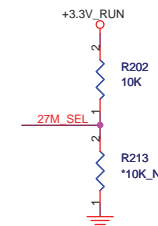
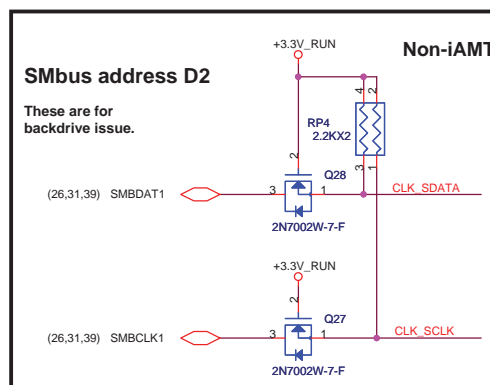
Mini Card (WPAN)

Mini Card (WWAN)

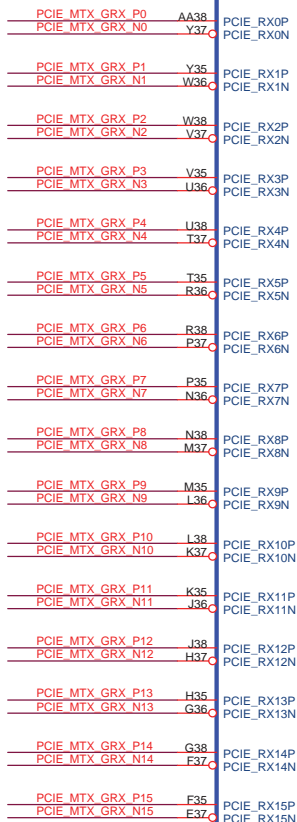


FSC	FSB	FSA	CPU	SRC	PO
1	0	1	100	100	33
0	0	1	133	100	33
0	1	1	166	100	33
0	1	0	200	100	33
0	0	0	266	100	33
1	0	0	333	100	33
1	1	0	400	100	33
1	1	1	RSVD	100	33

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



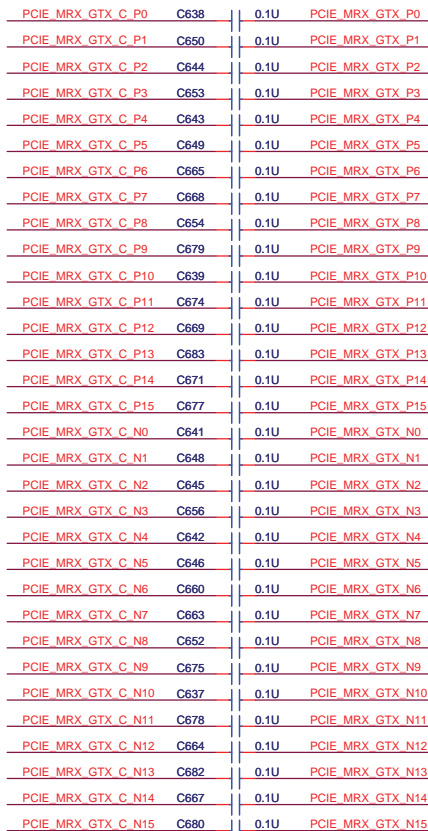
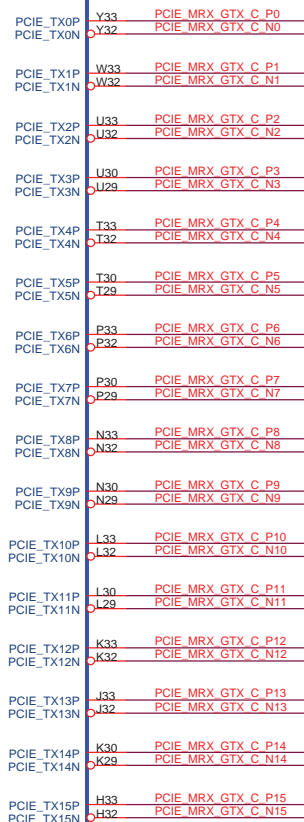
(6) PCIE_MTX_GRX_P[0..15]
(6) PCIE_MTX_GRX_N[0..15]



PCI EXPRESS INTERFACE

M96-M2 XT A13 216-0729051 100-CK3186 AJ072900T08
M97-M2 LP A11 216-0731001 100-CG1806 AJ073100T01

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



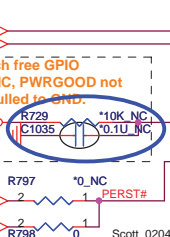
(17) CLK_PCIE_VGA
(17) CLK_PCIE_VGA#

!!! 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#

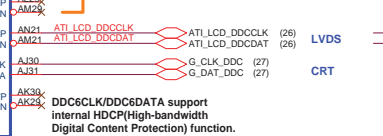
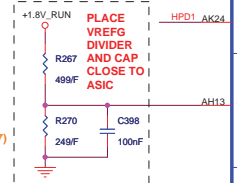
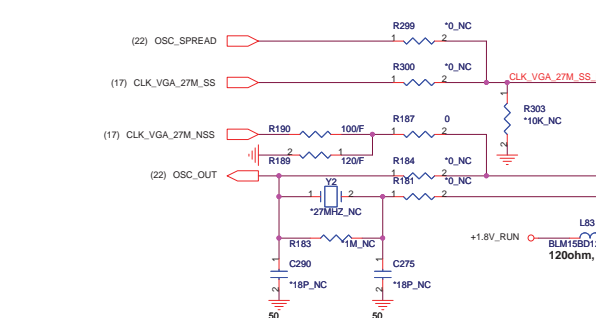
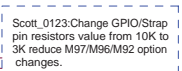
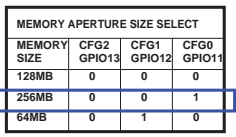
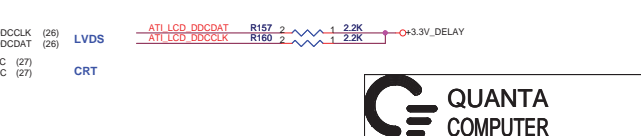
(6,12,30,31,33,34,43) PLTRST#

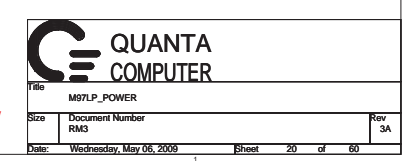


216-0729051(M96-M2 XT)

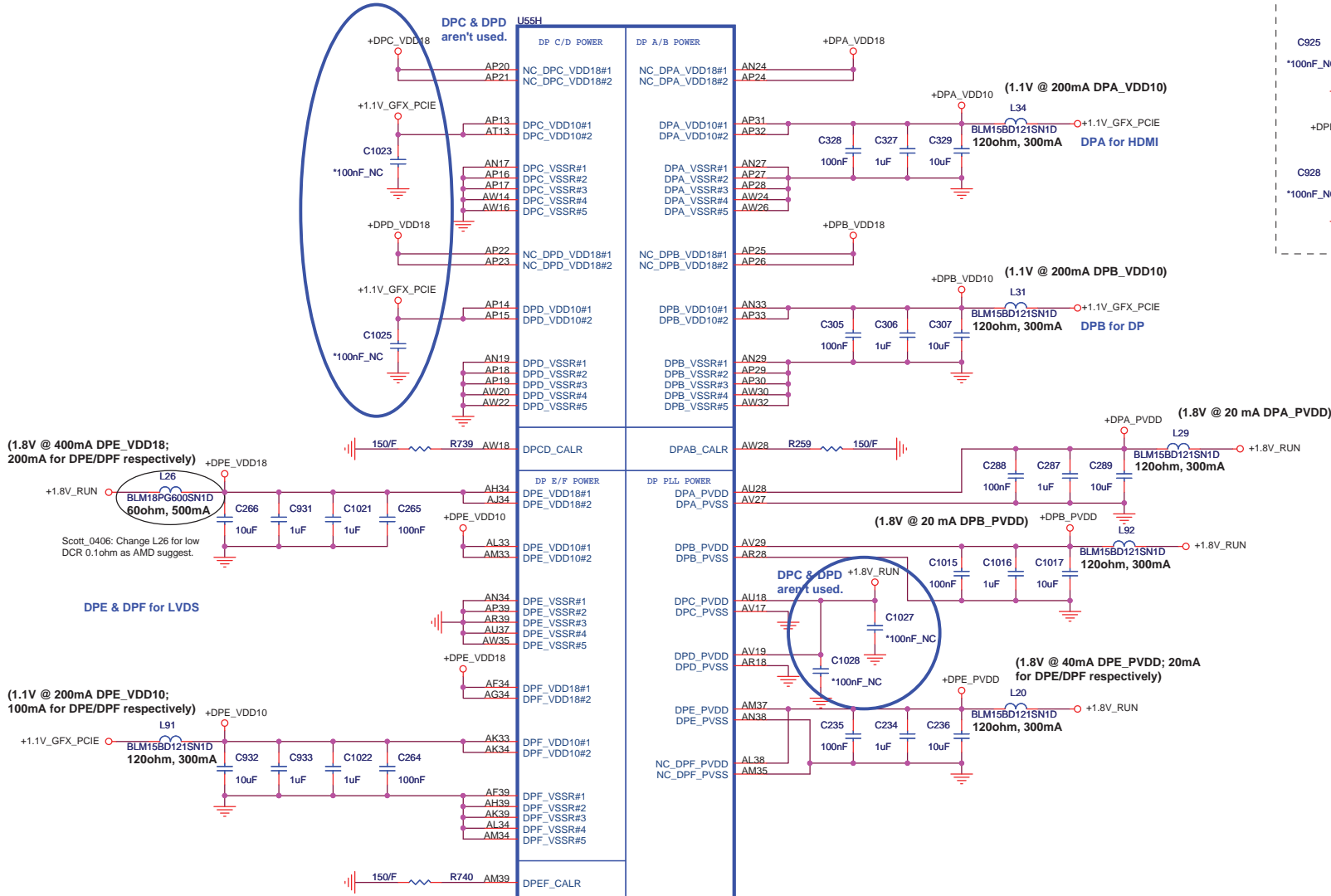
Scott_0204:change C1035 from 0603 to 0402 for layout request.

Note : Required Frequency = 800 MHz

[illegible]

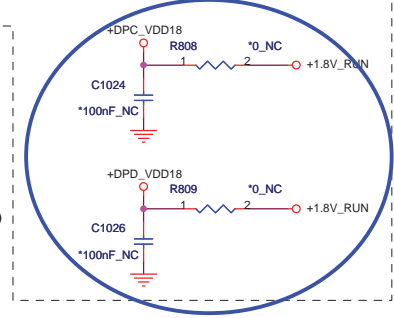
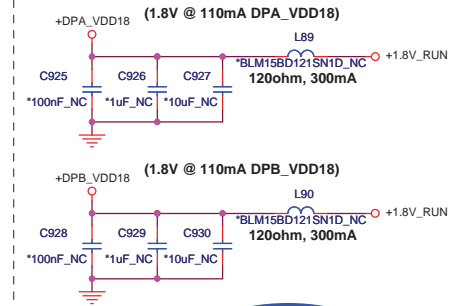


For M96/92, DPx_VDD10 = 1.1V
For M97 DPx_VDD10 = 1.0V



216-0729051 (M96-M2 XT)

!!! For M97 Only



(1.8V @ 20 mA DPA_PVDD)

(1.8V @ 20 mA DPB_PVDD)

(1.8V @ 20 mA DPE_PVDD)

(1.8V @ 20 mA DPF_PVDD)

(1.8V @ 20 mA DPE_PVDD)

(1.8V @ 20 mA DPF_PVDD)

(1.8V @ 20 mA DPE_PVDD)

(1.8V @ 20 mA DPF_PVDD)

(1.8V @ 20 mA DPE_PVDD)

(1.8V @ 20 mA DPF_PVDD)

(1.8V @ 20 mA DPE_PVDD)

(1.8V @ 20 mA DPF_PVDD)

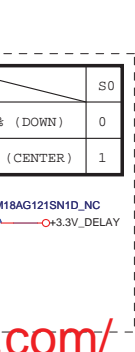
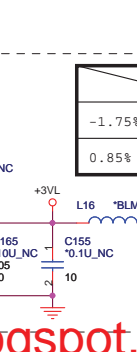
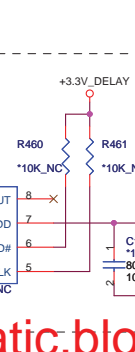
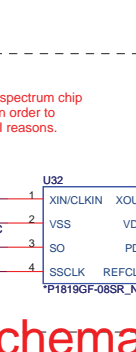
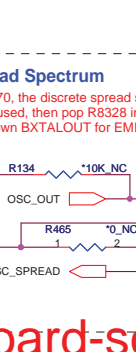
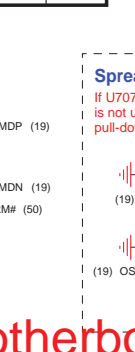
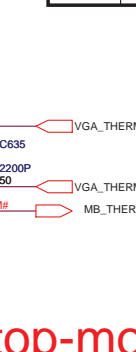
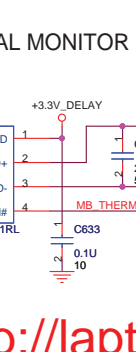
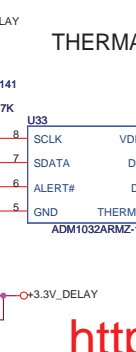
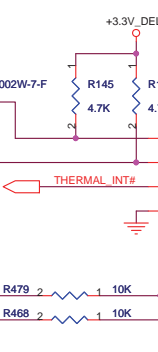
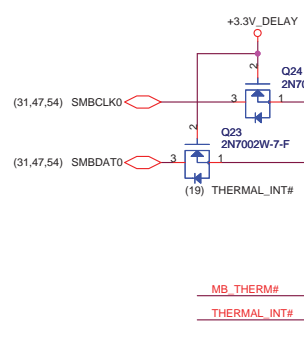
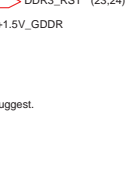
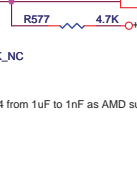
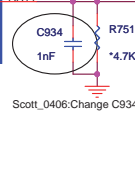
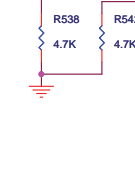
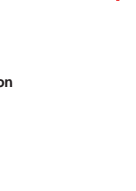
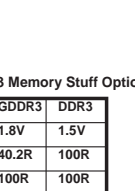
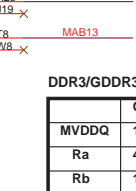
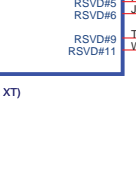
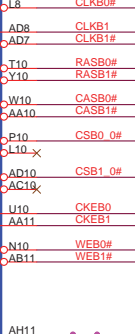
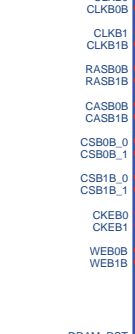
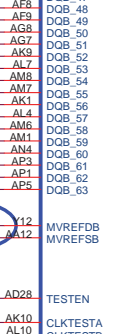
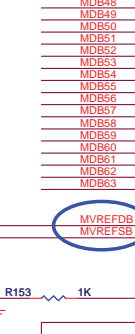
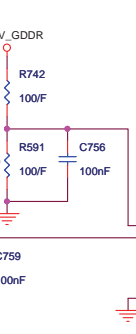
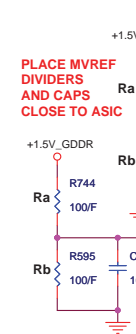
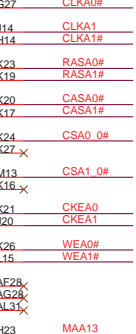
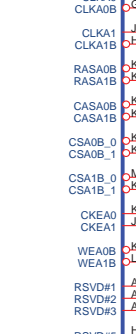
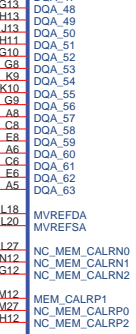
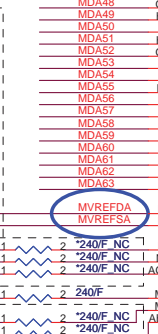
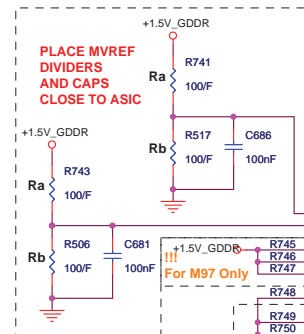
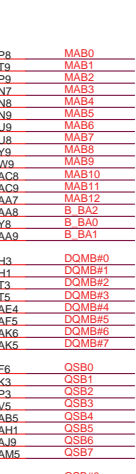
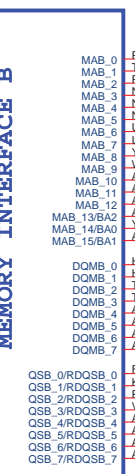
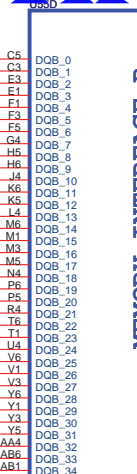
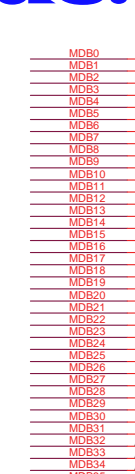
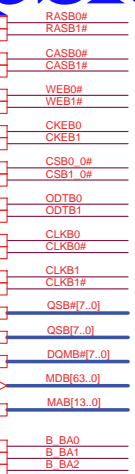
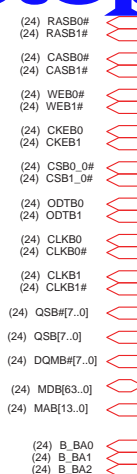
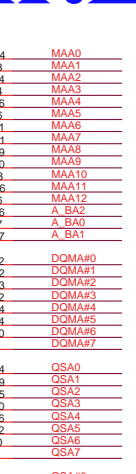
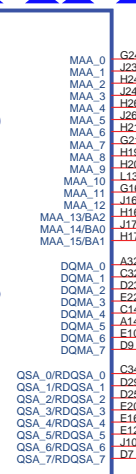
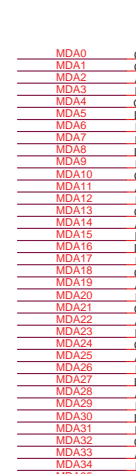
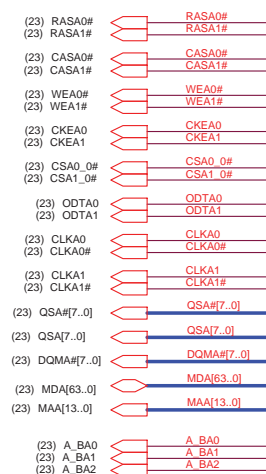
(1.8V @ 20 mA DPE_PVDD)

(1.8V @ 20 mA DPF_PVDD)

(1.8V @ 20 mA DPE_PVDD)

(1.8V @ 20 mA DPF_PVDD)

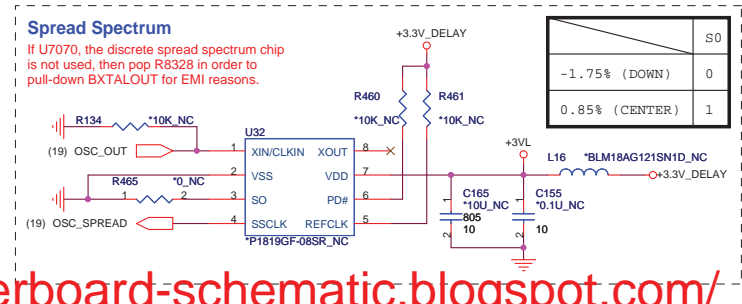
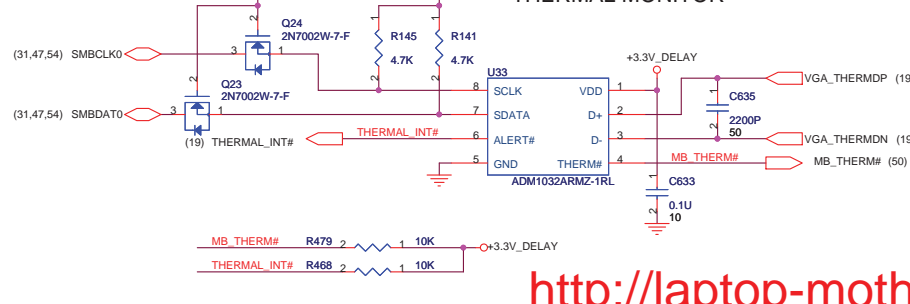
Title M97LP_DP POWER		
Size RM3	Document Number	Rev 3A
Date Wednesday, May 06, 2009	Sheet 21	of 60



DDR3/GDDR3 Memory Stuff Option

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

THERMAL MONITOR



QUANTA COMPUTER

M97LP_MEMORY/THERM

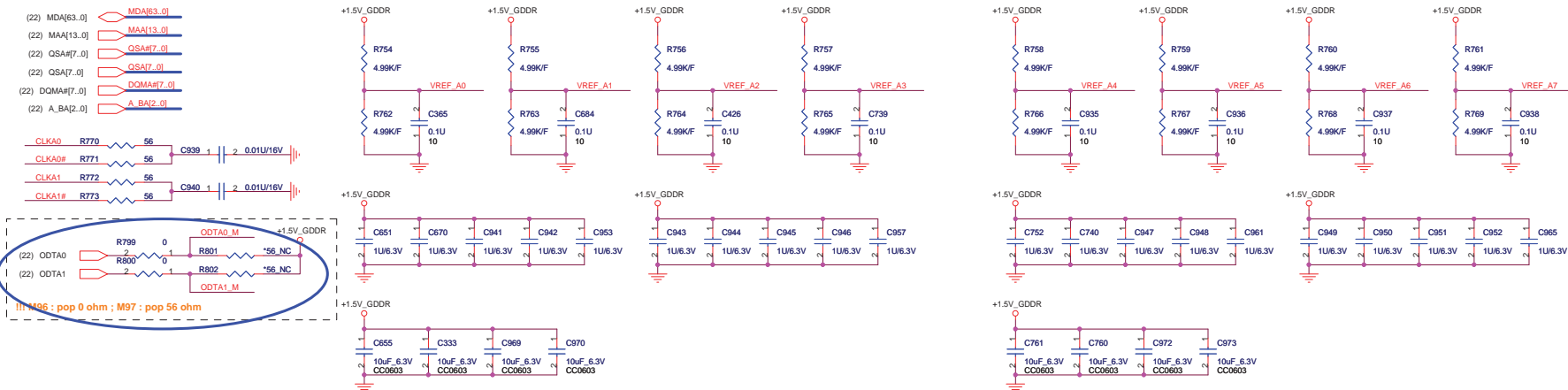
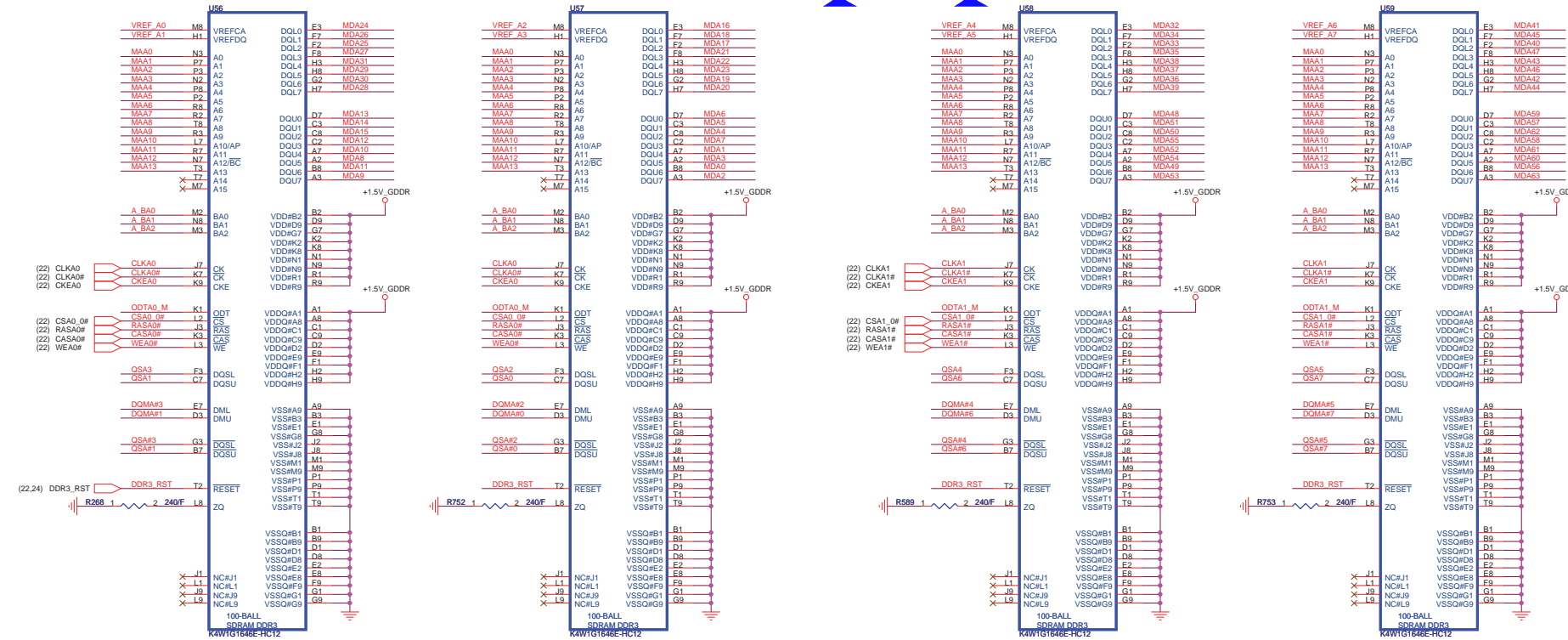
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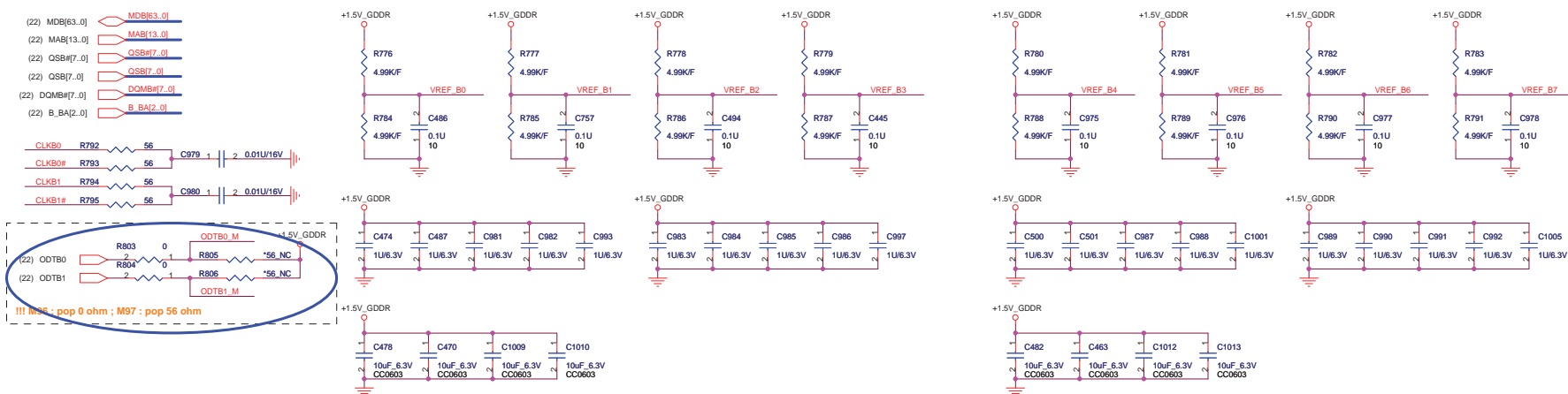
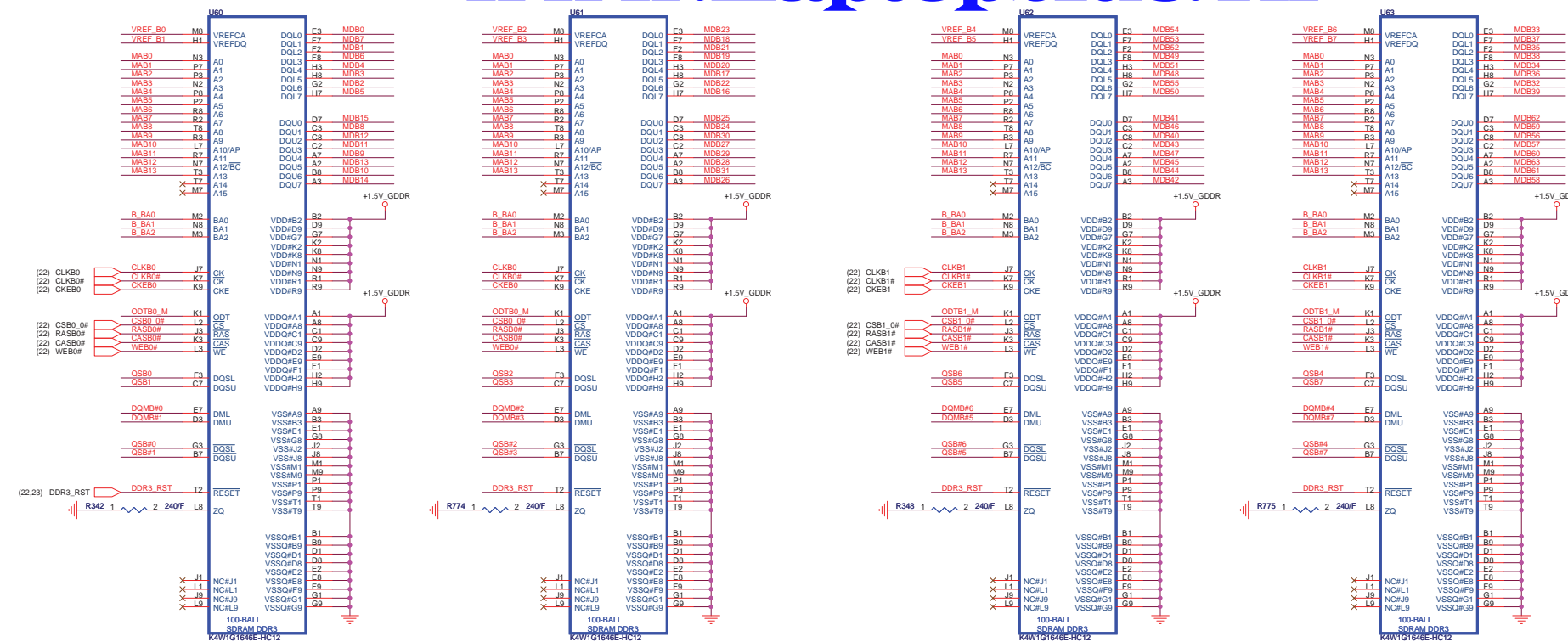
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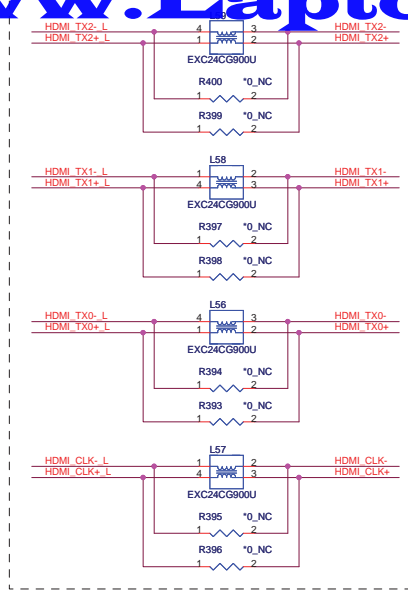
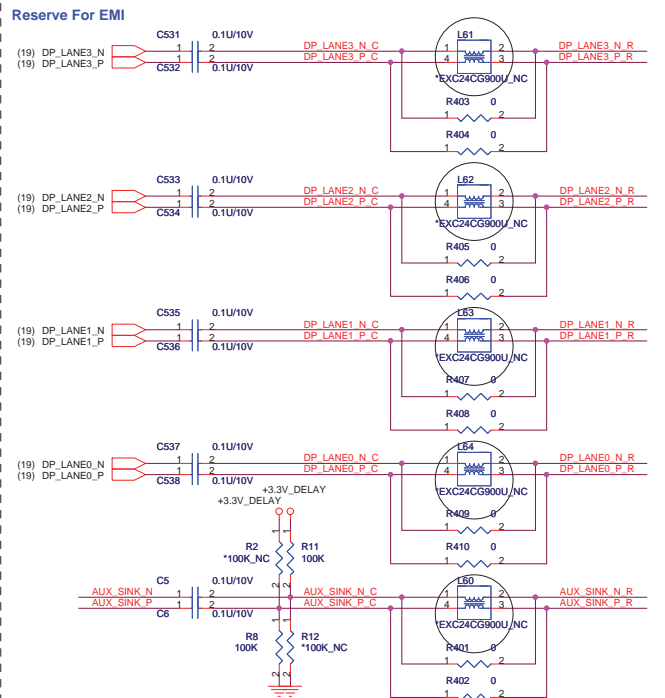
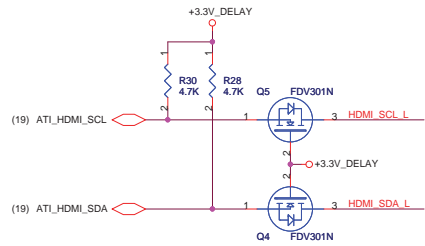
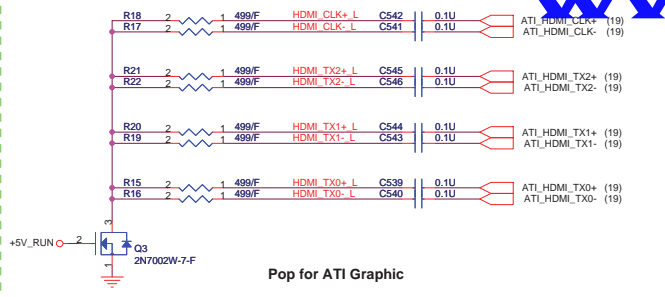
Date: Wednesday, May 06, 2009

Sheet: 22 of 60

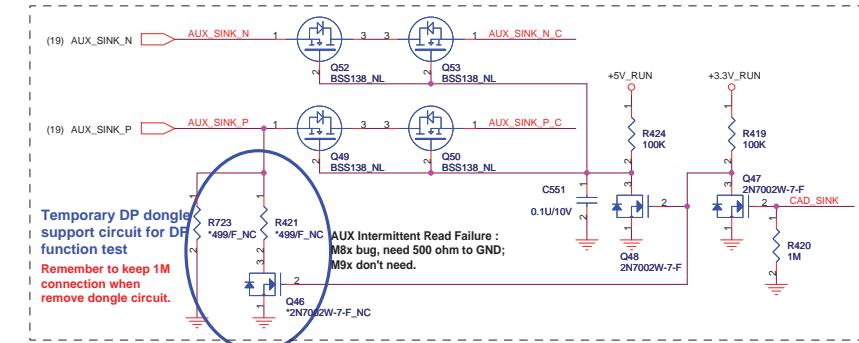
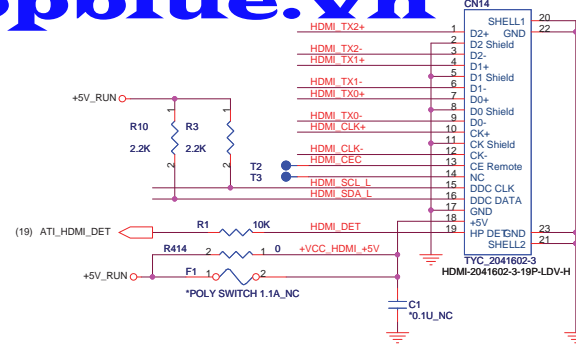
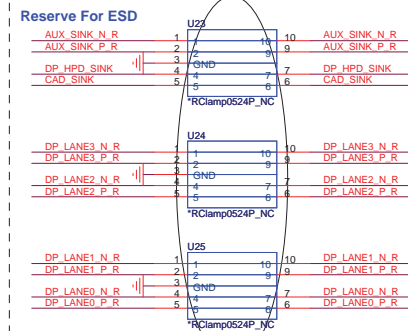
Rev: 3A







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

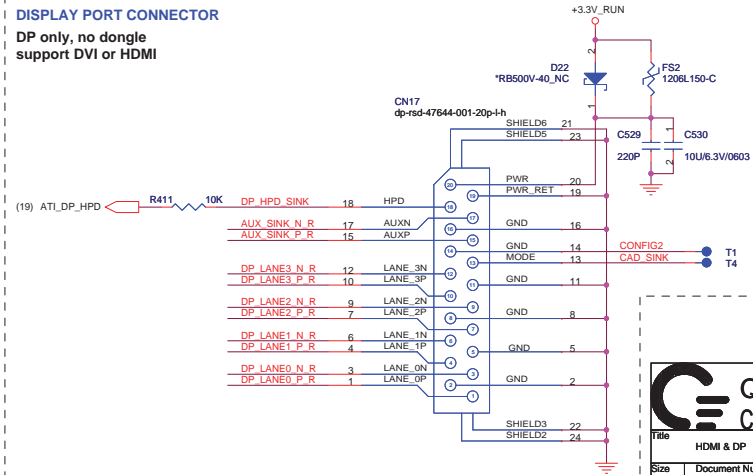


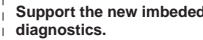
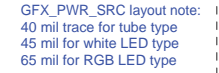
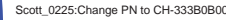
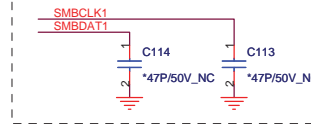
Temporary DP dongle support circuit for DP function test

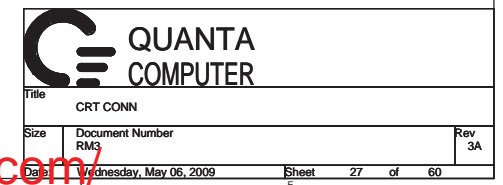
Remember to keep 1M connection when remove dongle circuit.

AUX Intermittent Read Failure : M8x bug, need 500 ohm to GND; M9x don't need.

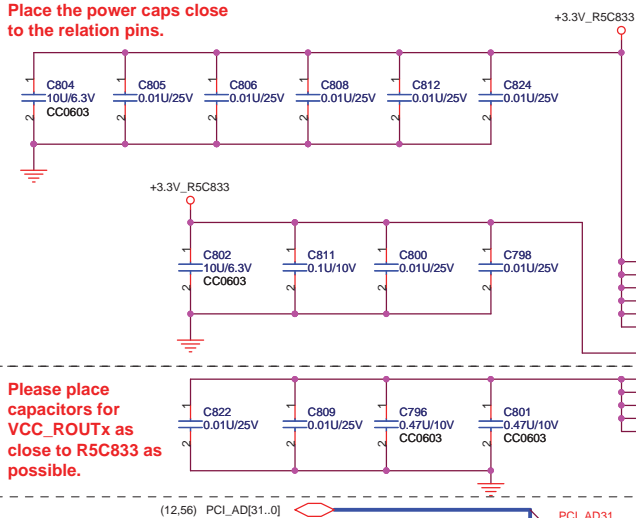
DISPLAY PORT CONNECTOR
DP only, no dongle support DVI or HDMI



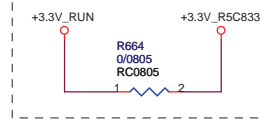




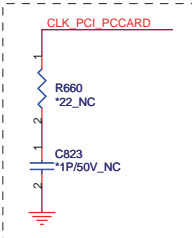
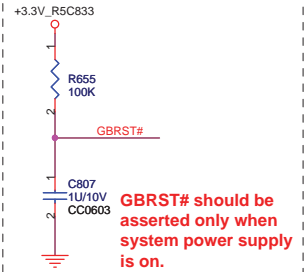
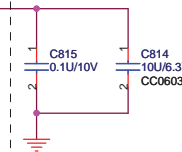
Place the power caps close to the relation pins.



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



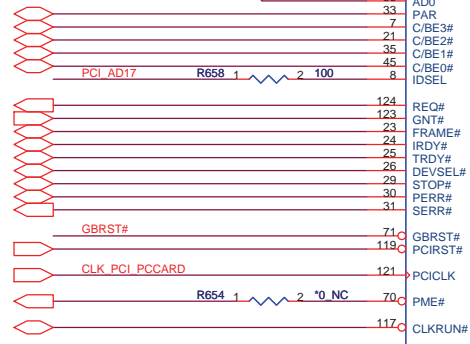
Place the power caps close to the relation pins.



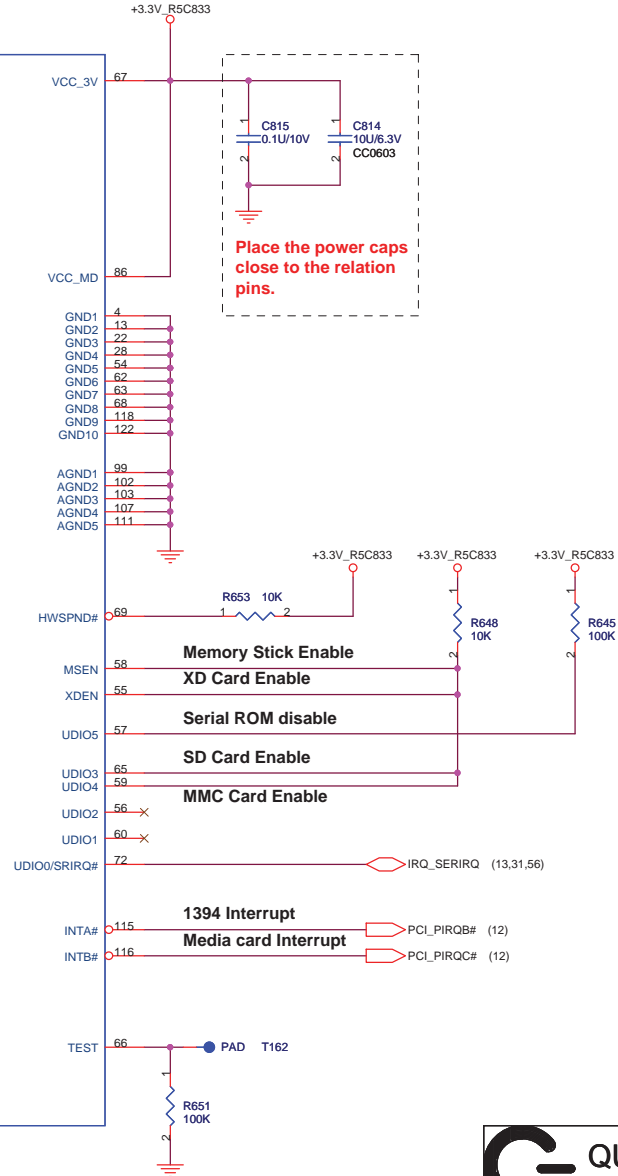
(12,56) PCI_PAR
(12,56) PCI_C_BE3#
(12,56) PCI_C_BE2#
(12,56) PCI_C_BE1#
(12,56) PCI_C_BE0#

(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

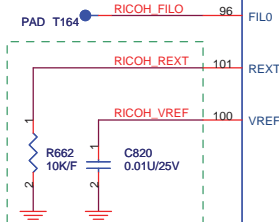
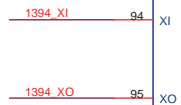
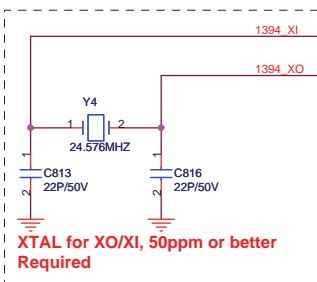
MMC Card Enable

1394 Interrupt

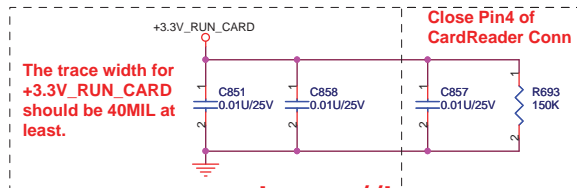
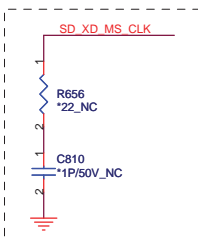
Media card Interrupt



Title			CardReader (5C833)
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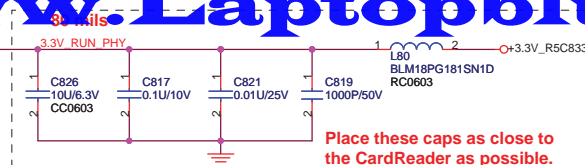
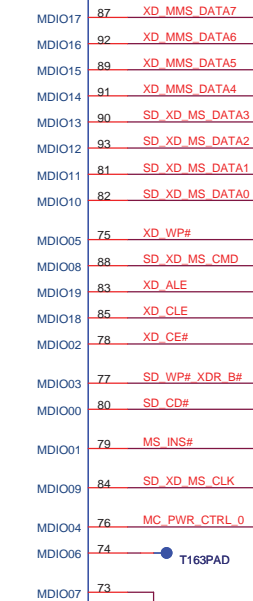
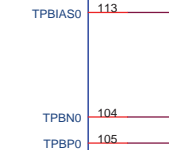


Place these components as close to the CardReader as possible.



The trace width for +3.3V_RUN_CARD should be 40MIL at least.

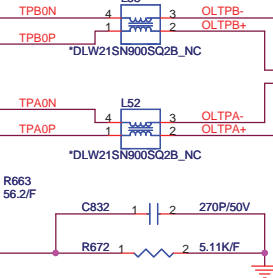
AVCC_PHY1
AVCC_PHY2
AVCC_PHY3
AVCC_PHY4



Place these caps as close to the CardReader as possible.

As possible as close to CardReader

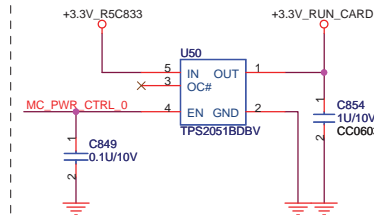
Reserved EMI Solution



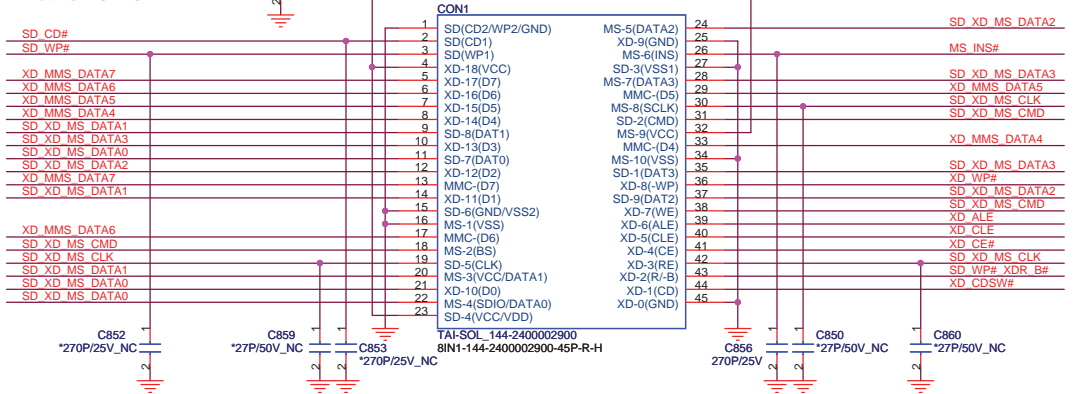
1. TPA0P/TPA0N, TPBP0/TPBN0 pair trace : Same length electrically.
2. TPA0P/TPA0N, TPBP0/TPBN0 pair trace : As close as possible.
3. Termination resistor for TPA+/- TPB+/- : As close as possible to its cable driver (device pin out).



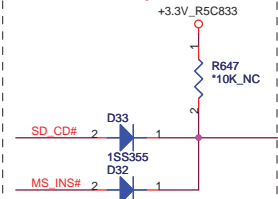
- Layout Note:
- 1). The distance between Media Card Power Switch and Media Socket should be less than 2-inches.
 - 2). The trace width for +3.3V_RUN_CARD should be 40MIL at least.
 - 3). The GND trace for Media Card Socket should be 40MIL at least.



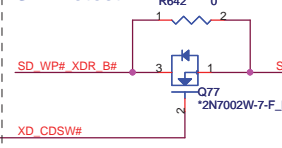
2.2uF cap is no more than 250mils away from the power pin and a have a min trace width of 40mils.



Close to the Chip

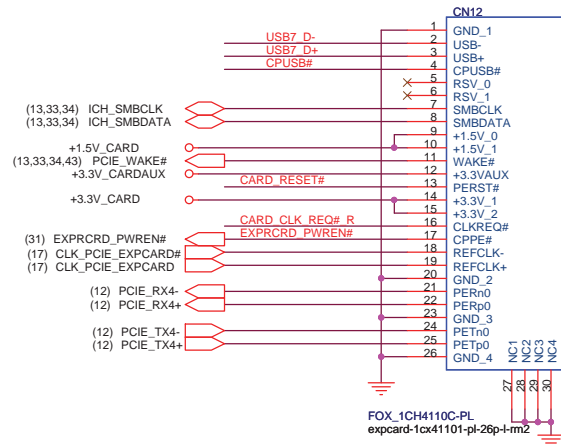


SD Protect

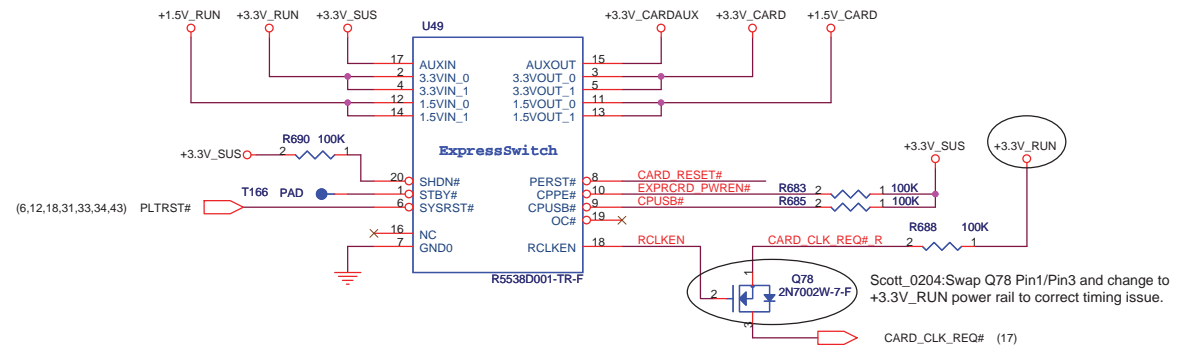


QUANTA COMPUTER

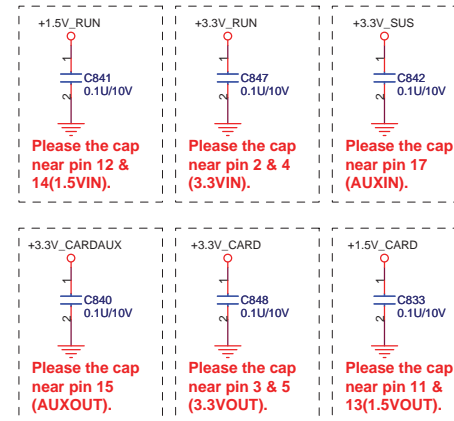
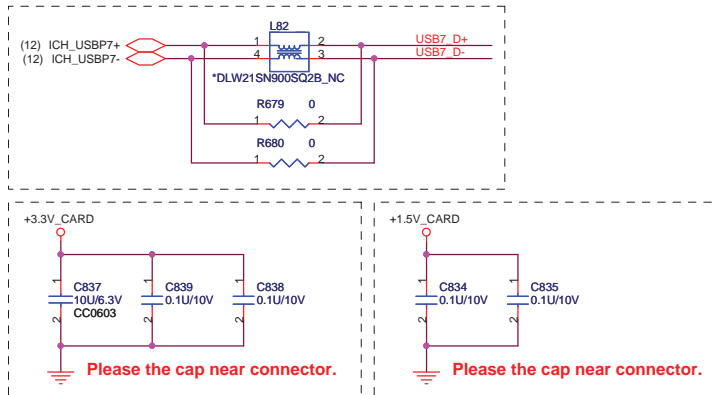
Express Card

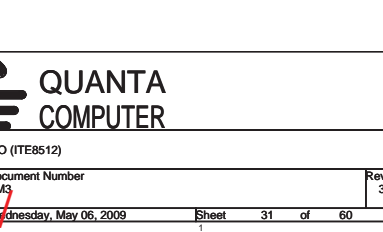
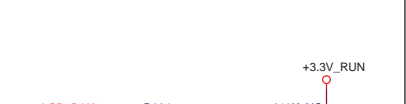
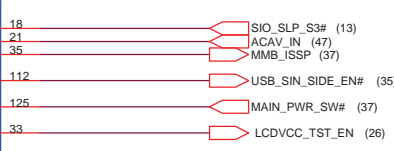
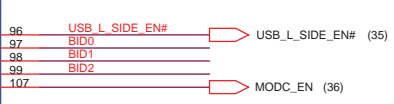
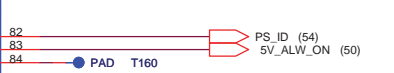
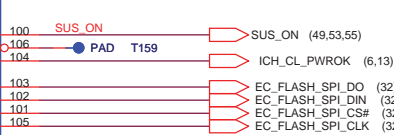
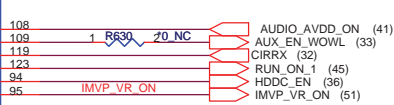
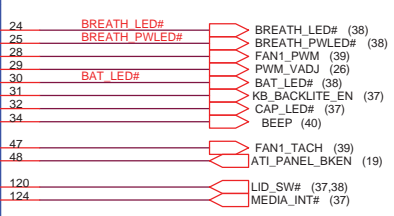
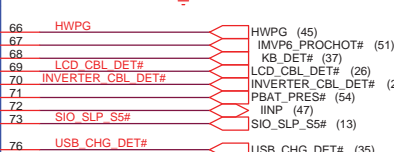
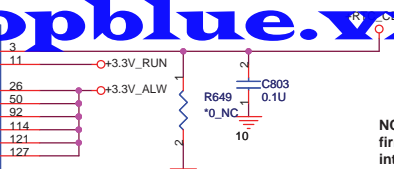
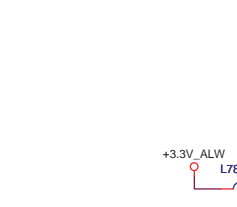
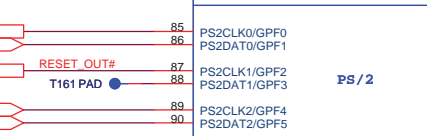
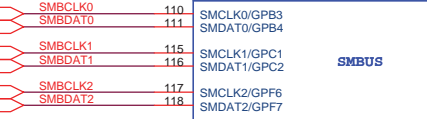
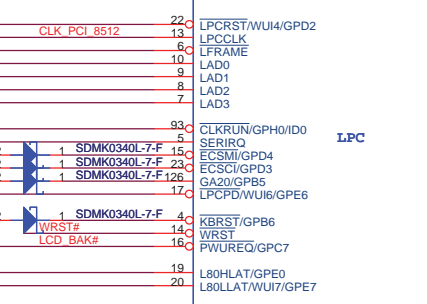
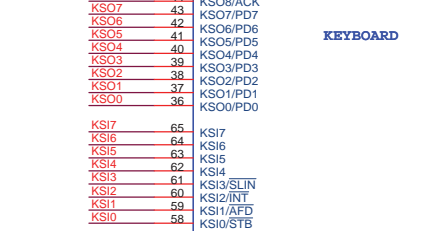
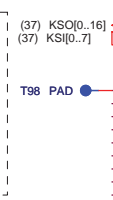


+1.5V_CARD Max. 650mA, Average 500mA.
+3V_CARD Max. 1300mA, Average 1000mA.

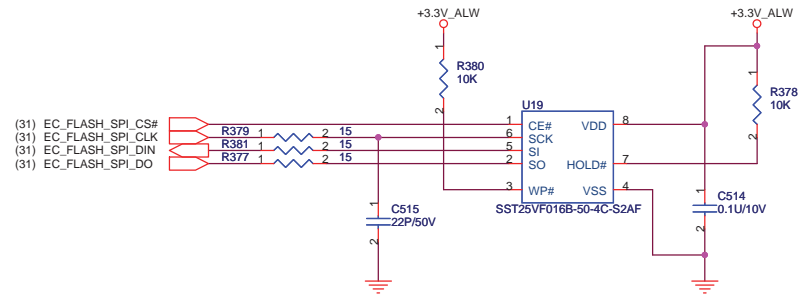


PCI-Express TX and RX direct to connector.

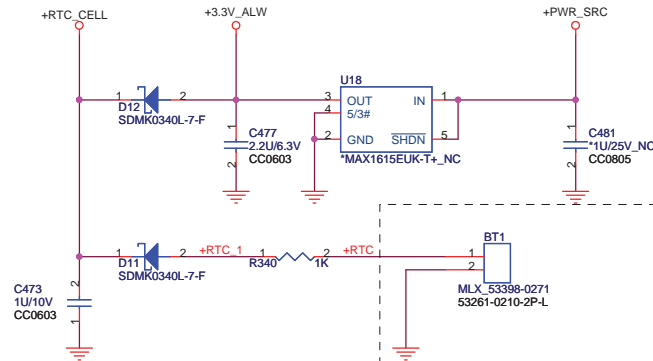




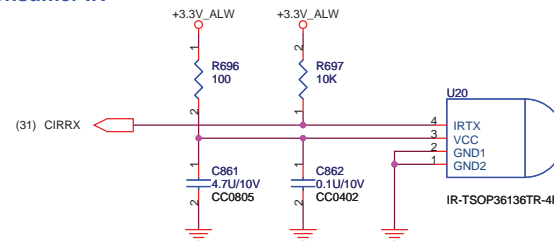
16Mbit (2M Byte), SPI



RTC BATTERY



Consumer IR



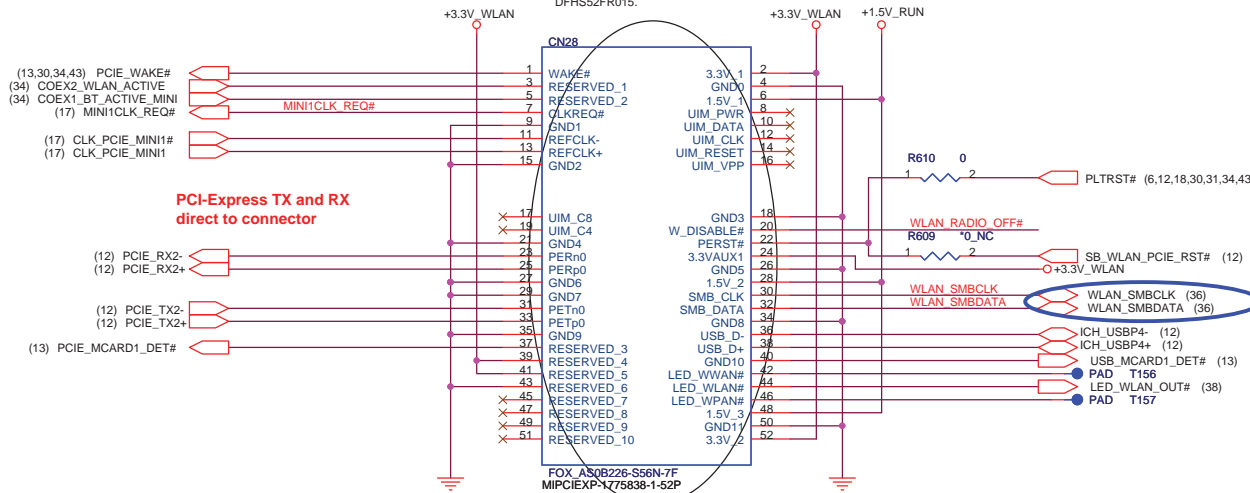
Title			
FLASH/ RTC/ CIR			
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Mini Card Nut

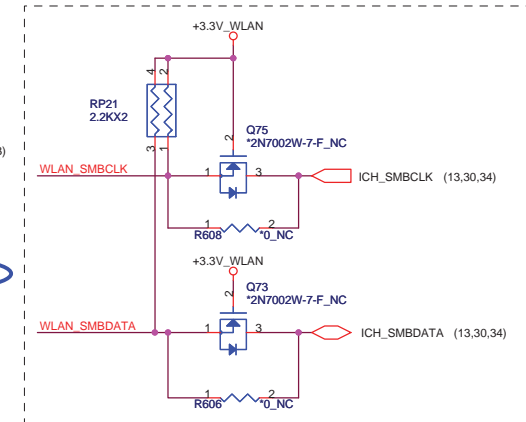


MiniCard WLAN Connector

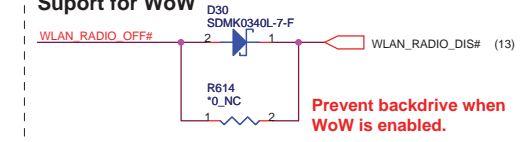
Scott_0123:Change CN28 PN with DFHS52FR015.



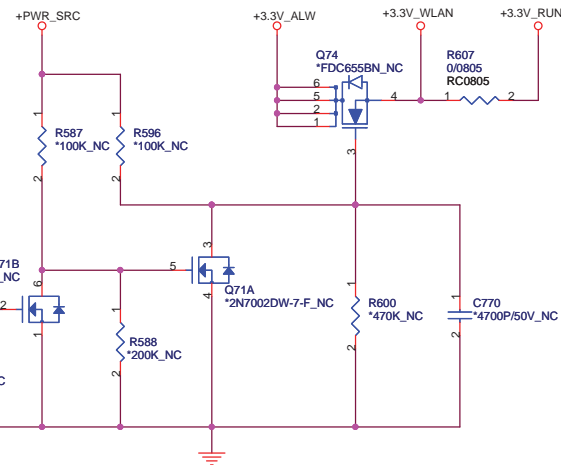
PCI-Express TX and RX direct to connector



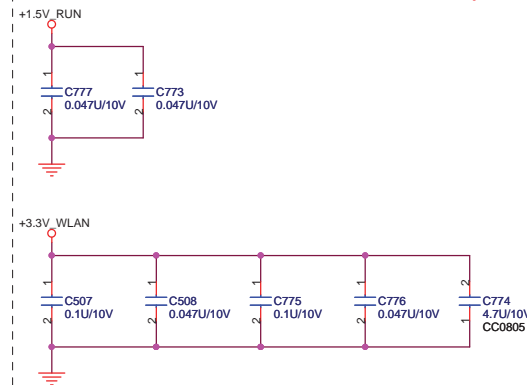
Support for WoW



Prevent backdrive when WoW is enabled.

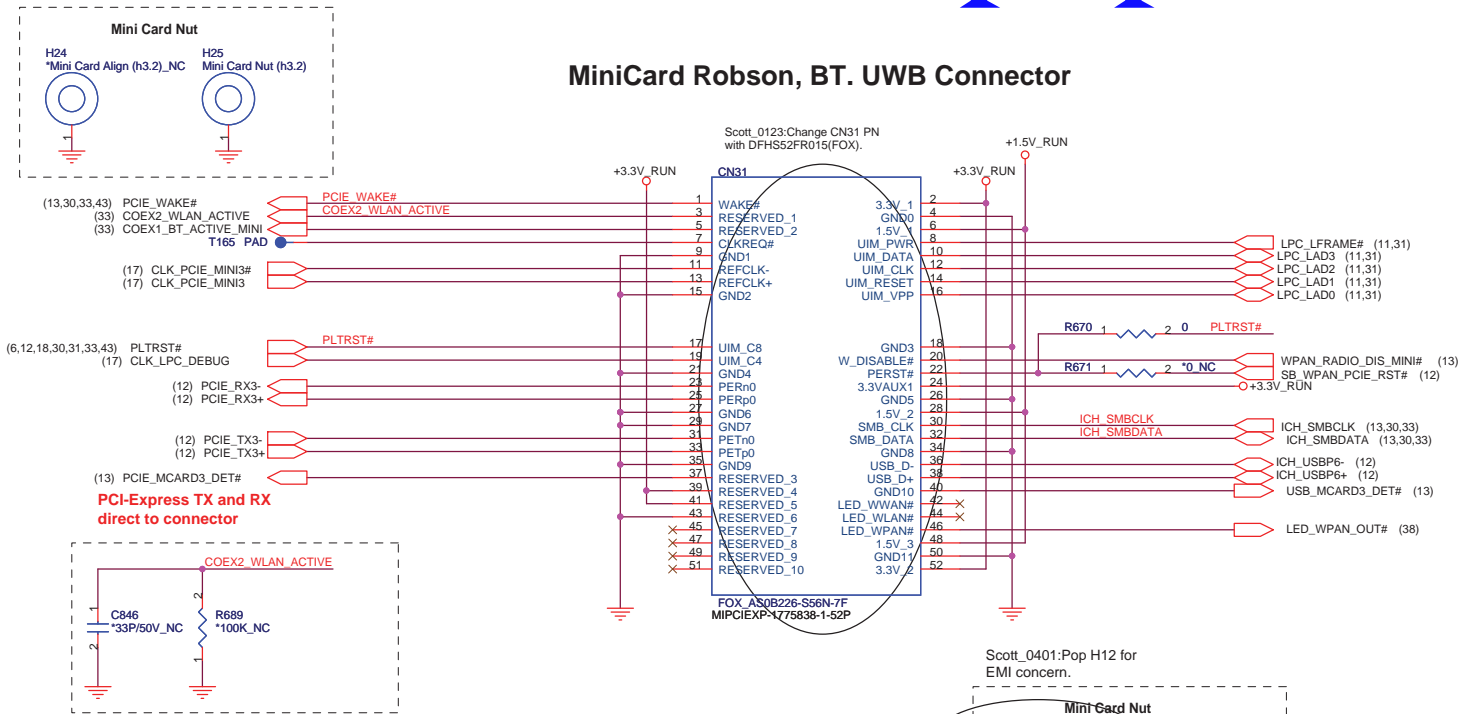


Place caps close to connector.

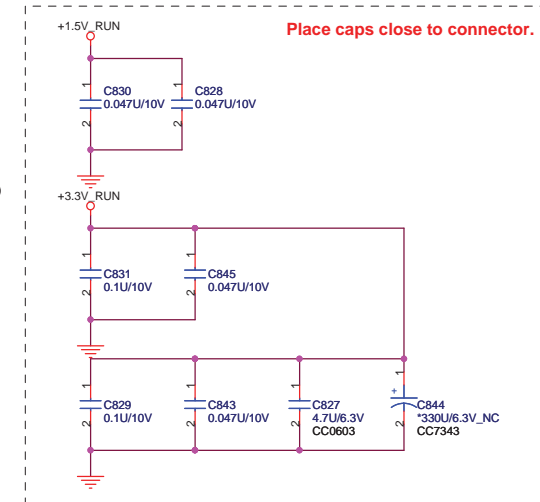


Title MINI-CARD (WLAN)		
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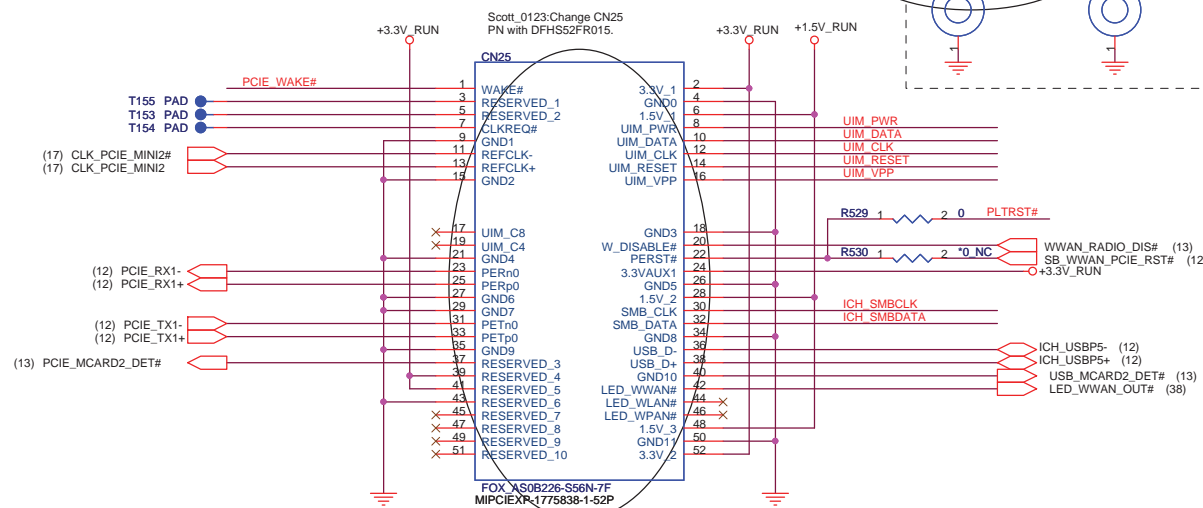
MiniCard Robson, BT. UWB Connector



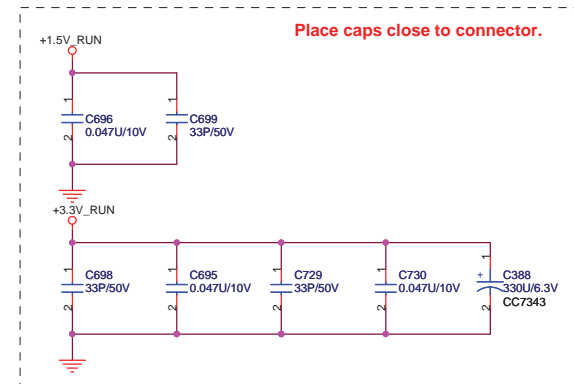
Layout Note:
R240 and R244 close to choke as possible to minimize stubs.



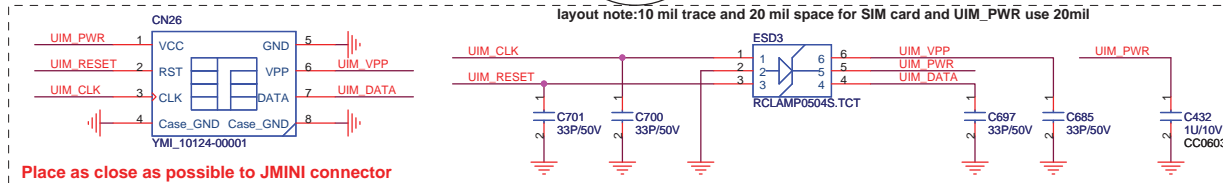
MiniCard WWAN Connector



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

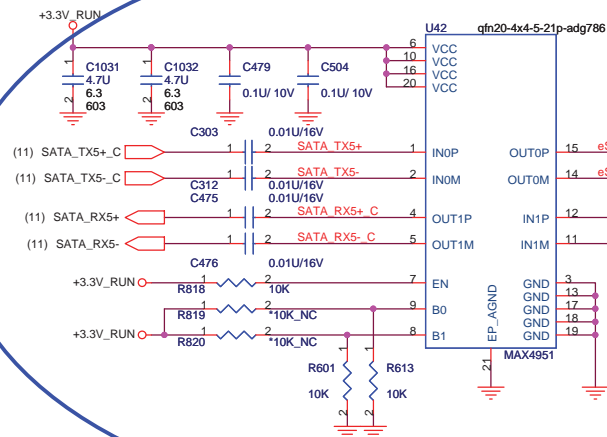


layout note:10 mil trace and 20 mil space for SIM card and UIM_PWR use 20mil



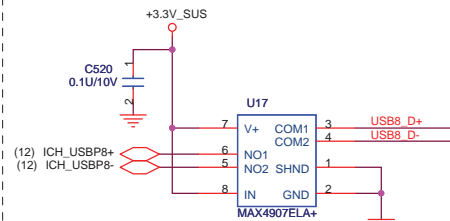
Title		
MINI-CARD (WPAN,WWAN)		
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eSATA Re-driver IC

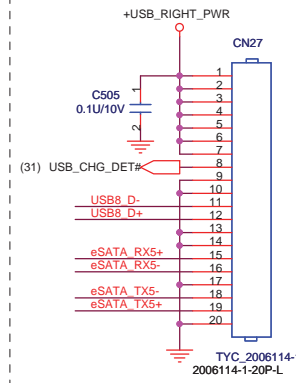


EN	B0	B1	FUNCTION
0	X	X	Standby
1	0	0	Standard SATA Output
1	1	0	Ch 0 Boost Output
1	0	1	Ch 1 Boost Output
1	1	1	Ch 0,1 Boost Output

USB BUS SW

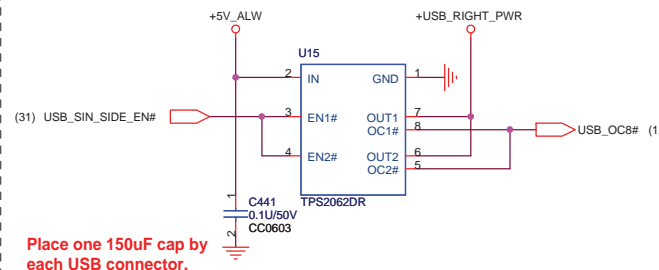


eSATA CONN



USB POWER SW

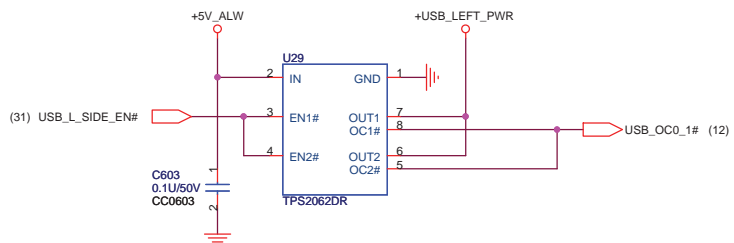
Each channel is 1A



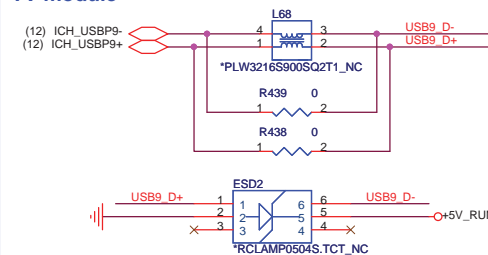
Place one 150uF cap by each USB connector.

USB POWER SW

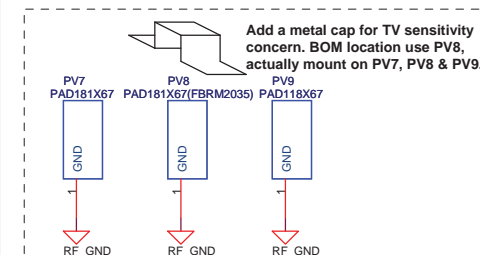
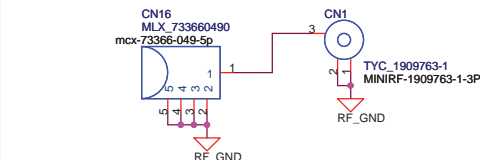
Each channel is 1A



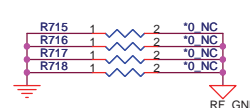
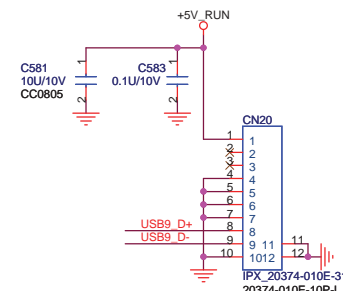
TV module



TV RF Jack & Microwave connector

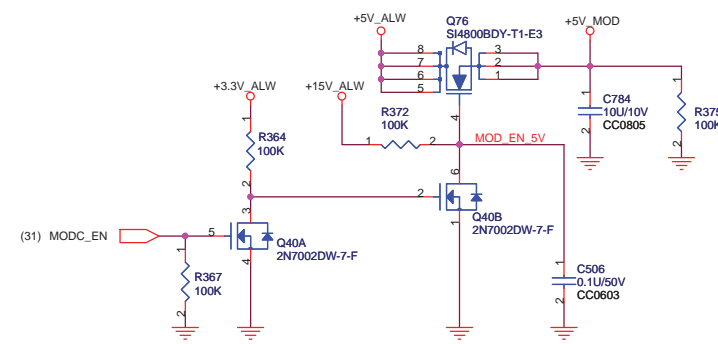
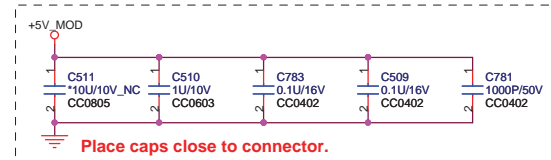
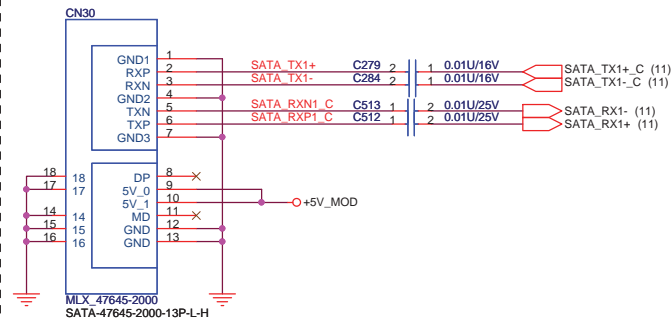
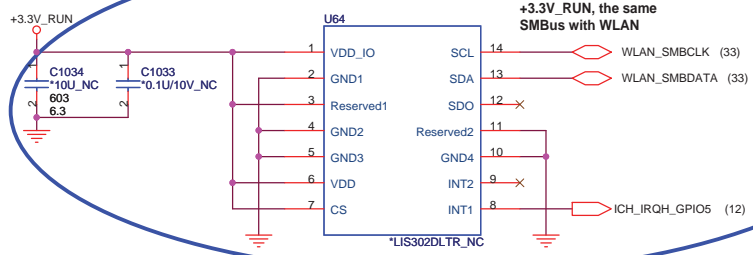


Add a metal cap for TV sensitivity concern. BOM location use PV8, actually mount on PV7, PV8 & PV9.

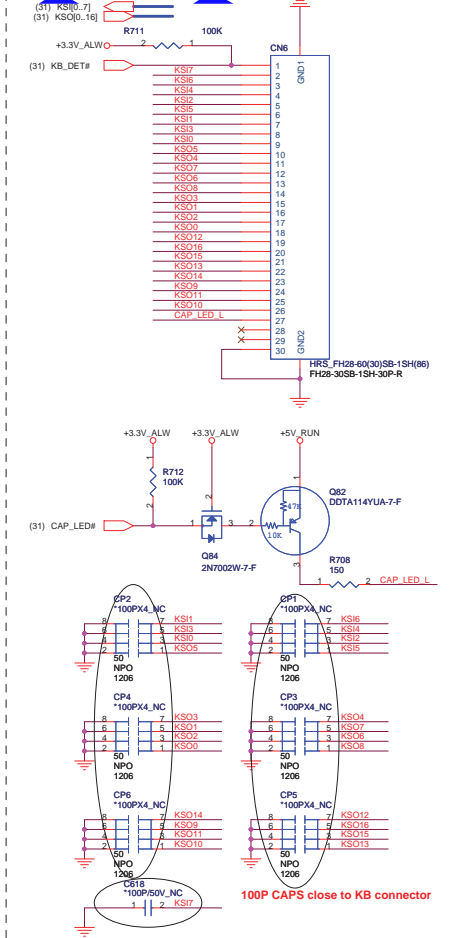


Title		
USB & eSATA & TV		
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ODD Connector

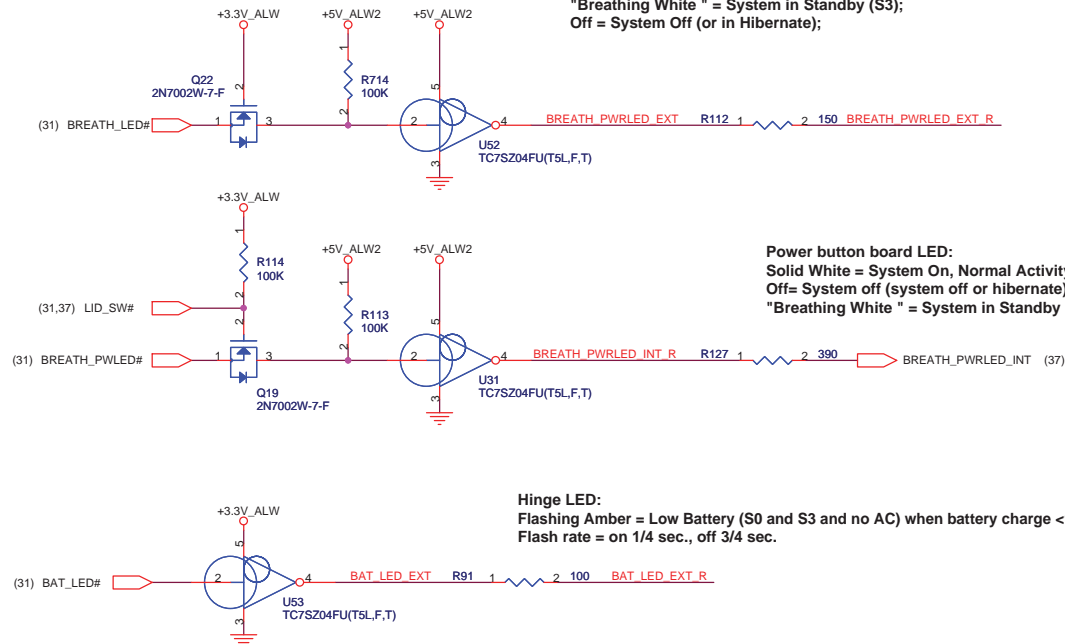
[illegible]

Title				KB/ CCD/ UI			
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	PM3						2
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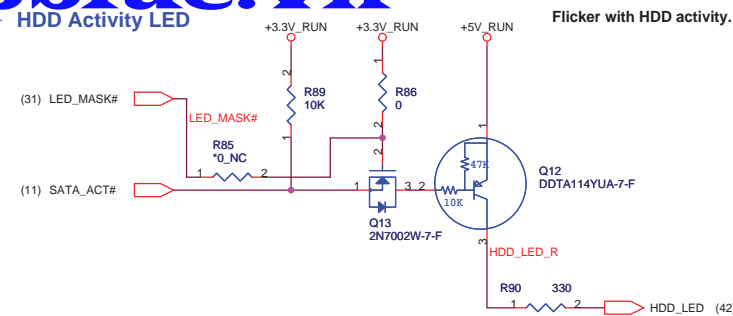


Hinge & Power Button board LED (PWR/Battery indicator)

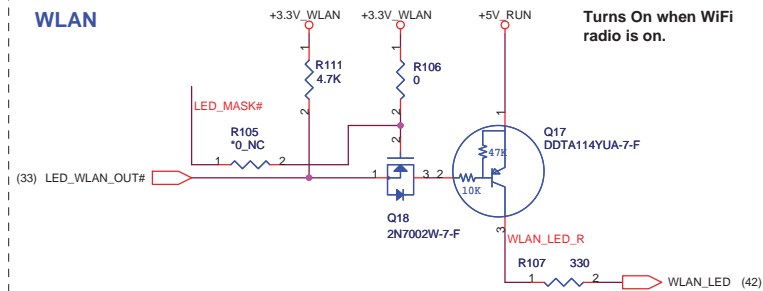
Solid White= System On, Normal Activity
Solid White= Charging (system on);
Solid White= Charging (system off or hibernate and battery charge <90%);
Off= Charging (system off or hibernate and battery charge > 90%);
"Breathing White " = System in Standby (S3);
Off = System Off (or in Hibernate);



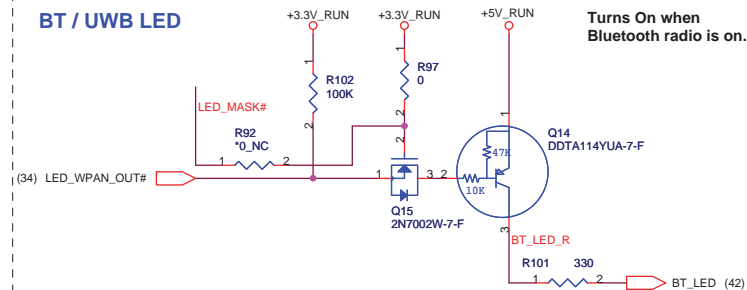
HDD Activity LED



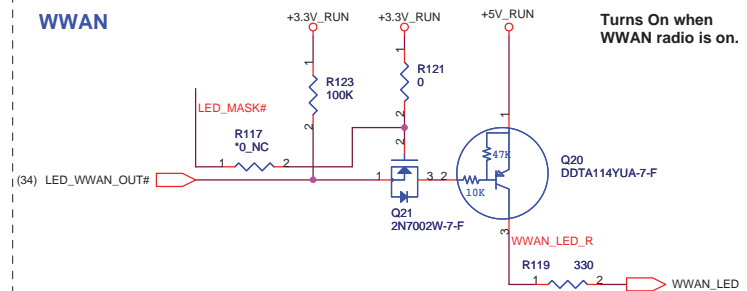
WLAN



BT / UWB LED

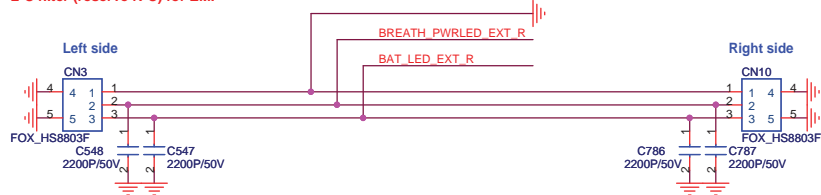


WWAN



Hinge LED (PWR/Battery indicator)

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

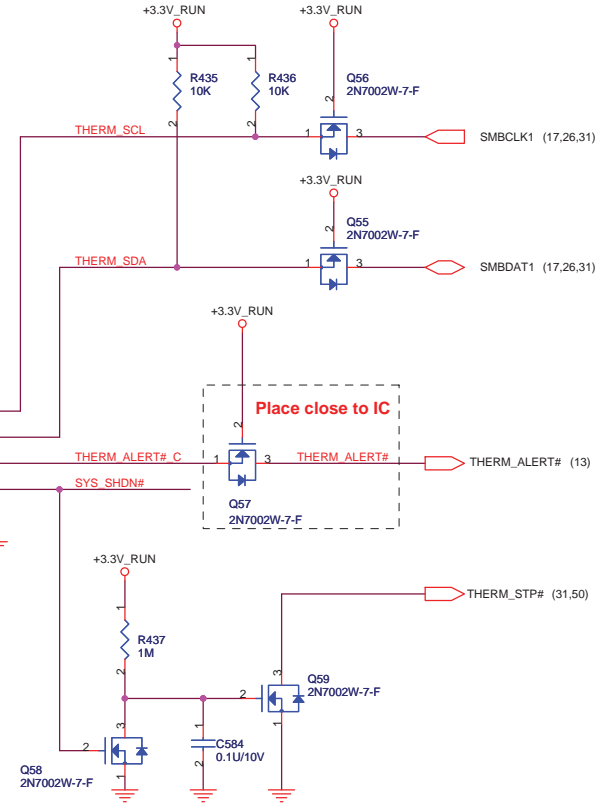
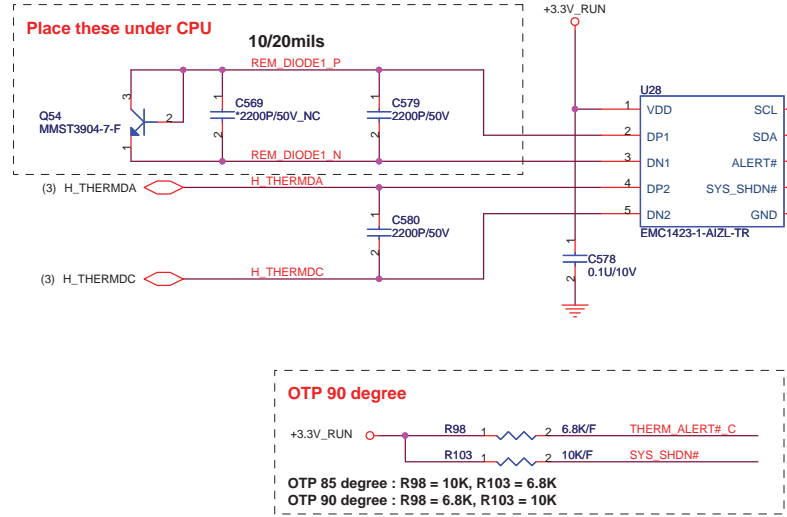
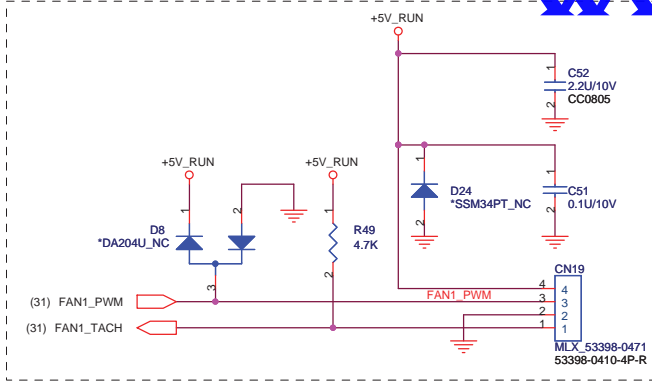


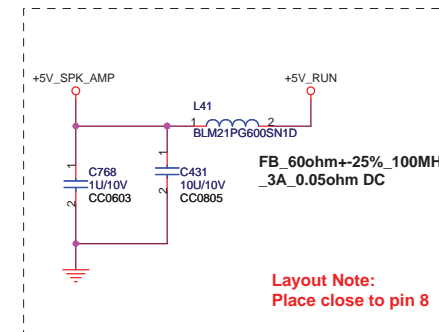
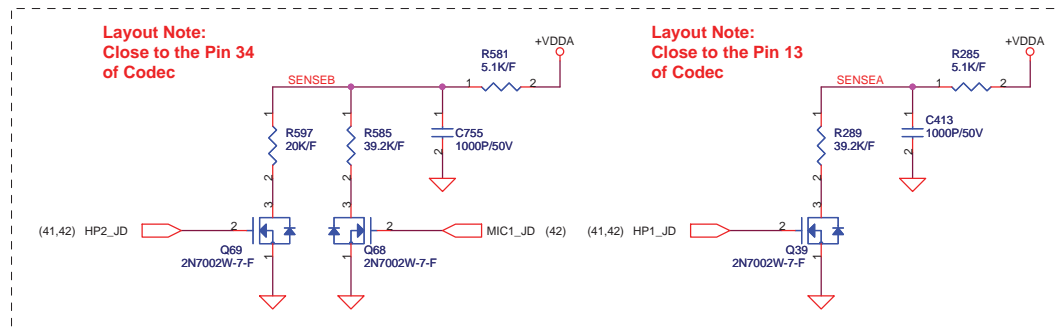
Solid White= System On, Normal Activity
Solid White= Charging (system on);
Solid White= Charging (system off or hibernate and battery charge <90%);
Off= Charging (system off or hibernate and battery charge > 90%);
"Breathing White " = System in Standby (S3);
Off = System Off (or in Hibernate);

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

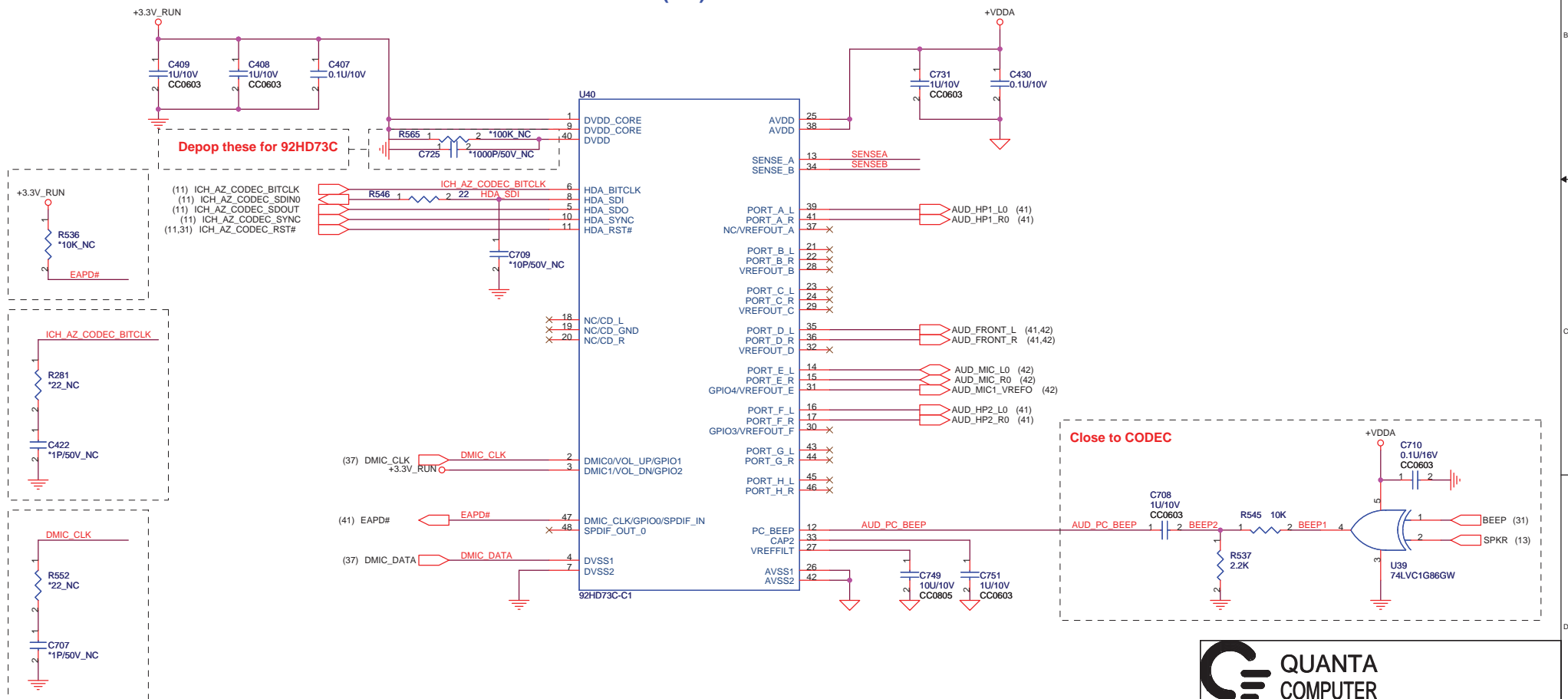
QUANTA
COMPUTER

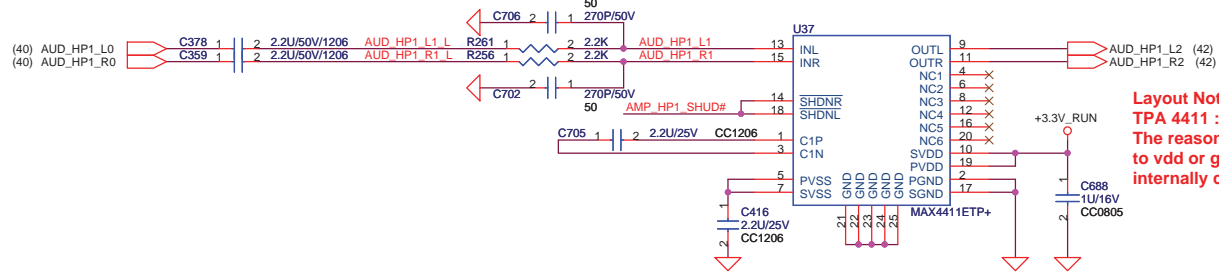
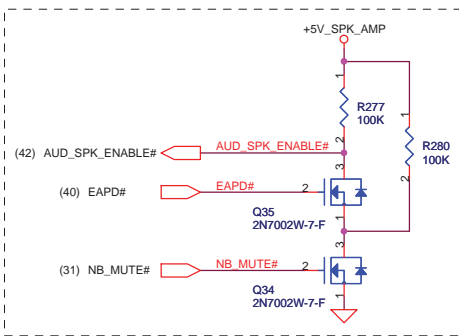
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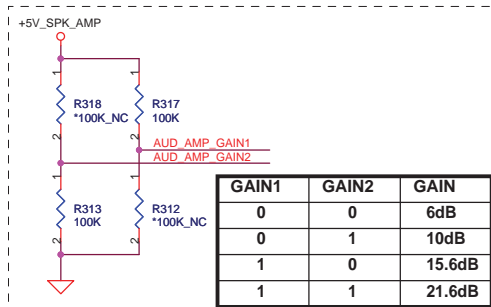
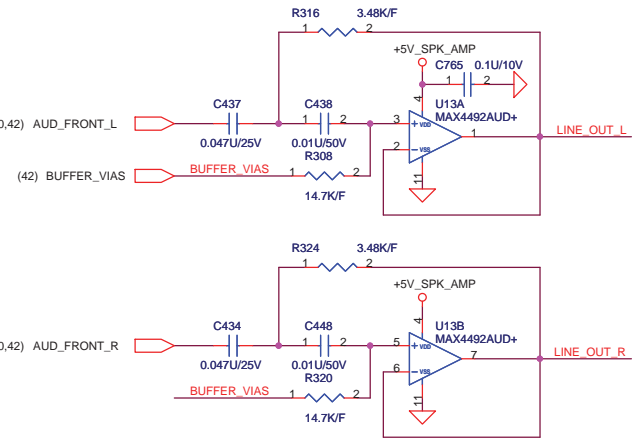
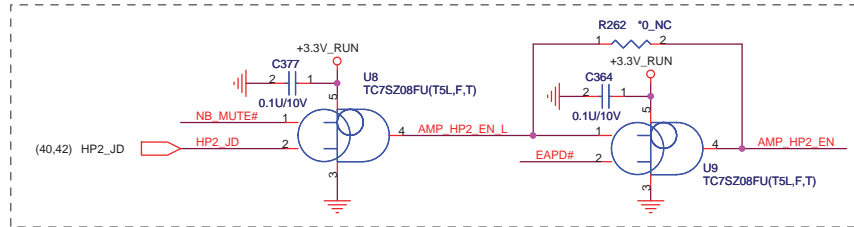
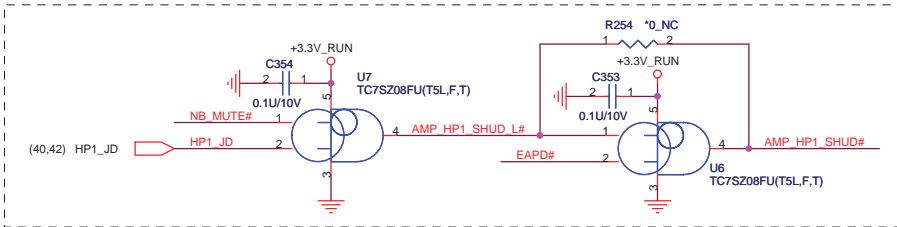


AZALIA (HD) CODEC

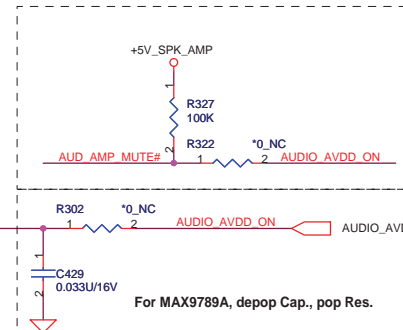




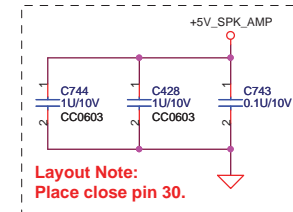
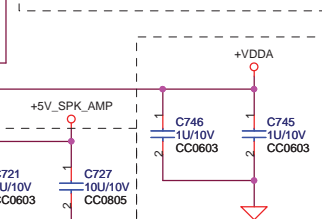
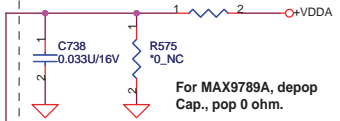
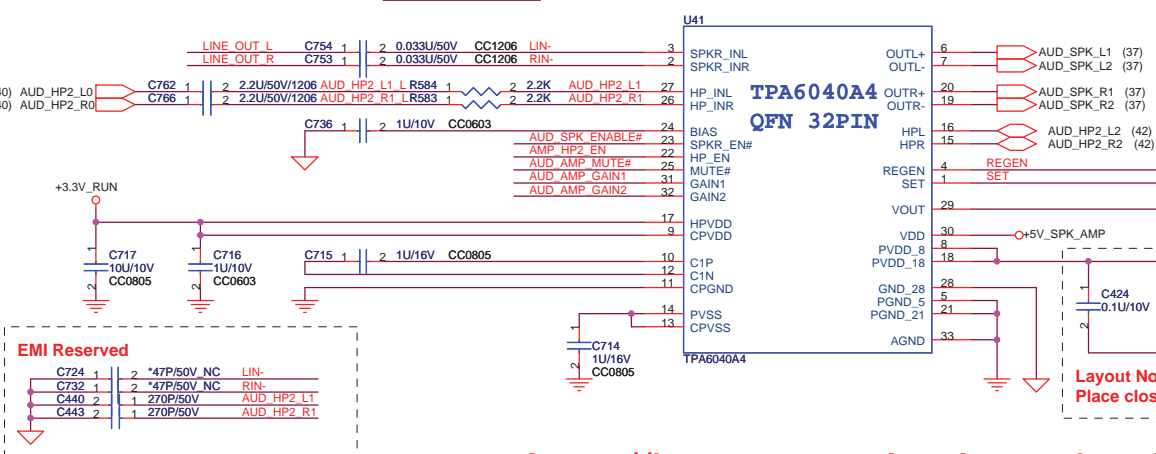
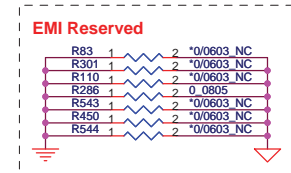
Layout Note:
TPA 4411 : cannot connect EP to GND.
The reason that we can't solder the pad to vdd or ground is because it is internally connected to VSS.



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



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.

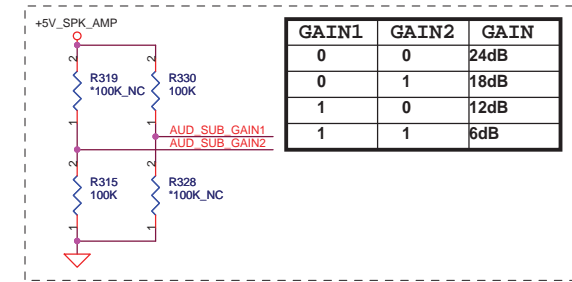
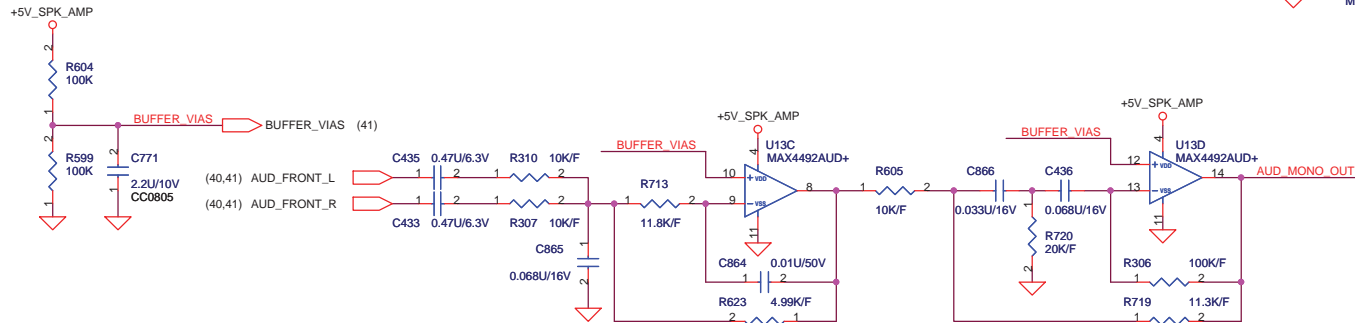
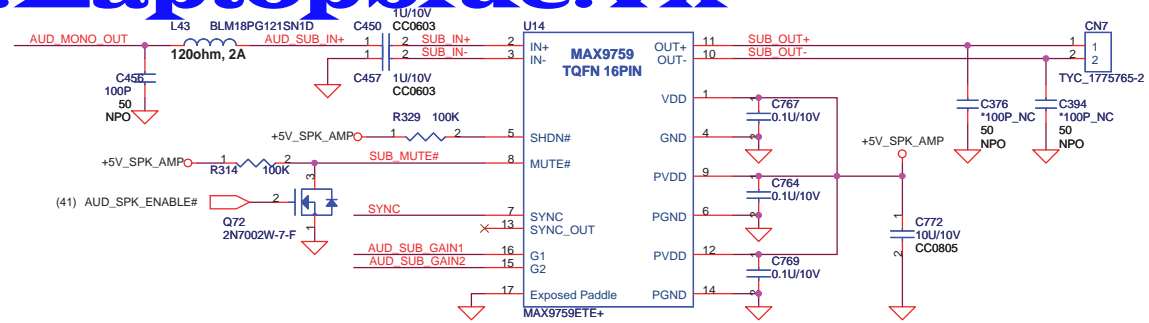
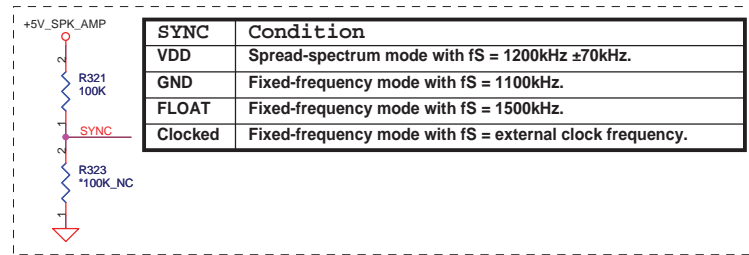


Layout Note:
Place close pin 30.

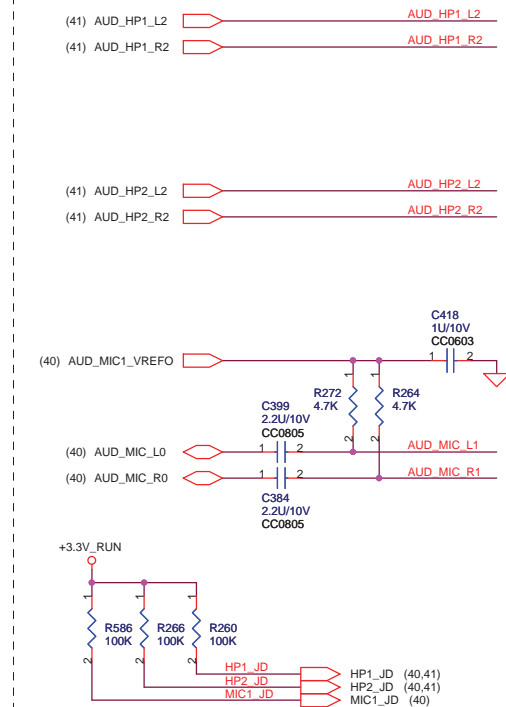


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AUDIO AMP			
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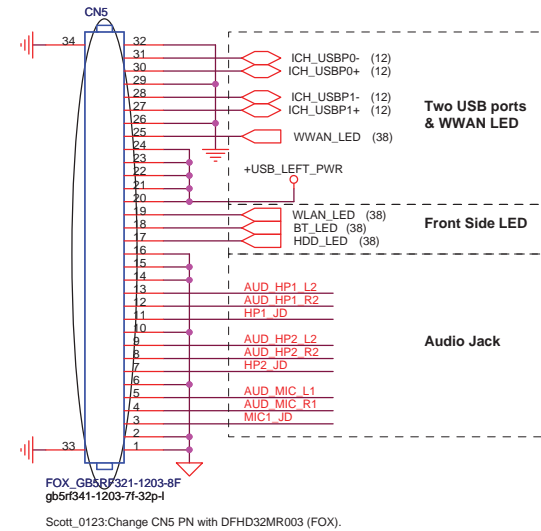
INTERNAL SUBWOOFER AMP



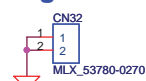
Ambient Parts of Headphone & MIC Jack

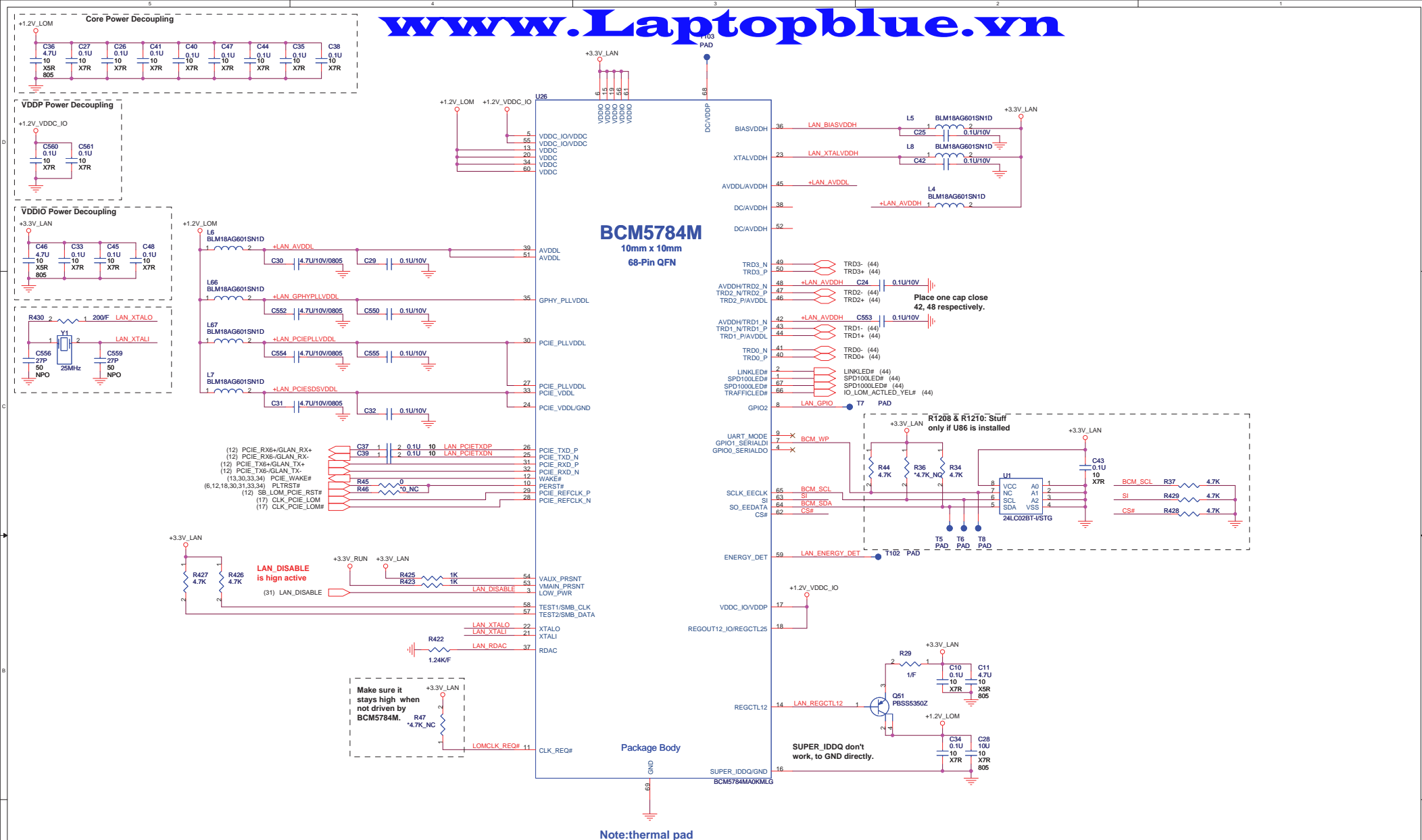


To IB(IO Board) connector



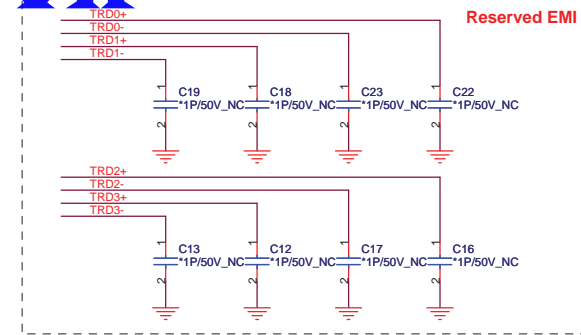
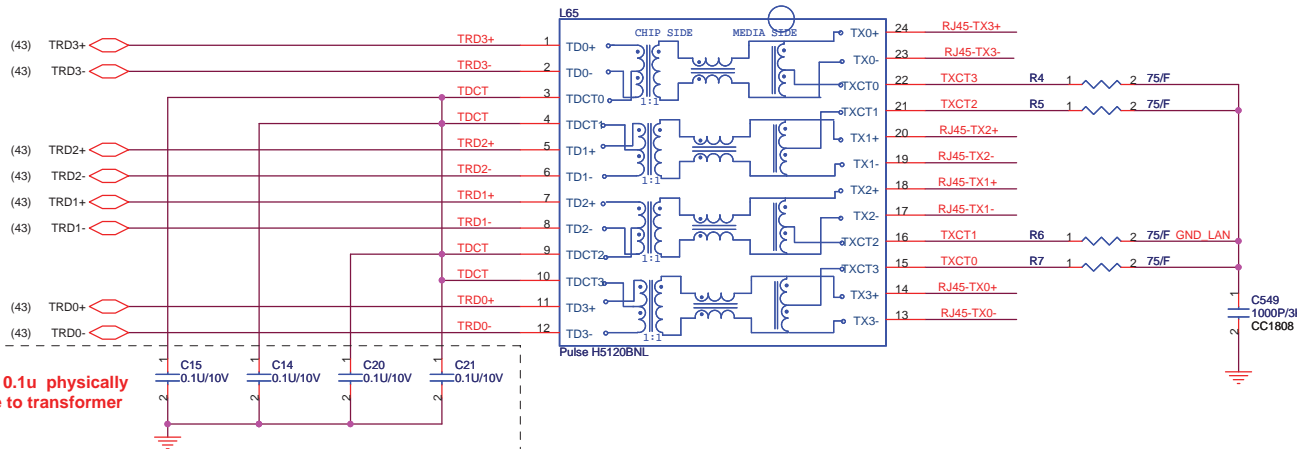
Adding additional AGND



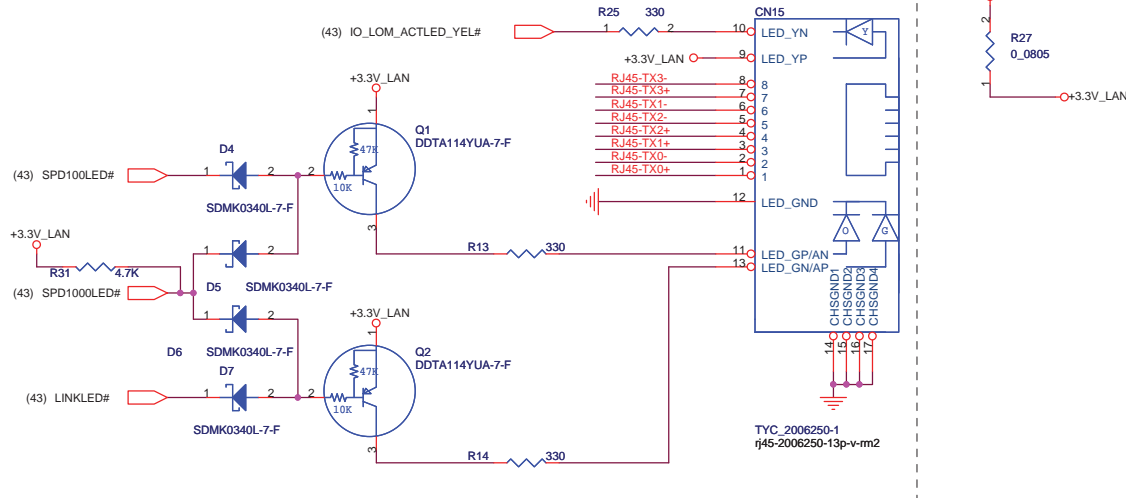


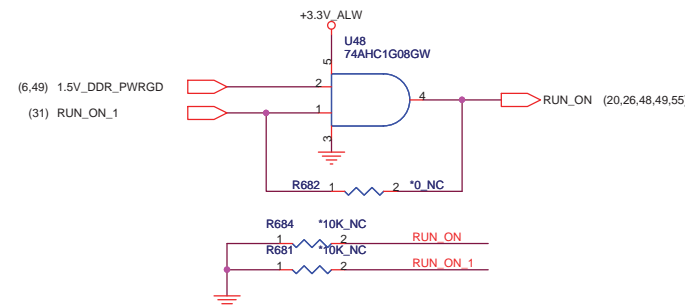
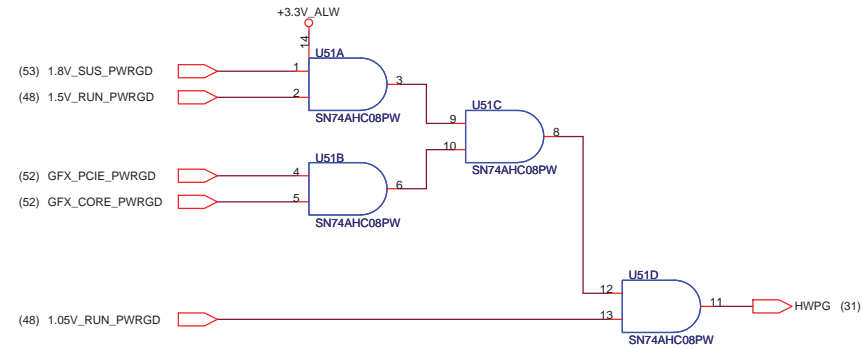
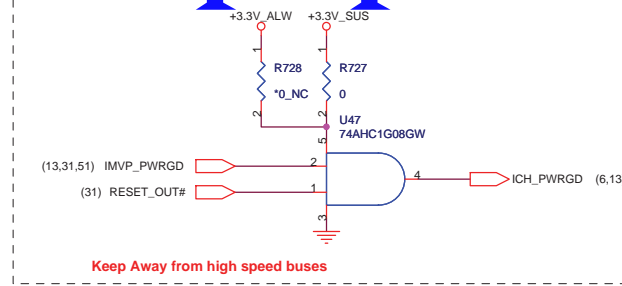
TRANSFORMER

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

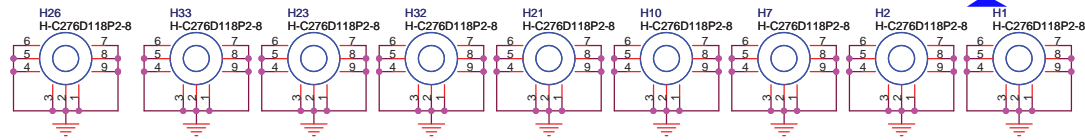


RJ-45 Connector

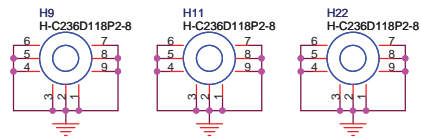




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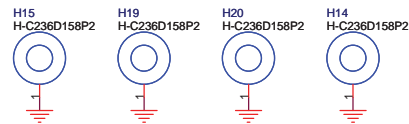
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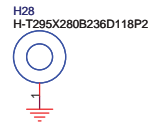
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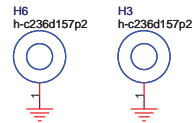
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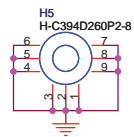
H-T295X280B236D118P2 * 1



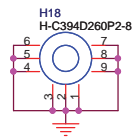
h-c236d157p2 * 2



h-c394d260p2 * 1



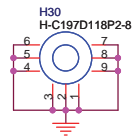
H-C394D260P2-8 * 1



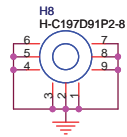
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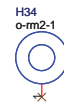
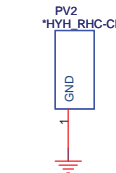
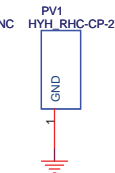
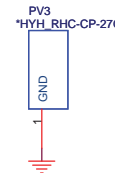
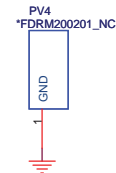
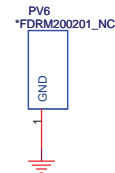
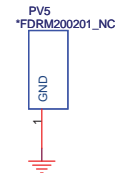
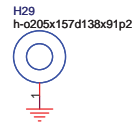
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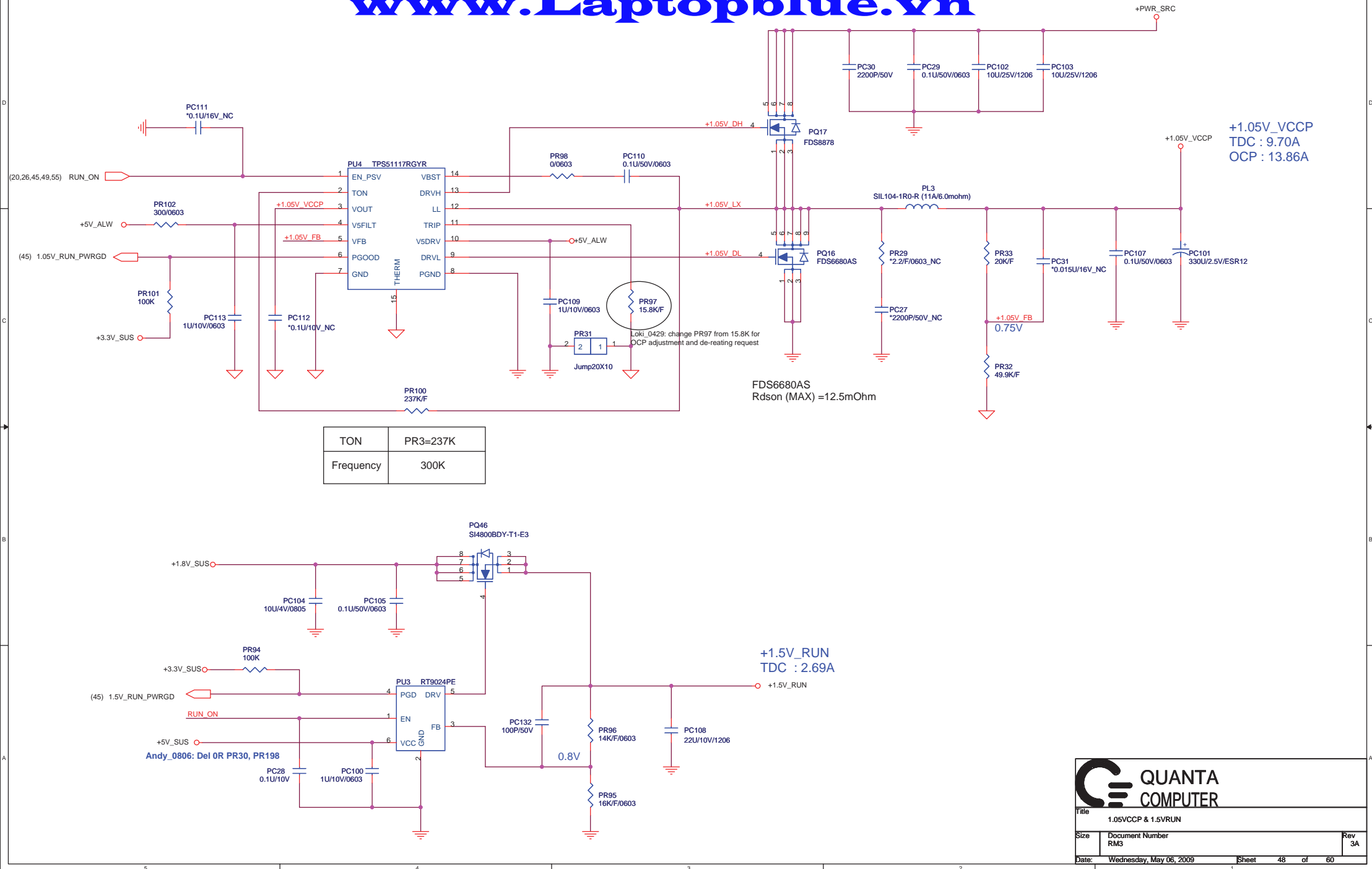


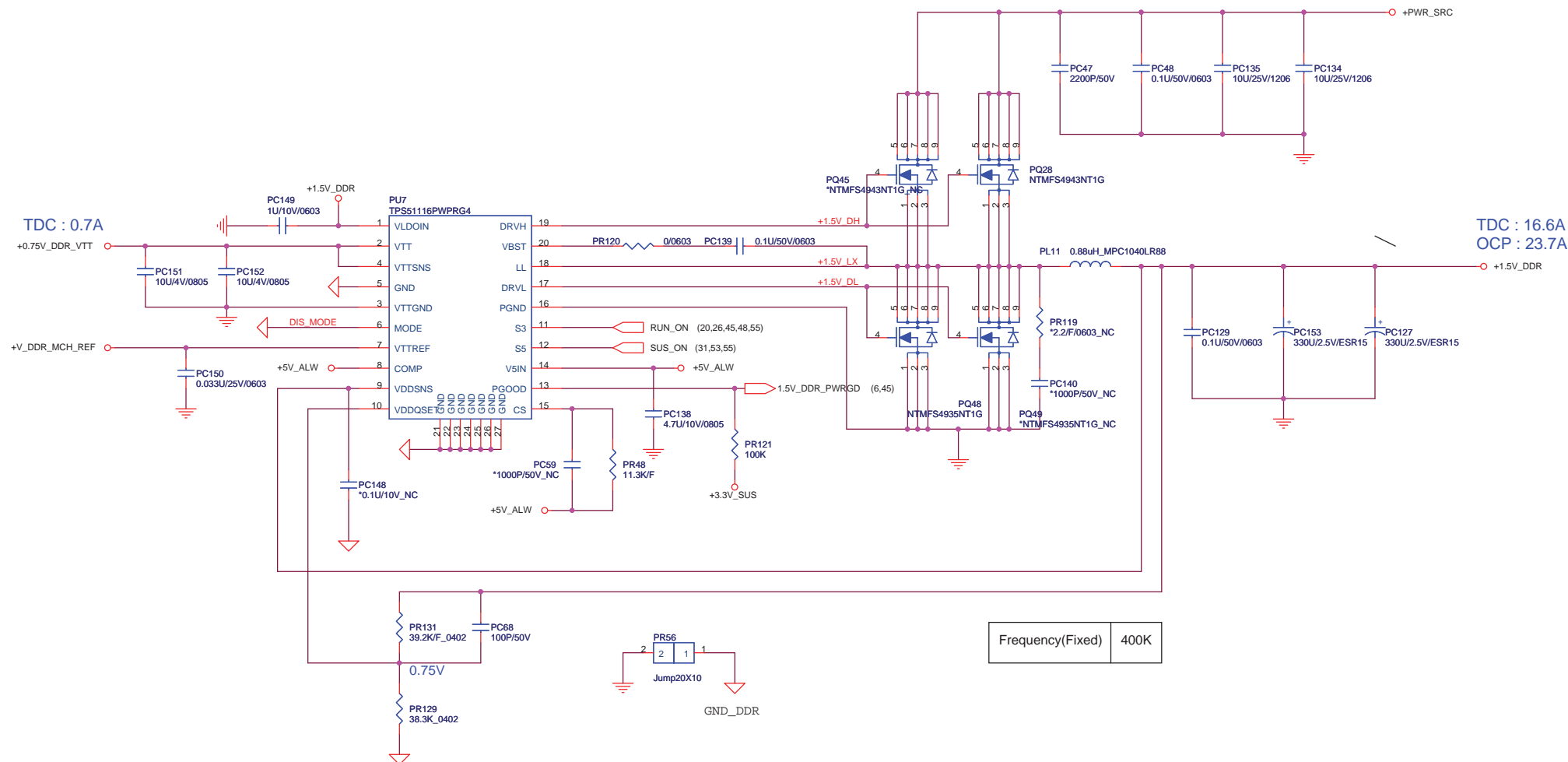
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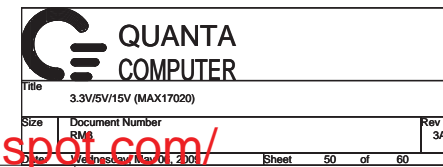


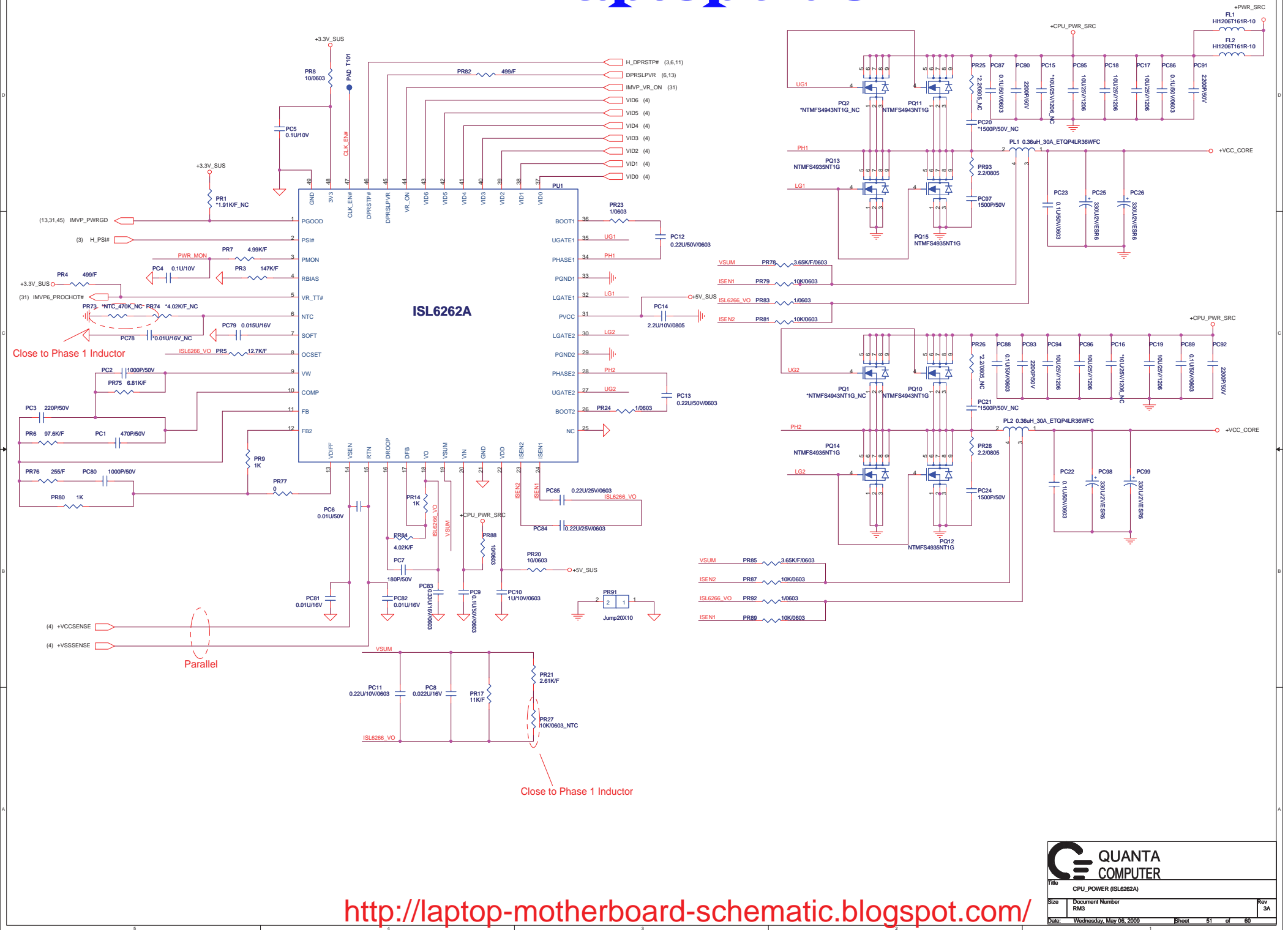
			
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PAD & SCREW & SPRING			
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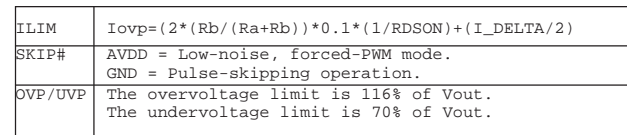





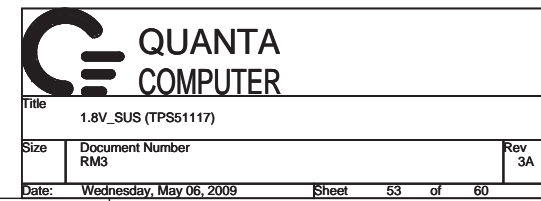


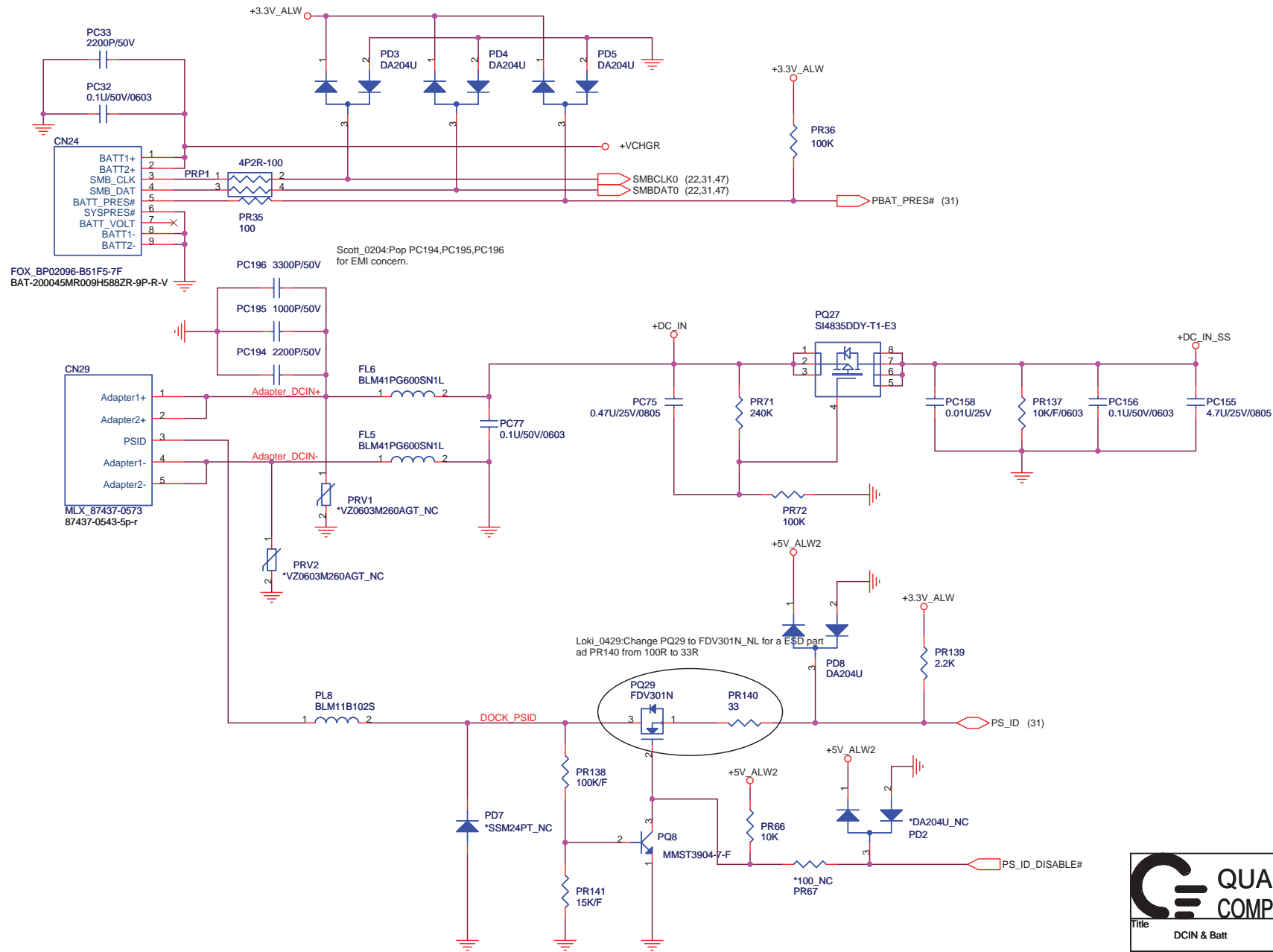




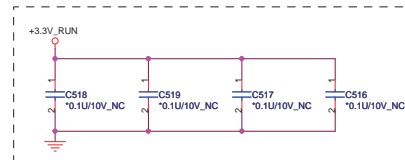


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DCIN & Batt		
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ICH9-M

G16 ICH_SMBCLK
A13 ICH_SMBDATA

SIO
ITE8512

110 SMBCLK0
111 SMBDAT0

115 SMBCLK1
116 SMBDAT1

117 SMBCLK2
118 SMBDAT2

+3.3V_SUS
2.2K 2.2K

+3.3V_WLAN
2.2K 2.2K

+3.3V_WLAN
2.2K 2.2K

+3.3V_RUN
2.2K 2.2K

+3.3V_ALW
2.2K 2.2K

+3.3V_ALW
10K 10K

+3.3V_ALW
10K 10K

+3.3V_DELAY
4.7K 4.7K

+3.3V_RUN
2.2K 2.2K

+3.3V_RUN
10K 10K

+3.3V_RUN
10K 10K

+3.3V_RUN
10K 10K

30 32
WWAN, WPAN

7 8
EXPRESS CARD

30 32
WLAN

14 13
HDD Fall Sensor

MEM_SCLK 202
MEM_SDATA 200
DIMM1 & DIMM2

8 7
GPU THERMAL

10 9
CHARGER

3 4
BATTERY

7 6
CLOCK GEN

6 5
LCD

10 9
THERMAL

5 4
MMB

31 28
DB

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

