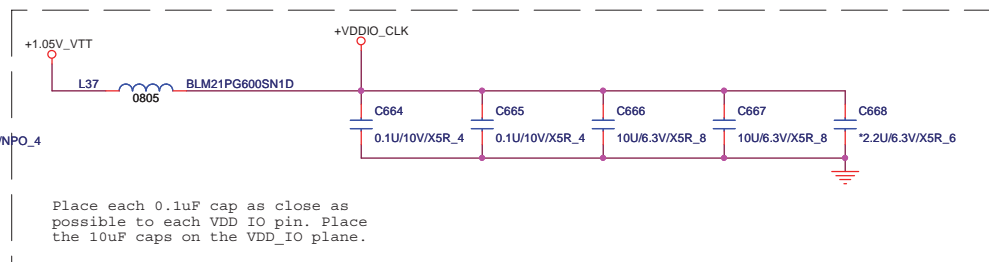
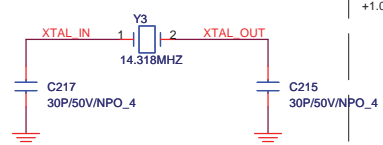
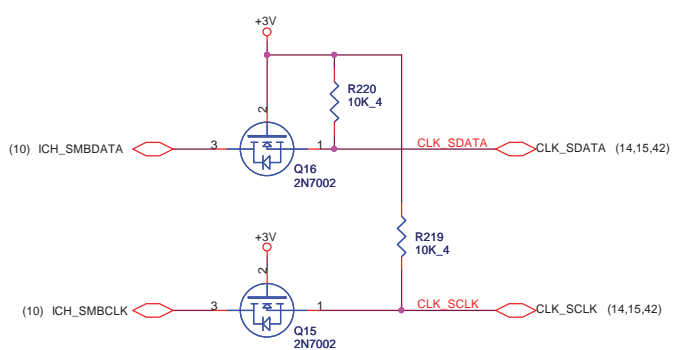
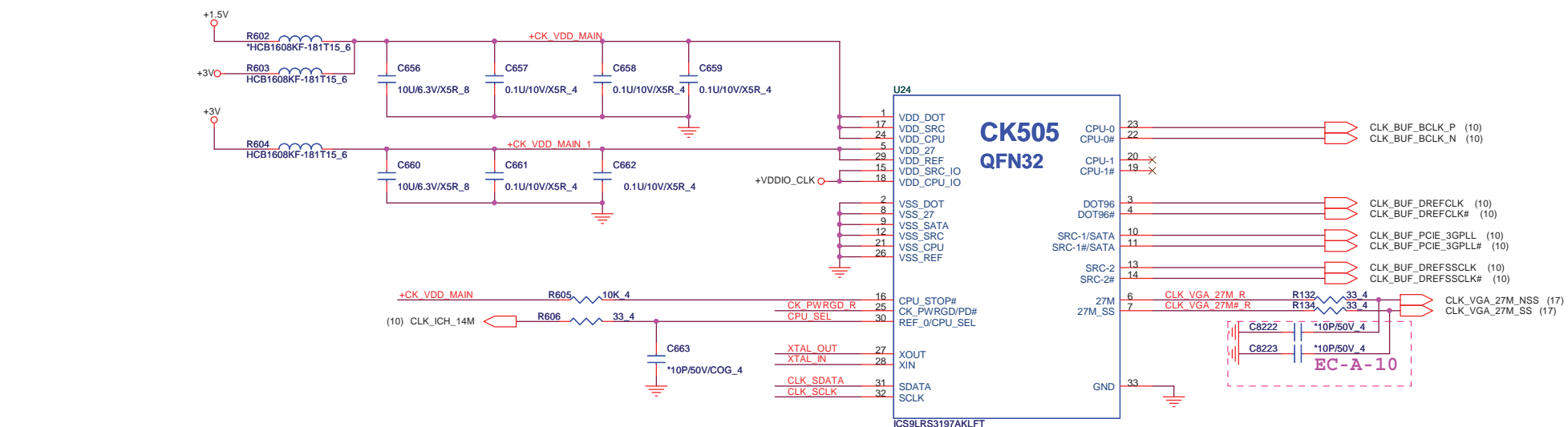


Table of Contents

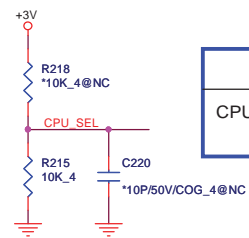
PAGE	DESCRIPTION
01	BLOCK DIAGRAM
02	FRONT PAGE
03	CLOCK GENERATOR
04-07	Auburndale PROCESSER
08-13	Ibex Peak-M
14-15	DDRIII SO-DIMM
16	LCD & LID CON
17	HDMI PORT(PS8101)
18	CRT CONN
19	AUDIO CODEC(ALC269Q)
20	LAN(8111DL)
21	SATA HDD/CD-ROM
22	USB X2/SIM_CARD/LEDs/RF
23	CARD READER/USB/SIM CONN
24	MINI-Card (WWAN)
25	MINI-Card (WLAN)
26	ONFI
27	Express Card
28	K/B, T/P
29	BlueTooth
30	FAN /THERMAL
31	G-SENSOR
32	B TO B CON
33	TPM & RFID EEPROM
34	KBC IT8502E
35	HOLD & SKEW
36	Discharge
37	Charger (ISL88731)
38	DDR3/0.75V(TPS51116REGR)
39	1.05V_VTT (RT8204)
40	3V/5V (ISL6237IRZ-T)
41	CPU (ISL62882)
42	GFX_VCC (MAX17028)
43	XDP & JTAG
44	Power Block Dianram
45	Schematic Value Descript
46	BOM Matrix Table

Power States

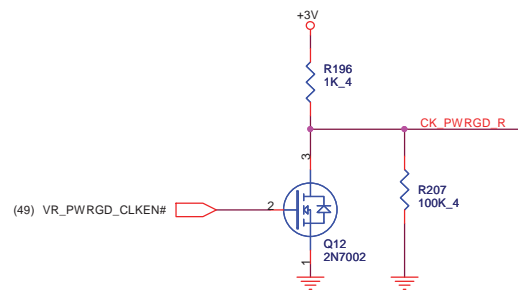
POWER PLANE	VOLTAGE	PAGE	DESCRIPTION	CONTROL SIGNAL	ACTIVE IN
VIN	10V~+20V	16,36,37,38,39,40,41,42	MAIN POWER		S0~S5
+3VRTC	+3.0V~+3.3V	9,12,34	RTC		S0~S5
3VPCU	+3.3V	9,16,20,23,28,32,34,36,37,40,42	ITE8502 POWER	3V5V_EN	S0~S5
5VPCU	+5V	36,37,38,39,40,42	DC/DC POWER IC SOURCE	3V5V_EN	S0~S5
+15V	+15V	16,31,36,38,39,40	LARGE POWER	3V5V_EN	S0~S5
LANVCC	+3.3V	20,36	LAN POWER	LAN_ON	
5V_S5	+5V	12,22,23,36	PCH SUS POWER	S5_ON	S0~S3
3V_S5	+3.3V	8,9,10,11,12,36	Sys Management,PCH Resume Well, Intel HD Audio,USB,WLAN,WiMAX POWER	S5_ON	S0~S3
5VSUS	+5V	16,32,36,41,42	SLP_S4# CTRLD POWER	SUSON	S0~S3
3VSUS	+3.3V	8,23,27,34,36,42	SLP_S4# CTRLD POWER	SUSON	S0~S3
1.5VSUS	+1.5V	4,6,12,14,15,36,38,39	DDR3 SODIMM POWER	SUSON	S0~S3
0.75VSMDDR_VTERM	+0.75V	14,15,36,38	DDR3 SODIMM REFERENCE POWER	MAINON	S0
+5V	+5V	8,12,16,17,18,19,21,28,30,34,36,37	SLP_S3# CTRLD POWER	MAINON	S0
+3V	+3.3V	3,4,8,9,10,11,12,14,15,16,17,18,19,20,21,22,23,24,25,26,27,29,30,31,32,33,34,36,37,38,39,40,41,42,43	SLP_S3# CTRLD POWER	MAINON	S0
+1.8V	+1.8V	6,12,26,36,42	LVDS,NVM POWER	MAINON	S0
+1.5V	+1.5V	12,24,25,27,38,39	Mini PCIe,Express Card POWER	MAIND	S0
+1.05V_VTT	+1.05V	3,4,6,8,10,11,12,36,39,41,43	AuBurndale VTT POWER/PCH CORE POWER	MAINON	S0
+VCC_GFX_CORE		6,36,42	VGA CORE POWER	GFXVR_EN	S0
VCC_CORE		6,36,41	CPU CORE POWER	VRON	S0
LCDVCC	+3.3V	16	LCD Power	ENVDD	S0
+5V_ODD	+5V	21	ODD Power	MAINON#	S0
+5V_HDD	+5V	21	HDD Power	MAINON#	S0
BAT-V	+10V~+17V	37	MAIN BATTERY	CHG_PBATT	S0~S5



Place each 0.1uF cap as close as possible to each VDD IO pin. Place the 10uF caps on the VDD\_IO plane.

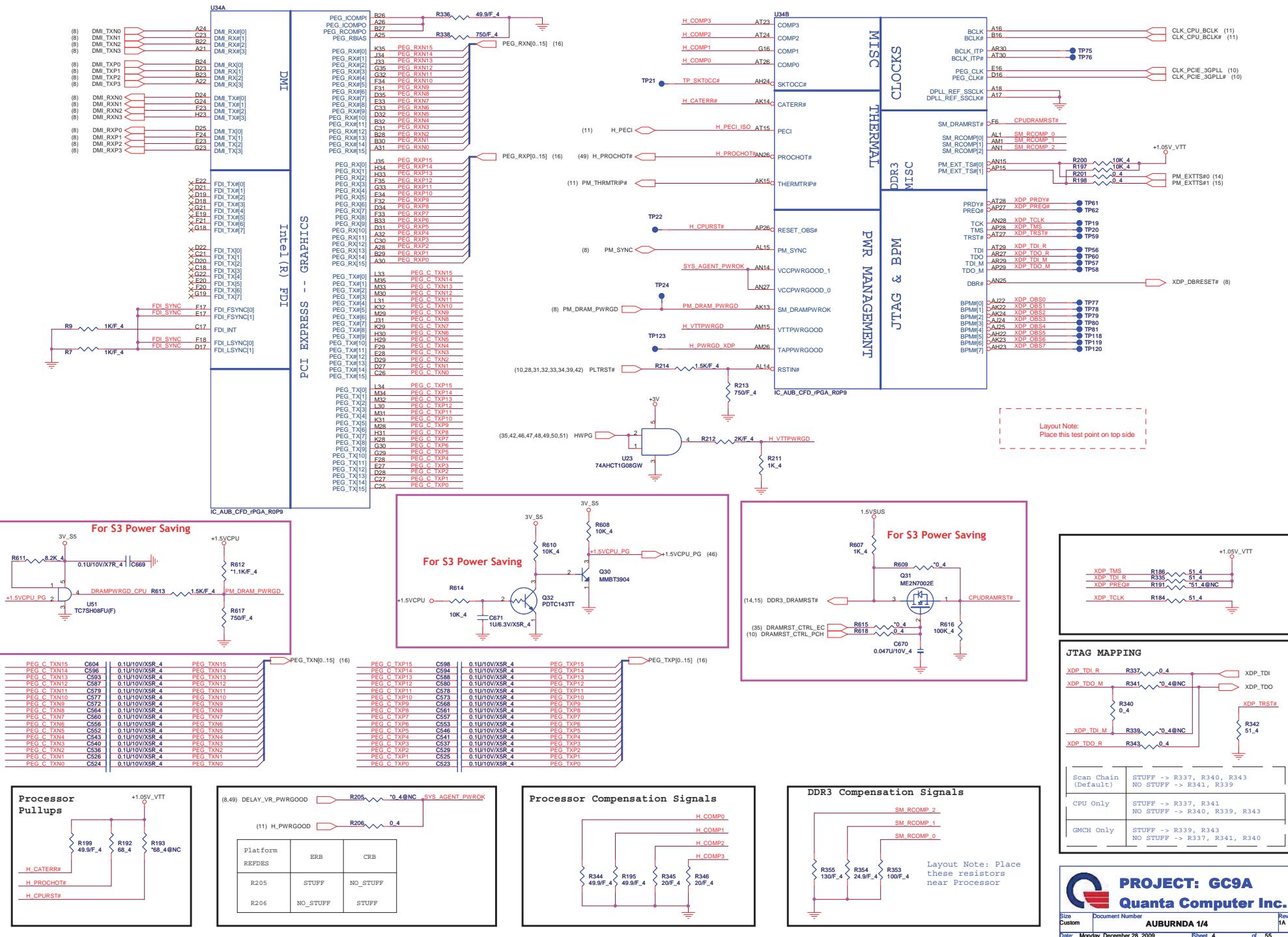


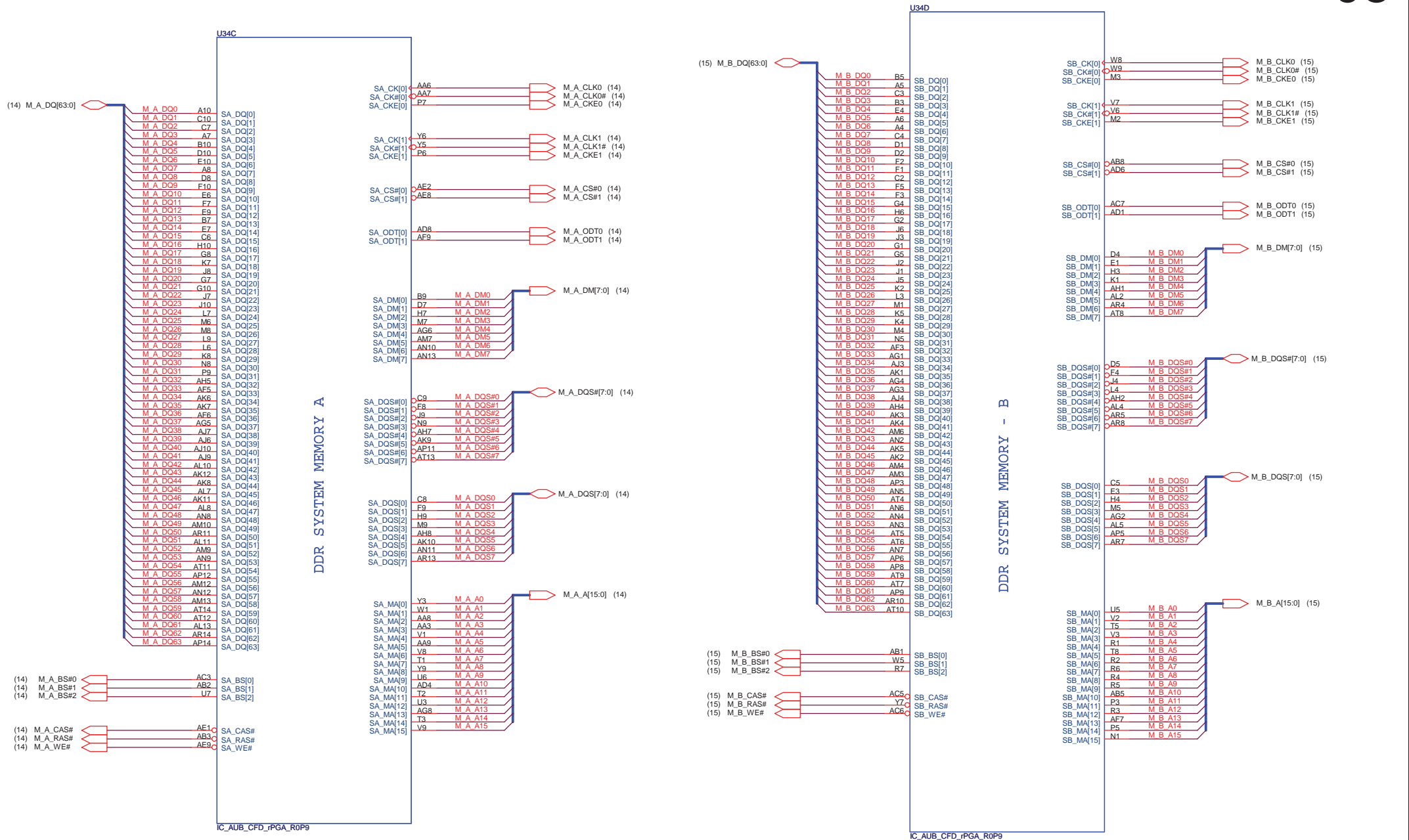
	0	1
CPU_SEL	CPU0/1=133MHz (default)	CPU0/1=100MHz



# ARRANDALE PROCESSOR (DMI, PEG, FDI)

# ARRANDALE PROCESSOR (CLK, MISC, JTAG)

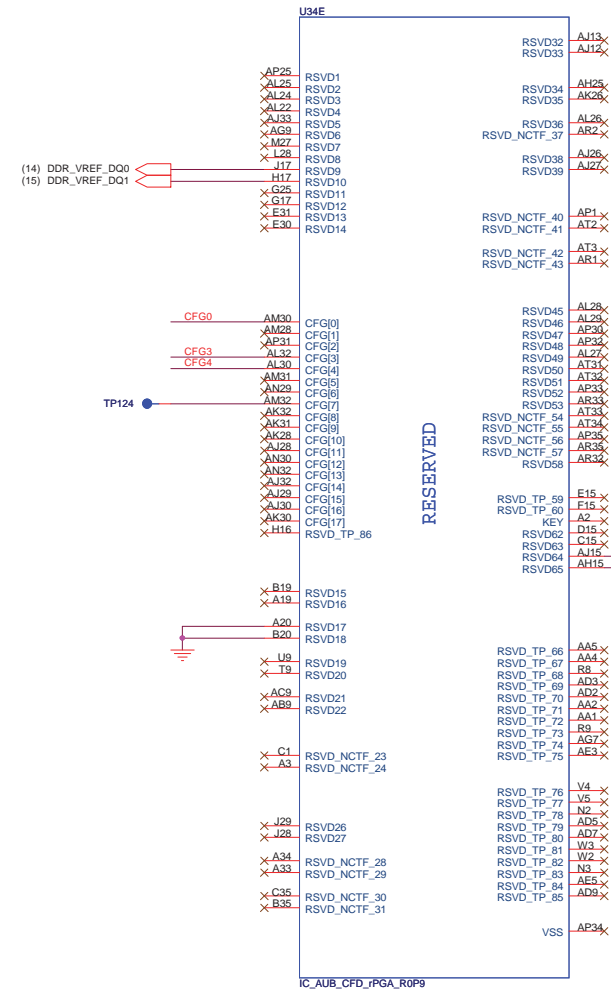




## CPU Core Power

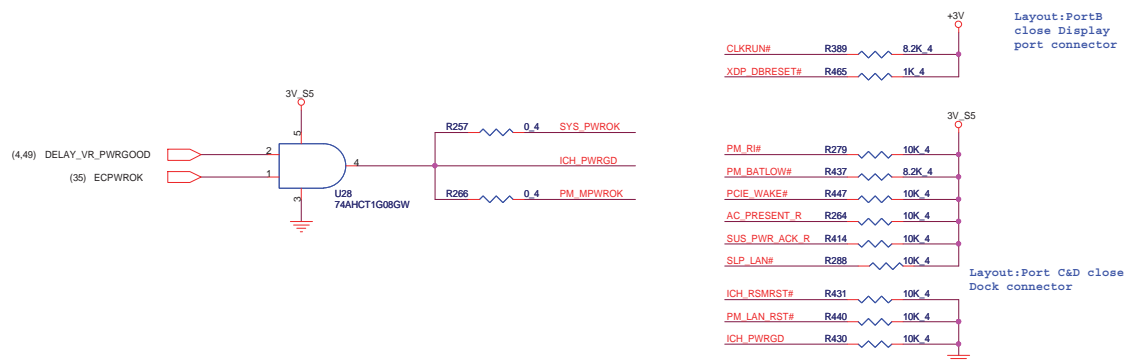
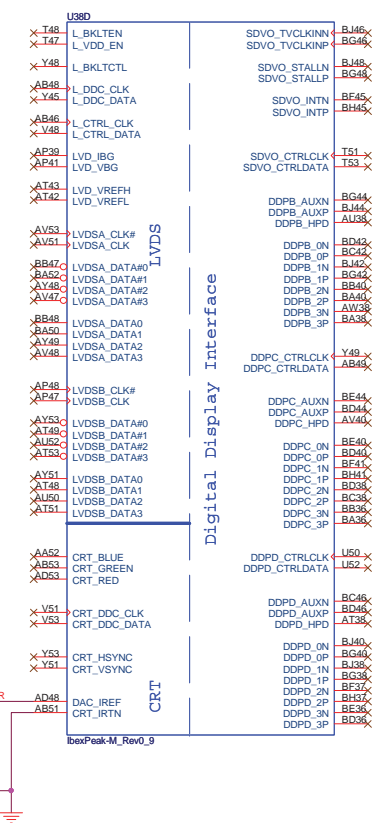






	1	0
CFG4 (Display Port Presence)	Disabled; No Physical Display Port attached to Embedded Display Port	Enabled; An external Display port device is connected to the Embedded Display port
CFG0 (PCI-Epress Configuration Select)	Single PEG	Bifurcation enabled
CFG3 (PCI-Epress Static Lane Reversal)	Normal Operation	Lane Numbers Reversed

## IBEX PEAK-M (LVDS,DDI)



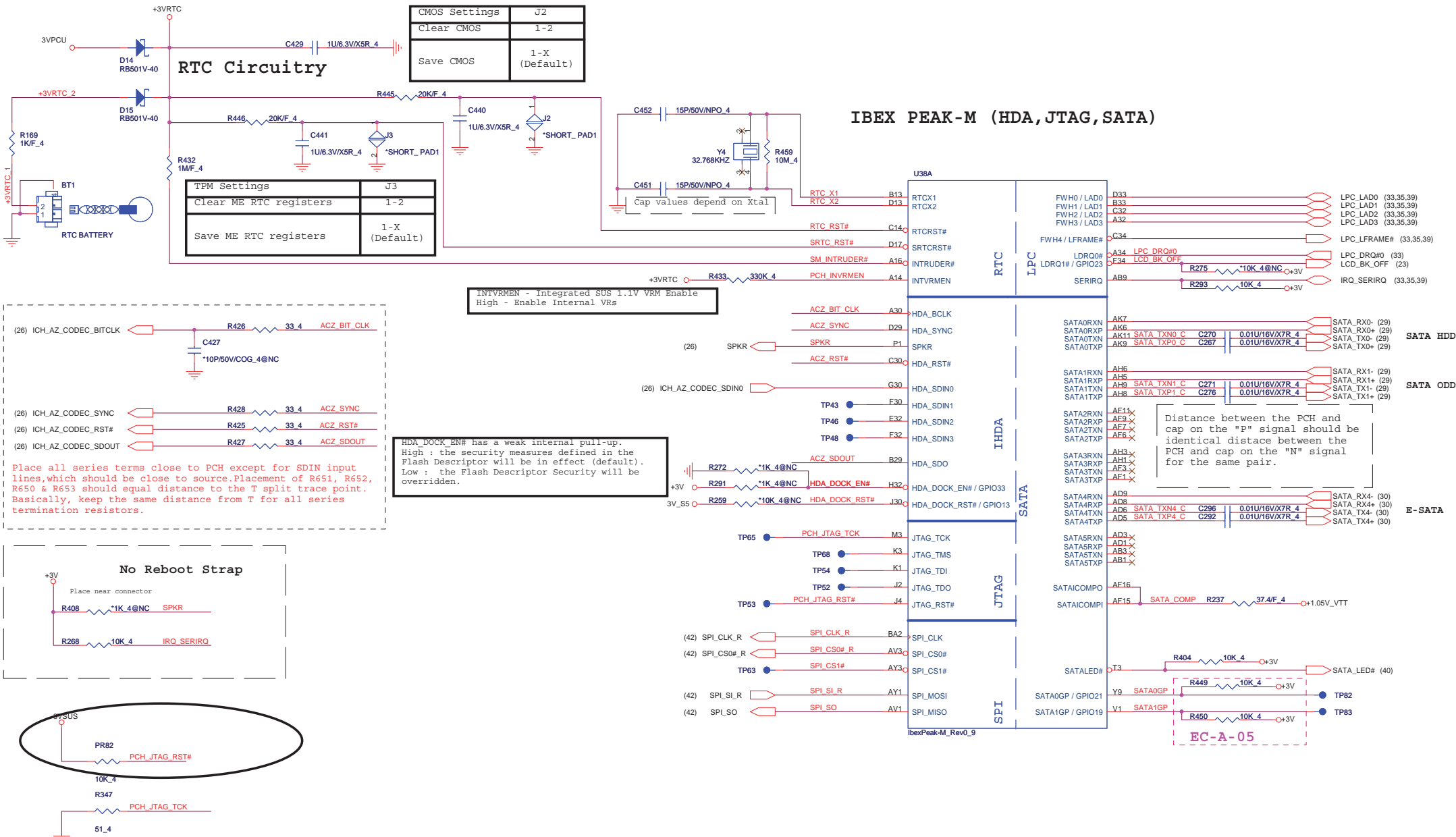


## RTC Circuitry

CMOS Settings	J2
Clear CMOS	1-2
Save CMOS	1-X (Default)

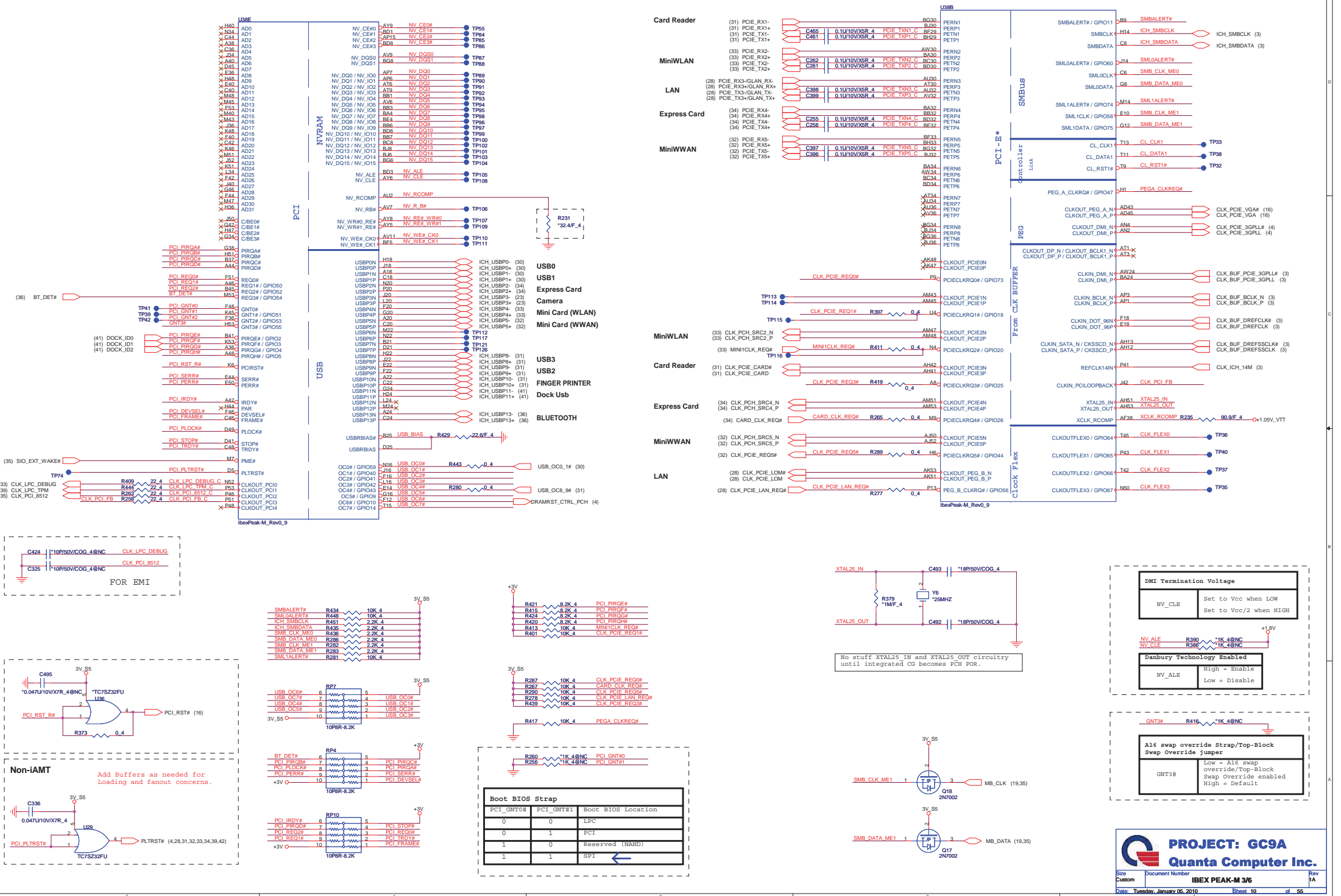
TPM Settings	J3
Clear ME RTC registers	1-2
Save ME RTC registers	1-X (Default)

## IBEX PEAK-M (HDA, JTAG, SATA)



IBEX PEAK-M (PCI,USB,NVRAM)

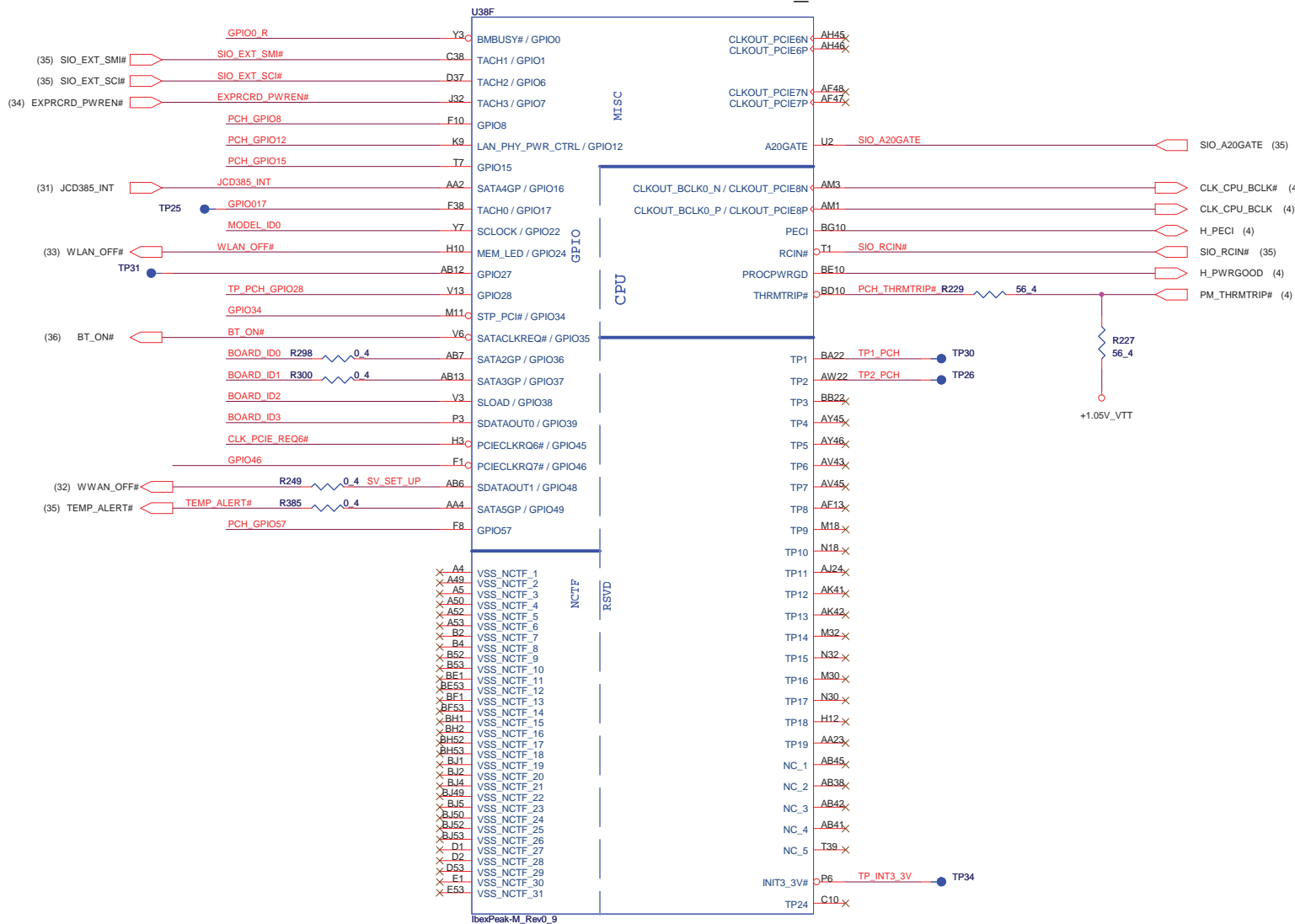
IBEX PEAK-M (PCI-E,SMBUS,CLK)



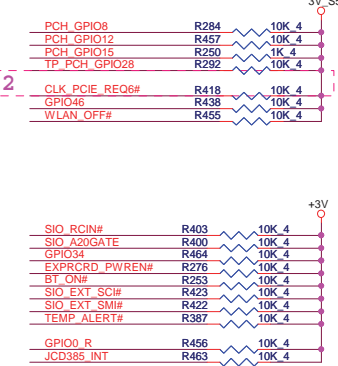
# IBEX PEAK-M (GPIO, VSS\_NCTF, RSVD)

13,14,15,17,23,24,25,26,28,29,30,31,32,33,34,35,36,38,39,40,41,42,44,46,47,48,49,51)  
(4,8,9,10,12,30,33,42,44)  
(3,4,6,8,9,10,12,44,47,49) +3V  
3V\_S5  
+1.05V\_VTT

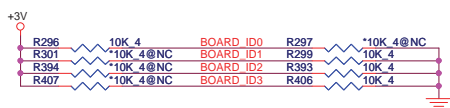
11



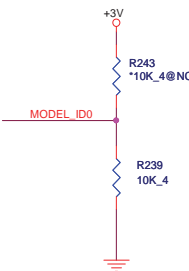
EC-A-02



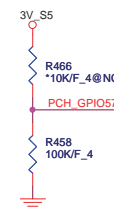
Board ID For Function	ID3 GPIO39	ID2 GPIO38	ID1 GPIO37	ID0 GPIO36
SDV	0	0	0	0
SIV	0	0	0	1
SIT	0	0	1	0
SVT	0	0	1	1
SOVP	0	1	0	0



Model ID	MODEL_ID0
14 "	0
15 "	1



TPM physical presence	
PCH_GPIO57	Low: Default

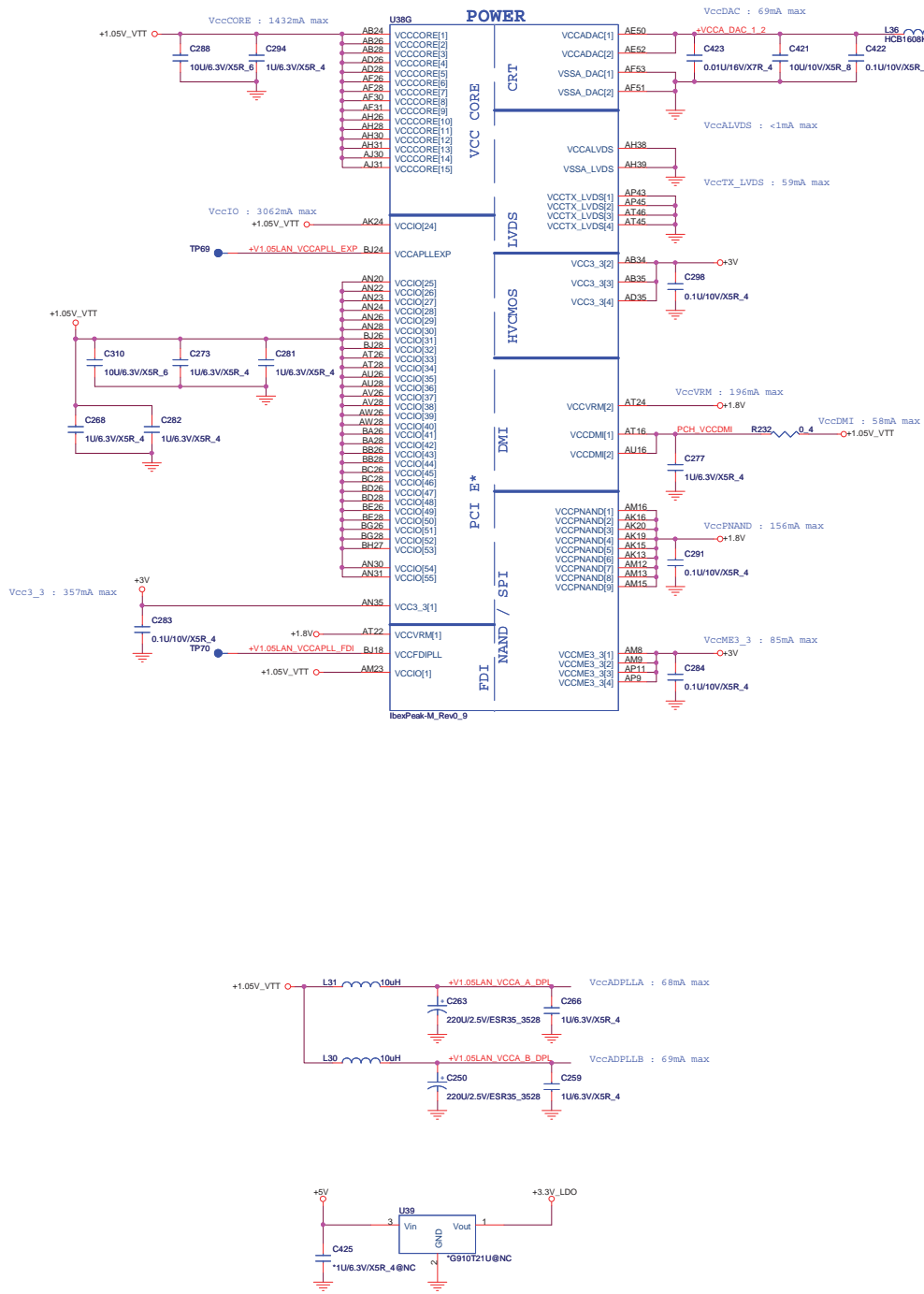


SV_SET_UP	1-X High = Strong (Default)
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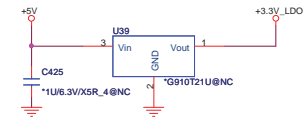
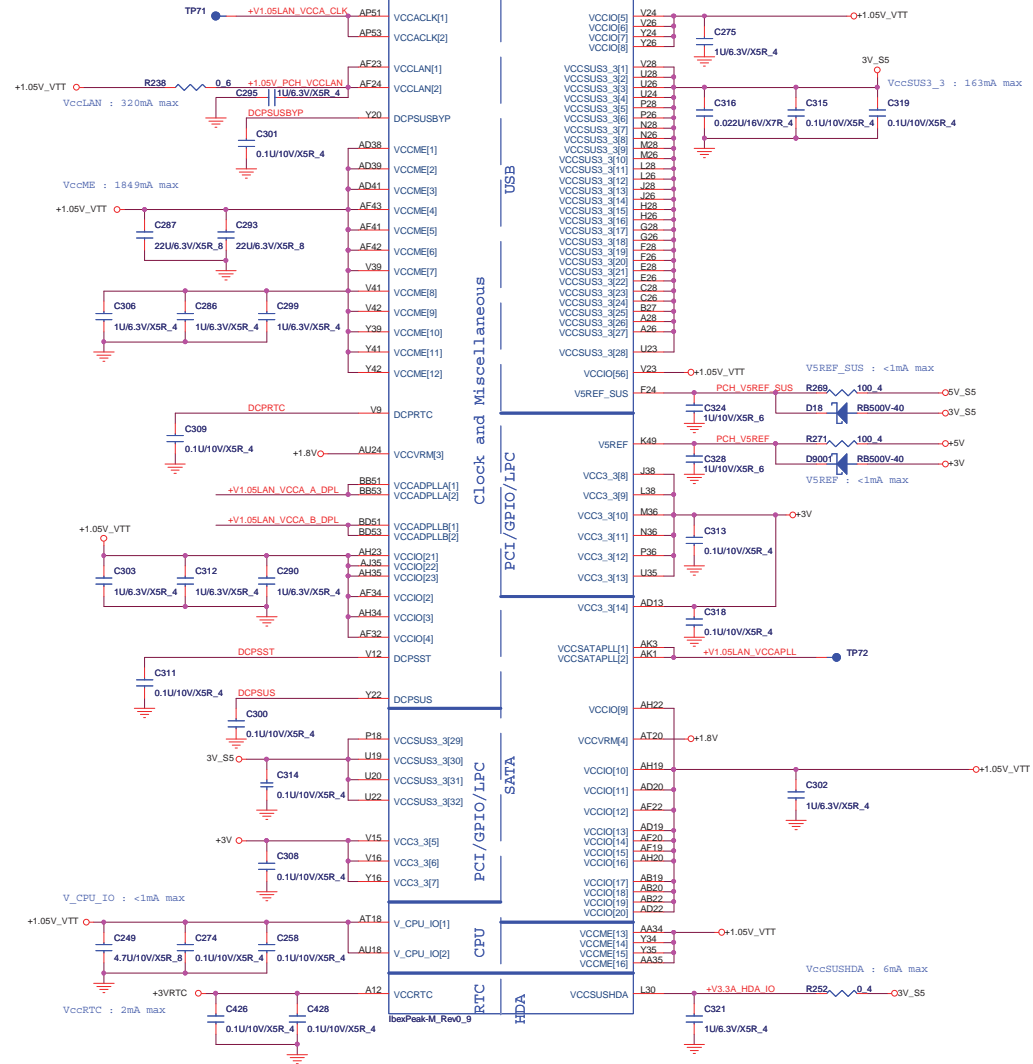
**PROJECT: GC9A**  
**Quanta Computer Inc.**

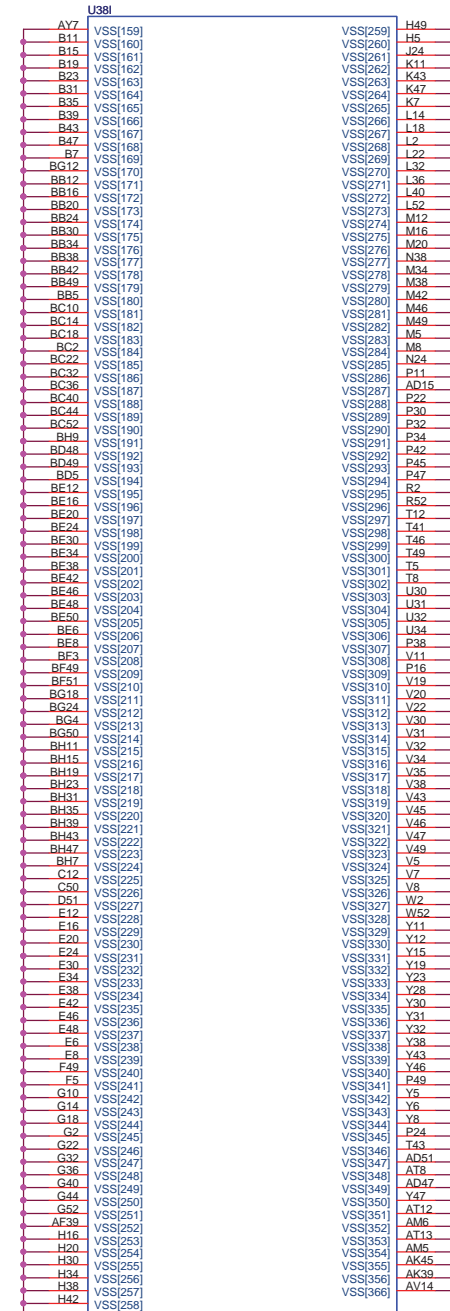
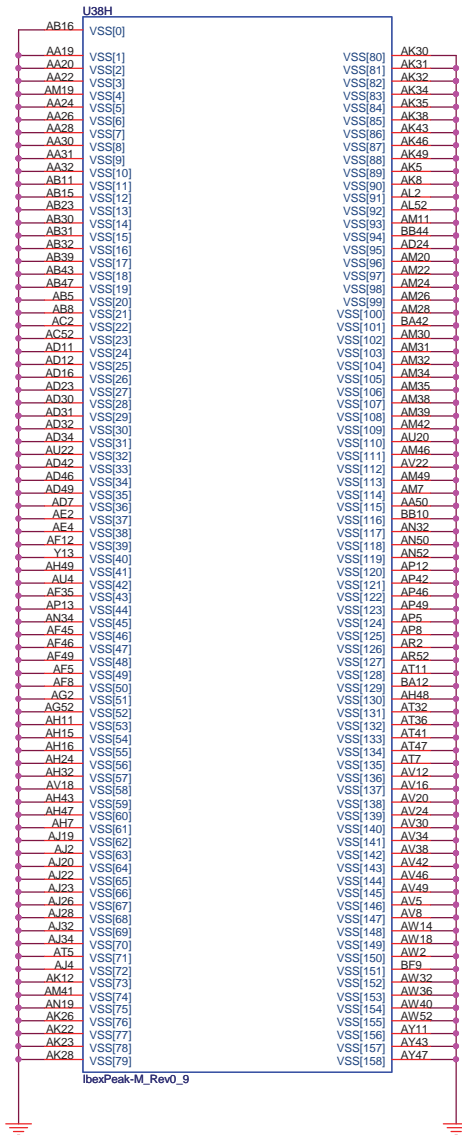
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Document Number: IBEX PEAK-M 4/6  
Rev: 1A  
Date: Monday, January 04, 2010  
Sheet: 11 of 55

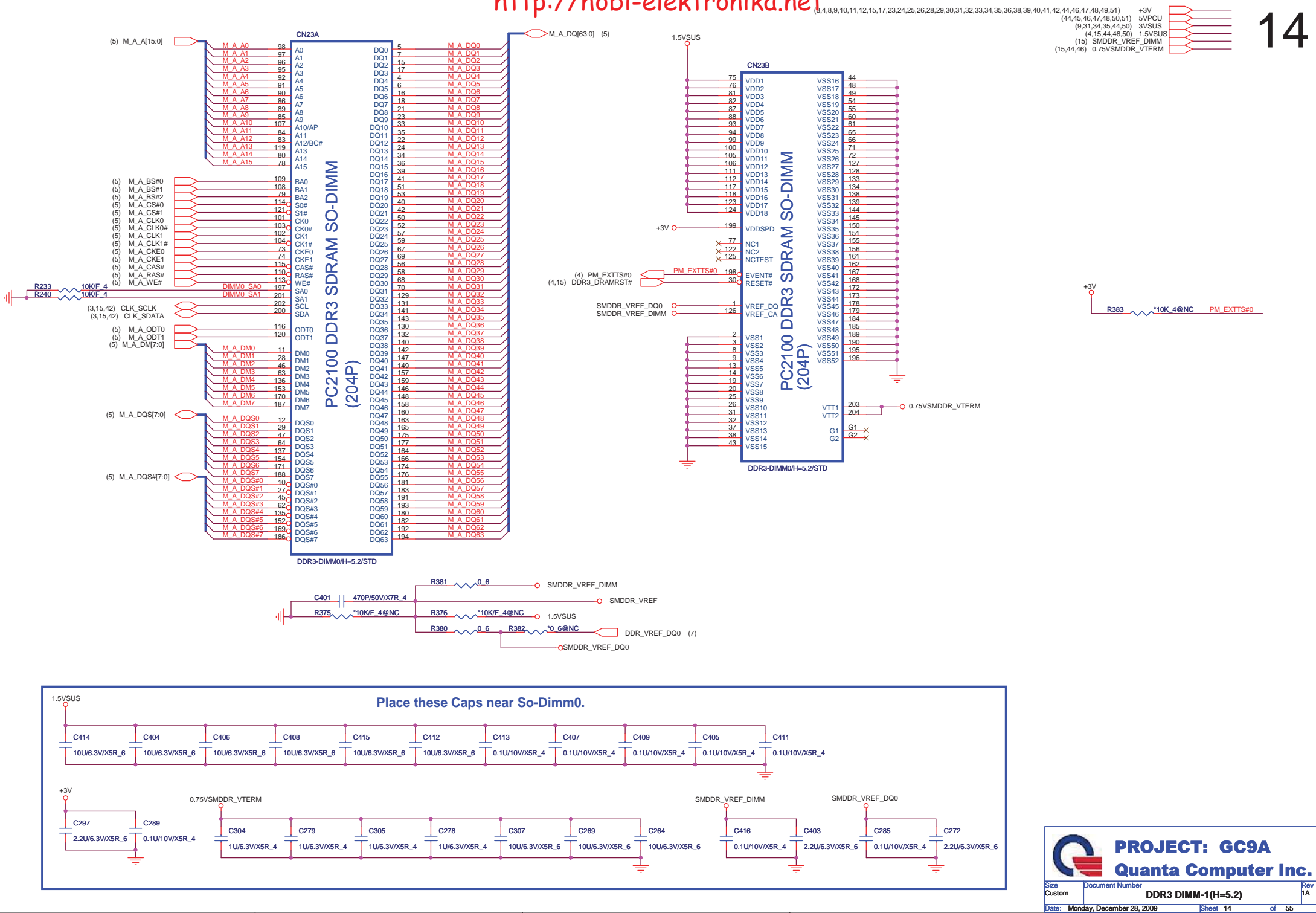
## POWER



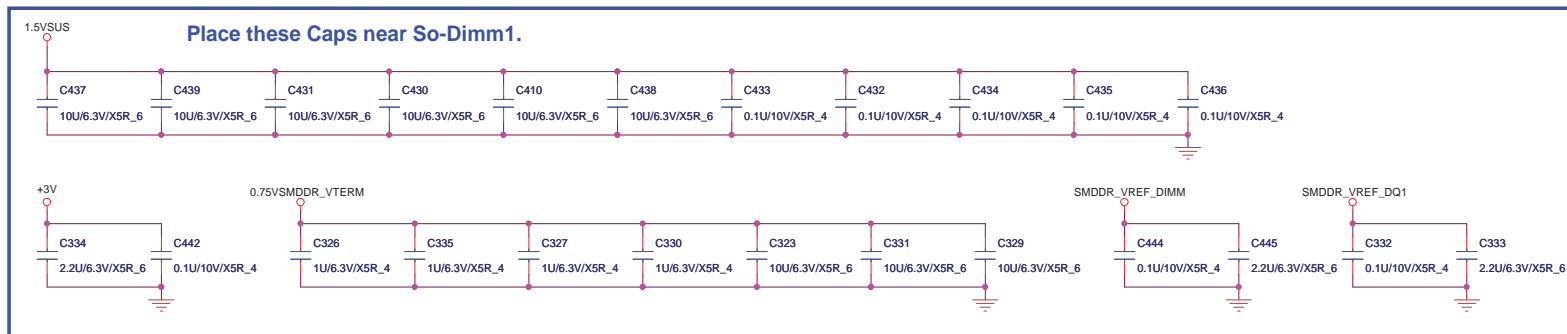
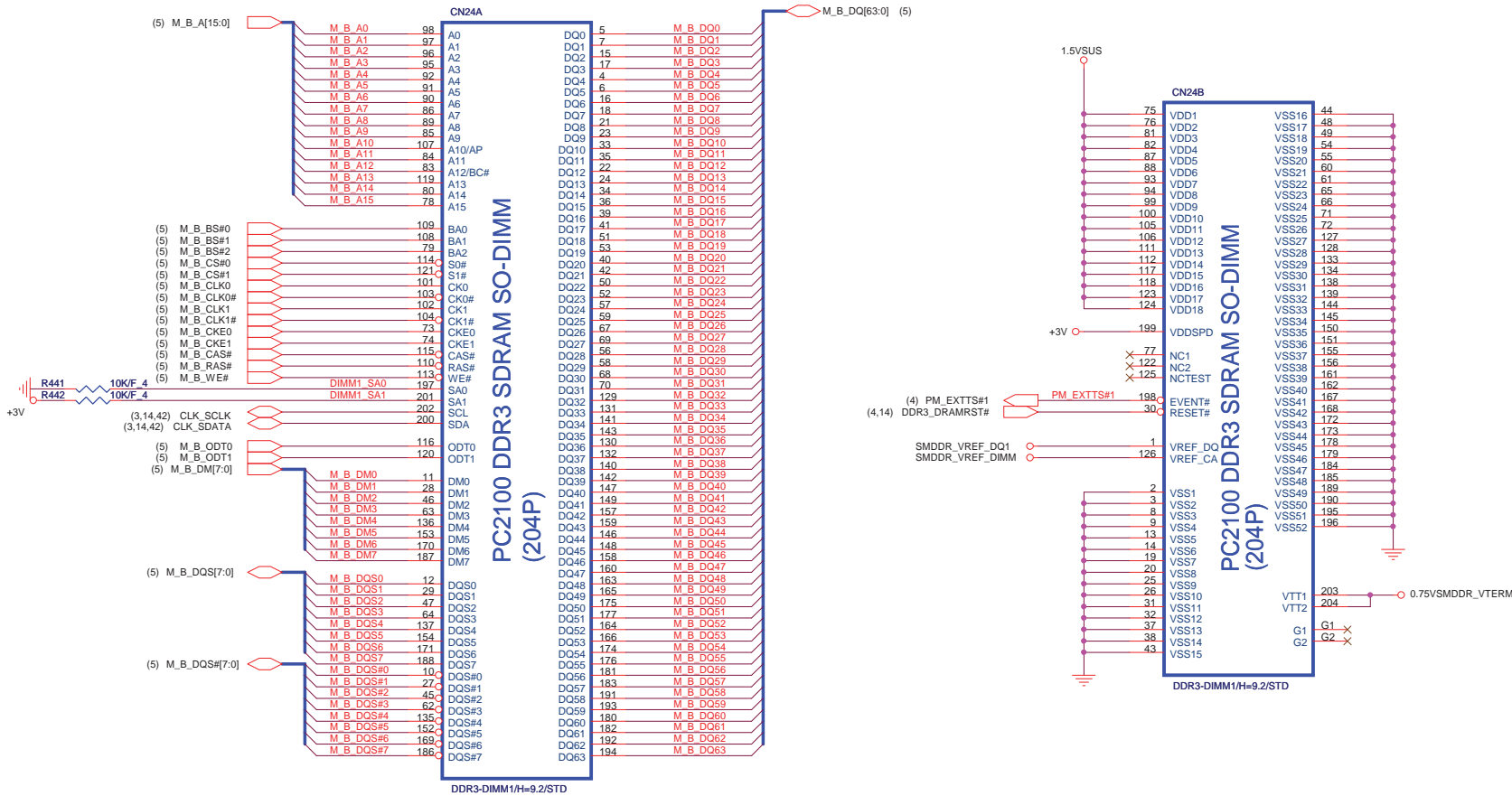
us







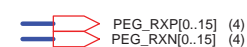
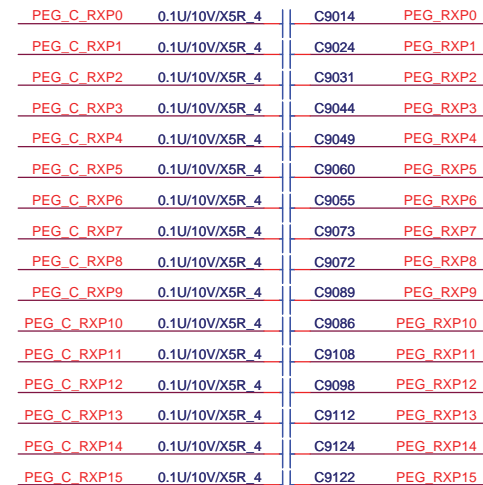
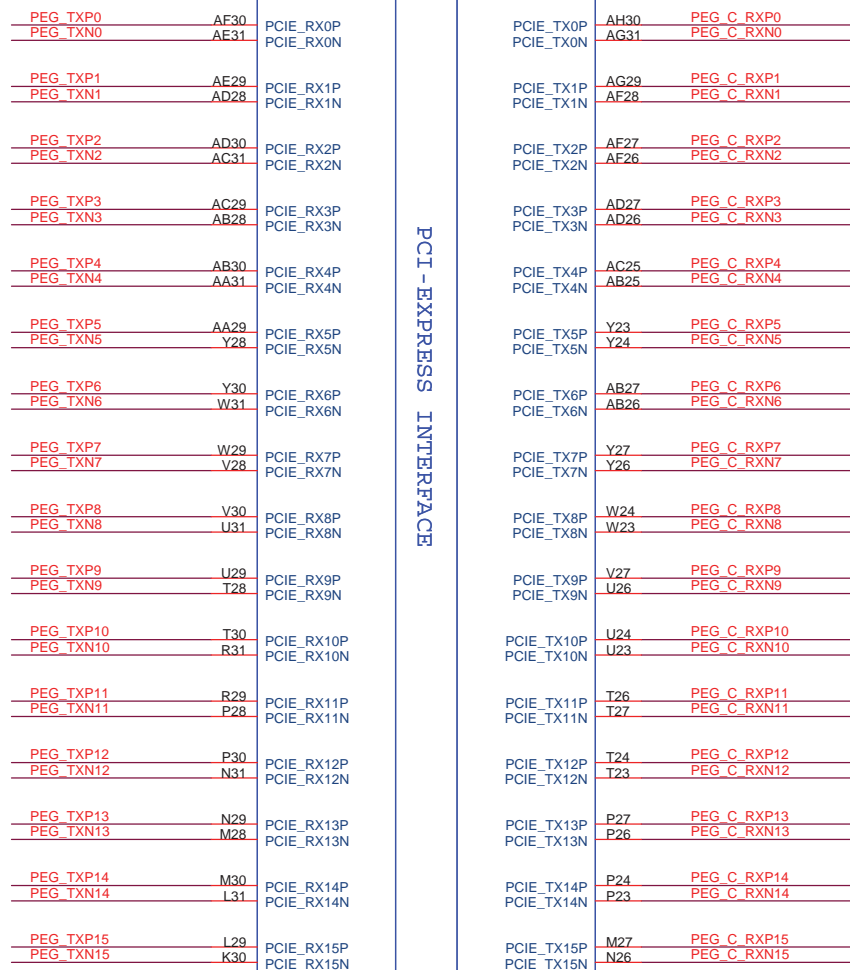
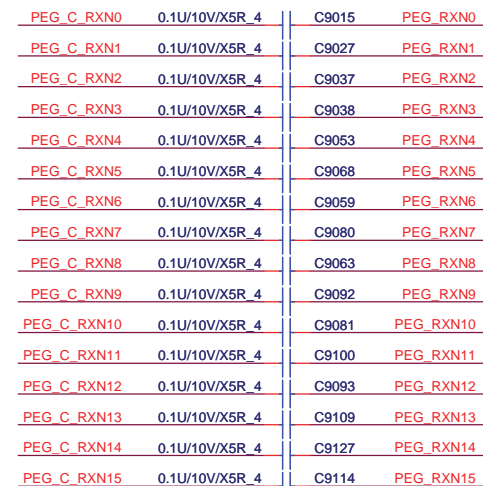






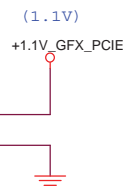
(4) PEG\_TXP[0..15]  
(4) PEG\_TXN[0..15]

(18,21,22,44,50) +1.1V\_GFX\_PCIE

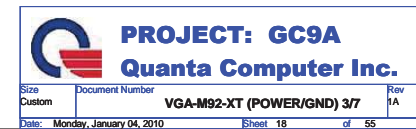
PEG\_RXP[0..15] (4)  
PEG\_RXN[0..15] (4)

100 MHz (+/-300 ppm) input frequency,  
0-0.7 V single-ended swing.  
clock must be provided less than 400ns  
after CLKREQ# is asserted

M92-S2/M92-XT

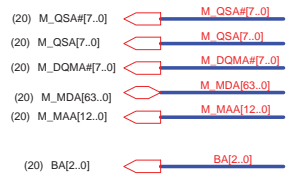
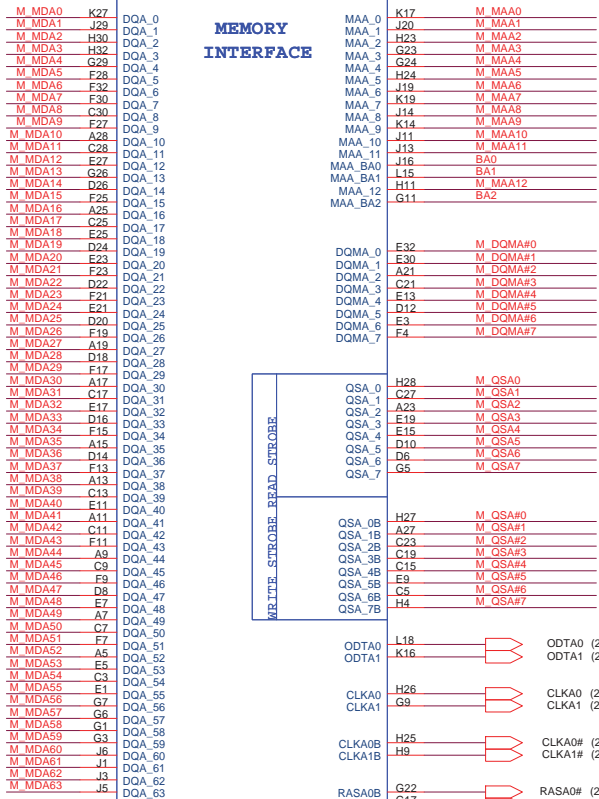


Size Custom	Document Number <b>VGA-M92-XT (IO) 2/7</b>	Rev 1A
Date: Monday, December 28, 2009	Sheet 17	of 55

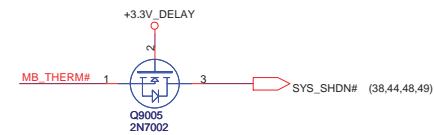
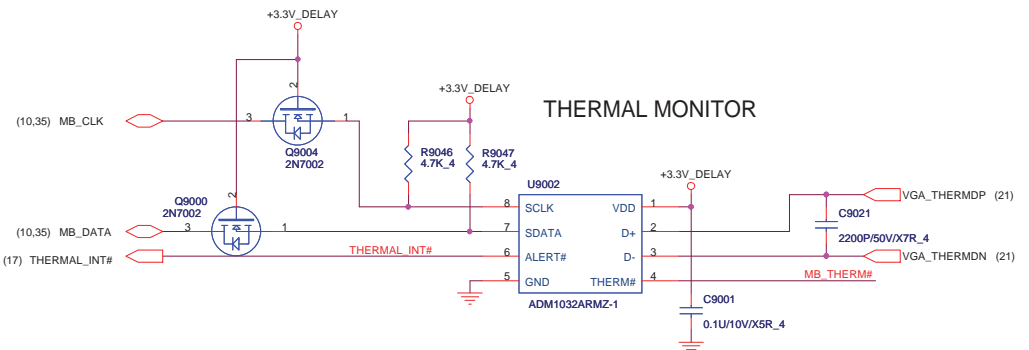
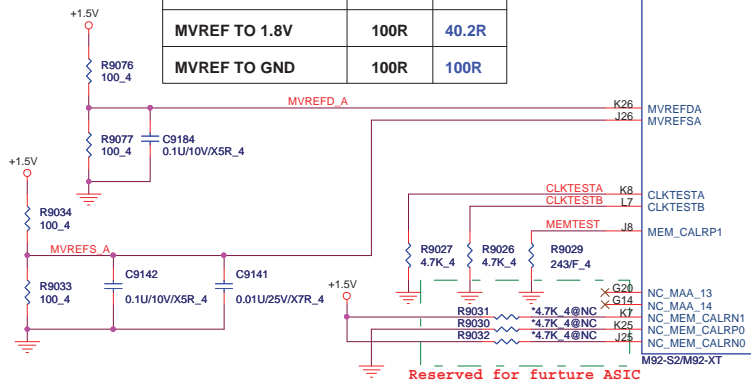


U9003C PART 3 OF 10

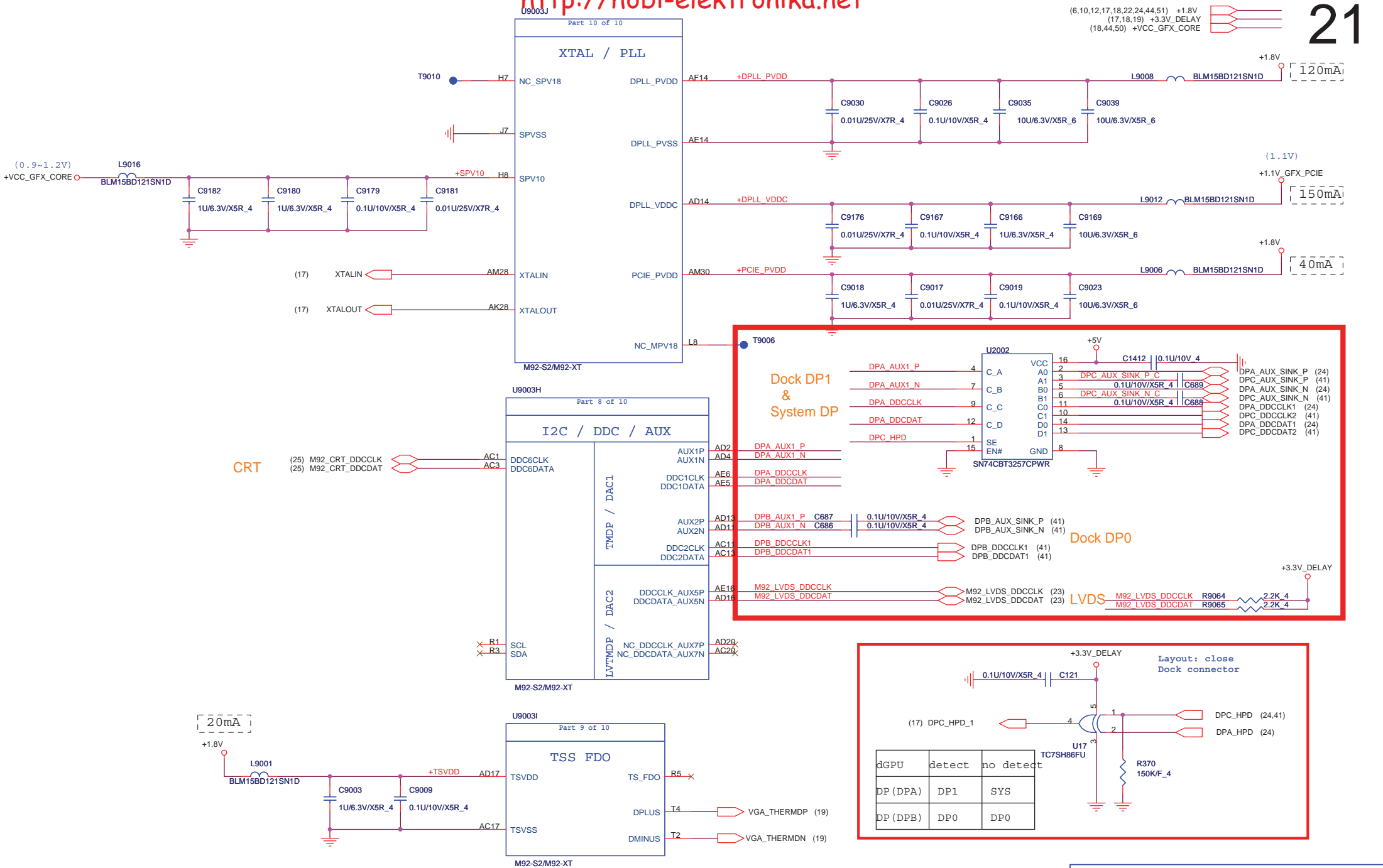
## MEMORY INTERFACE



DIVIDER RESISTORS	DDR3	GDDR3
MVREF TO 1.8V	100R	40.2R
MVREF TO GND	100R	100R

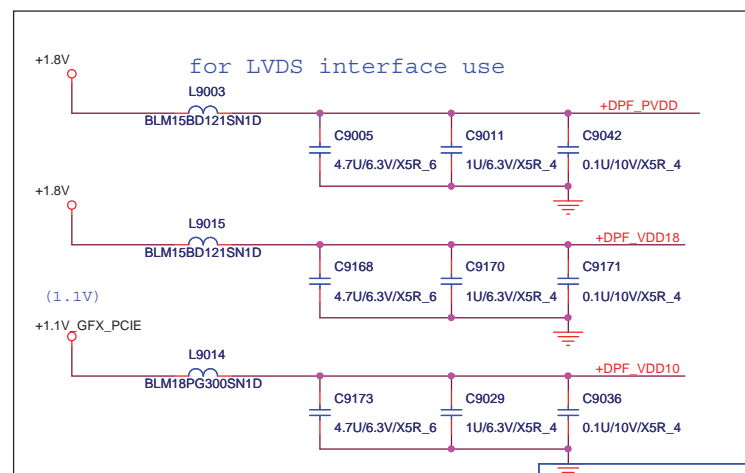
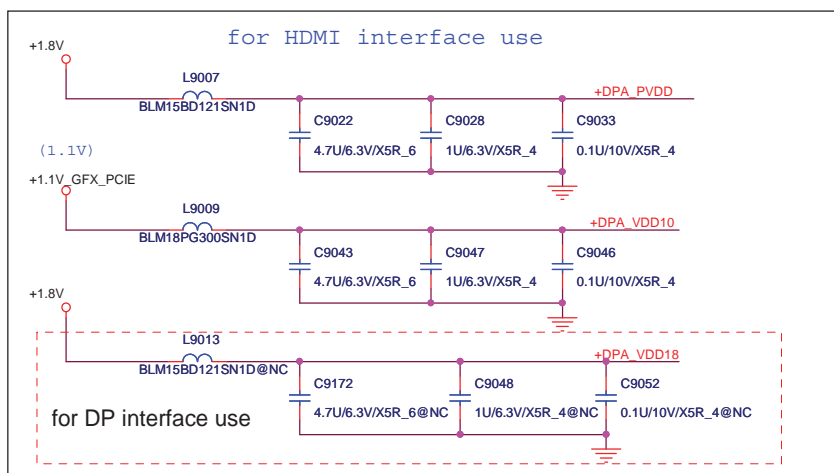
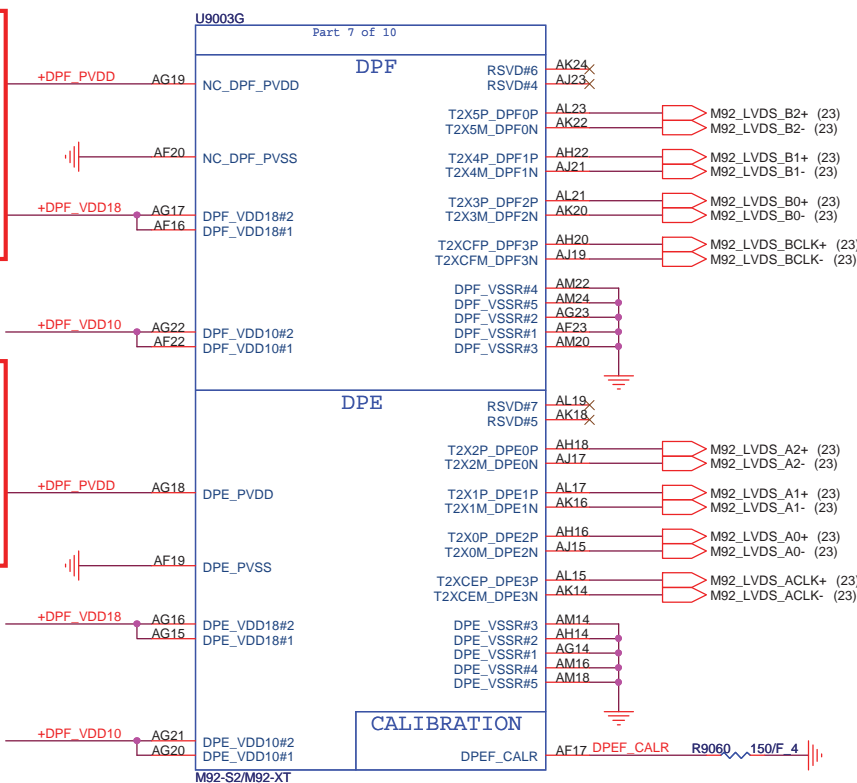
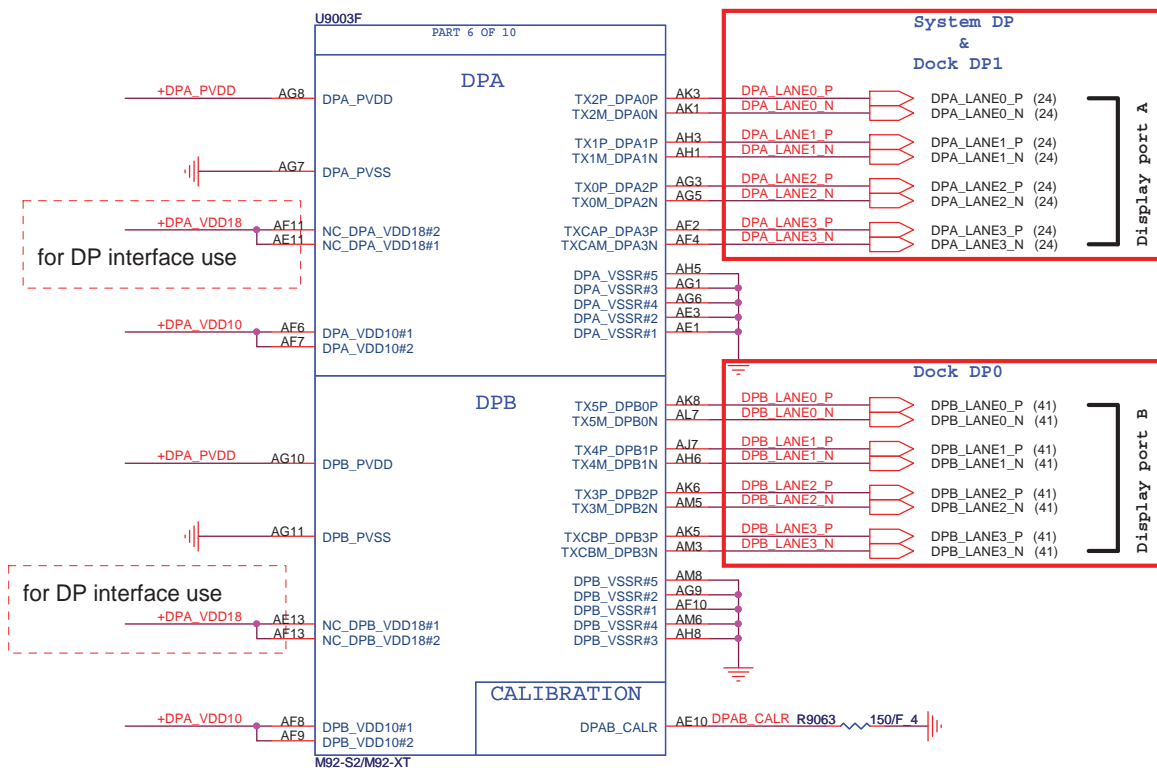






# TMDP(HDMI) INTERFACE

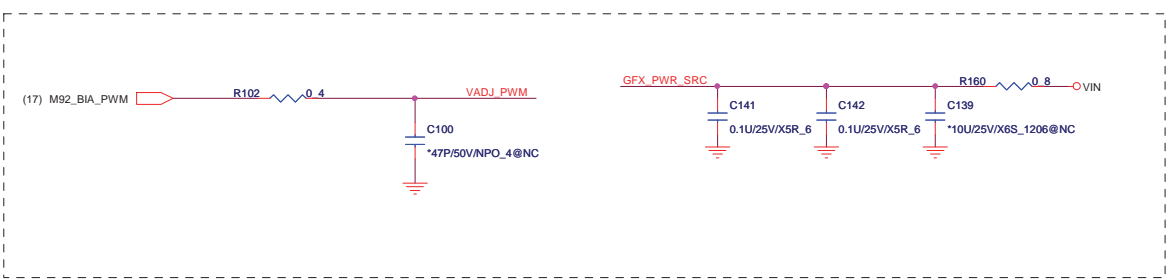
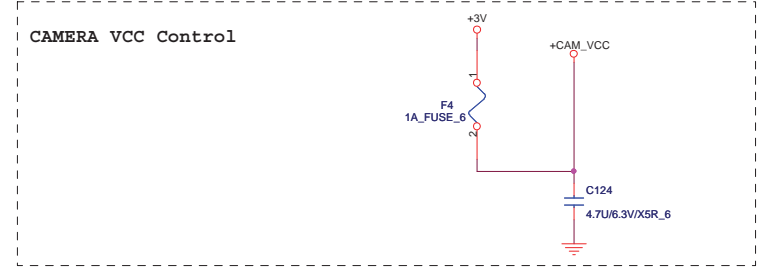
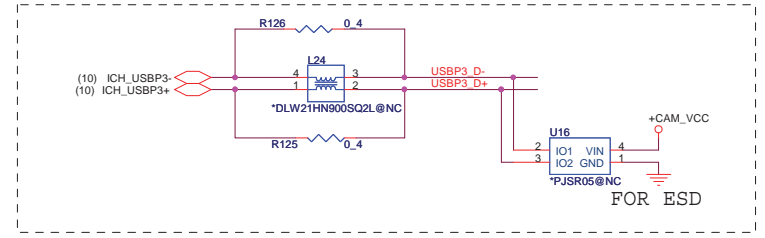
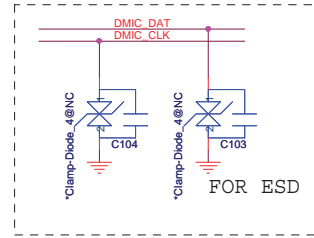
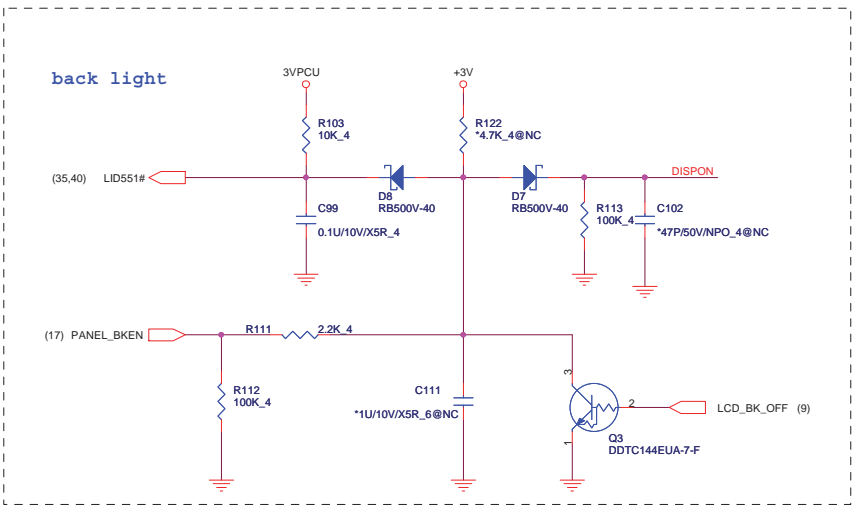
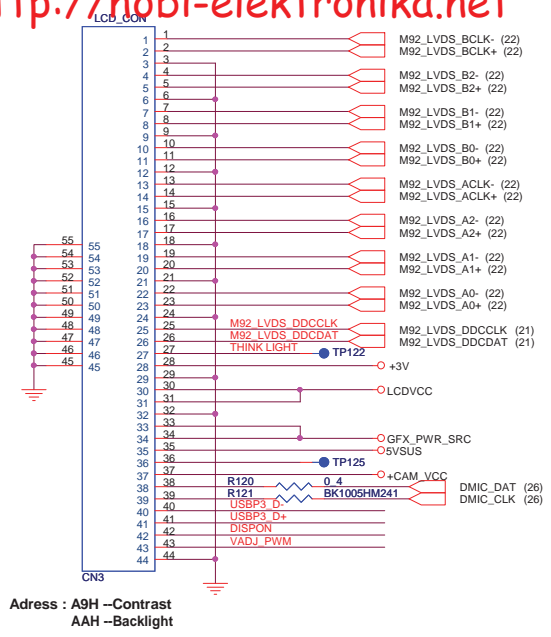
# LVDS INTERFACE



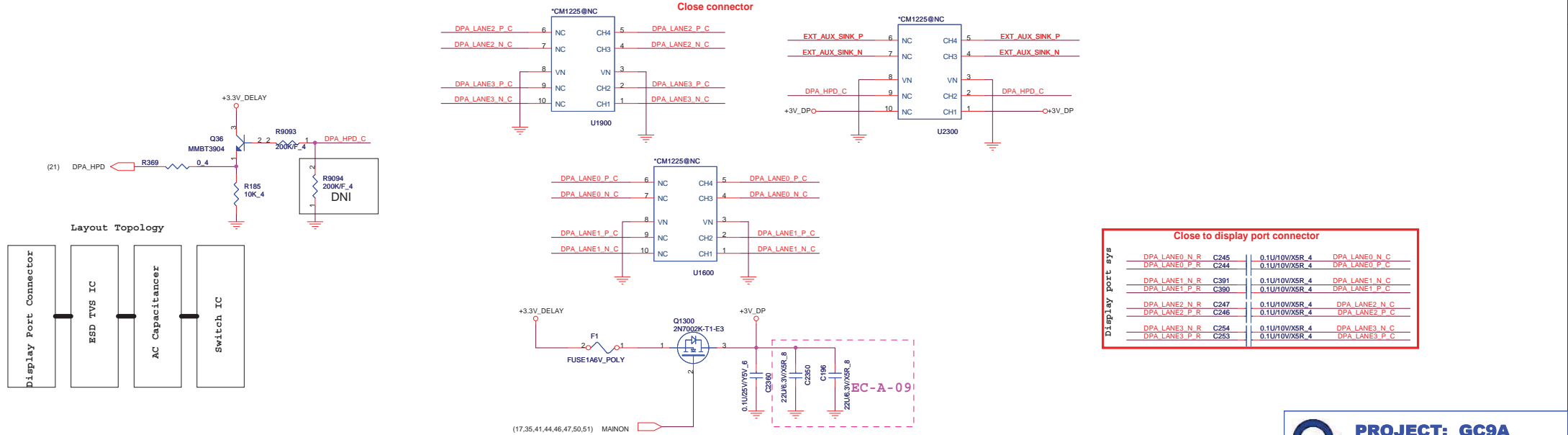
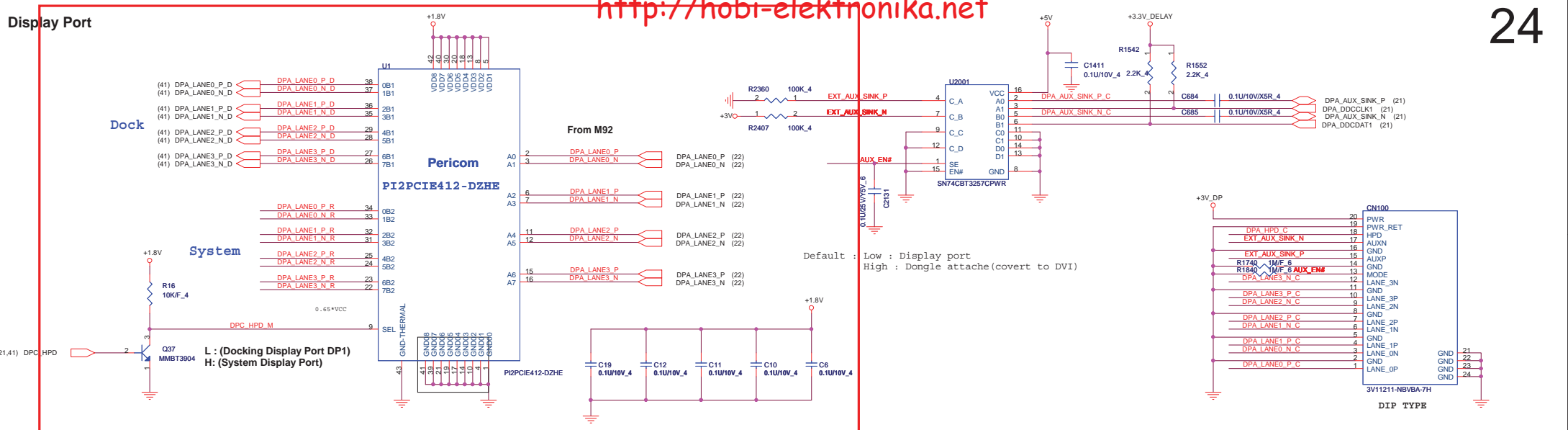
**PROJECT: GC9A**  
**Quanta Computer Inc.**

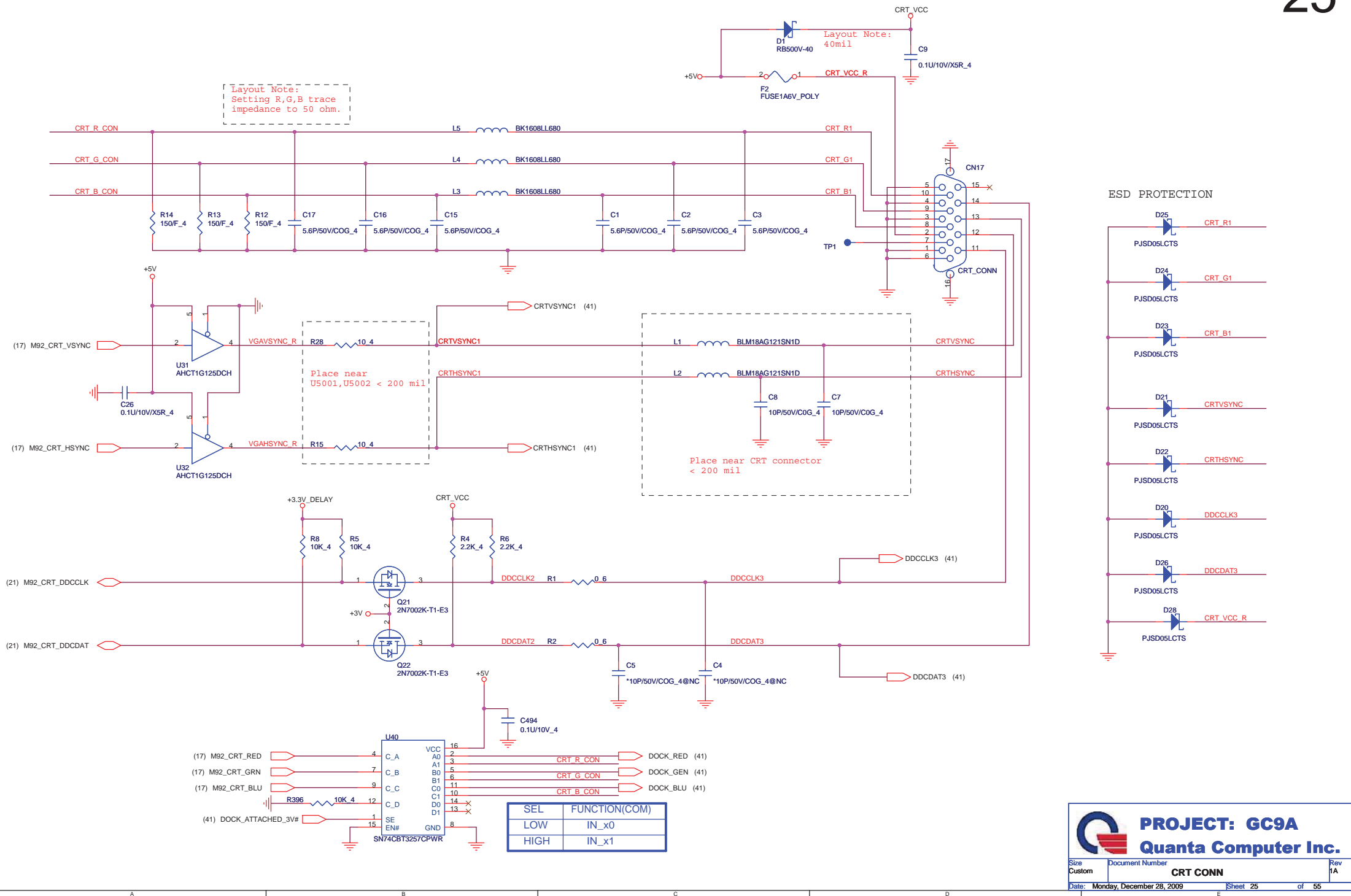
Size Custom	Document Number <b>VGA-M92-XT (TMDP I/F) 7/7</b>	Rev 1A
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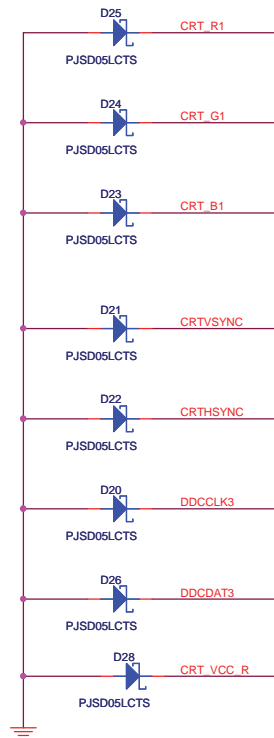


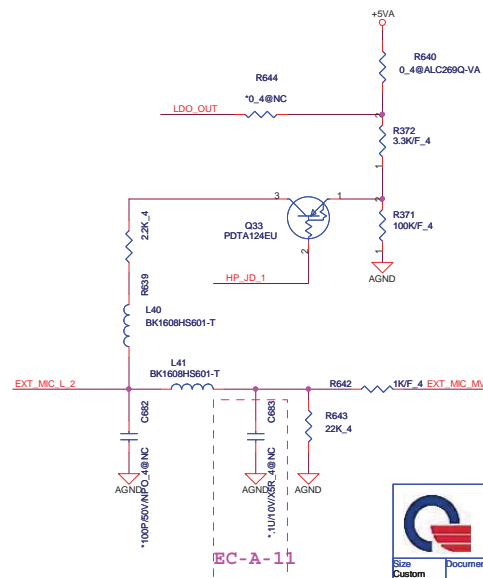
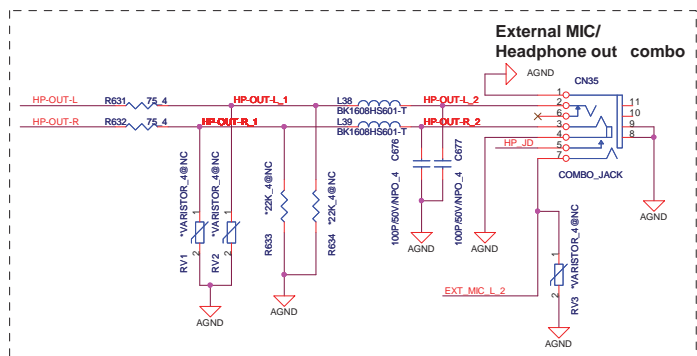
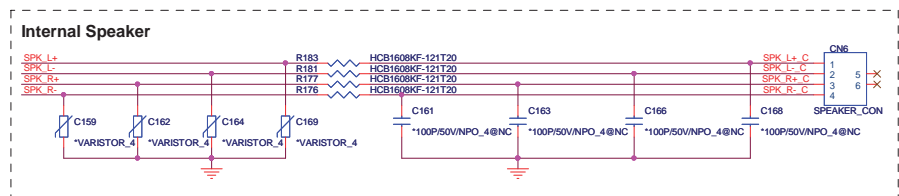
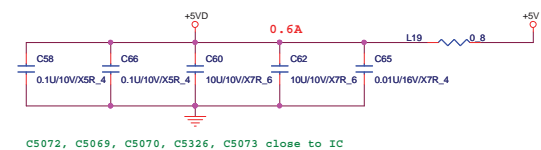
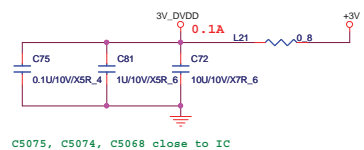
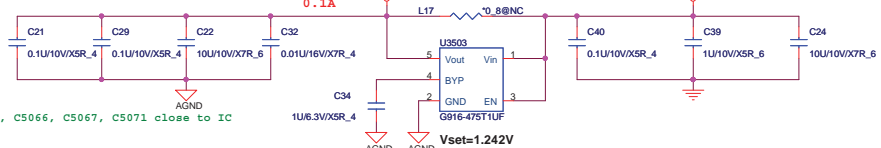
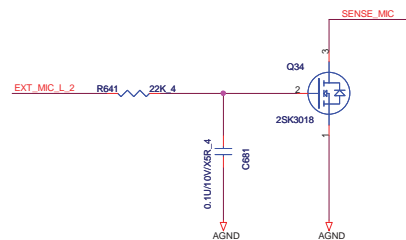
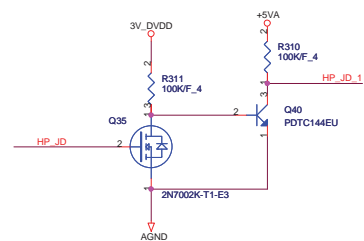
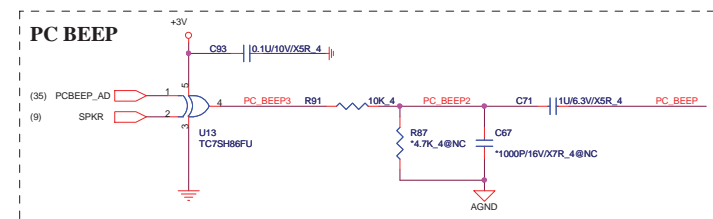
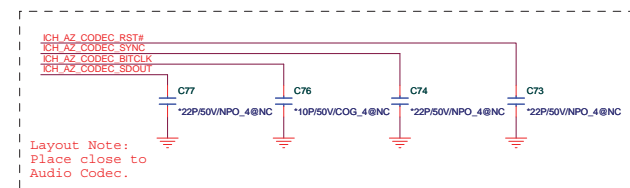
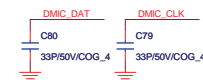
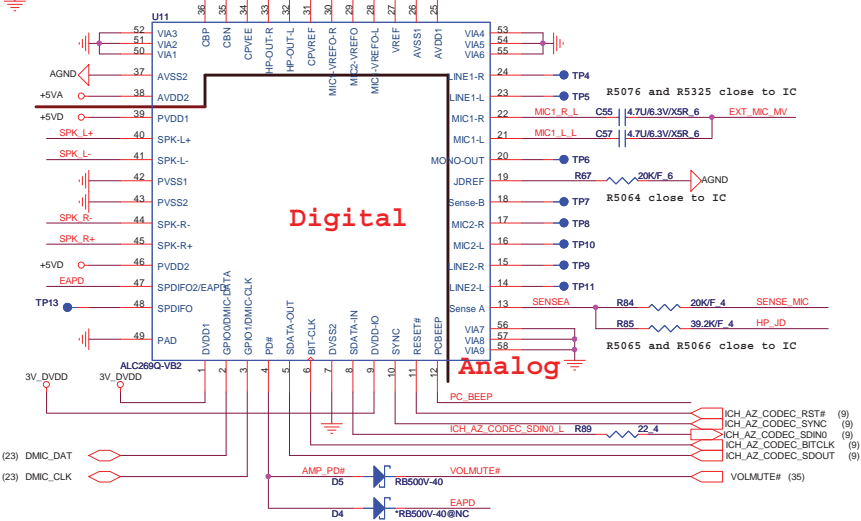
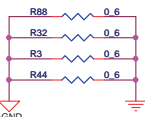
Display Port



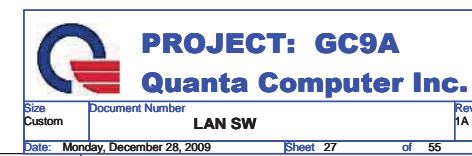


# ESD PROTECTION





	VA	VB
R310	3.3K	2K
R640	ASM	
R644		ASM



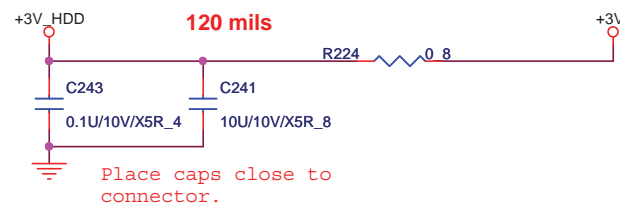
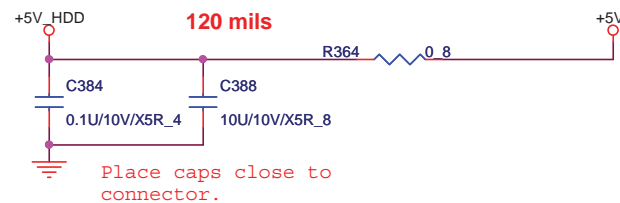
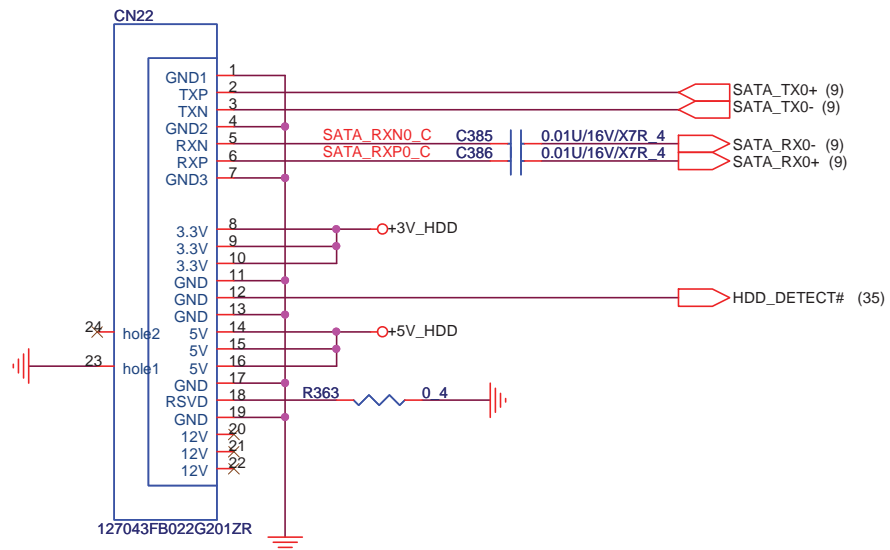


## SATA Connector.

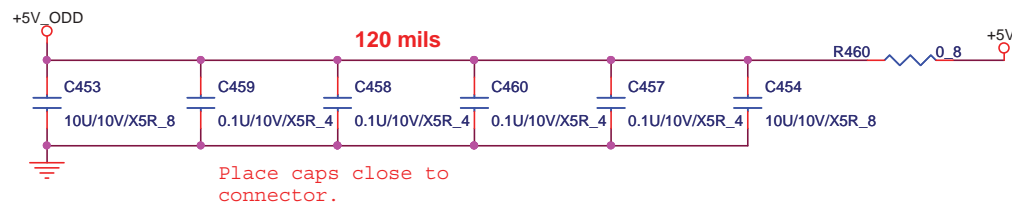
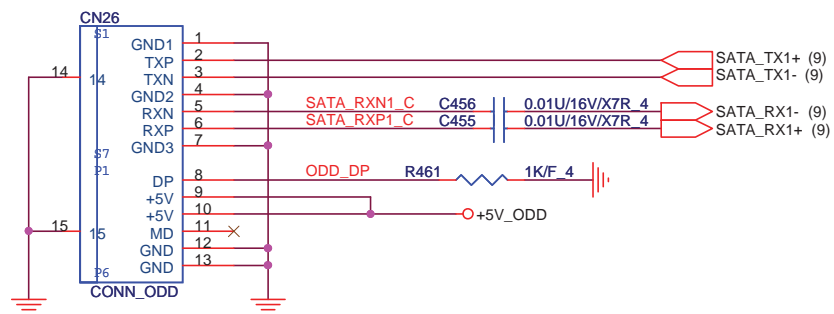
(12,18,21,24,25,26,35,37,38,44) +5V  
(3,4,8,9,10,11,12,14,15,17,23,24,25,26,28,30,31,32,33,34,35,36,38,39,40,41,42,44,46,47,48,49,51) +3V



29

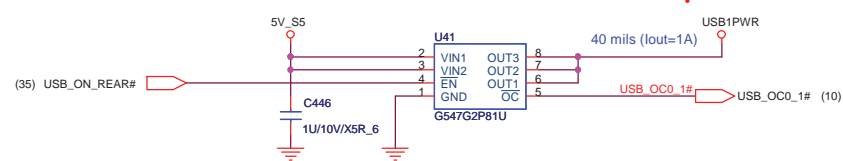


## ODD Connector





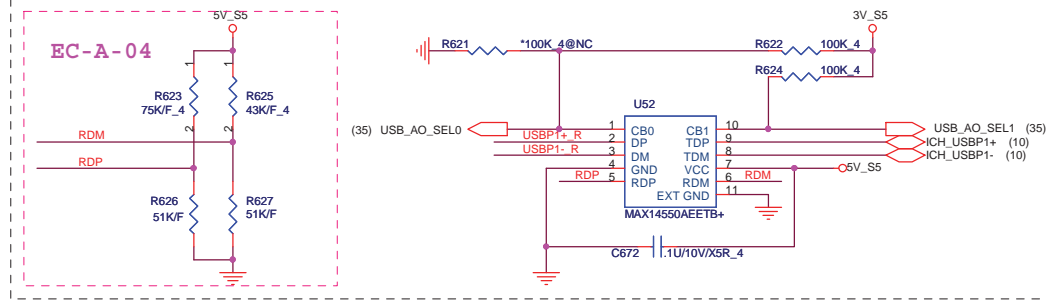
# USBX1



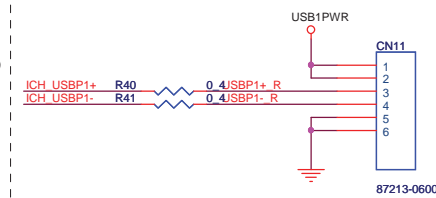
(12,31,44) 5V\_S5 +3V (3,4,8,9,10,11,12,14,15,17,23,24,25,26,28,29,31,32,33,34,35,36,38,39,40,41,42,44,46,47,48,49,51)

30

## Support Black-berry function



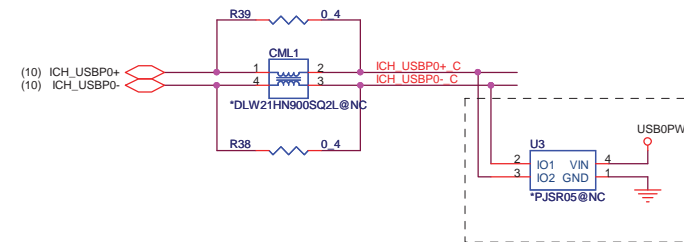
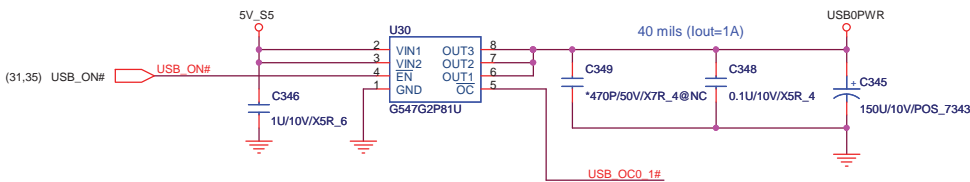
## USB X1----> Wire to board conn



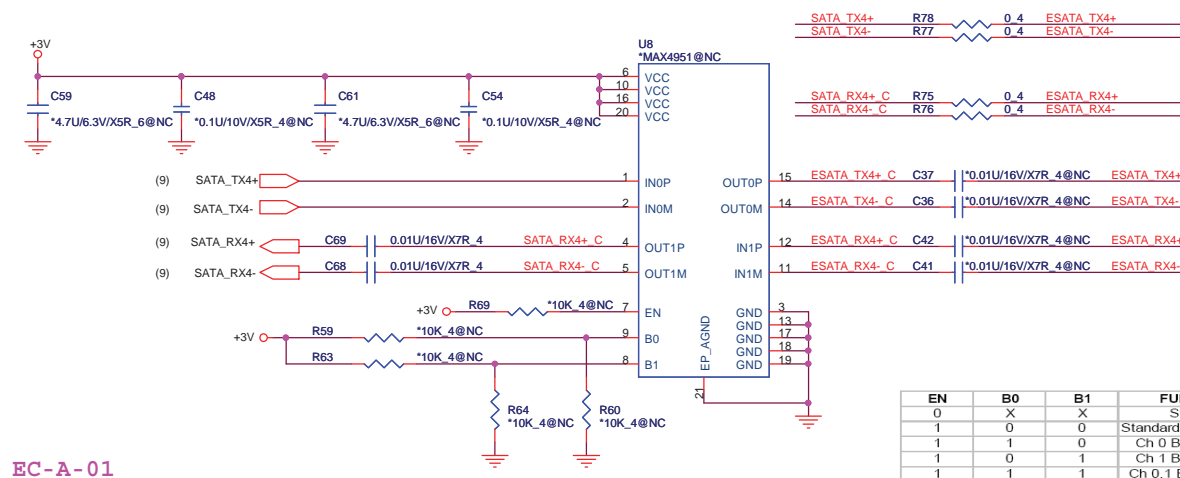
## USB 1

	w/ AOU3	w/o AOU3
R40	NO ASM	ASM
R41	NO ASM	ASM
U52	ASM	NO ASM
R622	ASM	NO ASM
R624	ASM	NO ASM
R626	ASM	NO ASM
C676	ASM	NO ASM

## USB + E-SATA

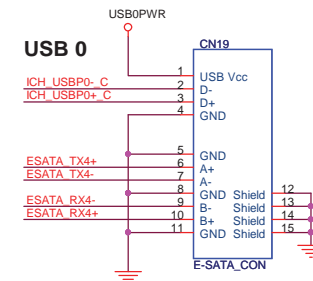
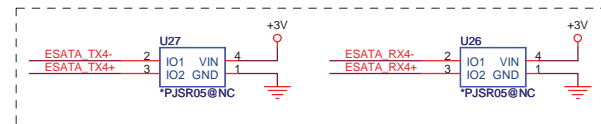


## E-SATA RE-DRIVER



## EC-A-01

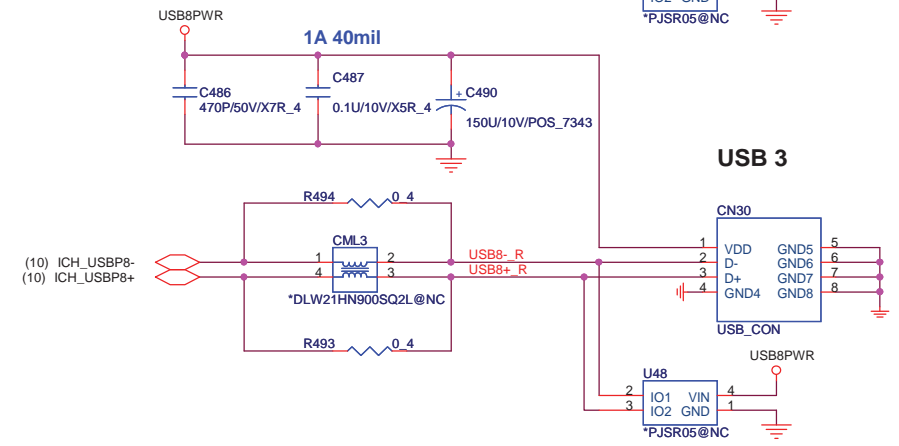
EN	B0	B1	FUNCTION
0	X	X	Standby
1	0	0	Standard SATA Output
1	1	0	Ch 0 Boost Output
1	0	1	Ch 1 Boost Output
1	1	1	Ch 0,1 Boost Output



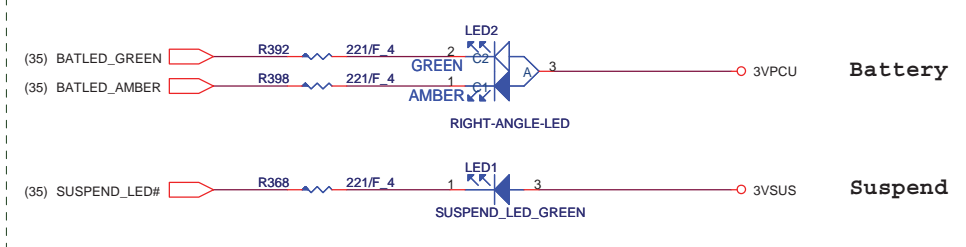
**PROJECT: GC9A**  
**Quanta Computer Inc.**

Size: Custom Document Number: USB X1/USB+ESATA Rev 1A

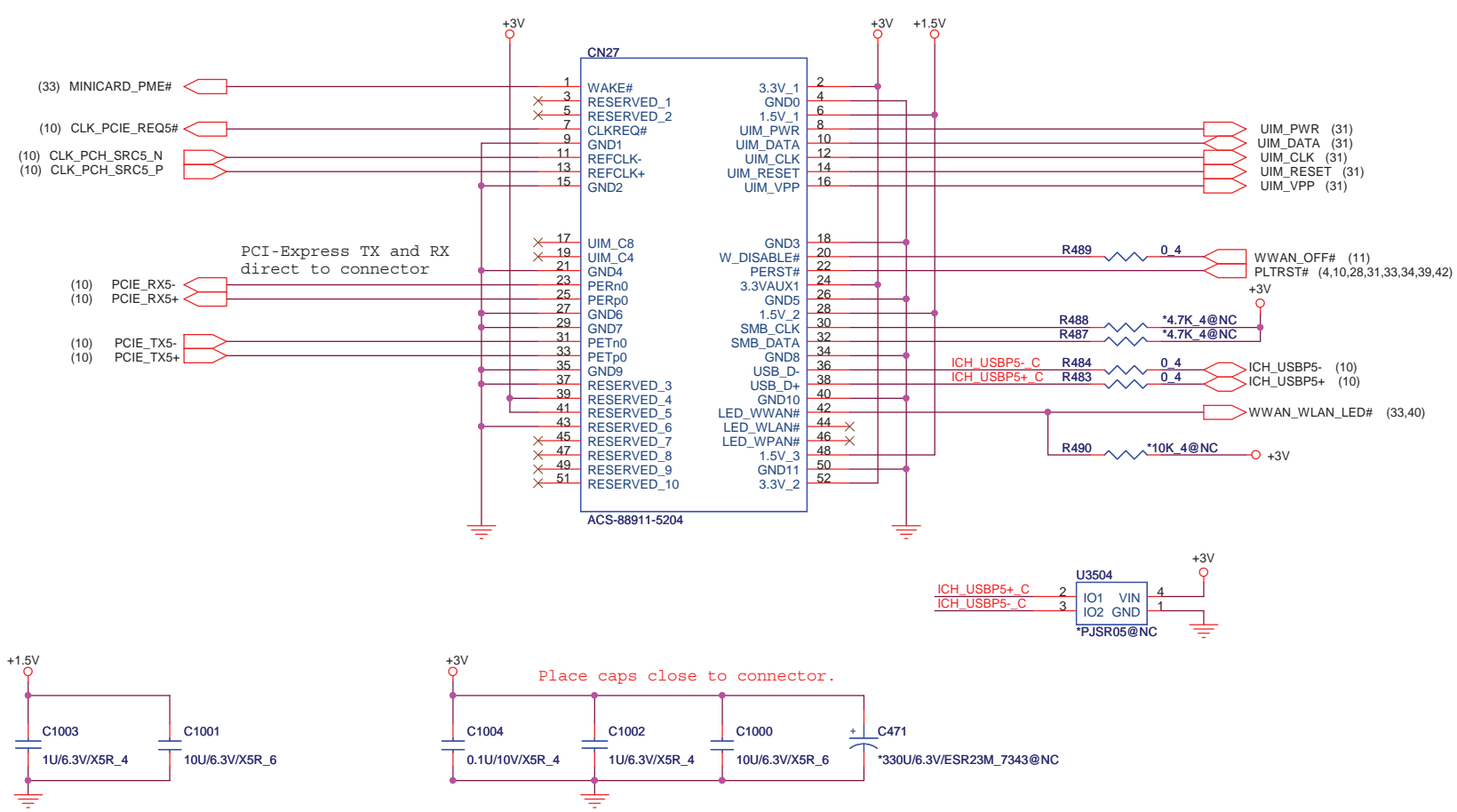
Date: Monday, December 28, 2009 Sheet 30 of 55




## FRONT LEDs



MiniCard WWAN connector

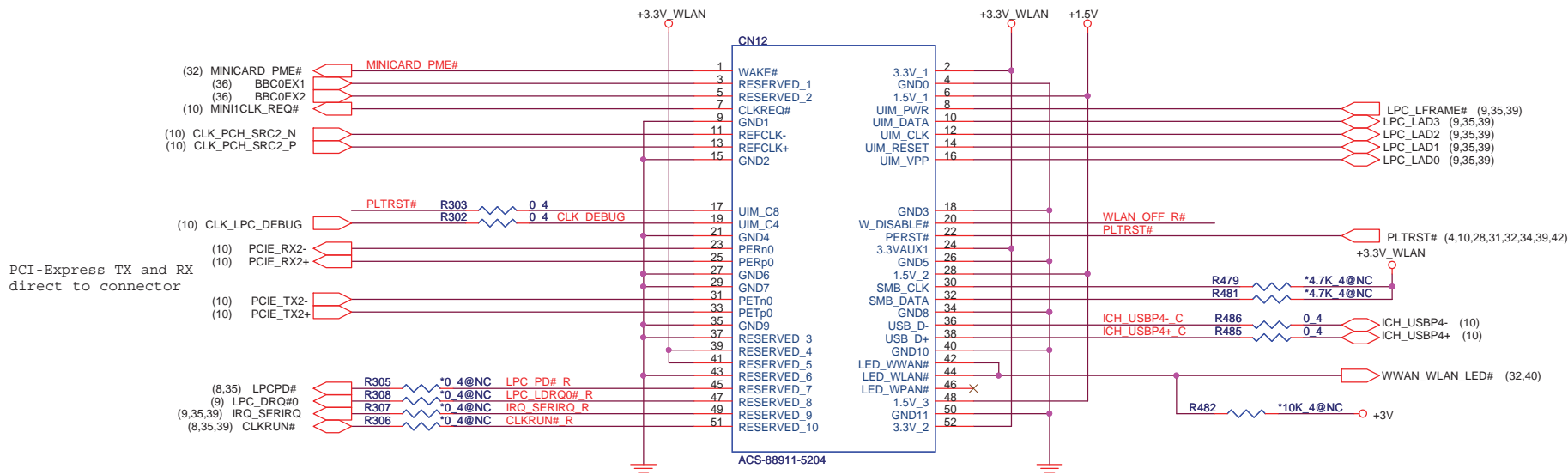


	w/ WWAN	w/o WWAN
CN27	ASM	NO ASM
R489	ASM	NO ASM
R484	ASM	NO ASM
R483	ASM	NO ASM
C1000~C1004	ASM	NO ASM

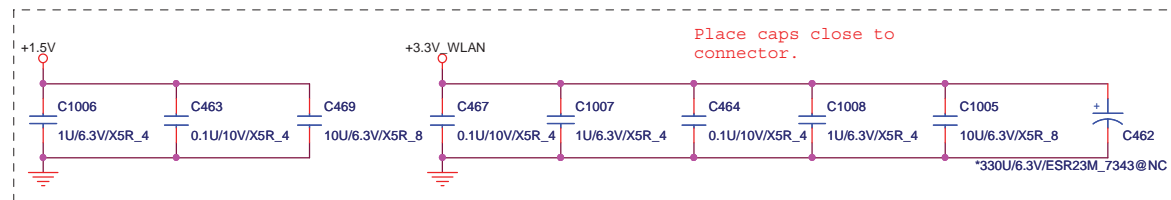
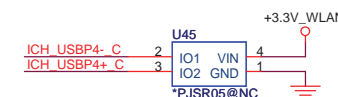
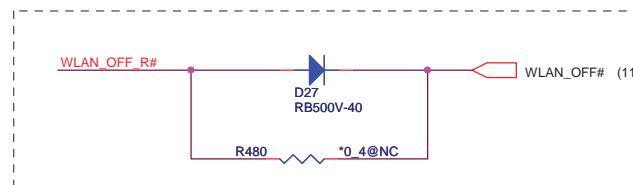
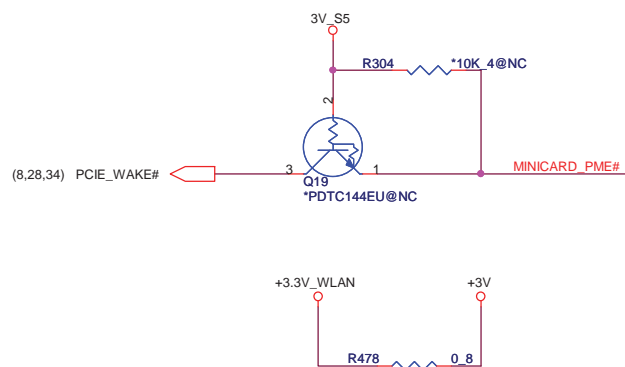


**PROJECT: GC9A**  
**Quanta Computer Inc.**

Size: Custom  
Document Number: **MINI-Card (UWB, WWAN)**  
Date: Monday, December 28, 2009  
Sheet 32 of 55  
Rev 1A



PCI-Express TX and RX  
direct to connector

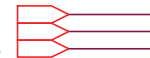


# Express Card

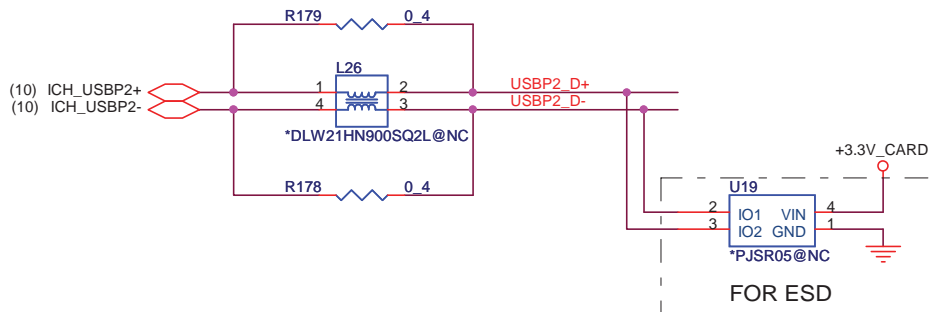
<http://hobi-elektronika.net>

(3,4,8,9,10,11,12,14,15,17,23,24,25,26,28,29,30,31,32,33,35,36,38,39,40,41,42,44,46,47,48,49,51)  
(3,18,19,20,32,33,46)  
(9,31,35,44,50)

+3V  
+1.5V  
3VSUS



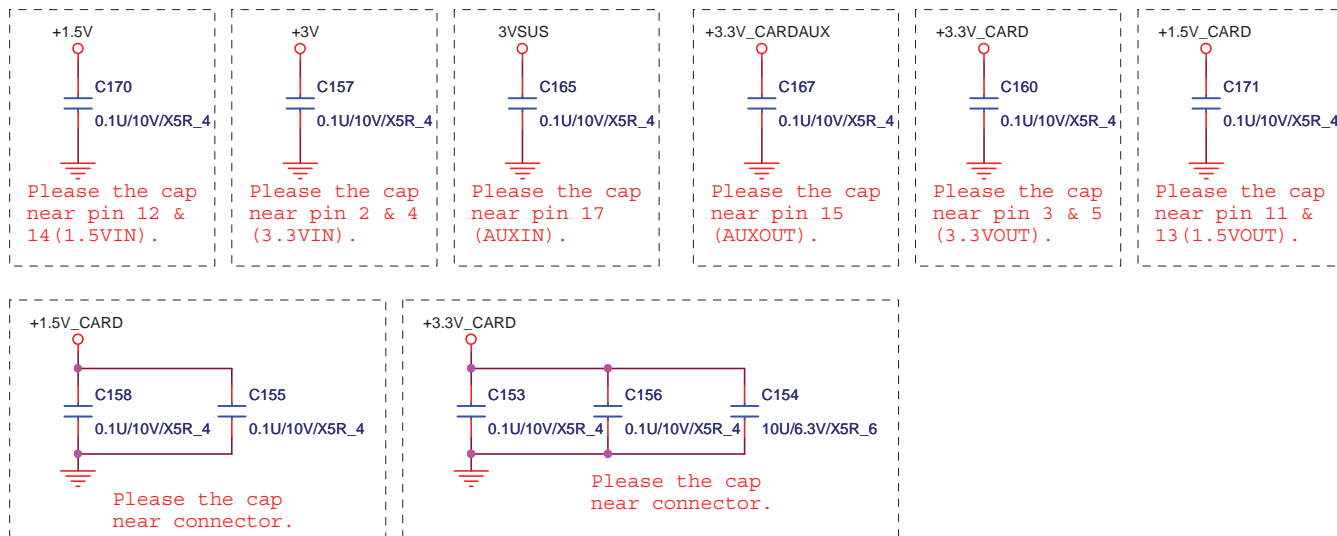
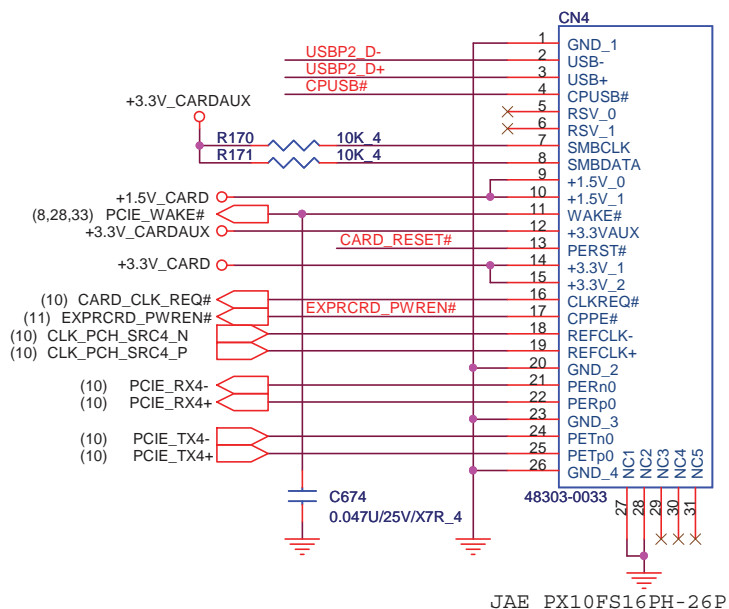
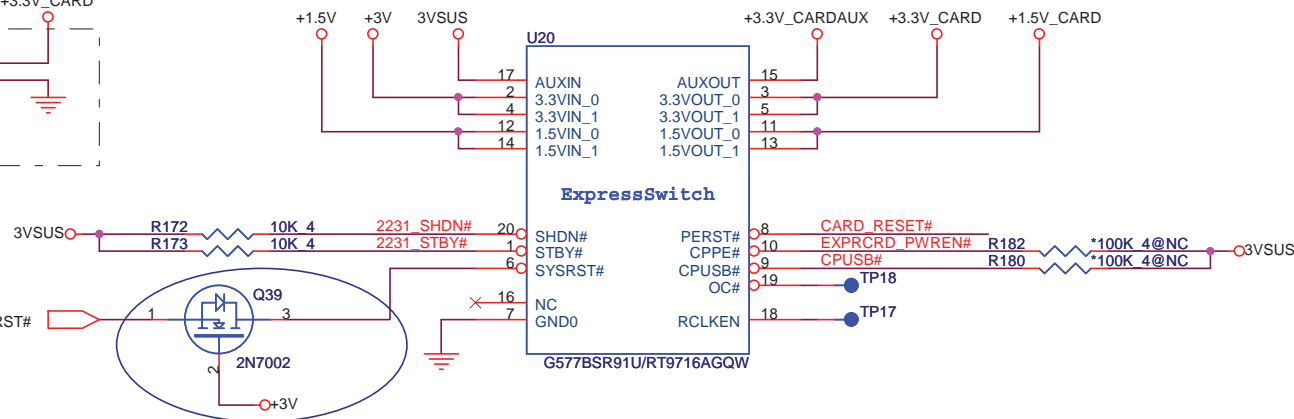
34



+1.5V\_CARD Max. 650mA, Average 500mA.  
+3V\_CARD Max. 1300mA, Average 1000mA.

20090928  
avoid current leakage

(4,10,28,31,32,33,39,42) PLTRST#



**PROJECT: GC9A**  
**Quanta Computer Inc.**

Size Custom	Document Number <b>Express Card</b>	Rev 1A
Date: Monday, December 28, 2009	Sheet 34	of 55

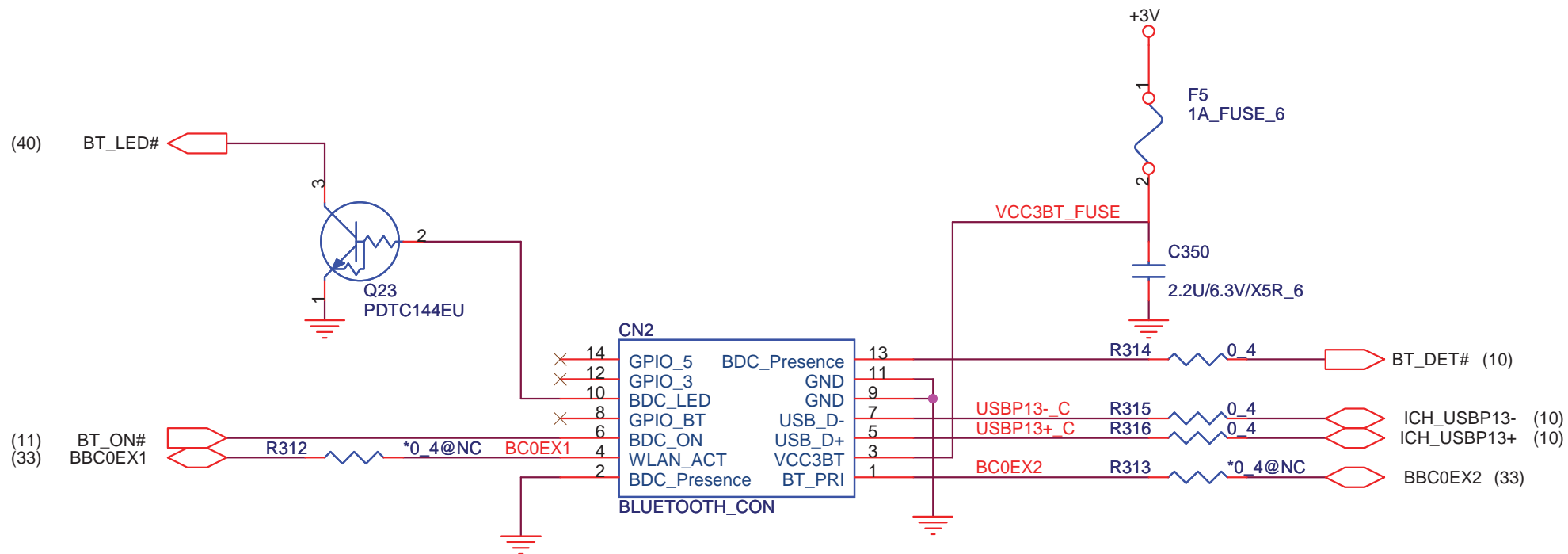


# BLUETOOTH

(3,4,8,9,10,11,12,14,15,17,23,24,25,26,28,29,30,31,32,33,34,35,38,39,40,41,42,44,46,47,48,49,51)

+3V

36



**PROJECT: GC9A**  
**Quanta Computer Inc.**

Size  
Custom

Document Number

B/T

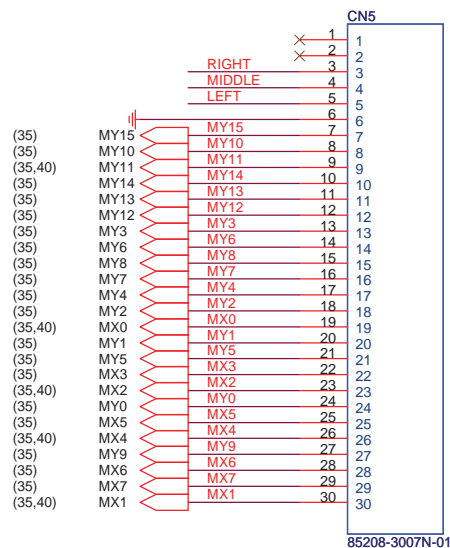
Rev  
1A

Date: Monday, December 28, 2009

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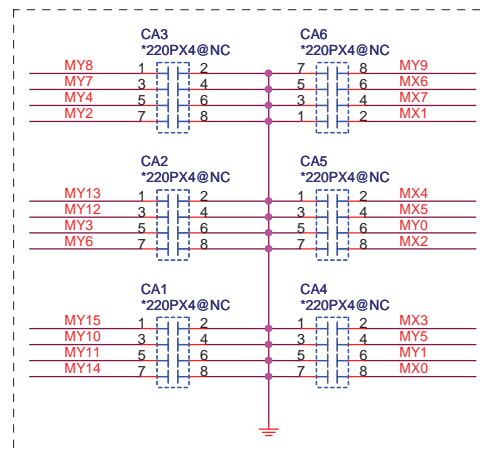


## KEYBOARD connector



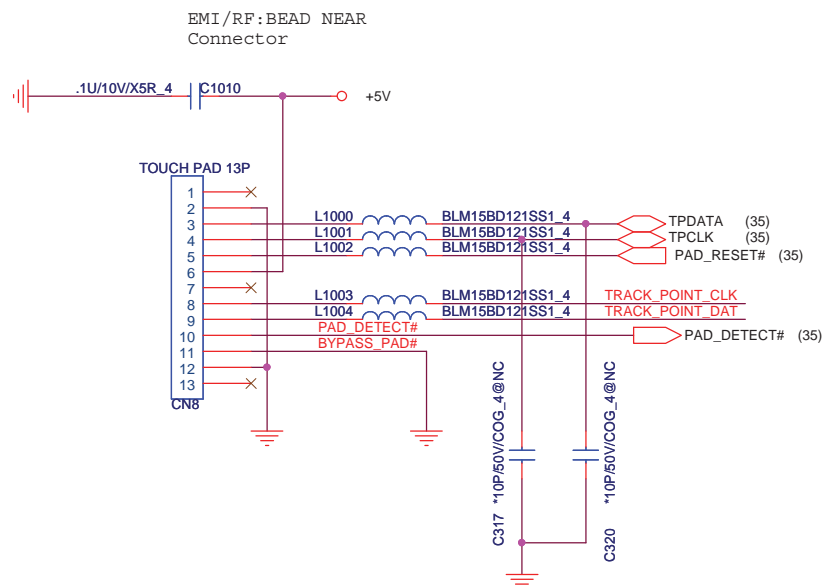
(12,18,21,24,25,26,29,35,38,44)  
(9,23,28,31,35,40,41,44,45,48,50)

+5V  
3VPCU

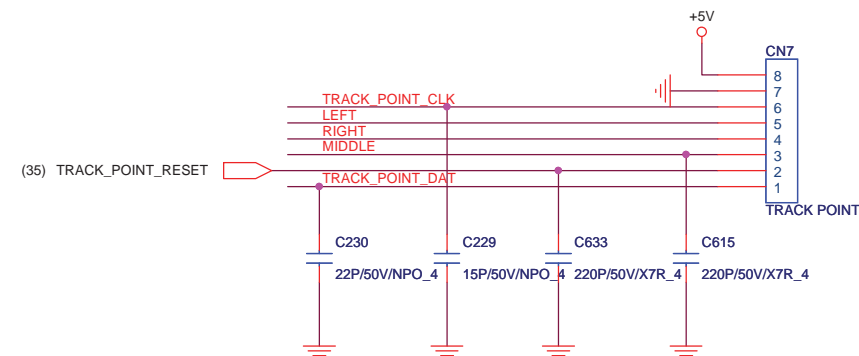


For EMI request

## Touch pad



## TRACK POINT



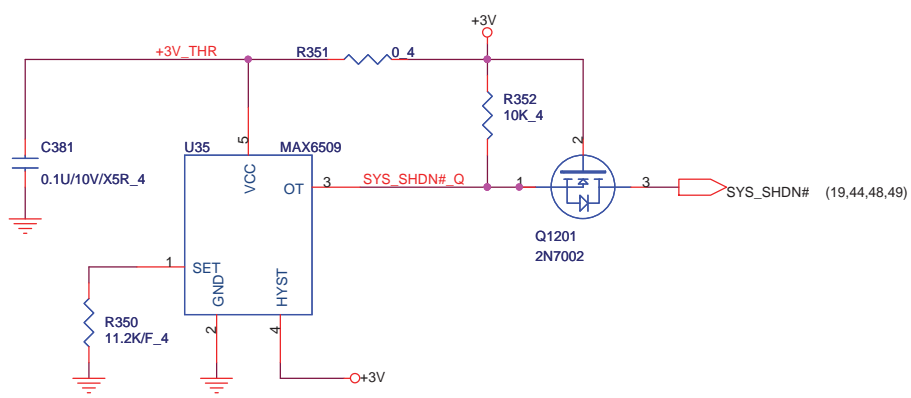
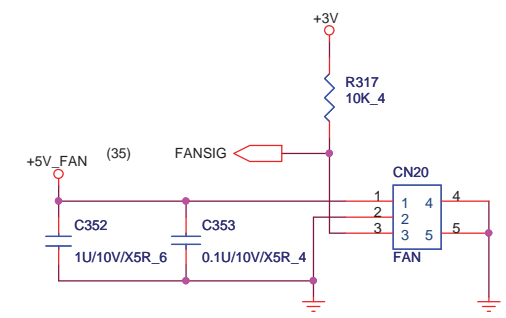
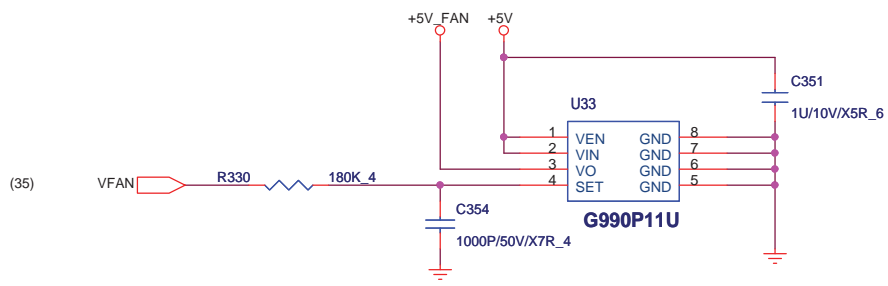
**PROJECT: GC9A**  
**Quanta Computer Inc.**

Size Custom Document Number K/B, T/P Rev 1A

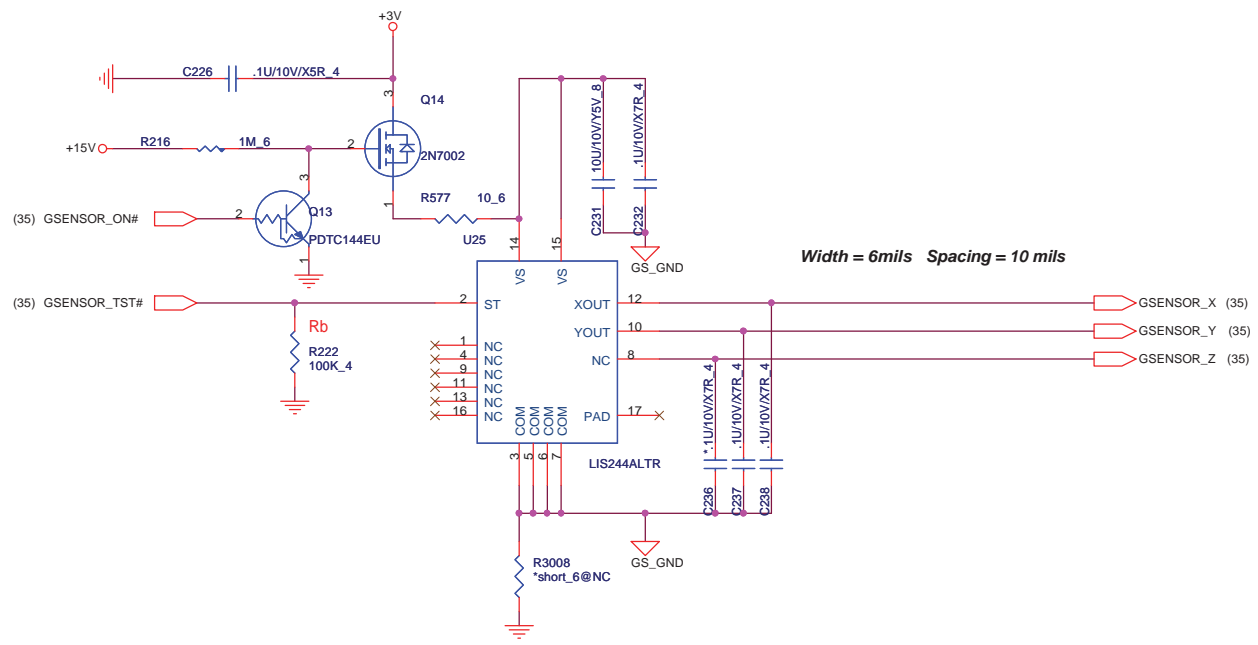
Date: Monday, December 28, 2009 Sheet 37 of 55

# FAN CONTROL

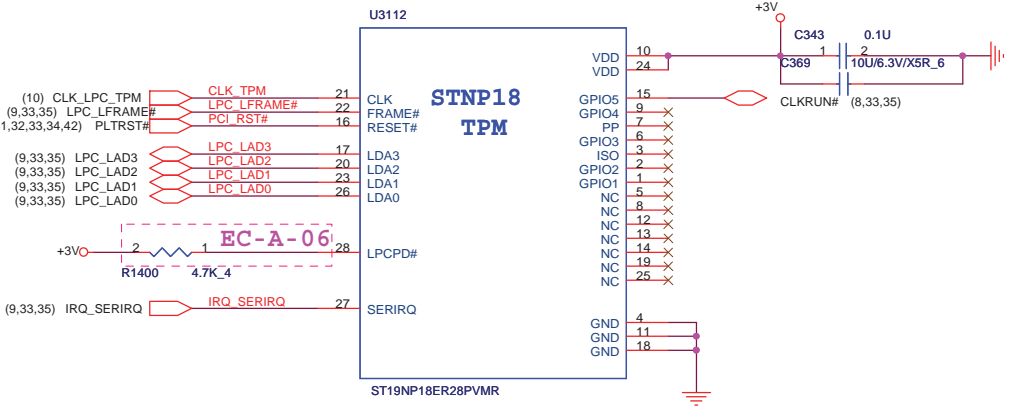
38



## G-SENSOR (2-Axial)



## Discrete TPM



supplier P/N:ST19NP18ER28PVMR  
 Quanta P/N:AL19NP18K13  
 F/P:tssop28-6\_4-65-1\_2h

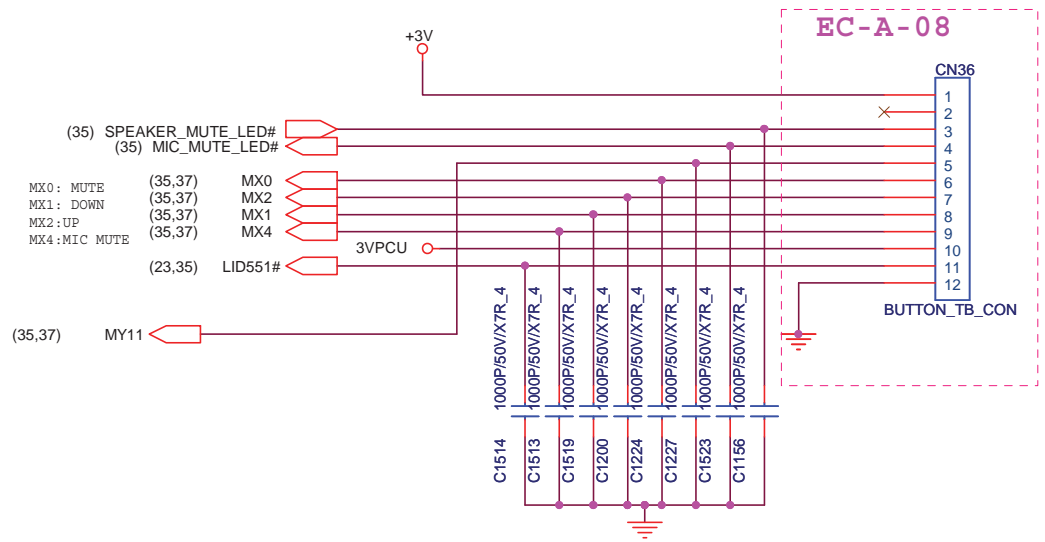
**PROJECT: GC9A**  
**Quanta Computer Inc.**

Size Custom Document Number **G-SENSOR/Discrete TPM** Rev 1A

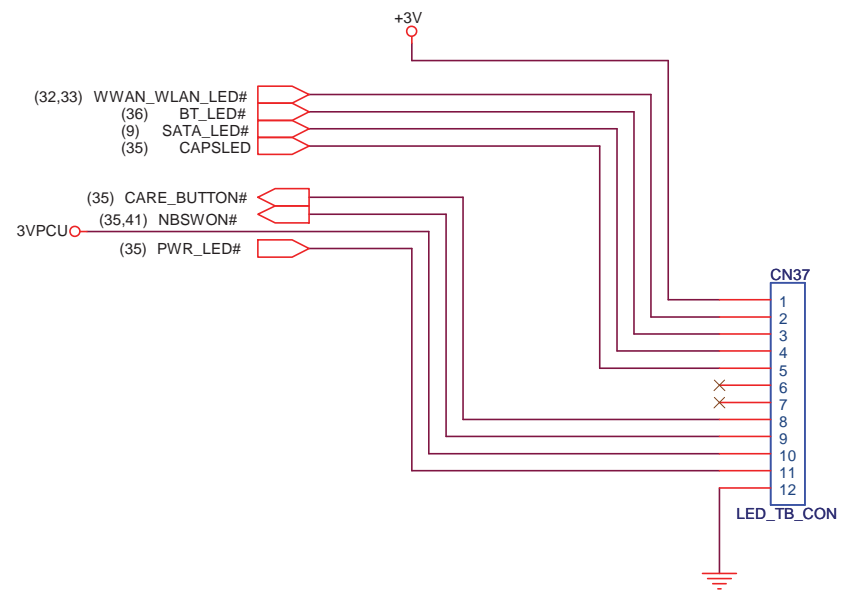
Date: Monday, December 28, 2009 Sheet 39 of 55

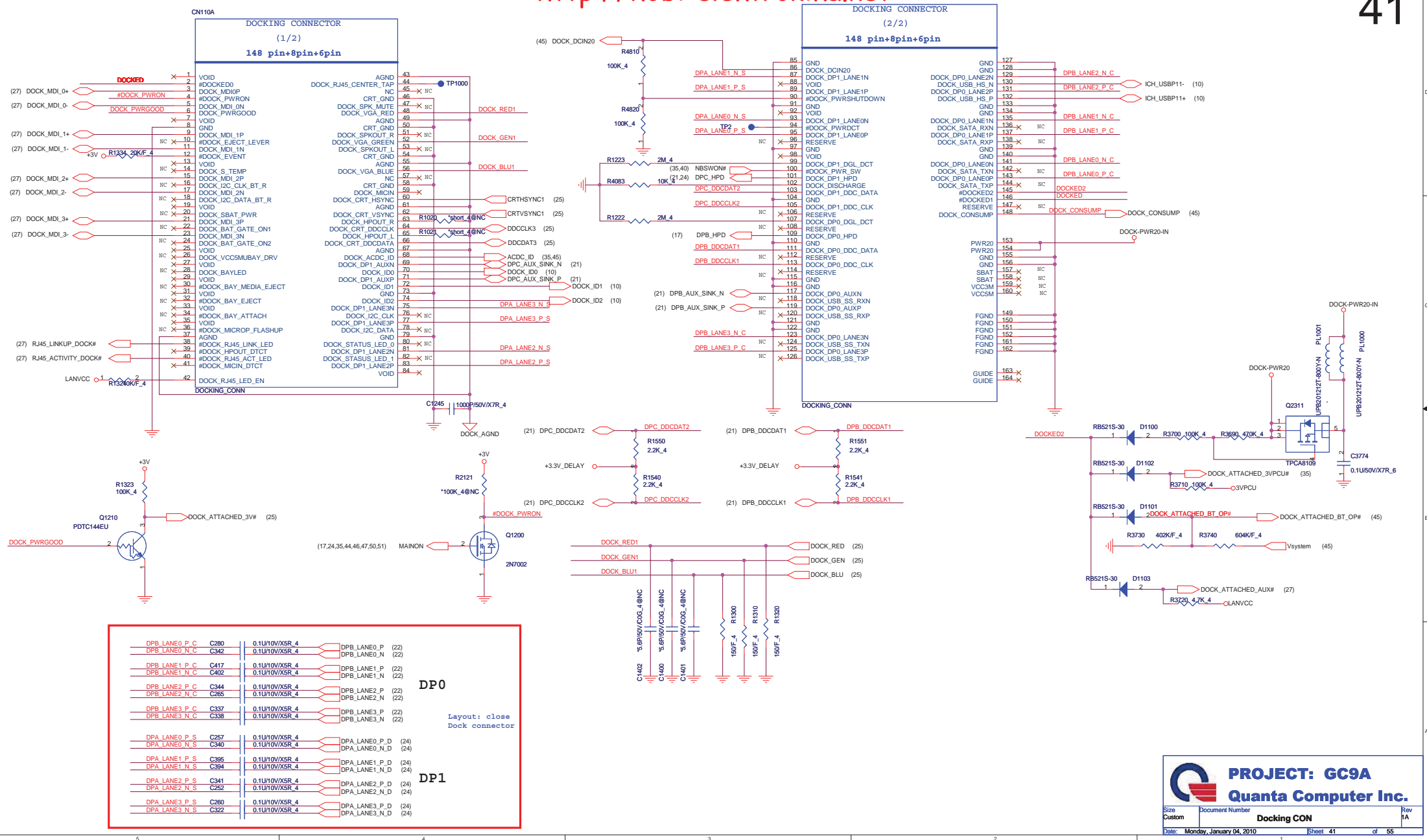
Daughter Boards for LEDs & Ports

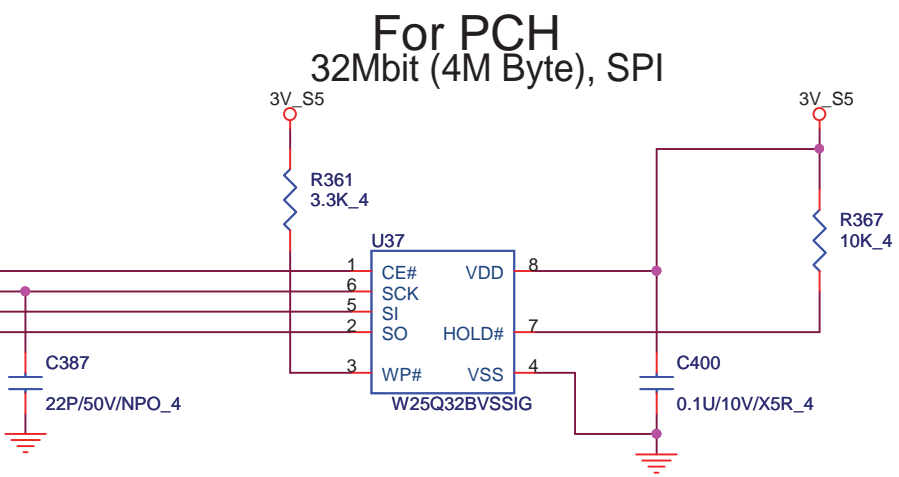
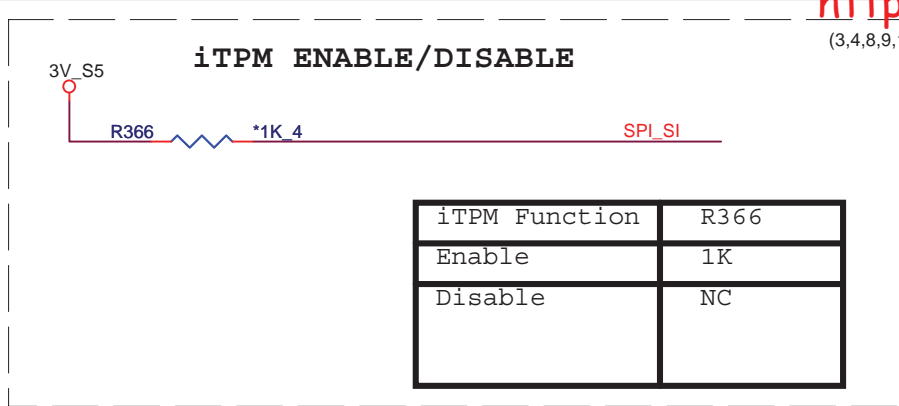
FFC TO KBD LEFT SIDE CONNECTOR



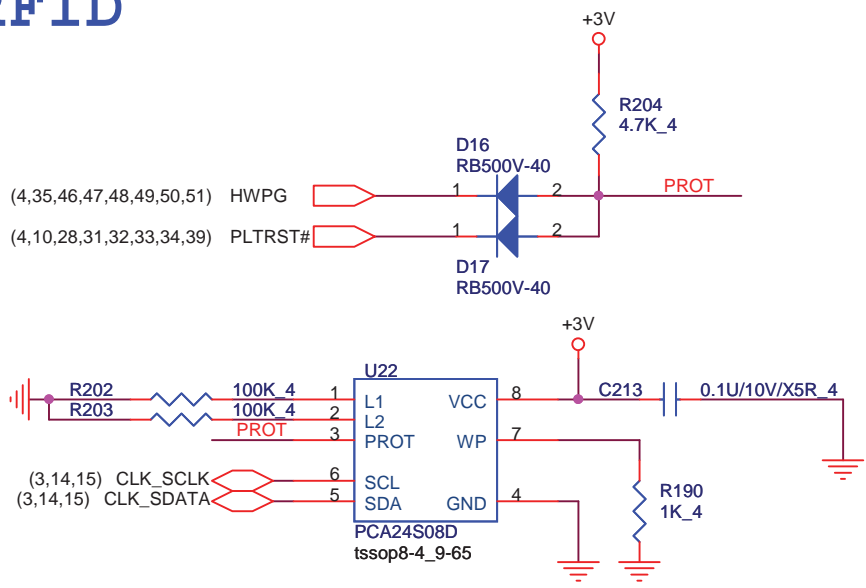
FFC TO LED RIGHT SIDE CONNECTOR








## RFID

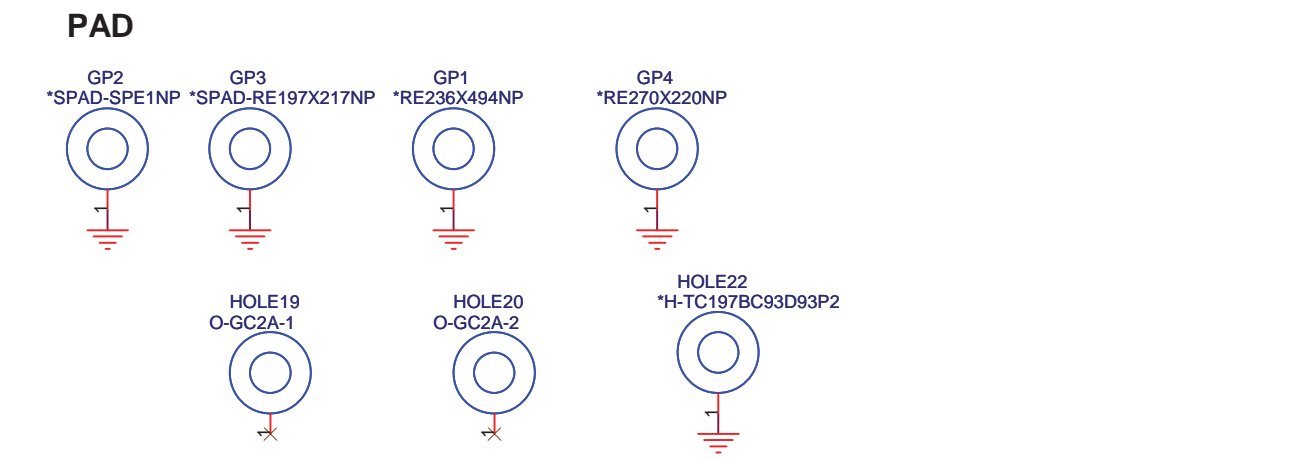
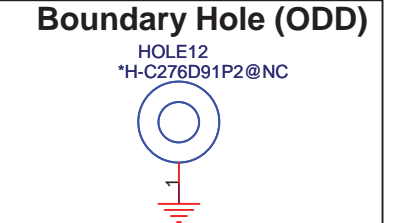
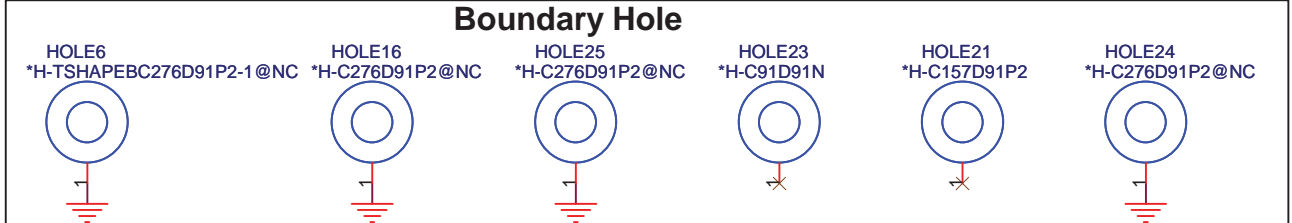
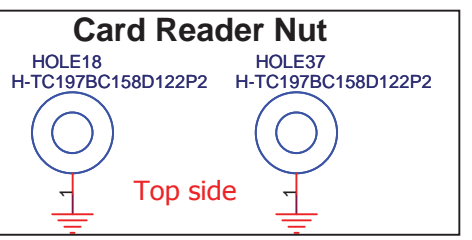
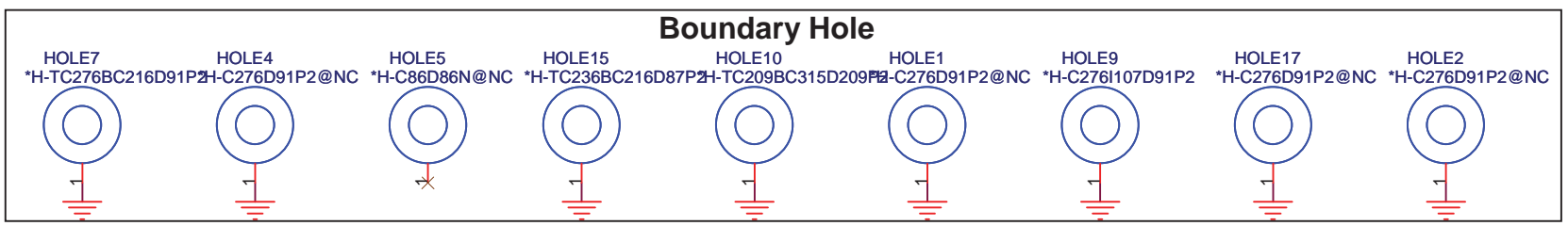
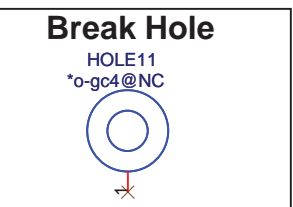
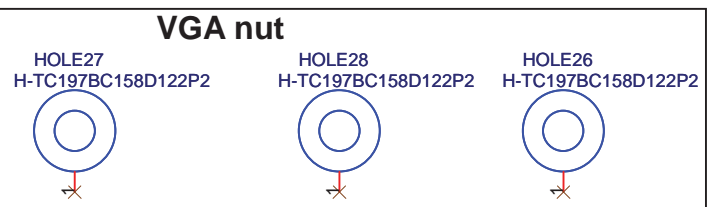
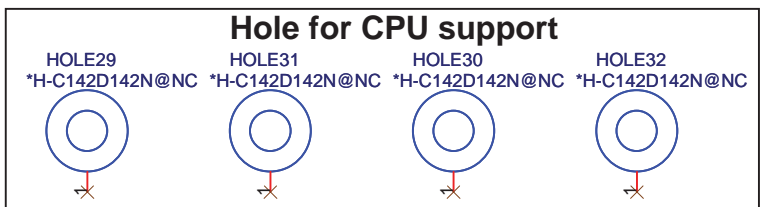
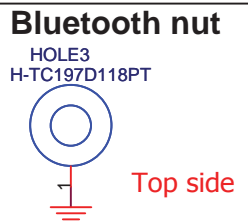
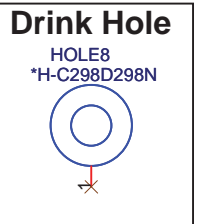
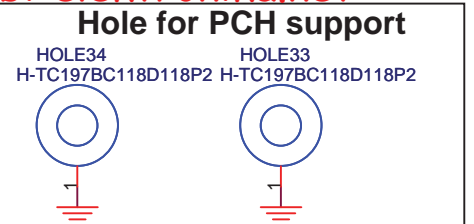
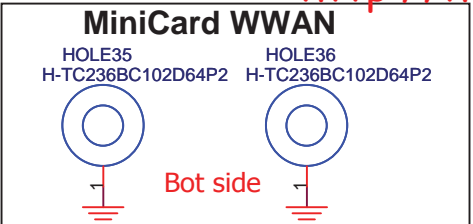
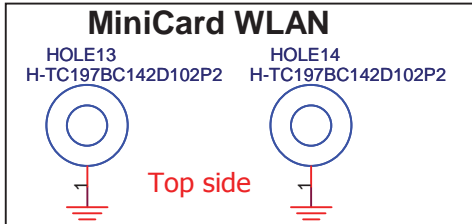




**PROJECT: GC9A**

**Quanta Computer Inc.**

Size Custom	Document Number	Rev 1A
iTPM & RFID EEPROM		
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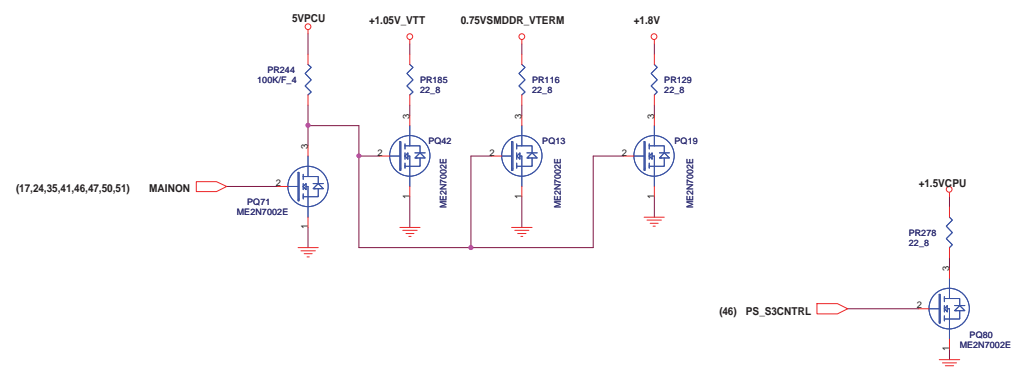
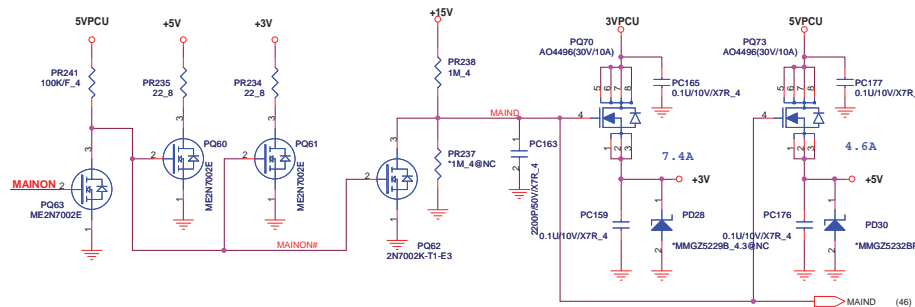
**PROJECT: GC9A**  
**Quanta Computer Inc.**

Size Custom	Document Number <b>HOLE &amp; SCREW</b>	Rev 1A
Date: Tuesday, December 29, 2009		Sheet 43 of 55

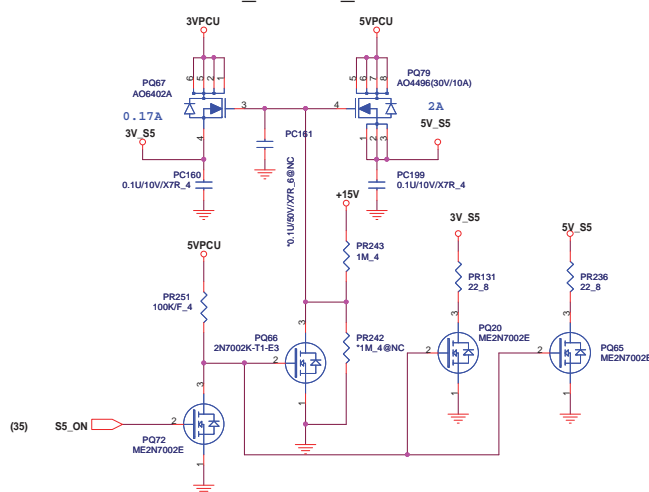


DISCHARGE

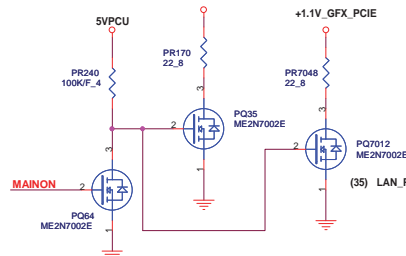
+3.3V, +5V



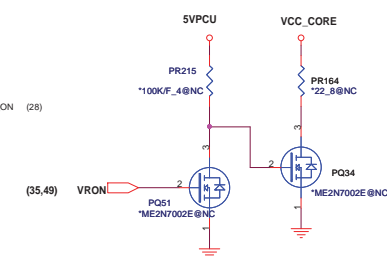
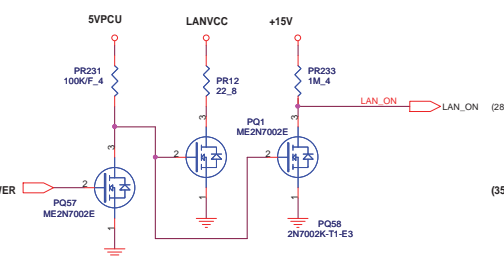
3V\_S5, 5V\_S5



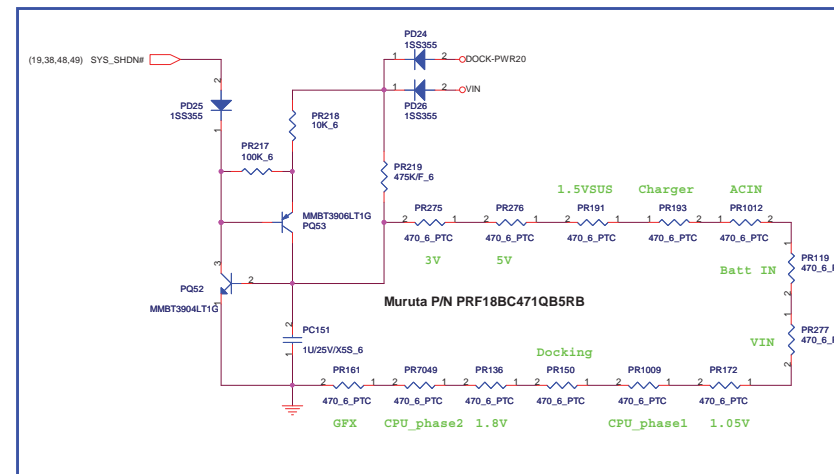
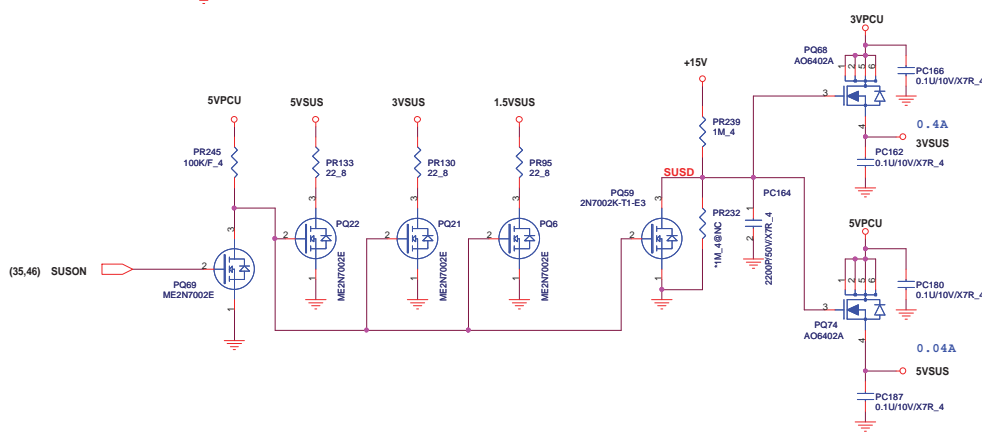
+VCC\_GFX\_CORE

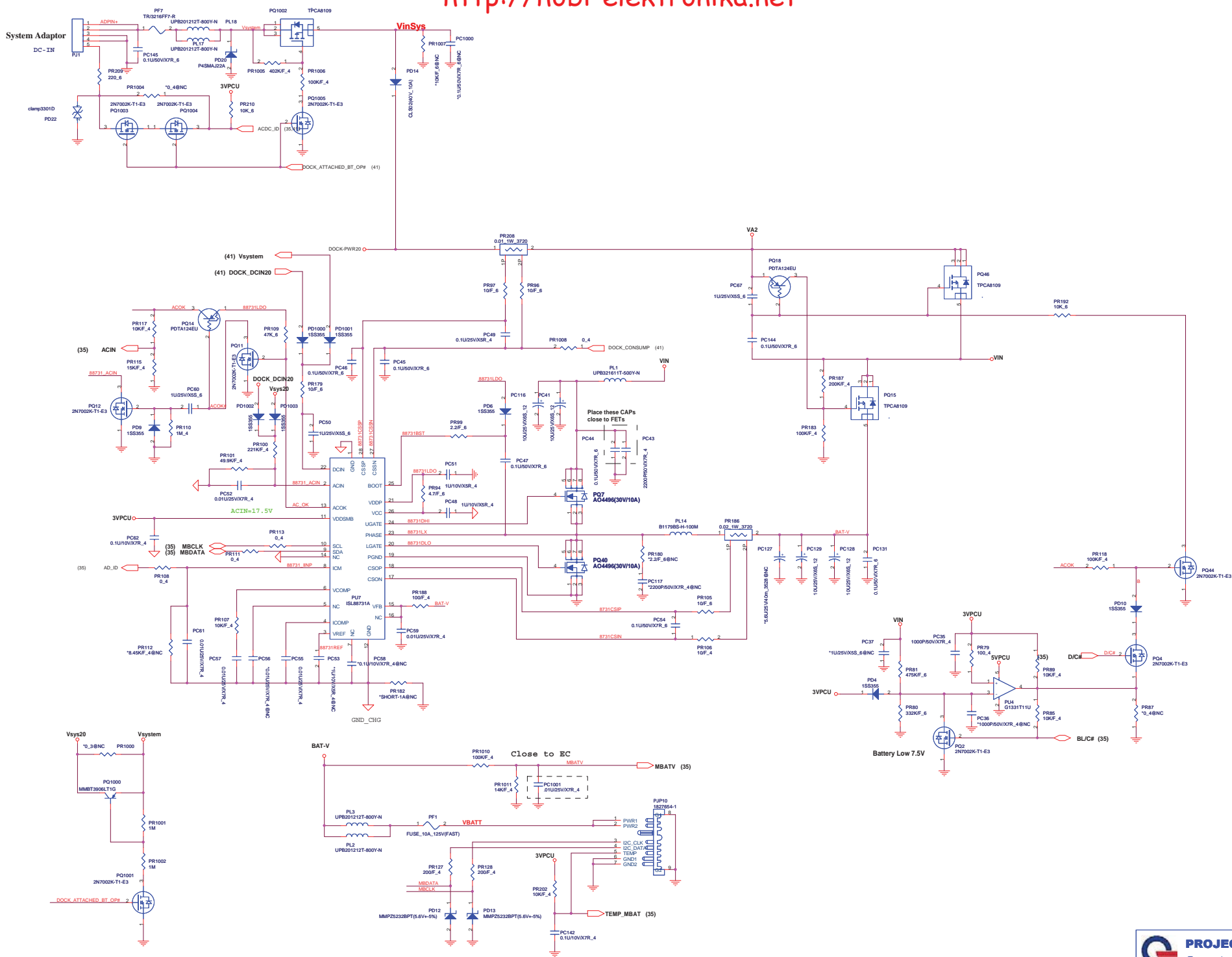


LANVCC

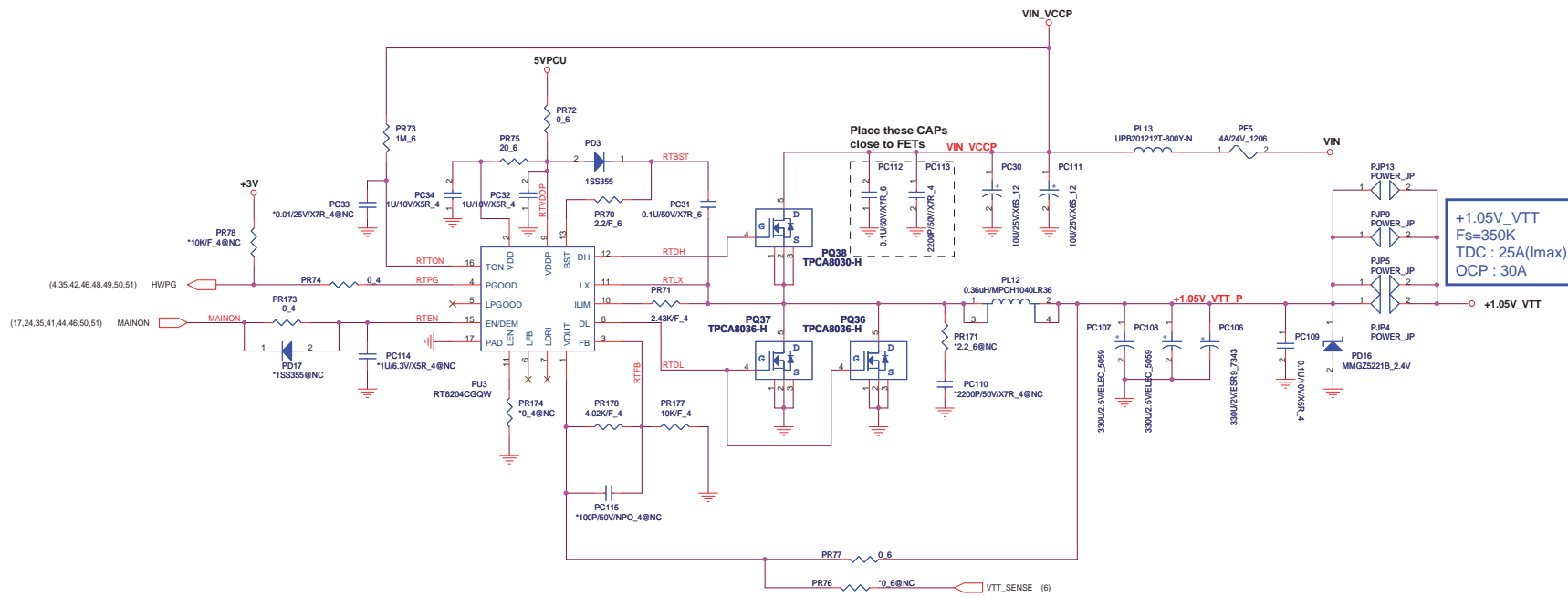


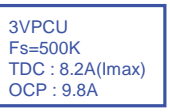
3VSUS, 5VSUS

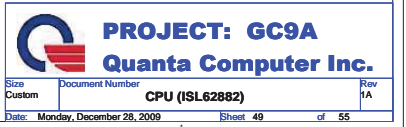


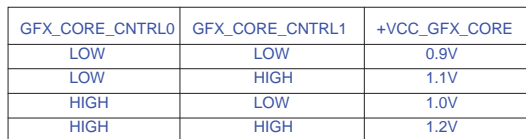












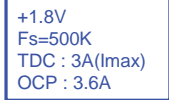
1.1 Volt +/- 5%  
Continue current: 2A  
Peak current: 3A

MAX : 2A

> +1.1V\_GFX\_PCIE (16,18,21,22,44)

$$R_2 < 120 \text{ K}\Omega$$





## Revision History

Revision	Date	Phase	Change List	Release Schematic Date	Release Gerber File Date
1A		DV	Initial release		

## Schematic Value Explanation Description :

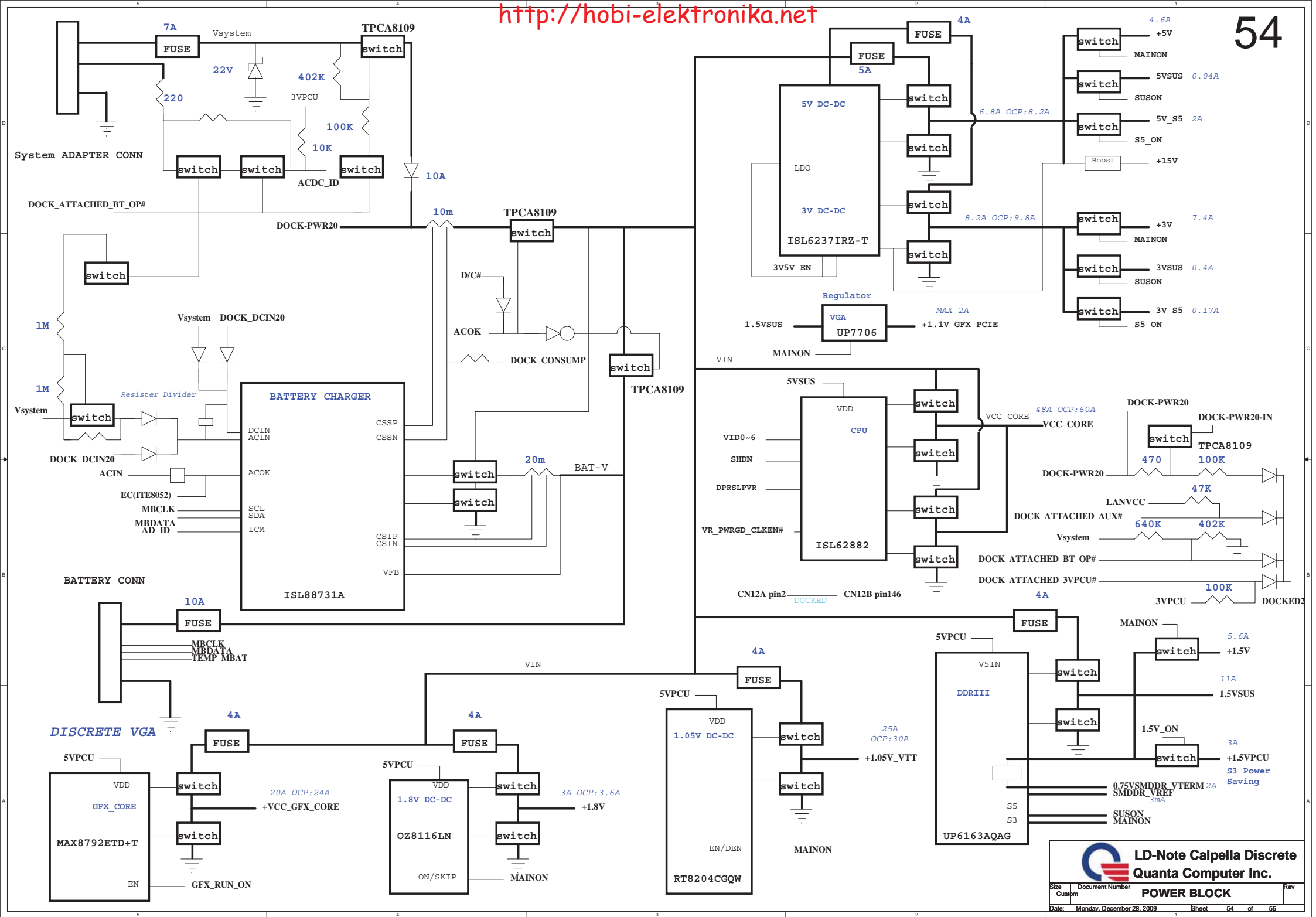
### RESISTOR

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

[illegible][illegible]



2009	EC NO.	PG.	DATE	PART REFERENCE	DESCRIPTION
	EC-A-01	30	12/22	R36,R37,R42,R43	Delete R36,R37,R41,R42 (redundant optional resistor) and change connection of E-sata.
	EC-A-02	11	12/22	R285	No POP R285 or delete.We have R466 for TPM physical presence
	EC-A-03	35	12/22	R101	EC use SPI type
	EC-A-04	30	12/22	R623,R625,R626, R627	AUO3 use ext power
	EC-A-05	9	12/22	R449,R450	GPIO19,21 should have pull up 10K to +3V due to no internal PU/PD
	EC-A-06	39	12/22		Cut LPCPD# signal from TPM#28. due to PCH bug(SUSSTAT# signal chatteringwhen assert)
	EC-A-07	35	12/23	R262,C382	Add Pull high for CARE_BUTTON#
	EC-A-08	40	12/23	R79,R80,R81, R82,R83,R86, R104,R105,R108	Delete these resistor to save space for layout.
	EC-A-09	24	12/28	C2350,C196	Change CAP value per customer request.
	EC-A-10	03	12/28	C8222,C8223	Add decoupling cap per RF engineer requested.
	EC-A-11	26	12/29	C683	De-pop C683 to prevent efect high frequency of THD+N.
A stage					



**G-Note Montevina**  
**Quanta Computer Inc.**

<http://hobi-elektronika.net>

```
ERROR: syntaxerror  
OFFENDING COMMAND: --nostringval--
```

```
STACK:
```

```
/Title  
( )  
/Subject  
(D:20100106114247+08'00')  
/ModDate  
( )  
/Keywords  
(PDFCreator Version 0.9.5)  
/Creator  
(D:20100106114247+08'00')  
/CreationDate  
(93121305)  
/Author  
-mark-
```