PCB STACK UP 8L

- LAYER 1 : TOP
- LAYER 2 : SGND
- LAYER 3 : IN1
- LAYER 4 : IN2
- LAYER 5 : SVCC
- LAYER 6 : IN3
- LAYER 7 : SGND1
- LAYER 8 : BOT

Dutton/Jett Block Diagram -- Intel Chief River ULV

POWER

DC/DC 3VPCU, 5VPCU, +15V	Page 31
REGULATOR (DDR3) 1.5VSUS, +0.75V_DDR_VTT	Page 32
REGULATOR +1.05V&+1.8V	Page 33,34
REGULATOR +VCCSA	Page 35
CPU Core +VCC_CORE&+VCC_GFX	Page 36
Charger VIN	Page 37
RUN POWER SW/Discharge 3VSUS,5VSUS, 3V_S5, 5V_S5, +3V, +5V	Page 38

DDR3 SO-DIMM 1 Page 13

DDR3 SO-DIMM 2 Page 14

Intel Chief River Ivy Bridge
31mmX24mm, BGA1023
2 Core 17Watt
Page 3,4,5,6

FDI

X4 DMI

Charger temperature Thermal Sensor Page 26

CRT Page 16 — RGB

HDMI Page 16 — HDMI

LCD Page 15 — LVDS

2.5" HDD /SSD Module (Option) Page 17 — SATA

HP/Mic Audio Jack Page 24

HDA CODEC ALC269-Q-VC2 Page 24 — HD Audio

Internal MIC Page 24

Internal SPK Page 24

SPI Flash (8MB) Page 8

RFID Page 27

Panther Point
HM77
25mmX25mm, BGA
PCH 4.1Watt
Page 7,8,9,10,11,12

32.768KHz

LPC BUS

25MHz

SPI Flash (512K) Page 28

IT8518 Page 28

TPM (for Jett) Page 22

TrackPoint Page 21

Accelerometer (APS) Page 22

Int. KB Page 21

ClickPad Page 21

Battery Page 37

Charger Page 37

PCI-e — **Card Reader Realtek RTS5209** Page 25 — **4 in 1 Socket SD/SDHC/SDXC/MMC** Page 25

PCI-e/USB — **Mini PCIe Slot** Page 19 — **WLAN Module / Bluetooth** Page 19

SATA/USB — **Mini PCIe Slot** Page 20 — **WWAN module / mSATA** Page 20 — **SIM Card** Page 20

PCI-e — **10/100/1G Ethernet RTL8111F-CG** Page 23 — **RJ-45** Page 23

USB 3.0 + USB2.0 — **USB 3.0 PORT X 2** Page 18

USB 2.0 — **Camera Conn** Page 15 — **Camera Module** Page 15

USB 2.0 — **USB 2.0 PORT X 1** Page 18

USB 2.0 — **Reserved Discrete Bluetooth** Page 22

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Size	Document Number	Rev
	System Block Diagram	1A

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Table of Contents

Power States

POWER PLANE	VOLTAGE	PAGE	DESCRIPTION	CONTROL SIGNAL	ACTIVE IN
VIN	10V~+20V	15,31,32,33,34,35,36,37	MAIN POWER		S0~S5
+3V_RTC	+3.0V~+3.3V	7,8,11,28	RTC		S0~S5
3VPCU	+3.3V	8,15,16,17,20,27,28,31,33,36,37	IT8518/19 POWER	3V5V_EN	S0~S5
5VPCU	+5V	15,29,31,32,33,34,36,37	DC/DC POWER IC SOURCE	3V5V_EN	S0~S5
+15V	+15V	15,25,31,32,37	LARGE POWER	3V5V_EN	S0~S5
LANVCC	+3.3V	17,37	LAN POWER	LAN_ON	
5V_S5	+5V	11,20,37	PCH SUS POWER	S5_ON	S0~S3
3V_S5	+3.3V	3,7,8,9,10,11,22,25,27,28,37	Sys Management,PCH Resume Well, USB,WLAN,WiMAX POWER	S5_ON	S0~S3
5VSUS	+5V	15,27,35,37	SLP_S4# CTRLD POWER	SUSON	S0~S3
3VSUS	+3.3V	32,37	SLP_S4# CTRLD POWER	SUSON	S0~S3
+1.5VSUS	+1.5V	3,11,13,14,32,37	DDR3 SODIMM POWER	SUSON	S0~S3
+0.75V_DDR_VTT	+0.75V	13,14,32,37	DDR3 SODIMM REFERENCE POWER	MAINON	S0
+5V	+5V	7,8,11,15,16,18,19,24,26,28,29,37	SLP_S3# CTRLD POWER	MAINON	S0
+3V	+3.3V	3,7,8,9,10,11,13,14,15,16,17,18,19,21,22,23 24, 25,26,27,28,29	SLP_S3# CTRLD POWER	MAINON	S0
+VCC_GFX		5,35,37	VGA CORE POWER	MAINON	S0
+VCCSA	+0.8V~+0.9V	5,34,37	Sandy Bridge Power	MAINON	S0
+1.8V	+1.8V	5,8,11,33,37	LVDS,NVM POWER	MAINON	S0
+1.05V	+1.05V	3,5,7,8,9,11,33,37	Sandy Bridge VTT POWER/PCH CORE POWER	MAINON	S0
+VCC_CORE		5,6,35,37	CPU CORE POWER	VRON	S0
+LCDVCC	+3.3V	15	LCD Power	ENVDD	S0
+3V_HDD	+3V	19	ODD Power	ODD_5V_ON	S0
+5V_HDD	+5V	19	HDD Power	MAINON#	S0
BAT-V	+10V~+17V	36	MAIN BATTERY	CHG_PBATT	S0~S5
+1.5V_CPU	+1.5V	3,5,32,37	DDR3 1.5V Rails	PS_S3CNTRL	S0

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	FRONTPAGE	1A

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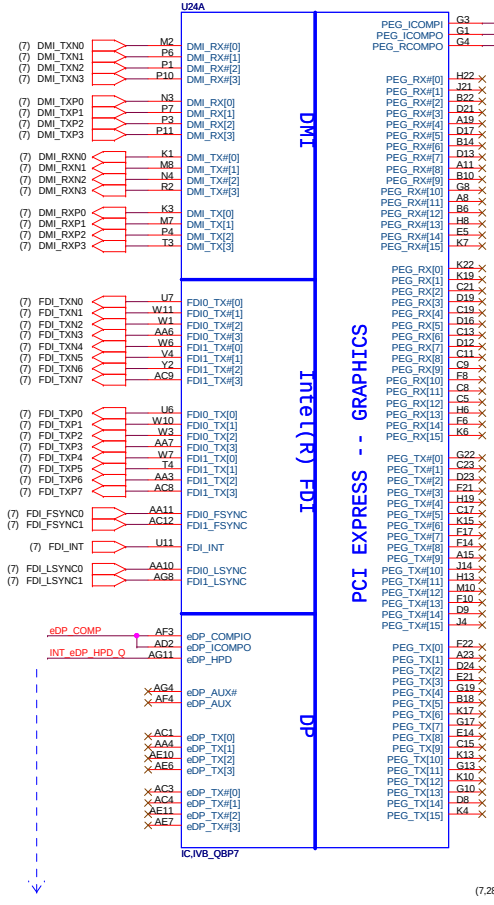
IVY Bridge Processor (DMI,PEG,FDI)

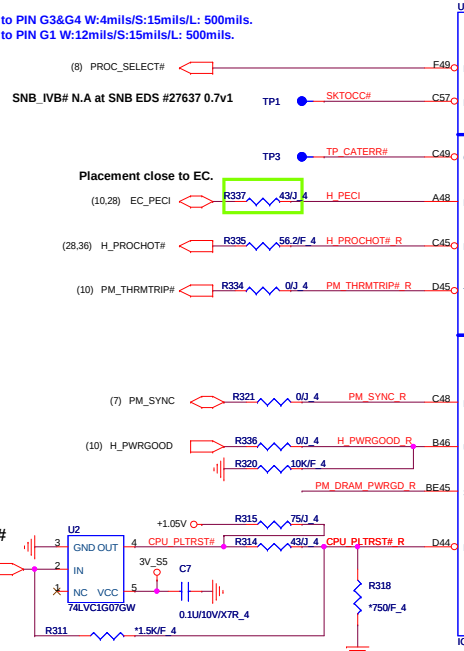
IVY Bridge Processor (CLK,MISC,JTAG)

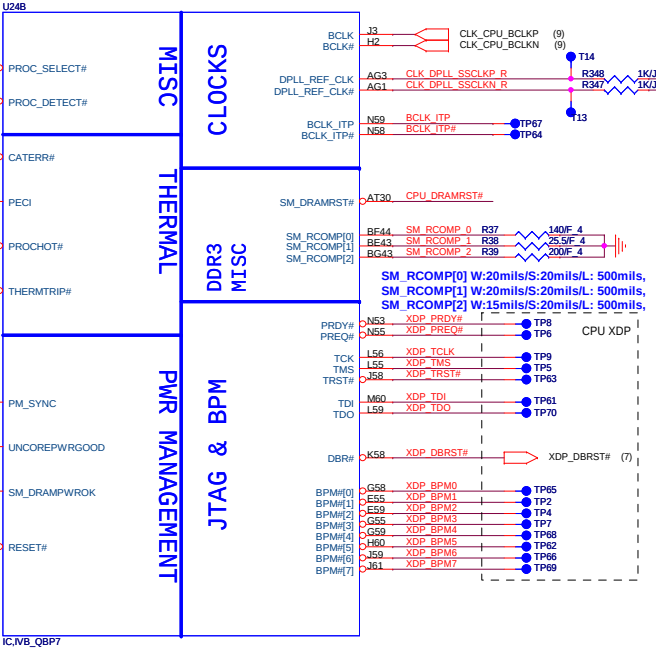
03

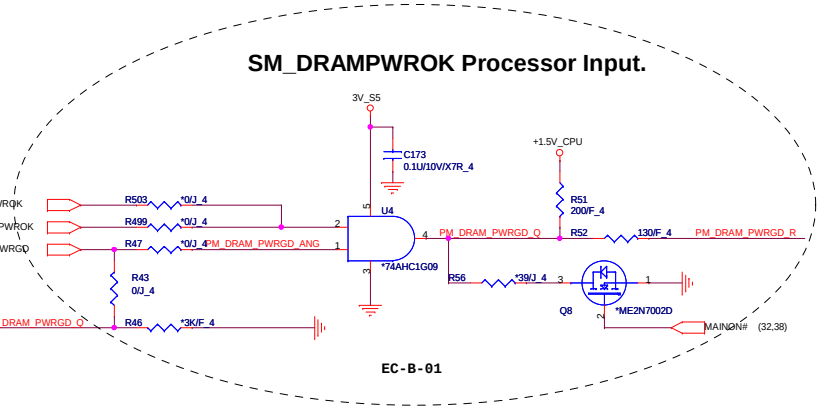


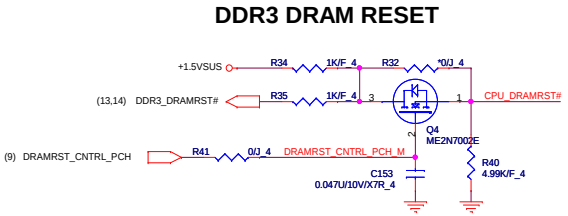
PEG_COMP connect to PIN G3&G4 W:4mils/S:15mils/L: 500mils.
PEG_COMP connect to PIN G1 W:12mils/S:15mils/L: 500mils.

eDP_COMP connect to PIN AF3 W:4mils/S:15mils/L: 500mils.
eDP_COMP connect to PIN AD2 W:12mils/S:15mils/L: 500mils.

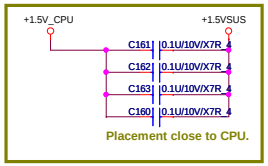




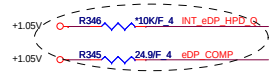




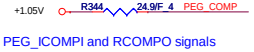
+1.5VSUS (11,13,14,29,32,38)
+1.05V (5,7,8,9,11,29,33,36,38,49)
+1.5V_CPU (5,29,32,38)
3V_S5 (7,8,9,10,11,19,28,38)
+3V (7,8,9,10,11,13,14,15,16,17,19,20,22,24,25,26,27,28,29,31,32,33,35,36,38,49)



DP & PEG Compensation

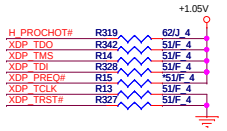


eDP_COMPIO and ICOMPO signals should be shorted near balls and routed with typical impedance <25 mohms



PEG_ICOMPI and RCOMPO signals should be routed within 500 mils typical impedance = 43 mohms PEG_ICOMPO signals should be routed within 500 mils typical impedance = 14.5 mohms

Processor pull-up (CPU)



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Size	Document Number	Rev
	IVB 1/4 (PCIE&DMI&FDI)	1A
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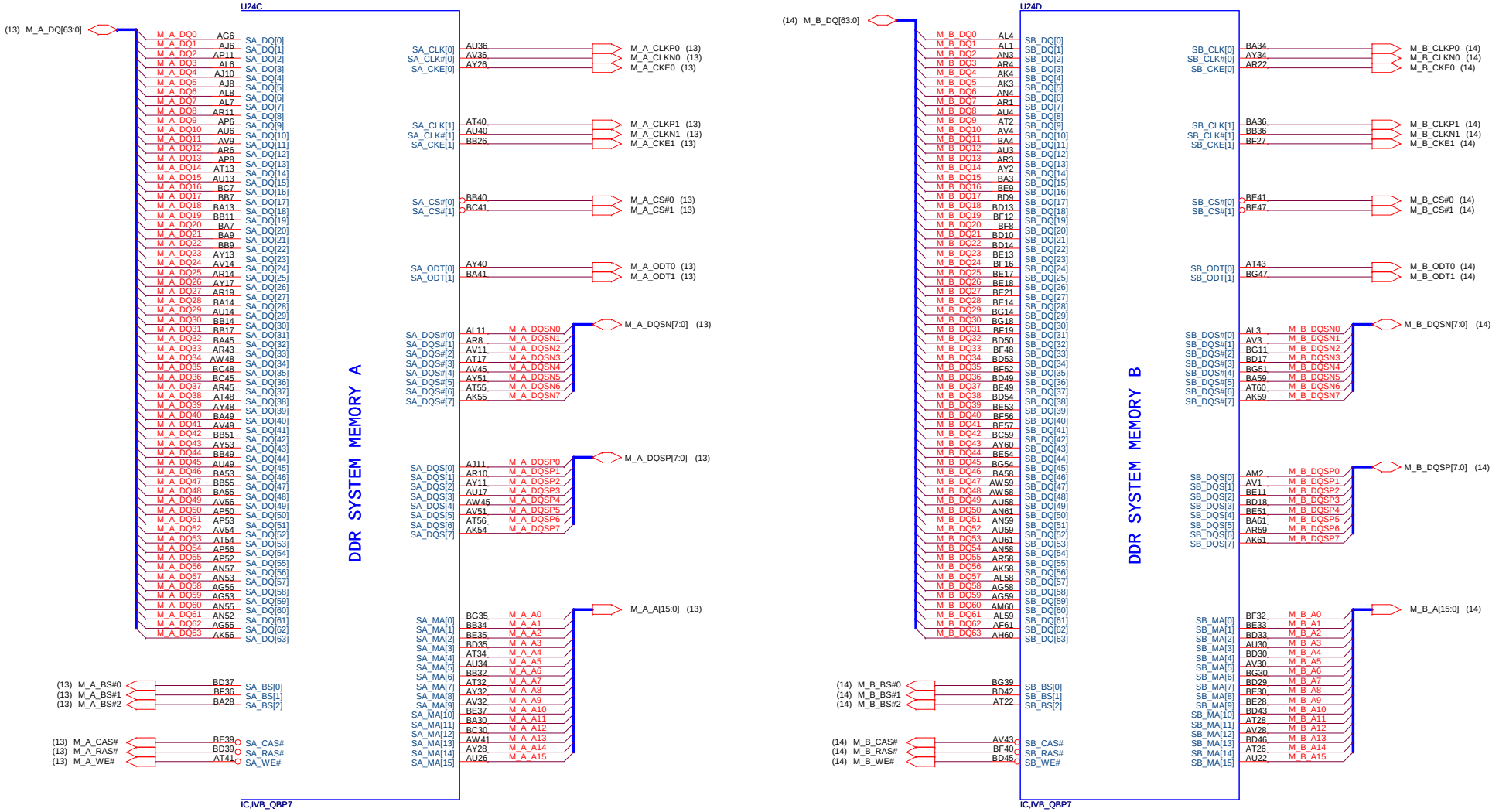
IVY Bridge Processor (DDR3)



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Size	Document Number	Rev
	IVB 2/4 (DDR3 I/F)	1A

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IVY Bridge Processor (POWER)

IVY Bridge Processor (GRAPHIC POWER)

05

330uF locate power side

CPU Core Power

IVB:33A

+VCC_CORE

U24F

IVB:8.5A

+1.05V

CORE SUPPLY

PEG AND DDR

POWER

EC-DV-16

EC-DV-07

EC-DV-08

3.3V_SUS?(PDDG p127)

QUIET RAILS

SVID

SENSE LINES

IC,IVB_QBP7

IVB:33A

+VCC_GFX

U24G

GRAPHICS

POWER

DDR3 - 1.5V RAILS

CAD Note: +VDDR_REF_CPU should have 10 mil trace width

+VDDR_REF_CPU

DDR_VTTREF (13,14,32)

MAIND (32,38)

SM_VREF

Q5 ME2N7002E

IVB:5A

+1.5V_CPU

EC-DV-08 EC-DV-23

EC-DV-06

EC-DV-17

IVB:1.2A

1.8V RAIL

SENSE LINES

QUIET RAILS

IVB:6A

SA RAIL

SENSE LINES

If +1.5V_CPU will be implemented, have to change the two divided resistor as 100-ohm 1%

SNB_IVB# N.A at SNB EDS #27637 0.7v1

IC,IVB_QBP7

SVID CLK

Layout note: need routing together and ALERT need between CLK and DATA.

Place PU resistor close to VR

SVID DATA

Place PU resistor close to CPU

Place PU resistor close to VR

SVID ALERT

Place PU resistor close to CPU

+VCC_CORE (29,36,38)
+VCC_GFX (29,36,38)
+VCCSA (35,38)
+1.05V (3,7,8,9,11,29,33,36,38,49)
+1.5V_CPU (3,29,32,38)
+1.8V (8,11,34,38)
DDR_VTTREF (13,14,32)

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	IVB 3/4 (POWER)	1A

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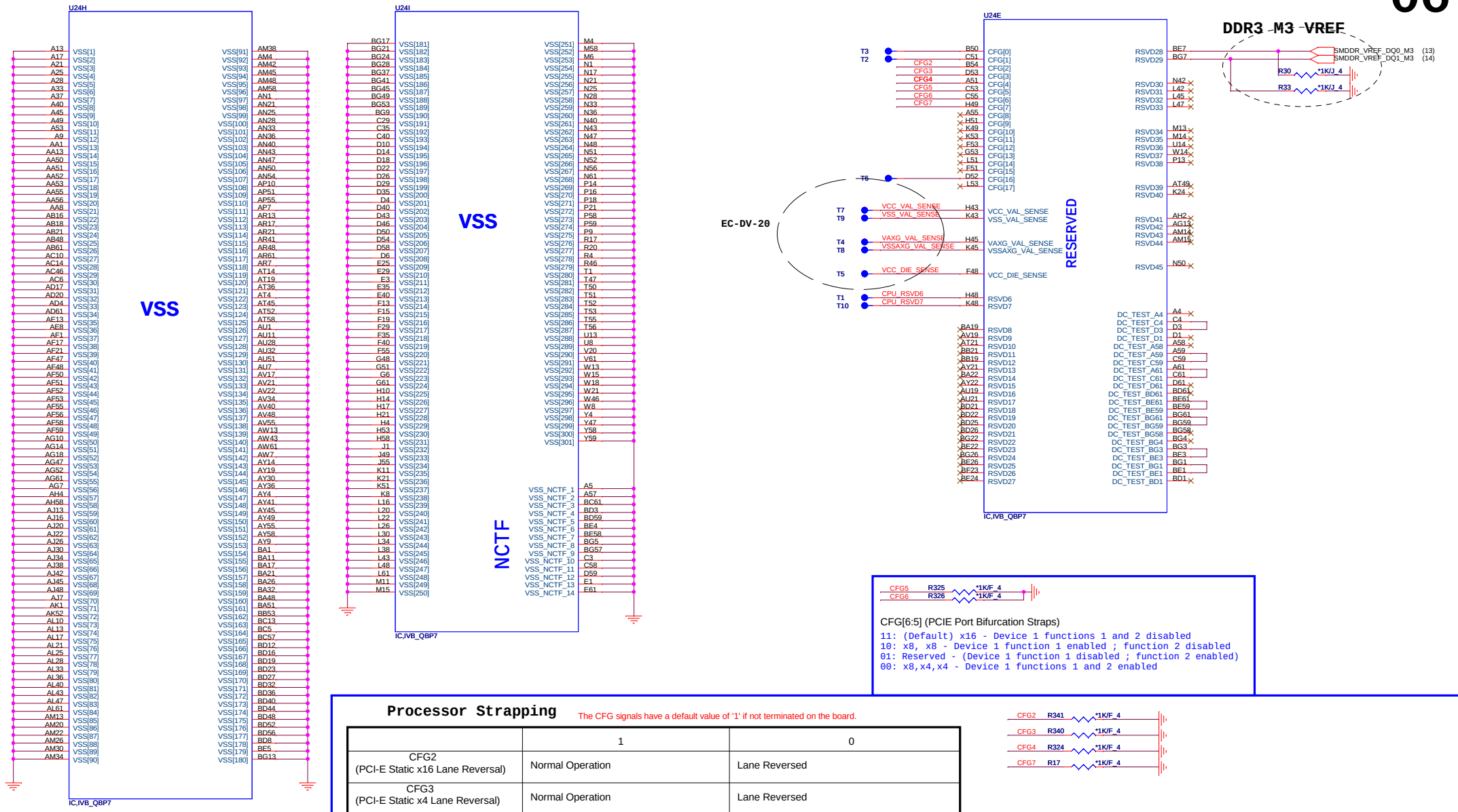
IVY Bridge Processor (GND)

IVY Bridge Processor (RESERVED, CFG)

06



Processor Strapping

The CFG signals have a default value of '1' if not terminated on the board.

	1	0
CFG2 (PCI-E Static x16 Lane Reversal)	Normal Operation	Lane Reversed
CFG3 (PCI-E Static x4 Lane Reversal)	Normal Operation	Lane Reversed
CFG4 (DP Presence Strap)	Disable; No physical DP attached to eDP	Enable; An ext DP device is connected to eDP

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Size	Document Number	Rev
	IVB 4/4 (GND)	1A

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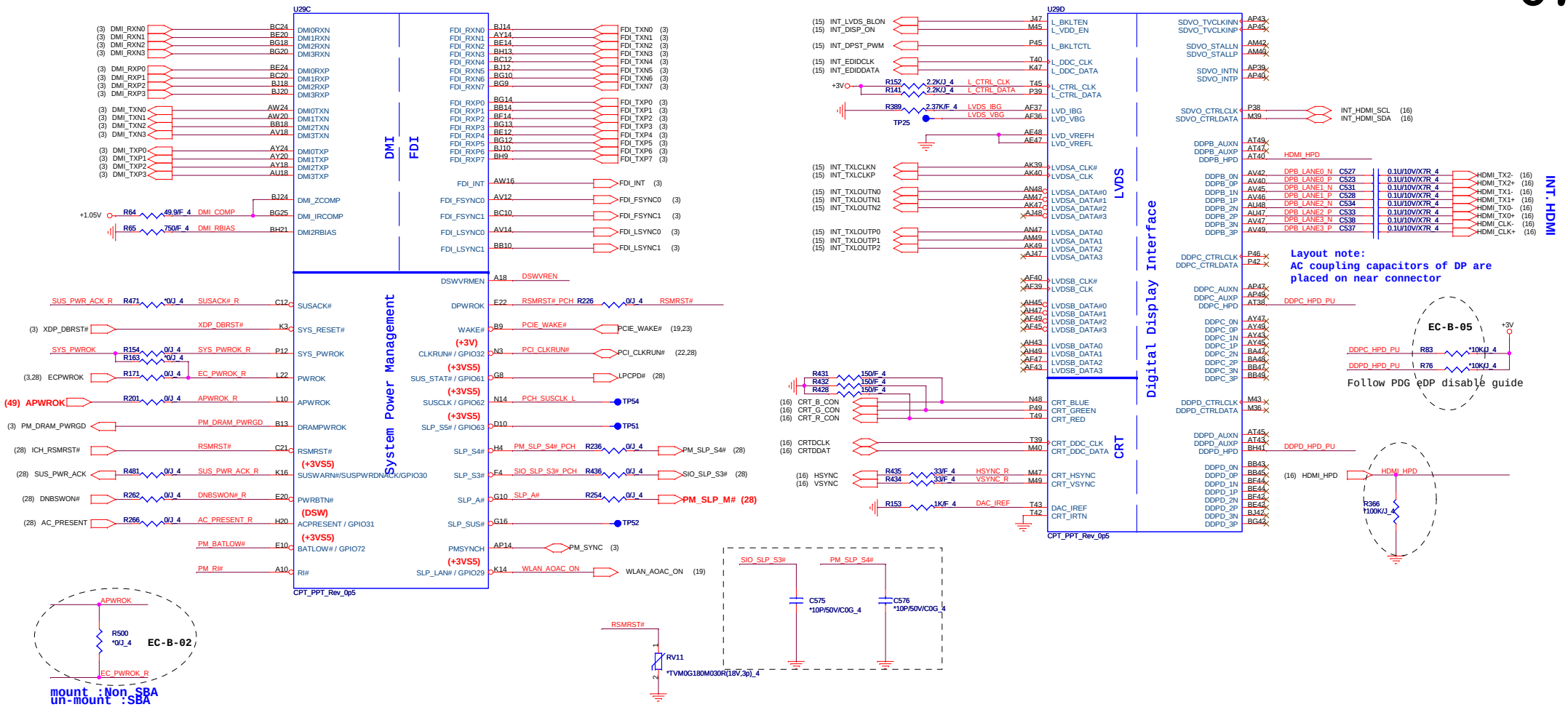
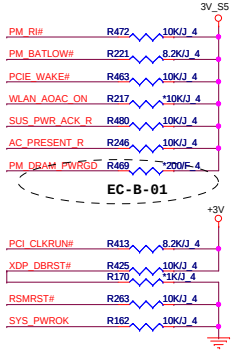
Cougar Point/Panther Point(DMI,FDI,PM)

Cougar Point/Panther Point (LVDS,DDI)

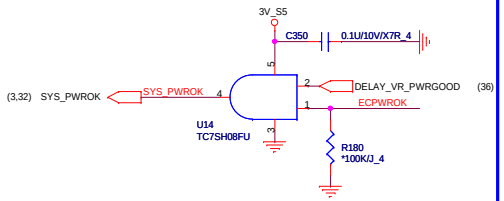
07



PCH Pull-high/low(CLG)



System PWR_OK(CLG)



+1.05V (3,5,8,9,11,29,33,36,38,49)
+3V_RTC (8,11,28)
3V_S5 (3,8,9,10,11,19,28,38)
+3V (8,9,10,11,13,14,15,16,17,19,20,22,24,25,26,27,28,29,31,32,33,35,36,38,49)
+5V (8,11,16,17,21,24,26,29,36,38)

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	PCH 1/6 (DMI/FDI/VIDEO)	1A

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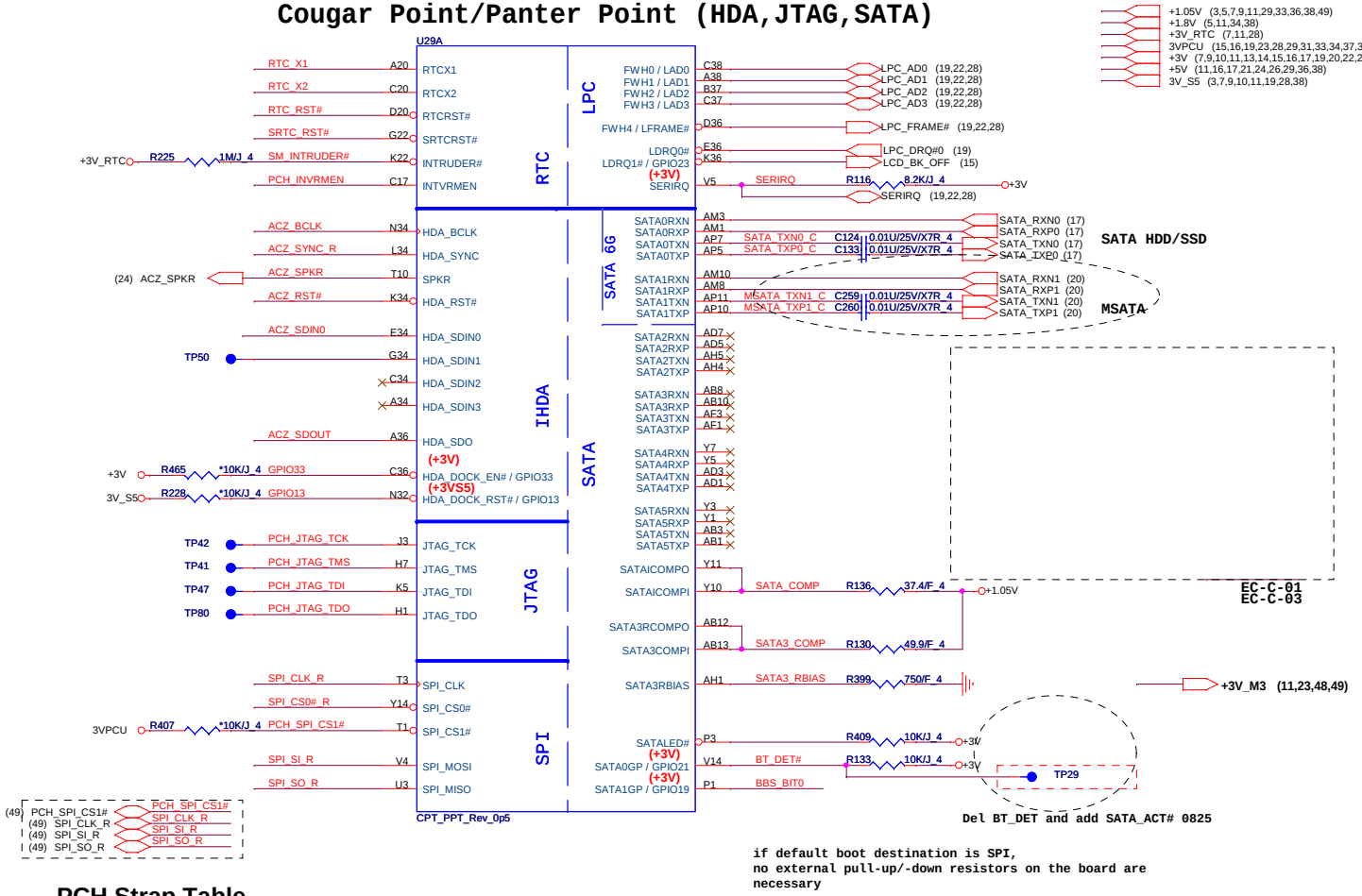
Cougar Point/Panter Point (HDA,JTAG,SATA)



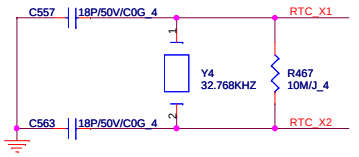
+1.05V (3,5,7,9,11,29,33,36,38,49)
+1.8V (5,11,34,38)
+3V_RTC (7,11,28)
3VPCU (15,16,19,23,28,29,31,33,34,37,38,48,49)
+3V (7,9,10,11,13,14,15,16,17,19,20,22,24,25,26,27,28,29,31,32,33,35,36,38,49)
+5V (11,16,17,21,24,26,29,36,38)
3V_S5 (3,7,9,10,11,19,28,38)

if default boot destination is SPI,
no external pull-up/-down resistors on the board are necessary

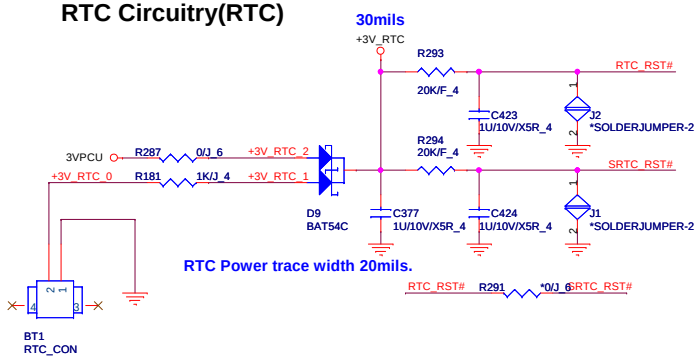
PCH Strap Table

Pin Name	Strap description	Sampled	Configuration	Circuit
SPKR Different from Calpella	No reboot mode setting	PWROK	0 = Default (weak pull-down 20K) 1 = Setting to No-Reboot mode	ACZ_SPKR R143 *1K/J_4 +3V
GNT3# / GPIO55	Top-Block Swap Override	PWROK	0 = "top-block swap" mode 1 = Default (weak pull-up 20K)	R459 *1K/J_4, R452 10K/J_4, PCI_GNT3# (9), Bios request, for can't boot Capella 4/23.
INTVRMEN	Integrated 1.05V VRM enable	ALWAYS	Should be always pull-up	PCH_INVRMEN R468 330K/J_4 +3V_RTC
HDA_SDO	Flash Descriptor Security Only for Interposer	PWROK	0 = effective(Default: weak pull down) 1 = Override	ACZ_SDOUT R464 *1K/J_4 3V_S5
GNT1# / GPIO51	Boot BIOS Selection 1 [bit-1]	PWROK	GNT1# GNT0# Boot Location: 1 1 SPI; 1 0 LPC	[Need external pull-down for LPC BIOS]
GPIO19 Different from Calpella	Boot BIOS Selection 0 [bit-0]	PWROK		R410 *1K/J_4 BBS_BIT0, R458 *1K/J_4 BBS_BIT1 (9)
GNT2# / GPIO53	ESI strap (Server only)	PWROK	Should not be pull-down (weak pull-up 20K)	USE GPIO PIN
DF_TVS	DMI Termination voltage	PWROK	weak pull-down 20kohm	+1.8V R382 2.2K/J_4, N.A at CPT EDS 0.7, (3) PROC_SELECT#, R384 1K/J_4 DF_TVS (10)
HDA_SYNC	On-Die PLL VR Voltage Select	RSMRST	0 = Support by 1.8V (weak pull-down) 1 = Support by 1.5V	3V_S5 R250 1K/J_4 ACZ_SYNC_R
GPIO15				(10) GPIO15 R433 1K/J_4 3V_S5
GPIO28 Different from Calpella	On-die PLL Voltage Regulator	RSMRST#	0 = Disable 1 = Enable (Default)	R166 *1K/J_4 PLL_ODVR_EN (10)
DSWVREN	0: disable 1: enable			

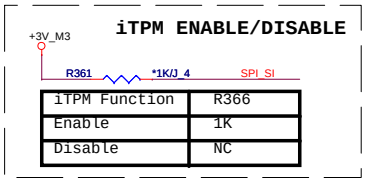
RTC Clock 32.768KHz



RTC Circuitry(RTC)

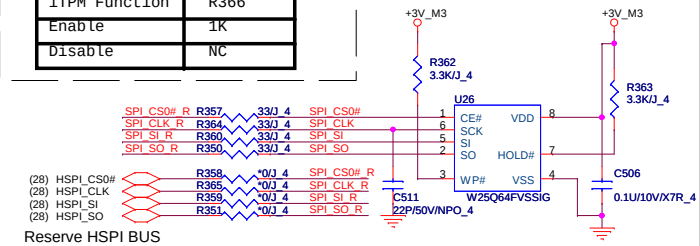


iTPM ENABLE/DISABLE

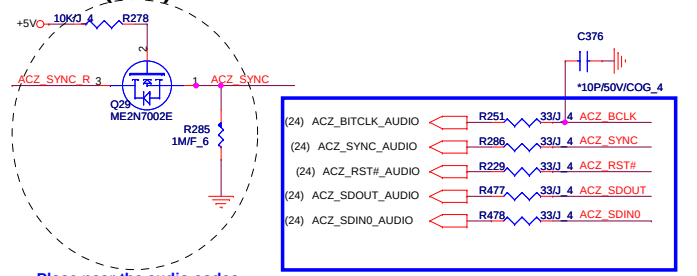


iTPM Function	R366
Enable	1K
Disable	NC

For PCH
32Mbit (4M Byte), SPI



HDA Bus(CLG)



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	PCH 2/6 (SATA/HDA/SPI)	1A

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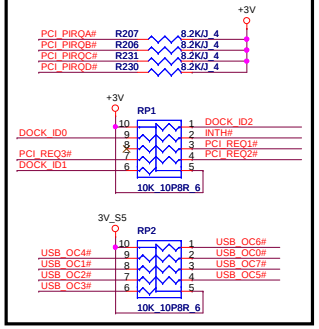
Cougar Point/Panther Point(PCI,USB,NVRAM)

Cougar Point/Panther Point((PCI-E,SMBUS,CLK)

09

PCI/USBOC# Pull-up(CLG)



WLAN

Card Reader

Remove WWAN PCIE shcematic

LAN

EHCI1

EHCI2

USB3.0

Camera

WLAN

WWAN

USB2.0(AUO4)

Remove Fringer Printer

BlueTooth

Reserved

SMBUS

Controller Link

CLOCKS

FLEX CLOCKS

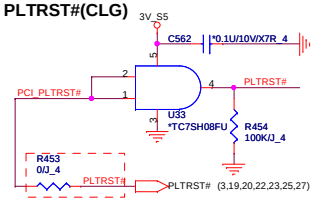
PCI-E*

PCI

USB

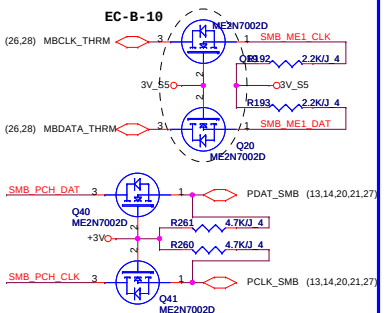
RSVD

PLTRST#(CLG)

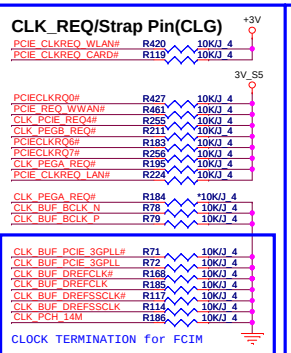


SMBus/Pull-up(CLG)

EC-B-10



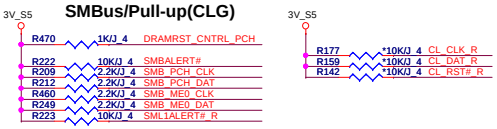
CLK_REQ/Strap Pin(CLG)



PCIE Clock

Layout note:
PCIE_CLKREQ_LAN# layout adjacent
to CLK_PEGA_REQ#

SMBus/Pull-up(CLG)



3V_S5 (3,7,8,10,11,19,28,38)
+3V (7,8,10,11,13,14,15,16,17,19,20,22,24,25,26,27,28,29,31,32,33,35,36,38,49)

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	PCH 3/6 (PCIE/USB/CLK)	1A

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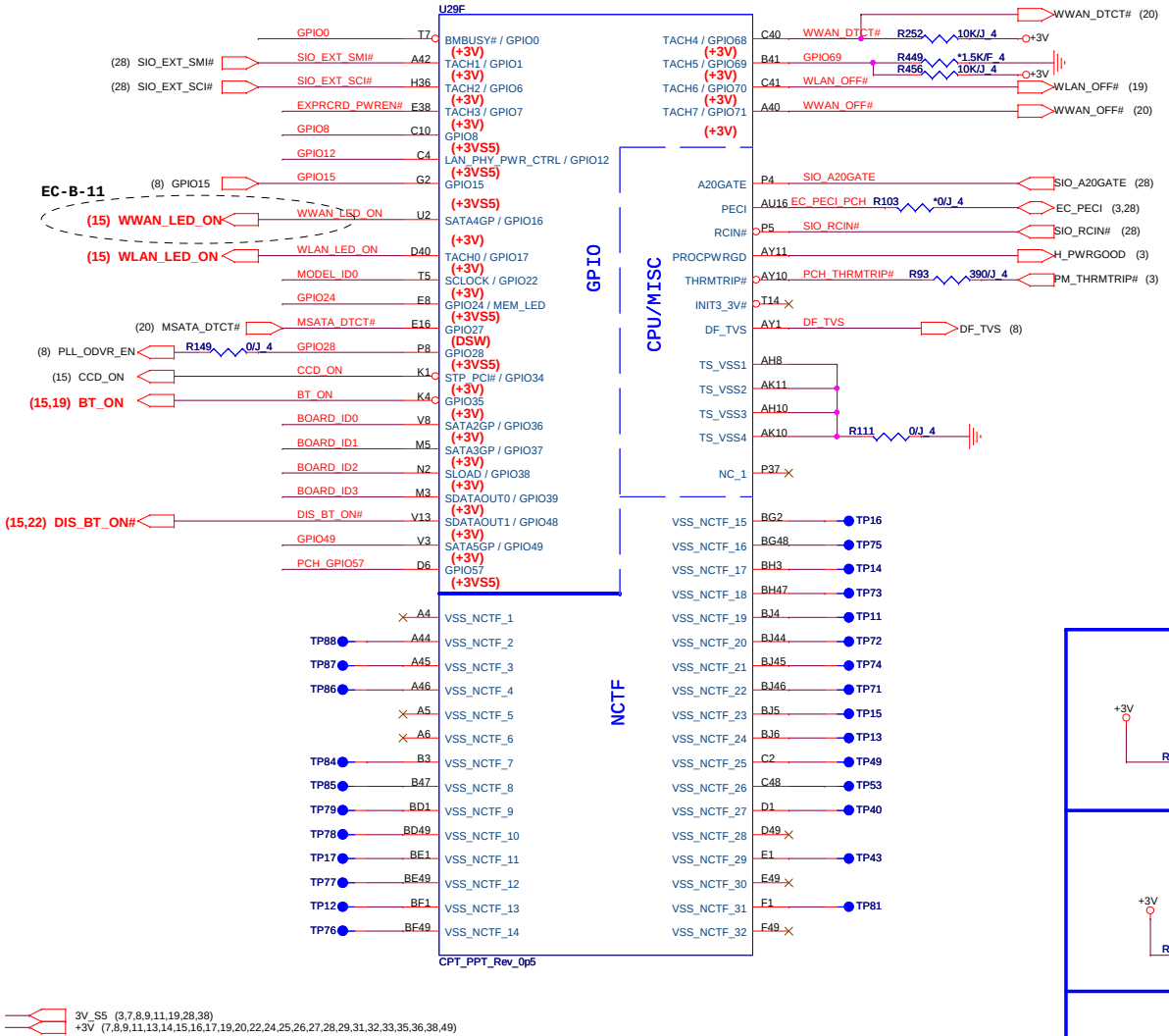
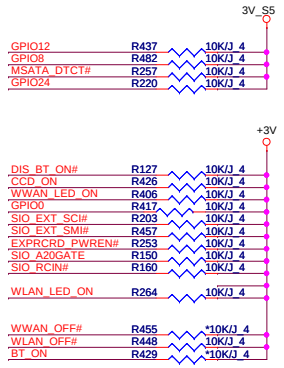
Cougar Point/Panther Point(GPIO,VSS_NCTF,RSVD)

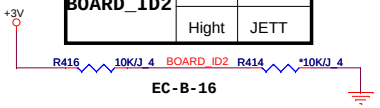


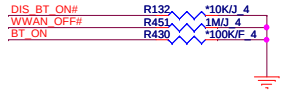
GPIO Pull-up/Pull-down(CLG)



PROJECT ID SETTING

BOARD_ID2	Low	Dutton
	Hight	JETT

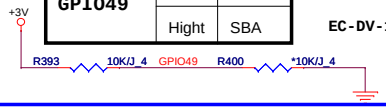




SBA SETTING

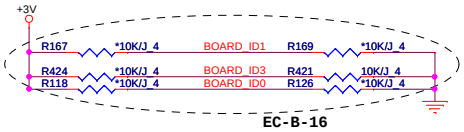
GPIO49	Low	N.A
	Hight	SBA

EC-DV-15

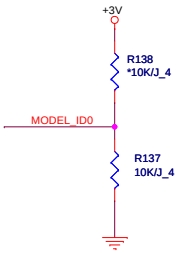


BOARD ID SETTING

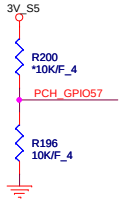
Board ID For Function	ID3 GPIO39	ID2 GPIO38	ID1 GPIO37	ID0 GPIO36
SDV	0	0	0	0
SIV	0	0	0	1
SIT	0	0	1	0
SVT	0	0	1	1
SOVP	0	1	0	0



Model ID	MODEL_ID0
INTEL	0
AMD	1



TPM physical presence	
PCH_GPIO57	Low: Default



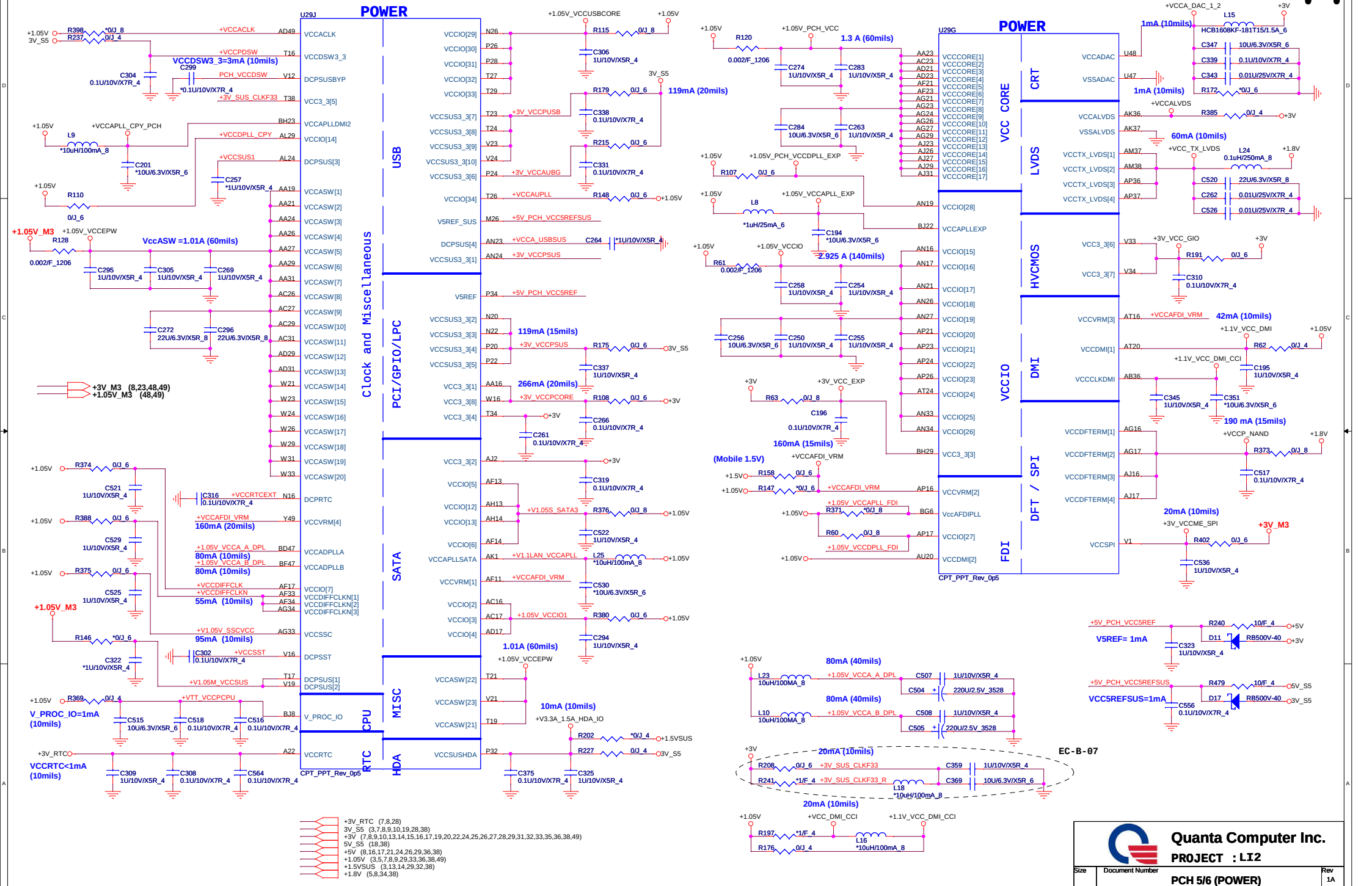
Quanta Computer Inc.
PROJECT : LI2

Size	Document Number	Rev
	PCH 4/6 (GPIO/MISC)	1A

Date: Thursday, January 05, 2012 Sheet 10 of 49

Cougar Point/Panther Point (POWER)

Cougar Point/Panther Point (POWER)

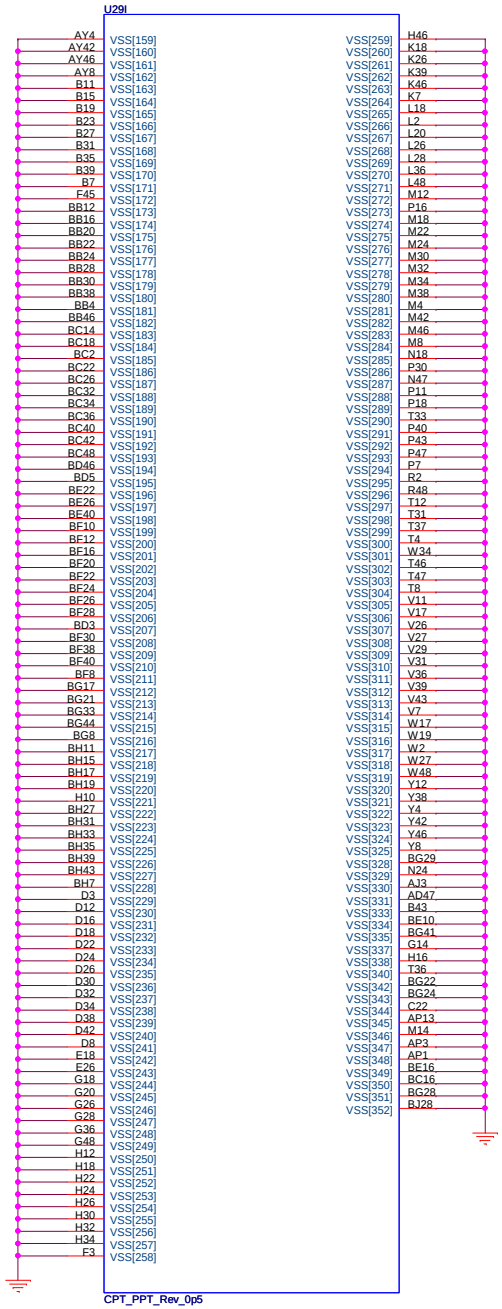


Quanta Computer Inc.
PROJECT : LI2

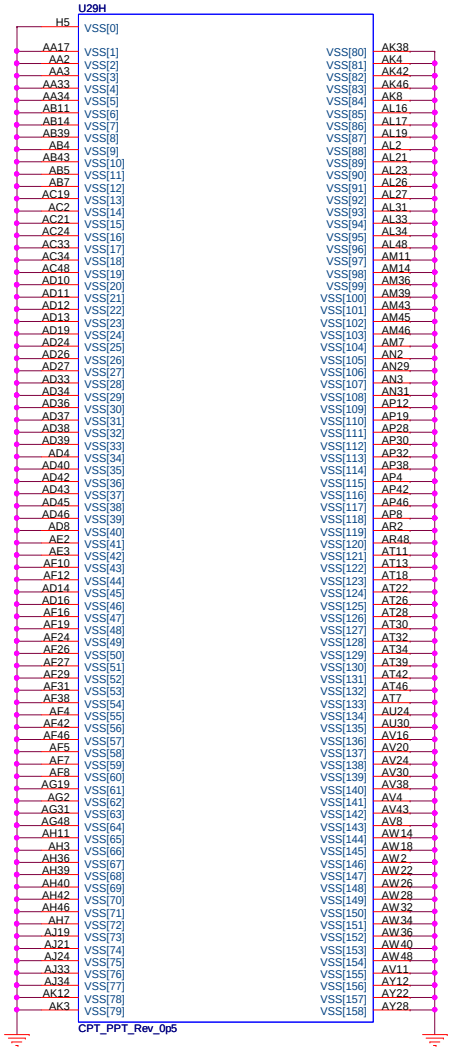
Size	Document Number	Rev
	PCH 5/6 (POWER)	1A

Date: Thursday, January 05, 2012 Sheet 11 of 49

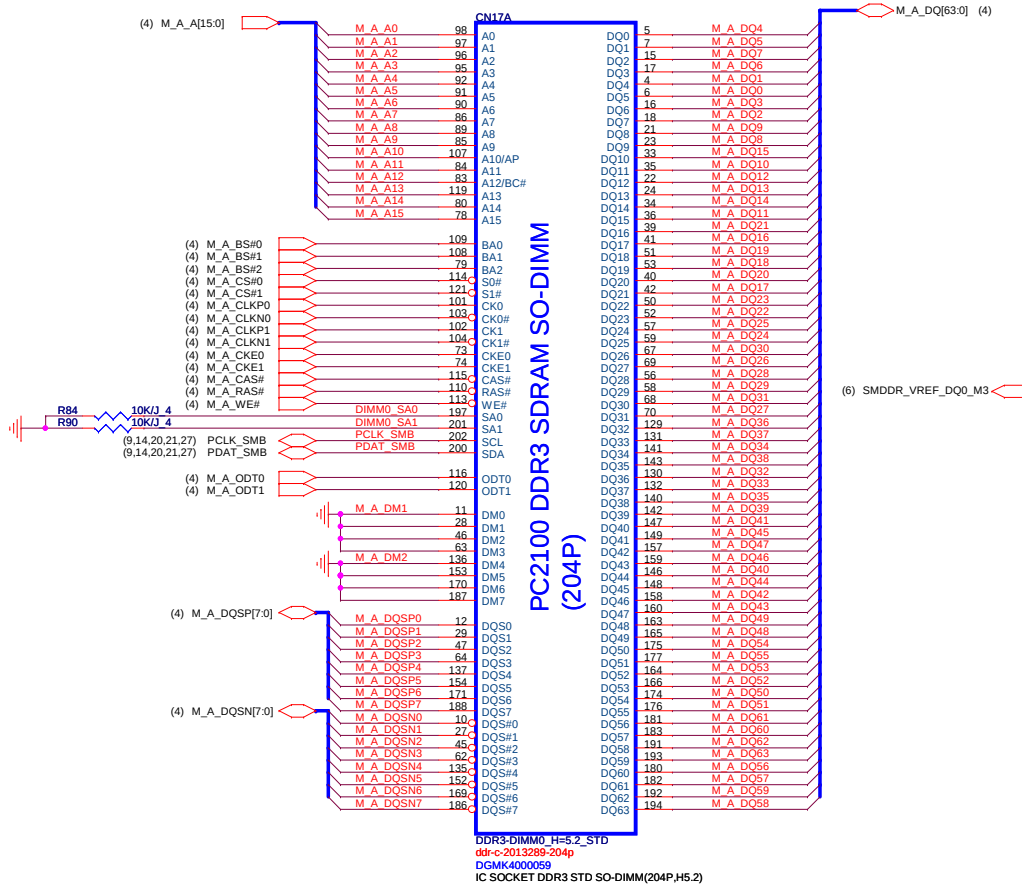
Cougar Point/Panther Point (GND)

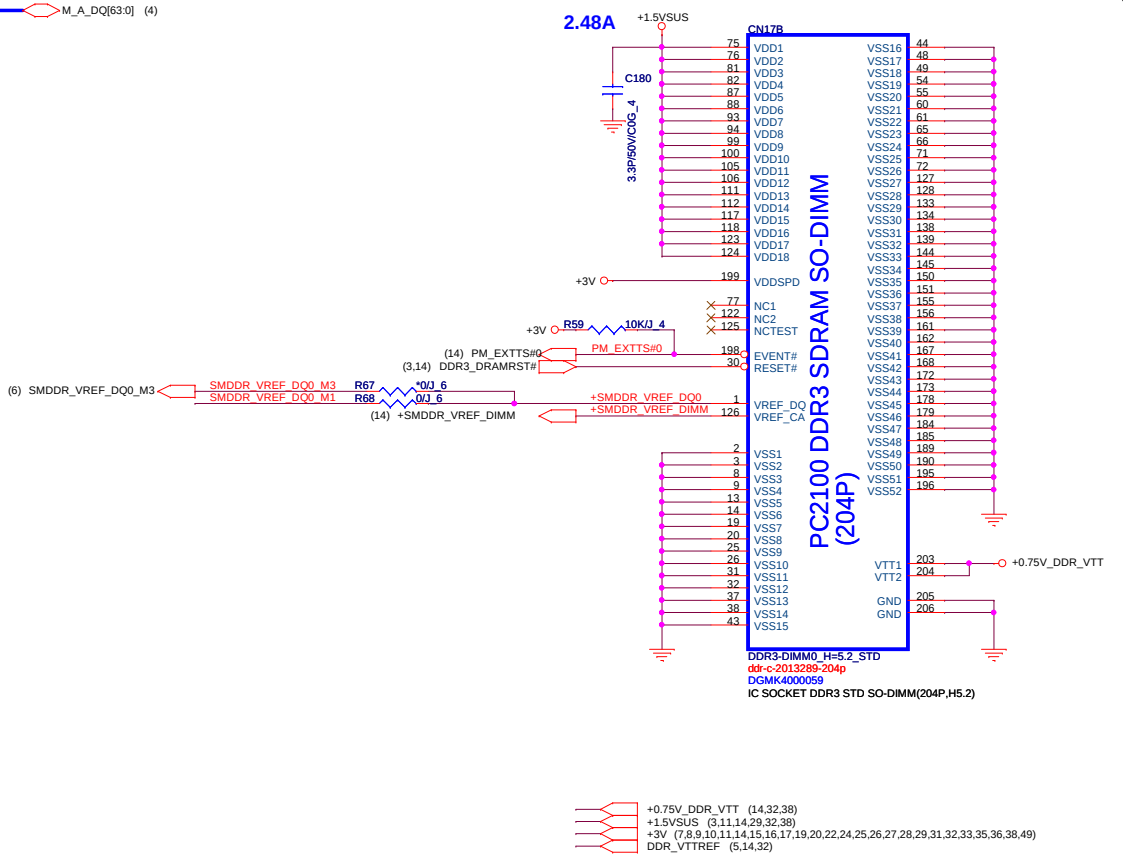


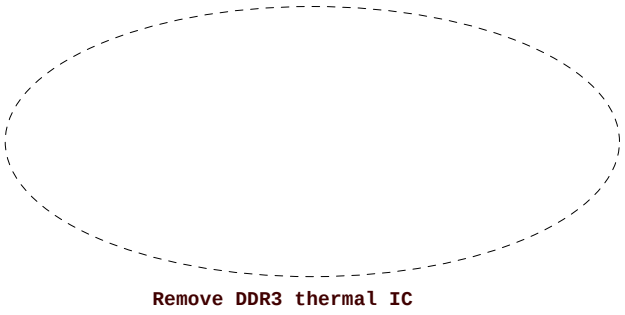
Cougar Point/Panther Point (GND)



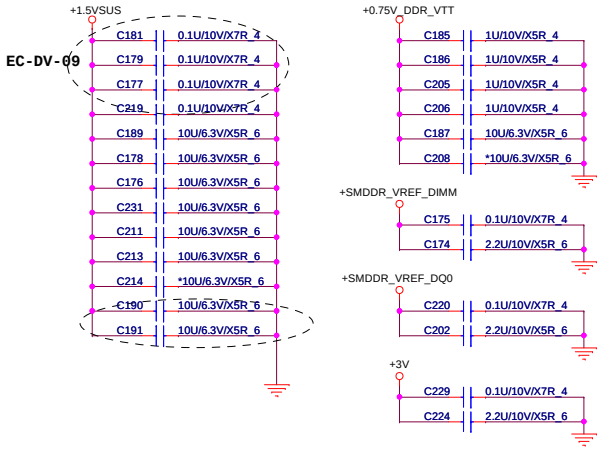
Quanta Computer Inc.		
PROJECT : LI2		
Size	Document Number	Rev
	PCH 6/6 (GND)	1A
Date: Wednesday, January 04, 2012	Sheet 12 of 49	





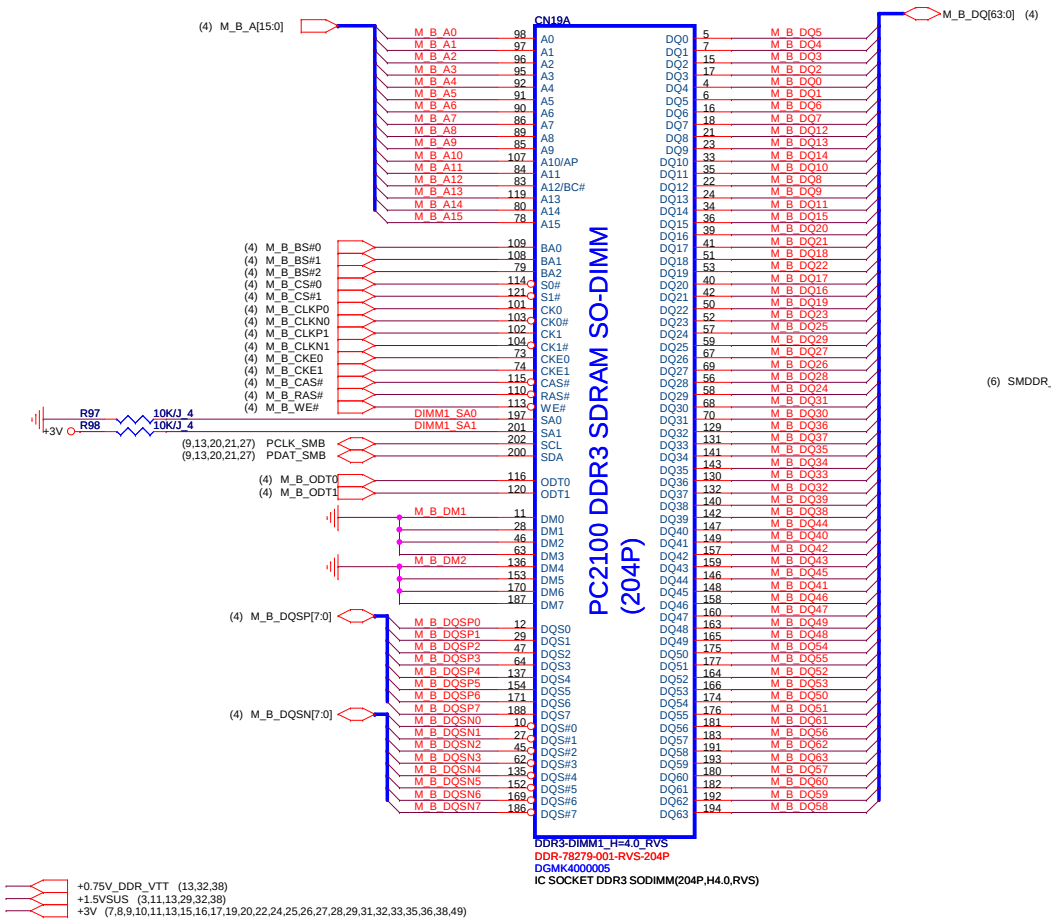


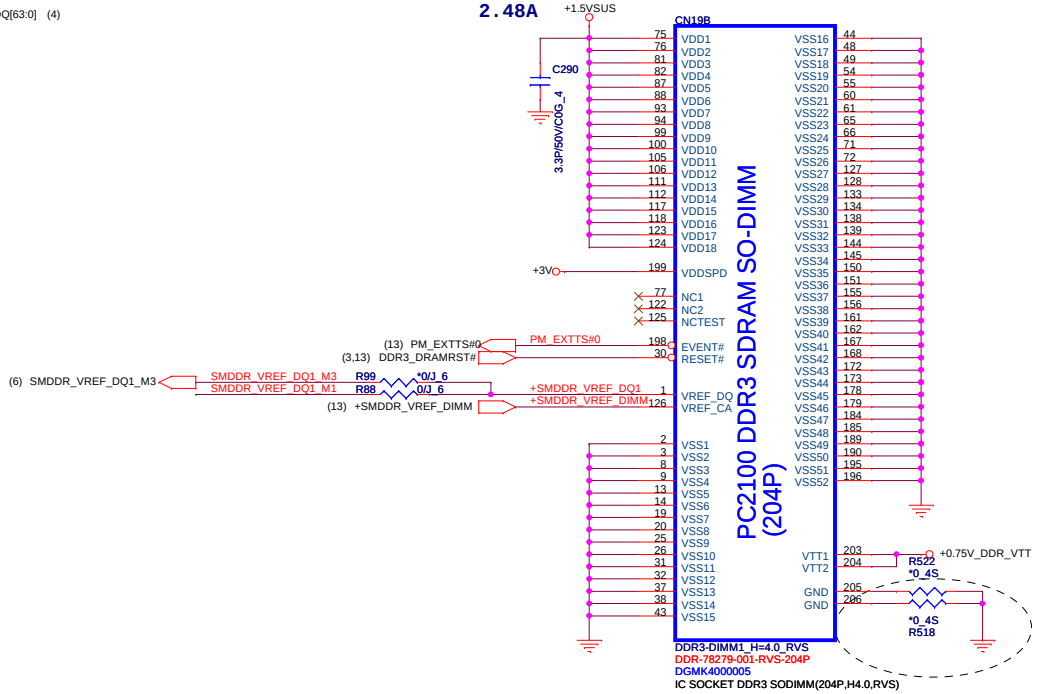
Place these Caps near So-Dimm0.



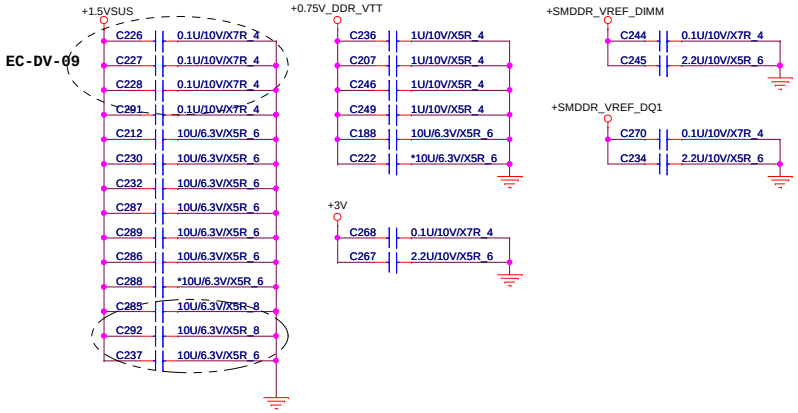
VREF DQ0 M1 Solution

Quanta Computer Inc.		
PROJECT : LI2		
Size	Document Number	Rev
	DDR3 DIMM0-STD (5.2H)	1A
Date: Thursday, January 05, 2012	Sheet 13 of 49	

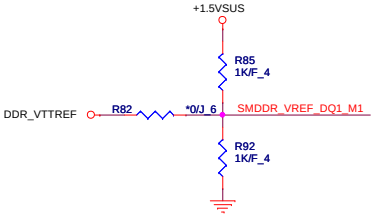




Place these Caps near So-Dimm1.



VREF DQ1 M1 Solution



Quanta Computer Inc.
PROJECT : LI2

Size	Document Number	Rev
	DDR3 DIMM1-RVS (4.0H)	1A

Date: Thursday, January 05, 2012 Sheet 14 of 49

+3V (7,8,9,10,11,13,14,16,17,19,20,22,24,25,26,27,28,29,31,32,33,35,36,38,49)
3VPCU (8,16,19,23,28,29,31,33,34,37,38,48,49)
+15V (22,31,38,48)
+5V (8,11,16,17,21,24,26,29,36,38)
VIN (29,31,32,33,35,36,37,38)
5VSUS (27,38)
5VPCU (29,31,32,33,34,35,37,38,48)

LCDVCC

+15V, +3V, +LCDVCC
R303 330K/J_4
Q30 AO3404
F3 FUSE_3A_6V
C447 10U/6.3V/X5R_8
R301 22/J_8
LCDVCC_ON
C452 0.022U/25V/X7R_6
+LCDVCC_M
5VPCU
Q33 2N7002W
Q31 2N7002W
R307 100K/J_4
Q32 PDTC144EV
(7) INT_DISP_ON
R304 100K/J_4

Back light

3VPCU, +3V
R10 10K/J_4
R305 *4.7K/J_4
(16,28) LID#
D2 RB500V-40
D1 RB500V-40
DISPON
SC8 *0.1U/10V/X7R_4
C25 0.1U/10V/X7R_4
For ESD
R8 100K/J_4
C10 *47P/50V/NPO_4
(7) INT_LVDS_BLON
R308 2.2K/J_4
R306 100K/J_4
C453 *1U/10V/X5R_6
Q36 PDTC144EV
LCD_BK_OFF (8)

For RF

For ESD

SC17 *0.1U/10V/X7R_4
C450 2.2U/10V/X5R_6
LVD-A30SFYG+
+LCDVCC
+3V
(7) INT_EDIDCLK
(7) INT_EDIDDATA
(7) INT_TXLOUTN0
(7) INT_TXLOUTP0
(7) INT_TXLOUTN1
(7) INT_TXLOUTP1
(7) INT_TXLOUTN2
(7) INT_TXLOUTP2
(7) INT_TXLCLKN
(7) INT_TXLCLKP
VADJ_PWM
DISPON
GFX_PWR_SRC
CN1

For EMI

INT_TXLCLKN
INT_TXLCLKP
C12 6.8P/50V/NPO_4
C13 6.8P/50V/NPO_4

For ESD / For EMI

INT_EDIDCLK
INT_EDIDDATA
SC5 *0.1U/10V/X7R_4
C14 *2200P/50V/X7R_4
SC6 *0.1U/10V/X7R_4
C15 *2200P/50V/X7R_4
For ESD
For EMI

C8 *47P/50V/NPO_4
C9 *47P/50V/NPO_4
close to CN2
+3V
R7 2.2K/J_4
R6 2.2K/J_4
INT_EDIDCLK
INT_EDIDDATA

LVDS (11.6") (1024x600, 1366x768)

FOR ESD

R3 0/J_4
*DLW21HN900SQ2L
CML1
R1 0/J_4
(9) USBP3-
(9) USBP3+
USBP3- R
USBP3+ R
U1 *PJSR05
+CAM_VCC

CCD+LOGO LED CONN

EC-DV-02
EC-DV-10
+CAM_VCC
USBP3- R
USBP3+ R
(27) LOGO_LED_A#
5VSUS
LOGO_LED_A#
CCD_ON_LED# L
RF_ON_LED# L
R4 1K/J_4
R2 1K/J_4
+3V
CN2 CONN_CCD&LED

LOGO_LED_A#
*Clamp_Diode_4
C1

LOGO_LED_A#
For EMI
C2 2200P/50V/X7R_4

(10) CCD_ON
Q34 2N7002W
CCD_ON_LED# L
EC-DV-25

+3V
R507 10K/J_4
RF_ON_LED# L
Q44 2N7002W
(22) DIS_BT_RF_LED_ON
R516 *0/J_4
Q45 2N7002W
(10,22) DIS_BT_ON#
R517 0/J_4
EC-B-11

RF_ON_LED# L
Q47 2N7002W
(10,19) BT_ON
R514 0/J_4
(19) BT_RF_LED_ON
R515 *0/J_4

+3V
R508 10K/J_4
RF_ON_LED# L
Q9 2N7002W
(10) WLAN_LED_ON
R509 0/J_4
Q48 2N7002W
(19) WLAN_RF_LED_ON#
R510 *0/J_4

+3V
R511 10K/J_4
RF_ON_LED# L
Q46 2N7002W
(10) WWAN_LED_ON
R513 0/J_4
Q49 2N7002W
(20) WWAN_RF_LED_ON#
R512 *0/J_4

CAMERA VCC Control

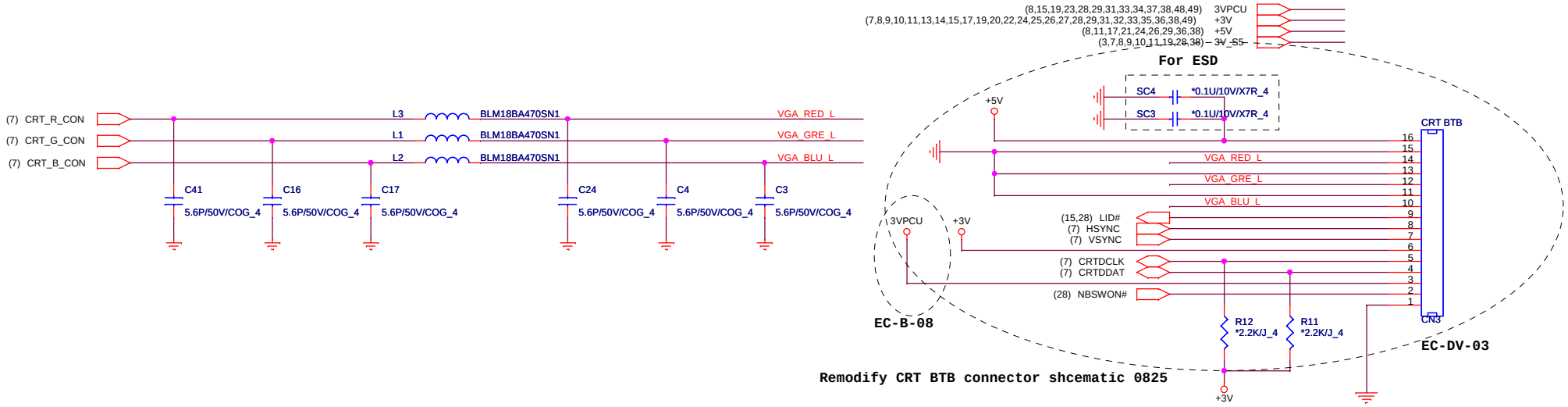
EC-B-09
+3V
R312 10K/J_4
R313 10K/J_4
Q1 AOS3413
(10) CCD_ON
Q35 PDTC144EV
C454 2200P/50V/X7R_6
R5 0/J_6
+CAM_VCC
C5 1U/10V/X5R_4
C6 0.1U/10V/X7R_4

(7) INT_DPST_PWM
R9 0/J_4
VADJ_PWM
C11 *47P/50V/NPO_4

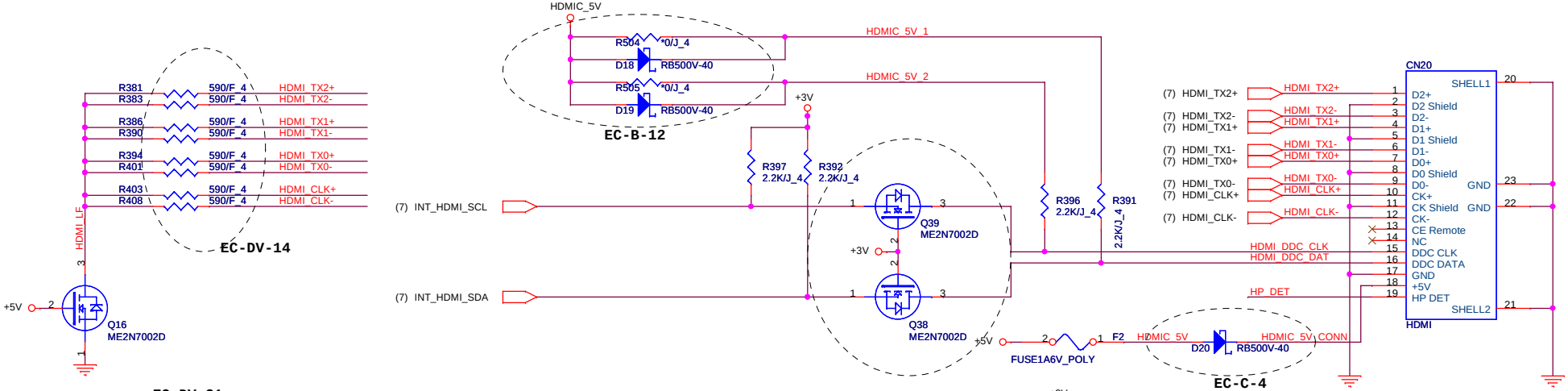
GFX_PWR_SRC
R302 0/J_8
VIN
C449 0.1U/50V/X7R_6
C451 0.1U/50V/X7R_6
C448 *10U/25V/X6S_12

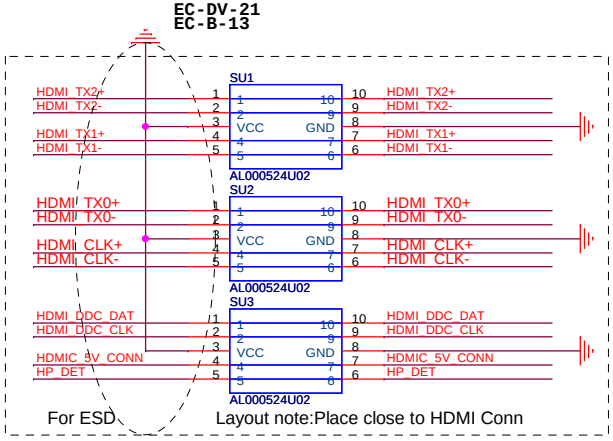
Quanta Computer Inc.
PROJECT : LI2

Size	Document Number	Rev
	LCD/CAMERA	1A
Date: Friday, January 06, 2012	Sheet 15 of 49	

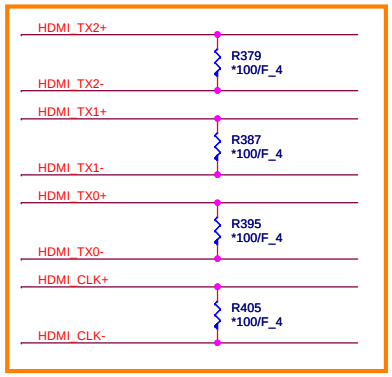


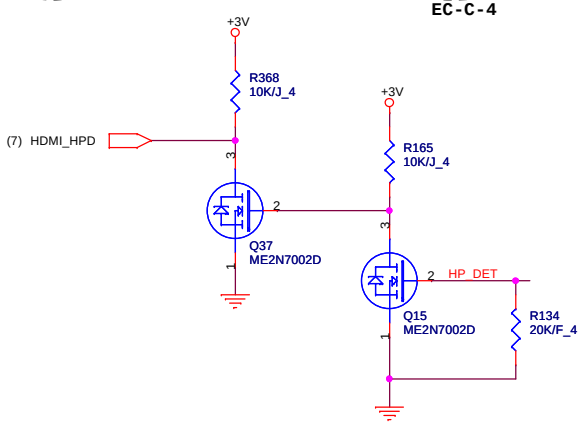
Remodify CRT BTB connector shcematic 0825

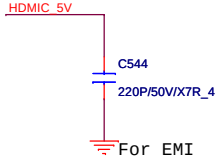




EMI reserve for HDMI







Quanta Computer Inc.
PROJECT : LI2

Size	Document Number	Rev
	CRT/HDMI CONN	1A
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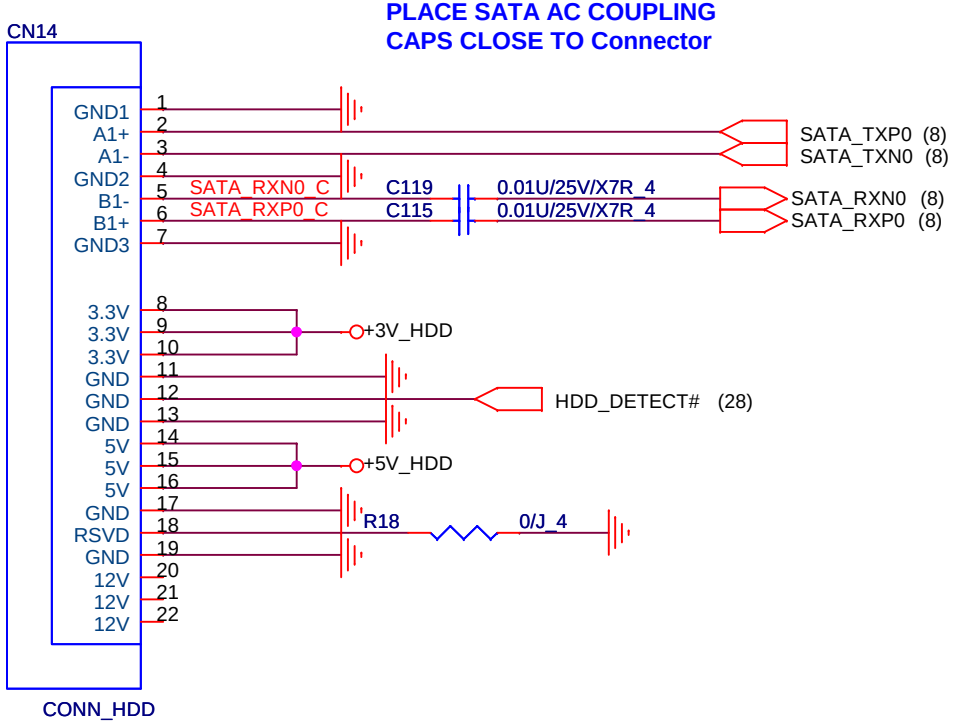
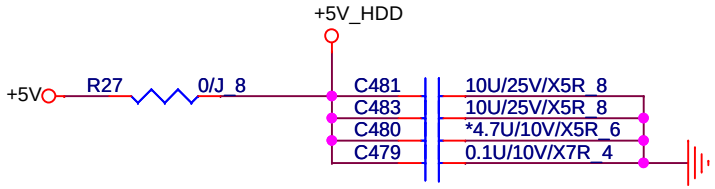
HDD

+3V (7,8,9,10,11,13,14,15,16,19,20,22,24,25,26,27,28,29,31,32,33,35,36,38,49)
+5V (8,11,16,21,24,26,29,36,38)

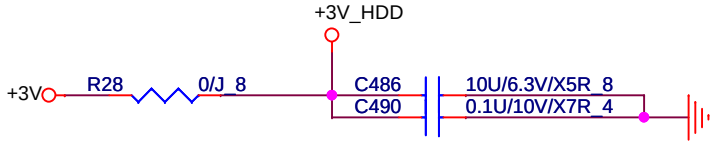
PLACE SATA AC COUPLING CAPS CLOSE TO Connector



DC Current rating: 2 A (MAX)



DC Current rating: 3 A (MAX)



Quanta Computer Inc.		
PROJECT : LI2		
Size	Document Number: SATA	Rev: 1A
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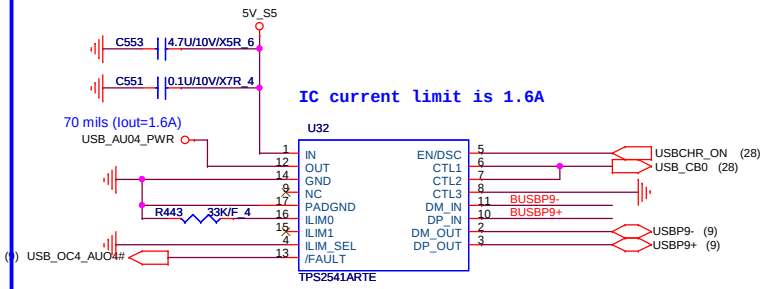
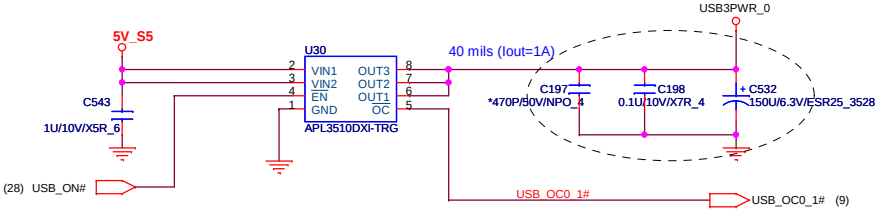
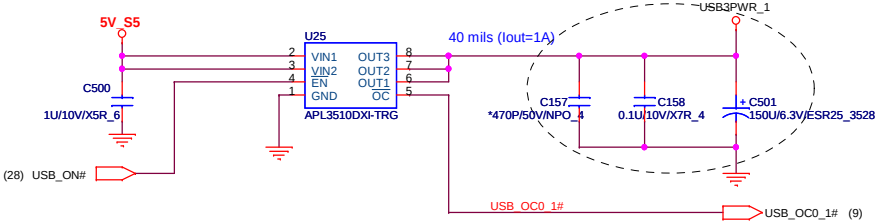
TPS2541 table

CTL1	CTL2	CTL3	Mode
0	0	X	Dedicated Charging Port, Auto-detect
0	1	X	Dedicated Charging Port, BC Specification 1.1 Only
1	0	X	Dedicated Charging Port, Apple Only
1	1	0	Standard Downstream Port, USB 2.0 Mode
1	1	1	Charging Downstream Port, BC Specification 1.1

Table 3 – TPS2541 Control Truth Table

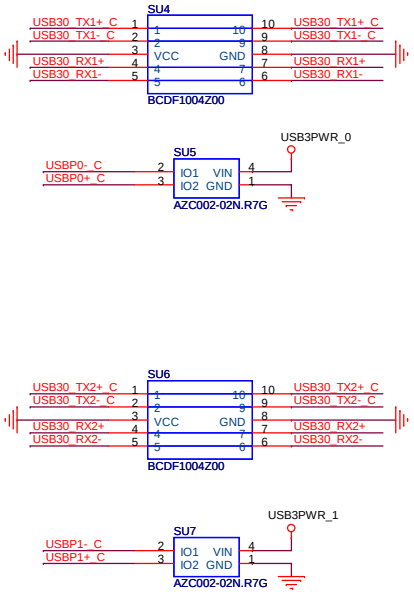




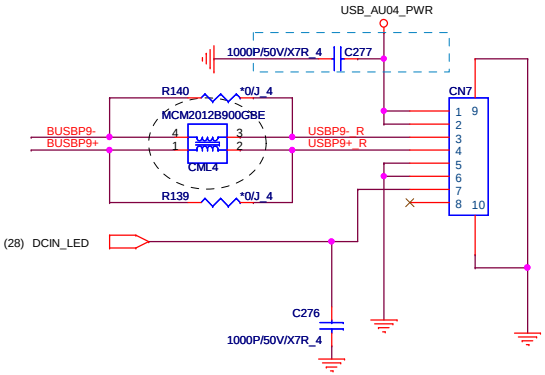


5V_S5 (11,38)

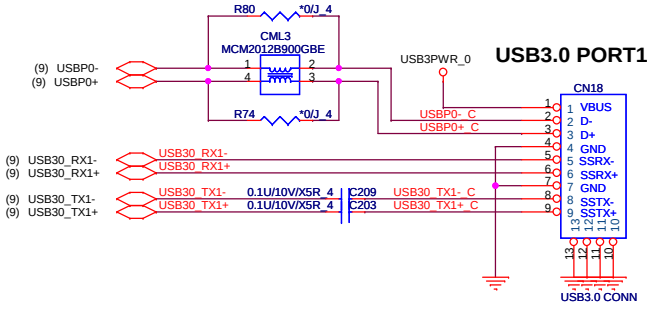
EC-B-13
EC-DV-05



USB BTB CONN

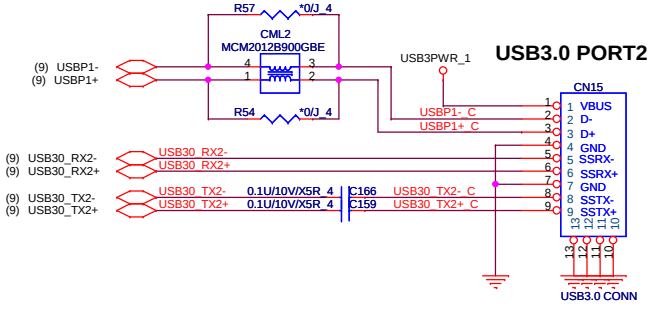


USB3.0 PORT1



SUY USB3.0: DFHS09FR063

USB3.0 PORT2



SUY USB3.0: DFHS09FR063

Quanta Computer Inc.
PROJECT : LI2

Size	Document Number	Rev
	CONN USB x 3	1A

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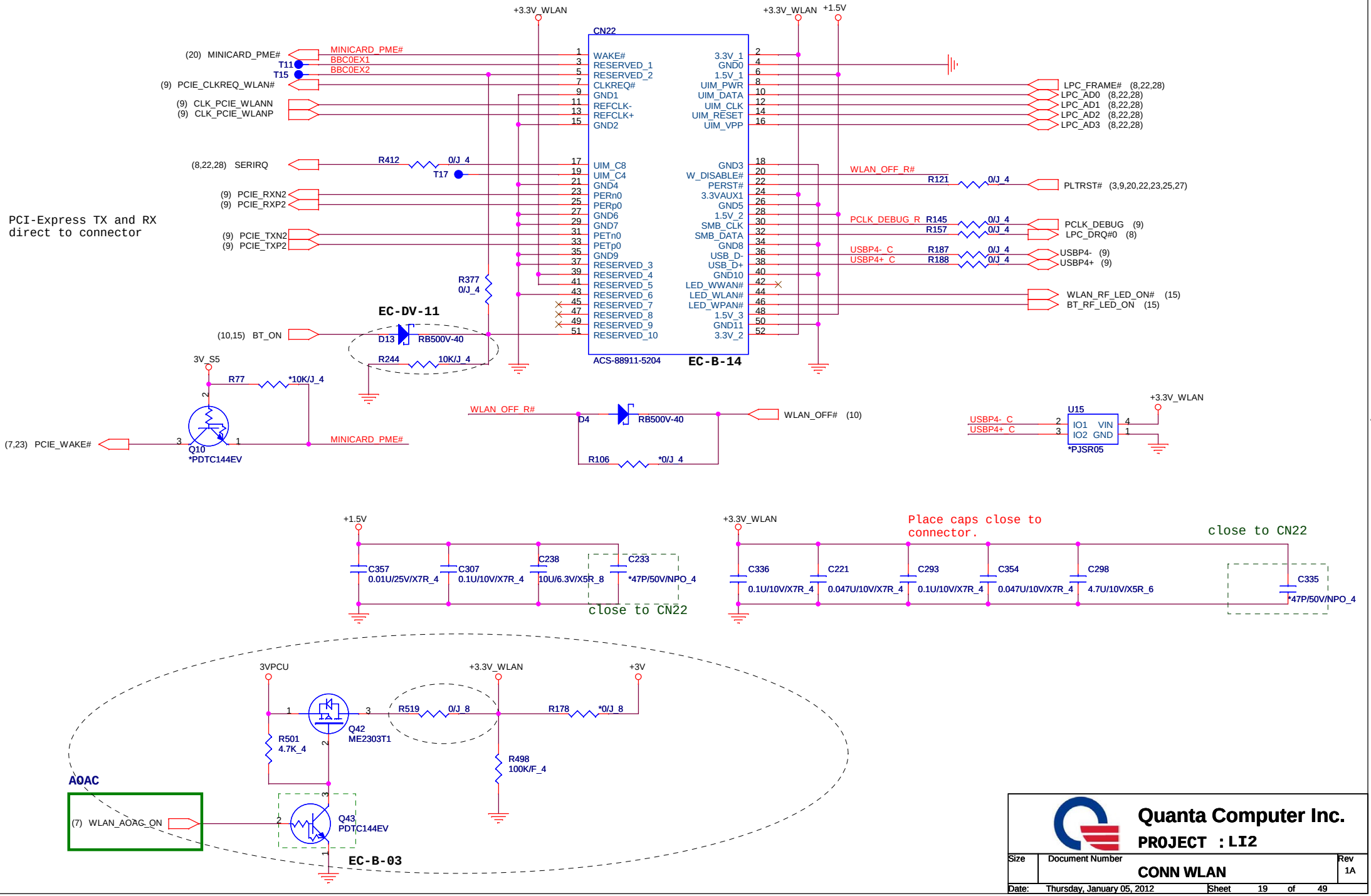
MiniCard WLAN connector

+3V (7,8,9,10,11,13,14,15,16,17,20,22,24,25,26,27,28,29,31,32,33,35,36,38,49)
+1.5V (11,20,32,38)
3V_S5 (3,7,8,9,10,11,28,38)



Quanta Computer Inc.
PROJECT : LI2

Size	Document Number	Rev
	CONN WLAN	1A
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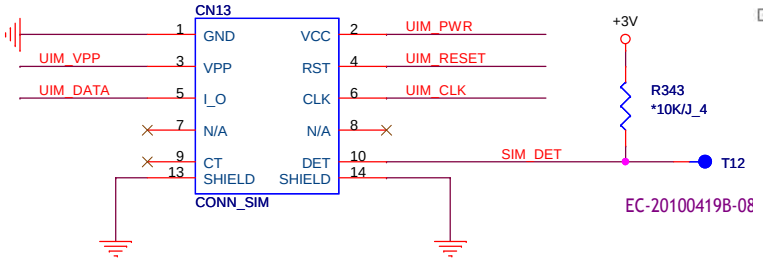
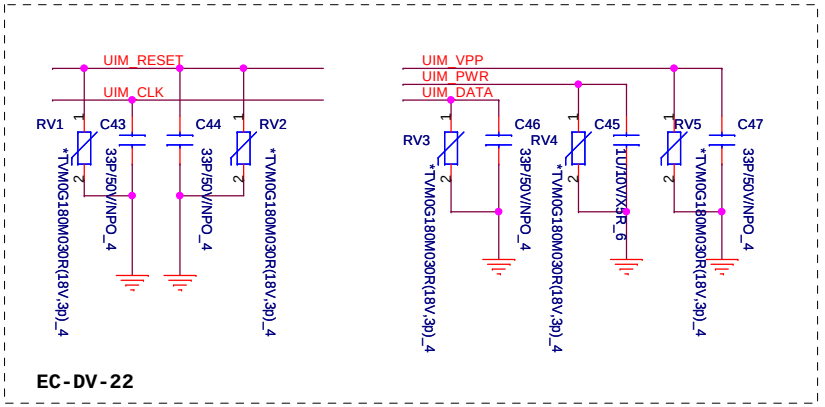
+3V (7,8,9,10,11,13,14,15,16,17,19,22,24,25,26,27,28,29,31,32,33,35,36,38,49)
+1.5V (11,19,32,38)

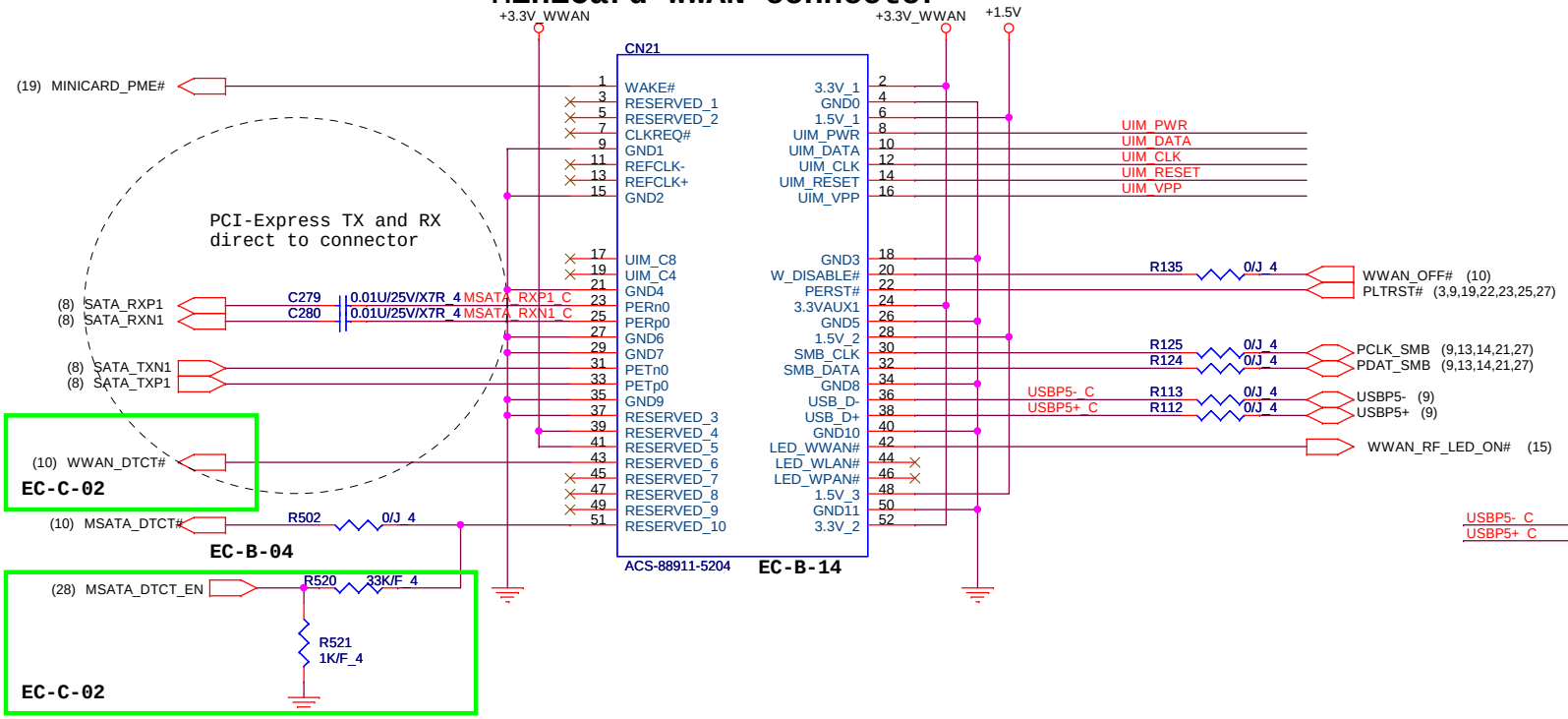
SIM Card CONN

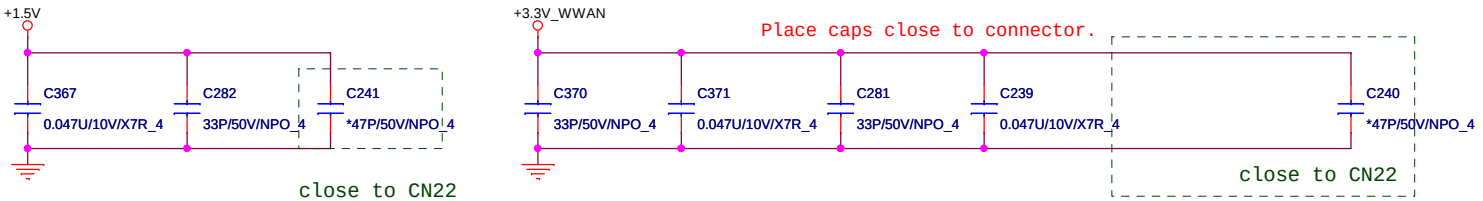


Layout Note:
UIM_RESET,UIM_CLK,UIM_DATA routting as short as possible



MiniCard WWAN connector





Quanta Computer Inc.
PROJECT : LI2

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	WWAN+MSATA	1A
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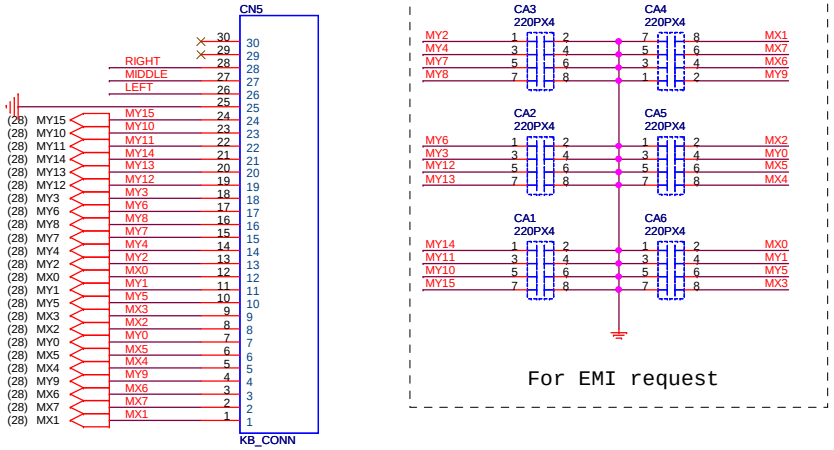
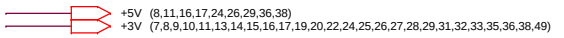
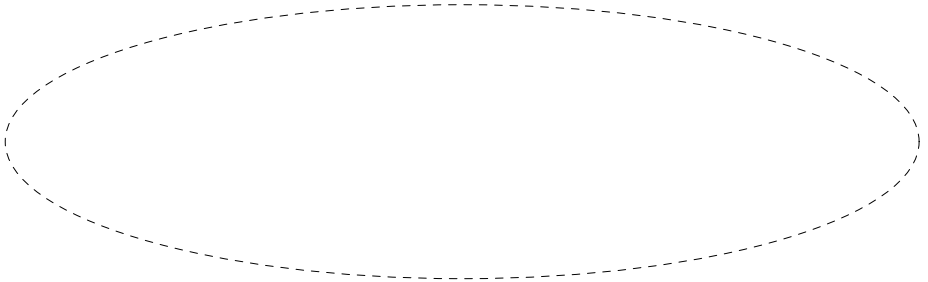
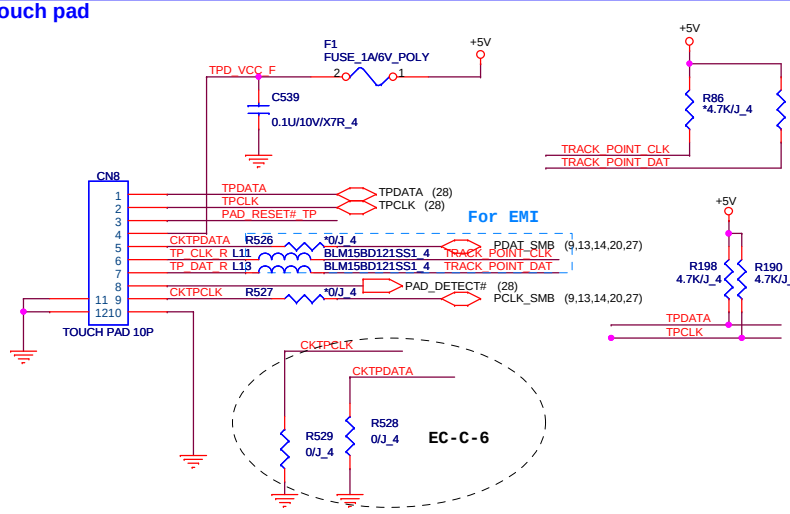
KEYBOARD

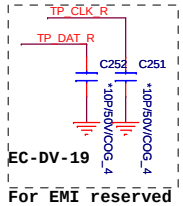


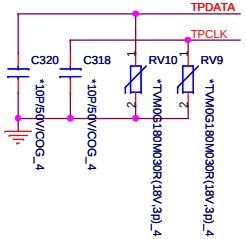




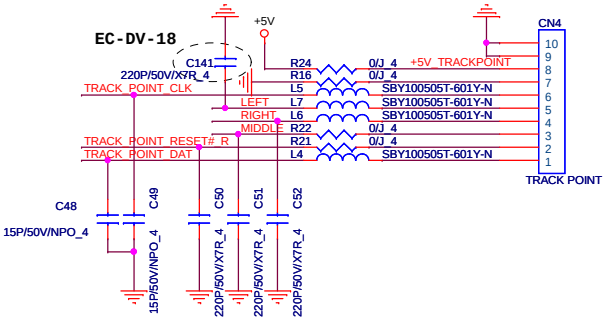
Touch pad

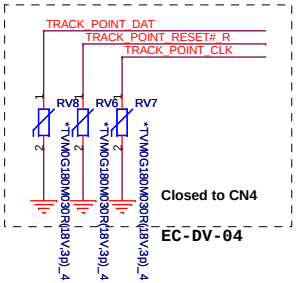




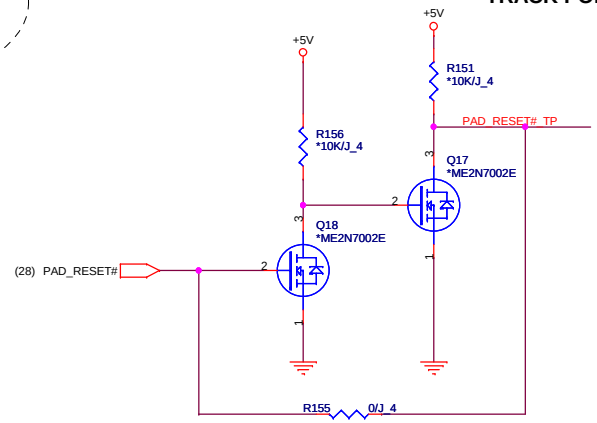


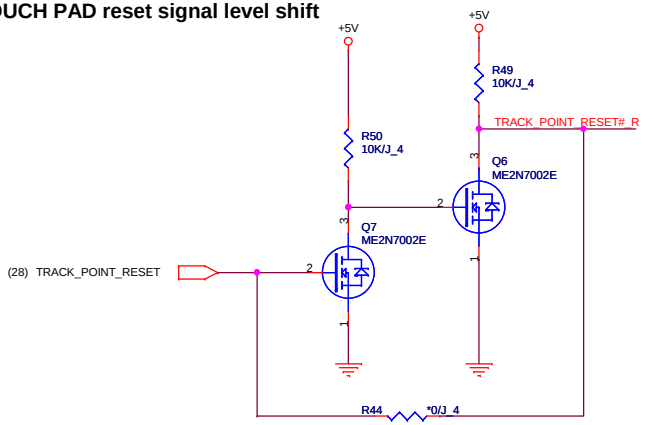
TRACK POINT





TRACK POINT/TOUCH PAD reset signal level shift





Quanta Computer Inc.
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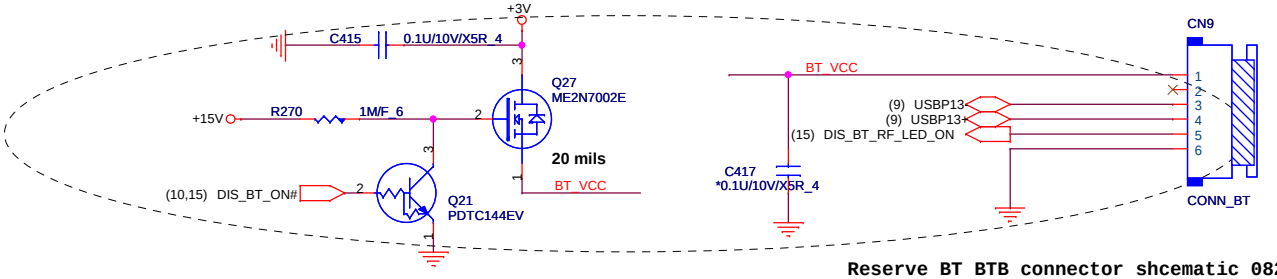
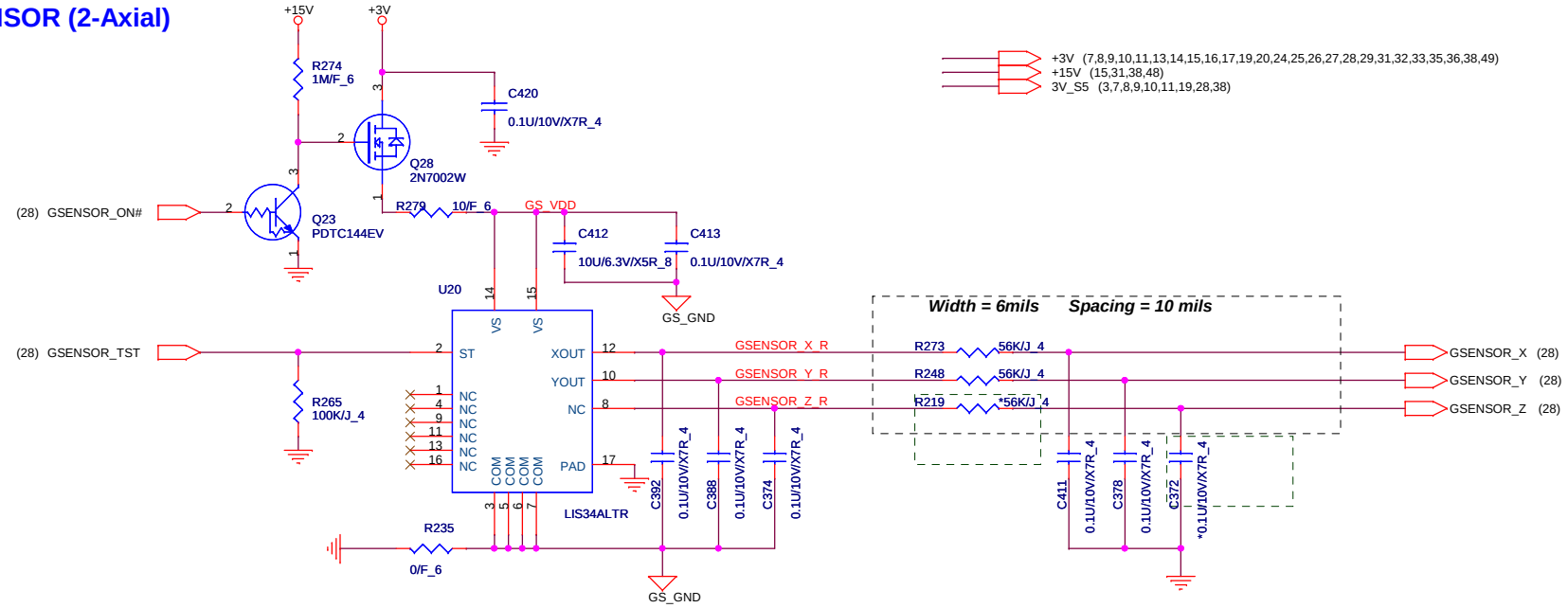
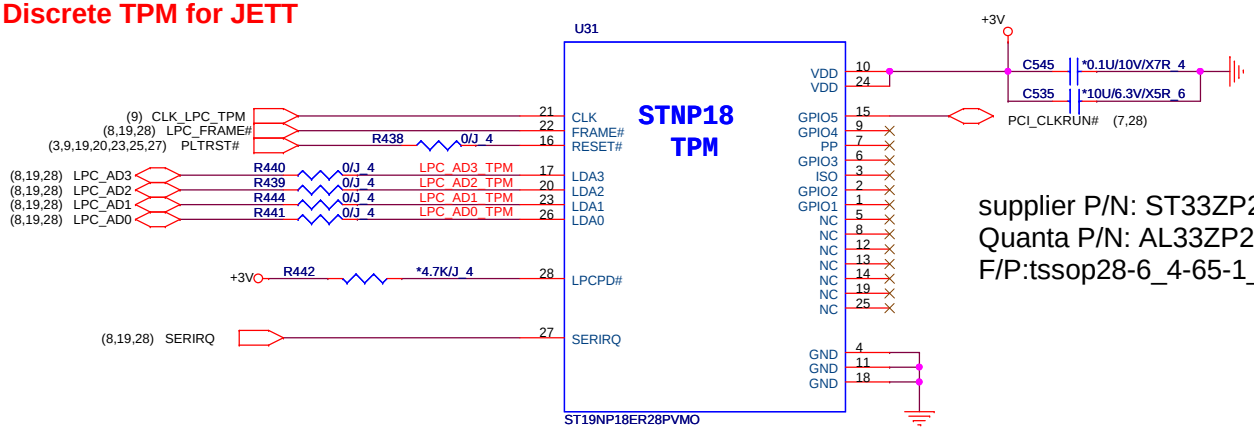
BLUETOOTH Reserve



G-SENSOR (2-Axial)



Discrete TPM for JETT



supplier P/N: ST33ZP24AR28PVSC
Quanta P/N: AL33ZP24K01
F/P:tssop28-6_4-65-1_2h

Quanta Computer Inc.
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	BT/G-SENSOR/TPM	1A

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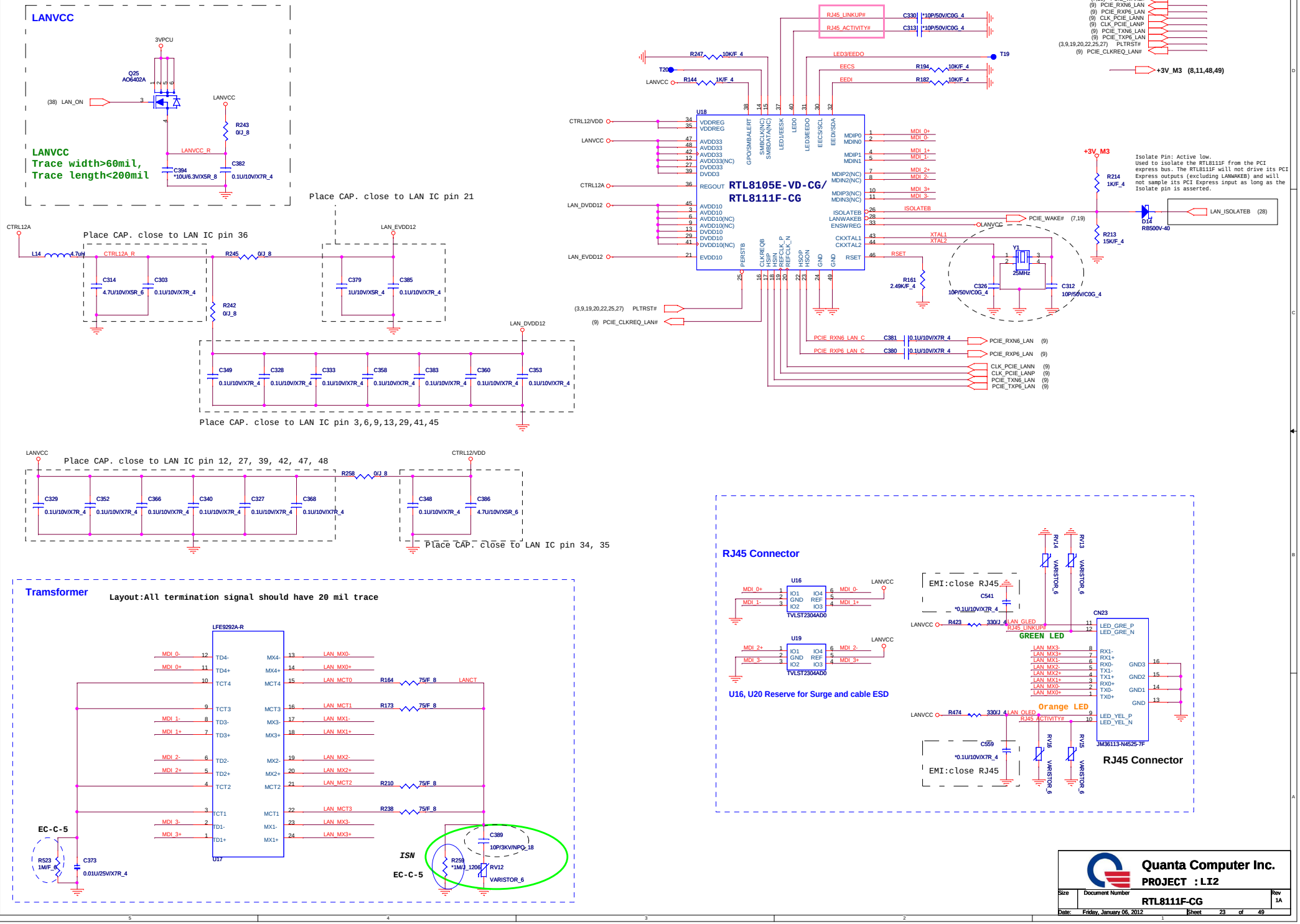
LAN: RTL8111F-CG



Quanta Computer Inc.		
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	RTL8111F-CG	1A
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CODEC(ADO)

<<Attention>>
Surges of PVDD >7V duration 0.1ms when class D amplifier is working may damage the amplifier, 10uF tantalum capacitors are required at PVDD1 and PVDD2 to suppress the surge.

EMI Reserved
R275 0/J_4
AGND

Please see Design Guide for audio grounding.
DIGITAL GND
ANALOG GND

Close to CODEC

ALC3202-VC3-GR
(MQFN-48)

DIGITAL
ANALOG
Moat 40 mil

Codec Power(ADO)

+5V_CODEC
R283 0/J_8
+5V
C422 0.1U/10V/X7R_4
C400 0.1U/10V/X7R_4
C433 4.7U/10V/X5R_6
C432 4.7U/10V/X5R_6
AGND
Close to CODEC

(8,11,16,17,21,26,29,36,38) +5V
(7,8,9,10,11,13,14,15,16,17,19,20,22,25,26,27,28,29,31,32,33,35,36,38,49) +3V
(28) VOLMUTE#
(8) ACZ_SDOUT_AUDIO
(8) ACZ_BITCLK_AUDIO
(8) ACZ_SYNC_AUDIO
(8) ACZ_RSTF_AUDIO
(8) ACZ_SPKR
(28) PCBEEP_AD

HDA Power(ADO)

*Intel HDA Either +1.5V_S5 or +3V_S5

+3V_CODEC
R284 0/J_8
+3V
C428 1U/10V/X5R_4
C402 0.1U/10V/X7R_4
Close to CODEC

PC BEEP

+5V_CODEC
C405 0.1U/10V/X7R_4
Close to codec
From EC (28) PCBEEP_AD
From PCH (8) ACZ_SPKR
U21 TC7SET32FU
BEEP
R269 33K/F_4
BEEP2
R268 10K/J_4
EC-DV-26
C390 0.1U/10V/X7R_4
PC_BEEP

External MIC/Headphone Combo

HPOUT_L R292 75/J_4
HPOUT_R R288 75/J_4
HPOUT_LR
HPOUT_RR
L21 BLM18BD601SN1D 0.2A
L19 BLM18BD601SN1D 0.2A
HPOUT_LB
HPOUT_RB
JACK_SENSE
EXT_MIC
CN12
COMBO_JACK
C409 100P/50VNPO_4
C437 100P/50VNPO_4
AGND

MIC1-VREFO-L R297 2.2K/J_4
MIC1-VREFO-LL
EXT_MIC_R C445 2.2U/10V/X5R_6
EXT_MIC_L C443 2.2U/10V/X5R_6
EXT_MIC_RL R300 1K/J_4
L22 BLM18BD601SN1D 0.2A
R299 470K/F_4
C444 *100P/50V/NPO_4
EC-DV-26
COMBOJACK_EAPD
R298 22K/J_4
C442 10U/6.3V/X5R_6

Audio Combo Jack

Important for Jack detect behavior:
The Pin 4 & Pin 5 of COMBO-JACK must use Normal-Open type.

INT Digital MIC

+3V
DMIC_DATA
DMIC_CLK
CN6
CONN_DIGITAL_MIC

Internal Speaker

<<Attention>>
Place there EMI components next to codec; For EMI issue,
please also refer our ALC269 Layout guide document

SPK_R+ R272 HCB1608KF-301T20(300+-25%,2A) SPK_R+_OUT
SPK_R- R277 HCB1608KF-301T20(300+-25%,2A) SPK_R-_OUT
SPK_L- R281 HCB1608KF-301T20(300+-25%,2A) SPK_L-_OUT
SPK_L+ R290 HCB1608KF-301T20(300+-25%,2A) SPK_L+_OUT
C427 C418 C403 C391
CN11
CONN_SPEAKER

SPK L+ L- R+ R- trace width
Speaker 4 ohm ==> 40 mils
Speaker 8 ohm ==> 20 mils

ESD Reserve

HPOUT_LB HPOUT_RB JACK_SENSE EXT_MIC DMIC_DATA DMIC_CLK
C436 AVLC 5S 02 100
C408 AVLC 5S 02 100
C395 AVLC 5S 02 100
C446 AVLC 5S 02 100
C183 AVLC 5S 02 100
C193 AVLC 5S 02 100
AGND

FOR EMI Reserve

ACZ_RST#_AUDIO ACZ_SDOUT_AUDIO ACZ_BITCLK_AUDIO DMIC_DATA DMIC_CLK
C393 *22P/50V/NPO_4
C404 *22P/50V/NPO_4
C406 *22P/50V/NPO_4
C182 *33P/50V/NPO_4
C192 *33P/50V/NPO_4

EMI Reserve

C384 0/J_4
C396 0/J_4
C567 0/J_4
C397 0/J_4
C434 0/J_4
C431 0/J_4
AGND

Quanta Computer Inc.
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	ALC3202-GR/MIC/Line out	1A
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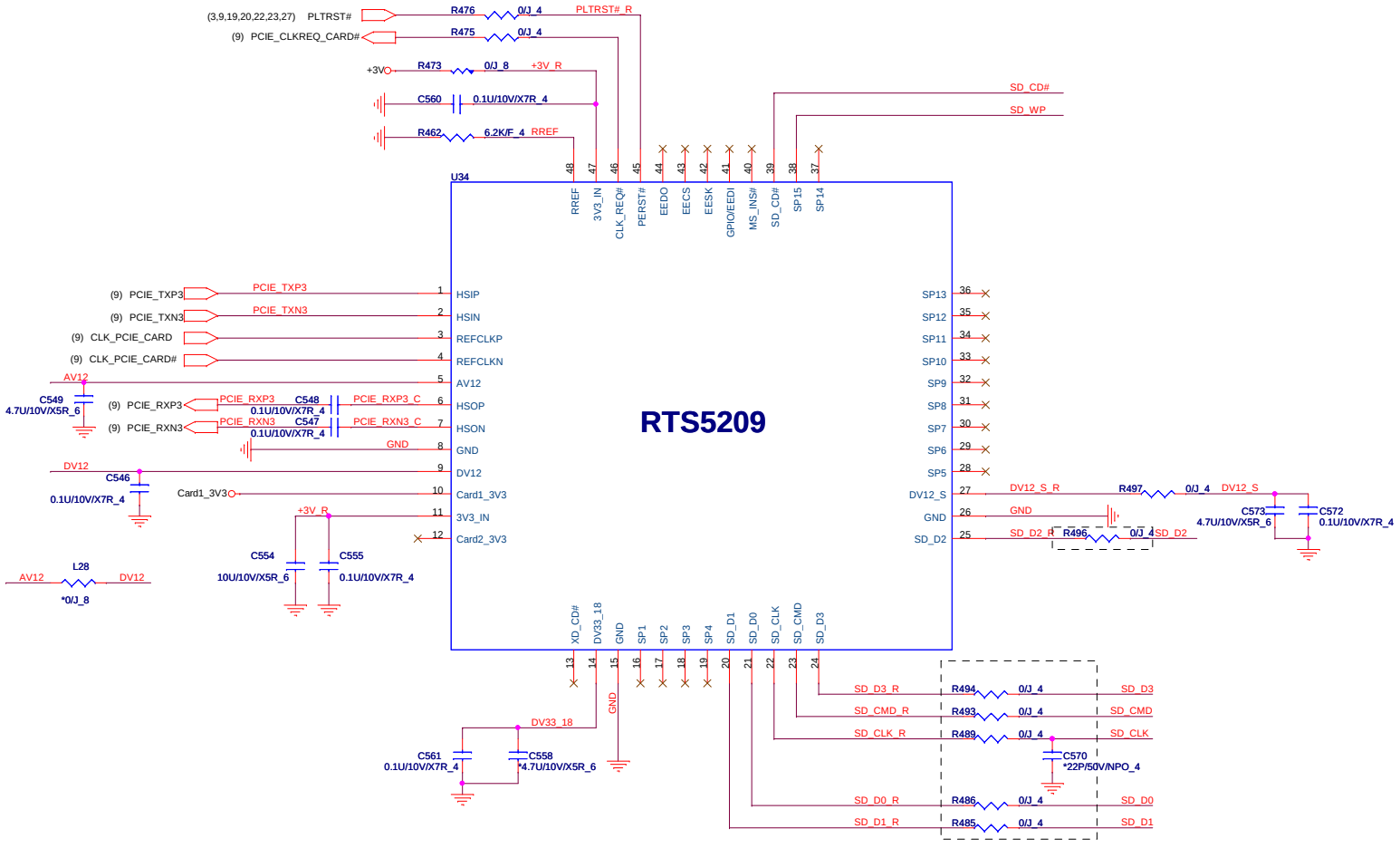
+3V (7,8,9,10,11,13,14,15,16,17,19,20,22,24,26,27,28,29,31,32,33,35,36,38,49)



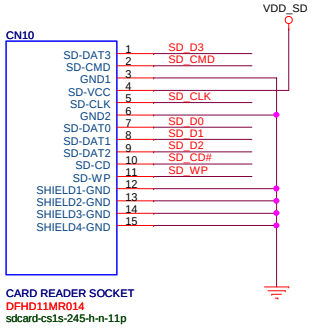
R489,R495,R499,R504,R505,R508,C568 close to chip pin

It is recommended that mismatch trace length between CLK and DATA trace is 100 mils with maximum

Note:

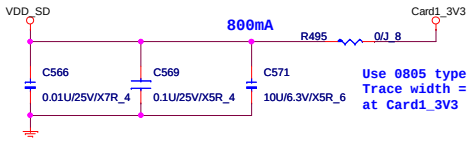
	SD/MMC	MS
SP1	SD_D7	
SP2	SD_D6	
SP3	SD_D5	
SP4	SD_D4	
SP5		MS_BS
SP6		
SP7		MS_D1
SP8		
SP9		MS_D0
SP10		MS_D2
SP11		
SP12		MS_D3
SP13		
SP14		MS_CLK
SP15	SD_WP	

4 IN 1 CARD READER



CARD READER SOCKET
DFHD11MR014
sdcard-cs1s-245-h-n-11p

Memory Card Power Supply



Use 0805 type and Trace width = 40 mil" at Card1_3V3

Quanta Computer Inc.		
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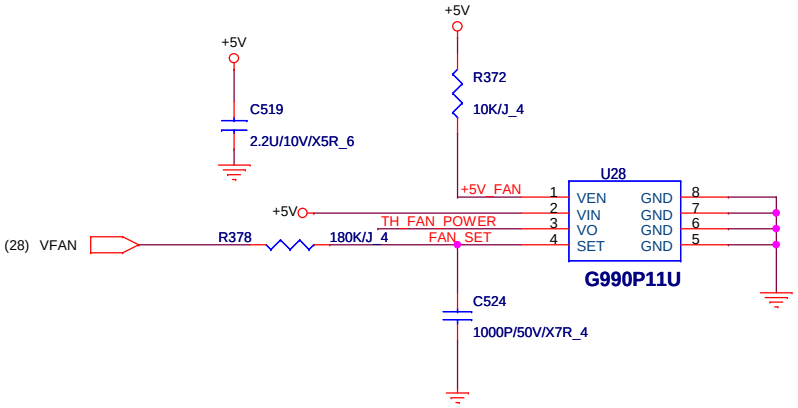
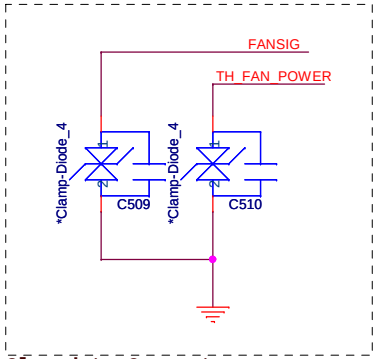
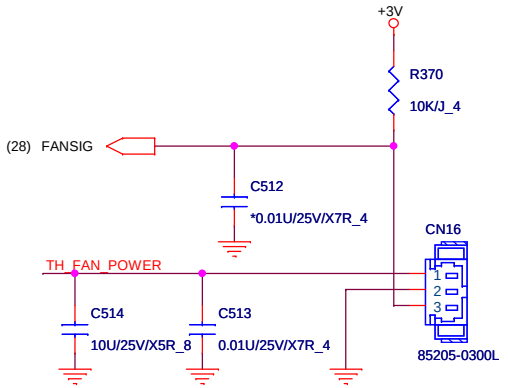
Size	Document Number	Rev
	RTS5201-GR	1A
Date: Thursday, January 05, 2012	Sheet 25 of 49	

FANPWR = 1.6*VSET



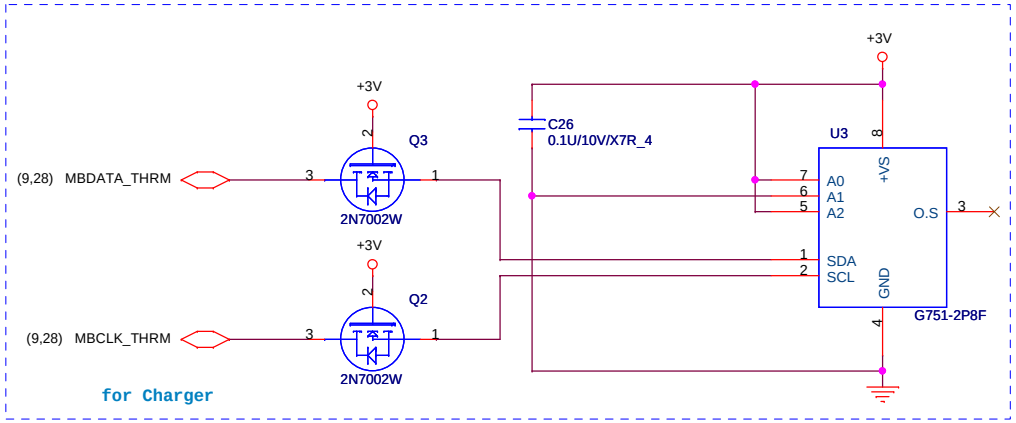


Closed to Connector
Reserved for ESD



Remove environment thermal IC

+3V (7,8,9,10,11,13,14,15,16,17,19,20,22,24,25,27,28,29,31,32,33,35,36,38,49)
+5V (8,11,16,17,21,24,29,36,38)



ADDRESS: 9AH

ADDRESS

1	0	0	1	A2	A1	A0	0

MSB LSB

Quanta Computer Inc.
PROJECT : LI2

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	FAN/Thermal	1A

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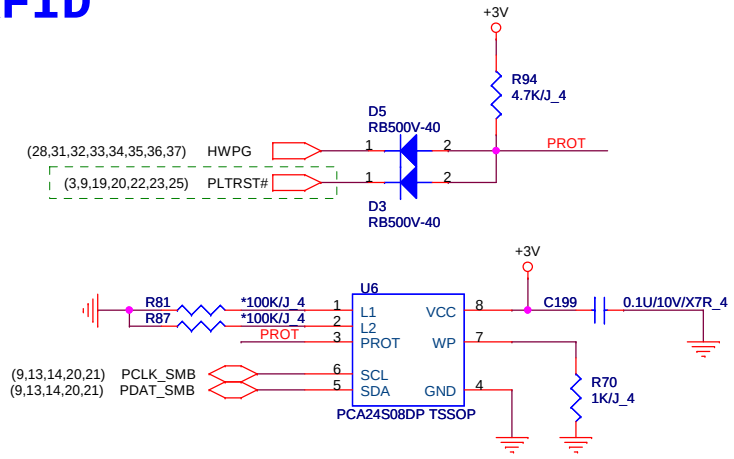
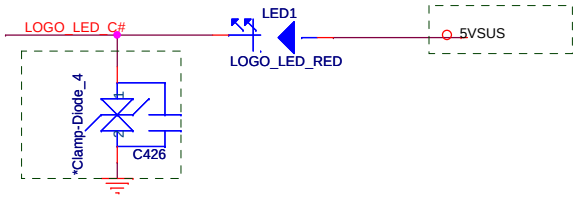
+3V (7,8,9,10,11,13,14,15,16,17,19,20,22,24,25,26,28,29,31,32,33,35,36,38,49)
3VPCU (8,15,16,19,23,28,29,31,33,34,37,38,48,49)
3V_S5 (3,7,8,9,10,11,19,28,38)
5VSUS (15,38)

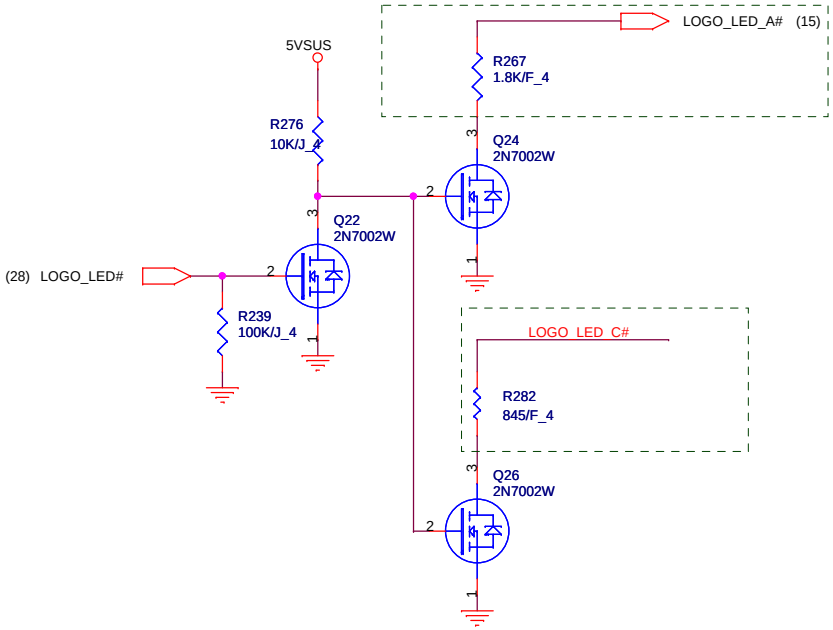
RFID





EC-DV-24

LED Driver



POWER BUTTON

Quanta Computer Inc.			
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Size	Document Number		Rev
	SW/LED/RFID_EEPROM		1A
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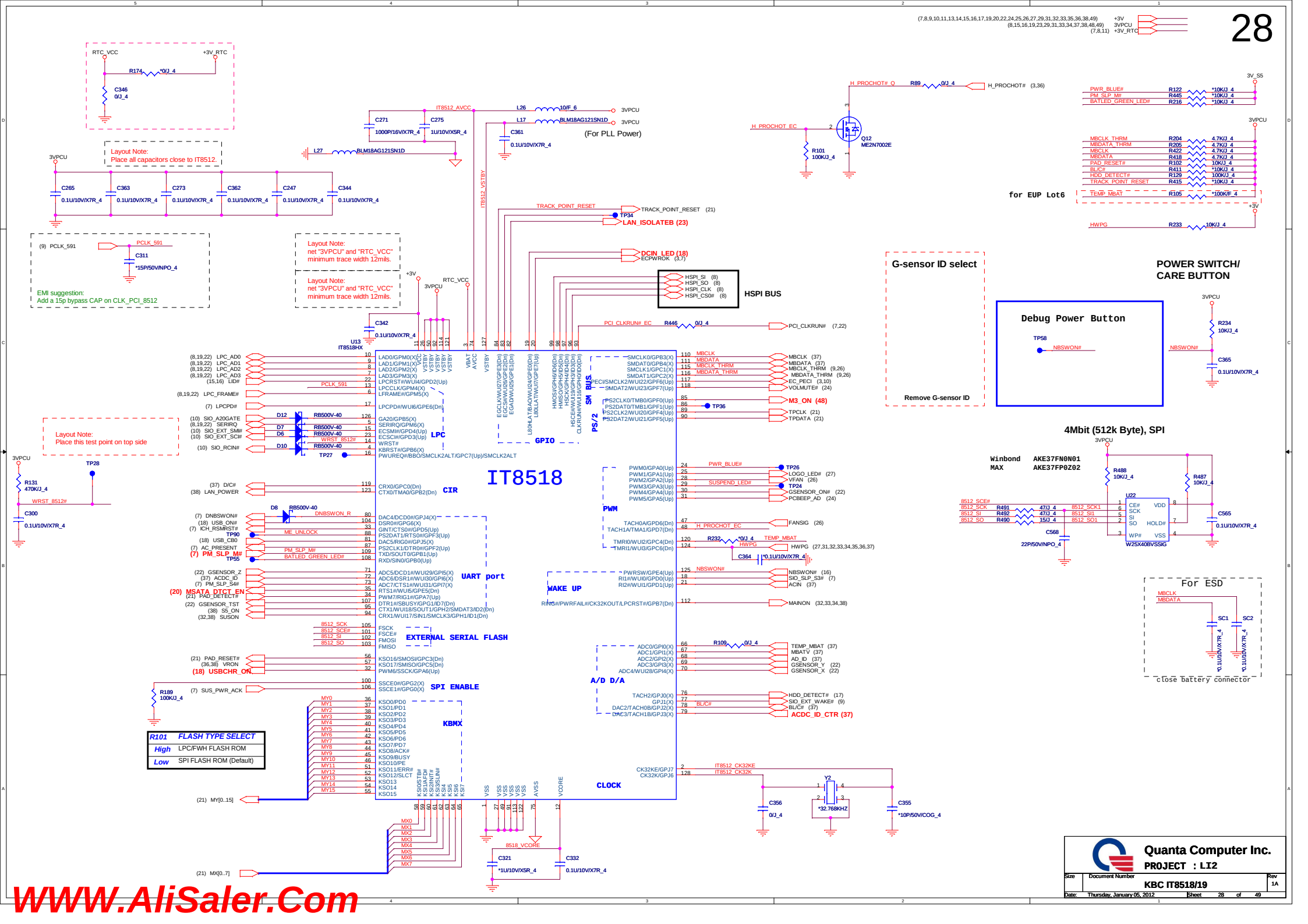

Quanta Computer Inc.
PROJECT : LI2
KBC IT8518/19
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Hole for CPU support

HOLE12 *H-C142D142N
HOLE14 *H-C142D142N
HOLE11 *H-C142D142N
HOLE13 *H-C142D142N

MiniCard WWAN

HOLE16 H-TC217BIC142D102P2

MiniCard WLAN

HOLE15 H-TC217BIC142D102P2

EC-DV-01

CRT

Spad1 *Spad1

Keyboard

HOLE7 *O-FL7C-2

SB

Boundary Hole

HOLE2 *h-c197l117d87p2
HOLE3 *H-C71d71n
HOLE1 *H-C222D91P2
HOLE5 *H-O91X71D91X71N

Boundary Hole

HOLE10 *HG-C217D87P2
HOLE9 *HG-C217D87P2
HOLE4 *HG-C236D91P2
HOLE6 *HG-TC217BC256D87P2
HOLE8 *HG-TC217BC256D87P2

Fro ESD

+1.5V_CPU: SC12 SC13 *0.1U/10V/X7R_4, *0.1U/10V/X7R_4
3VPCU: SC14 SC16 SC15 SC7 *0.1U/10V/X7R_4, 0.1U/10V/X7R_4, *0.1U/10V/X7R_4, *0.1U/10V/X7R_4
+VCC_GFX: SC9 SC18 SC11 SC10 *0.1U/10V/X7R_4, *0.1U/10V/X7R_4, *0.1U/10V/X7R_4, *0.1U/10V/X7R_4

Fro ESD

VIN C18 *0.1U/10V/X7R_4 +VCC_CORE
+3V C477 *0.1U/10V/X7R_4 +1.05V

EMI

+1.5VSUS: C184 C172 C341 C204 C169 C243 C223 — 2200P/50V/X7R_4
VIN: C30 C168 C317 — 0.1U/50V/X7R_6
+3V: C441 C297 C253 C401 C171 C324 C210 C145 — 2200P/50V/X7R_4
VIN: C235 C387 C498 — 0.1U/50V/X7R_6
+5V: C414 C438 C278 C440 C435 C439 C301
C414: 1U/10V/X5R_4
C438 C278 C440 C435 C439 C301: 2200P/50V/X7R_4
R524 0/J_4
R525 0/J_4

Fro EMI

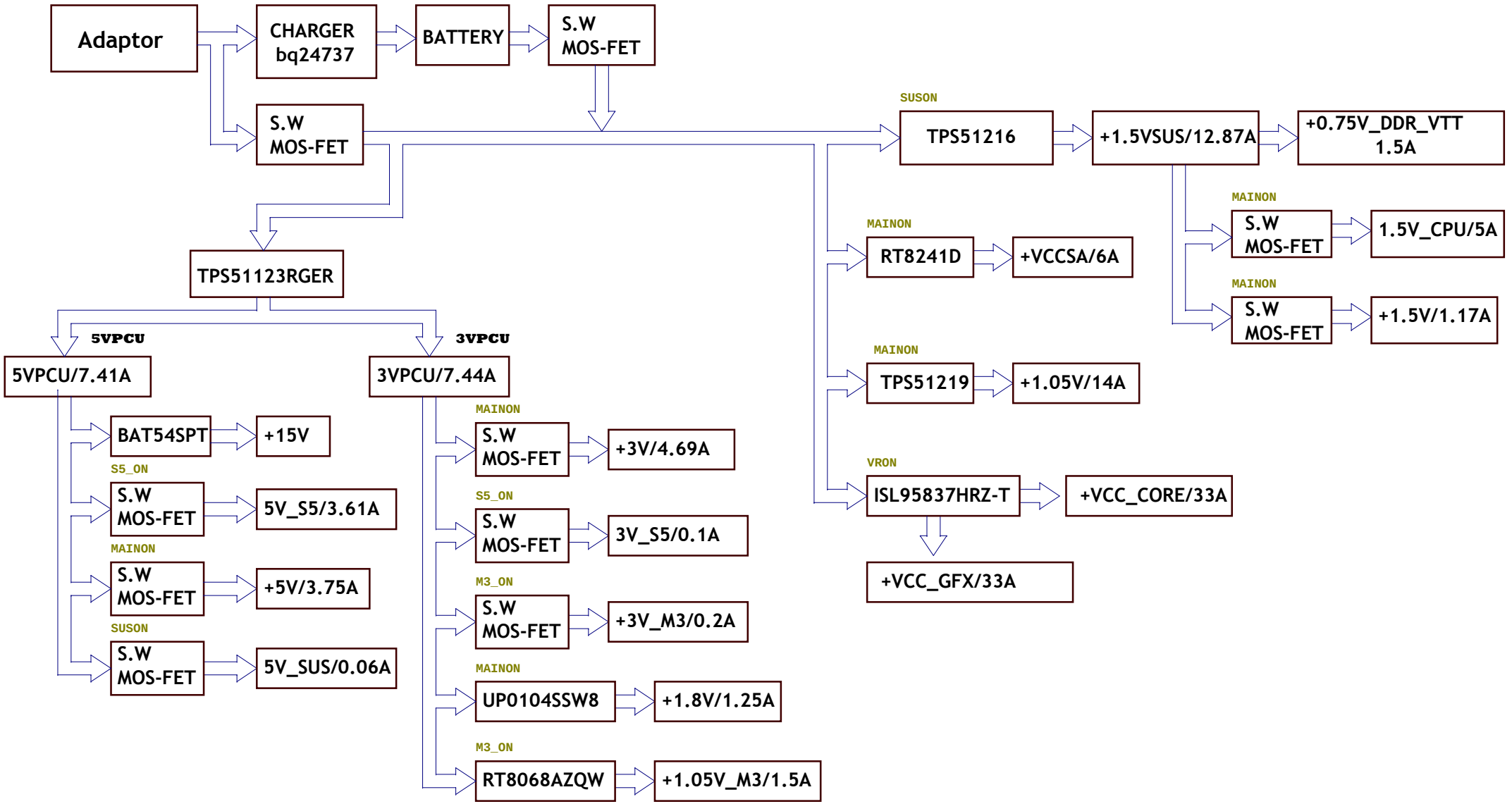
5VPCU: C485 C315 C334
C485: 1000P/50V/X7R_4
C315: 1U/10V/X5R_4
C334: 1U/10V/X5R_4

+1.5V_CPU (3,5,32,38)
3VPCU (8,15,16,19,23,28,31,33,34,37,38,48,49)
+VCC_GFX (5,36,38)
+3V (7,8,9,10,11,13,14,15,16,17,19,20,22,24,25,26,27,28,31,32,33,35,36,38,49)
+5V (8,11,16,17,21,24,26,36,38)
+1.5VSUS (3,11,13,14,32,38)
5VPCU (15,31,32,33,34,35,37,38,48)
VIN (15,31,32,33,35,36,37,38)
+VCC_CORE (5,36,38)
+1.05V (3,5,7,8,9,11,33,36,38,49)

Quanta Computer Inc.
PROJECT : LI2

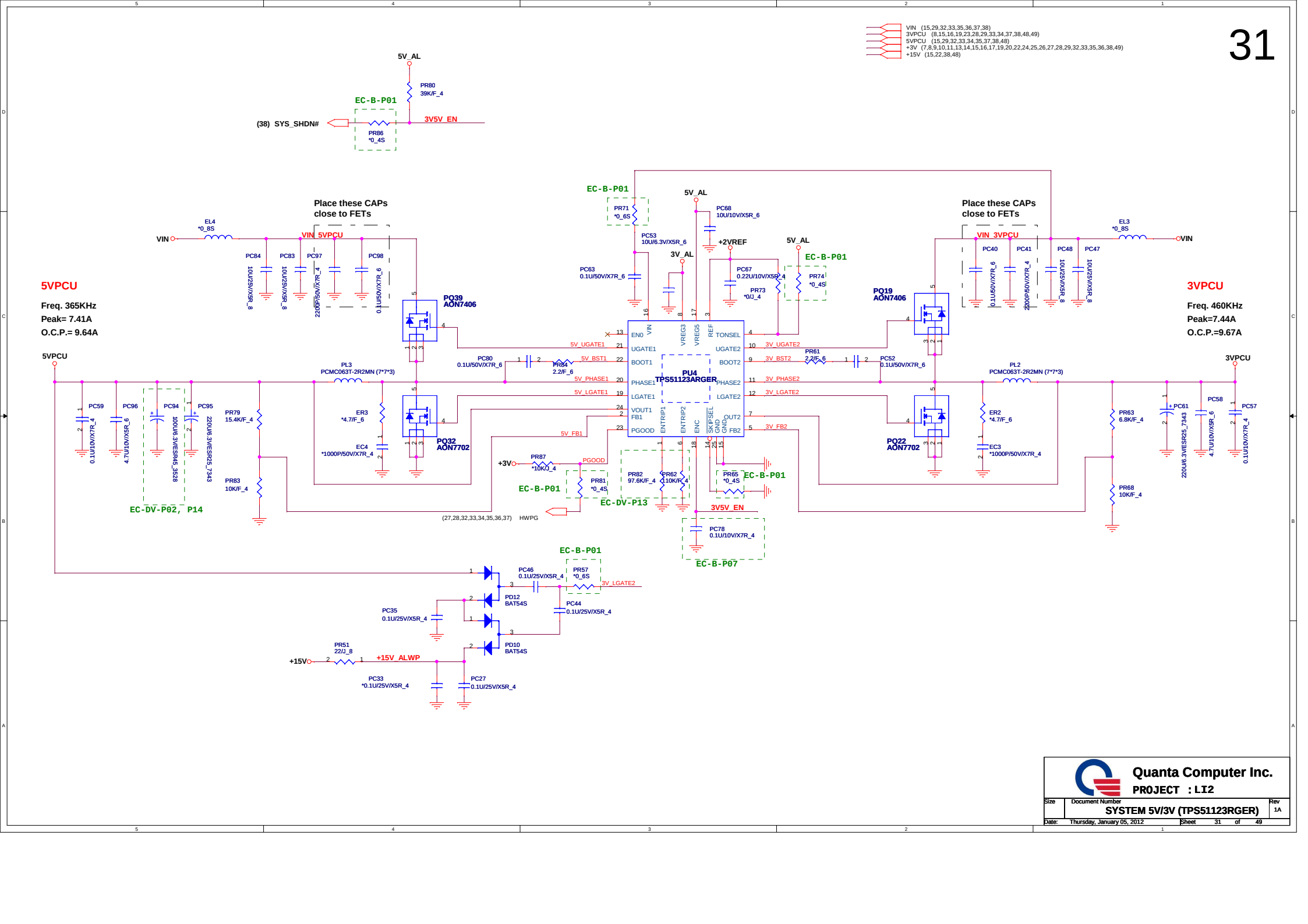
Size	Document Number	Rev
	Screw Hole/EMI	1A
Date: Thursday, January 05, 2012	Sheet 29 of 49	

LI2 Chief River SYSTEM POWER BLOCK DIAGRAM



Quanta Computer Inc.
PROJECT : LI2
Size | Document Number | Rev 1A
Power Diagram
Date: Wednesday, January 04, 2012 | Sheet 30 of 49

VIN (15,29,32,33,35,36,37,38)
3VPCU (8,15,16,19,23,28,29,33,34,37,38,48,49)
5VPCU (15,29,32,33,34,35,37,38,48)
+3V (7,8,9,10,11,13,14,15,16,17,19,20,22,24,25,26,27,28,29,32,33,35,36,38,49)
+15V (15,22,38,48)



Quanta Computer Inc.		
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Size	Document Number: SYSTEM 5V/3V (TPS51123RGER)	Rev: 1A
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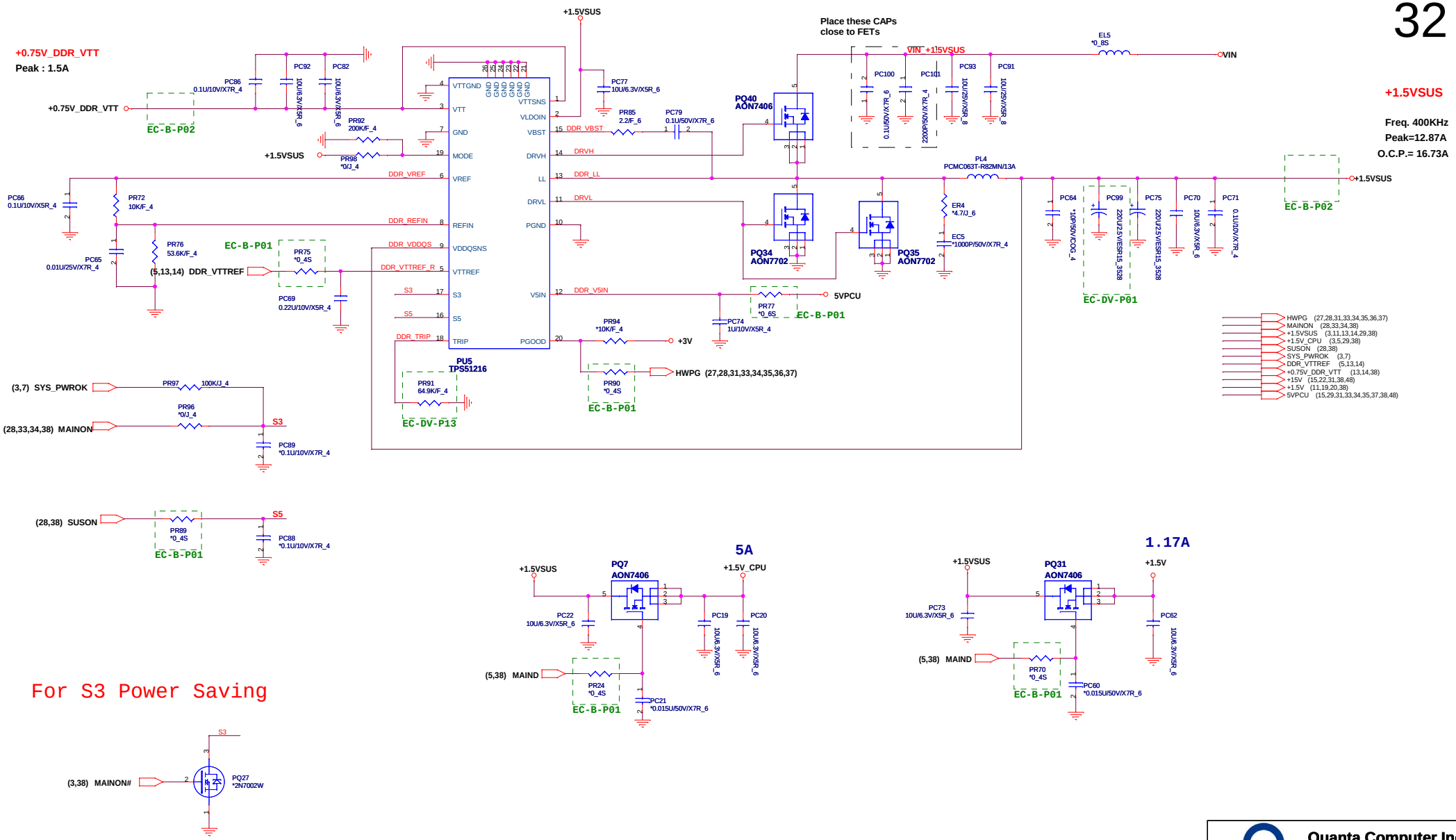

Quanta Computer Inc.
PROJECT : LI2

Size	Document Number	Rev
	+1.5VSUS (TPS51216)	1A

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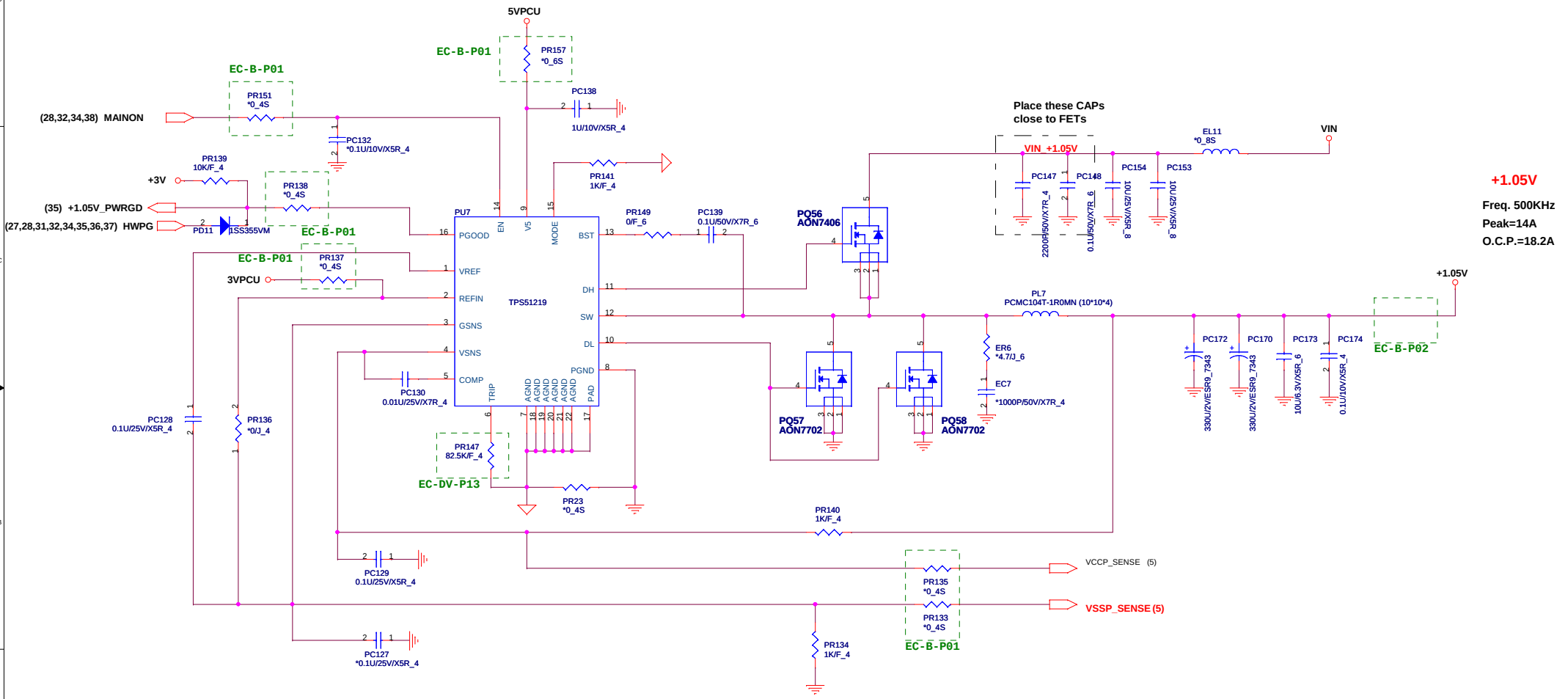
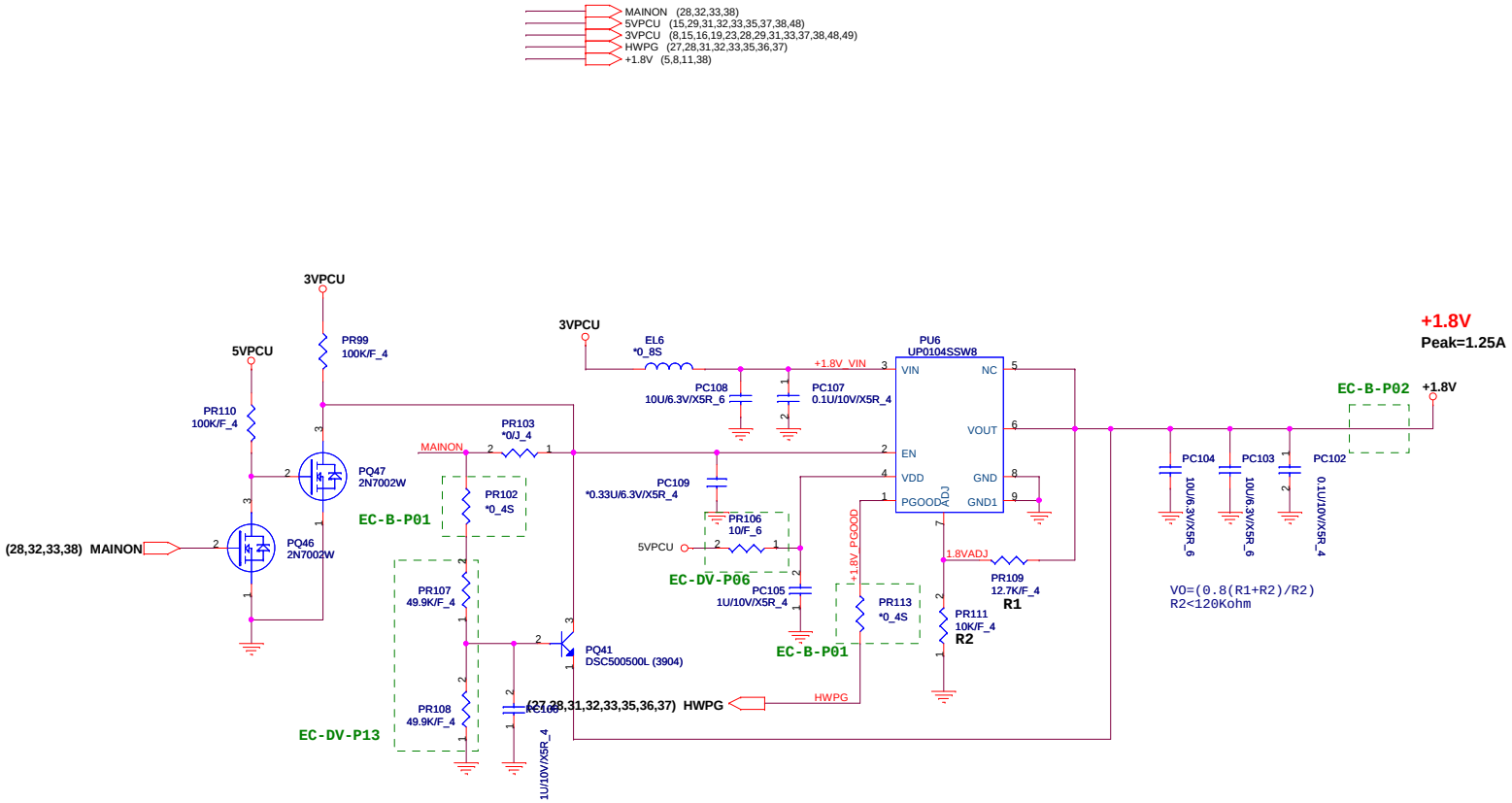
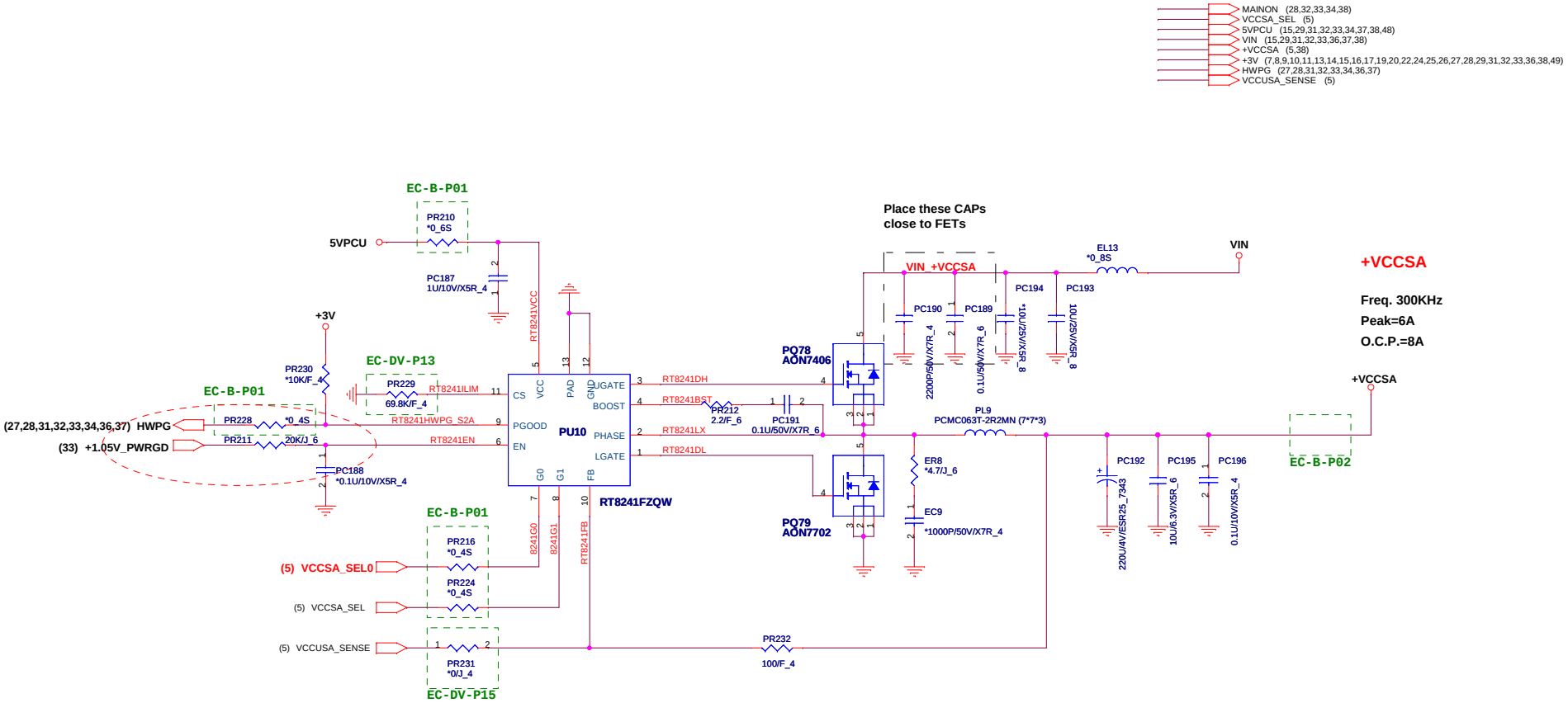
VIN (15,29,31,32,35,36,37,38)
+1.05V (3,5,7,8,9,11,29,36,38,49)
VCCP_SENSE (5)
+3V (7,8,9,10,11,13,14,15,16,17,19,20,22,24,25,26,27,28,29,31,32,35,36,38,49)
HWPG (27,28,31,32,34,35,36,37)
MAINON (28,32,34,38)
5VPCU (15,29,31,32,34,35,37,38,48)



Quanta Computer Inc.		
PROJECT : LI2		
Size	Document Number: +1.05V (TPS51219)	Rev: 1A
Date: Friday, January 06, 2012	Sheet 33 of 49	



Quanta Computer Inc.		
PROJECT : LI2		
Size	Document Number	Rev
	+1.8V (UP0104SSW8)	1A
Date: Thursday, January 05, 2012	Sheet 34 of 49	



Processor	VCCSA_SEL0 G0	VCCSA_SEL G1	VCCSA XE&SV segments
Sandy Bridge	0	0	0.9V
	0	1	0.85V
Ivy Bridge	1	0	0.775V
	1	1	0.75V

Quanta Computer Inc.
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Size	Document Number	Rev
	+VCCSA (RT8241D)	1A

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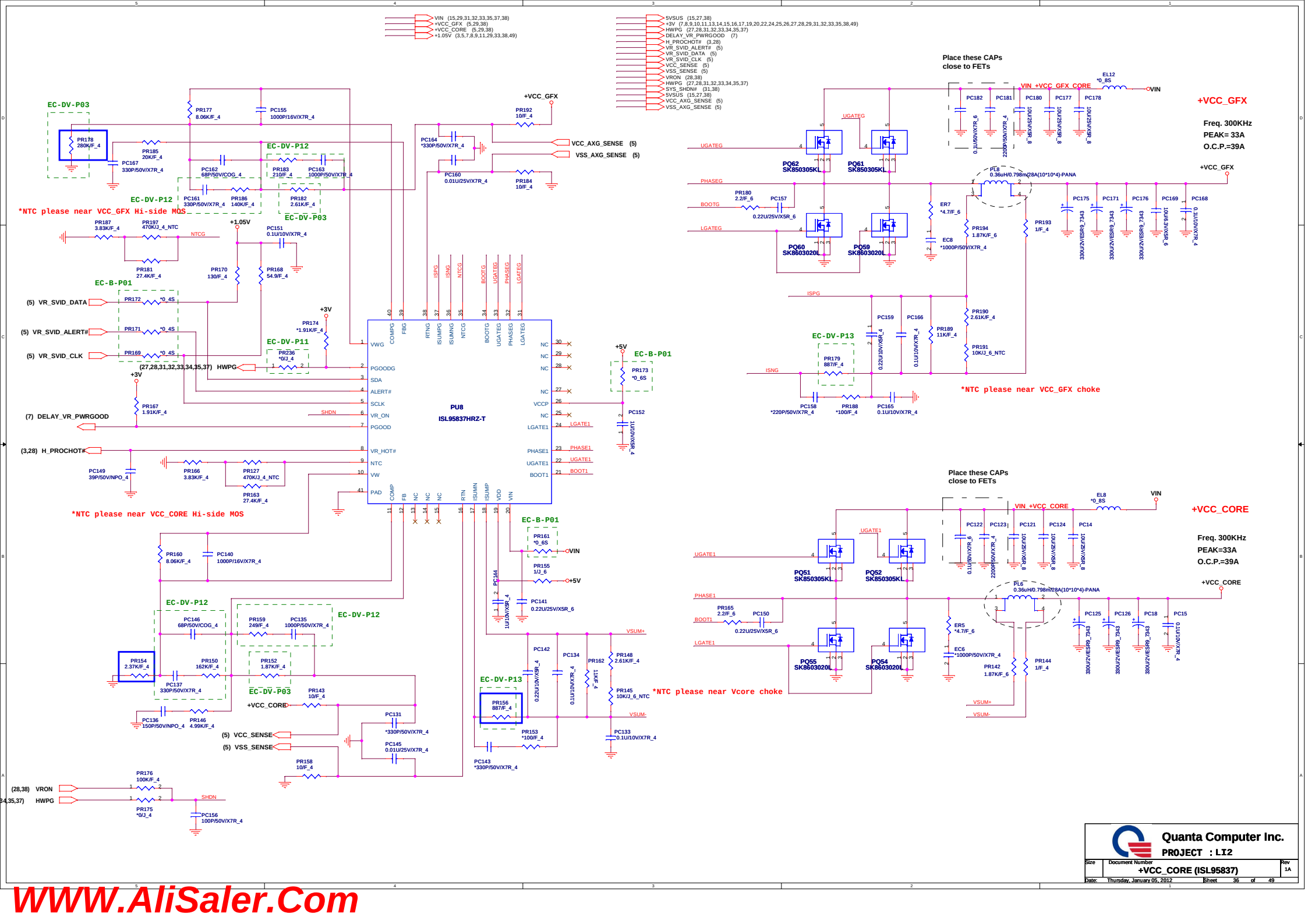

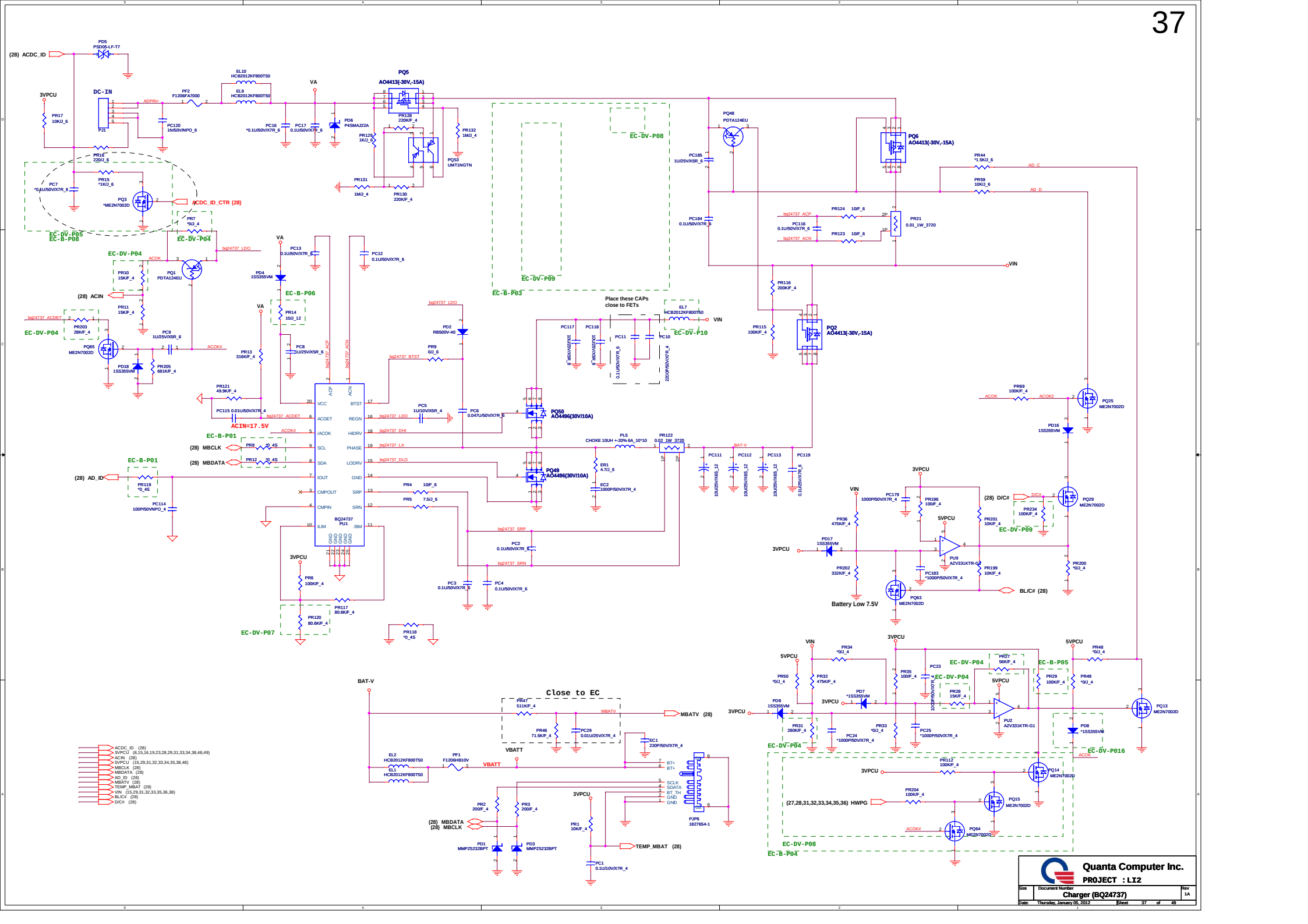
(28) ACDC_ID
PD5 PSD05-LF-T7
3VPCU
DC-IN
PJ1
ADPIN+
PF2 F1206FA7000
EL10 HCB2012KF800T50
EL9 HCB2012KF800T50
VA
PQ5 AO4413(-30V,-15A)
PD6 P4SMAJ22A
PR128 220K/F_4
PR129 1K/J_6
PQ53 UMT1NGTN
PR132 1M/J_4
PR131 1M/J_4
PR130 220K/F_4
PR17 10K/J_6
PR16 22/J_6
PR15 *1K/J_6
PC7 *0.1U/50V/X7R_6
PQ3 *ME2N7002D
/CDC_ID_CTR (28)
PR7 *0/J_4
EC-DV-P05
EC-B-P08
EC-DV-P04
EC-DV-P08
EC-DV-P09
EC-B-P03
PQ48 PDTA124EU
PC185 1U/25V/X5R_6
PC184 0.1U/50V/X7R_6
PQ6 AO4413(-30V,-15A)
PR44 *1.5K/J_6
PR59 10K/J_6
AD_C
AD_D
bq24737_ACP
PC116 0.1U/50V/X7R_6
bq24737_ACN
PR124 10/F_6
PR123 10/F_6
PR21 0.01_1W_3720
VIN
PR116 200K/F_4
PQ2 AO4413(-30V,-15A)
PR115 100K/F_4
EC-DV-P10
EL7 HCB2012KF800T50
PC117
PC118
PC11
PC10
Place these CAPs close to FETs
PC13 0.1U/50V/X7R_6
PC12 0.1U/50V/X7R_6
PD4 1SS355VM
EC-B-P06
PR14 10/J_12
bq24737_LDO
PD2 RB500V-40
PR9 0/J_6
bq24737_BTST
PC5 1U/10V/X5R_4
PC6 0.047U/50V/X7R_6
PQ50 AO4496(30V/10A)
PQ49 AO4496(30V/10A)
PL5 CHOKE 10UH +-20% 6A_10*10
PR122 0.02_1W_3720
ER1 4.7/J_6
EC2 1000P/50V/X7R_4
PC111
PC112
PC113
PC119
BAT-V
PC115 0.01U/50V/X7R_4
ACIN=17.5V
bq24737_ACDET
bq24737_LDO
bq24737_DHI
bq24737_LX
bq24737_DLO
bq24737_SRP
bq24737_SRN
PR121 49.9K/F_4
PR13 316K/F_4
PC8 1U/25V/X5R_6
PR8 *0_4S
PR12 *0_4S
(28) MBCLK
(28) MBDATA
EC-B-P01
(28) AD_ID
PR119 *0_4S
PC114 100P/50VNPO_4
BQ24737 PU1
VCC
ACDET
/ACOK
IOUT
CMPOUT
CMPIN
ILIM
AGP
ACN
BTST
REGN
HIDRV
PHASE
LODRV
GND
SRP
SRN
/BM
PR4 10/F_6
PR5 7.5/J_6
PC2 0.1U/50V/X7R_6
PC3 0.1U/50V/X7R_6
PC4 0.1U/50V/X7R_6
PR6 100K/F_4
PR117 80.6K/F_4
PR120 80.6K/F_4
PR118 *0_4S
EC-DV-P07
PQ65 ME2N7002D
PD18 1SS355VM
PR205 681K/F_4
PR203 280K/F_4
PC9 1U/25V/X5R_6
PQ1 PDTA124EU
PR10 15K/F_4
PR11 15K/F_4
(28) ACIN
PD16 1SS355VM
PQ25 ME2N7002D
PR69 100K/F_4
PQ29 ME2N7002D
PR234 100K/F_4
PR201 10K/F_4
(28) D/C#
PR36 475K/F_4
PR17 1SS355VM
PR202 332K/F_4
PR196 100K/F_4
PC179 1000P/50V/X7R_4
PR183 *1000P/50V/X7R_4
PU9 AZV331KTR-G1
PR199 10K/F_4
PR200 *0/J_4
PQ63 ME2N7002D
Battery Low 7.5V
BL/C# (28)
Close to EC
MBATV
MBATV (28)
PR47 511K/F_4
PR46 71.5K/F_4
PC29 0.01U/25V/X7R_4
EC1 220P/50V/X7R_4
VBATT
EL2 HCB2012KF800T50
EL1 HCB2012KF800T50
PF1 F1206HB10V
PR2 200/F_4
PR3 200/F_4
PD1 MMPZ5232BPT
PD3 MMPZ5232BPT
PR1 10K/F_4
PC1 0.1U/10V/X7R_4
TEMP_MBAT (28)
PJP6 1827654-1
PR34 *0/J_4
PR50 *0/J_4
PR32 475K/F_4
PR35 100K/F_4
PC23 1000P/50V/X7R_4
PR27 56K/F_4
PR28 15K/F_4
PR33 *0/J_4
PC24 *1000P/50V/X7R_4
PC25 *1000P/50V/X7R_4
PD9 1SS355VM
PD7 *1SS355VM
PU2 AZV331KTR-G1
PR31 280K/F_4
PR48 *0/J_4
PR49 *0/J_4
PR29 100K/F_4
PQ13 ME2N7002D
PD8 *1SS355VM
EC-B-P05
EC-DV-P016
PR112 100K/F_4
PQ14 ME2N7002D
PR204 100K/F_4
PQ15 ME2N7002D
PQ64 ME2N7002D
(27,28,31,32,33,34,35,36) HWPG
EC-B-P04
ACDC_ID (28)
3VPCU (8,15,16,19,23,28,29,31,33,34,38,48,49)
ACIN (28)
5VPCU (15,29,31,32,33,34,35,38,48)
MBCLK (28)
MBDATA (28)
AD_ID (28)
MBATV (28)
TEMP_MBAT (28)
VIN (15,29,31,32,33,35,36,38)
BL/C# (28)
D/C# (28)
Quanta Computer Inc.
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Size
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Charger (BQ24737)
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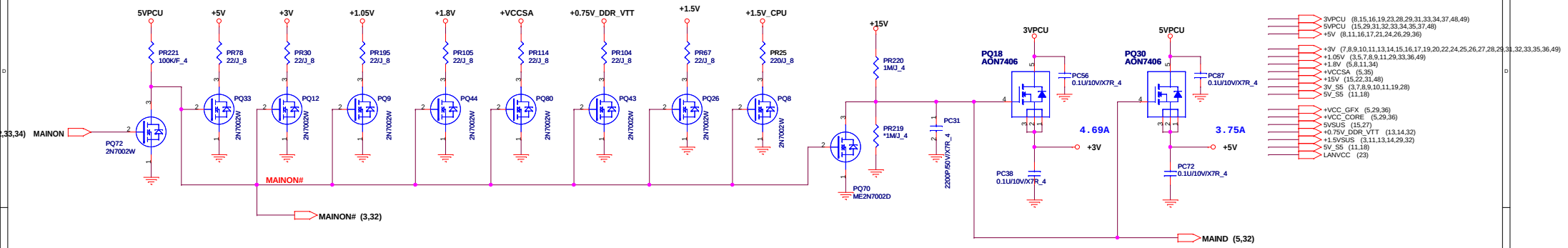
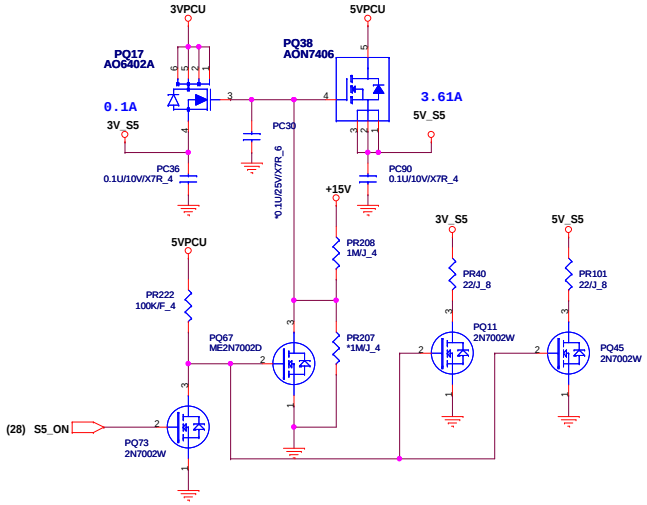
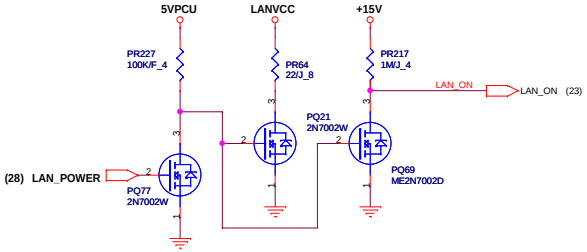
+3V, +5V,+1.05V,+1.8V,+VCCSA,+0.75V_DDR_VTT, +1.5V, +1.5V_CPU



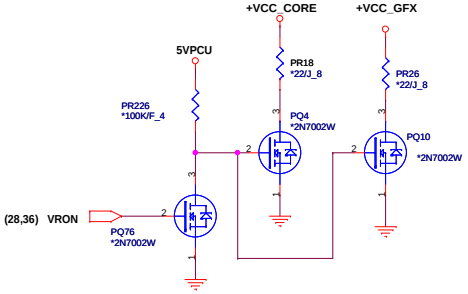
3V_S5, 5V_S5



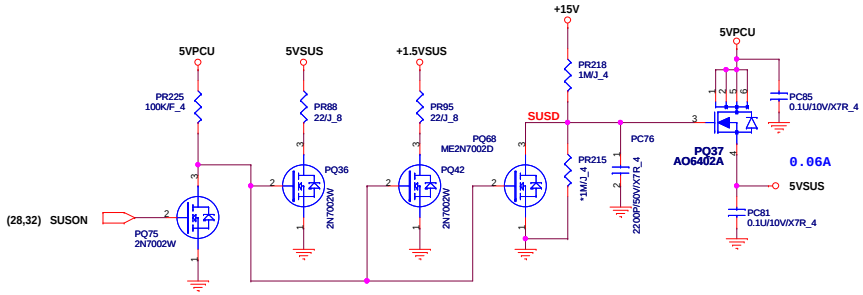
LANVCC

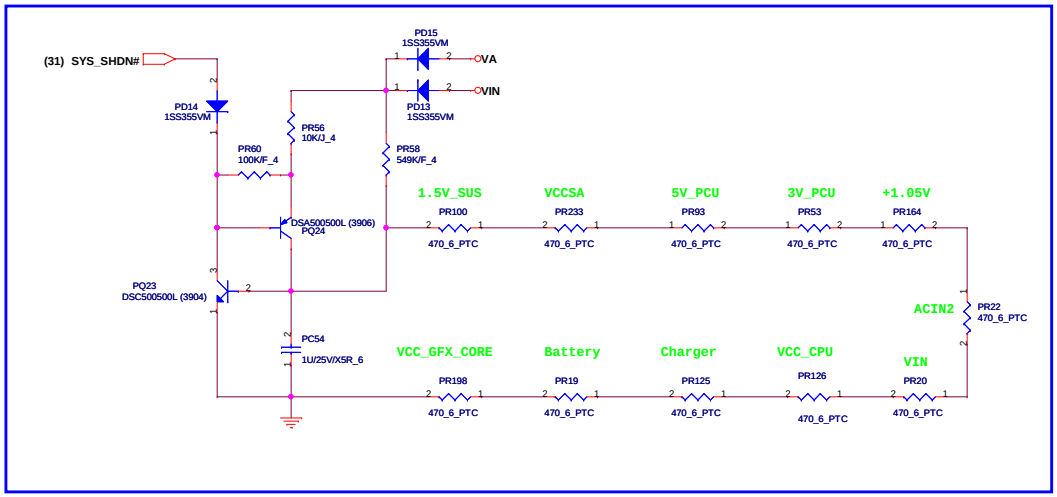


+VCC_CORE, +VCC_GFX



5VSUS, +1.5VSUS





Quanta Computer Inc.
PROJECT : LI2

Size	Document Number	Rev
	Discharge & 3V/5V load switch	1A
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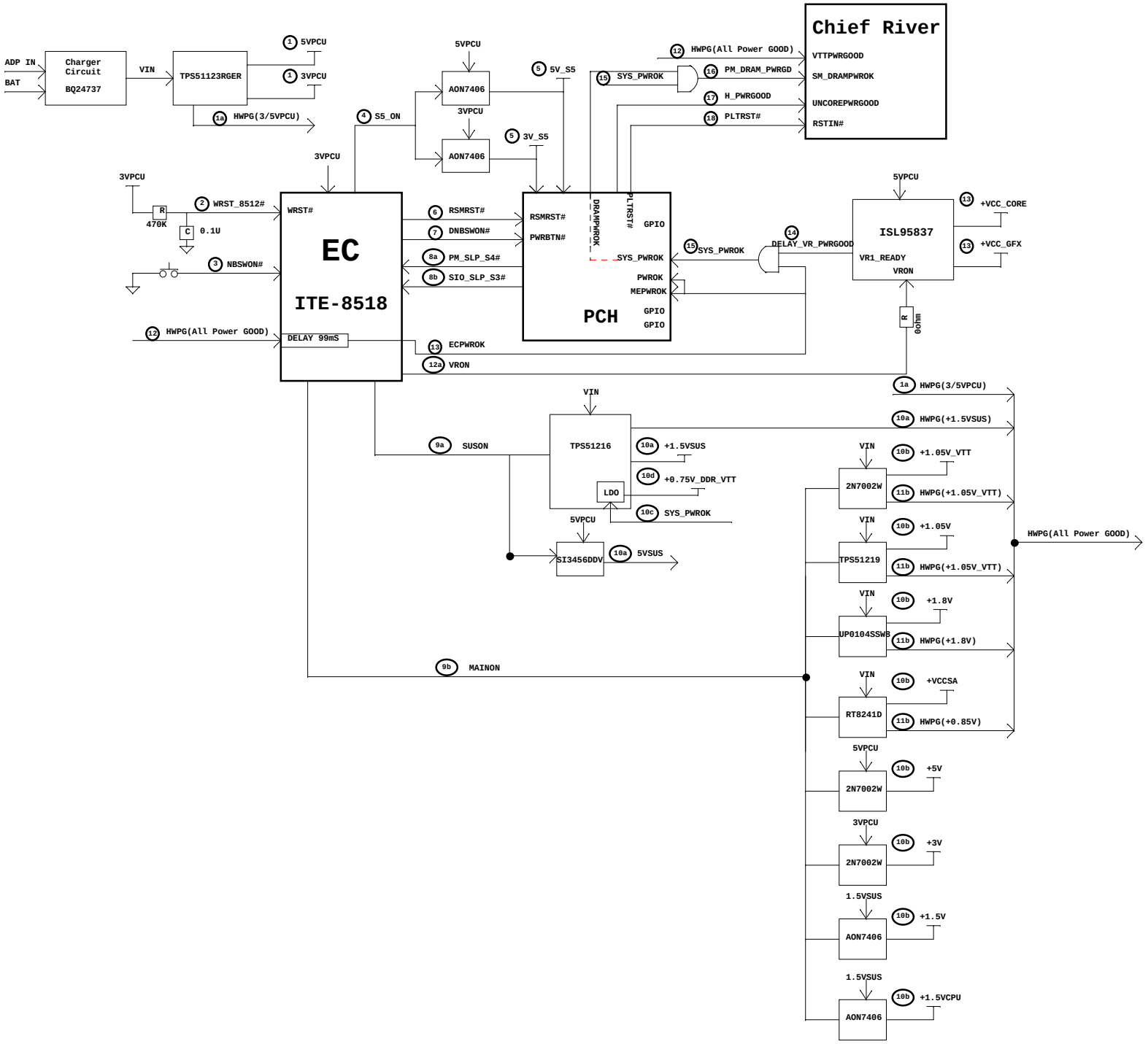

Quanta Computer Inc.
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Size	Document Number	Rev
	Power On Sequence	1A

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D-NOTE SKU TABLE

Location					

M-NOTE SKU TABLE

Location					Page

Quanta Computer Inc.
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Size	Document Number	Rev
	BOM Matrix Table	1A

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Revision History

Revision	Date	Phase	Change List	Release Schematic Date	Release Gerber File Date
A1A		DV	Initial release	2010/12/03	2010/12/03

Schematic Value Explanation Description :

RESISTOR

Value	F	4	6	8	12	1210	*	Description
*1K/F_4	1%	0402 (1005)					DE POP	1K ohm 1% SMD 0402 package and DE POP
1K_6	5%		0603 (1608)				POP	1K ohm 5% SMD 0603 package and POP
1K_8	5%			0805 (2125)			POP	1K ohm 5% SMD 0805 package and POP
1K_12	5%				1206 (3216)		POP	1K ohm 5% SMD 1206 package and POP
1K_1210	5%					1210 (3225)	POP	1K ohm 5% SMD 1210 package and POP

CAPACITOR

Value	Voltage	Material	6				*	Description
*0.1U/10V/X5R_4	10V	X5R	0402 (1005)				DE POP	0.1UF 10V X5R SMD 0402 package DE POP
1U/25V/X7R_6	25V	X7R	0603 (1608)				POP	0.1UF 25V X7R SMD 0603 package POP

EC #	Page	Date	Part Affected	Description
EC-DV-01	29	2011/09/07	Hole8	Remove unused Nut
EC-DV-02	15	2011/09/08	CN32	ME RECOMMAND:update CCD/LED connector for PE suggestion
EC-DV-03	16	2011/09/09	CN30	ME RECOMMAND:reverse CN30 pin define
EC-DV-04	21	2011/09/09	RV15.RV16,RV17	ESD RECOMMAND:reserve for ESD
EC-DV-05	18	2011/09/13	U43,U43	ESD RECOMMAND for layout routing:exchange USB3.0 RX and USB2.0 signal of U43 and U44
EC-DV-06	05	2011/09/13	C761,C762	Reduce for power noise:reserve C761 and C762
EC-DV-07	05	2011/09/14	C447,C59,C431,C45,C432 C430,C442,C62,C443,C56, C56,C428,C23,C49,C435 C427	Follow DG:change 15 pcs caps value from 1uf to 2.2uf
EC-DV-08	05	2011/09/14	C764,C765,C766,C767 ,C768,C771	Lenovo RECOMMAND :Reserve 150uF 3528 Caps of CPU Power rail
EC-DV-09	13 14	2011/09/14	C190,C191,C192,C282, C498,C499,C497,C168	Follow DG :change caps value from 1uF to 0.1uF
EC-DV-10	15	2011/09/14	CN32,C733,C734	For add new LEDs on LCO cover:update CN32 from 6 pins to 10 pins and add two Res for tuning LED brightness
EC-DV-11	19	2011/09/14	Q15,D18,R736	Remodify BT_ON schematic:Remove Q15 and add D18,R736
EC-DV-12	49	2011/09/14	Q47,Q45,R728,R727,R731	Remodify SBA schematic:Remove 1.05V_M3_PG schematic in pg49
EC-DV-13	49	2011/09/15	L51,R737	Reserve for SBA Power select
EC-DV-14	16	2011/09/16	R82,R81,R78,R77, R74,R71,R68,R62	Follow DG:update HDMI Rpd value from 499 to 680 ohm
EC-DV-15	10	2011/09/16	R738,R739	BIOS RECOMMAND:Add SBA selection schematic
EC-DV-16	05	2011/09/16	C55,C58,C429,C60,C48, C61,C445,C433,C46,C448 C439,C441,C446,C437,C47 C434,C444,C438,C440,C436	Follow DG:update +VCC_CORE caps from 1uf to 2.2uf
EC-DV-17	05	2011/09/19	R28,R29	Follow DG:update R28 and R29 Res value from 10 ohm to 100 ohm
EC-DV-18	21	2011/09/19	C772	ESD RECOMMAND:add C772 on the signal of LEFT
EC-DV-19	21	2011/09/19	C773,C774	EMI RECOMMAND:reserve for EMI
EC-DV-20	06	2011/09/19	R25,R26,R31,R30	Remove R25,R26,R31,R30
EC-DV-21	16	2011/09/19	U4,U5,U7	Add Power trace of +3V connection to pin3 of U4,U5 and U7
EC-DV-22	20	2011/09/20	RV18,RV19,RV20,RV21, RV22,U3	ESD RECOMMAND:remove U3 and RV18-RV22 for ESD solution
EC-DV-23	05	2011/09/21	C775,C776,C777,C778 ,C779,C780,C764,C765	No layout spacing:Remove C764 ,C765 and Add C775-C780
EC-DV-24	27	2011/09/21	LED2,R580,C383	Remove SATA LED schematic:Remove C383,R580,LED2
EC-DV-25	15	2011/09/21	Q49,Q50	Add 2 2N7002 to control CCD and WLAN LED of LCD COVER
EC-DV-26	24	2011/09/28	R268,R269,R299	FAE RECOMMAND:update PC-beeper voltage level,change R268,R269,R299 RES value form FAE suggestion

LI2 Schematic EC Tracking Record DV (for DV)XXXX. XX, 2011

EC #	Page	Date	Part Affected	Description
EC-DV-P01	32	2011/9/7	PC99	Change for +1.05V output ripple voltage (base on TI simulation)
EC-DV-P02	31	2011/9/7	PC94	Change for 5VPCU output ripple voltage (base on TI simulation)
EC-DV-P03	36	2011/9/7	PR182, PR178, PR152	Intersil FAE recommend change value
EC-DV-P04	37	2011/9/7	PR7, PR10, PR203, PR27, PR28	TI FAE recommend change value
EC-DV-P05	37	2011/9/8	PC7, PR15, PQ3	Add for Lenovo external battery ID pin function
EC-DV-P06	34	2011/9/21	PR106	Add for uPI FAE recommend (base on uPI simulation)
EC-DV-P07	37	2011/10/3	PR120	Change for charger current limit (base on TI simulation)
EC-DV-P08	37	2011/10/3	PC186, PQ15, PR52, PD11, PC39, PR42, PQ14	Delete reserved component
EC-DV-P09	37	2011/10/3	PR234, PR235, PQ81	Add for TI FAE recommend (base on TI simulation)
EC-DV-P10	37	2011/10/3	EL7	Add for EMI team recommend (base on EMI simulation)
EC-DV-P11	36	2011/10/17	PR236	Add PR236 for DV test
EC-DV-P12	36	2011/10/17	PC161,PR186,PR183,PC163, PC146,PC137,PR150,PR159, PC135	Intersil FAE recommend change value (base on Intersil simulation)
EC-DV-P13	31 32 33 35 36	2011/10/21	PR82, PR62, PR91, PR147, PR229, PR179, PR156,PR107 PR108	Change for power converter current limit (base on OCP test)
EC-DV-P14	31	2011/10/26	PC94	change PC94 size to 3528, because orignal 3216 size has shortsge issue.
EC-DV-P15	35	2011/10/26	PR231	RT FAE recommend change to open
EC-DV-P16	37	2011/10/28	PD8	Change for DV test result (base on ACOK test)

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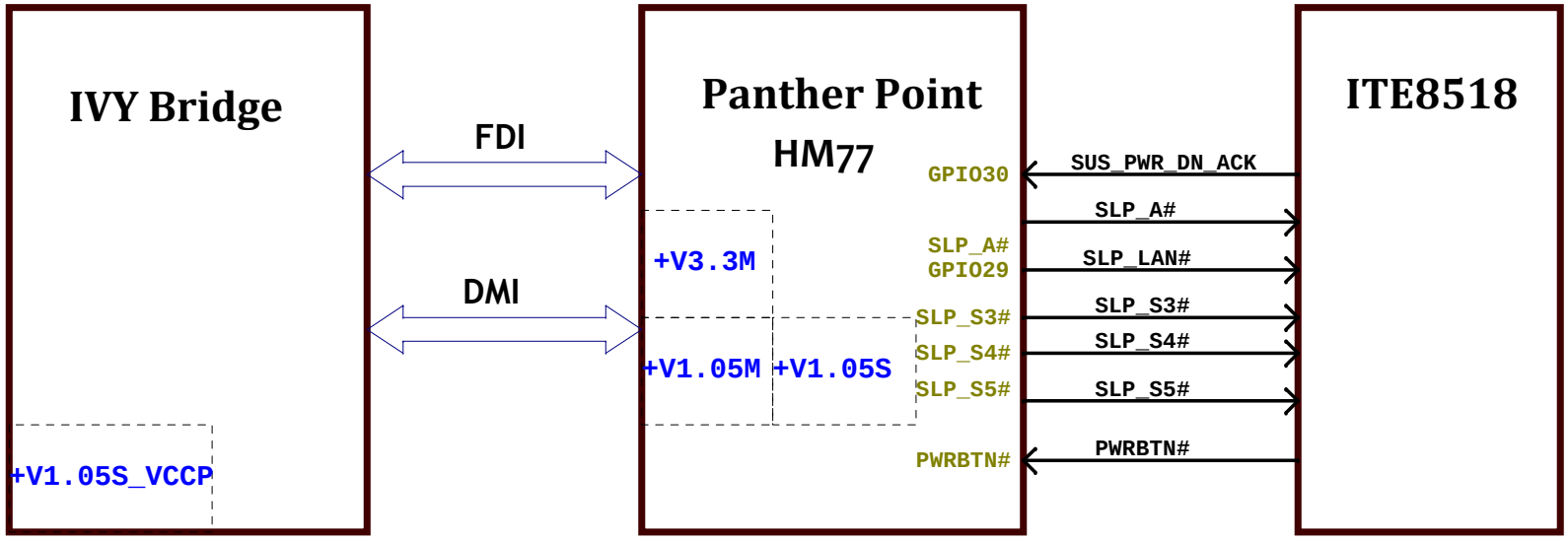
EC #	Page	Date	Part Affected	Description
EC-B-01	03	2011/10/19	R499,R47,R43	For platforms that do not implement the S3 Power Reduction circuitry and meet Intel Power-on sequence 1.Reserve R499 on the trace of SYS_PWROK 2.R47,R469 un-mount 3.updae R43 value from 1.1k ohm to 0 ohm
EC-B-02	07	2011/10/19	R500	Reserve R500 for SBA selection and meet Intel power-on sequence.
EC-B-03	19	2011/10/19	Q42,Q43,R501	Lenovo recommand to reserve AOAC schematic: reserve Q42,Q43,R501
EC-B-04	20	2011/10/19	R502	BIOS recommand :add MSATA detect signal to GPIO27 of PCH
EC-B-05	07	2011/11/21	R83,R76	Intel recommend:HPD and HPC are active high signal,Pull ups are not required for unused ports:R83 and R76 are un-mounted
EC-B-06	03	2011/11/21	R346	Intel recommend:if eDP is not used EDP_HPD can be left as unconnected.R346 un-mounted
EC-B-07	11	2011/11/21	R208,R241,L18	Intel recommend:3VS_VCC_CLKF33 filter is no longer required. Keep the Cdecap, but remove the Cfilter/Lfilter. CRB schematics includes these components but they are not required on customer designs:R208 mountrd and R241,L18 are un-mounted
EC-B-08	16	2011/11/21		To support DC mode S4 wake up from LCD,update Lid switch power rail from 3V_S5 to 3VPCU
EC-B-09	15	2011/11/21		Camera VCC power rail issue:change the power rail from +5V to +3V
EC-B-10	09	2011/11/28	Q19,Q20	Reduce 3V_S5 leakage:SWAP the signals pin1 and pin3 of Q19 and Q20
EC-B-11	10 15	2011/11/28	Q44~Q47,R507	Lenovo recoomand to verifty RF LED function:Add Q44~Q47 ,R507 and modify WWAN_LED_ON to GPIO16 of PCH
EC-B-12	16	2011/11/28	D18,D19,R504,R505	Reduce +5V leakage from HDMI device:Add D18,D19 ,R504 and R505
EC-B-13	16 18	2011/11/28	SU1~SU7	ESD recommend:update ESD protection component of SU1~SU7 to HDMI and USB3.0 sginals
EC-B-14	19 20	2011/11/28	CN21,CN22	Layout recoomend:update minipcie footprint to minipci-aaa-pci-041 -k01-52p-smt
EC-B-15	49	2011/11/28	R506 ,C574	To fine tuning Intel Power-on sequence:Add RC delay of ACPWROK add R506 and C574
EC-B-16	10	2011/11/28		Intel recommend:GPIO36 and GPIO37 should not be pulled high when strap is sampled.Change Jett/Dutton strap pin to GPIO38

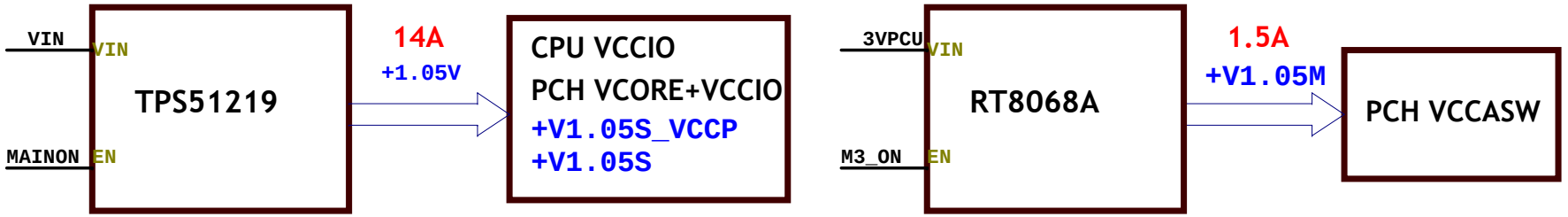
LI2 Schematic EC Tracking Record B 11.22.2011

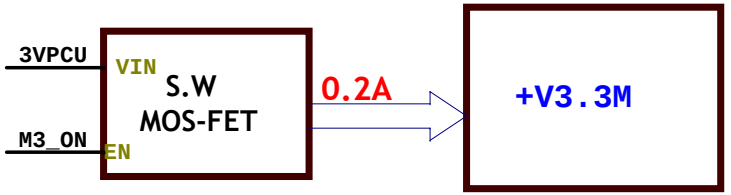
EC #	Page	Date	Part Affected	Description
EC-B-P01	31~37 48	2011/11/22	PR71, PR77, PR157, PR57, PR210, PR161, PR173, PR74, PR81, PR209, PR86, PR119, PR12, PR8, PR24, PR70, PR135, PR133, PR137, PR138, PR151, PR102, PR113, PR37, PR45, PR75, PR89, PR90, PR172, PR171, PR169, PR216, PR224, PR228, PR65	Change 0 ohm (for DV test) to short Pad
EC-B-P02	32 33 34 35 48	2011/11/22	PJP2, PJP3, PJP4, PJP7, PJP8, PJP9, PJP5, PJP10 PJP1	Remove Jump for C stage
EC-B-P03	37	2011/11/22	PQ64, PR204, PQ66, PR235, PQ81	Delete reserved component
EC-B-P04	37	2011/11/22	PR112, PQ14, PR204, PQ15, PQ64	Add for TI FAE recommend (base on DV test)
EC-B-P05	37	2011/11/22	PR29	Change PR29 form 10K to 100K (base on DV test)
EC-B-P06	37	2011/11/23	PR14	Change PR14 form 0603 size to 1206 size (base on TI simulation)
EC-B-P07	31	2011/11/24	PC78	Change PC78 form de-pop to pop (base on DV test)
EC-B-P08	37	2011/12/02	PC7,PR15,PQ3	Because we don’t need to support the external Battery PC7,PR15,PQ3 un-mounted

LI2 Schematic EC Tracking Record SIT

EC #	Page	Date	Part Affected	Description
EC-C-01	08	2011/11/29	R518,Q50	Add ME unlock schematic for Intel ME lock issue:Add R518 and Q
EC-C-02	10,20 28	2011/12/20	R520,R521	Modify for mSATA and WWAN exclusive support design
EC-C-03	08	2011/12/27	R518,Q50	Lenovo recommand:remove ME un-lock shcematic
EC-C-04	16	2011/12/27	D29	Add D20 to reduce HDMI plug leakage
EC-C-05	23	2011/12/28	R259,R523	HI-Pod issue:Add 1M 0603 resistance and R259 un-mounte
EC-C-06	21	2012/01/05	R526-R529	Lenovo recommand:To qualify new click pad:add R526,R527,R528 ,R529







Quanta Computer Inc.

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Size	Document Number	Rev
	SBA Power Block	1A

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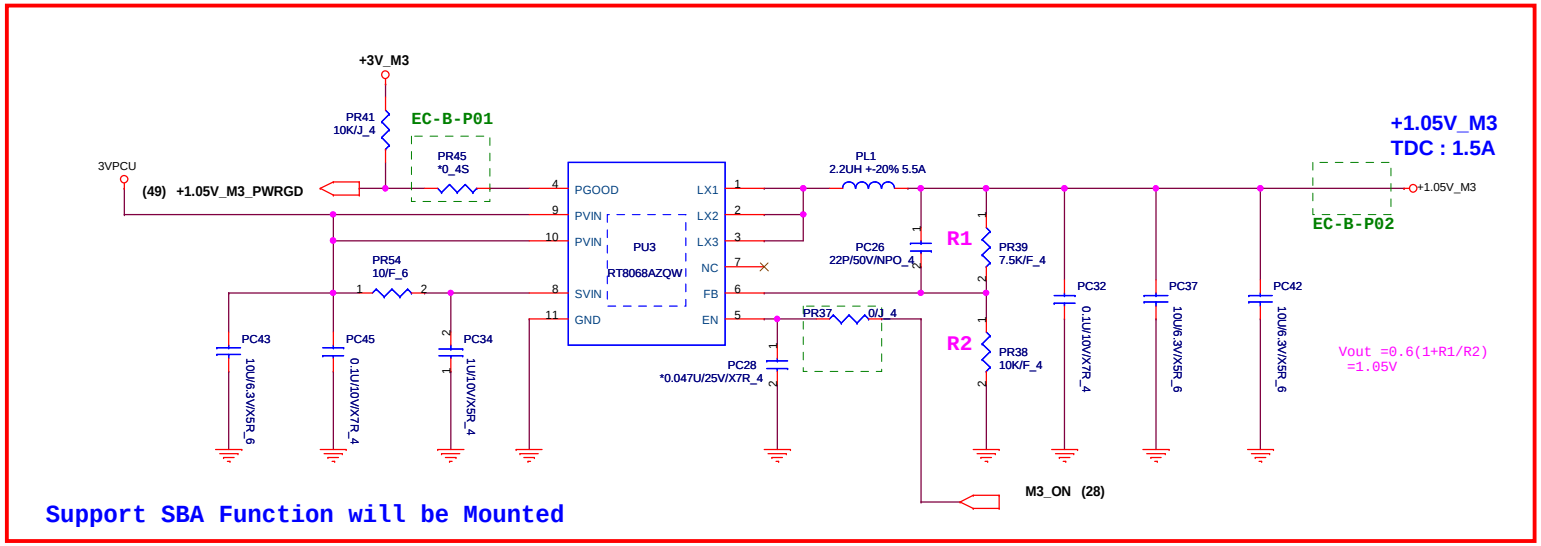
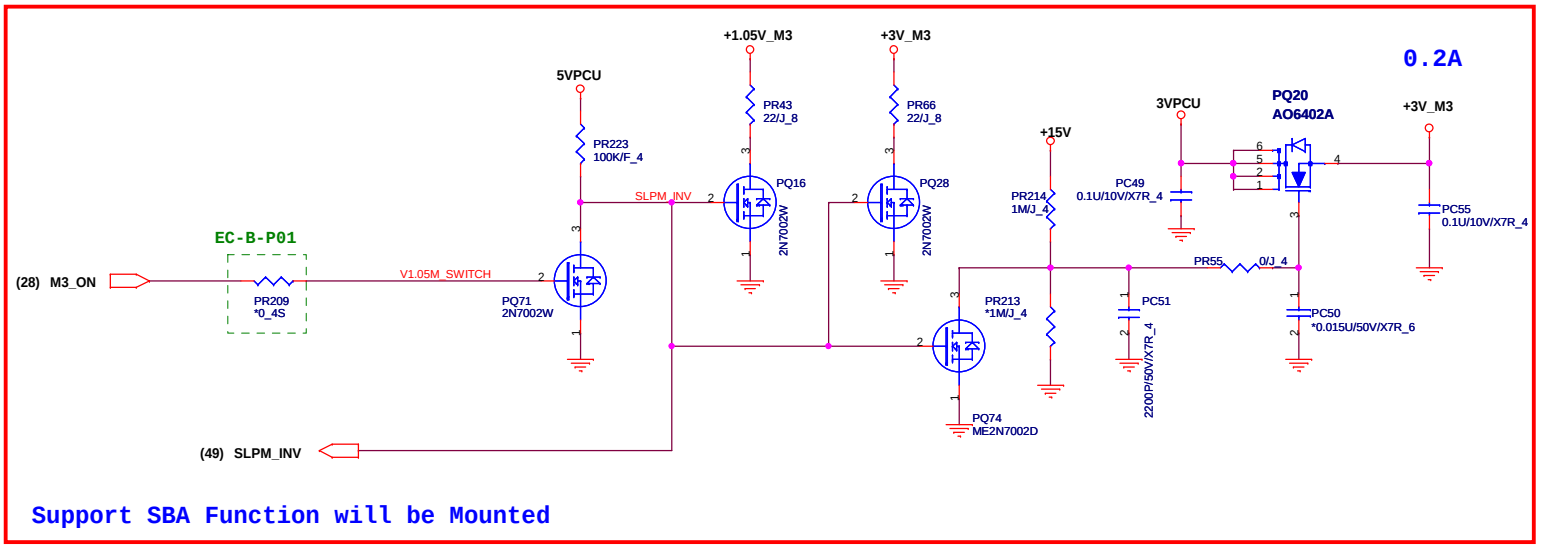
+3V_M3 (8,11,23,49)
+1.05V_M3 (11,49)





Support SBA Function will be Mounted

Quanta Computer Inc.
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Size	Document Number	Rev
	New Circuit for Intel M3	1A

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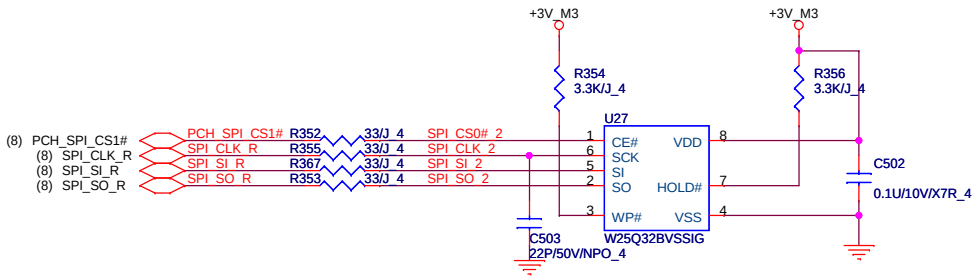
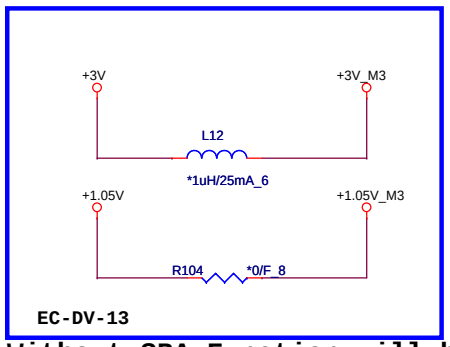
SBA SPI ROM

HWPG (27,28,31,32,33,34,35,36,37)
+1.05V (3,5,7,8,9,11,29,33,36,38)
3VPCU (8,15,16,19,23,28,29,31,33,34,37,38,48)
+3V_M3 (8,11,23,48)
+1.05V_M3 (11,48)

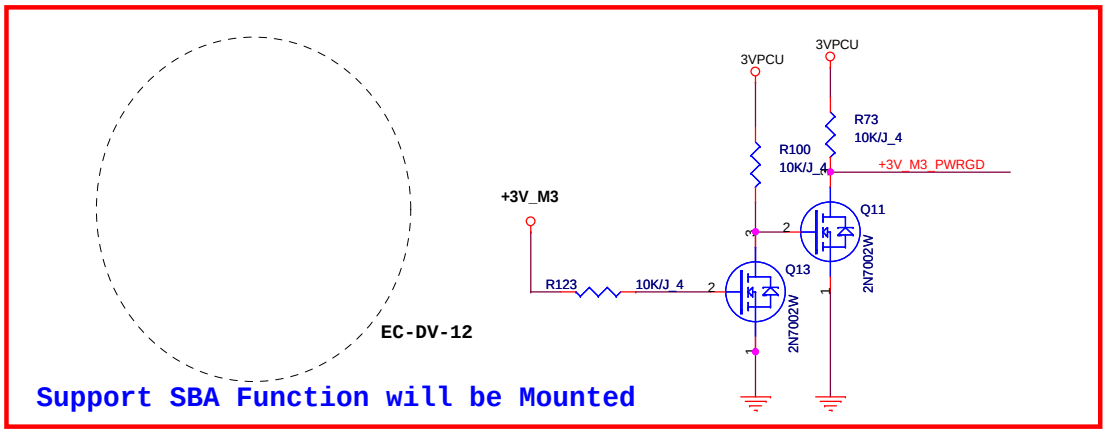


Support SBA Function will be Mounted

SBA POWERGD/SBA Power select

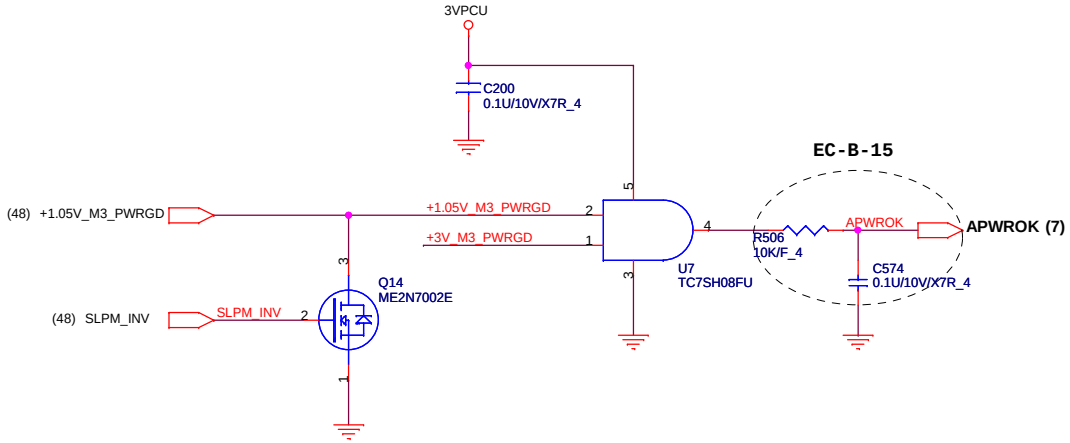


Without SBA Function will be Mounted



Support SBA Function will be Mounted

SBA LOGIC



Support SBA Function will be Mounted

Quanta Computer Inc.
PROJECT : LI2

Size	Document Number	Rev
	New Circuit for Intel M3	1A

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