

Diamond-3 Intel Calpella Platform with Discrete GFX

<http://hobi-elektronika.net>

01

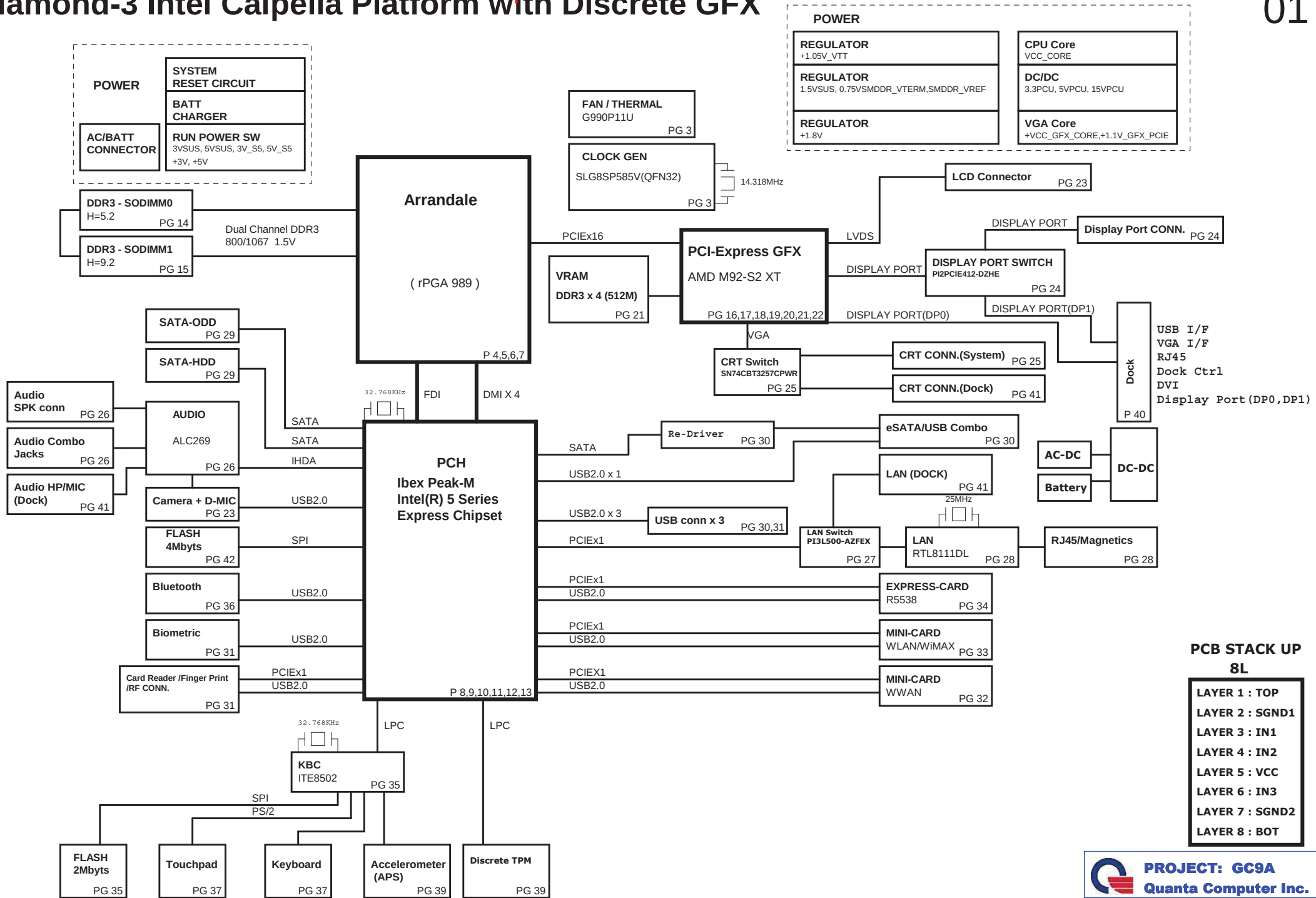
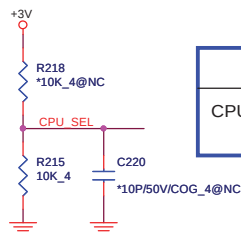
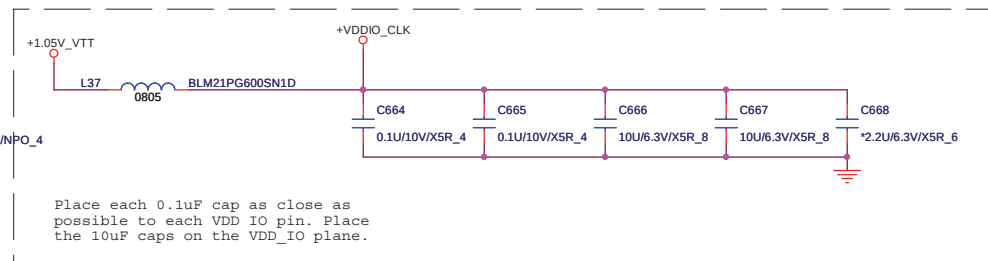
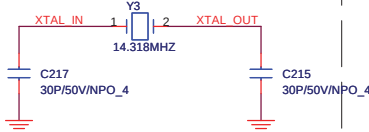
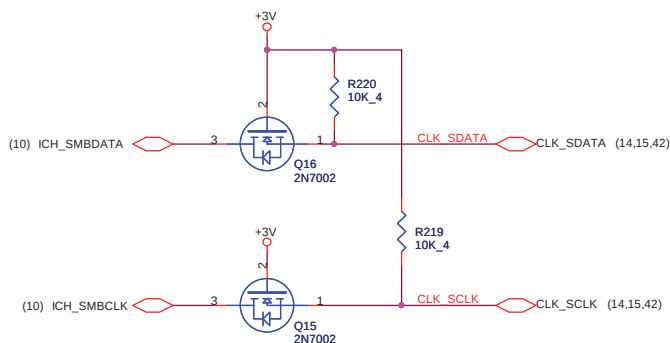
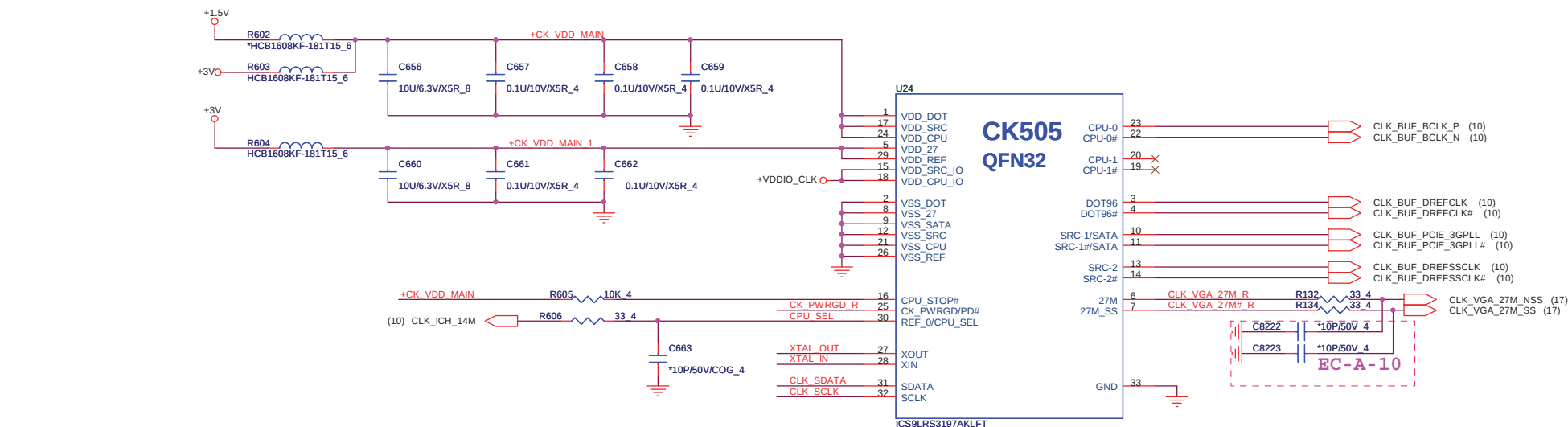


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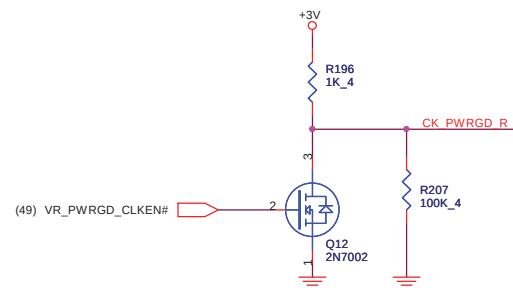
PAGE	DESCRIPTION
01	BLOCK DIAGRAM
02	FRONT PAGE
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04-07	Auburndale PROCESSER
08-13	Ibex Peak-M
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16	LCD & LID CON
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19	AUDIO CODEC(ALC269Q)
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25	MINI-Card (WLAN)
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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



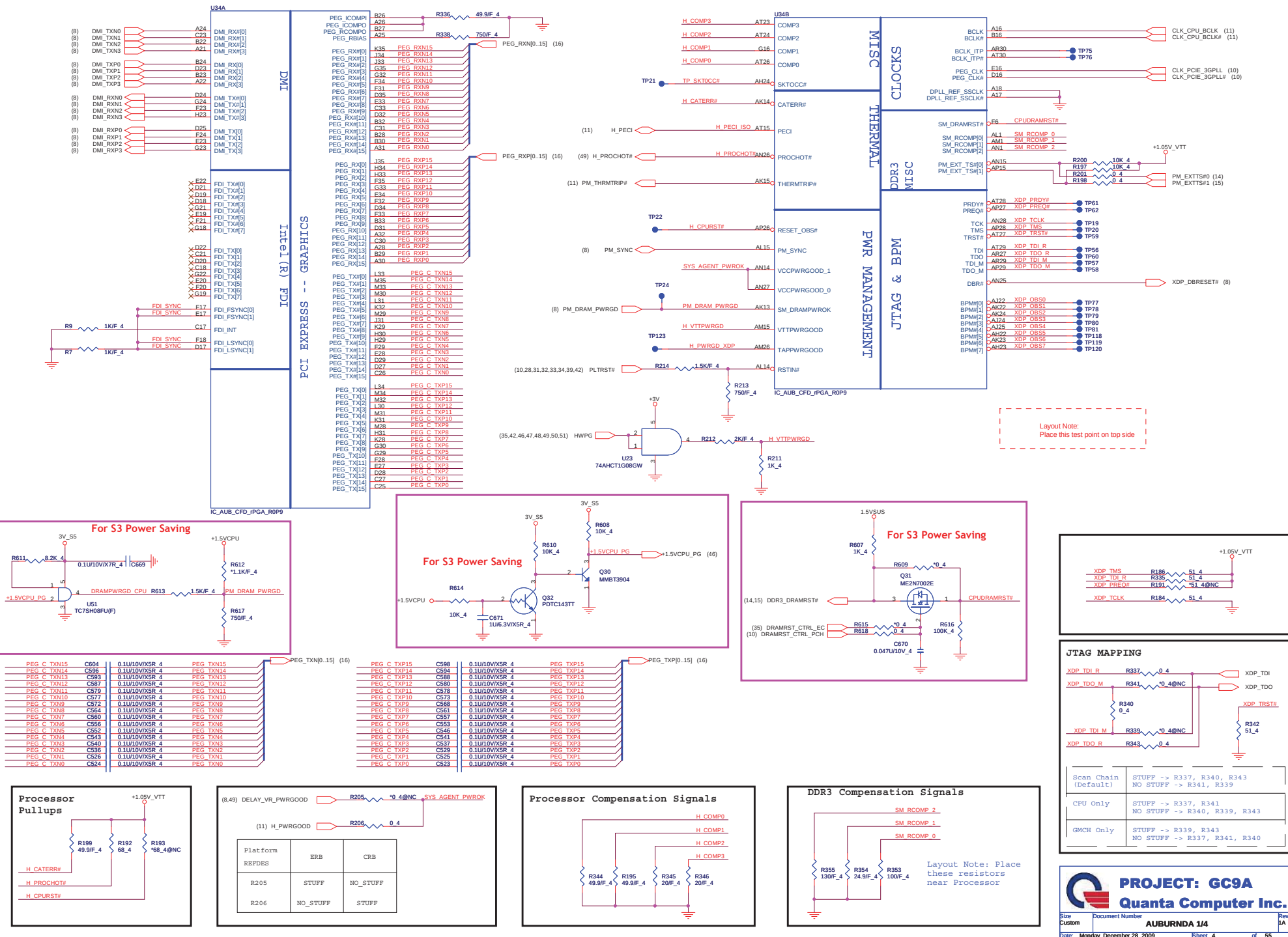
	0	1
CPU_SEL	CPU0/1=133MHz (default)	CPU0/1=100MHz

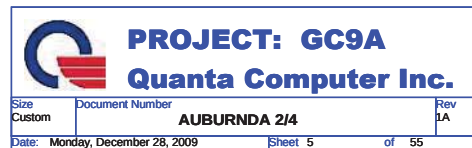


ARRANDALE PROCESSOR (DMI, PEG, FDI)

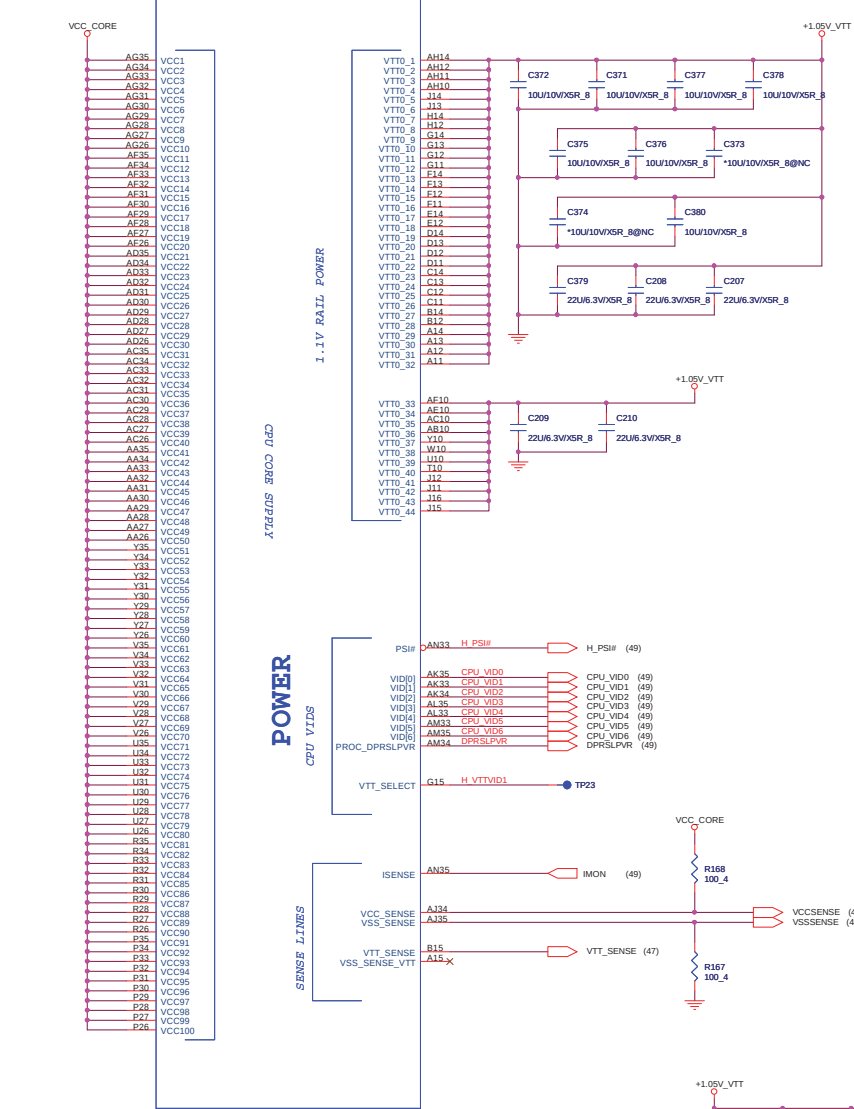
ARRANDALE PROCESSOR (CLK, MISC, JTAG)

04

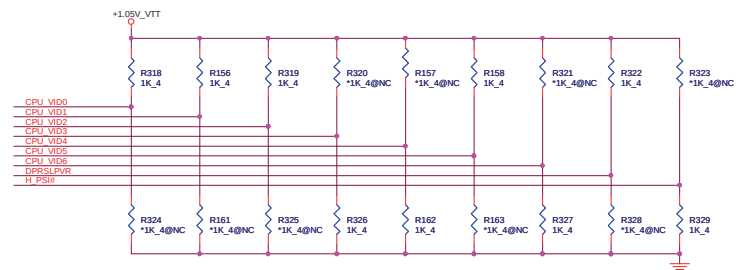




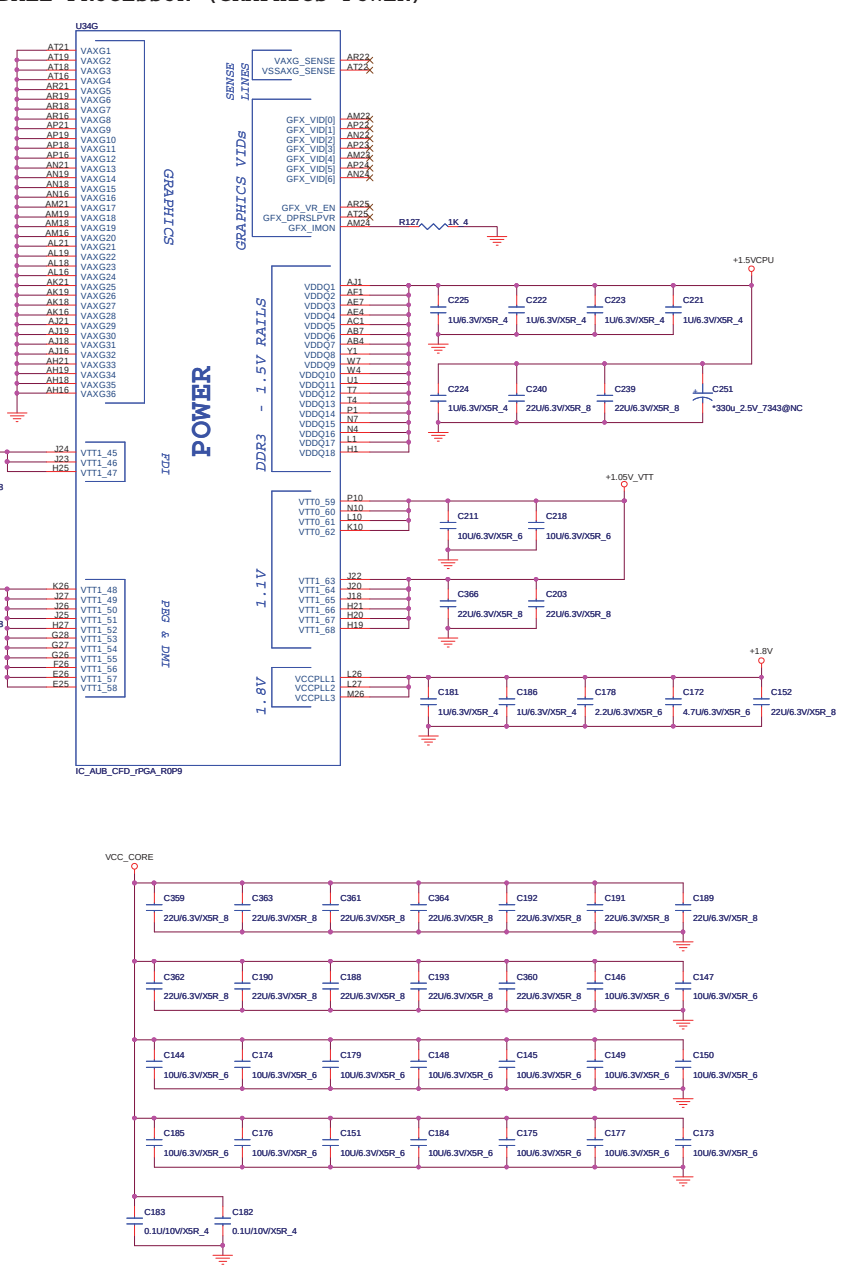
CPU Core Power

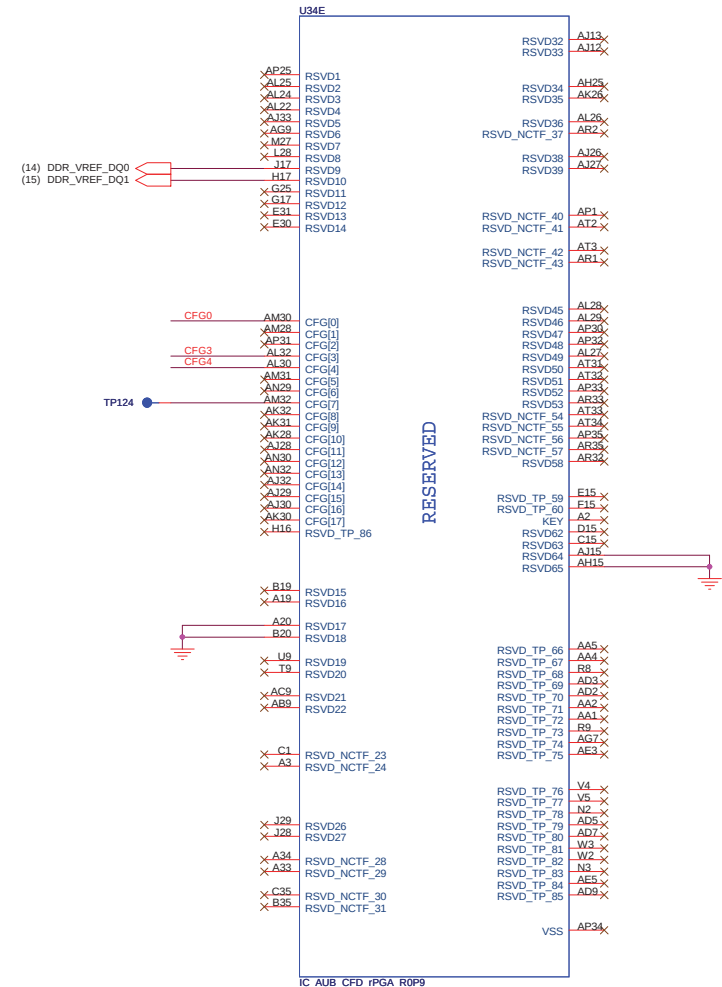


AUBURNDALE PROCESSOR (POWER)



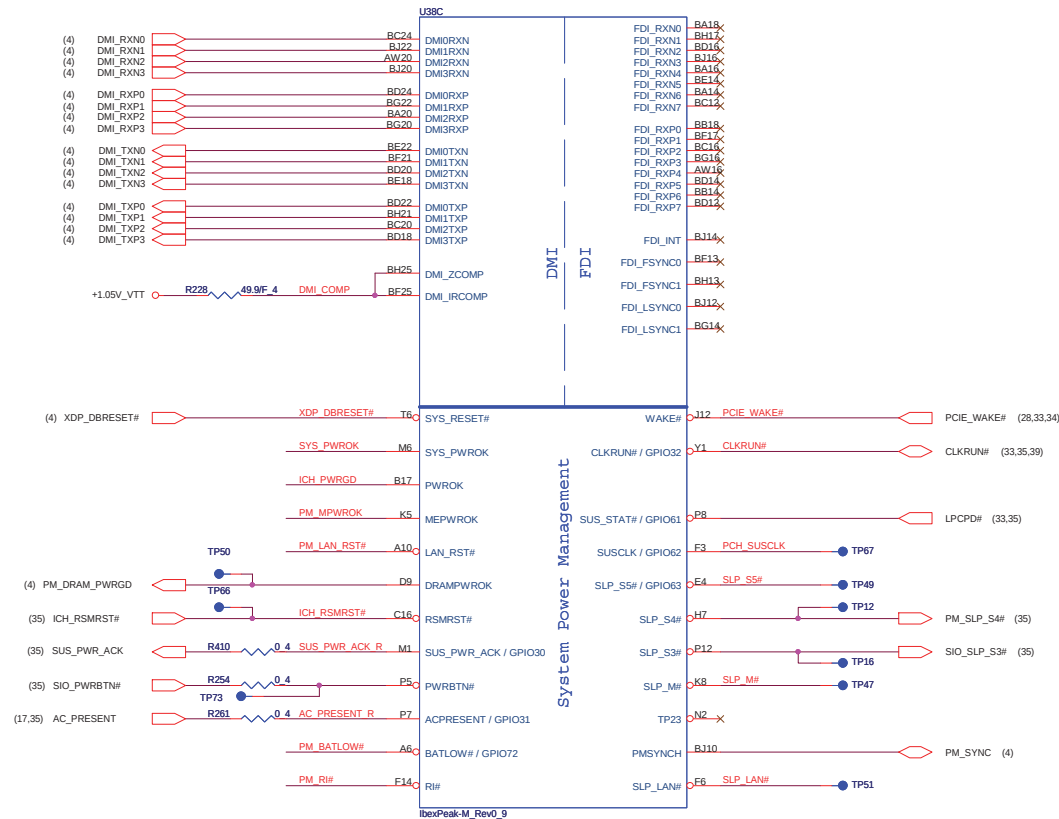
ARRANDALE PROCESSOR (GRAPHICS POWER)



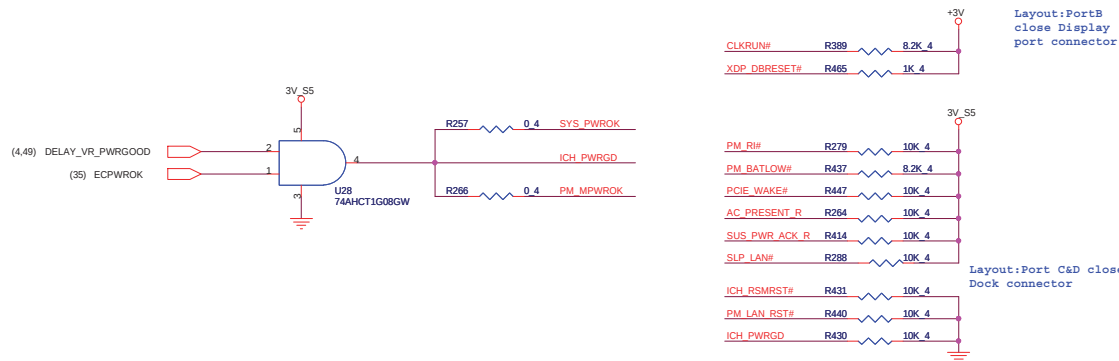
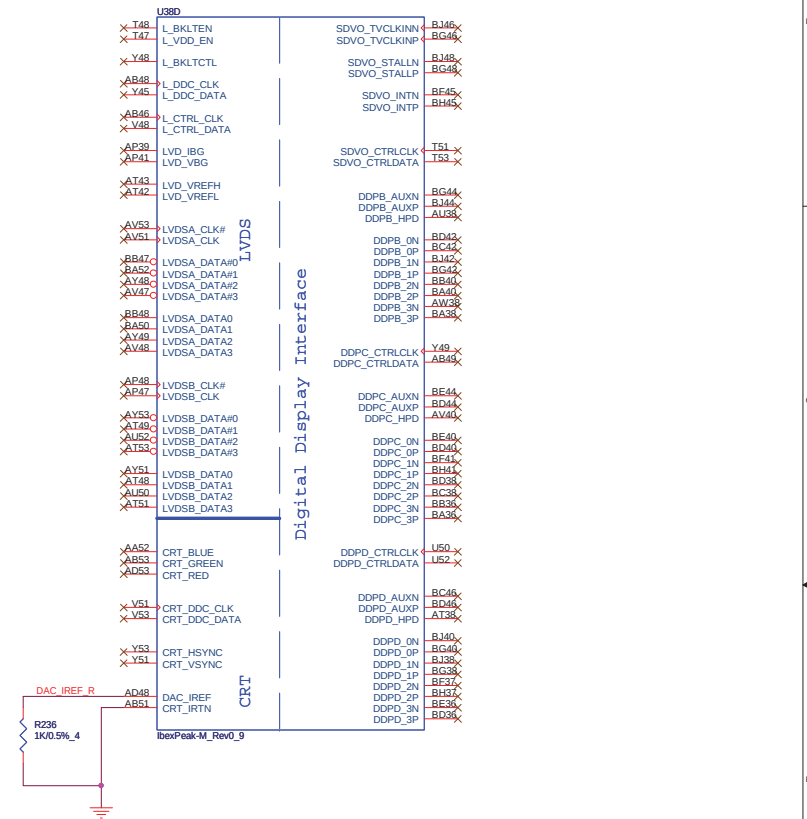


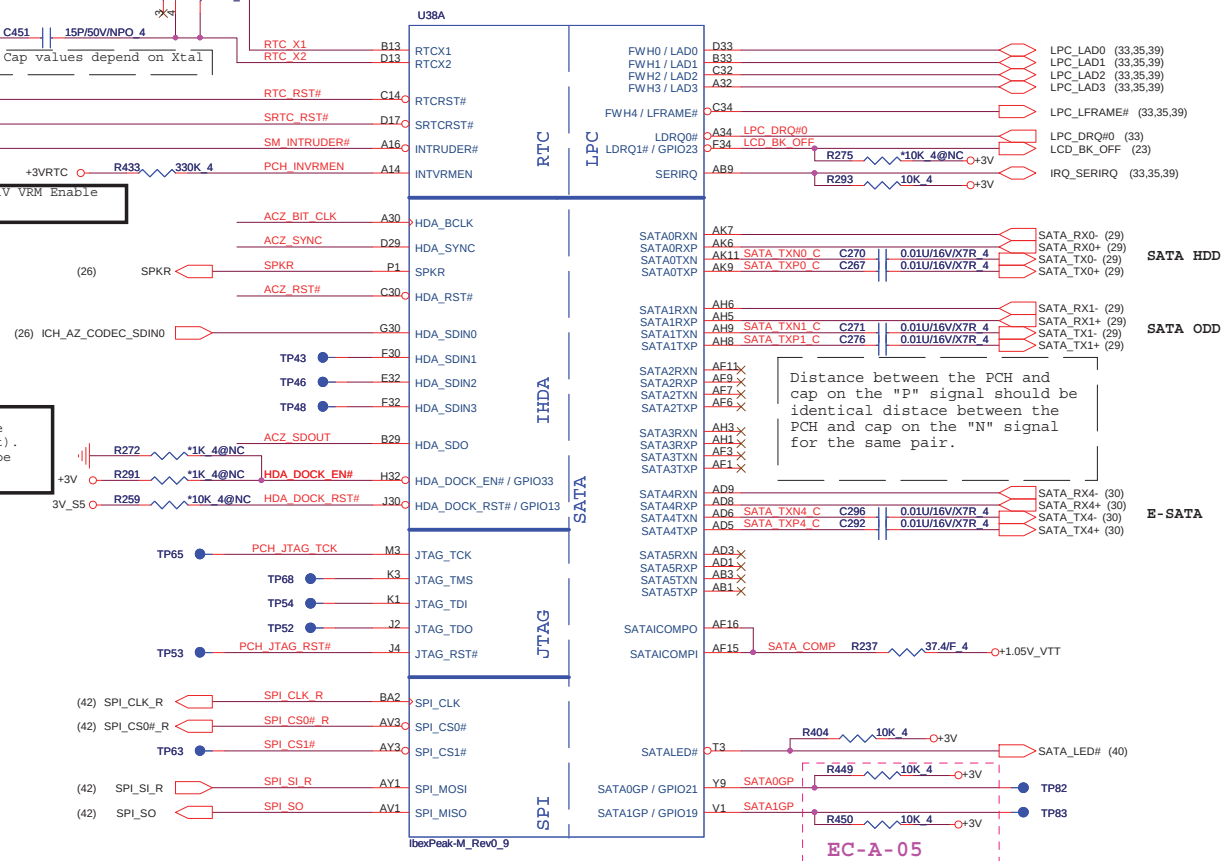
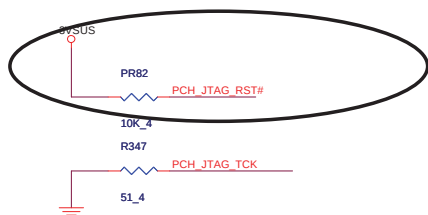
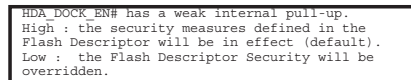
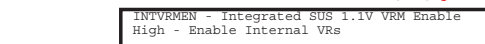
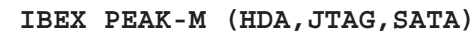
	1	0
CFG4 (Display Port Presence)	Disabled; No Physical Display Port attached to Embedded Display Port	Enabled; An external Display port device is connected to the Embedded Display port
CFG0 (PCI-Epress Configuration Select)	Single PEG	Bifurcation enabled
CFG3 (PCI-Epress Static Lane Reversal)	Normal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

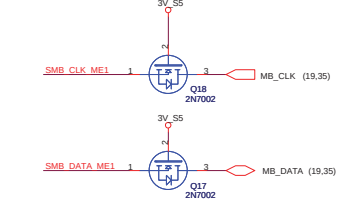
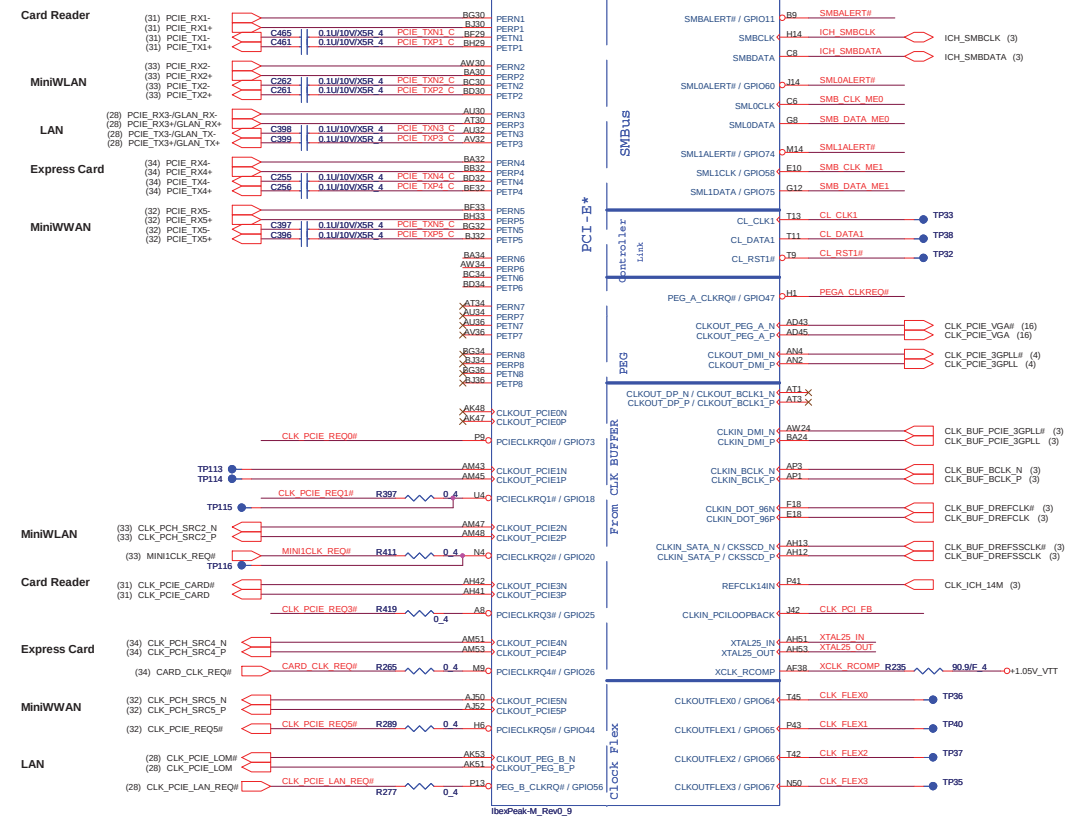
IBEX PEAK-M (DMI, FDI, GPIO)



IBEX PEAK-M (LVDS, DDI)



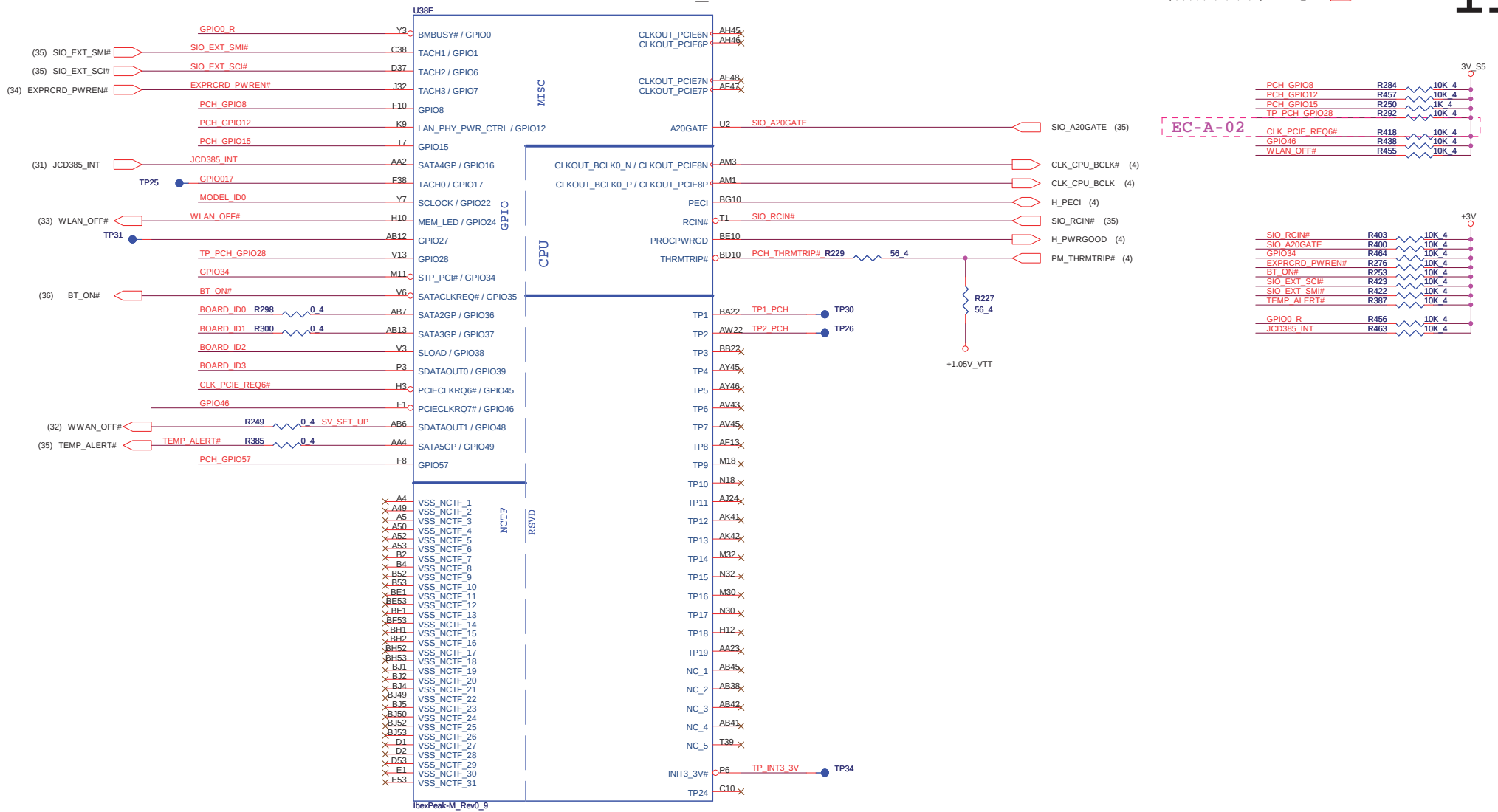


IBEX PEAK-M (PCI-E, SMBUS, CLK⁽⁶⁾)

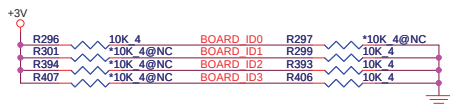
 PROJECT: GC9A Quanta Computer Inc.		
Size Custom	Document Number IBEX PEAK-M 3/6	Rev 1A
Date: Tuesday, January 05, 2010		Sheet 10 of 55

IBEX PEAK-M (GPIO, VSS_NCTF, RSVD)

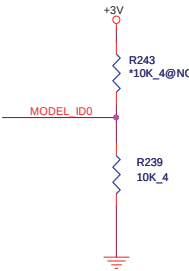
11



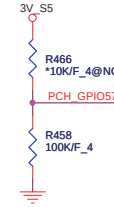
Board ID For Function	ID3 GPIO39	ID2 GPIO38	ID1 GPIO37	ID0 GPIO36
SDV	0	0	0	0
SIV	0	0	0	1
SIT	0	0	1	0
SVT	0	0	1	1
SOVP	0	1	0	0



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.

Size Custom Document Number **IBEX PEAK-M 4/6** Rev 1A

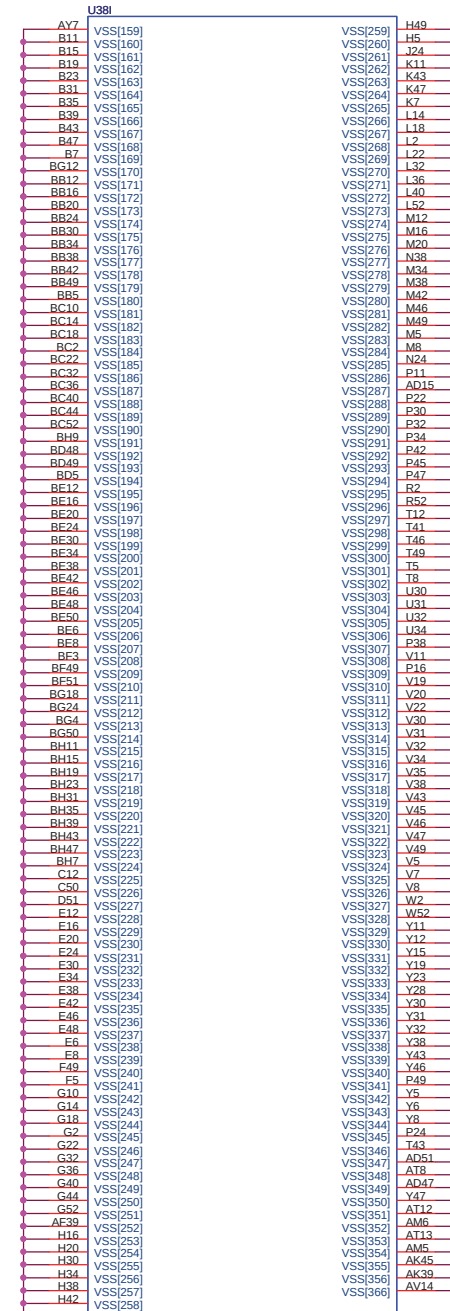
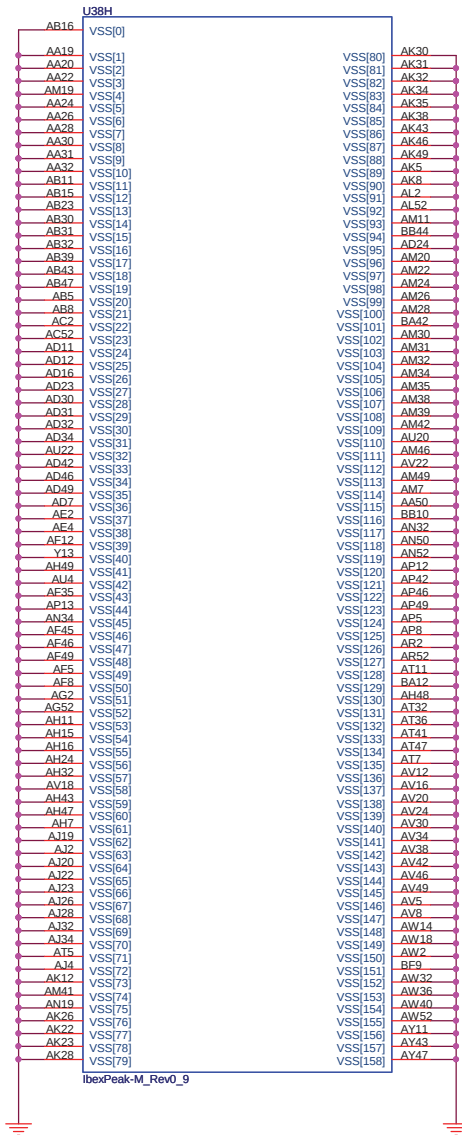
Date: Monday, January 04, 2010 Sheet 11 of 55

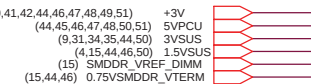
POWER

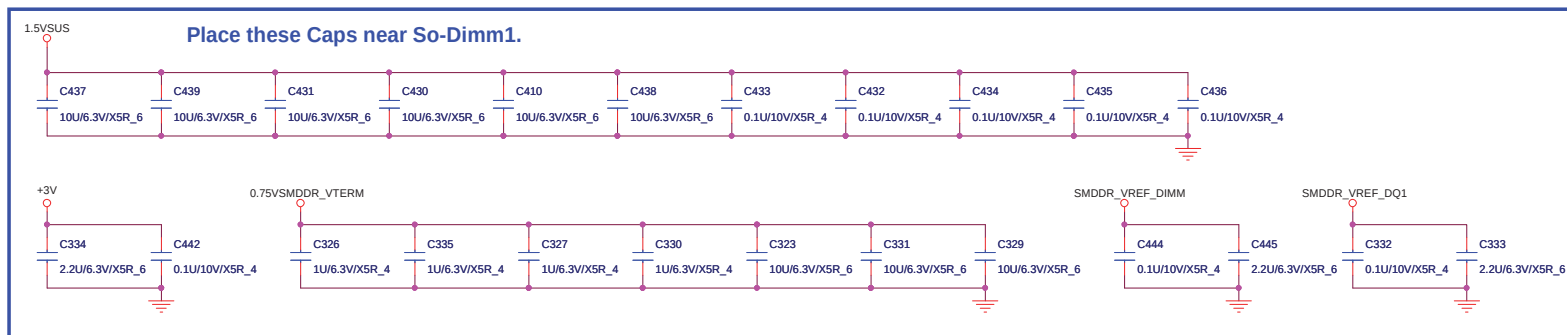
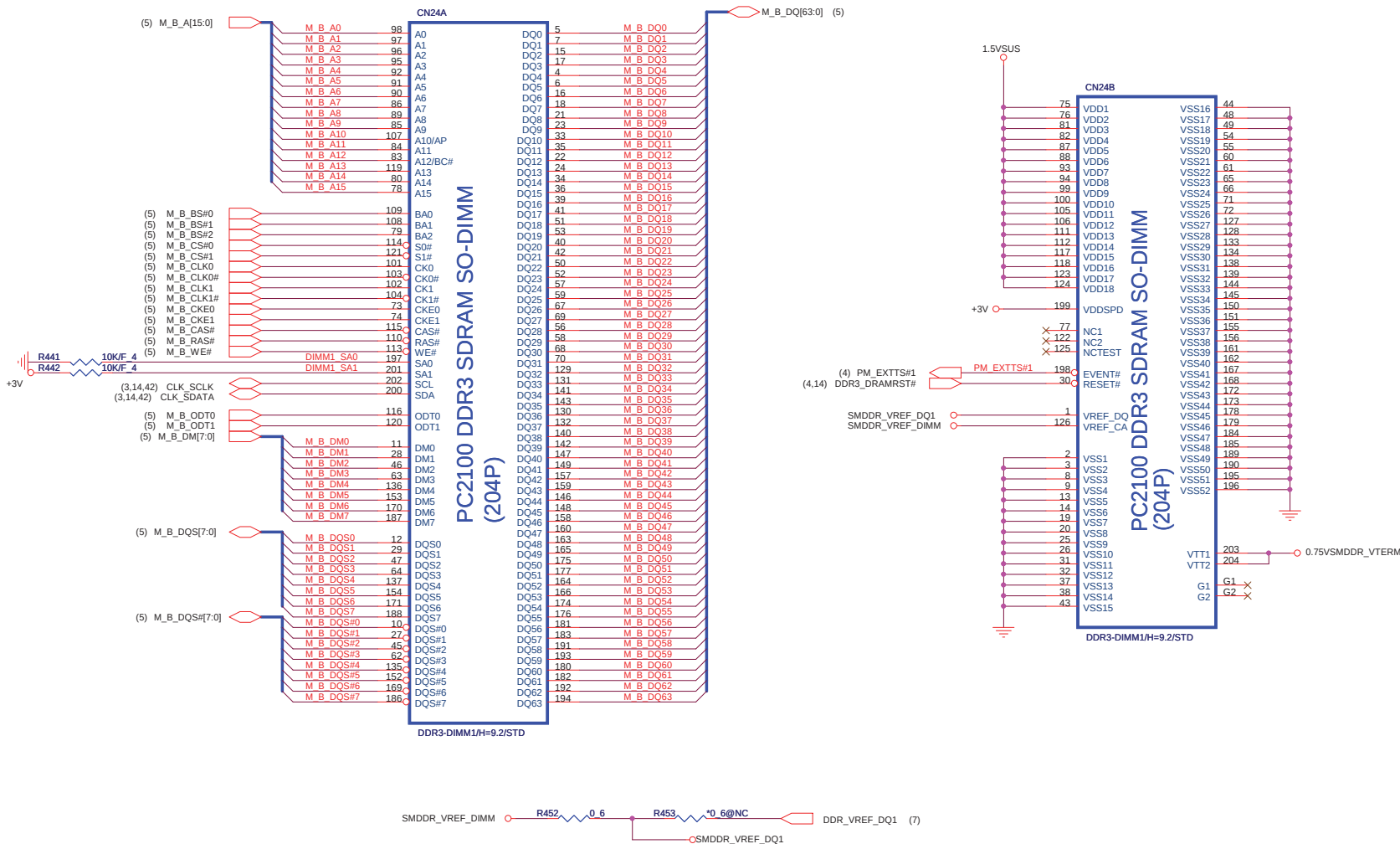


str





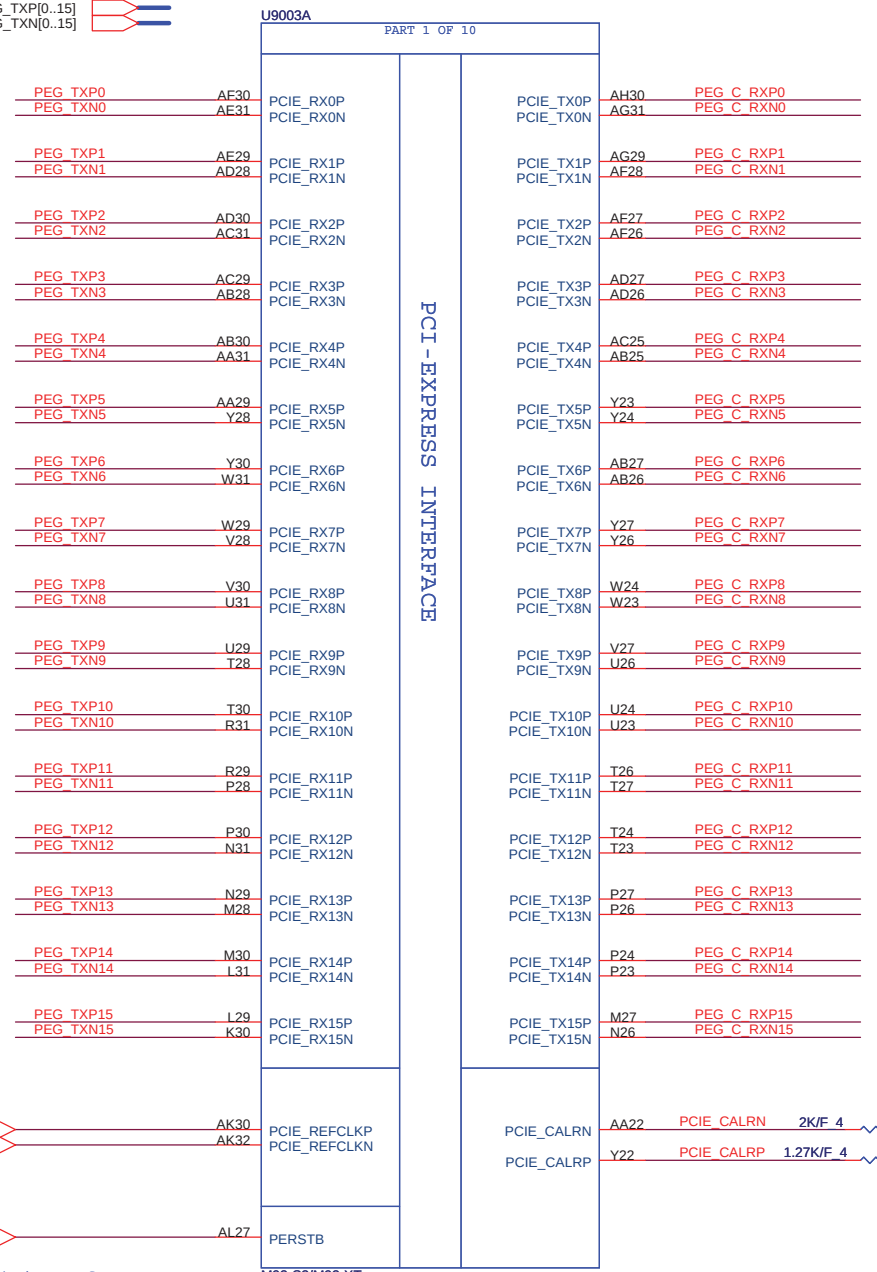




(4) PEG_TXP[0..15]
(4) PEG_TXN[0..15]

(18,21,22,44,50) +1.1V_GFX_PCIE

PEG_RXP[0..15] (4)
PEG_RXN[0..15] (4)



(10) CLK_PCIE_VGA
(10) CLK_PCIE_VGA#
(10) PCI_RST#

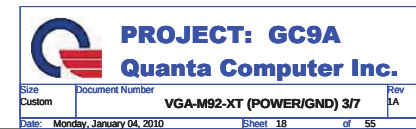
100 MHz (+/-300 ppm) input frequency,
0-0.7 V single-ended swing.
clock must be provided less than 400ns
after CLKREQ# is asserted



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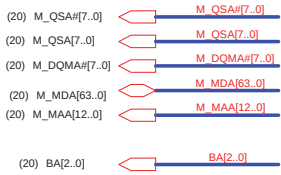
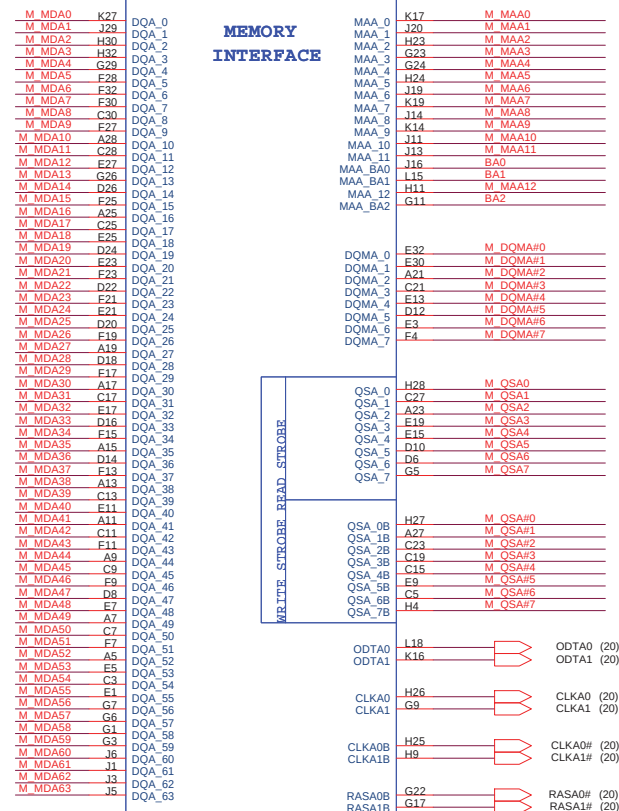
Size Custom	Document Number VGA-M92-XT (PCIe) 1/7	Rev 1A
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 PROJECT: GC9A Quanta Computer Inc.		Rev
Size Custom	Document Number VGA-M92-XT (IO) 2/7	1A
Date: Monday, December 28, 2009	Sheet 17	of 55

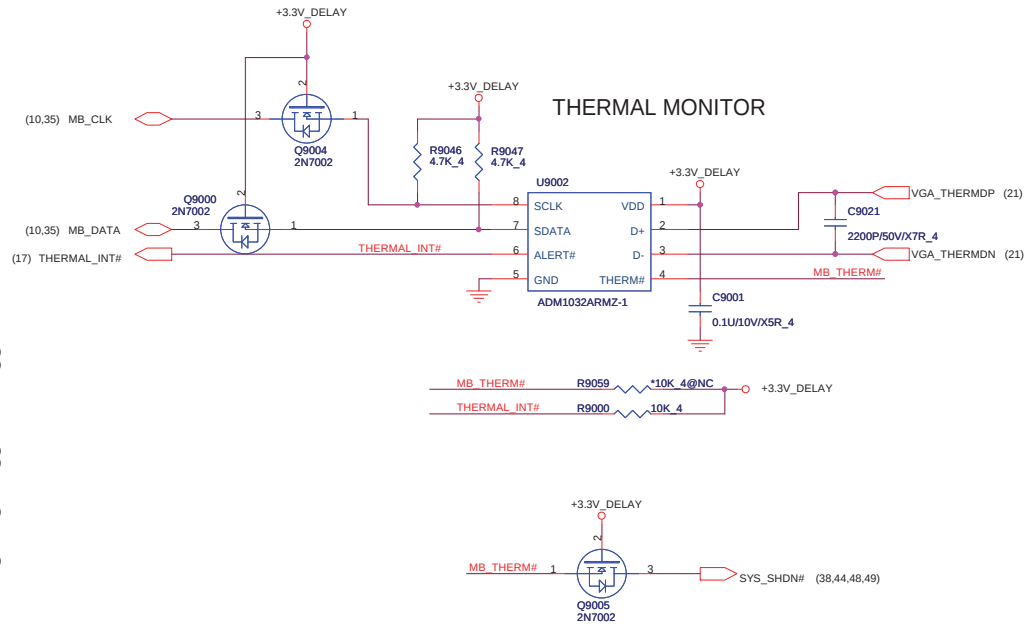
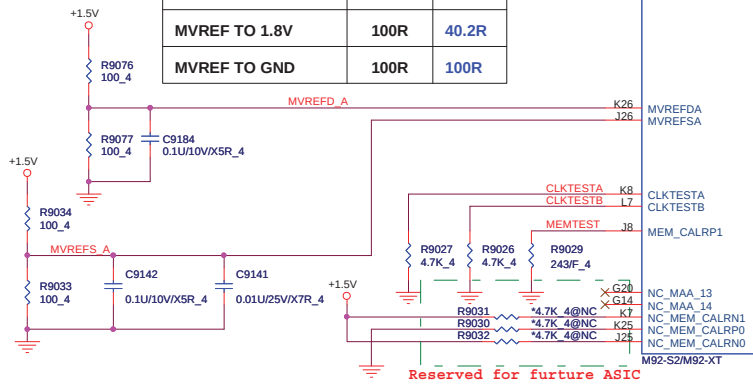


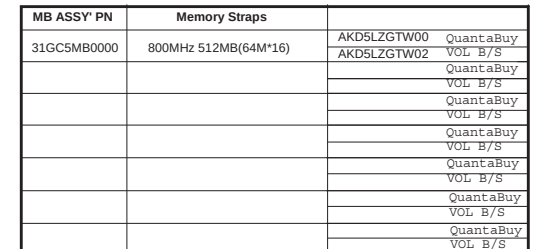
MEMORY INTERFACE

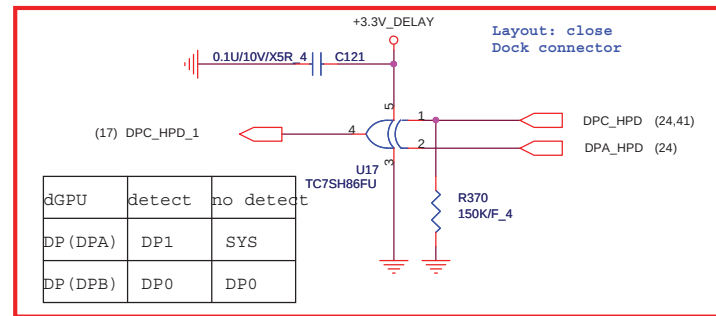
U9003C PART 3 OF 10



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

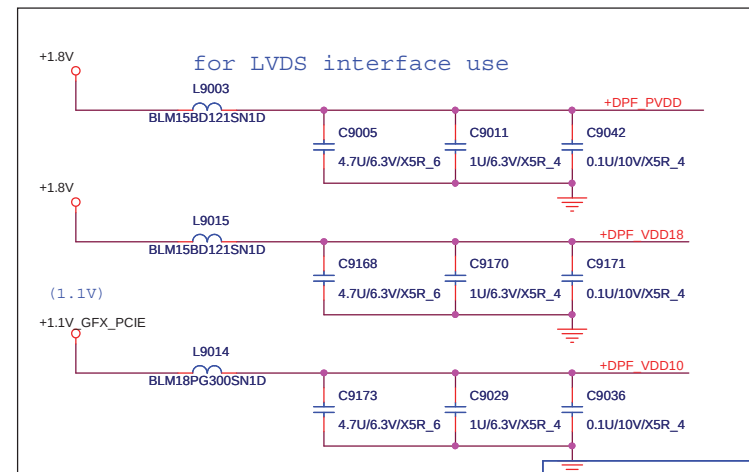
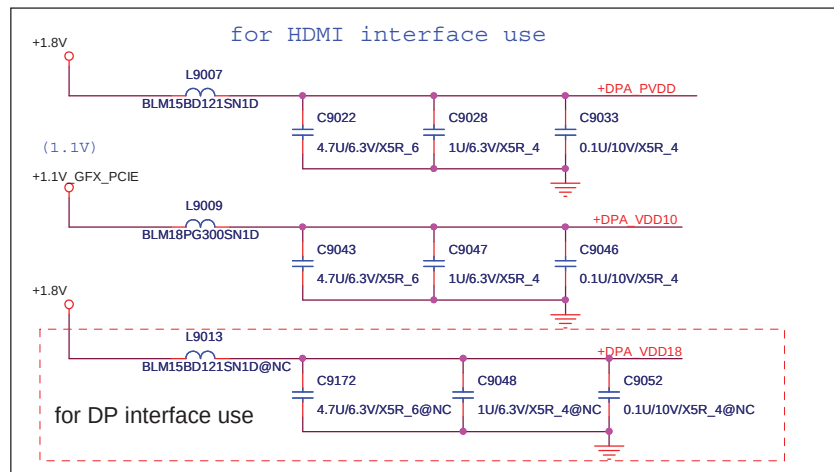
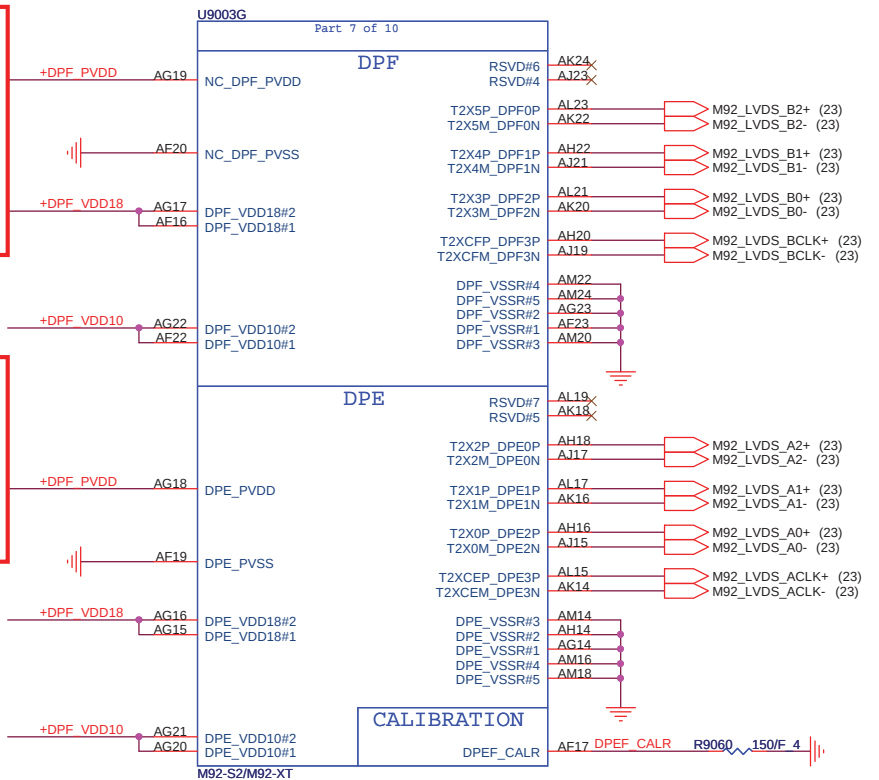
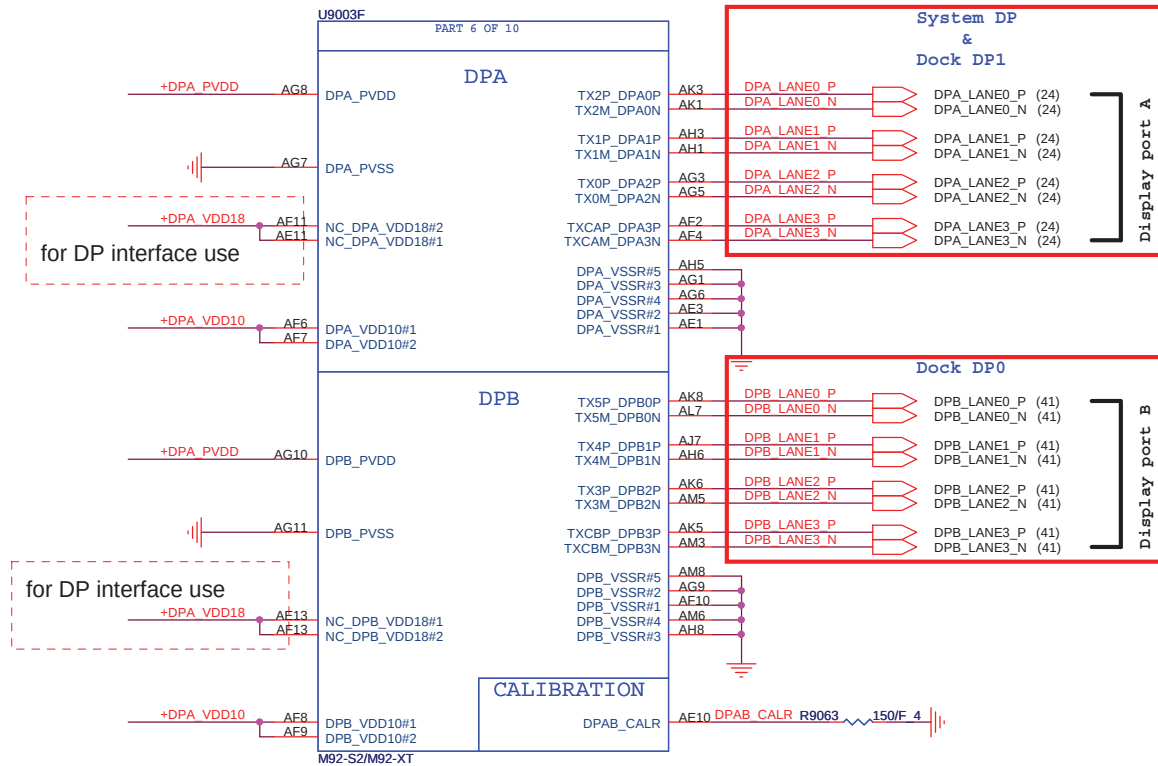






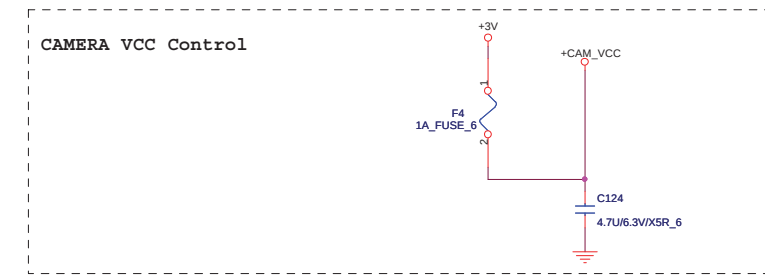
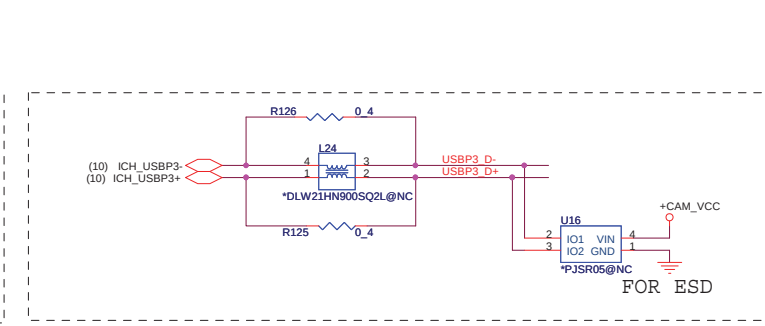
TMDP(HDMI) INTERFACE

LVDS INTERFACE

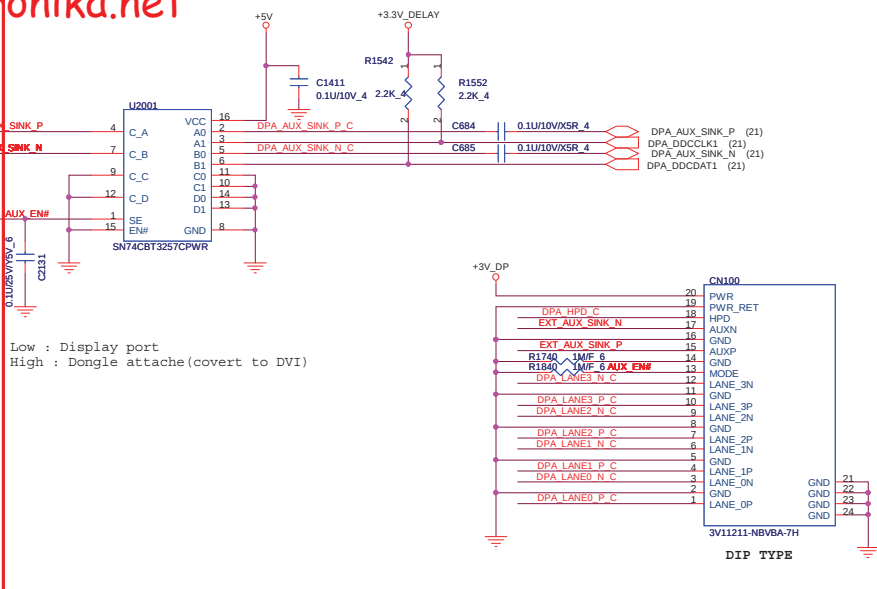


PROJECT: GC9A
Quanta Computer Inc.

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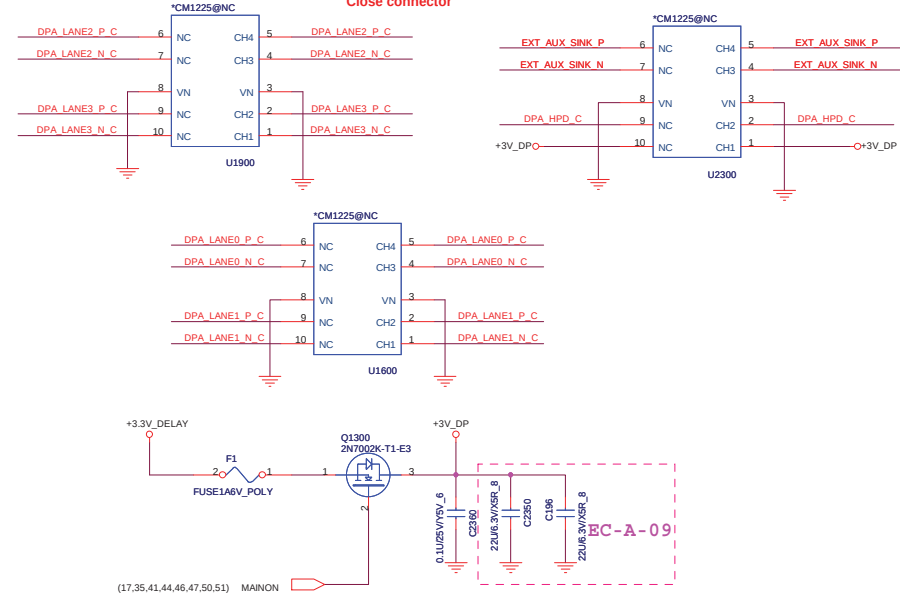


Dock



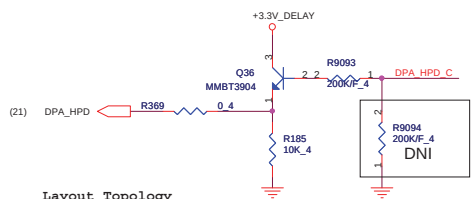
```
Default : Low : Display port
          High : Dongle attache(covert to DVI)
```

Reserve For ESD



```

graph LR
    A[Display Port Connector] --- B[ESD TVS IC]
    B --- C[AC Capacitance]
    C --- D[Switch IC]
  
```



Close to display port connector				
Display port pins	DPA LANE0 N P	C245	0.1U10VXSR 4	DPA LANE0 N C
	DPA LANE0 P R	C244	0.1U10VXSR 4	DPA LANE0 P C
	DPA LANE1 N P	C391	0.1U10VXSR 4	DPA LANE1 N C
	DPA LANE1 P R	C390	0.1U10VXSR 4	DPA LANE1 P C
	DPA LANE2 N P	C247	0.1U10VXSR 4	DPA LANE2 N C
	DPA LANE2 P R	C246	0.1U10VXSR 4	DPA LANE2 P C
	DPA LANE3 N P	C254	0.1U10VXSR 4	DPA LANE3 N C
	DPA LANE3 P R	C253	0.1U10VXSR 4	DPA LANE3 P C

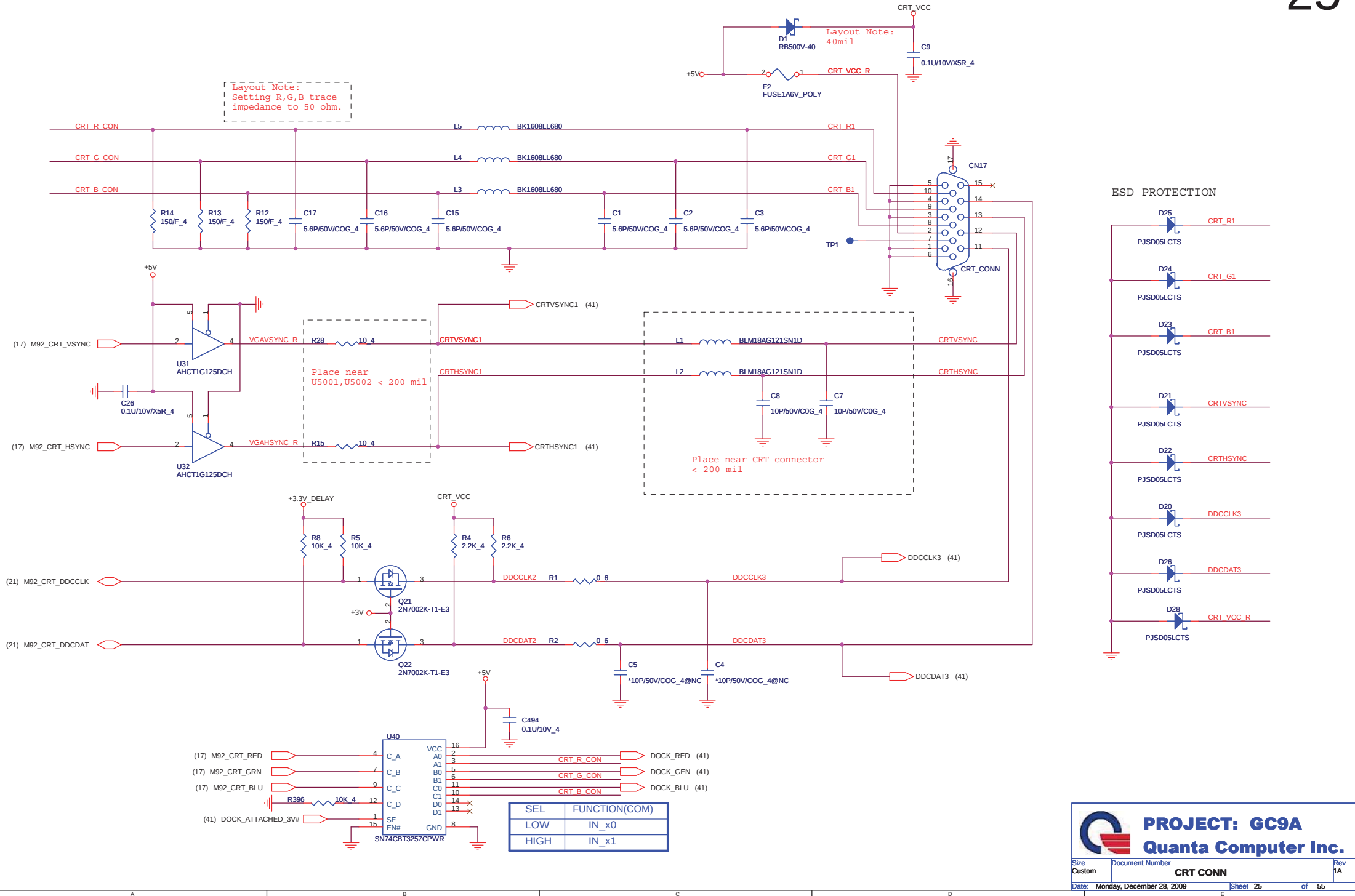
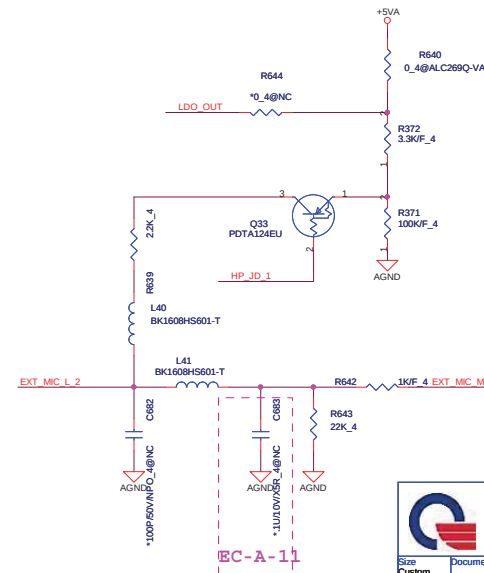
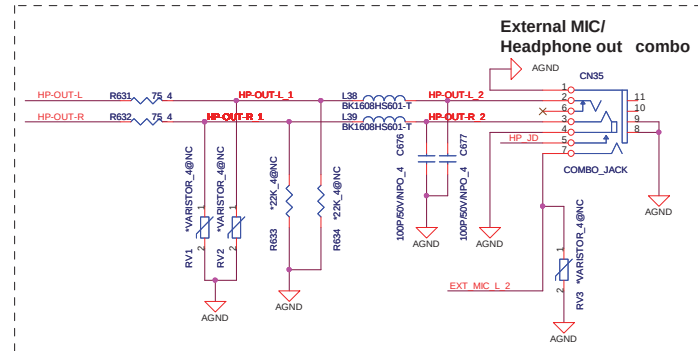
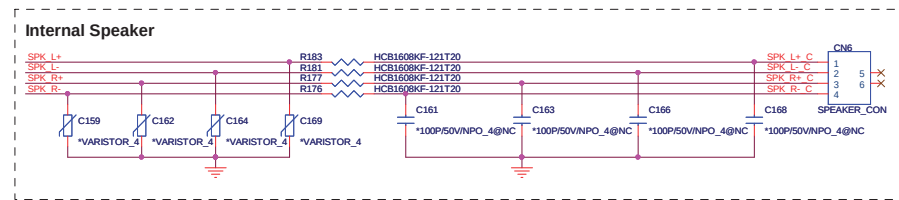
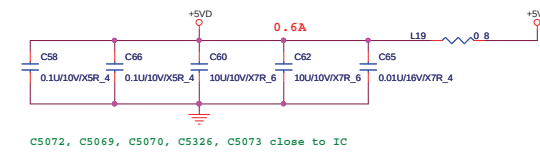
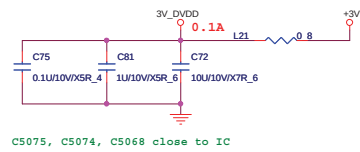
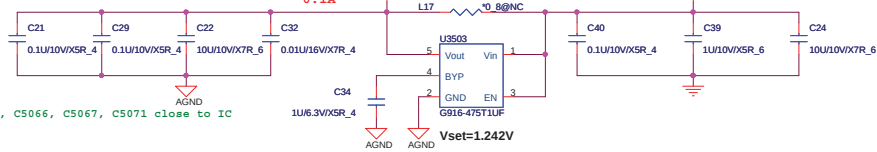
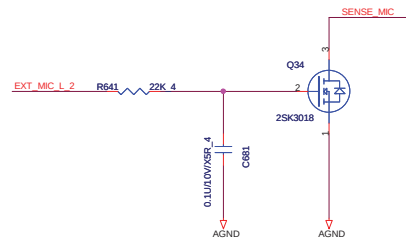
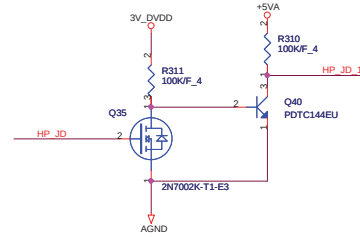
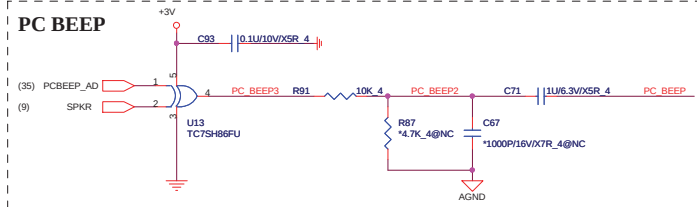
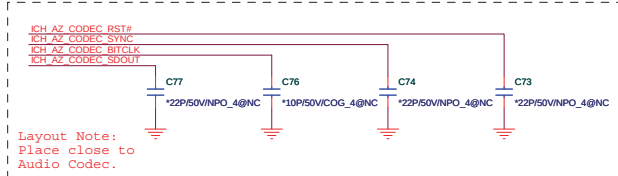
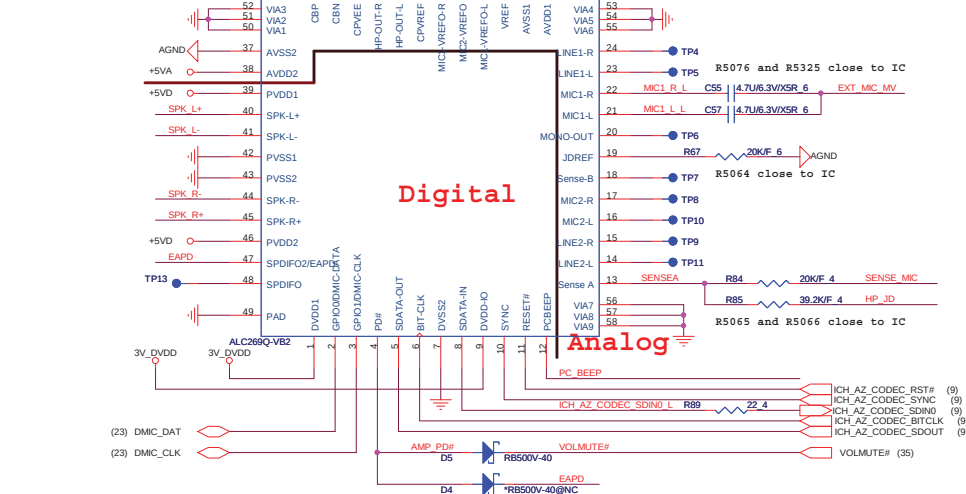
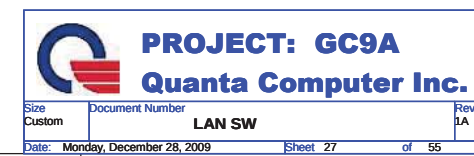
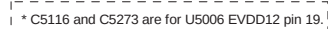


Diagram showing four resistors (R88, R32, R3, R44) connected in parallel to ground. Each resistor has a value of 0.6.

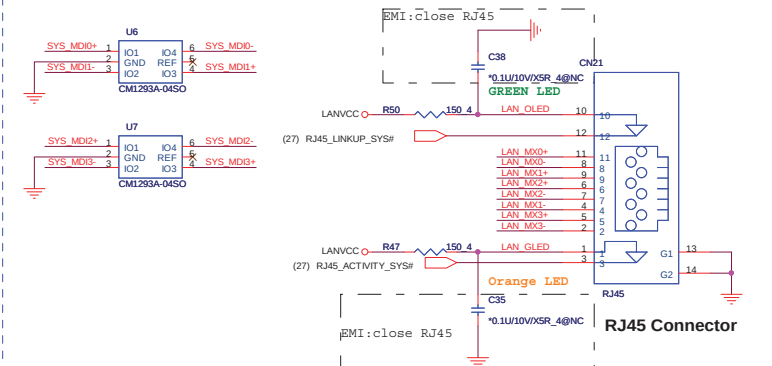


	VA	VB
R310	3.3K	2K
R640	ASM	
R644		ASM





* C5119 to C5123 are for U5006 VDD12 pins-- 10, 13, 30, 36, 39.

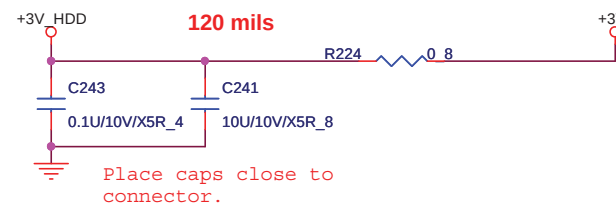
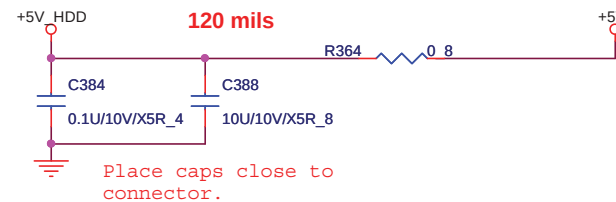
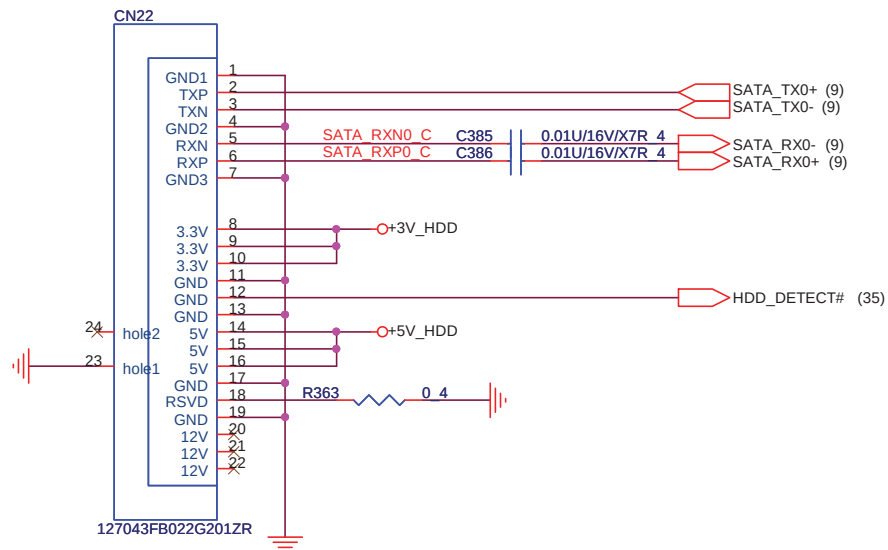


SATA Connector.

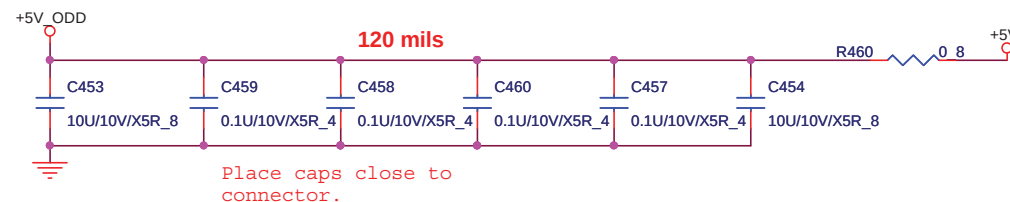
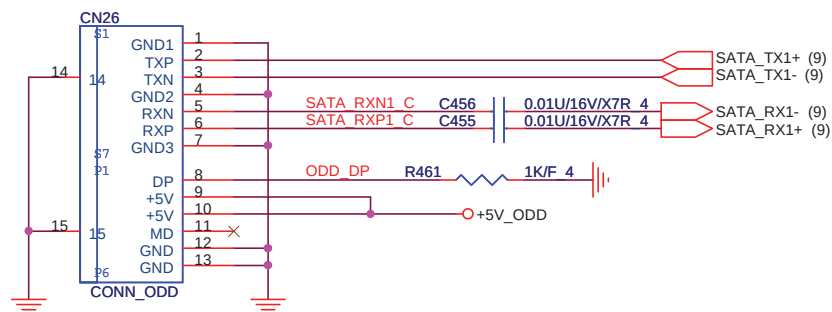
(12,18,21,24,25,26,35,37,38,44) +5V
(3,4,8,9,10,11,12,14,15,17,23,24,25,26,28,30,31,32,33,34,35,36,38,39,40,41,42,44,46,47,48,49,51) +3V



29



ODD Connector

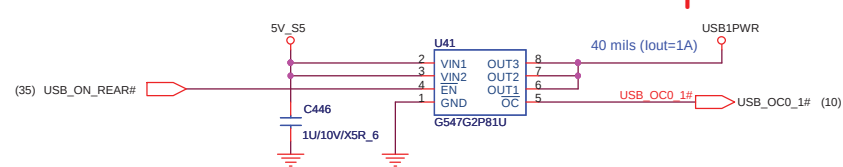


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Quanta Computer Inc.

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USBX1

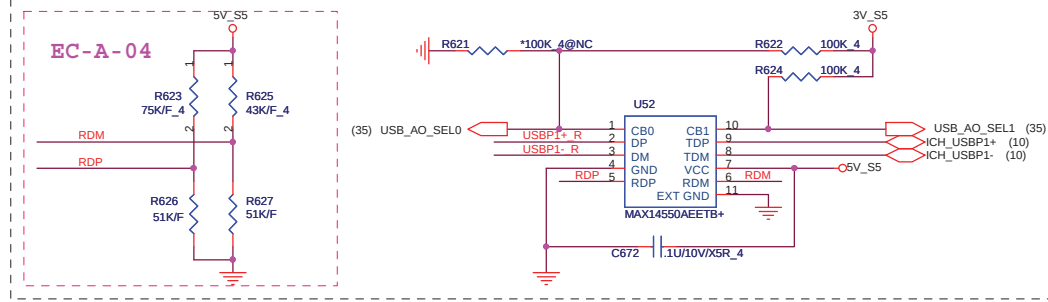


(3,4,8,9,10,11,12,14,15,17,23,24,25,26,28,29,31,32,33,34,35,36,38,39,40,41,42,44,46,47,48,49,51)

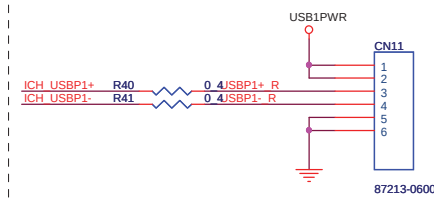
(12,31,44) 5V_S5 +3V

30

Support Black-berry function



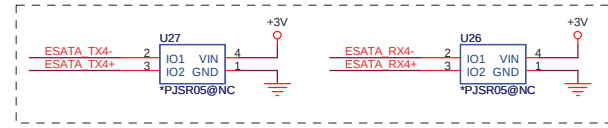
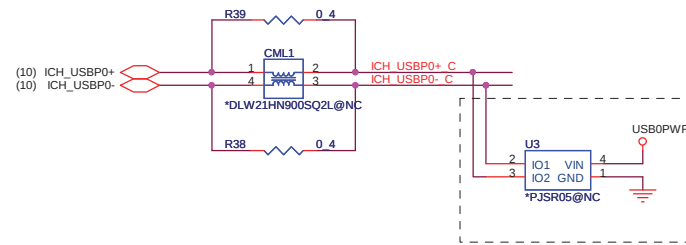
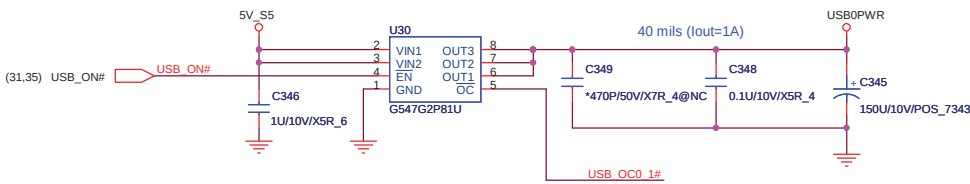
USB X1----> Wire to board conn



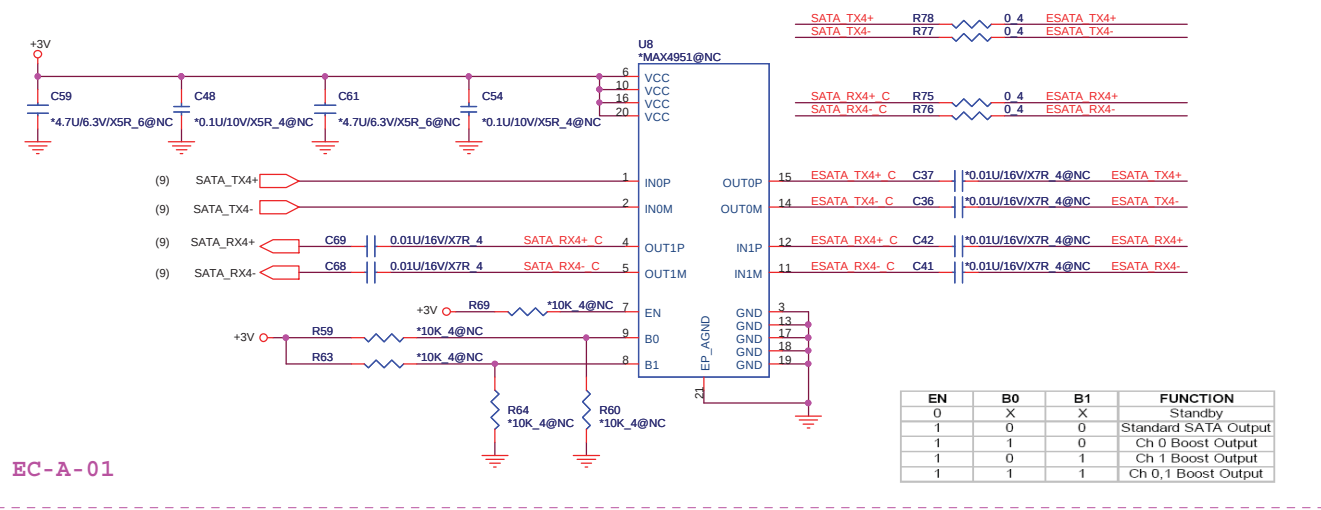
USB 1

	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

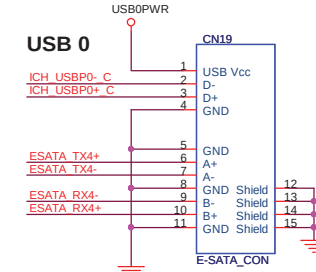
USB + E-SATA



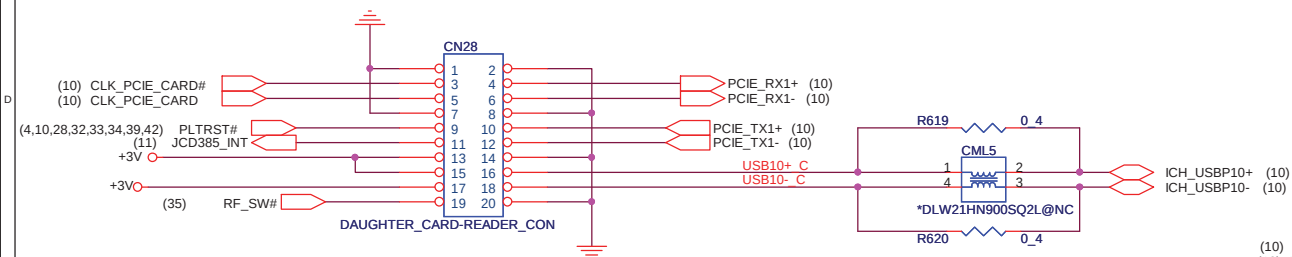
E-SATA RE-DRIVER



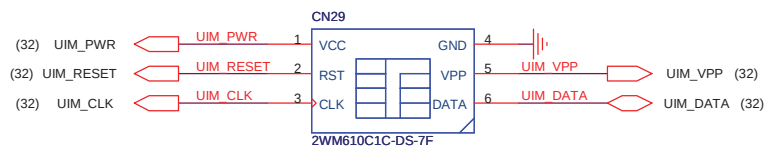
EN	B0	B1	FUNCTION
0	X	X	Standby
1	0	0	Standard SATA Output
1	1	0	Ch 0 Boost Output
1	0	1	Ch 1 Boost Output
1	1	1	Ch 0,1 Boost Output



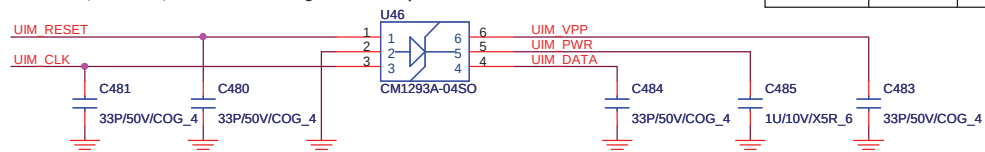
PROJECT: GC9A
Quanta Computer Inc.
 Size Custom Document Number
USB X1/USB+ESATA
 Date: Monday, December 28, 2009 Sheet 30 of 55



SIM Card CONN

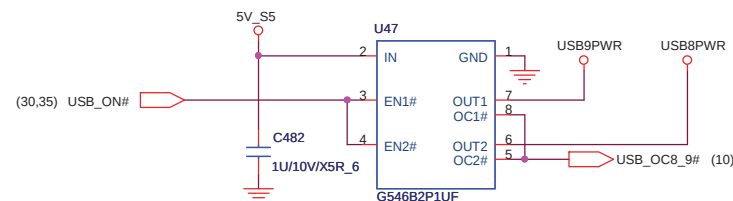
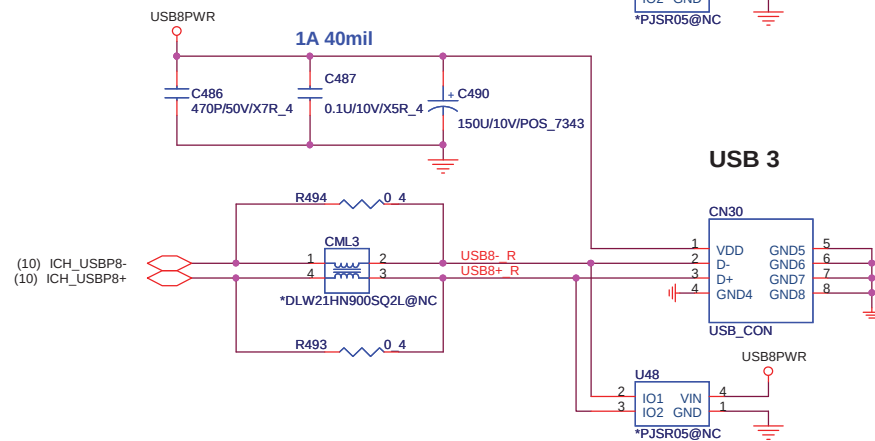
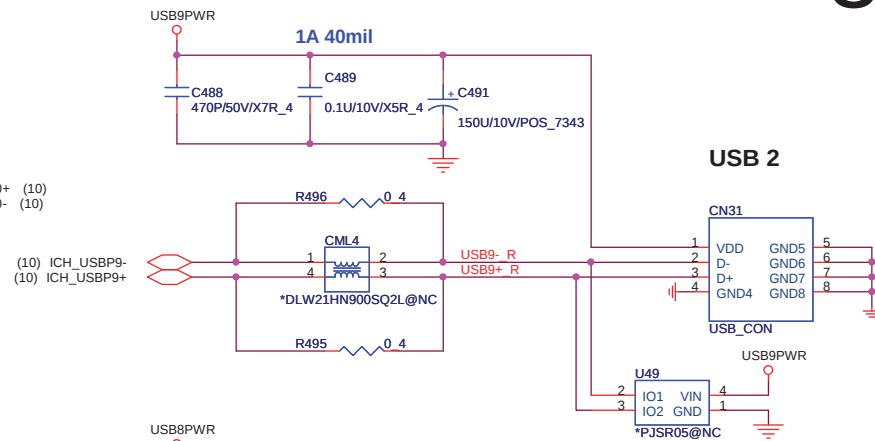
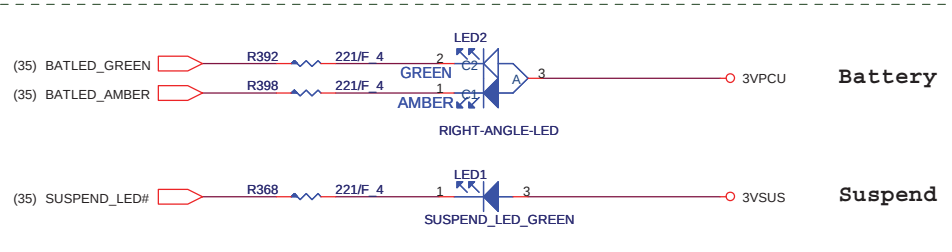


Layout Note:
UIM_RESET, UIM_CLK, UIM_DATA routing as short as possible

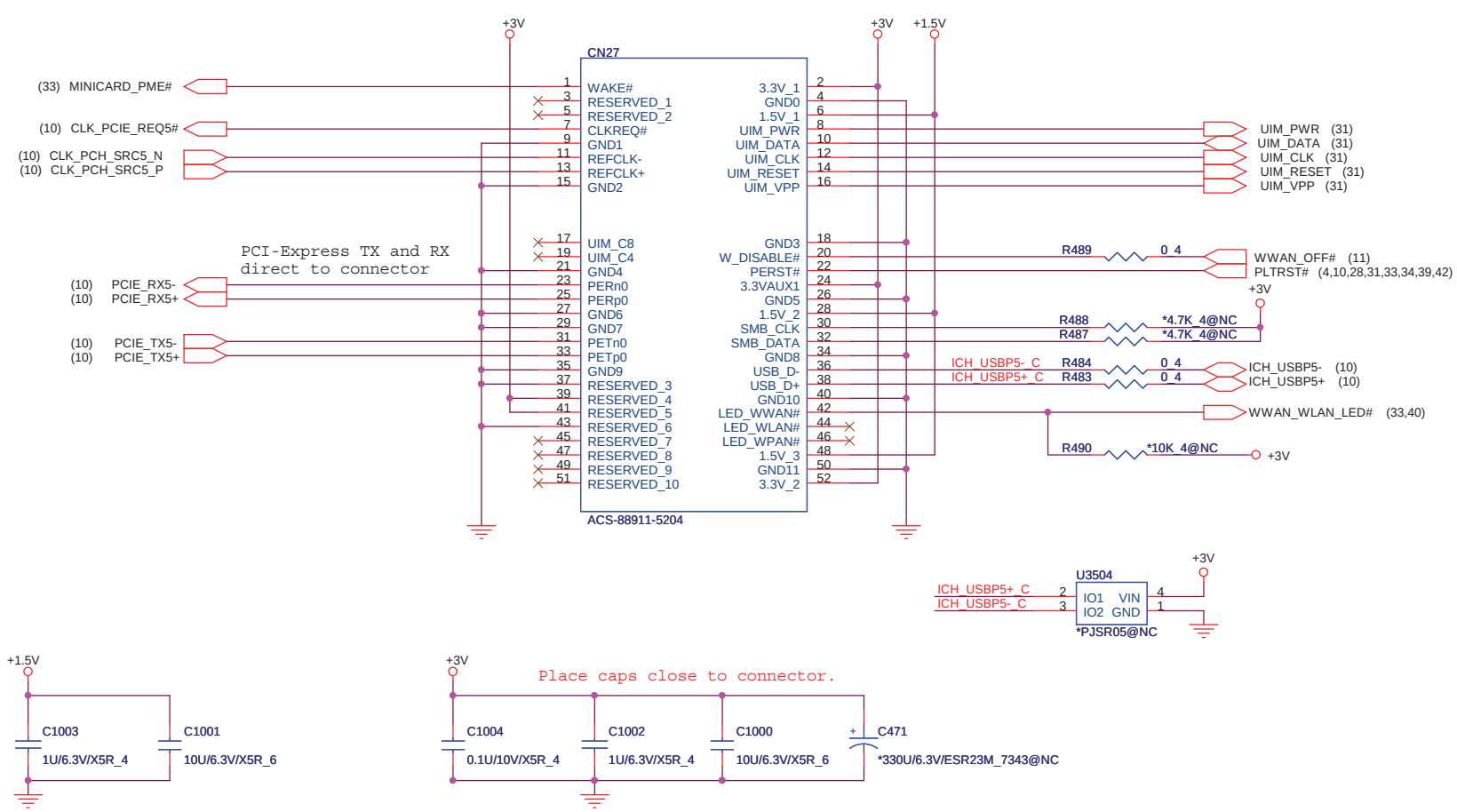


	w/ WWAN	w/o WWAN
CN29	ASM	NO ASM
U46	ASM	NO ASM
C480 - C481	ASM	NO ASM
C483 - C485	ASM	NO ASM

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

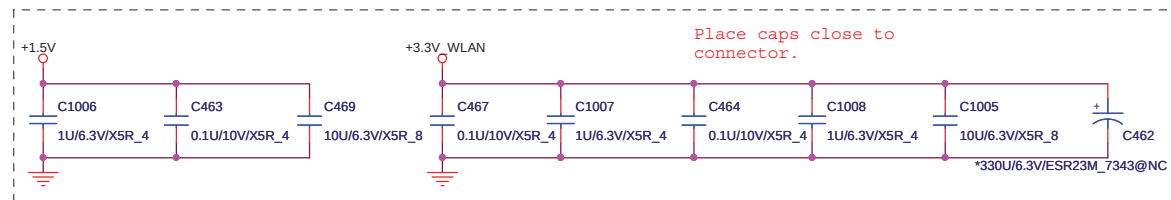
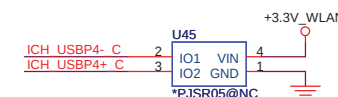
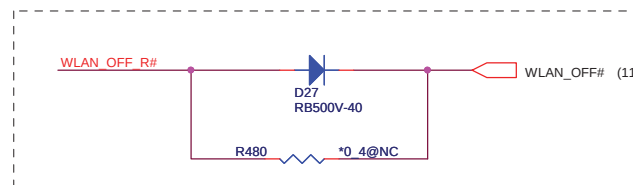
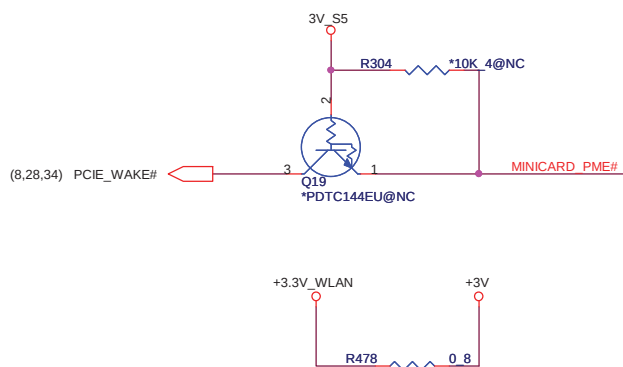
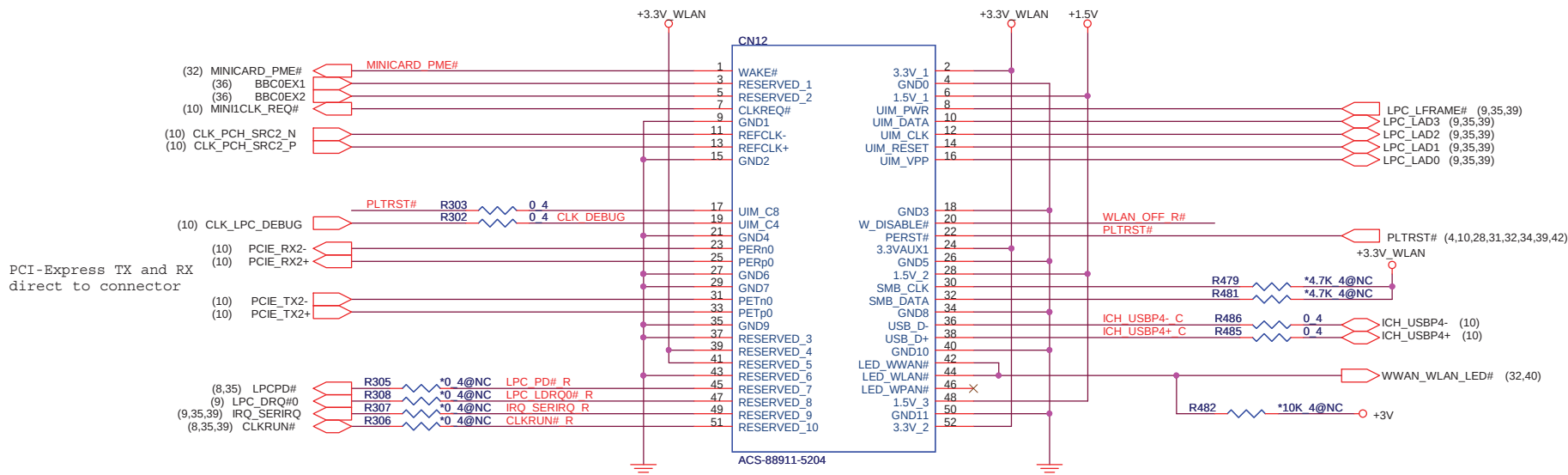
**PROJECT: GC9A**
Quanta Computer Inc.

Size
Custom

Document Number
MINI-Card (UWB, WWAN)

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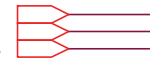


Express Card

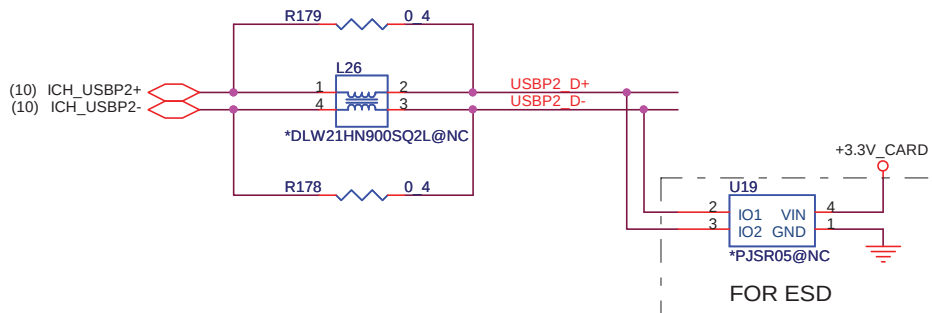
<http://hobi-elektronika.net>

(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



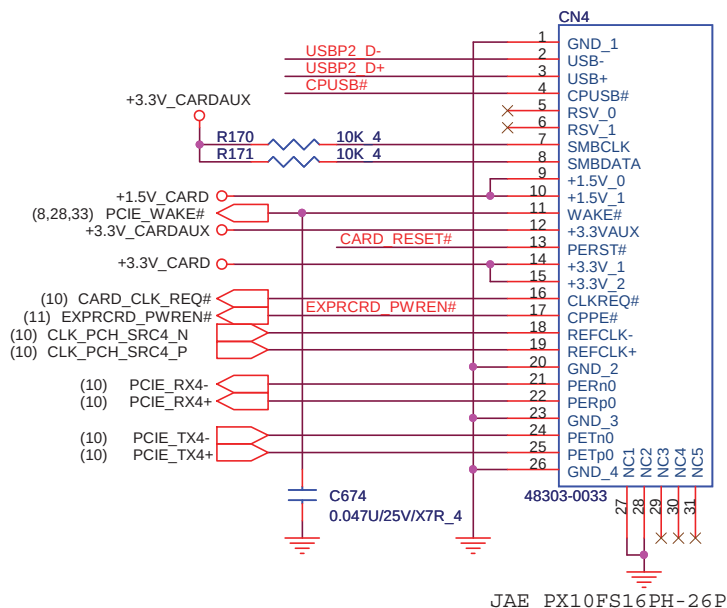
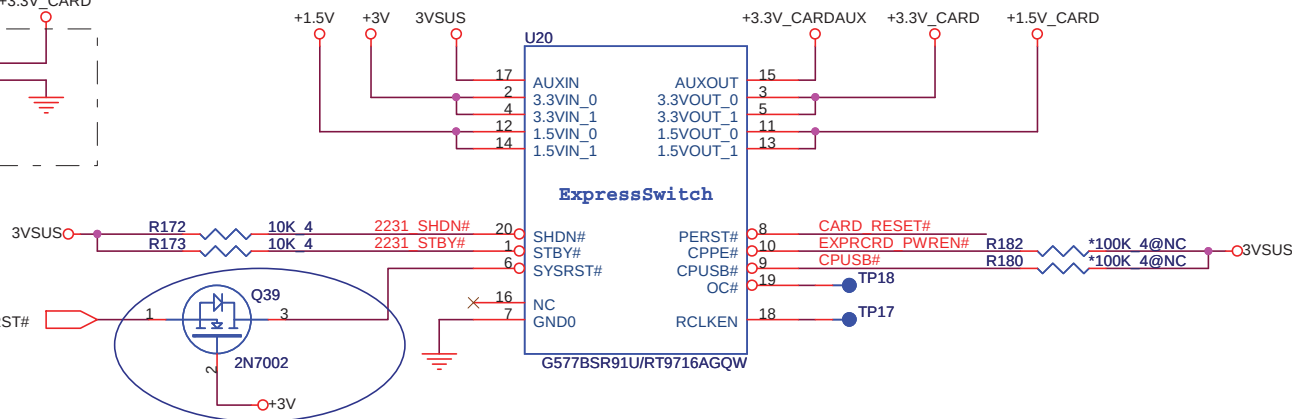
34



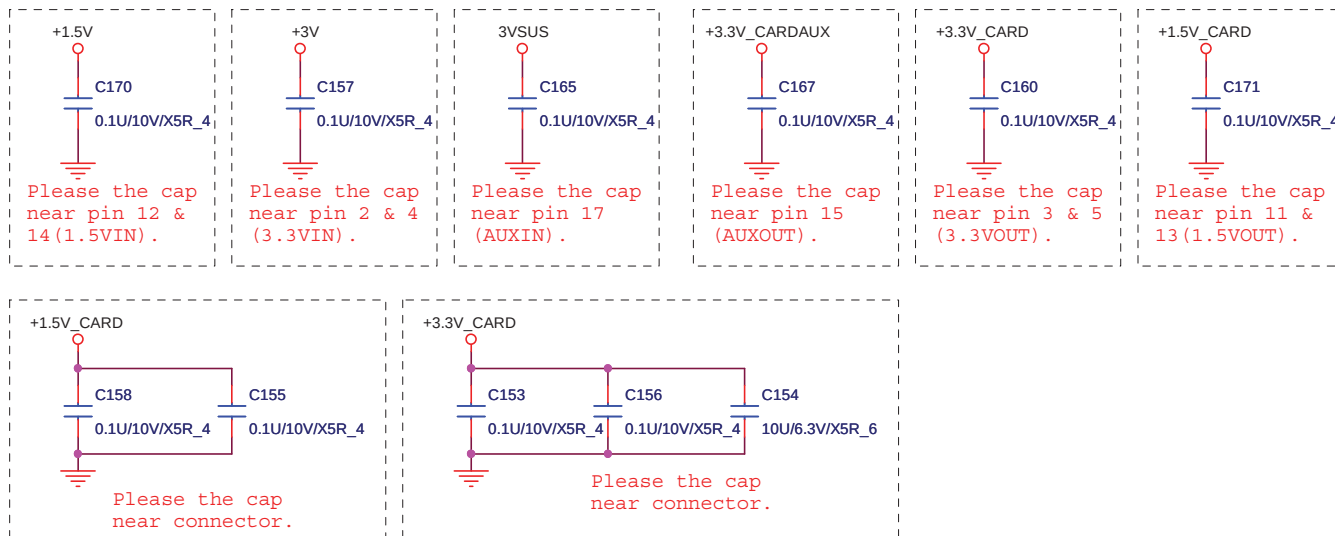
+1.5V_CARD Max. 650mA, Average 500mA.
+3V_CARD Max. 1300mA, Average 1000mA.

20090928
avoid current leakage

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

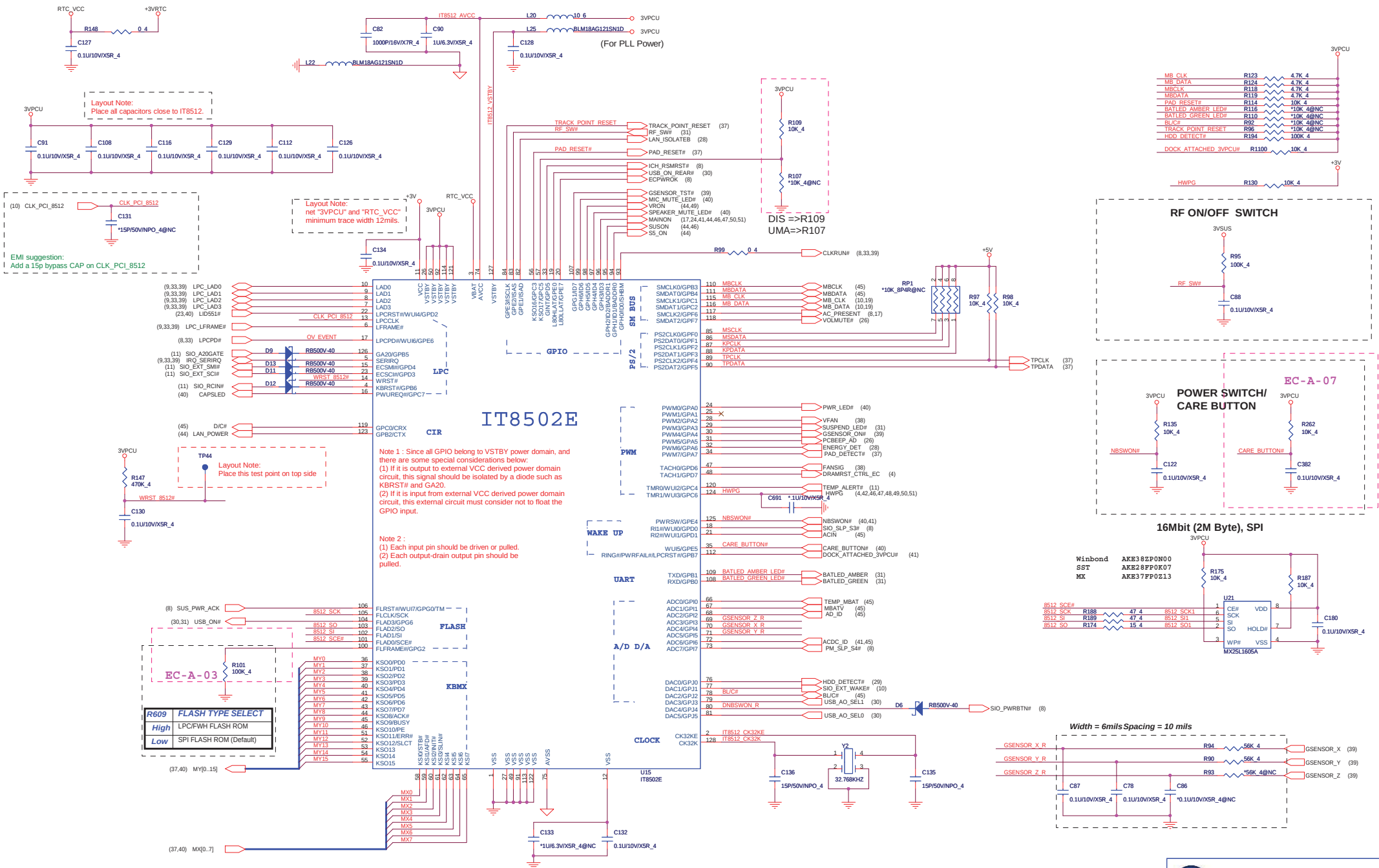


JAE PX10FS16PH-26P



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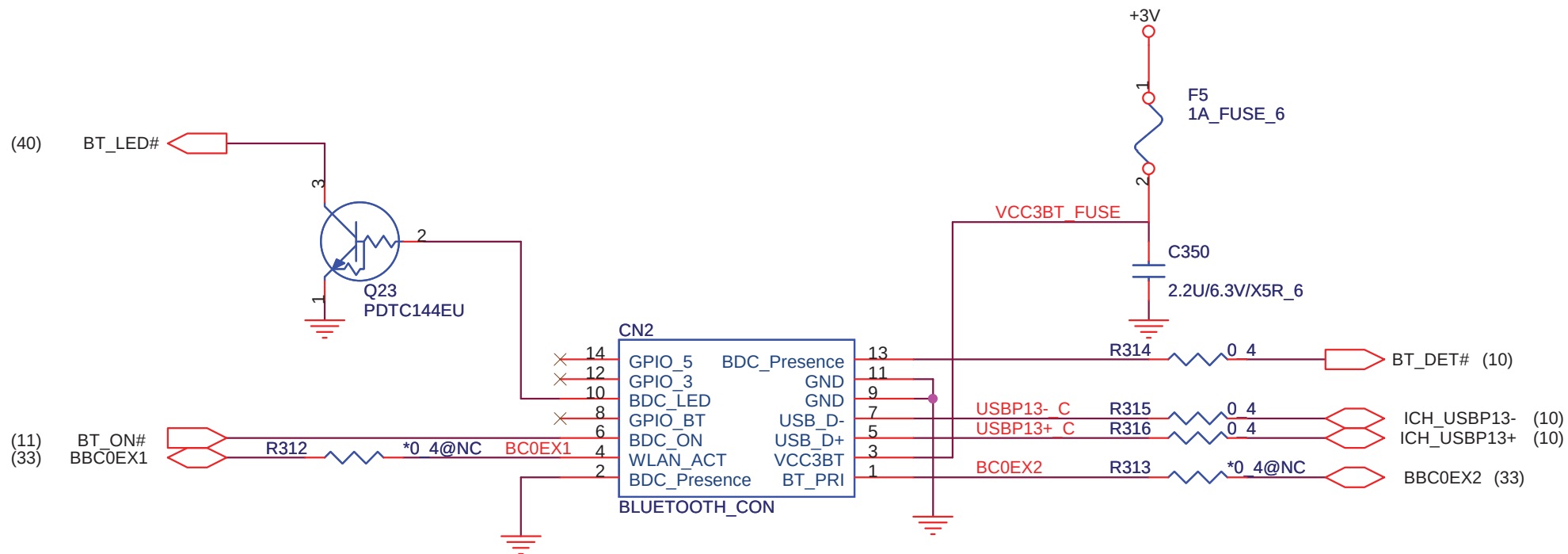


BLUETOOTH

(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



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Quanta Computer Inc.

Size
Custom

Document Number

B/T

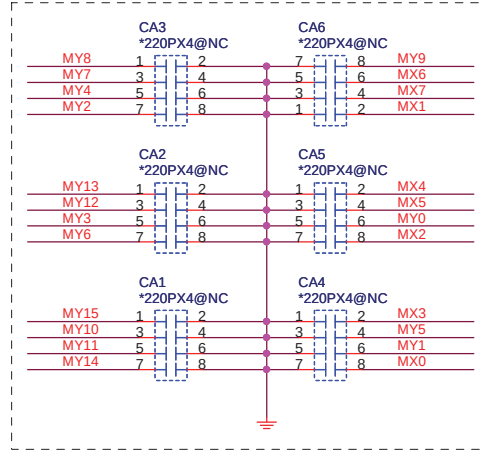
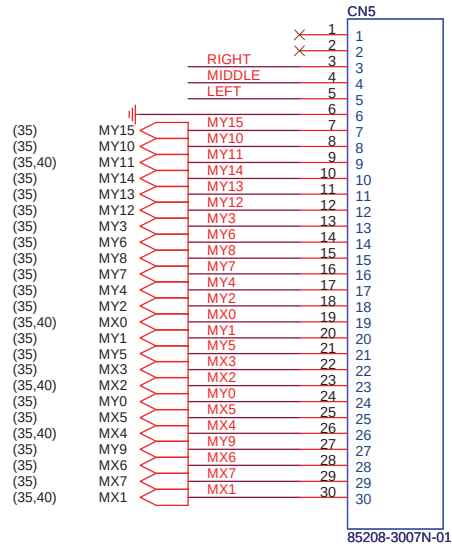
Rev
1A

Date: Monday, December 28, 2009

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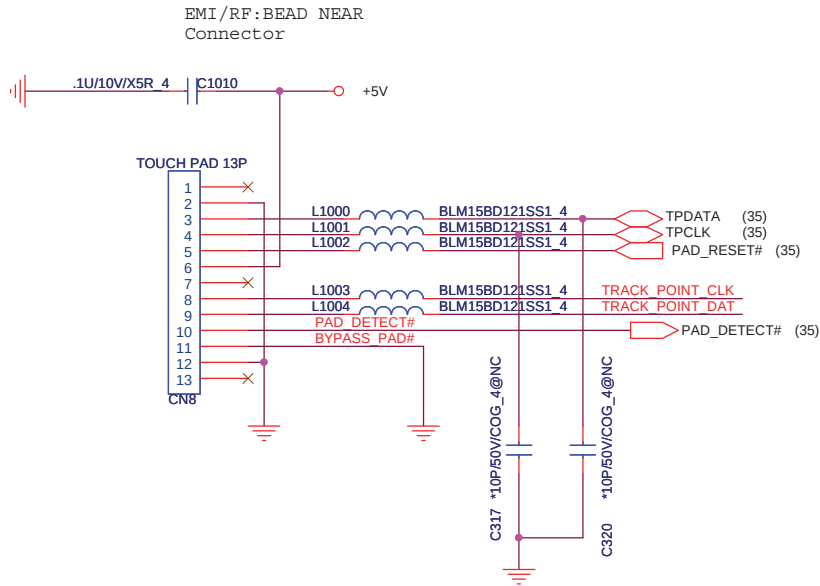
KEYBOARD

KEYBOARD connector

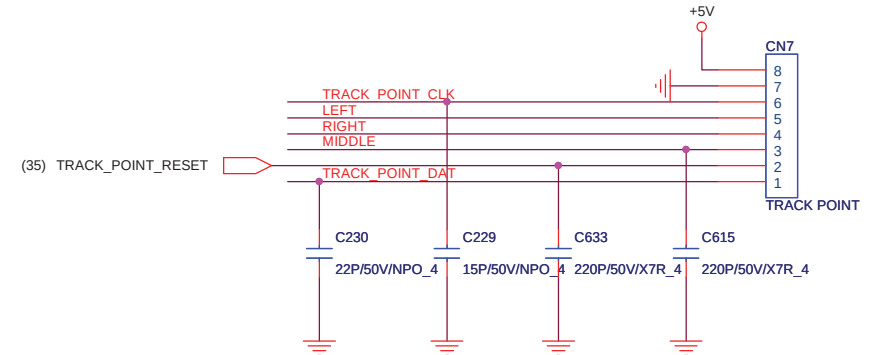


For EMI request

Touch pad



TRACK POINT

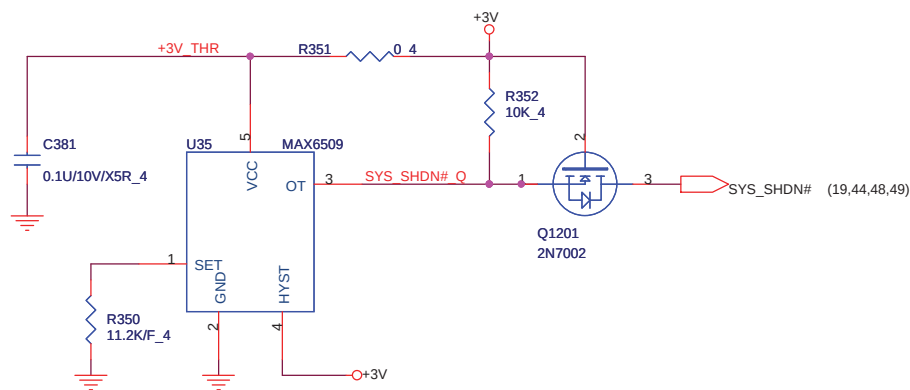
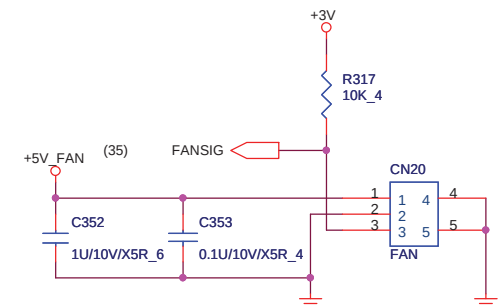
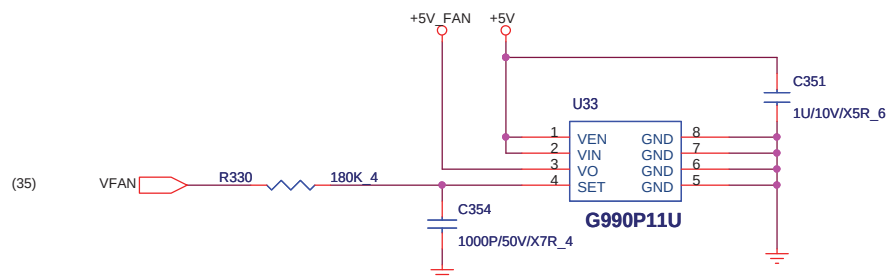


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Quanta Computer Inc.

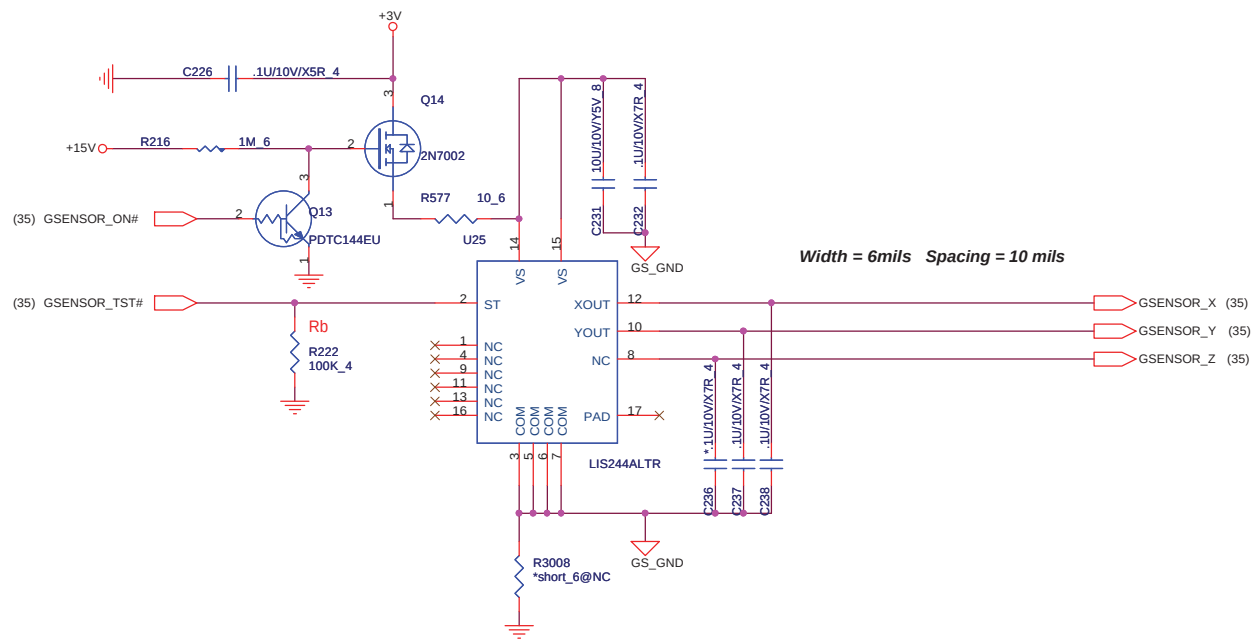
Size	Document Number	Rev
Custom	K/B, T/P	1A

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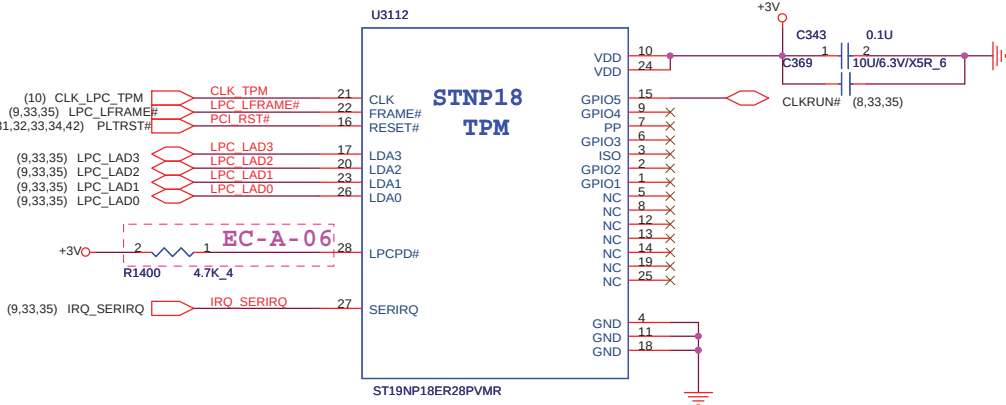
FAN CONTROL



G-SENSOR (2-Axial)



Discrete TPM



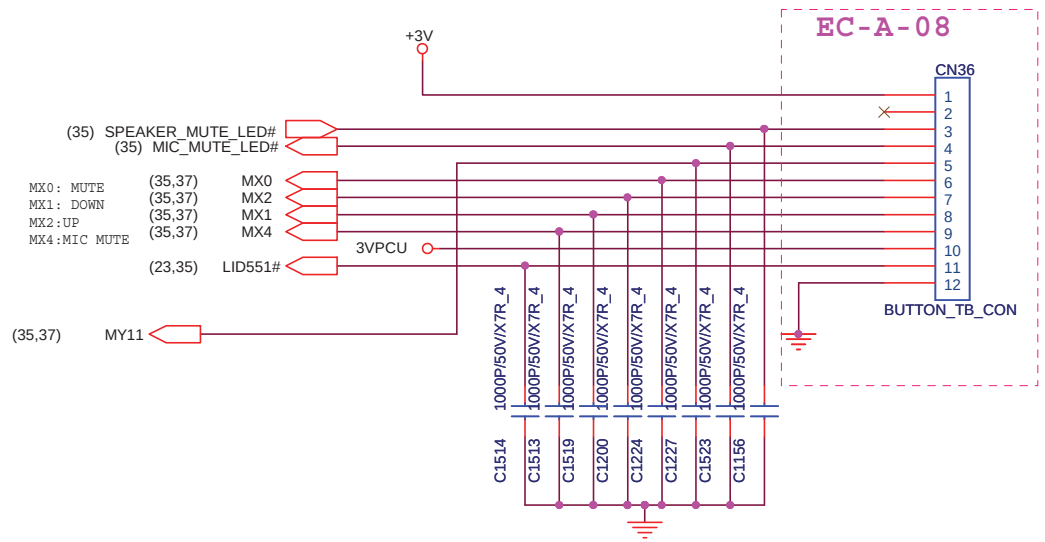
supplier P/N:ST19NP18ER28PVMR
Quanta P/N:AL19NP18K13
F/P:tssop28-6_4-65-1_2h

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Quanta Computer Inc.

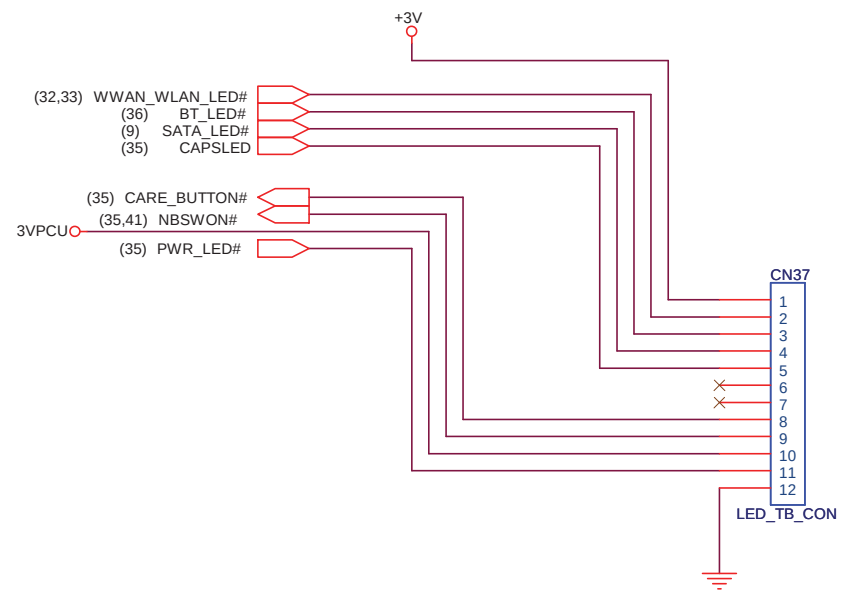
Size Custom	Document Number G-SENSOR/Discrete TPM	Rev 1A
Date: Monday, December 28, 2009 Sheet 39 of 55		

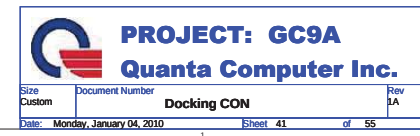
Daughter Boards for LEDs & Ports

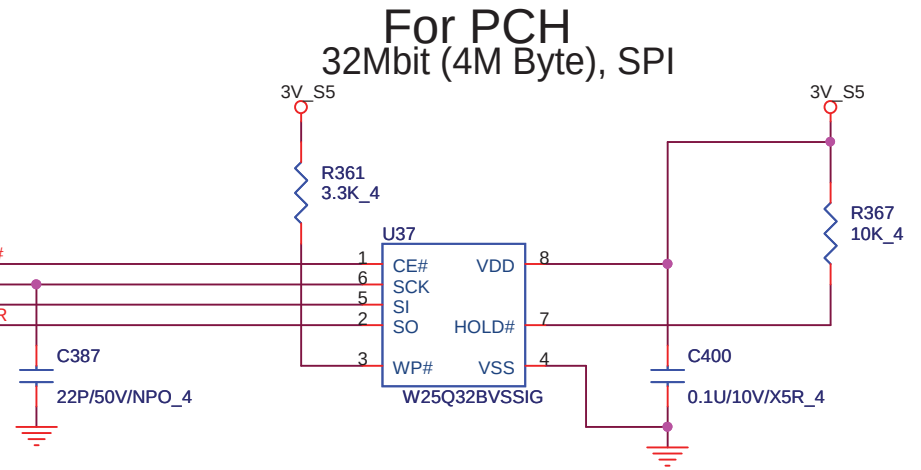
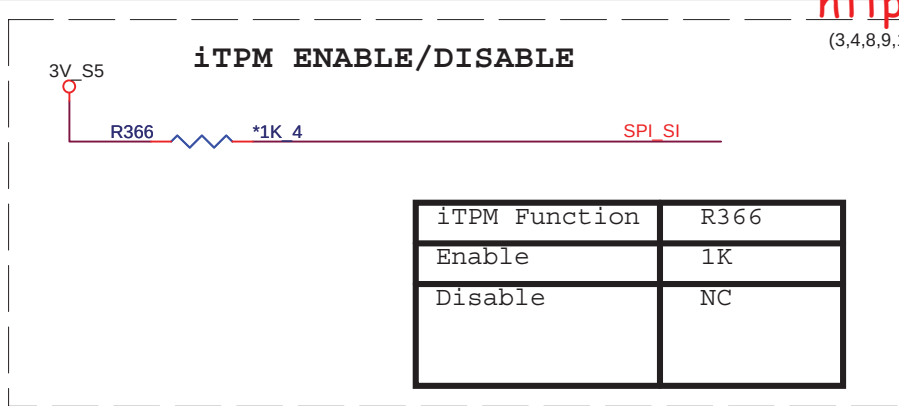
FFC TO KBD LEFT SIDE CONNECTOR



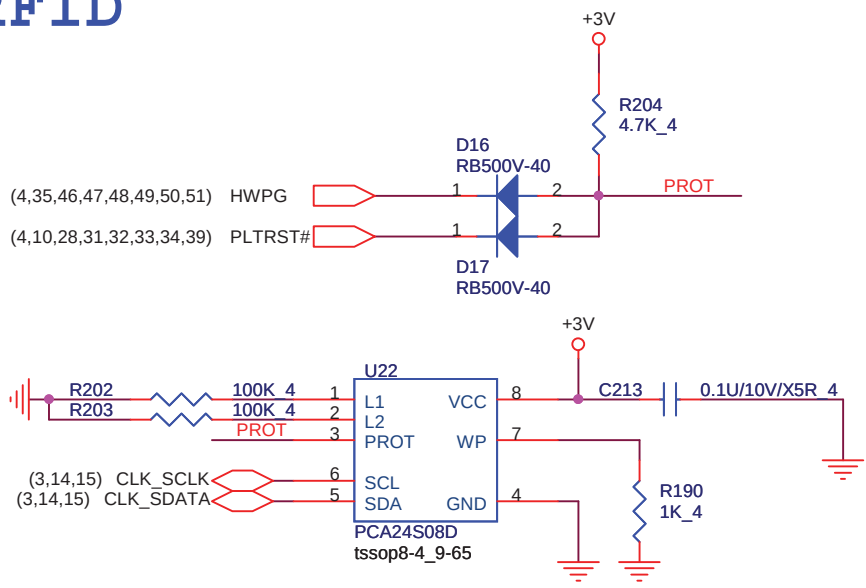
FFC TO LED RIGHT SIDE CONNECTOR







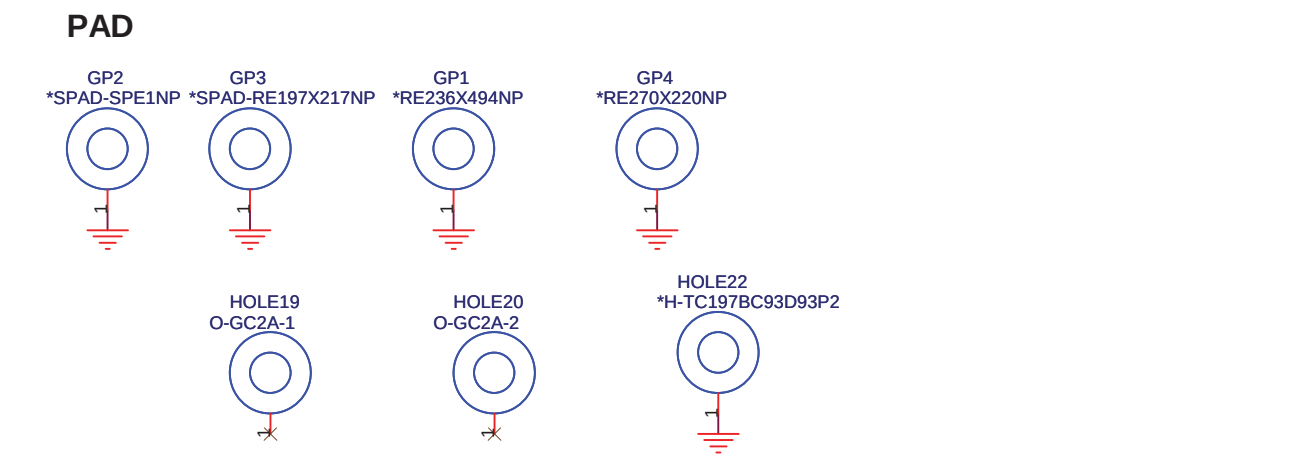
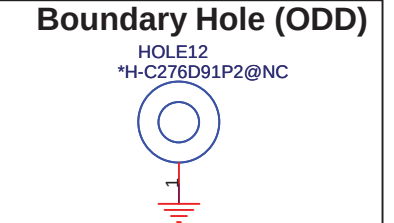
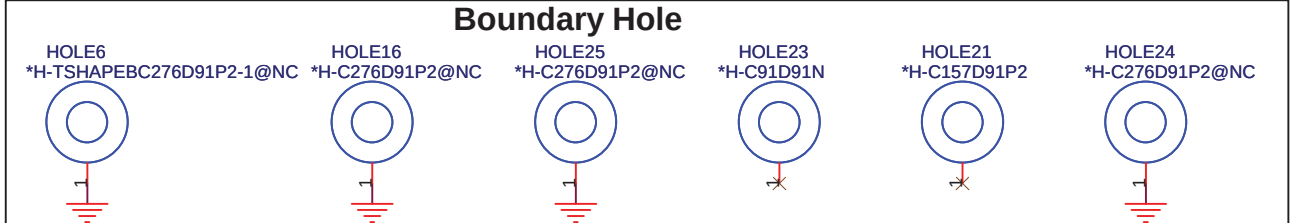
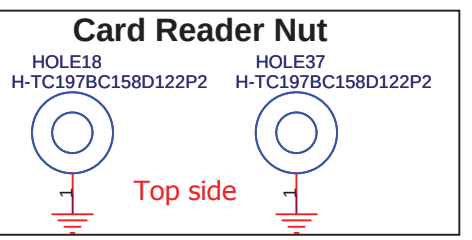
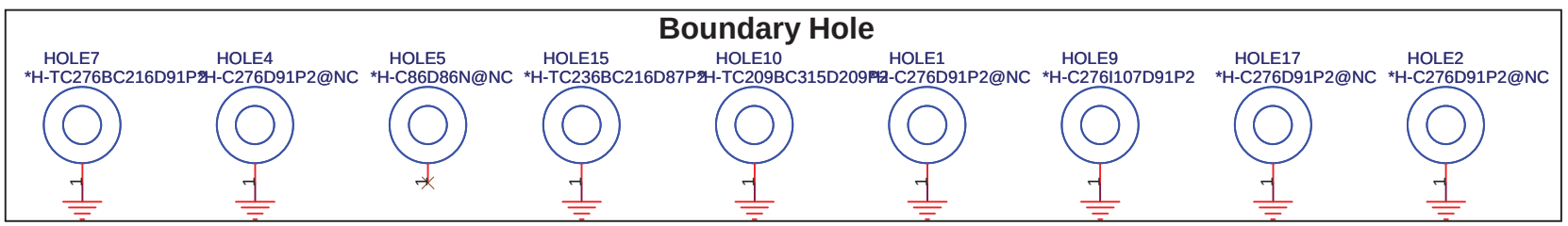
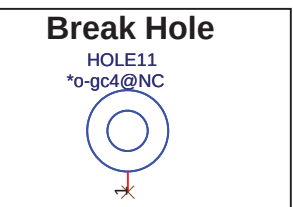
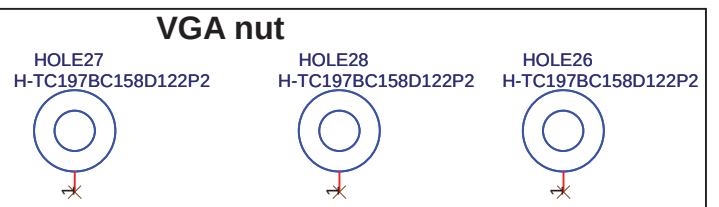
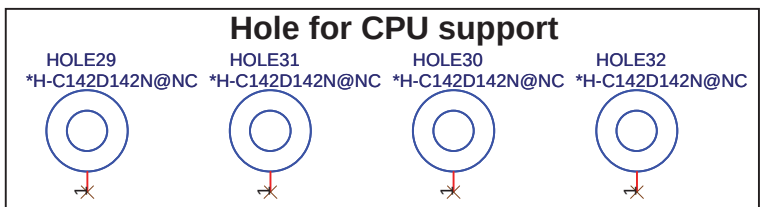
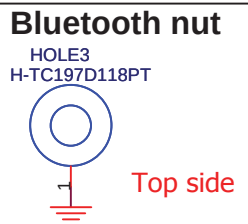
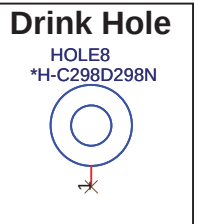
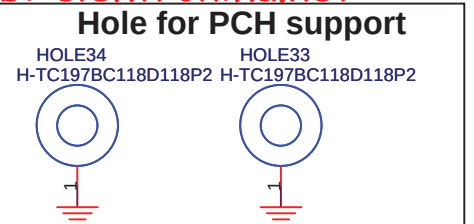
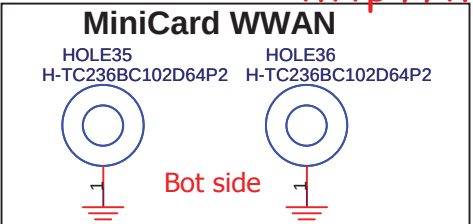
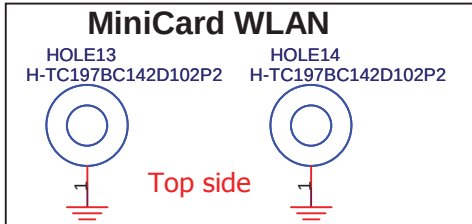
RFID





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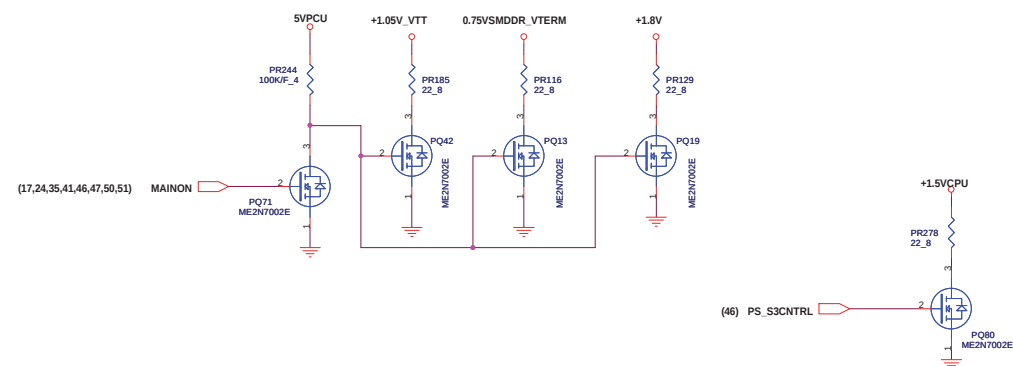
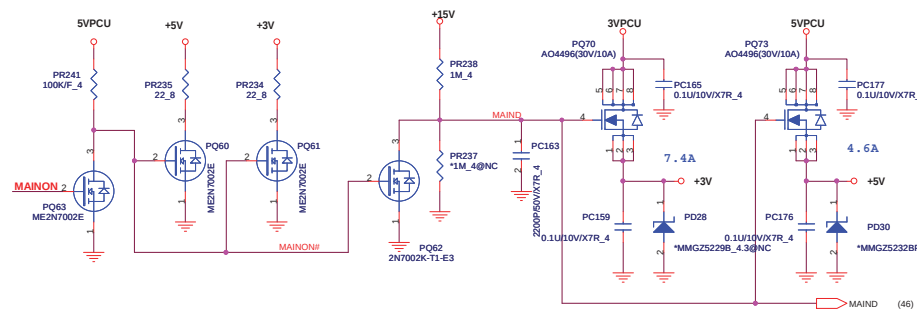




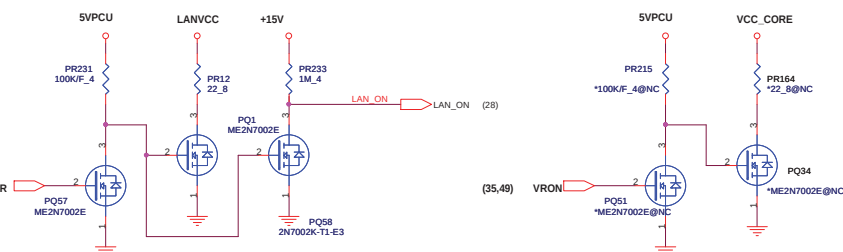
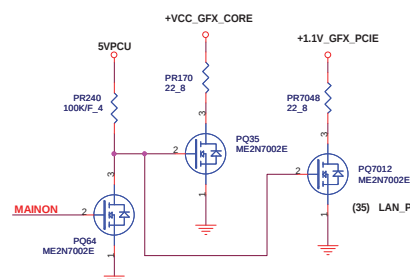
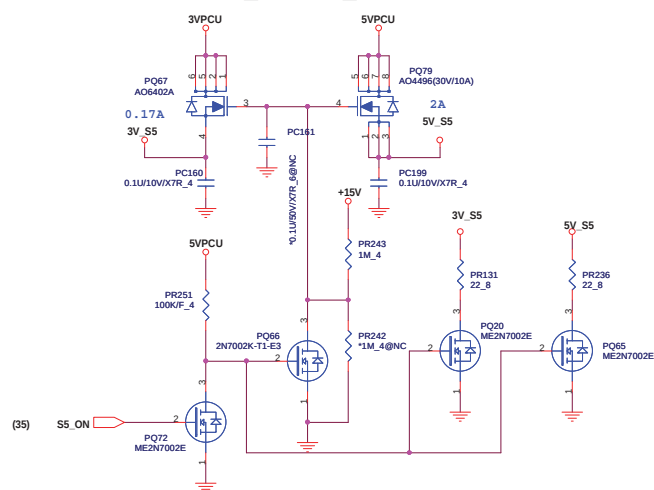
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Quanta Computer Inc.

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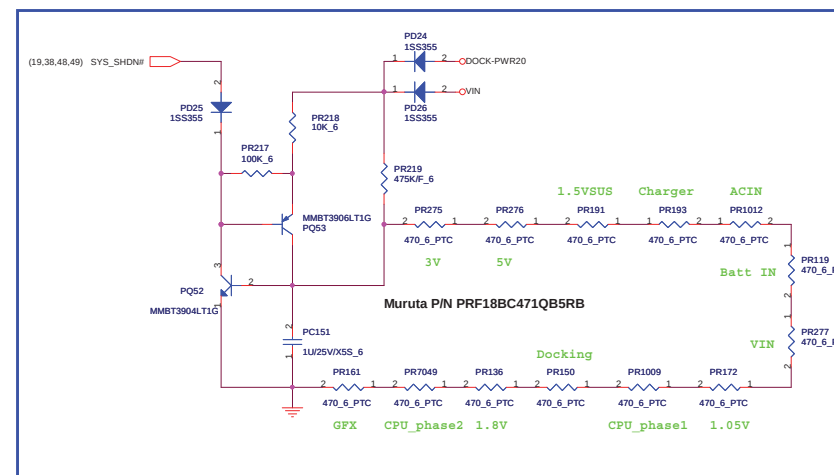
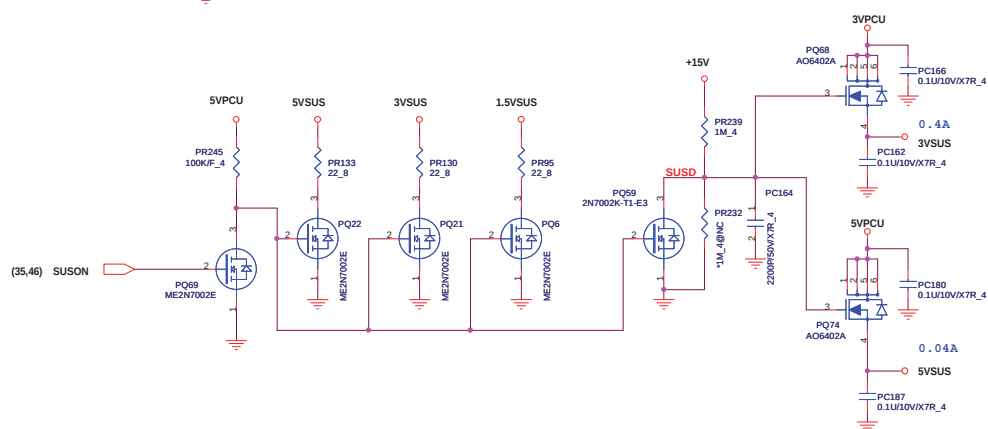
+3.3V, +5V

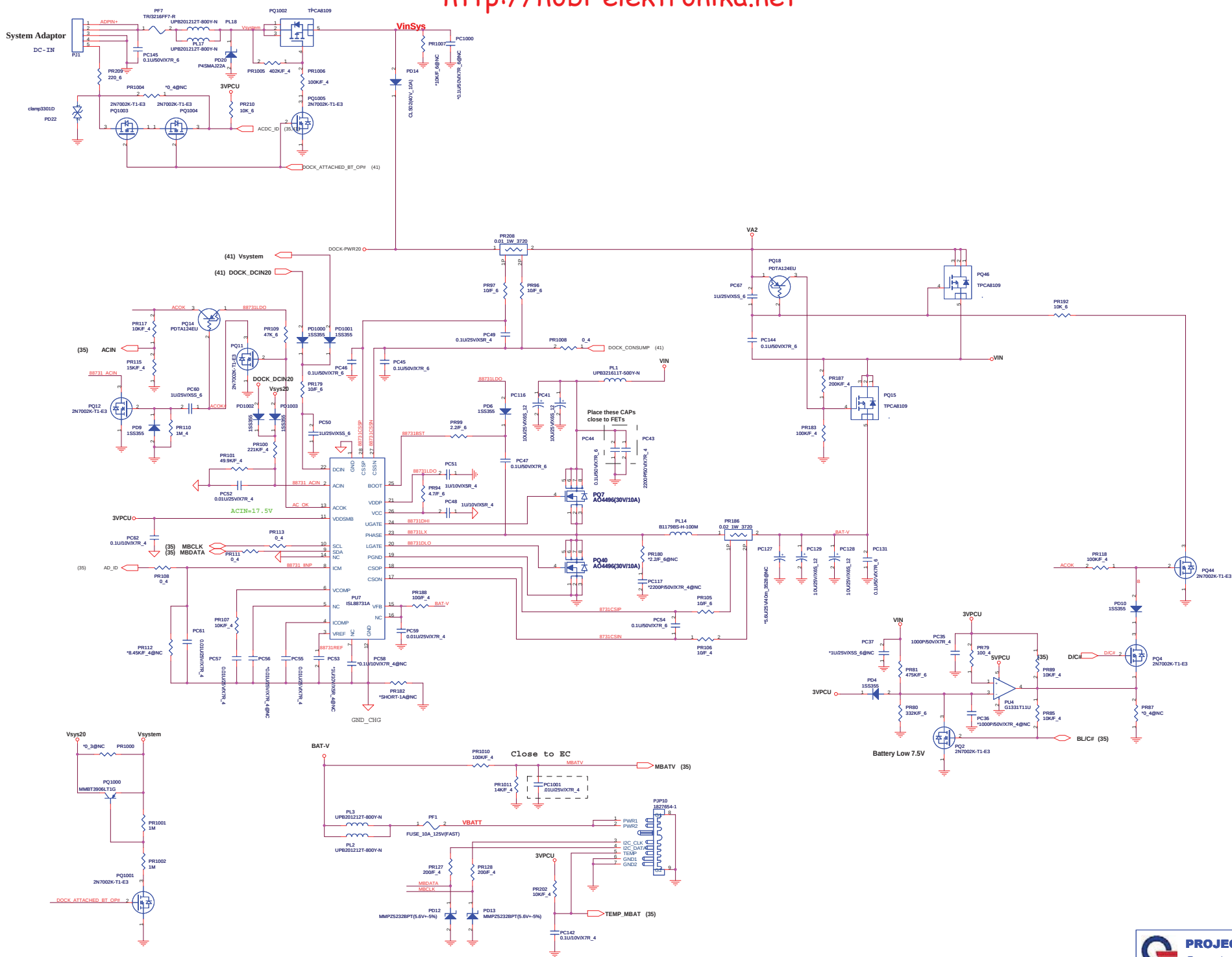


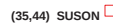
LANVCC

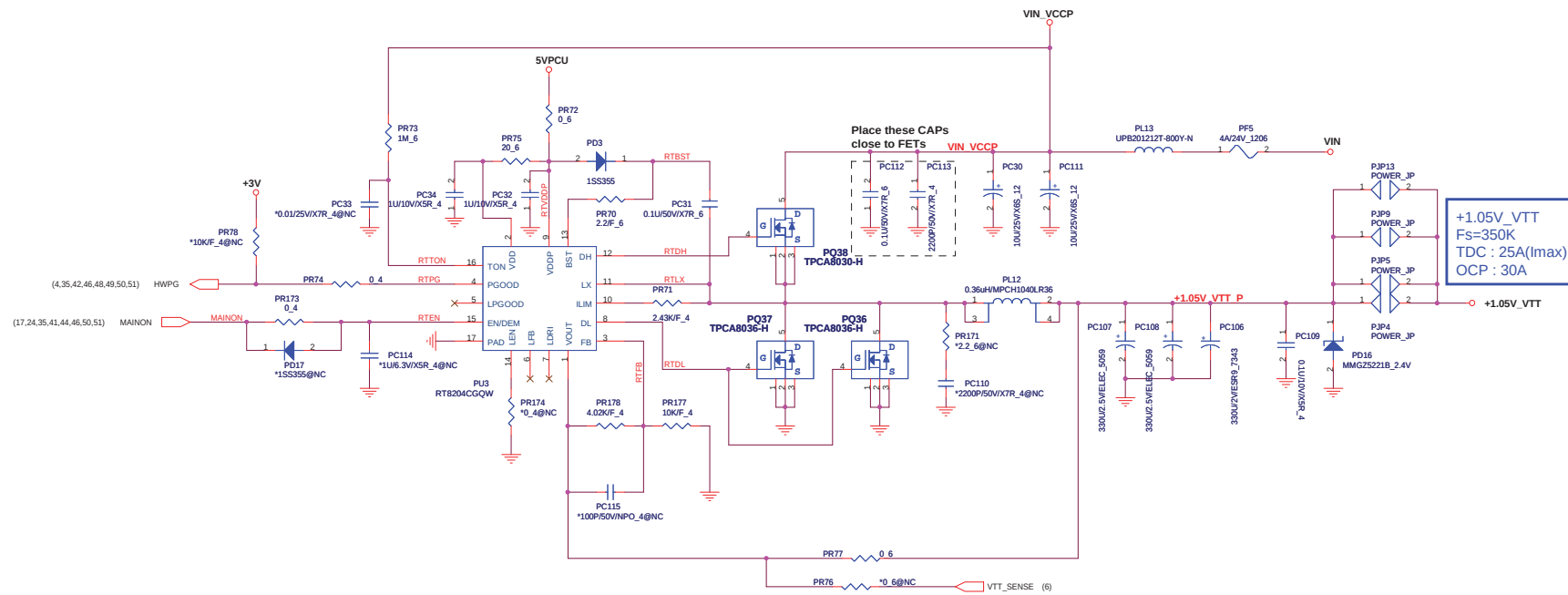


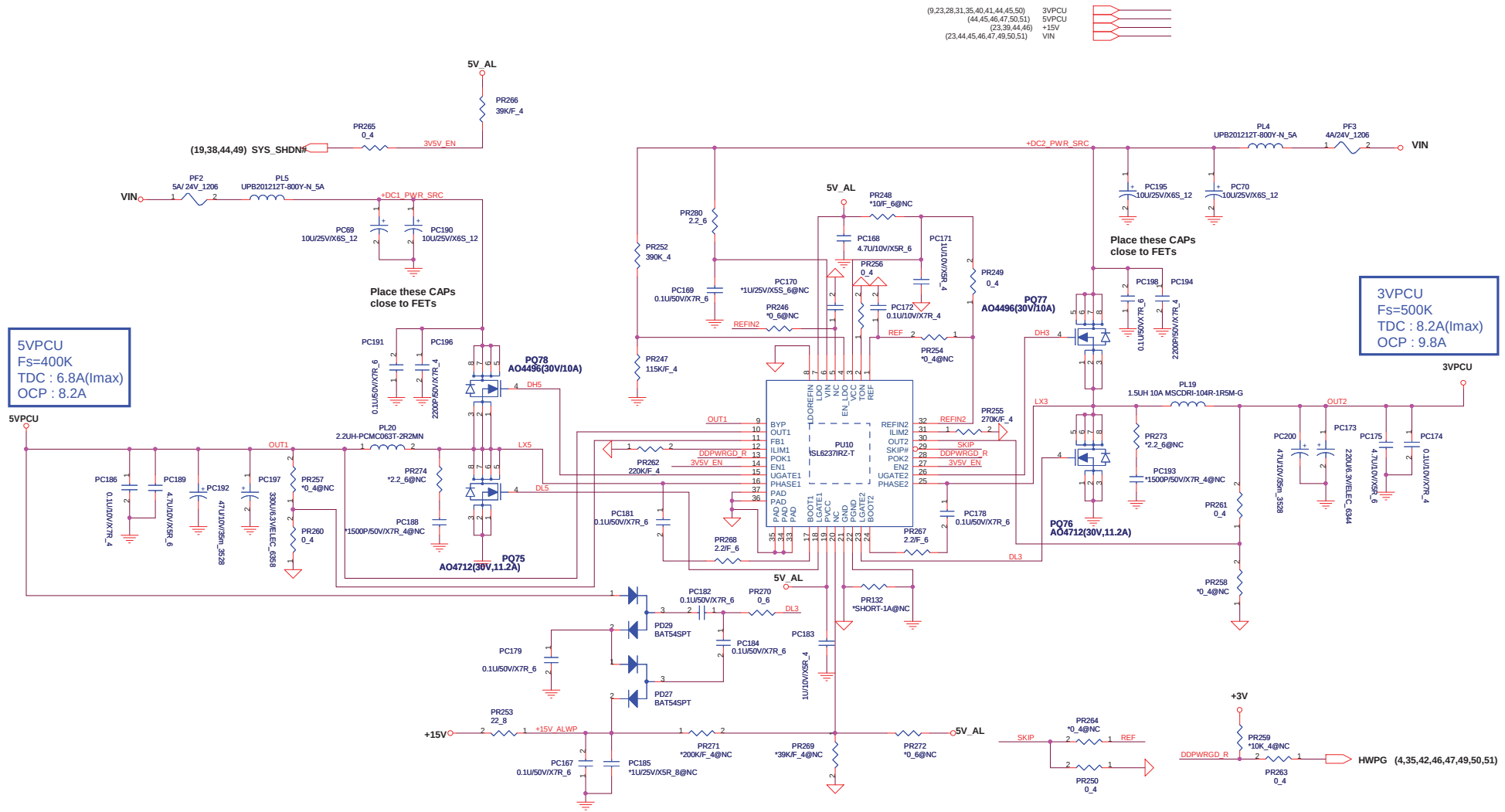
3VSUS, 5VSUS

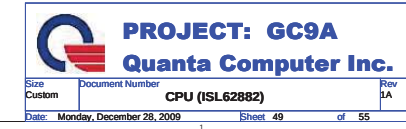


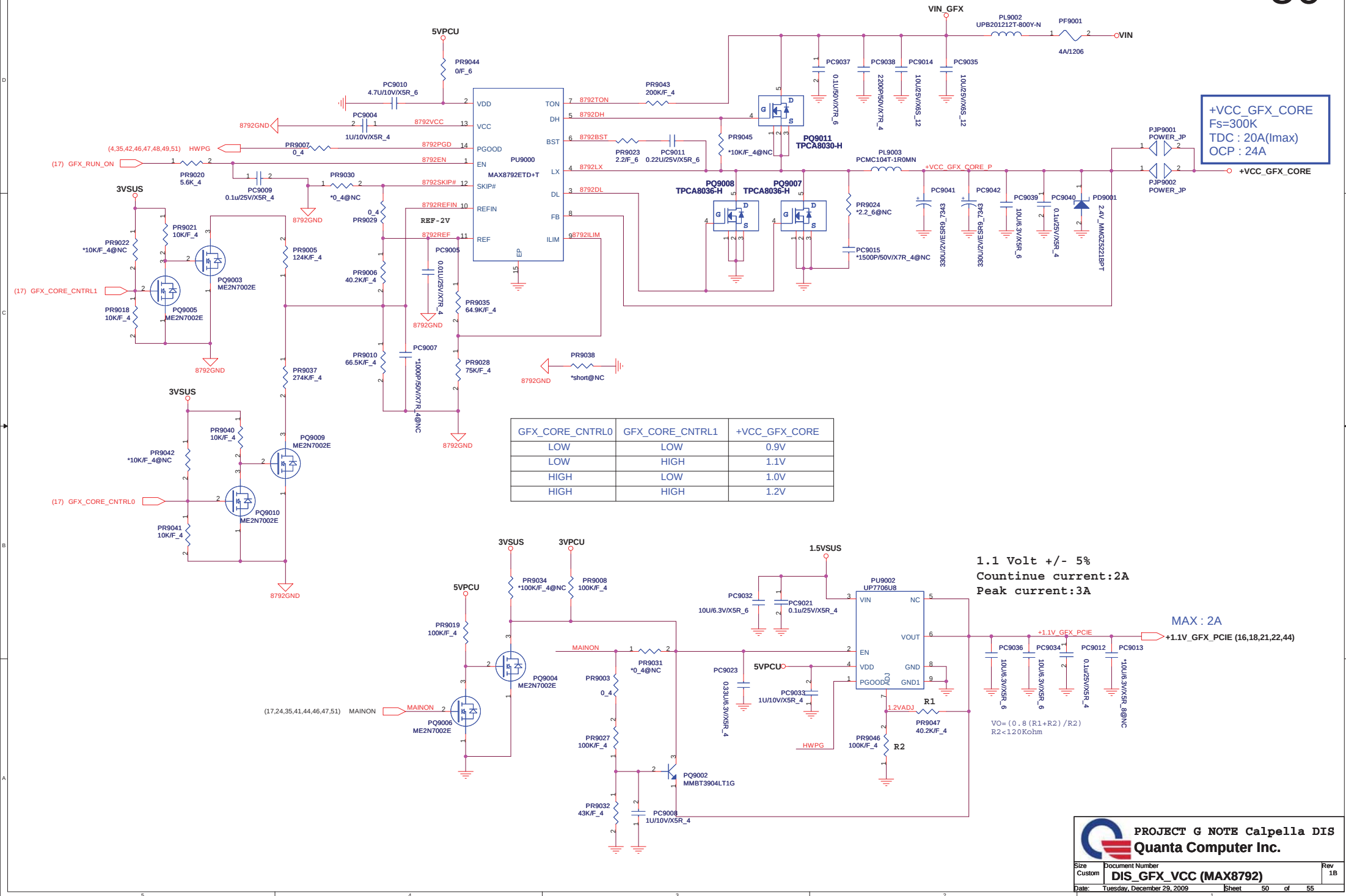


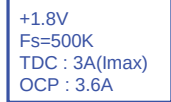












Revision History

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

Schematic Value Explanation Description :

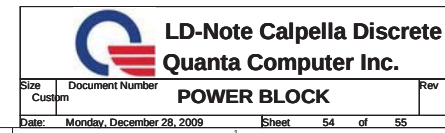
RESISTOR

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:
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( )  
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( )  
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(PDFCreator Version 0.9.5)  
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/Author  
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