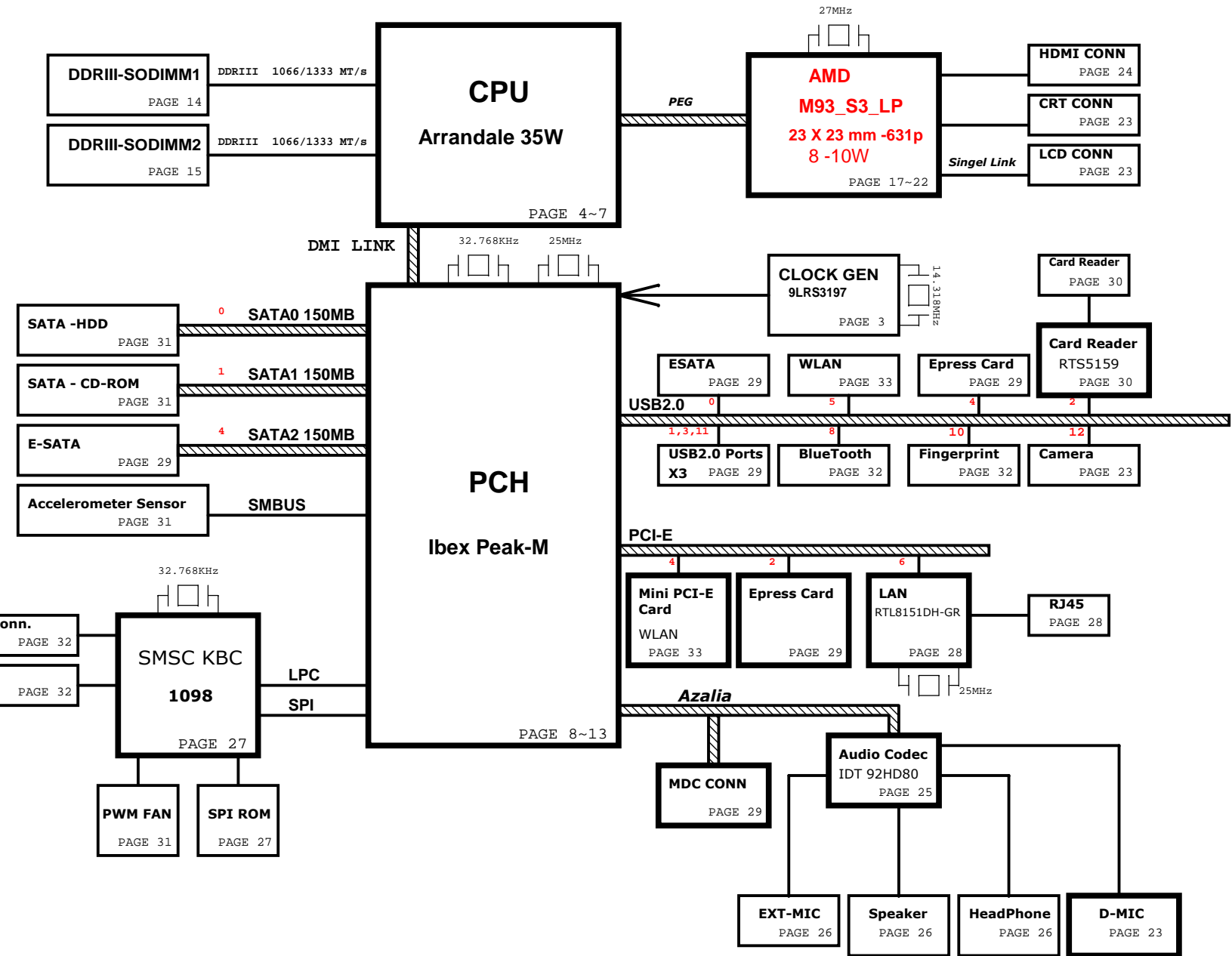


**PCB STACK UP**  
8L Dis.


# Hamilton 1.0 ( SX6-DIS ) BLOCK DIAGRAM

01

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




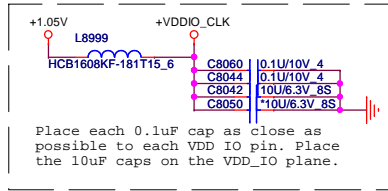
- 3/5V RT8206B PAGE 38
- VCCP +1.1VTT(RT8208A) AND DDR III SMDDR\_VTERM 1.5V/1.5VSUS(RT8207) PAGE 40
- CPU CORE ADP3212 PAGE 39
- VGACORE RT8208A PAGE 43
- PCH 1.05V RT8204C PAGE 41
- SYSTEM CHARGER(bq24740) PAGE 36,37

	<b>PROJECT : SX6</b> Quanta Computer Inc.	
	Size Custom	Document Number <b>BLOCK DIAGRAM</b>
Date: Tuesday, December 15, 2009   Sheet 1 of 43		

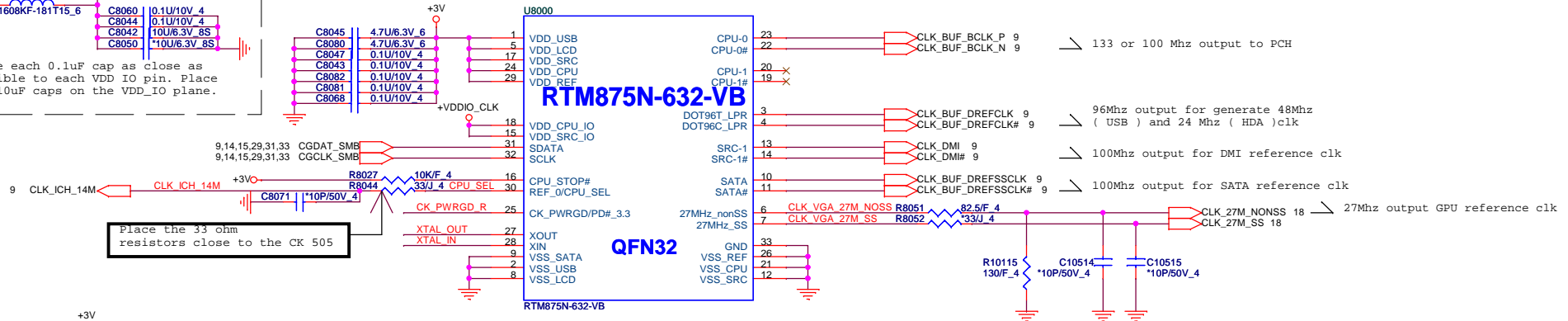
power State	+RTC_CELL	+VIN +3VPCU	+3VS5 +5VS5	+5VSUS +1.5VSUS	+5V +3V +1.8V_GFX +1.8V +1.5V +1.5V_CPU +1.1V_VTT +1.05V +1.0V_GFX +VGA_CORE +VCORE
S0	ON	ON	ON	ON	ON
S1	ON	ON	ON	ON	ON
S3	ON	ON	ON	ON	OFF
S4/S5 AC	ON	ON	ON	OFF	OFF
S4/S5 DC Only	ON	ON	OFF	OFF	OFF
AC/DC No Exist	ON	OFF	OFF	OFF	OFF

	SOURCE	BATTERY 0x16	CLK GEN 0xD2	Thermal IC 0x98(Write) / 0x99(Read)	G-SENSOR 0x3A(Write) /0x3B(Read)	WLAN	SO-DIMM DIMM0: 0xA0 DIMM1: 0xA2	SMSC 1098	GPU thermal sensor
SMBCLK SMBDATA	PCH	X	Y	Y	Y	Y	Y	X	X
SMB_CLK_ME1 SMB_DAT_ME1	PCH	X	X	X	X	X	X	Y	Y
AB1A_CLK AB1A_DATA	SMSC 1098	Y	X	X	X	X	X	X	X

	<b>PROJECT : SX6</b> Quanta Computer Inc.	
	Size Custom Document Number <b>power rails</b>	Rev 2B Date: Tuesday, December 15, 2009   Sheet 2 of 43

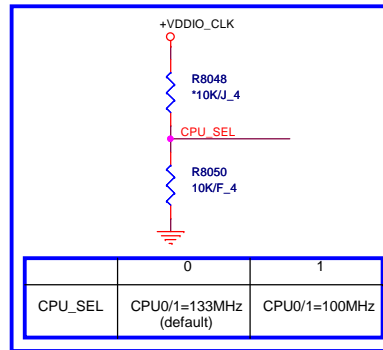
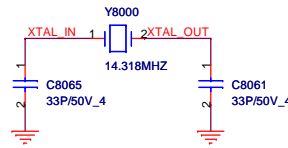
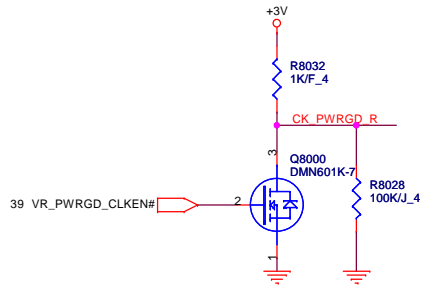



Place each 0.1uF cap as close as possible to each VDD IO pin. Place the 10uF caps on the VDD\_IO plane.



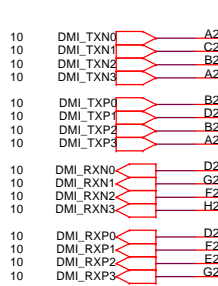
Place the 33 ohm resistors close to the CK 505

AL000875002IC OTHER(32P) RTM875N-632-VB-GRT(QFN)Realtek  
 AL8SP585000IC OTHER(32P)SLG8SP585VTR(QFN)Silogo



	<b>PROJECT : SX6</b> Quanta Computer Inc.		
	Size Custom	Document Number <b>CLOCK GEN (9LRS3197)</b>	Rev 2B
	Date: Tuesday, December 15, 2009		Sheet 3 of 43

U8009A



## DMI

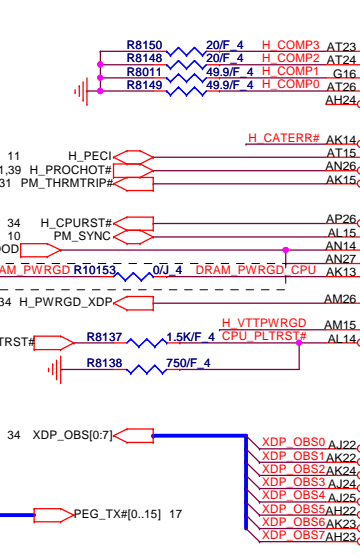
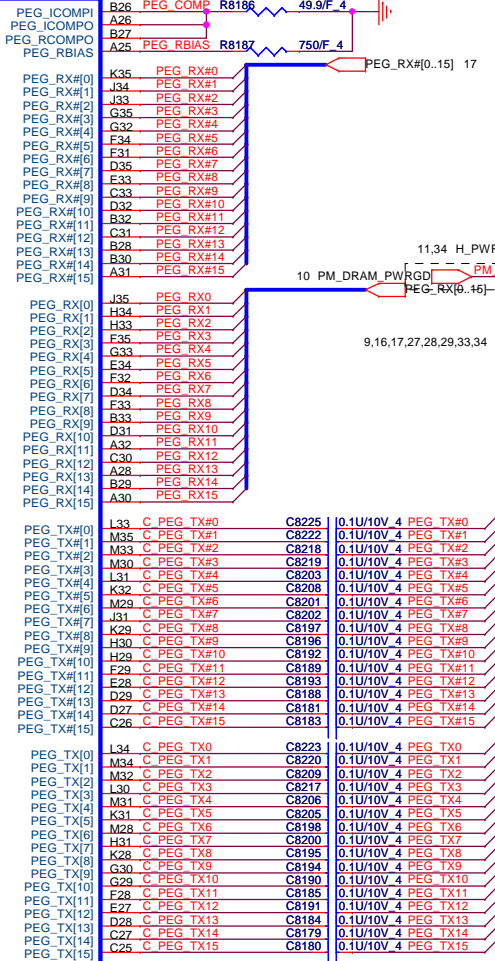


## Intel(R) FDI



FDI\_SYNC can gang all these 4 signals together and tie them with only one 1K resistor to GND ( Check list 1.0 ).

IC:AUB\_CFD\_PGA,R1P0



## MISC

## THERMAL

## DDR3

## MISC

## PWR MANAGEMENT

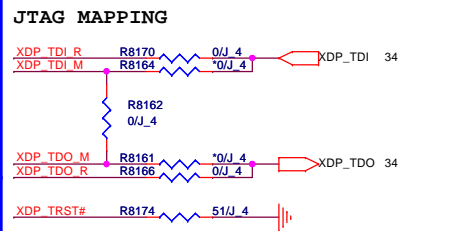
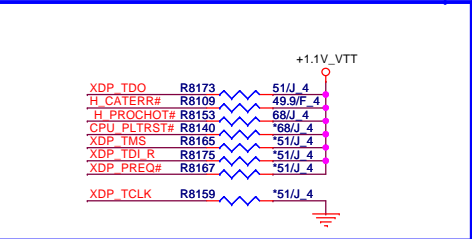
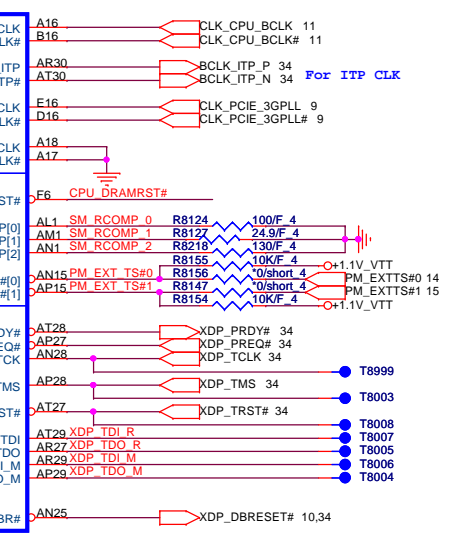
## JTAG & BPM

## CLOCKS

## DDR3

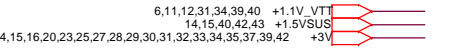
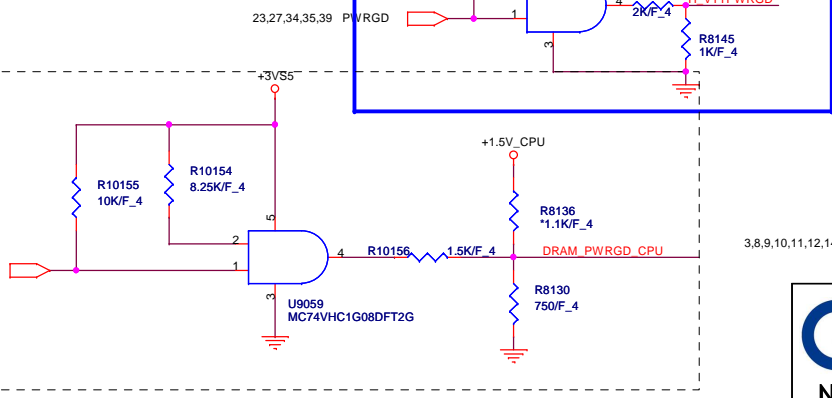
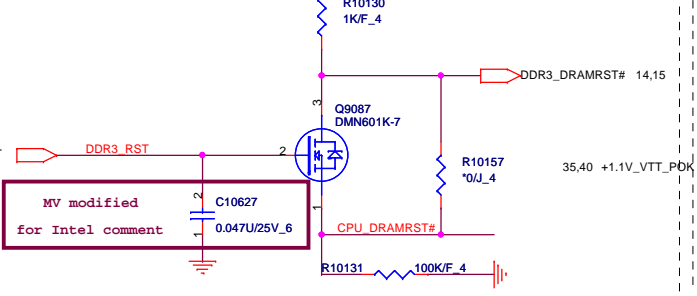
## MISC

## JTAG & BPM



Scan Chain (Default)	STUFF -> R97, R89, R90 NO STUFF -> R84, R512
CPU Only	STUFF -> R97, R84 NO STUFF -> R89, R512, R90
GMCH Only	STUFF -> R512, R90 NO STUFF -> R97, R84, R89

For S3 leakage issue



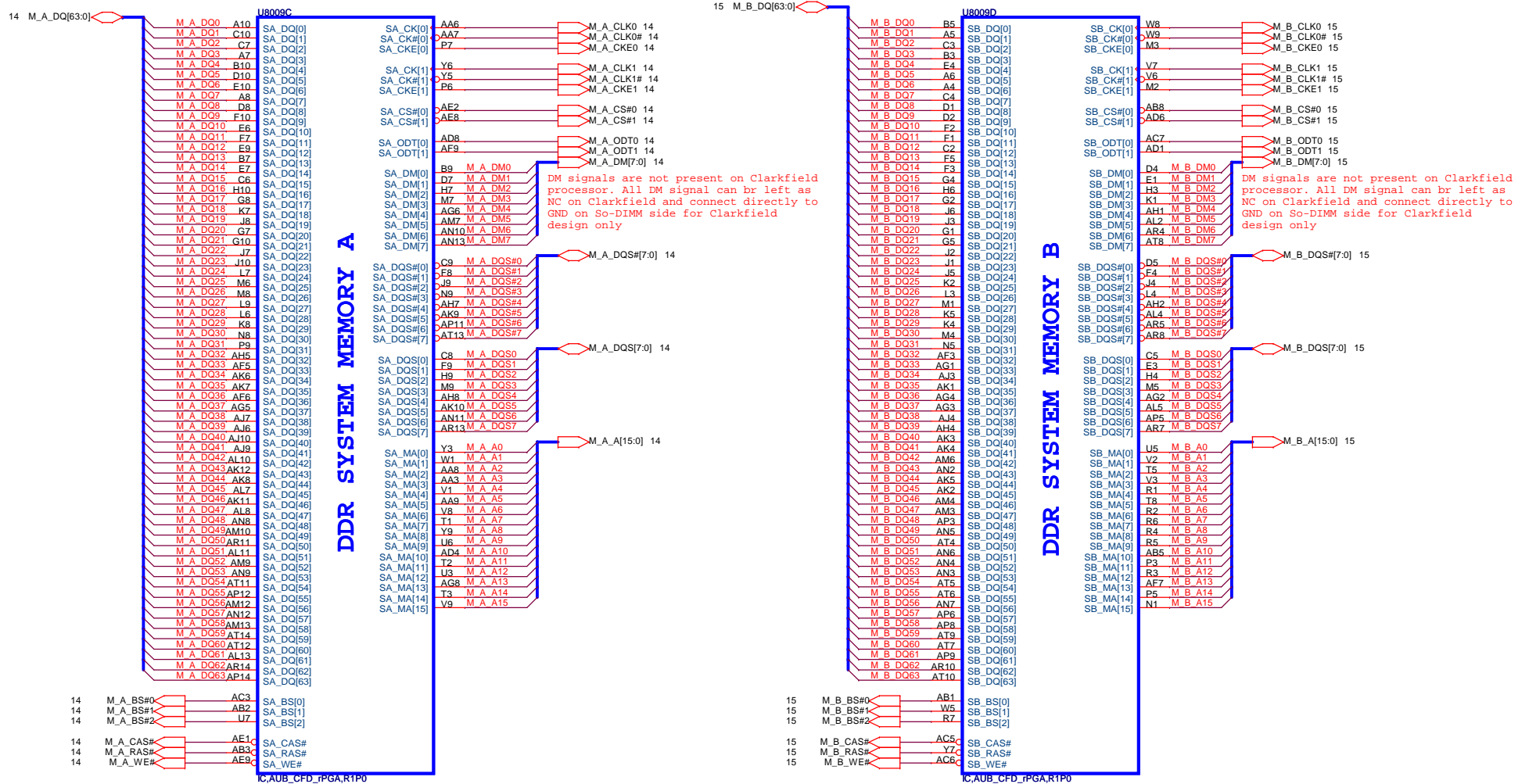
**PROJECT : SX6**  
**Quanta Computer Inc.**

Size Custom Document Number  
**PROCESSOR 1/4(HOST&PEX)**

Date: Tuesday, December 22, 2009 | Sheet 4 of 43

Rev 2B

AUBURNDALE/CLARKSFIELD PROCESSOR (DDR3)



**PROJECT : SX6**  
**Quanta Computer Inc.**

Size Custom Document Number **PROCESSOR 2/4(DDR)** Rev 2B

Date: Tuesday, December 15, 2009 Sheet 5 of 43

C8993	22U/6.3V 8S	AG35	VCC1
C8994	22U/6.3V 8S	AG34	VCC2
C8232	22U/6.3V 8S	AG32	VCC3
C8128	22U/6.3V 8S	AG31	VCC4
C8105	22U/6.3V 8S	AG30	VCC6
C8088	22U/6.3V 8S	AG29	VCC7
C8992	22U/6.3V 8S	AG28	VCC8
C8238	22U/6.3V 8S	AG27	VCC9
C8228	22U/6.3V 8S	AG26	VCC10
C8097	22U/6.3V 8S	AF35	VCC11
C8130	22U/6.3V 8S	AF34	VCC12
C8237	22U/6.3V 8S	AF33	VCC13
C8230	10U/6.3V 8	AF32	VCC14
C8129	10U/6.3V 8	AF31	VCC15
C8108	10U/6.3V 8	AF30	VCC16
C8089	10U/6.3V 8	AF29	VCC17
C8116	10U/6.3V 8	AF28	VCC18
C8090	10U/6.3V 8	AF27	VCC19
C8087	10U/6.3V 8	AF26	VCC20
C8239	10U/6.3V 8	AD35	VCC21
C8098	10U/6.3V 8	AD34	VCC22
C8125	10U/6.3V 8	AD33	VCC23
C8126	10U/6.3V 8	AD32	VCC24
C8236	10U/6.3V 8	AD31	VCC25
C8091	10U/6.3V 8	AD30	VCC26
C8117	10U/6.3V 8	AD29	VCC27
C8234	10U/6.3V 8	AD28	VCC28
C8127	10U/6.3V 8	AD27	VCC29
C8124	0.1U/10V 4	AD26	VCC30
C8123	0.1U/10V 4	AC35	VCC31
		AC34	VCC32
		AC33	VCC33
		AC32	VCC34
		AC31	VCC35
		AC30	VCC36
		AC29	VCC37
		AC28	VCC38
		AC27	VCC39
		AC26	VCC40
		AA35	VCC41
		AA34	VCC42
		AA33	VCC43
		AA32	VCC44
		AA31	VCC45
		AA30	VCC46
		AA29	VCC47
		AA28	VCC48
		AA27	VCC49
		AA26	VCC50
		Y35	VCC51
		Y34	VCC52
		Y33	VCC53
		Y32	VCC54
		Y31	VCC55
		Y30	VCC56
		Y29	VCC57
		Y28	VCC58
		Y27	VCC59
		Y26	VCC60
		V35	VCC61
		V34	VCC62
		V33	VCC63
		V32	VCC64
		V31	VCC65
		V30	VCC66
		V29	VCC67
		V28	VCC68
		V27	VCC69
		V26	VCC70
		U35	VCC71
		U34	VCC72
		U33	VCC73
		U32	VCC74
		U31	VCC75
		U30	VCC76
		U29	VCC77
		U28	VCC78
		U27	VCC79
		U26	VCC80
		R35	VCC81
		R34	VCC82
		R33	VCC83
		R32	VCC84
		R31	VCC85
		R30	VCC86
		R29	VCC87
		R28	VCC88
		R27	VCC89
		R26	VCC90
		P35	VCC91
		P34	VCC92
		P33	VCC93
		P32	VCC94
		P31	VCC95
		P30	VCC96
		P29	VCC97
		P28	VCC98
		P27	VCC99
		P26	VCC100

VTT0_1	AH14
VTT0_2	AH12
VTT0_3	AH11
VTT0_4	AH10
VTT0_5	J14
VTT0_6	J13
VTT0_7	H14
VTT0_8	H12
VTT0_9	G14
VTT0_10	G12
VTT0_11	G11
VTT0_12	F14
VTT0_13	F13
VTT0_14	F12
VTT0_15	F11
VTT0_16	E14
VTT0_17	E12
VTT0_18	D14
VTT0_19	D13
VTT0_20	D12
VTT0_21	D11
VTT0_22	C14
VTT0_23	C13
VTT0_24	C12
VTT0_25	C11
VTT0_26	B14
VTT0_27	B12
VTT0_28	A14
VTT0_29	A13
VTT0_30	A12
VTT0_31	A11
VTT0_32	A10
VTT0_33	AF10
VTT0_34	AE10
VTT0_35	AC10
VTT0_36	AB10
VTT0_37	Y10
VTT0_38	W10
VTT0_39	U10
VTT0_40	T10
VTT0_41	J12
VTT0_42	J11
VTT0_43	J16
VTT0_44	J15

10U/6.3V 8	C8233
10U/6.3V 8	C8229
10U/6.3V 8	C8214
10U/6.3V 8	C8174
10U/6.3V 8	C8175
10U/6.3V 8	C8215
10U/6.3V 8	C8215
22U/6.3V 8S	C8176
22U/6.3V 8S	C8231

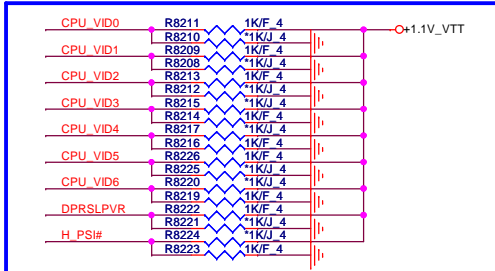
22U/6.3V 8S	C8076
22U/6.3V 8S	C8074

22U/6.3V 8S	C8077
22U/6.3V 8S	C8210
22U/6.3V 8S	C8173
22U/6.3V 8S	C8171
22U/6.3V 8S	C8172
22U/6.3V 8S	C8078

VTT1_45	J24
VTT1_46	J23
VTT1_47	H25
VTT1_48	K26
VTT1_49	J27
VTT1_50	J26
VTT1_51	J25
VTT1_52	H27
VTT1_53	G28
VTT1_54	G27
VTT1_55	G26
VTT1_56	F26
VTT1_57	E26
VTT1_58	E25

VTT1_59	P10
VTT1_60	N10
VTT1_61	L10
VTT1_62	J22
VTT1_63	J20
VTT1_64	J18
VTT1_65	H18
VTT1_66	H21
VTT1_67	H20
VTT1_68	H19
VCCPLL1	L26
VCCPLL2	L27
VCCPLL3	M26

10U/6.3V 4	C8109
10U/6.3V 4	C8111
10U/6.3V 4	C8118
10U/6.3V 4	C8106
10U/6.3V 4	C8107
22U/6.3V 8S	C8103
22U/6.3V 8S	C8138
330U/2V 7343	C8064
10U/6.3V 8	C8221
10U/6.3V 8	C8224
22U/6.3V 8S	C8212
22U/6.3V 8S	C8213
10U/6.3V 8	C8075
4.7U/6.3V 6	C8072
2.2U/6.3V 6	C8006
1U/6.3V 4	C8007
1U/6.3V 4	C8008



HFM\_VID : Max 1.4V  
LFM\_VID : Min 0.65V

1.1V RAIL POWER

CPU CORE SUPPLY

CPU VIDS

SENSE LINES

Max 18A

VTT Rail Values are  
Auburndal VTT=1.05V  
Clarksfield VTT=1.1V

H\_VTTVID1=Low, 1.1V  
H\_VTTVID1=High, 1.05V

GRAPHICS

POWER

FDI

PRG & DMI

SENSE LINES

GRAPHICS VIDS

DDR3 - 1.5V RAILS

1.1V

1.8V

IC\_AUB\_CFD\_PGAR1P0

U8009G

IC\_AUB\_CFD\_PGAR1P0

39	+VCORE
11,12,31,34,39,40	+1.1V_VTT
4,14,15,40,42,43	+1.5V_SUS
11,12,41,42	+1.8V

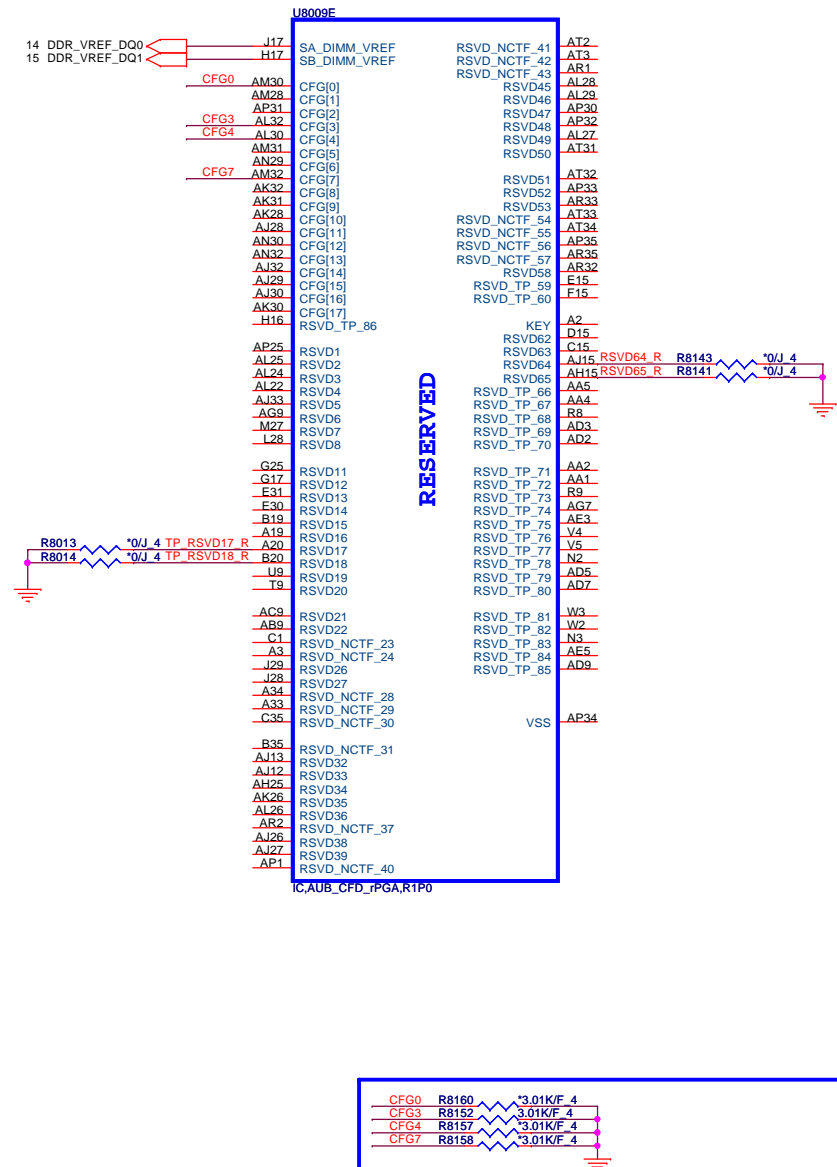
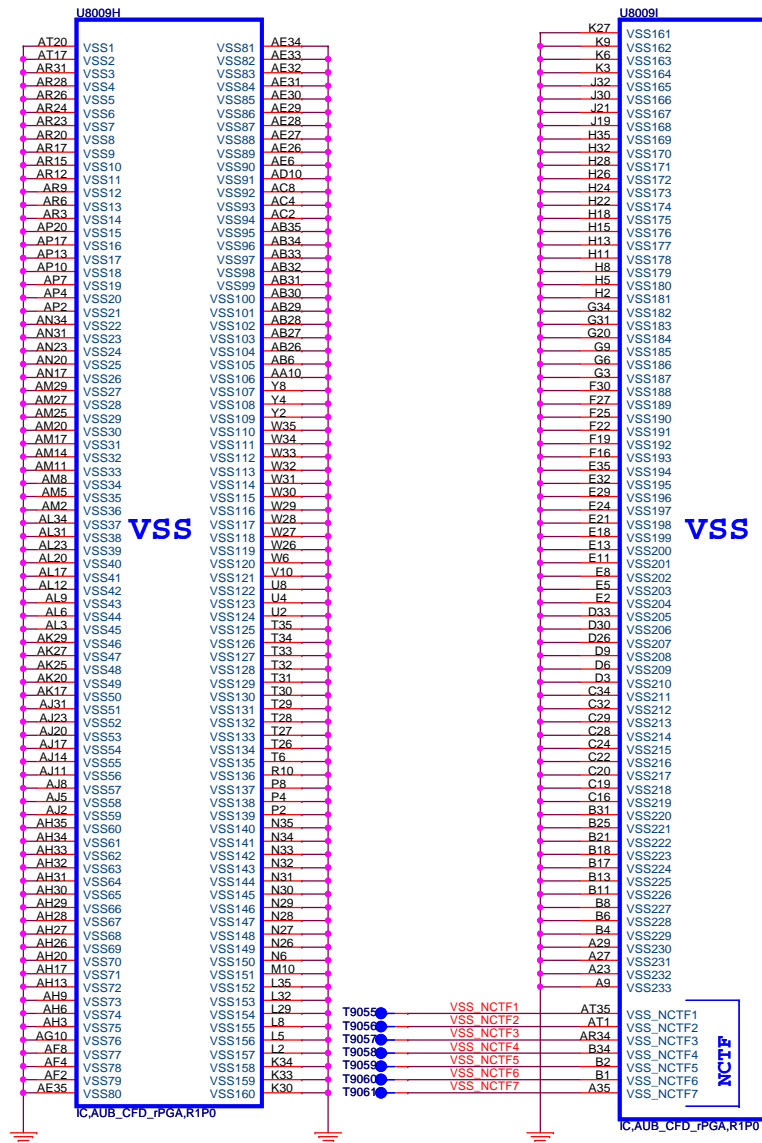


PROJECT : SX6  
Quanta Computer Inc.

Size	Document Number	Rev
Custom	PROCESSOR 3/4(POWER)	2B
Date:	Wednesday, December 16, 2009	Sheet 6 of 43

AUBURNDALE/CLARKSFIELD PROCESSOR (GND)

AUBURNDALE/CLARKSFIELD PROCESSOR( RESERVED, CFG)



The Clarkfield processor's PCI Express interface may not meet PCI Express 2.0 jitter specifications. Intel recommends placing a 3.01K +/- 5% pull down resistor to VSS on CFG[7] pin for both rPGA and BGA components. This pull down resistor should be removed when this issue is fixed.

	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 15 -> 0, 14 -> 1



CFG[ 1:0 ] - PCI\_Epress Configuration Select  
 \* 11= 1 x 16 PEG  
 \* 10= 2 x 8 PEG

**PROJECT : SX6**  
**Quanta Computer Inc.**

**NB5**

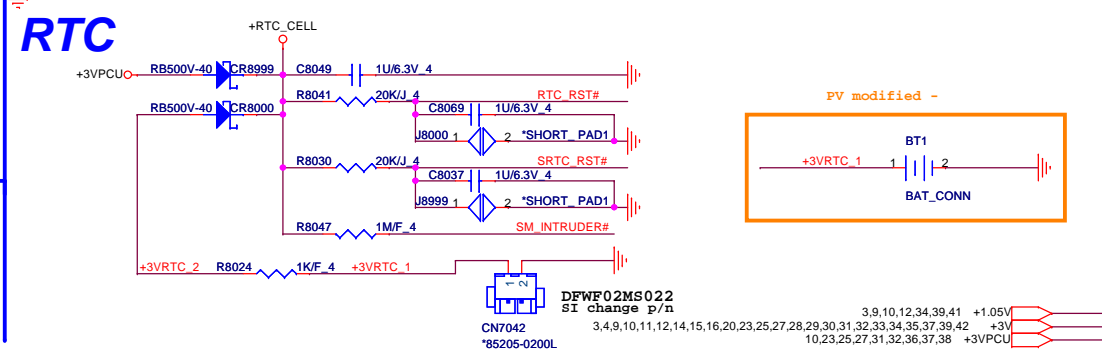
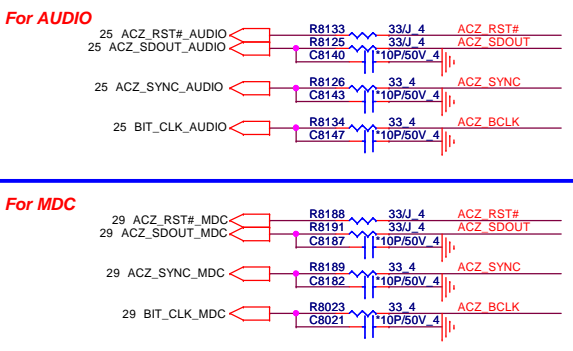
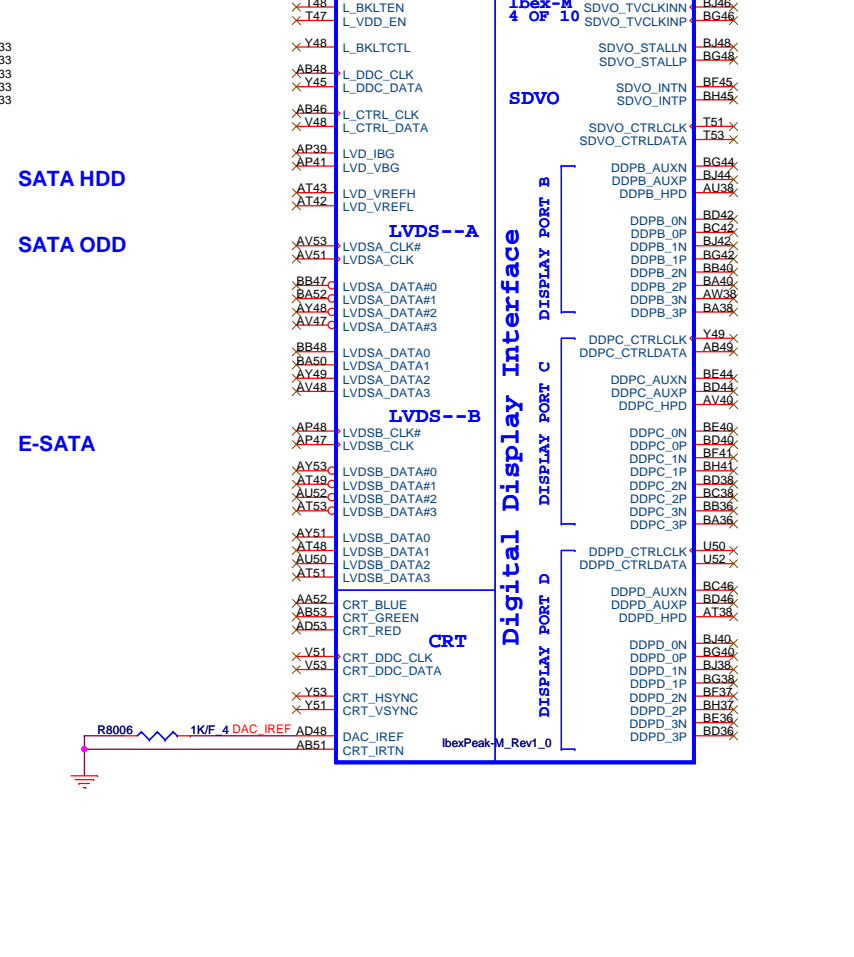
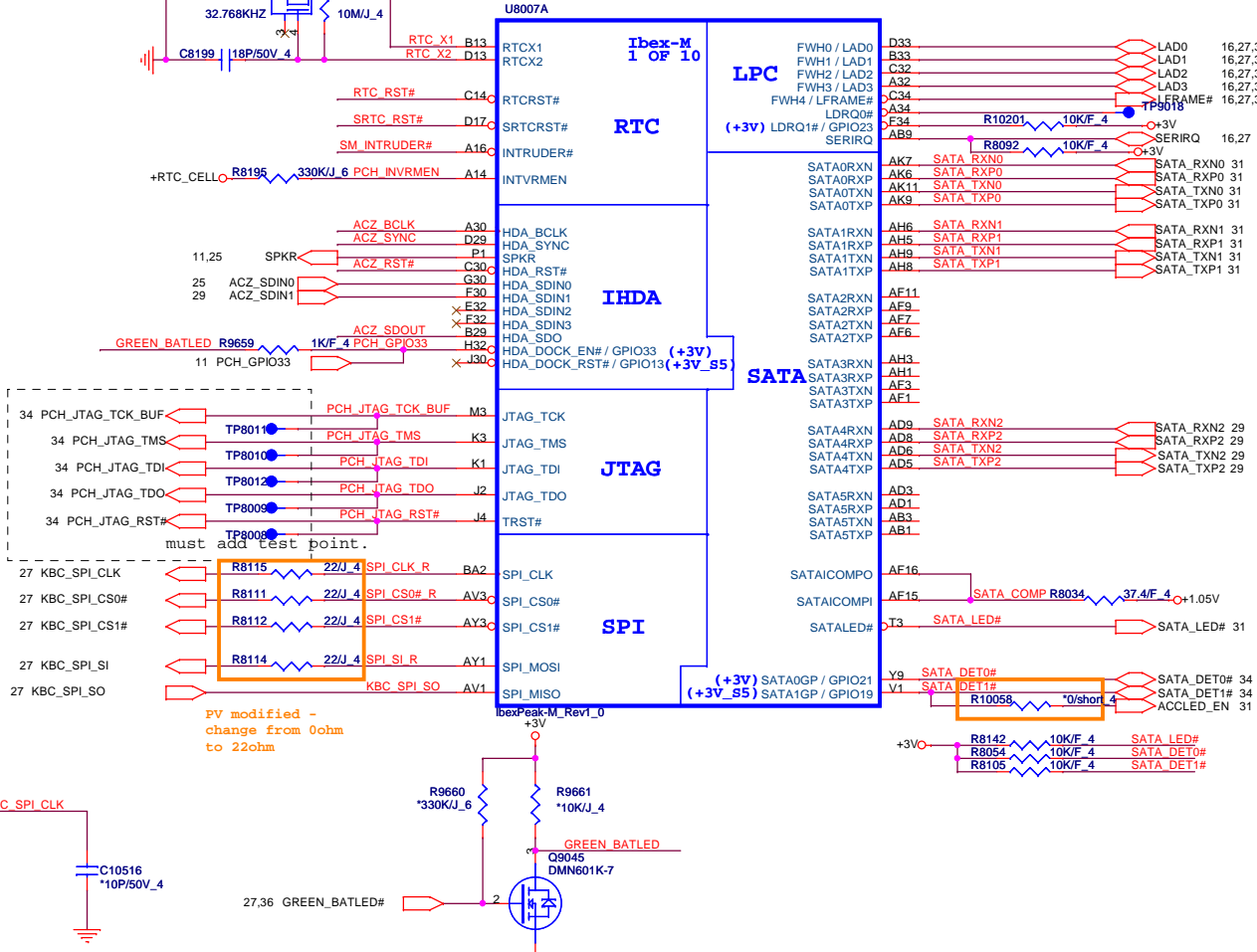
Size Custom Document Number **PROCESSOR 4/4(GND)** Rev 2B

Date: Tuesday, December 15, 2009 | Sheet 7 of 43

INTVRMEN - Integrated SUS 1.1V VRM Enable  
High - Enable Internal VRs

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

### IBEX PEAK-M (LVDS,DDI)



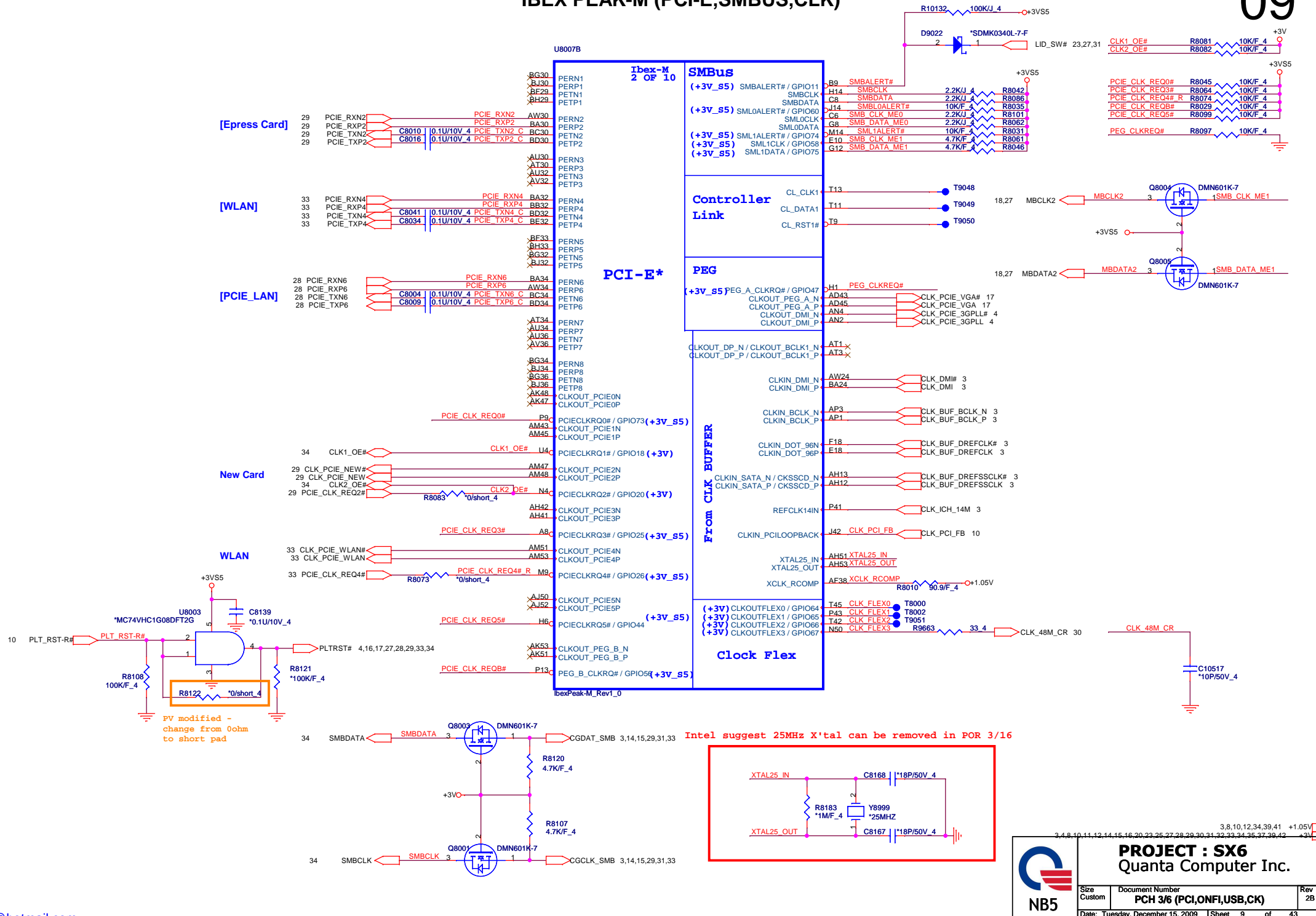
**PROJECT : SX6**  
**Quanta Computer Inc.**

Size Custom Document Number **PCH 2/6 (SATA,HDA,LPC)** Rev 2B

**NB5** Date: Tuesday, December 15, 2009 | Sheet 8 of 43



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



**PROJECT : SX6**  
Quanta Computer Inc.

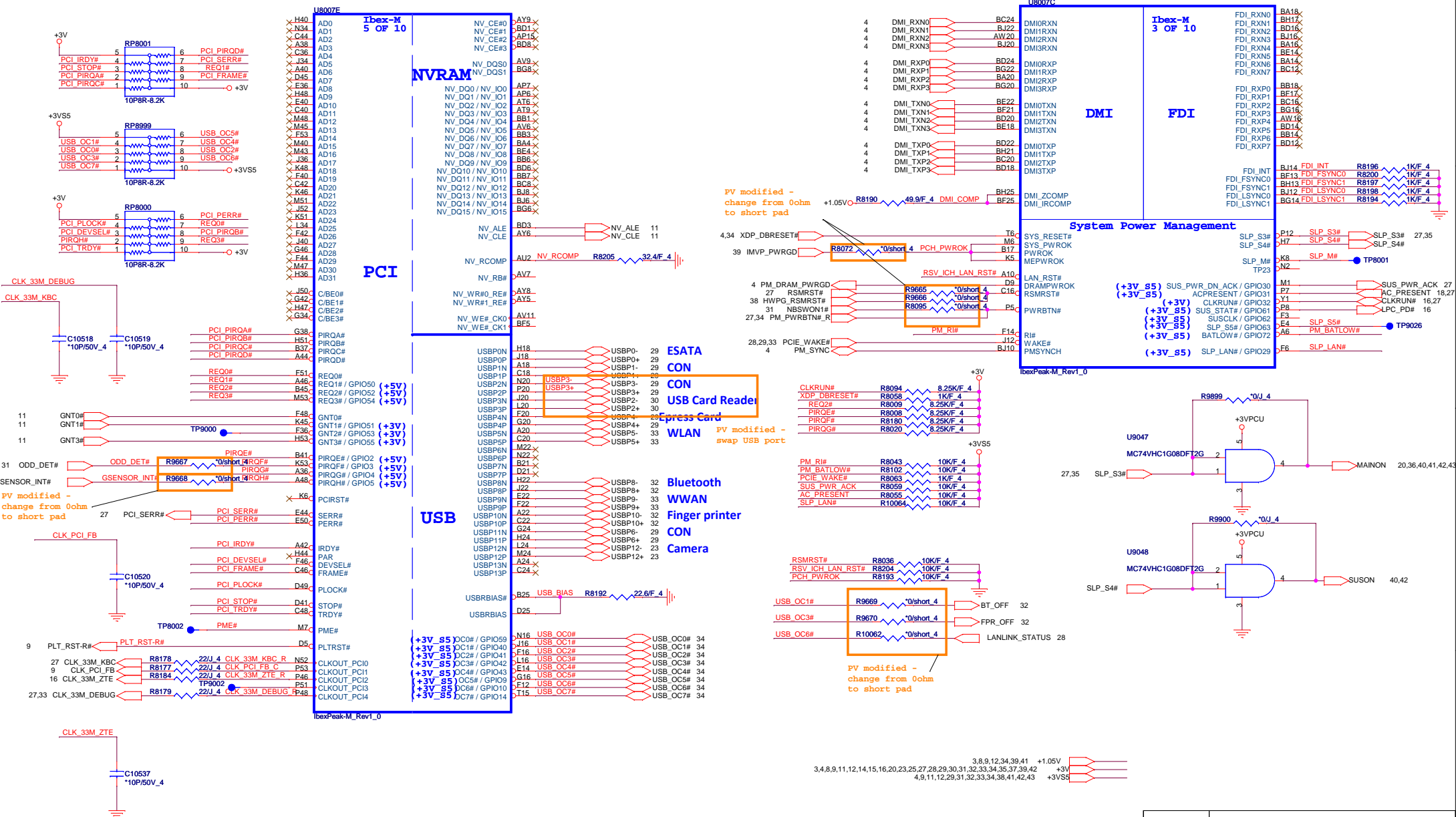
Size: Custom | Document Number: PCH 3/6 (PCI,ONFI,USB,CK) | Rev: 2B

Date: Tuesday, December 15, 2009 | Sheet: 9 of 43

NB5

IBEX PEAK-M (PCI,USB,NVRAM)

IBEX PEAK-M (DMI,FDI,GPIO)



PV modified - change from 0ohm to short pad

PV modified - swap USB port

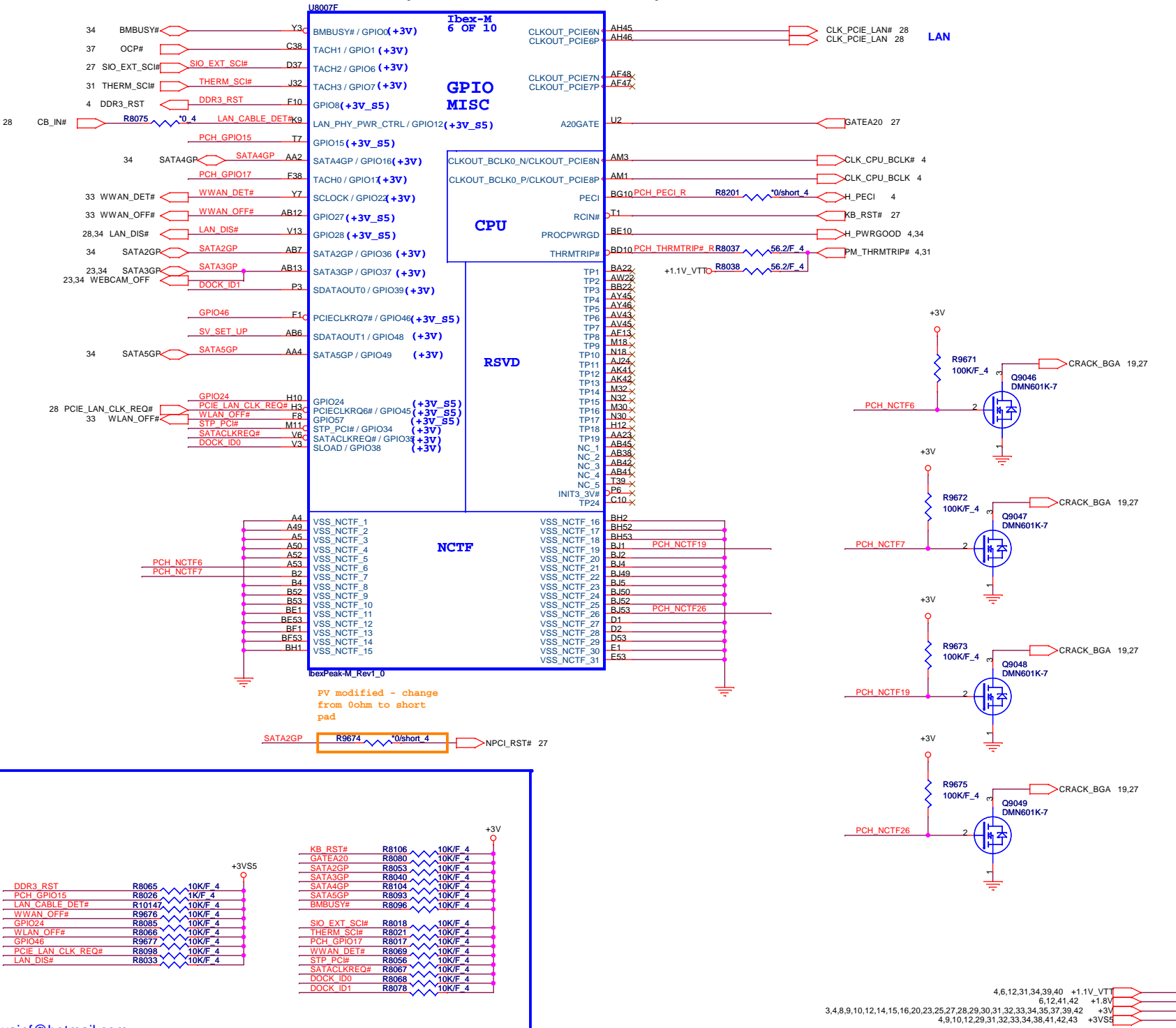
PV modified - change from 0ohm to short pad

3,8,9,12,34,39,41 +1.05V  
 5,4,8,9,11,12,14,15,16,20,23,25,27,28,29,30,31,32,33,34,35,37,39,42 +3V  
 4,9,11,12,29,31,32,33,34,38,41,42,43 +3VSS

**PROJECT : SX6**  
**Quanta Computer Inc.**

Size Custom	Document Number PCH 6/6 (GND)/ Braidwood	Rev 2B
Date: Tuesday, December 15, 2009 Sheet 10 of 43		

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



**A16 swap override Strap/Top-Block Swap Override jumper**

GNT3#	Low = A16 swap override/Top-Block Swap Override enabled High = Default
-------	---

**SV SET UP R8076**

SV_SET_UP	1-X High = Strong (Default)
-----------	-----------------------------

**Boot BIOS Strap**

PCI_GNT0#	GNT#1	Boot BIOS Location
0	0	LPC
0	1	Reserved (NAND)
1	0	PCI
1	1	SPI

**Danbury Technology Enabled**

NV_ALE	High = Enable Low = Disable
--------	--------------------------------

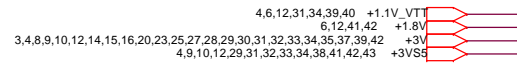
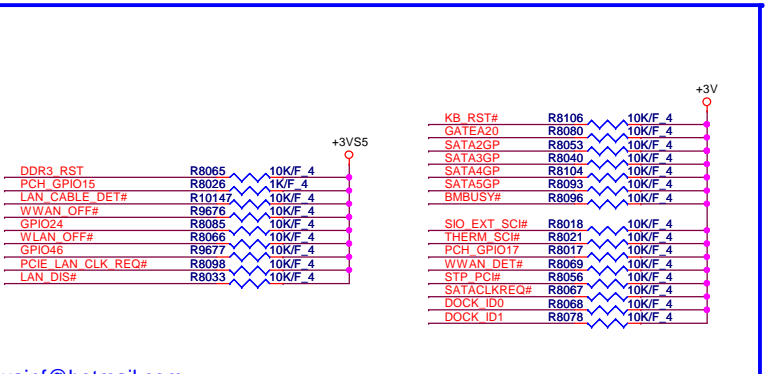
**DMI Termination Voltage**

NV_CLE	Set to Vcc when LOW Set to Vcc/2 when HIGH
--------	---

**No Reboot Strap**

SPKR R8132 \*1KJ 4 +3V

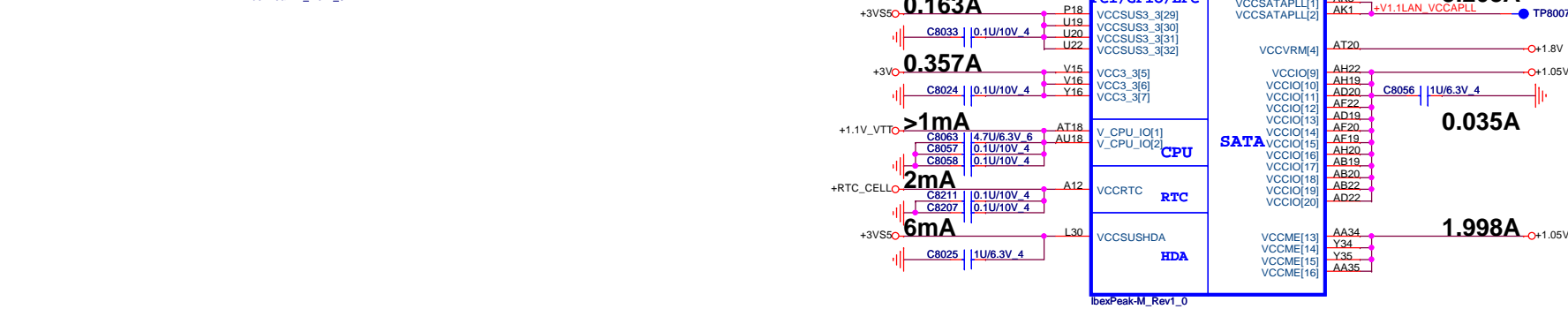
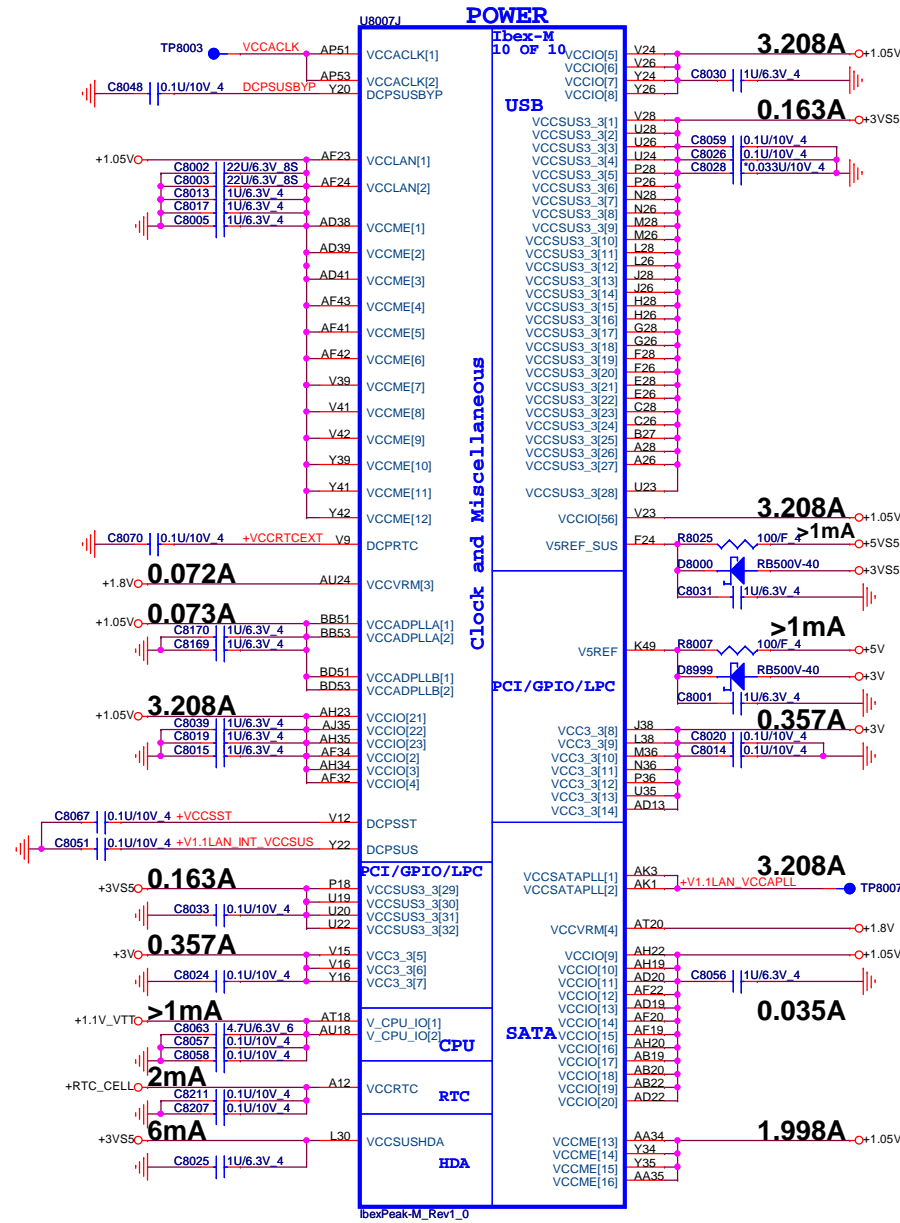
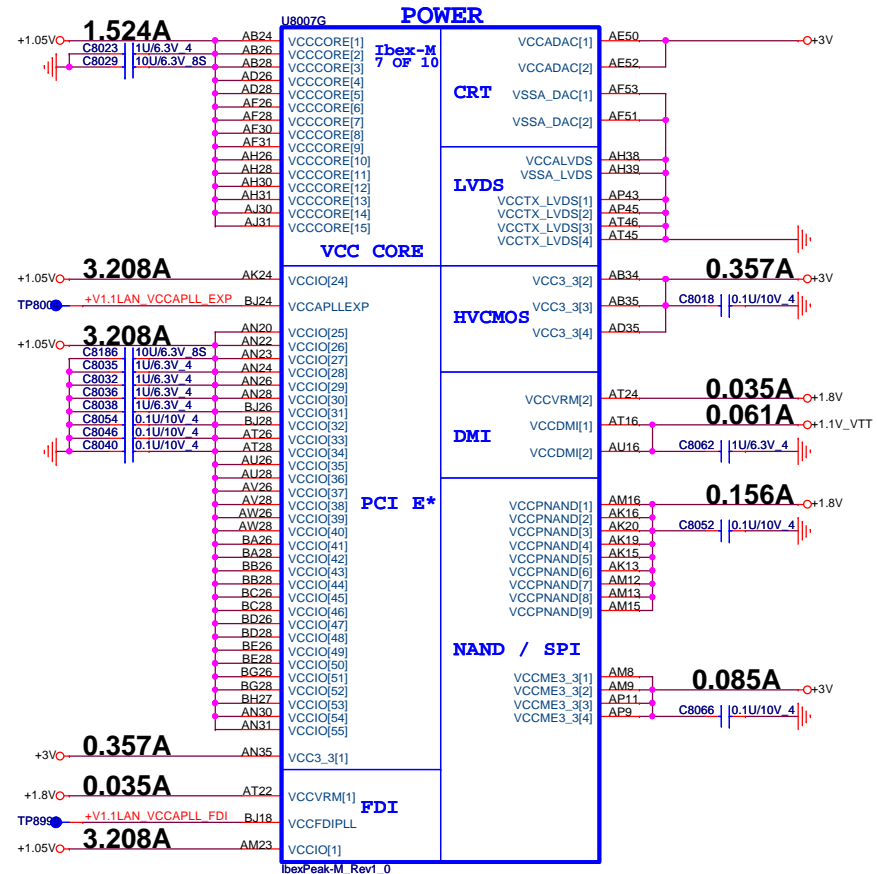
PCH\_GPIO33 R8022 \*100KJ 4



**PROJECT : SX6**  
Quanta Computer Inc.

Size Custom Document Number **PCH 4/6 (GPIO & Strap)** Rev 2B

Date: Tuesday, December 15, 2009 | Sheet 11 of 43



3, 8, 9, 10, 34, 39, 41	+1.05V
4, 6, 11, 31, 34, 39, 40	+1.1V_VTT
6, 11, 41, 42	+1.8V
3, 4, 8, 9, 10, 11, 14, 15, 16, 20, 23, 25, 27, 28, 29, 30, 31, 32, 33, 34, 35, 37, 39, 42	+3V
4, 9, 10, 11, 29, 31, 32, 33, 34, 38, 41, 42, 43	+3VSS
20, 23, 24, 25, 31, 32, 35, 37, 42	+5V
23, 35, 36, 37, 38, 40, 42	+5VSS5

**PROJECT : SX6**  
Quanta Computer Inc.

**NB5**

Size Custom	Document Number <b>PCH 5/6 (POWER)</b>	Rev 2B
Date: Tuesday, December 15, 2009   Sheet 12 of 43		

IBEX PEAK-M (GND)

IBEX PEAK-M (GND)

U8007I


A7	VSS[159]	VSS[259]	H49
B11	VSS[160]	VSS[260]	J2
B15	VSS[161]	VSS[261]	K11
B19	VSS[162]	VSS[262]	K43
B23	VSS[163]	VSS[263]	K47
B31	VSS[164]	VSS[264]	K7
B35	VSS[165]	VSS[265]	L14
B39	VSS[166]	VSS[266]	L18
B43	VSS[167]	VSS[267]	L2
B47	VSS[168]	VSS[268]	L22
B7	VSS[169]	VSS[269]	L32
BG12	VSS[170]	VSS[270]	L36
BB12	VSS[171]	VSS[271]	L40
BB16	VSS[172]	VSS[272]	L52
BB20	VSS[173]	VSS[273]	M12
BB24	VSS[174]	VSS[274]	M16
BB30	VSS[175]	VSS[275]	M20
BB34	VSS[176]	VSS[276]	N38
BB38	VSS[177]	VSS[277]	M34
BB42	VSS[178]	VSS[278]	M38
BB49	VSS[179]	VSS[279]	M42
BB5	VSS[180]	VSS[280]	M46
BC10	VSS[181]	VSS[281]	M49
BC14	VSS[182]	VSS[282]	M5
BC18	VSS[183]	VSS[283]	M8
BC2	VSS[184]	VSS[284]	N24
BC22	VSS[185]	VSS[285]	P11
BC32	VSS[186]	VSS[286]	AD15
BC36	VSS[187]	VSS[287]	P22
BC40	VSS[188]	VSS[288]	P30
BC44	VSS[189]	VSS[289]	P32
BC52	VSS[190]	VSS[290]	P34
BH9	VSS[191]	VSS[291]	P42
BD48	VSS[192]	VSS[292]	P45
BD49	VSS[193]	VSS[293]	P47
BD5	VSS[194]	VSS[294]	R2
BE12	VSS[195]	VSS[295]	R52
BE16	VSS[196]	VSS[296]	T12
BE20	VSS[197]	VSS[297]	T41
BE24	VSS[198]	VSS[298]	T46
BE30	VSS[199]	VSS[299]	T49
BE34	VSS[200]	VSS[300]	T5
BE38	VSS[201]	VSS[301]	T8
BE42	VSS[202]	VSS[302]	U30
BE46	VSS[203]	VSS[303]	U31
BE49	VSS[204]	VSS[304]	U32
BE50	VSS[205]	VSS[305]	U34
BE6	VSS[206]	VSS[306]	AF45
BE8	VSS[207]	VSS[307]	AF46
BF3	VSS[208]	VSS[308]	AF49
BF49	VSS[209]	VSS[309]	AF5
BF51	VSS[210]	VSS[310]	AG2
BG18	VSS[211]	VSS[311]	AG52
BG24	VSS[212]	VSS[312]	AH11
BG4	VSS[213]	VSS[313]	AH15
BG50	VSS[214]	VSS[314]	AH16
BH11	VSS[215]	VSS[315]	AH24
BH19	VSS[216]	VSS[316]	AH32
BH23	VSS[217]	VSS[317]	AV18
BH31	VSS[218]	VSS[318]	AH43
BH35	VSS[219]	VSS[319]	AH47
BH39	VSS[220]	VSS[320]	AH7
BH43	VSS[221]	VSS[321]	AJ19
BH47	VSS[222]	VSS[322]	AJ2
BH7	VSS[223]	VSS[323]	AJ20
C12	VSS[224]	VSS[324]	AJ22
C50	VSS[225]	VSS[325]	AJ23
D51	VSS[226]	VSS[326]	AJ26
E12	VSS[227]	VSS[327]	AJ28
E16	VSS[228]	VSS[328]	AJ32
E20	VSS[229]	VSS[329]	AJ34
E24	VSS[230]	VSS[330]	AT5
E30	VSS[231]	VSS[331]	AJ4
E34	VSS[232]	VSS[332]	AJ4
E38	VSS[233]	VSS[333]	AK12
E42	VSS[234]	VSS[334]	AK41
E46	VSS[235]	VSS[335]	AN19
E48	VSS[236]	VSS[336]	AK26
E48	VSS[237]	VSS[337]	VSS[76]
E6	VSS[238]	VSS[338]	AK22
E8	VSS[239]	VSS[339]	AK23
F49	VSS[240]	VSS[340]	VSS[78]
F5	VSS[241]	VSS[341]	VSS[79]
G10	VSS[242]	VSS[342]	Y46
G14	VSS[243]	VSS[343]	Y5
G18	VSS[244]	VSS[344]	Y6
G2	VSS[245]	VSS[345]	Y8
G22	VSS[246]	VSS[346]	P24
G36	VSS[247]	VSS[347]	T43
G40	VSS[248]	VSS[348]	AD51
G44	VSS[249]	VSS[349]	AT8
G52	VSS[250]	VSS[350]	AD47
AF39	VSS[251]	VSS[351]	Y47
H16	VSS[252]	VSS[352]	AT12
H20	VSS[253]	VSS[353]	AM6
H30	VSS[254]	VSS[354]	AT13
H34	VSS[255]	VSS[355]	AM5
H38	VSS[256]	VSS[356]	AK45
H42	VSS[257]	VSS[356]	AK39
	VSS[258]		AV14

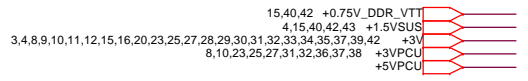
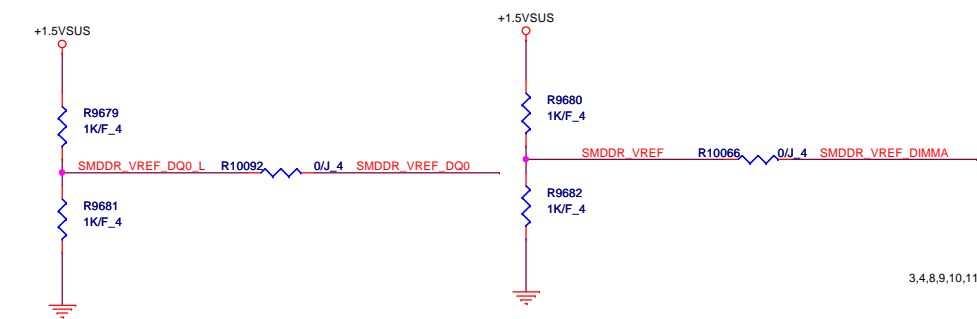
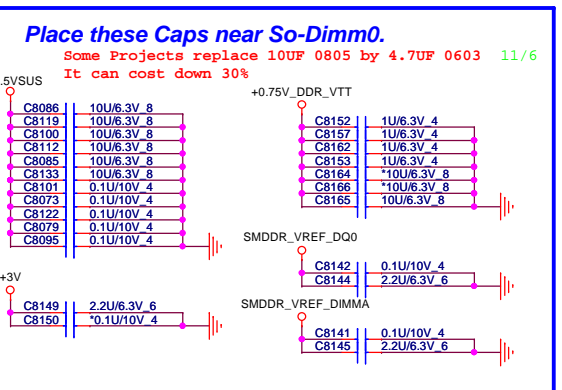
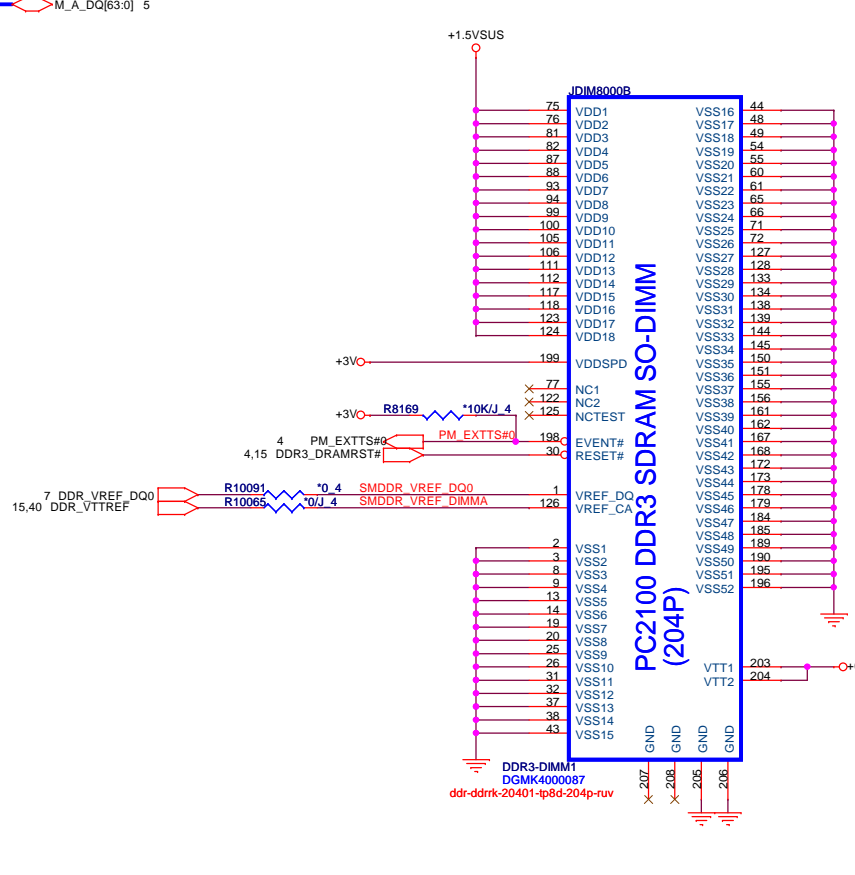
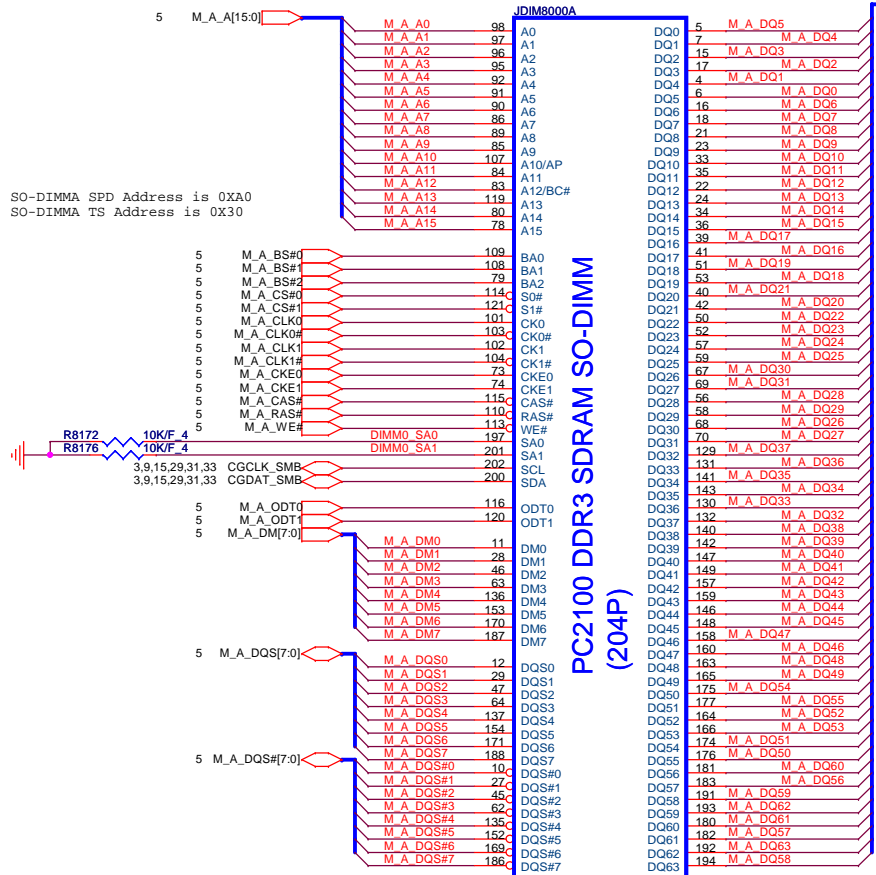
ibexPeak-M\_Rev1\_0

U8007H

AB16	VSS[0]	VSS[80]	AK30
AA20	VSS[1]	VSS[81]	AK31
AA22	VSS[2]	VSS[82]	AK32
AM19	VSS[3]	VSS[83]	AK34
AA24	VSS[5]	VSS[84]	AK35
AA26	VSS[6]	VSS[85]	AK38
AA28	VSS[7]	VSS[86]	AK43
L2	VSS[8]	VSS[87]	AK46
AA31	VSS[9]	VSS[88]	AK49
AA32	VSS[10]	VSS[89]	AK5
AB11	VSS[11]	VSS[90]	AK8
AB15	VSS[12]	VSS[91]	AL2
AB23	VSS[13]	VSS[92]	AL52
AB30	VSS[14]	VSS[93]	AM41
AB31	VSS[15]	VSS[94]	AM42
AB32	VSS[16]	VSS[95]	AM20
AB39	VSS[17]	VSS[96]	AM22
AB43	VSS[18]	VSS[97]	AM24
AB47	VSS[19]	VSS[98]	AM26
AB5	VSS[20]	VSS[99]	AM28
AB8	VSS[21]	VSS[100]	BA42
AC2	VSS[22]	VSS[101]	AM30
AC52	VSS[23]	VSS[102]	AM31
AD11	VSS[24]	VSS[103]	AM32
AD12	VSS[25]	VSS[104]	AM33
AD16	VSS[26]	VSS[105]	AM34
AD23	VSS[27]	VSS[106]	AM35
AD30	VSS[28]	VSS[107]	AM38
AD31	VSS[29]	VSS[108]	AM39
AD32	VSS[30]	VSS[109]	AM42
AD34	VSS[31]	VSS[110]	AU20
AJ22	VSS[32]	VSS[111]	AM46
AD42	VSS[33]	VSS[112]	AM47
AD46	VSS[34]	VSS[113]	AM49
AD49	VSS[35]	VSS[114]	AM7
AD7	VSS[36]	VSS[115]	AA50
AE7	VSS[37]	VSS[116]	BB10
AE4	VSS[38]	VSS[117]	AN52
AF12	VSS[39]	VSS[118]	AN50
Y13	VSS[40]	VSS[119]	AN52
AH49	VSS[41]	VSS[120]	AP12
AU4	VSS[42]	VSS[121]	AP42
AE35	VSS[43]	VSS[122]	AP46
U31	VSS[44]	VSS[123]	AP49
AN34	VSS[45]	VSS[124]	AP5
AF45	VSS[46]	VSS[125]	AP8
AF46	VSS[47]	VSS[126]	AR2
AF49	VSS[48]	VSS[127]	AR52
AF5	VSS[49]	VSS[128]	AT11
AG2	VSS[50]	VSS[129]	BA12
AG52	VSS[51]	VSS[130]	AH48
AH11	VSS[52]	VSS[131]	AT32
AH15	VSS[53]	VSS[132]	AT36
AH16	VSS[54]	VSS[133]	AT47
AH24	VSS[55]	VSS[134]	AT7
AH32	VSS[56]	VSS[135]	AV12
AV18	VSS[57]	VSS[136]	AV16
AH43	VSS[58]	VSS[137]	AV20
AH47	VSS[59]	VSS[138]	AV24
AH7	VSS[60]	VSS[139]	AV30
AJ19	VSS[61]	VSS[140]	AV34
AJ2	VSS[62]	VSS[141]	AV38
AJ20	VSS[63]	VSS[142]	AV42
AJ22	VSS[64]	VSS[143]	AV46
AJ23	VSS[65]	VSS[144]	AV49
AJ26	VSS[66]	VSS[145]	AV5
AJ28	VSS[67]	VSS[146]	AV5
AJ32	VSS[68]	VSS[147]	AV8
AJ34	VSS[69]	VSS[148]	AW18
AT5	VSS[70]	VSS[149]	AW2
AJ4	VSS[71]	VSS[150]	BF9
AJ4	VSS[72]	VSS[151]	AW32
AK12	VSS[73]	VSS[152]	AW36
AK41	VSS[74]	VSS[153]	AW40
AN19	VSS[75]	VSS[154]	AW52
AK26	VSS[76]	VSS[155]	AY11
AK22	VSS[77]	VSS[156]	AY43
AK23	VSS[78]	VSS[157]	AY47
AK28	VSS[79]	VSS[158]	

bexPeak-M\_Rev1\_0

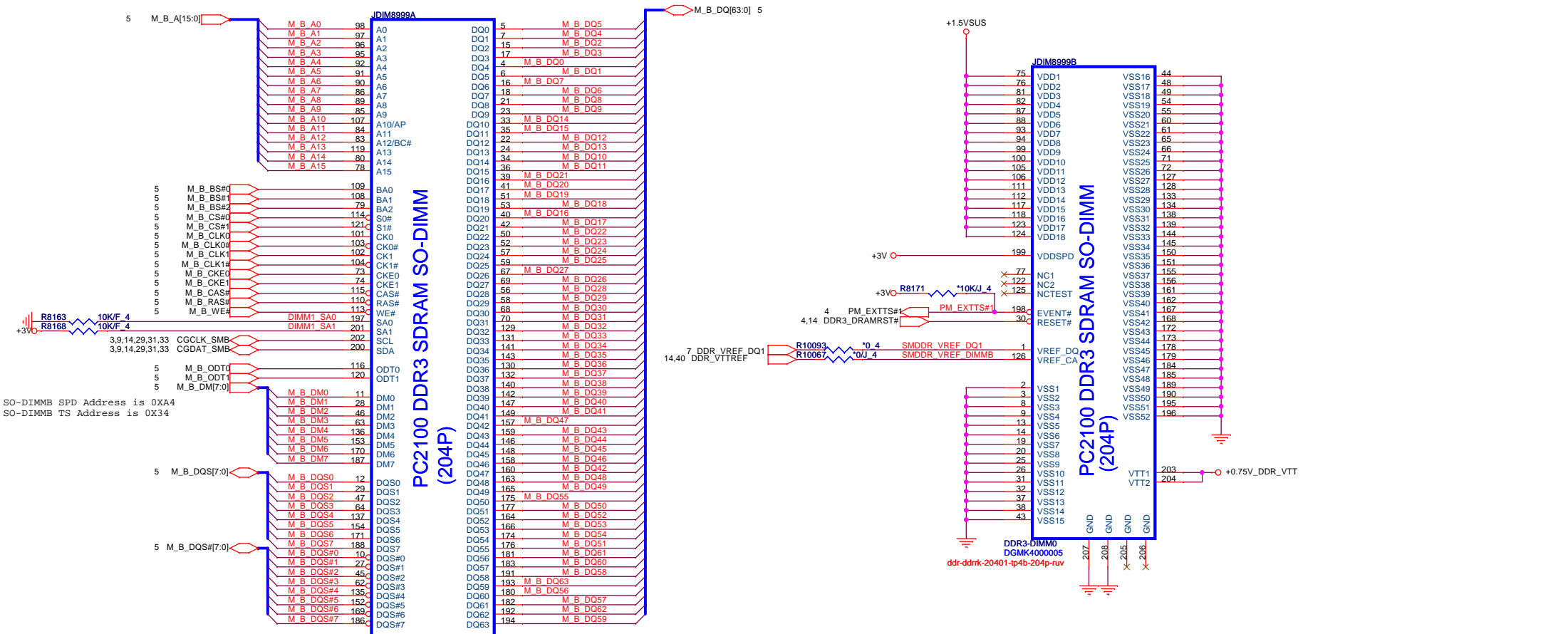
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	Quantata Computer Inc.			
	Size Custom	Date: Tuesday, December 15, 2009		



**PROJECT : SX6**  
Quanta Computer Inc.

Size Custom Document Number **DDR3 DIMM-0** Rev 2B

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SO-DIMMB SPD Address is 0XA4  
 SO-DIMMB TS Address is 0X34

**Place these Caps near So-Dimm1.**  
 Some Projects replace 10UF 0805 by 4.7UF 0603  
 It can cost down 30%

Capacitor values shown include: 10U/6.3V 8, 10U/6.3V 4, 10U/6.3V 6, 0.1U/10V 4, 0.1U/10V 6, 2.2U/6.3V 6, 0.1U/10V 4, 2.2U/6.3V 6.

Capacitor values shown include: 10U/6.3V 4, 10U/6.3V 6, 0.1U/10V 4, 2.2U/6.3V 6, 1K/F\_4, 0/J\_4.

Additional labels: +1.5VSUS, +0.75V\_DDR\_VTT, SMDDR\_VREF\_DIMMB, SMDDR\_VREF\_DQ1, R9683, R9685, R9684, R9686, R10094, R10068.

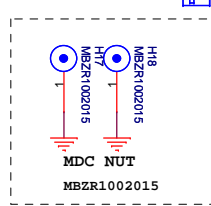
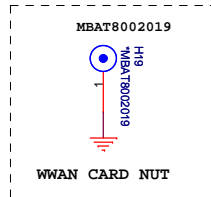
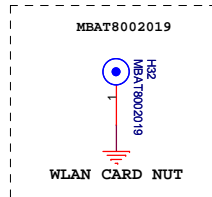
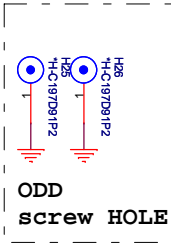
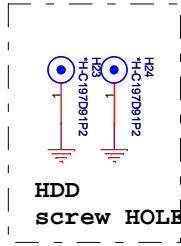
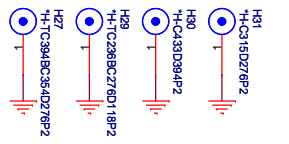
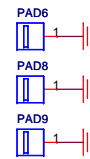
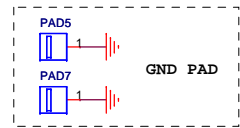
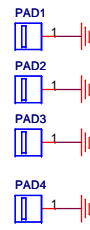
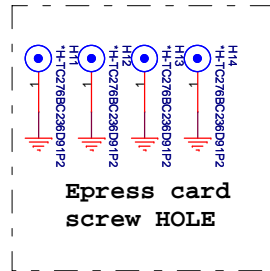
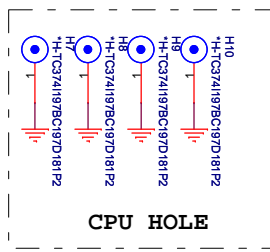
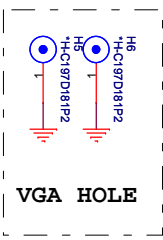
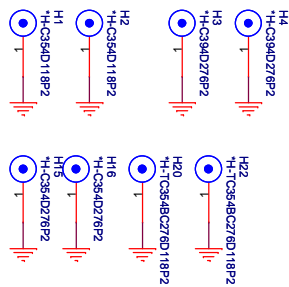
14,40,42 +0.75V\_DDR\_VTT  
 4,14,40,42,43 +1.5VSUS  
 3,4,8,9,10,11,12,14,16,20,23,25,27,28,29,30,31,32,33,34,35,37,39,42 +3V  
 8,10,23,25,27,31,32,36,37,38 +3VPCU  
 +5VPCU

**PROJECT : SX6**  
 Quanta Computer Inc.

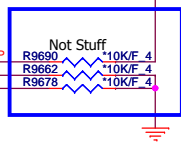
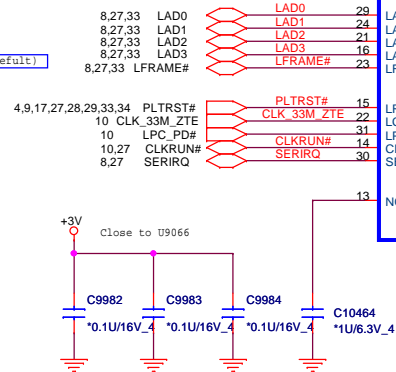
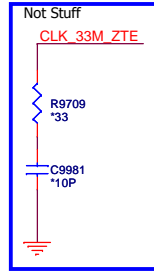
Size Custom Document Number **DDR3 DIMM-1** Rev 2B

NB5

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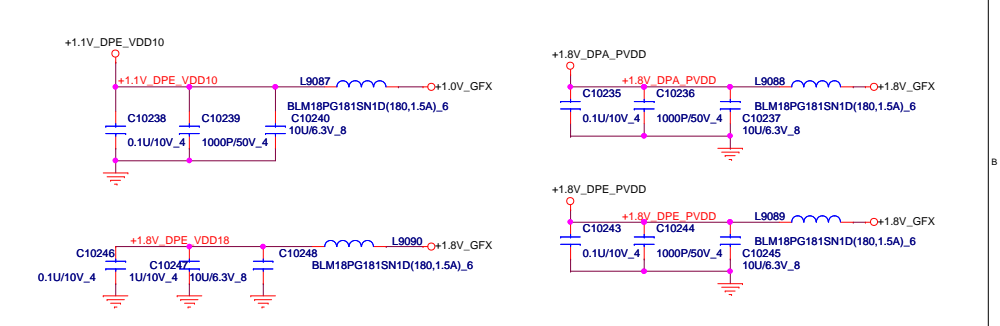
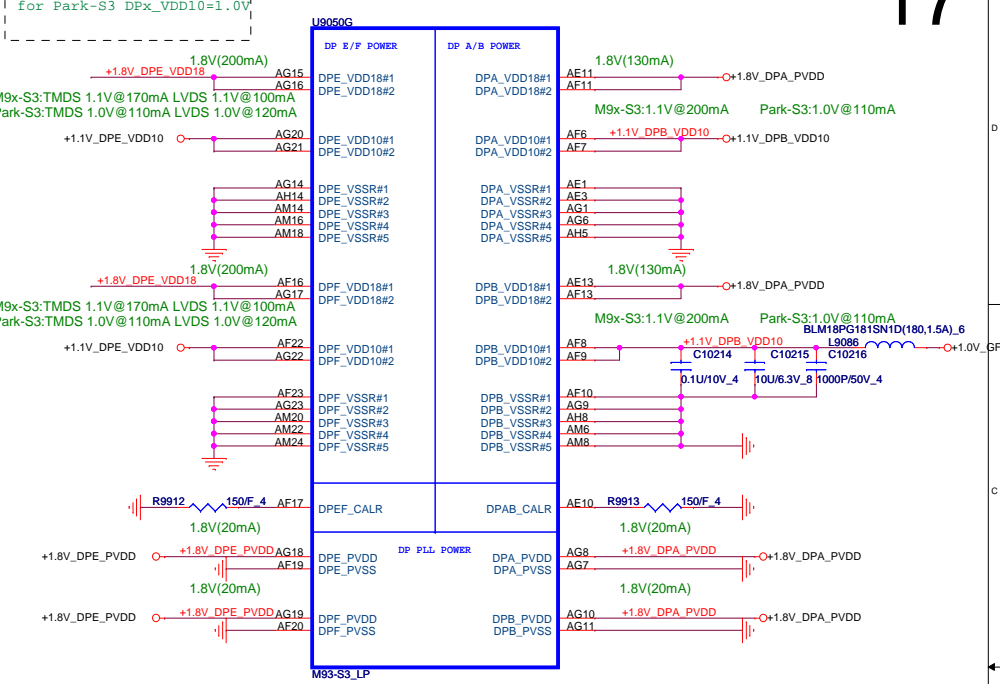
BADD1	BADD0	
0	0	EE/EF
0	1	7E/7F
1	0	2E/2F
1	1	4E/4F(Default)



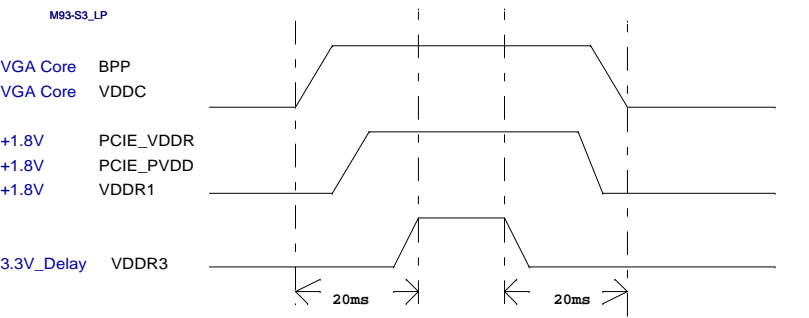


POWER  
+PCIE\_VDDR=1.2V  
+VDD\_MEM1.8V=1.8V  
+VGA\_CORE=0.9-1.2V

POWER  
for M9x-S3 DPx\_VDD10=1.1V  
for Park-S3 DPx\_VDD10=1.0V



100MHz (+/-300ppm) input frequency,  
0-0.7V single-ended swing



**PROJECT : SX6**  
**Quanta Computer Inc.**

Size Custom	Document Number <b>Park_PCIE Interface</b>	Rev 2B
Date: Tuesday, December 15, 2009   Sheet 17 of 43		



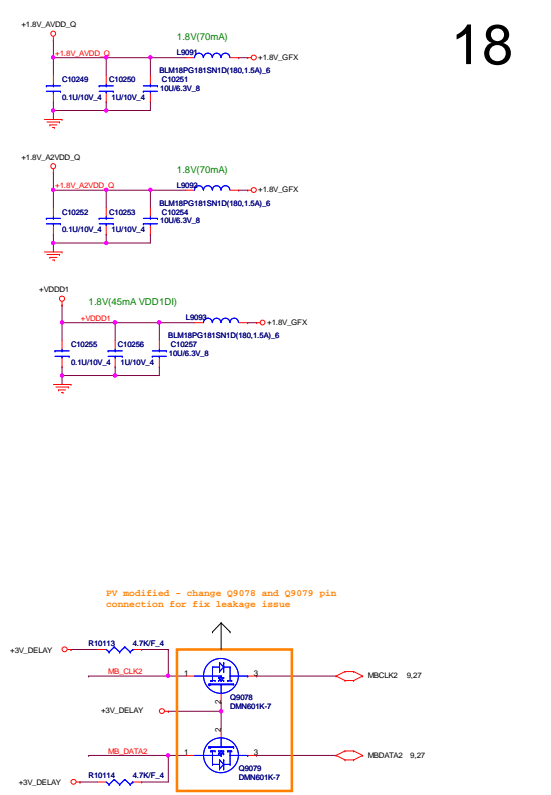
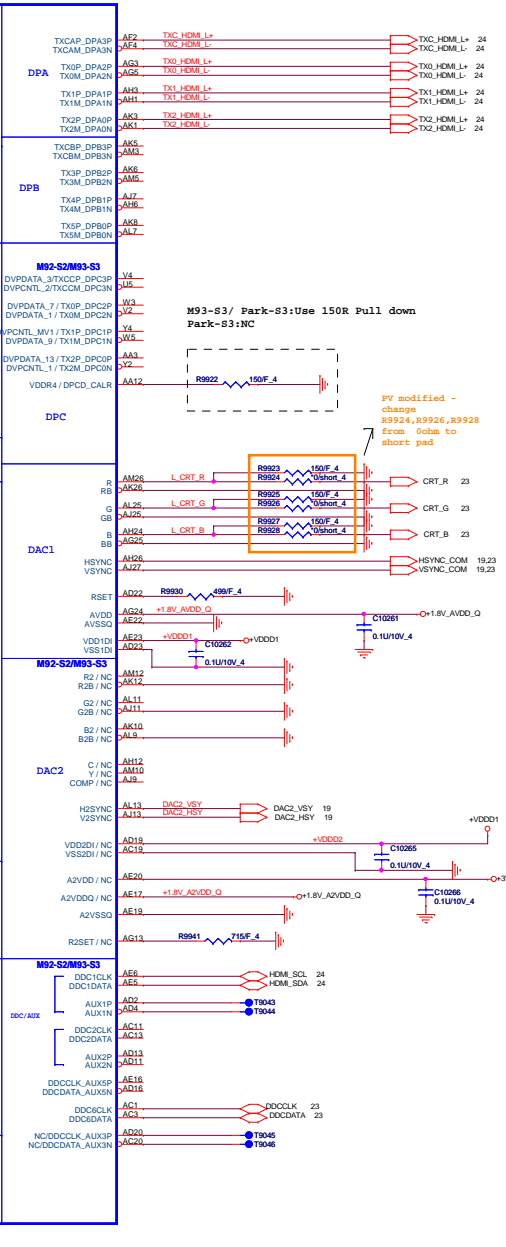
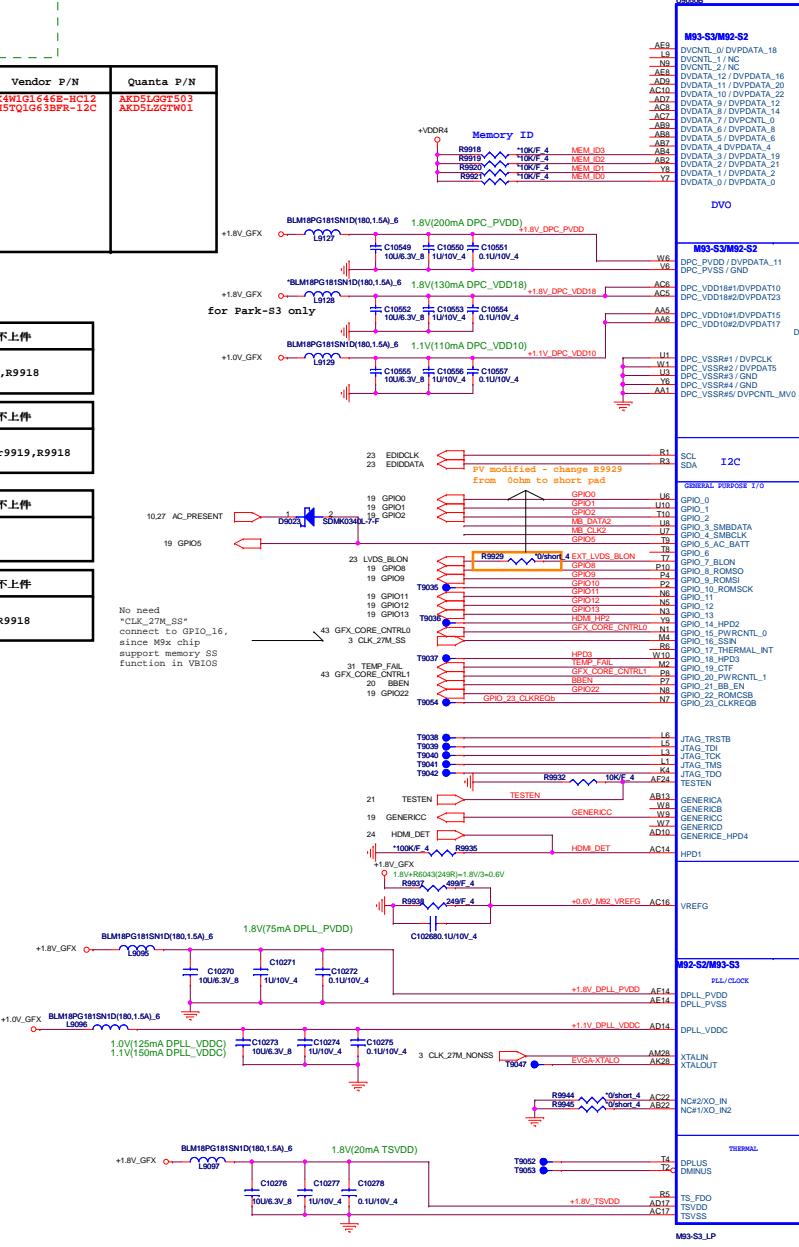
MEM_ID[3:0]	Vendor	Type	Vendor P/N	Quanta P/N
0000 0100	Samsung E-die Hynix Orion-die	64*16-800MHZ 64*16-800MHZ	K4W1G146E-HC12 H5TQ1G63BF-R12C	AKDSLGG7503 AKDSLZGTW01

I.MEMID\_0: ODM, 0\*Quanta 1\*Wistron  
 II.MEMID\_1: Vram size, 0\*512MB, 1\*1GB  
 III.MEMID\_2: Vram vender, 0\*samsung, 1\*hynix.

Vendor	Part Number	Part Name	Status
Hynix	512M	R9919	不上件
Samsung	512M	0000	不上件
Hynix	1G	R9919, R9920	不上件
Samsung	1G	0010	不上件

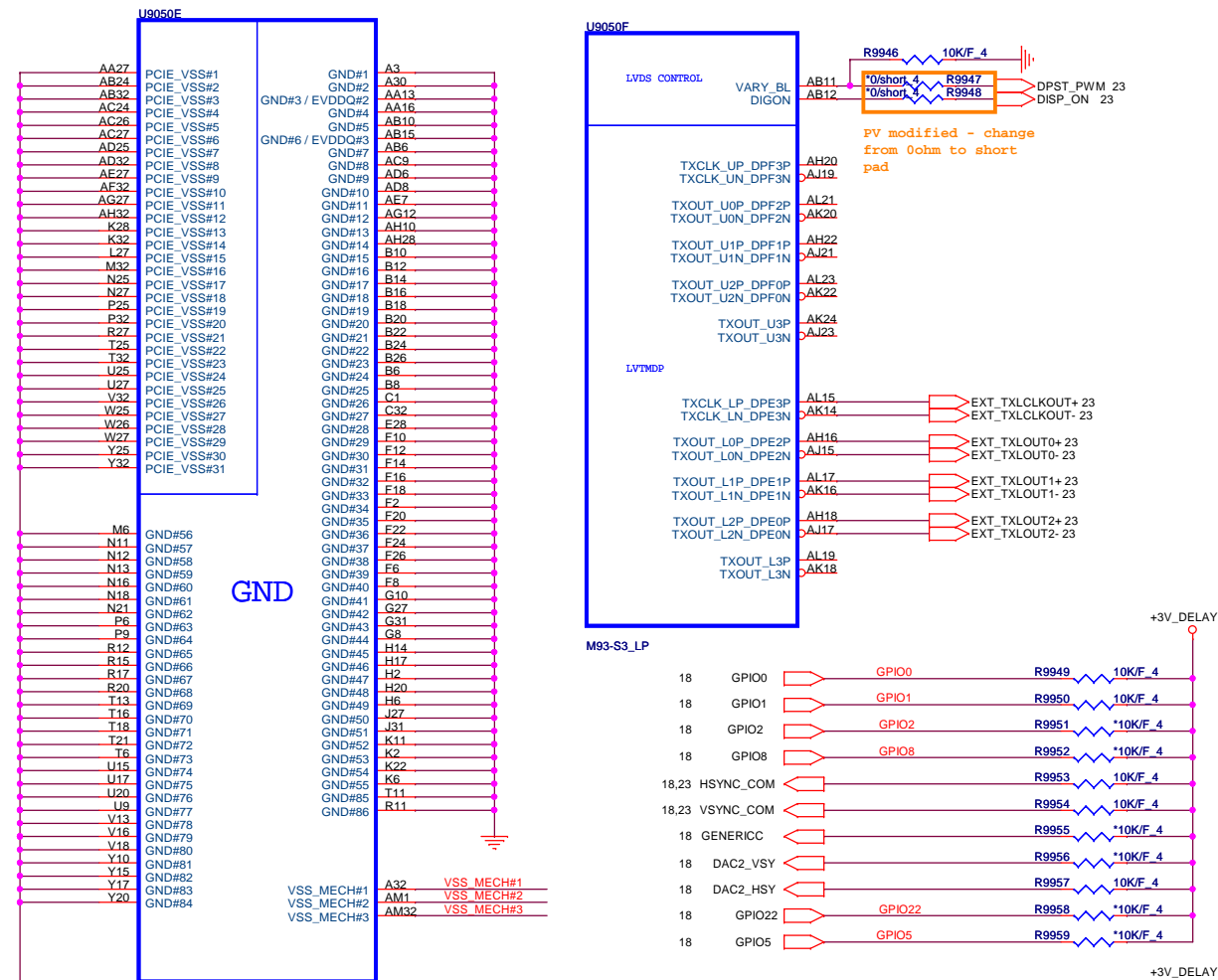
PWRCNTL1	PWRCNTL0	V-CORE
1	1	0.9V
1	0	0.95V
0	1	1.05V
0	0	1.1V

BVEN	BBP
L 0	V-CORE
H 1	+1.8V



**PROJECT : SX6**  
**Quanta Computer Inc.**

Rev	26
Docu	Document Number
File	Park_Main
Date	Tuesday, December 15, 2009 11:58:28 AM

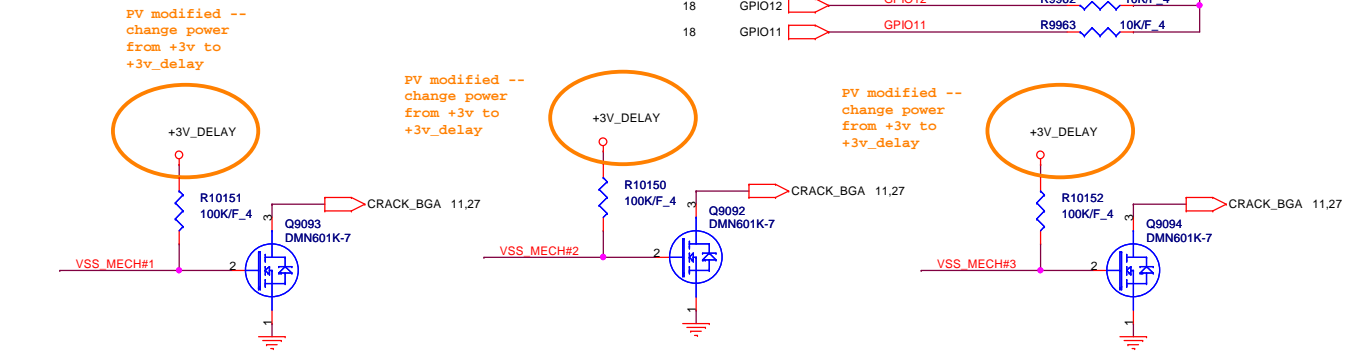


Strap Name	Pin Straps description	Default Value
TX_PWRS_ENB	GPIO0 PCI Express Full TX Output Swing 0: 50% Tx output swing for mobile mode 1: full Tx output swing (Default setting for Desktop)	1
TX_DEEMPH_EN	GPIO1 PCI Express Transmitter De-emphasis Enable 0: Tx de-emphasis disabled for mobile mode 1: Tx de-emphasis enabled (Default setting for Desktop)	1
BIF_GEN2_EN_A	GPIO2 0 = Advertises the PCI-E device as 2.5 GT/s capable at power-on. 1 = Advertises the PCI-E device as 5.0 GT/s capable at power-on. 5.0 GT/s capability will be controlled by software.	1
RSVD	GPIO8 Enable CLKREQ# Power Management 0 - CLKREQ# power management capability is disabled 1 - CLKREQ# power management capability is enabled	0
BIF_VGA_DIS	GPIO9	0
RSVD	GPIO21	0
BIOS_ROM_EN	GPIO22 Enable external BIOS ROM device 0 - Disable external BIOS ROM device 1 - Enable external BIOS ROM device	1
AUD[0]	VSYN	1
AUD[1]	HSYN	1
VIP_DEVICE_STRAP_ENA	V2SYN If VIP_DEVICE_STRAP_EN is set to ?? then this pin is used to sense whether a VIP slave device is connected to the VIP Host interface. If VIP_DEVICE_STRAP_EN is set to ?? then this pin is not used as a strap at all (i.e. its value during reset is unimportant), and it can be used as a regular GPIO	0
RSVD	GENERIC	0

### Memory Aperture size

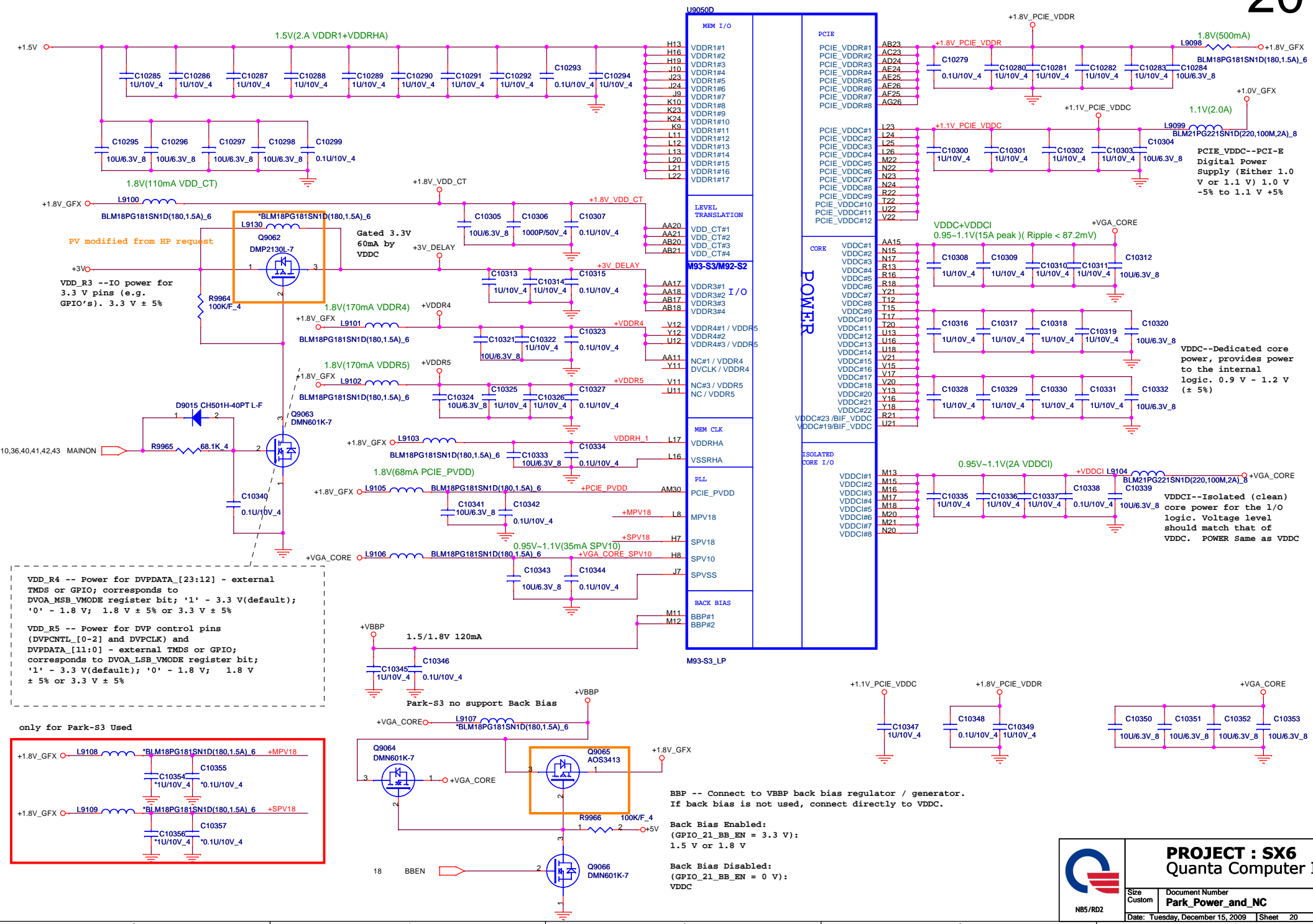
GPIO9 BIOSROM	GPIO13 ROMIDCFG2	GPIO12 ROMIDCFG1	GPIO11 ROMIDCFG0
0	128M	0	0
0	256M	0	1
0	64M	0	0
0	32M	0	1
0	512M	1	0
0	1G	1	0
0	2G	1	1
0	4G	1	1

It is a shared pin strap with CONFIG[2:0] if BIOS\_ROM\_EN is set to 0.



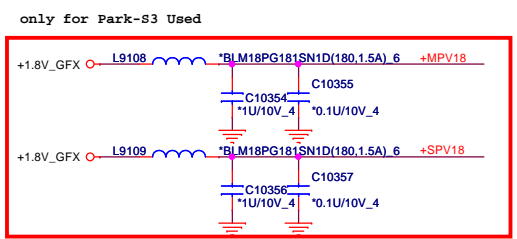
**PROJECT : SX6**  
Quanta Computer Inc.

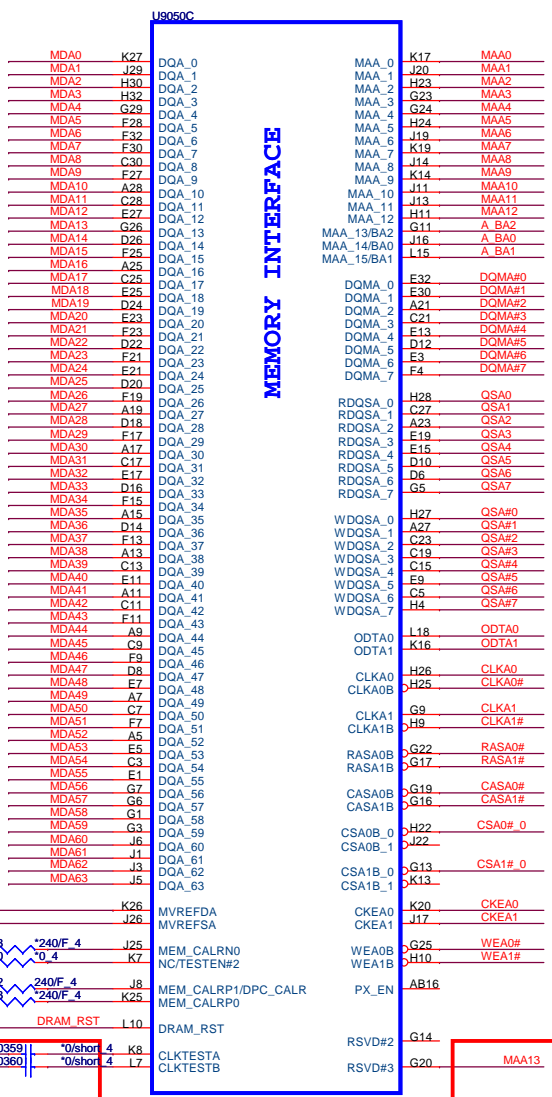
Size Custom	Document Number <b>Park_GND / LVDS/ Straps</b>	Rev 2B
Date: Tuesday, December 15, 2009   Sheet 19 of 43		



VDD\_R4 -- Power for DVPDATA [23:12] - external TMD5 or GPIO; corresponds to DVOA\_MSB\_VMODE register bit; '1' - 3.3 V(default); '0' - 1.8 V; 1.8 V ± 5% or 3.3 V ± 5%

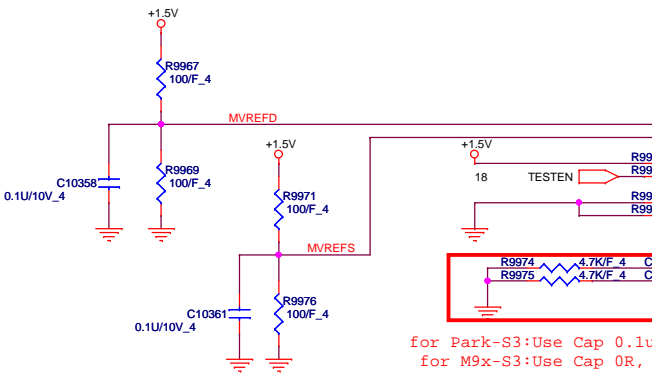
VDD\_R5 -- Power for DVP control pins (DVPCTRL [0-2] and DVPCLK) and DVPDATA [11:0] - external TMD5 or GPIO; corresponds to DVOA\_LSB\_VMODE register bit; '1' - 3.3 V(default); '0' - 1.8 V; 1.8 V ± 5% or 3.3 V ± 5%



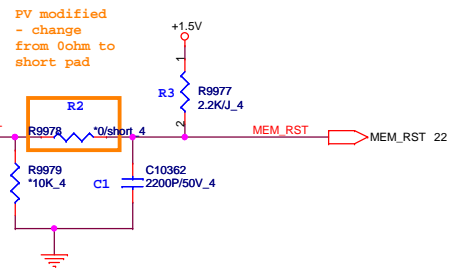


**MEMORY INTERFACE**

for Park-S3: Use only  
for M9x-S3: no support



for Park-S3: Use Cap 0.1uF, Res 51.1R  
for M9x-S3: Use Cap 0R, Res 4.7K



	M9x-S2/S3	Park-S3
MEM_CALRN0 (J25)	NC	240R
MEM_CALRP0 (K25)	NC	240R
MEM_CALRP1 (J8)	240R	150R
TESTEN2#2 (K7)	NC	0R
R1	NC	10K
R2	0R	680R
R3	2.2K	NC
C1	2.2nF	68pF

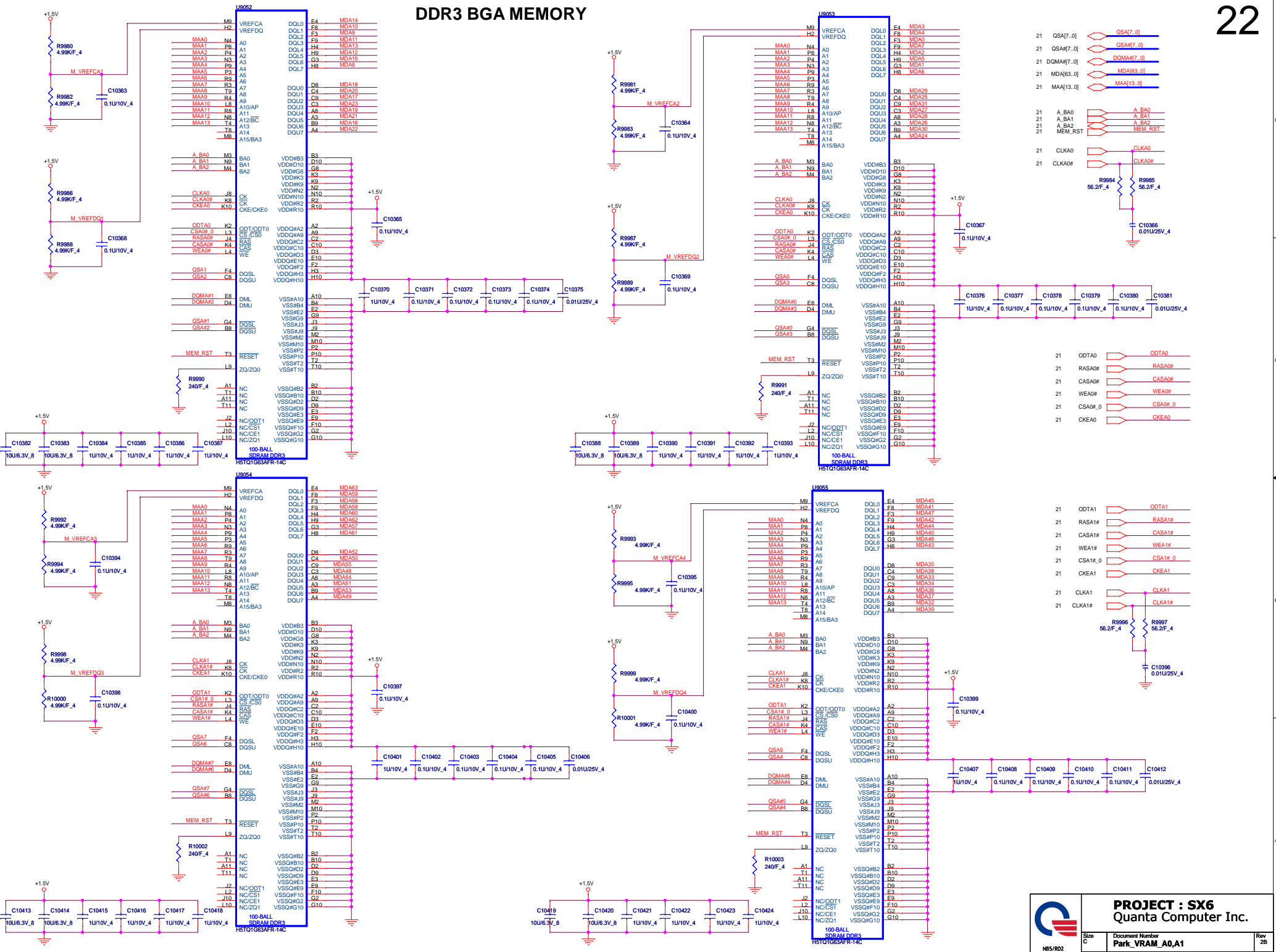
240R: CS12402FB03  
150R: CS11502FB21  
  
0R: CS00002JB38  
680R: CS16002JB27  
  
2.2nF: CH22206KB16  
68pF: CH06806JB01

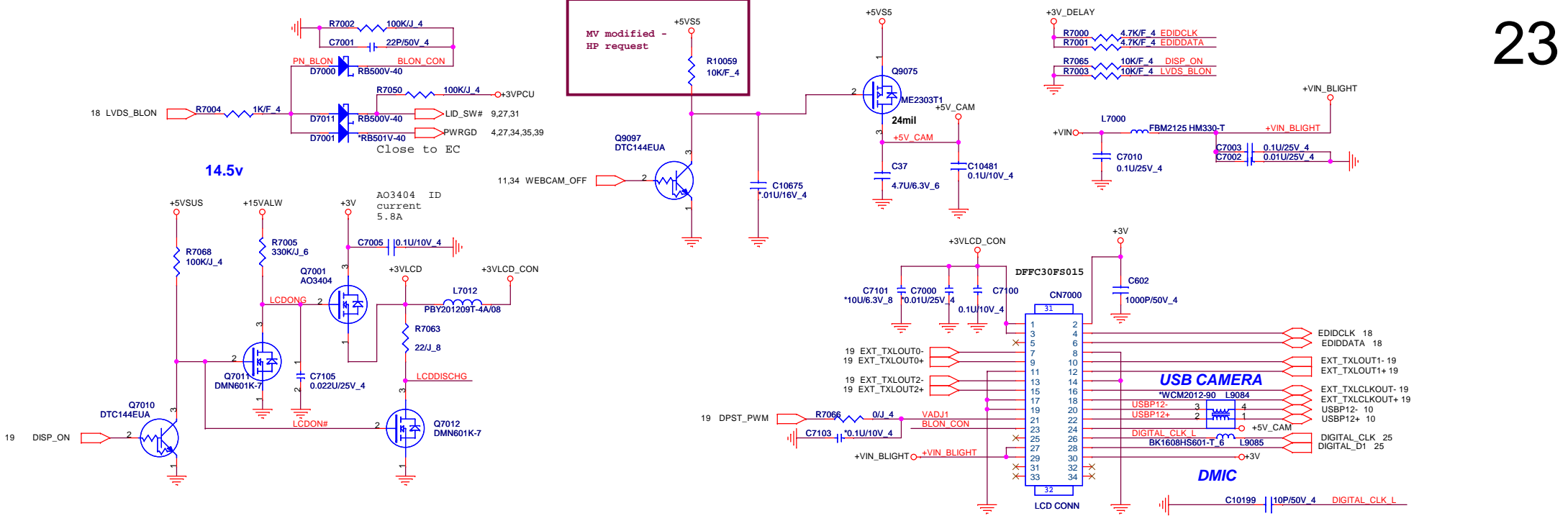


**PROJECT : SX6**  
Quanta Computer Inc.

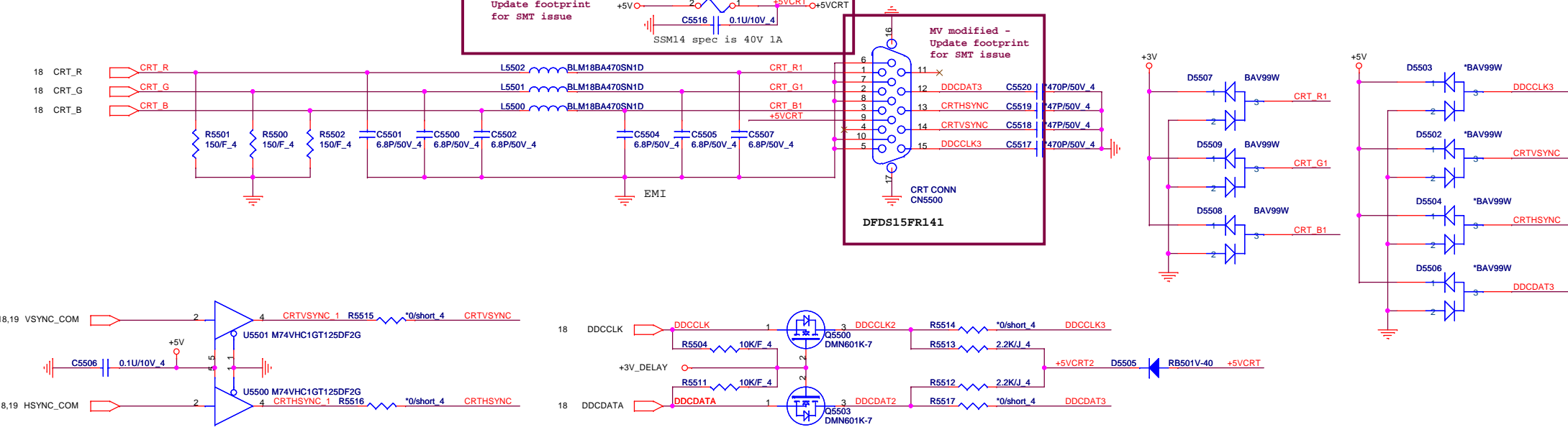
Size Custom	Document Number <b>Park_MEM Interface</b>	Rev 2B
Date: Tuesday, December 15, 2009	Sheet 21	of 43

### DDR3 BGA MEMORY





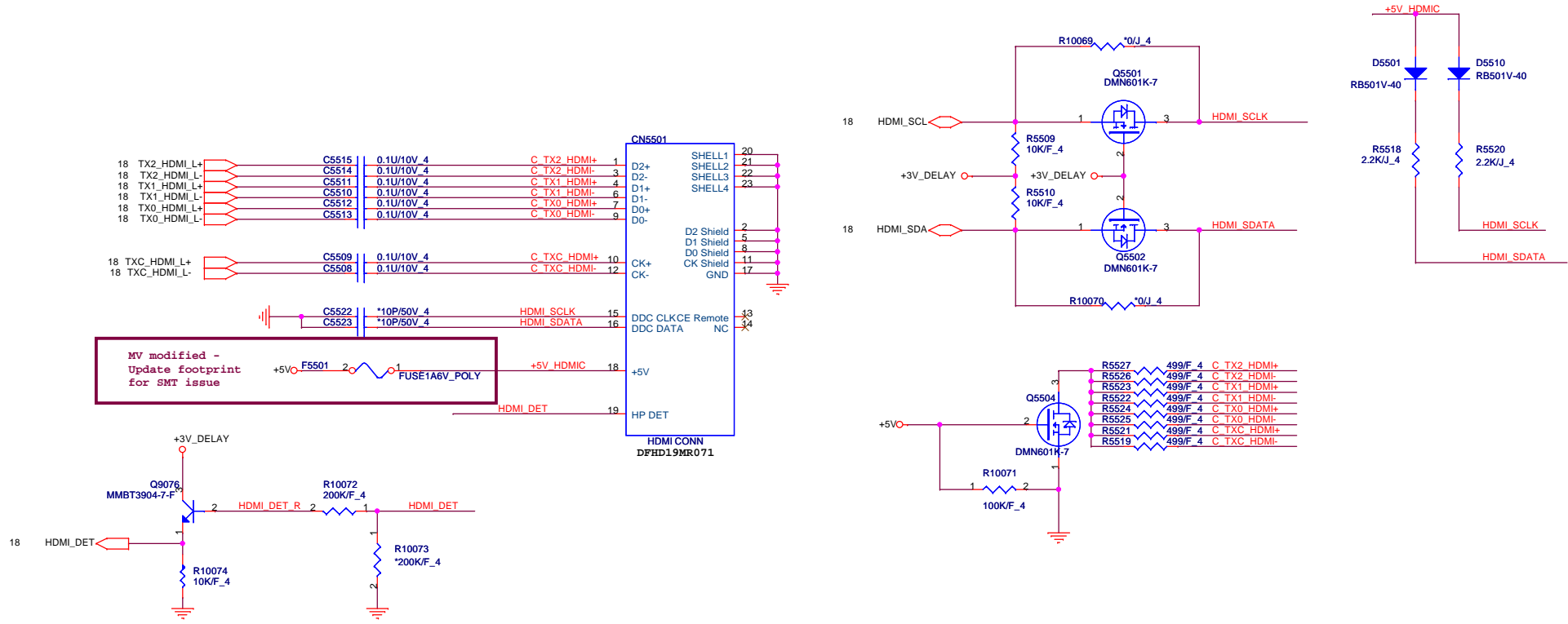
CRT PORT



- 3,4,8,9,10,11,12,14,15,16,20,25,27,28,29,30,31,32,33,34,35,37,39,42 +3V
- 8,10,25,27,31,32,36,37,38 +3VPCU
- 12,20,24,25,31,32,35,37,42 +5V
- 29,42 +5VSUS
- 38,42 +15VALW
- 36,38,39,40,41,42,43 +VIN

**PROJECT : SX6**  
Quanta Computer Inc.

Size Custom	Document Number <b>LCD CONN/LID function</b>	Rev <b>2B</b>
Date: Tuesday, December 15, 2009   Sheet 23 of 43		



3,4,8,9,10,11,12,14,15,16,20,23,25,27,28,29,30,31,32,33,34,35,37,39,42

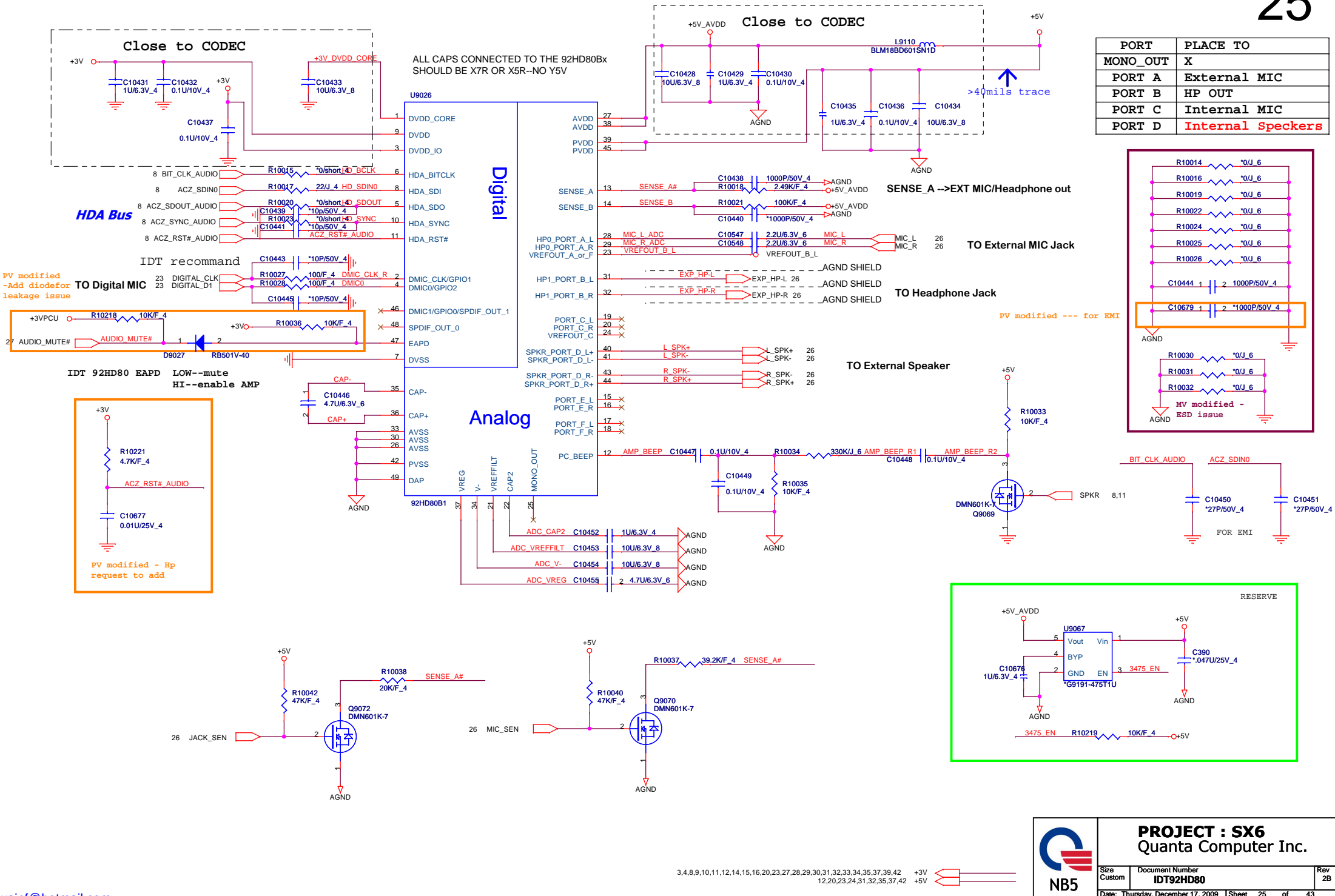
+3V

12,20,23,25,31,32,35,37,42

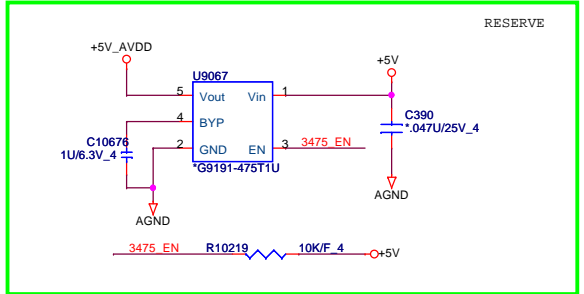
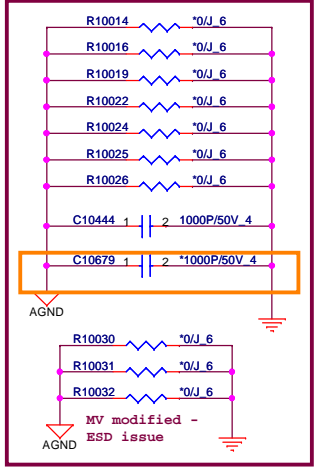
+5V

	<b>PROJECT : SX6</b> Quanta Computer Inc.		Rev
	Size	Document Number	2B
	Custom	<b>HDMI Conn</b>	
Date: Tuesday, December 15, 2009			Sheet 24 of 43





PORT	PLACE TO
MONO_OUT	X
PORT A	External MIC
PORT B	HP OUT
PORT C	Internal MIC
PORT D	Internal Speckers



**PROJECT : SX6**  
Quanta Computer Inc.

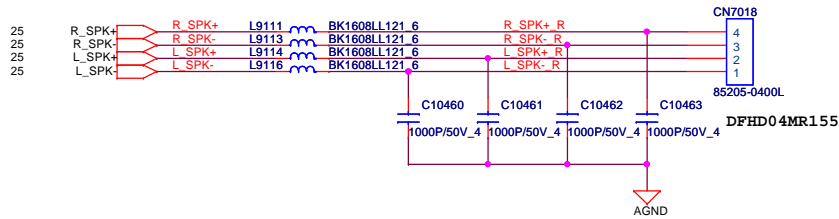
Size Custom Document Number IDT92HD80 Rev 2B

Date: Thursday, December 17, 2009 | Sheet 25 of 43

3,4,8,9,10,11,12,14,15,16,20,23,27,28,29,30,31,32,33,34,35,37,39,42 +3V  
12,20,23,24,31,32,35,37,42 +5V

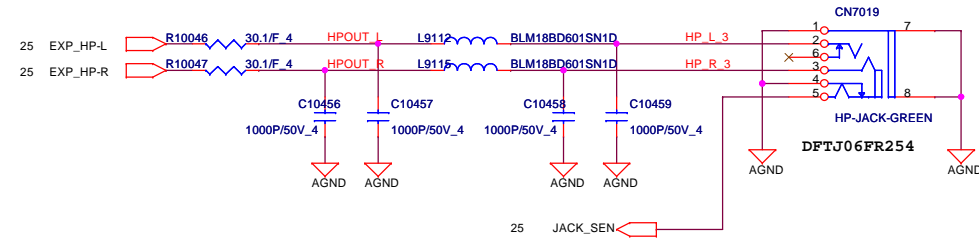
Note: JACK\_SEN# is electrically floating when no jack is inserted and shorted to ground when jack is present.

**INT. SPEAKER**



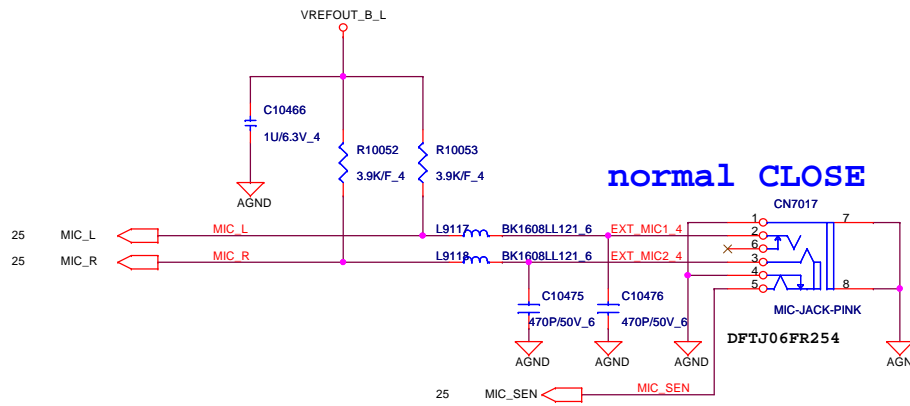
**Headphone Jack**

**normal CLOSE**

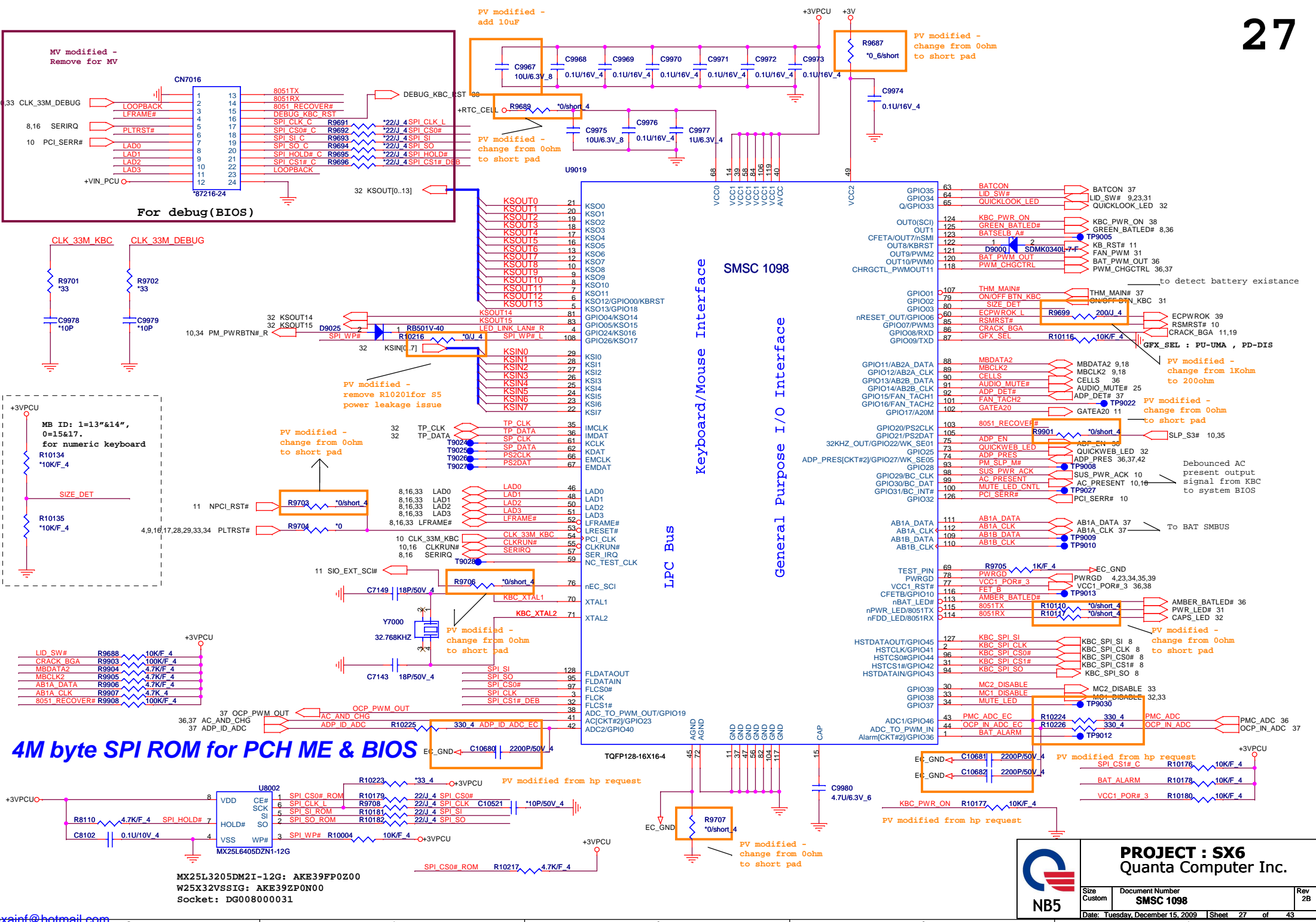


**EXT Mic Jack**

**normal CLOSE**



Note: MIC\_SEN# is electrically floating when no jack is inserted and shorted to ground when jack is present.

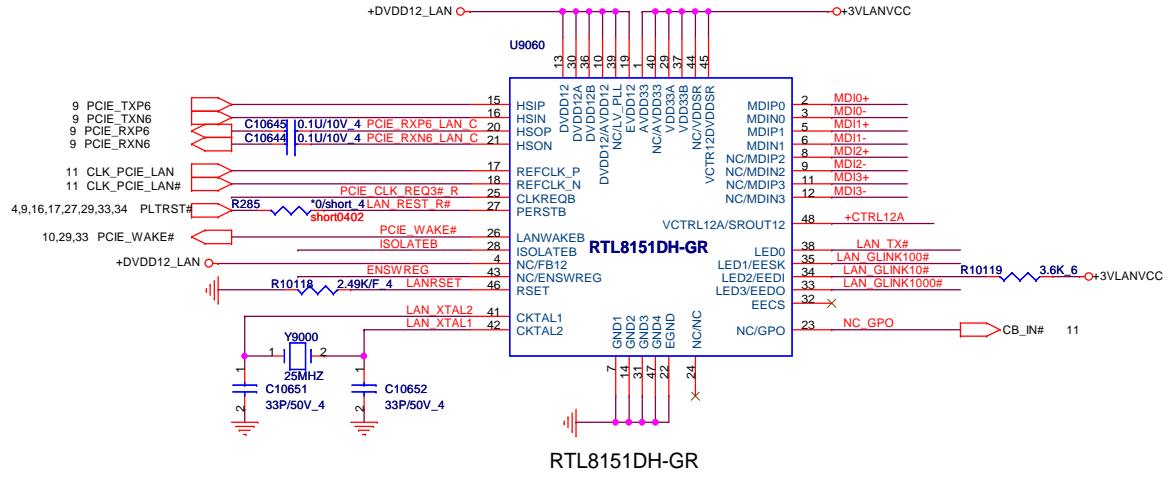


MB ID: 1=13\*14",  
0=15&17,  
for numeric keyboard

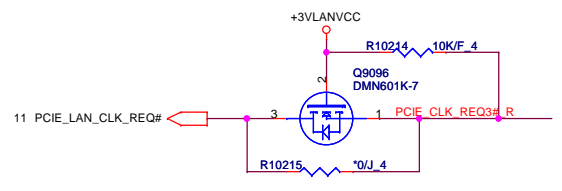
**4M byte SPI ROM for PCH ME & BIOS**

MX25L3205DM2I-12G: AKE39FP0Z00  
W25X32VSSIG: AKE39ZP0N00  
Socket: DG00800031

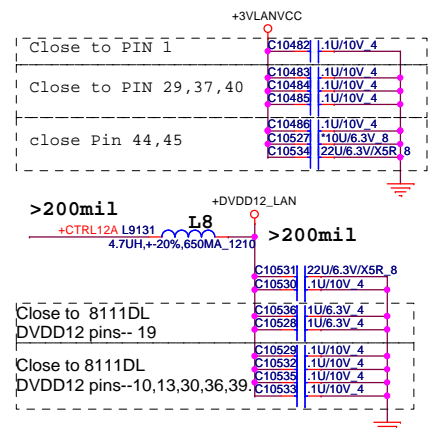
	<b>PROJECT : SX6</b> <b>Quanta Computer Inc.</b>	
	Size Custom Document Number <b>SMSC 1098</b>	Rev <b>2B</b>
Date: Tuesday, December 15, 2009   Sheet 27 of 43		



RTL8151DH-GR



11 PCIE\_LAN\_CLK\_REQ#

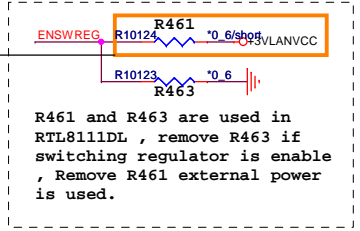


>200mil  
+CTRL12A L9131 L8  
4.7UH,+-20%,650MA\_1210

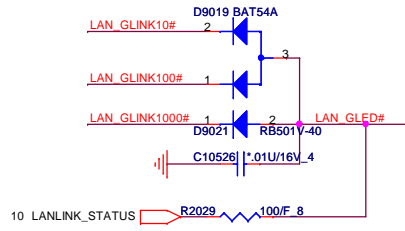
Close to 8111DL  
DVDD12 pins-- 19

Close to 8111DL  
DVDD12 pins--10,13,30,36,39

PV modified  
- change  
from 0ohm to  
short pad

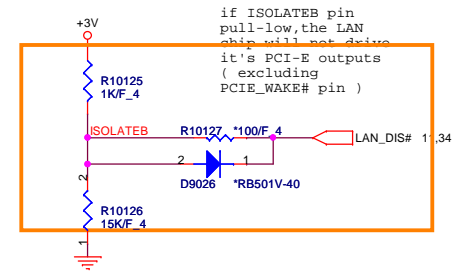


R461 and R463 are used in  
RTL8111DL, remove R463 if  
switching regulator is enable  
, Remove R461 external power  
is used.



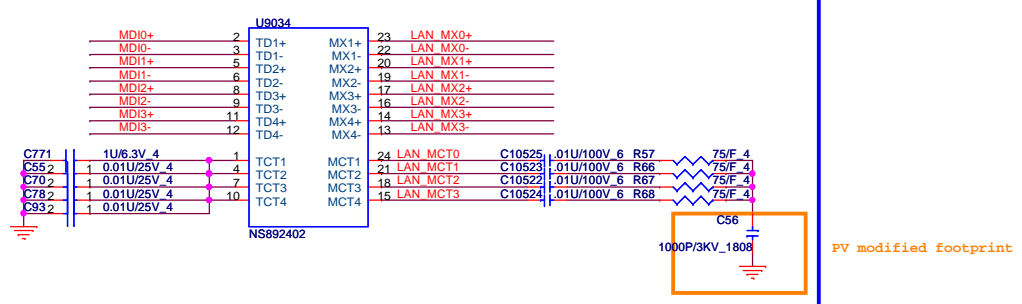
10 LANLINK\_STATUS

PV modified



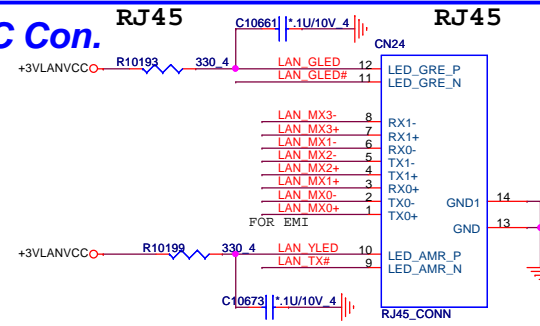
if ISOLATEB pin  
pull-low, the LAN  
chip will not drive  
it's PCI-E outputs  
( excluding  
PCIE\_WAKE# pin )

Transformer for 10/100/1000



PV modified footprint

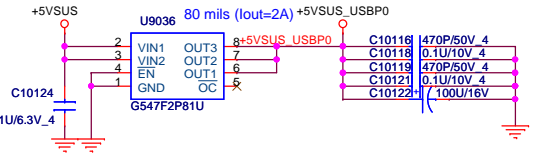
Lan and MDC Con.



**PROJECT : SX6**  
**Quanta Computer Inc.**

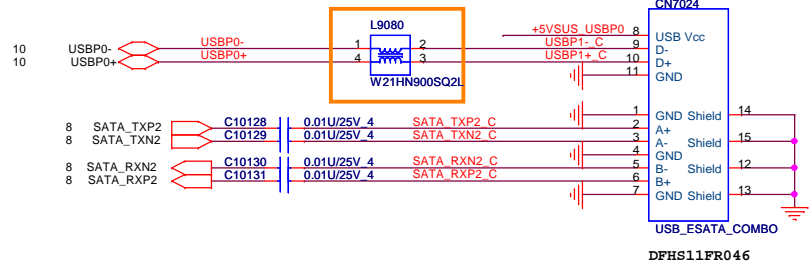
Size Custom	Document Number <b>RTL8151DH-GR</b>	Rev 2B
Date: Friday, December 18, 2009   Sheet 28 of 43		

# LEFT SIDE USBX1 and E-SATA/USB COMBO



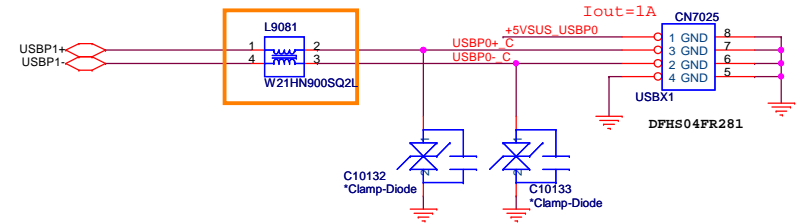
PV modified - add common choke for EMI

## USB & ESATA

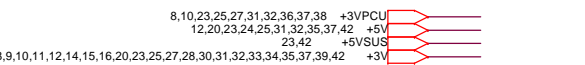
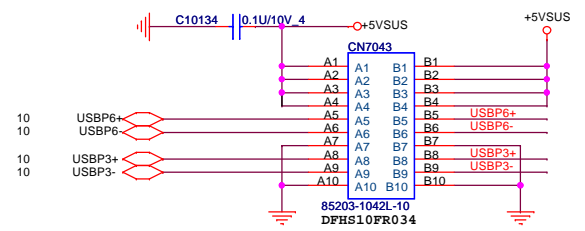


PV modified - add common choke for EMI

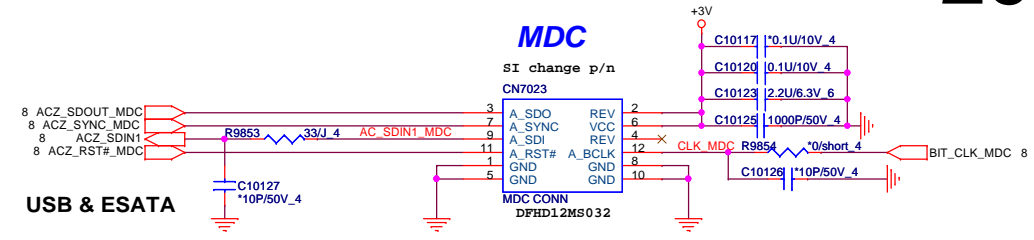
40 mils Iout=1A



# RIGHT SIDE USBX2

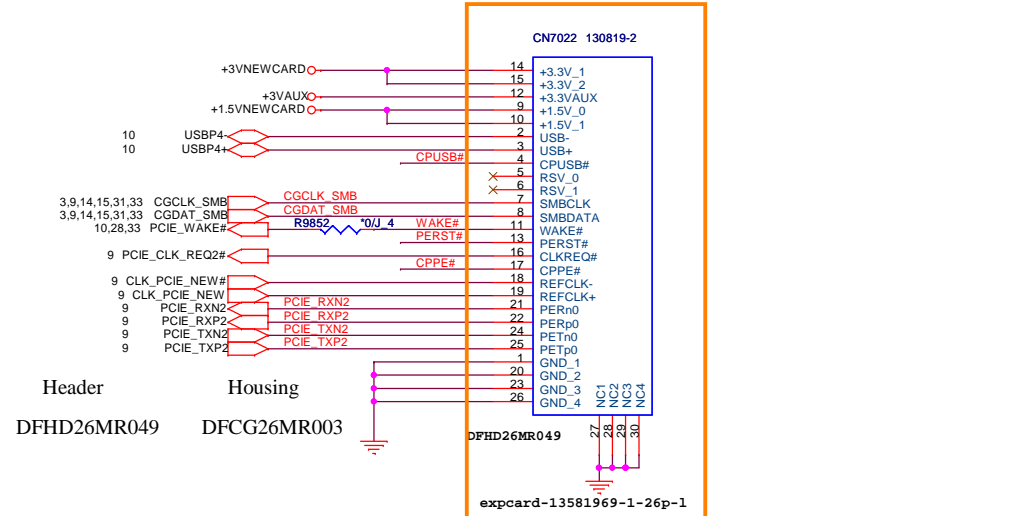


# Modem CONN

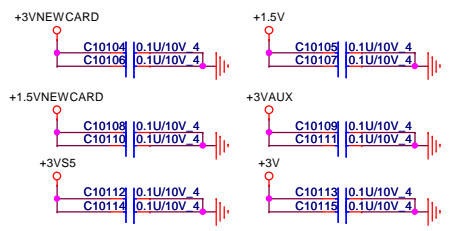
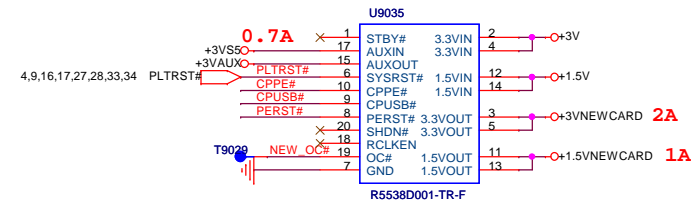


## USB & ESATA

PV modified - update footprint



## NEWCARD (PCIEXPRESS\*1 + USB\*1)



ACS

**PROJECT : SX6**  
Quanta Computer Inc.

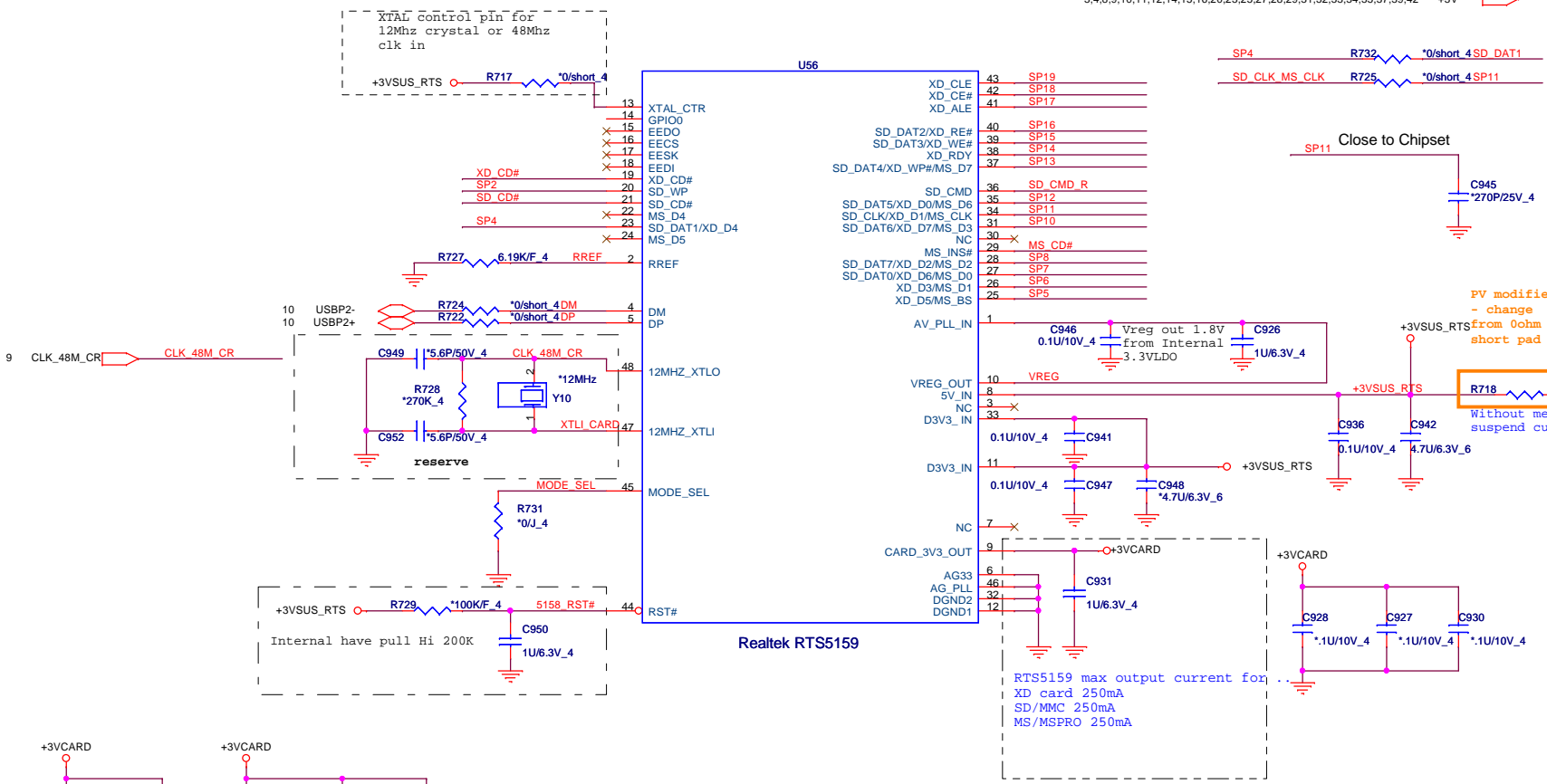
Size Custom	Document Number <b>EXTERNAL USB X2</b>	Rev 2B
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Note:

SP0	SD/MMC 4.2	MS	XD
SP1	SD WP		XD CD#
SP2	SD CD#		
SP3	SD DAT1		XD D4
SP4		MS BS	XD D5
SP5		MS D1	XD D3
SP6		MS D0	XD D6
SP7	SD DAT7/MMC DAT7	MS D2	XD D2
SP8		MS INS#	
SP9	SD DAT6/MMC DAT6	MS D3	XD D7
SP10	SD CLK	MS SCLK	XD D1
SP11	SD DAT5/MMC DAT5		XD D0
SP12	SD DAT4/MMC DAT4		XD WP#
SP13			XD R/B#
SP14			XD WE#
SP15	SD DAT3		XD RE#
SP16	SD DAT2		XD ALE
SP17			XD CE#
SP18			XD CLE
SP19			

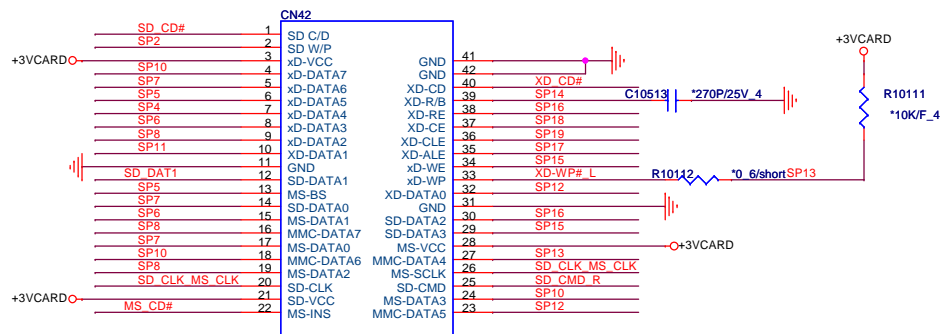
XTAL control pin for 12Mhz crystal or 48Mhz clk in



PV modified - change from 0ohm to short pad Without memory card 43mA suspend current 350uA

RTS5159 max output current for  
 XD card 250mA  
 SD/MMC 250mA  
 MS/MSPRO 250mA

**XD, MMC 4.2 / SD, MS / MSP 7 IN1 CARD READER**

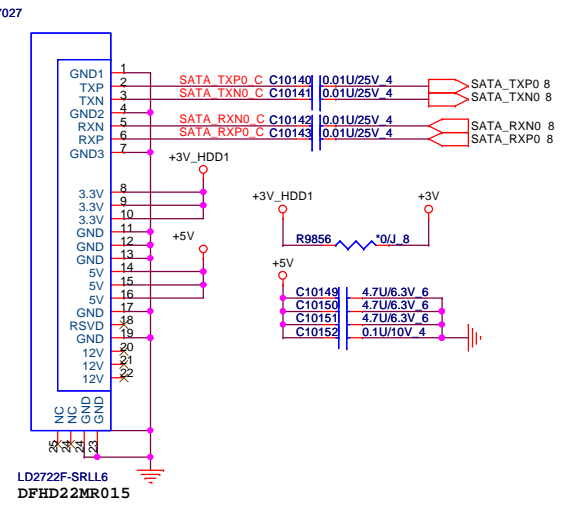


PLASTREN CM7S-02 CARD READER SOCKET  
 DFHD42MR011

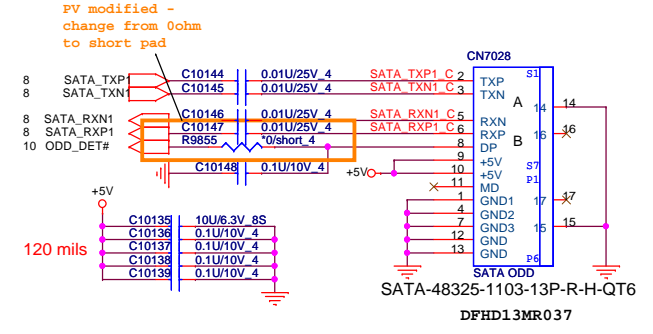
**PROJECT : SX6**  
 Quanta Computer Inc.

Size Custom	Document Number <b>RTS5159 &amp; CR SOCKET</b>	Rev 2B
Date: Tuesday, December 15, 2009   Sheet 30 of 43		

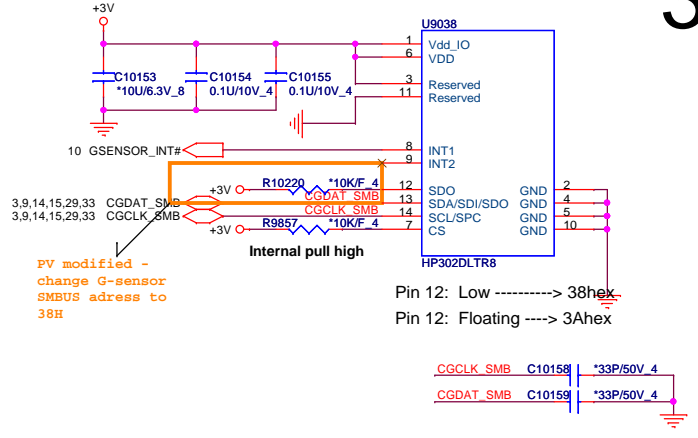
### SATA HDD CONNECTOR



### SATA CD-ROM

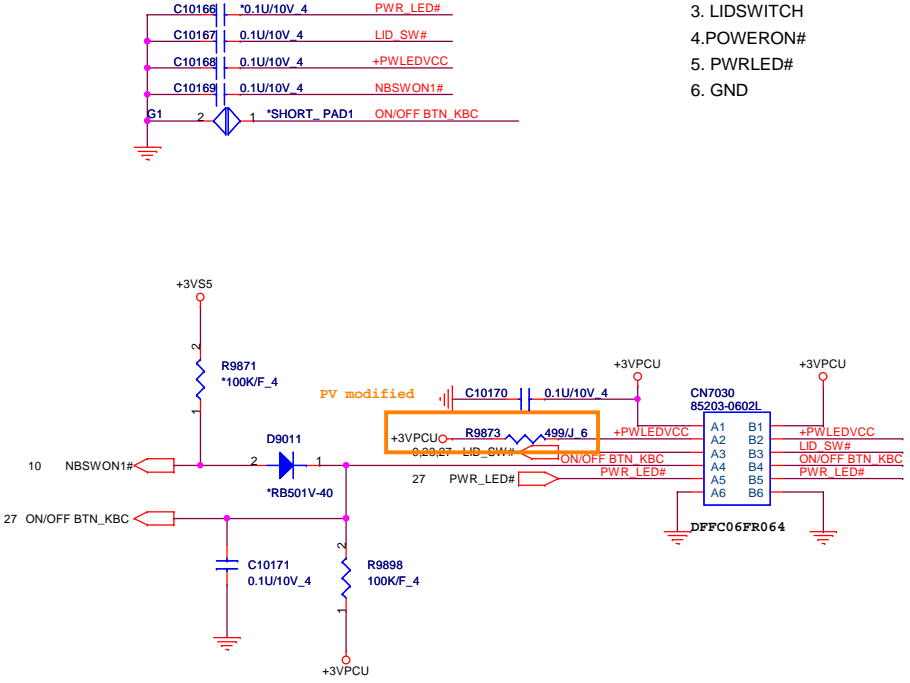


### Accelerometer Sensor

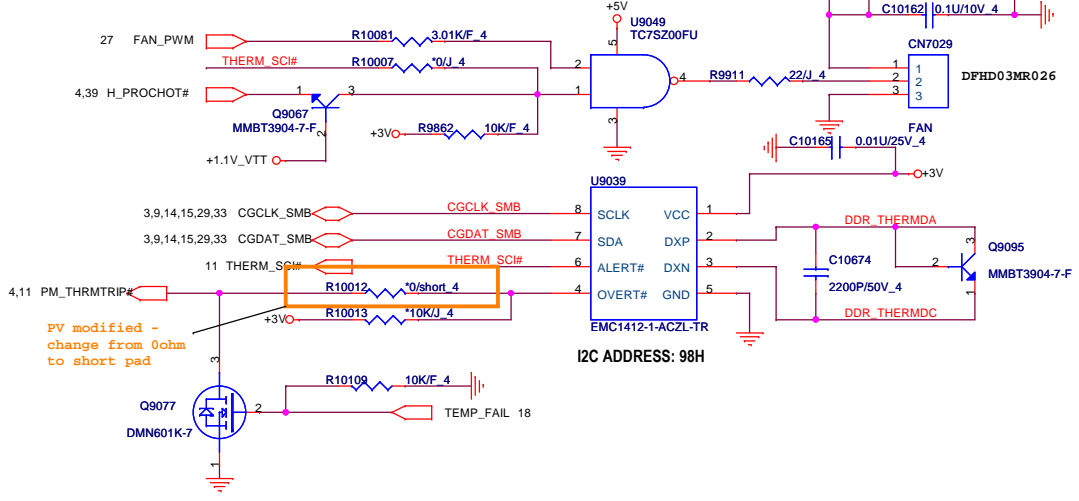


### POWER BOTTON CONNECT

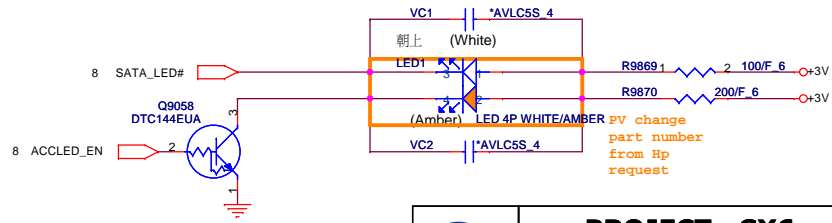
- 1.+3VPCU(LIDSWITCH PWR)
- 2.LEDVCC(+3VPCU)
- 3.LIDSWITCH
- 4.POWERON#
- 5.PWRLED#
- 6.GND



### CPU FAN & THERMAL



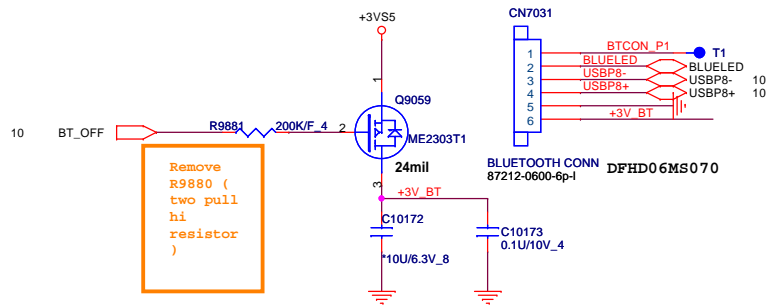
### LED



For RA 9,10,11,12,14,15,16,20,23,25,27,28,29,30,32,33,34,35,37,39,42 +3V  
8,10,23,25,27,32,36,37,38 +3VPCU  
4,9,10,11,12,29,32,33,34,38,41,42,43 +3VSS  
12,20,23,24,25,32,35,37,42 +5V  
23,36,42 +15VALW

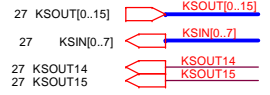
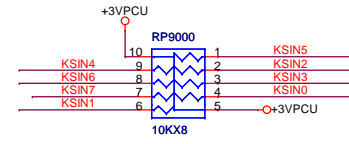
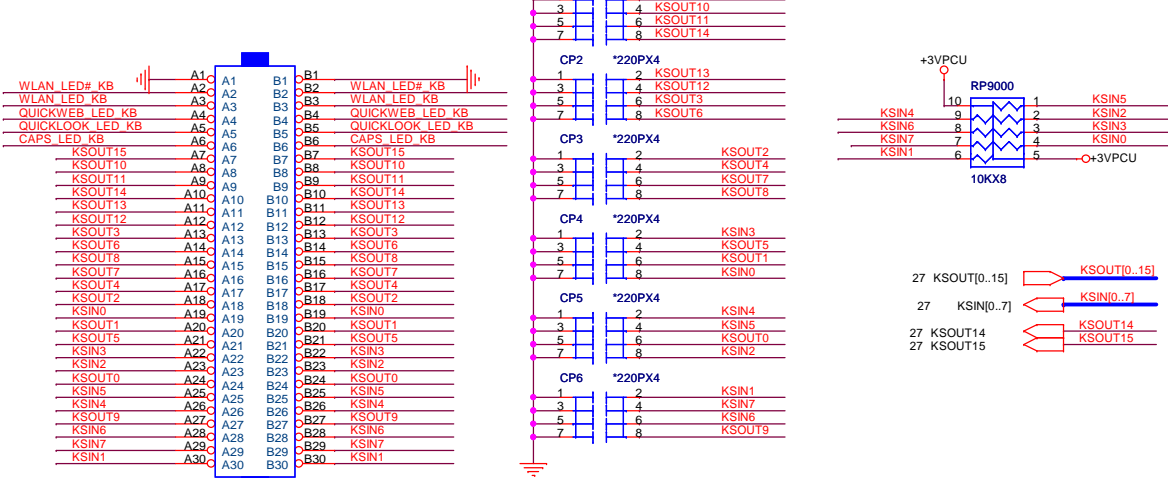
NB5	<b>PROJECT : SX6</b>		Rev 2B
	Quanta Computer Inc.		
	Size Custom	Document Number ESATA/HDD/ODD/LED/FAN	
Date: Tuesday, December 15, 2009		Sheet 31 of 43	

# BLUETOOTH

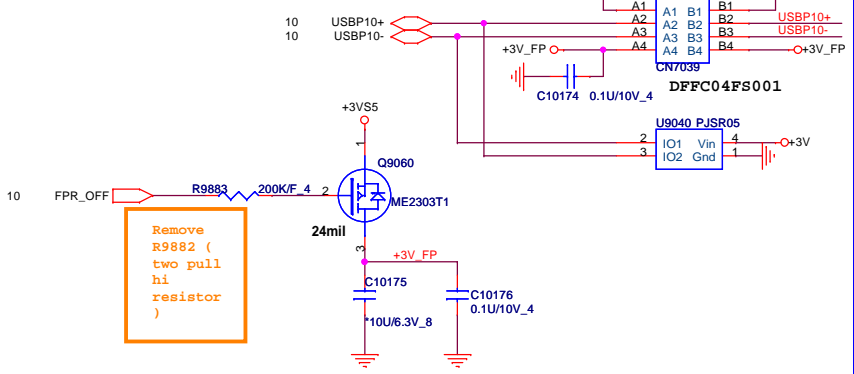


Remove R9880 (two pull hi resistor)

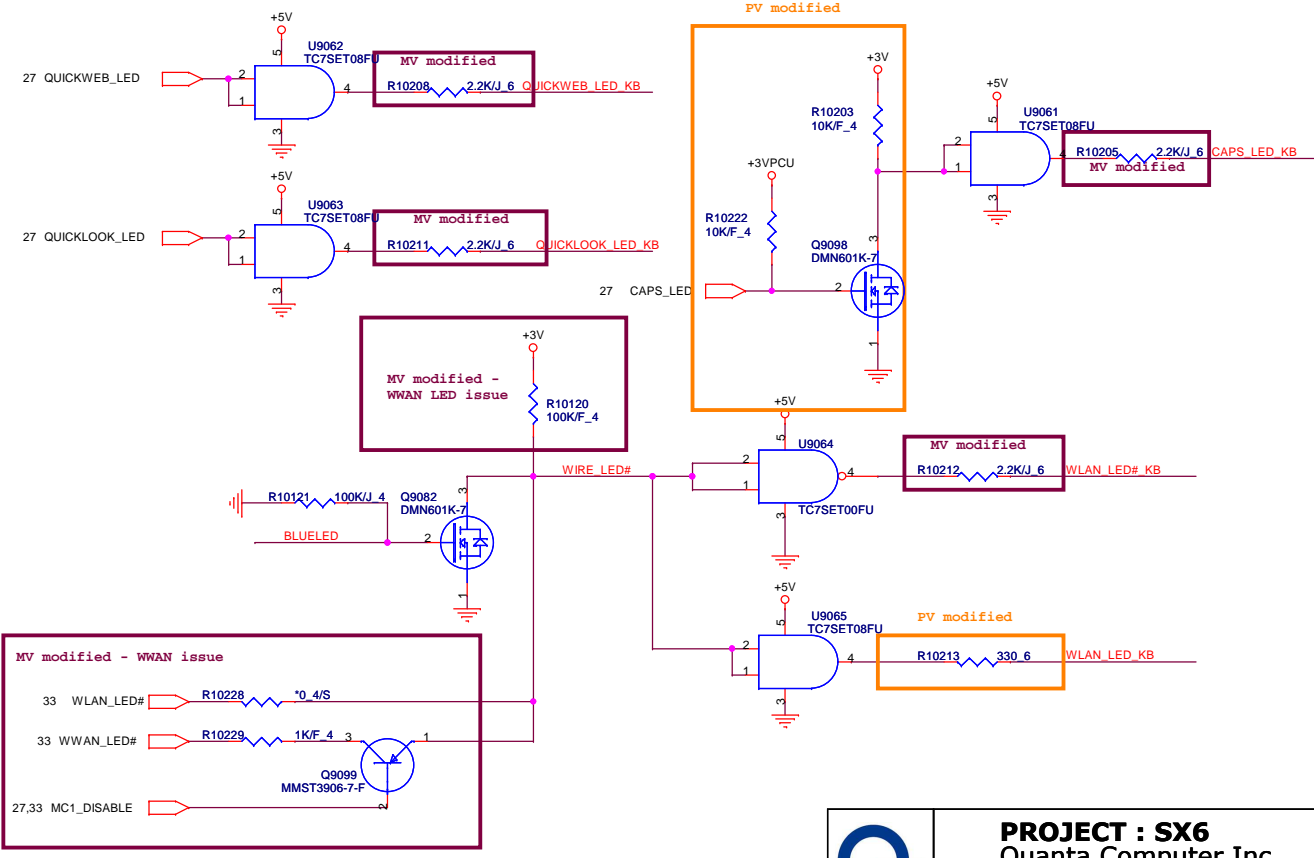
# KEYBOARD CONNECTOR.



# USB fingerprint CON

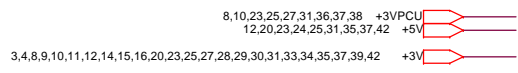
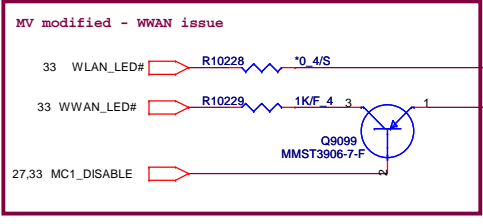
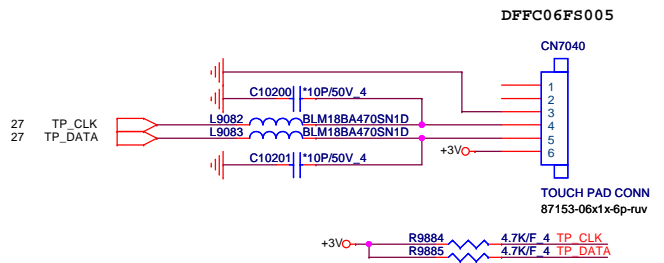


Remove R9882 (two pull hi resistor)



# TOUCH PAD CONNECTOR

Pin1	VDD
Pin2	DATA
Pin3	CLK
Pin4	GND
Pin5	X
Pin6	X

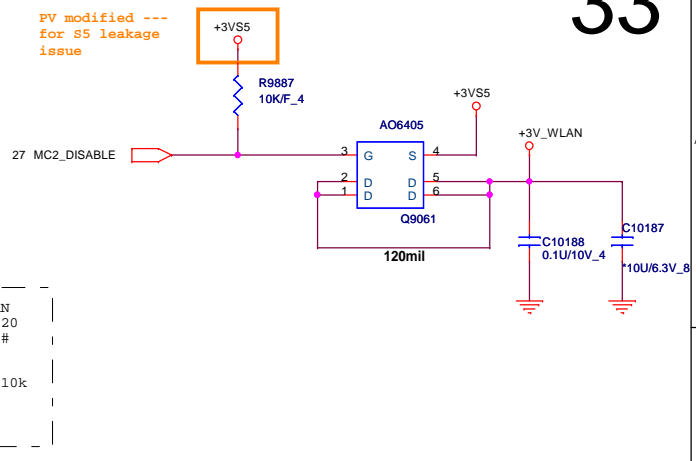
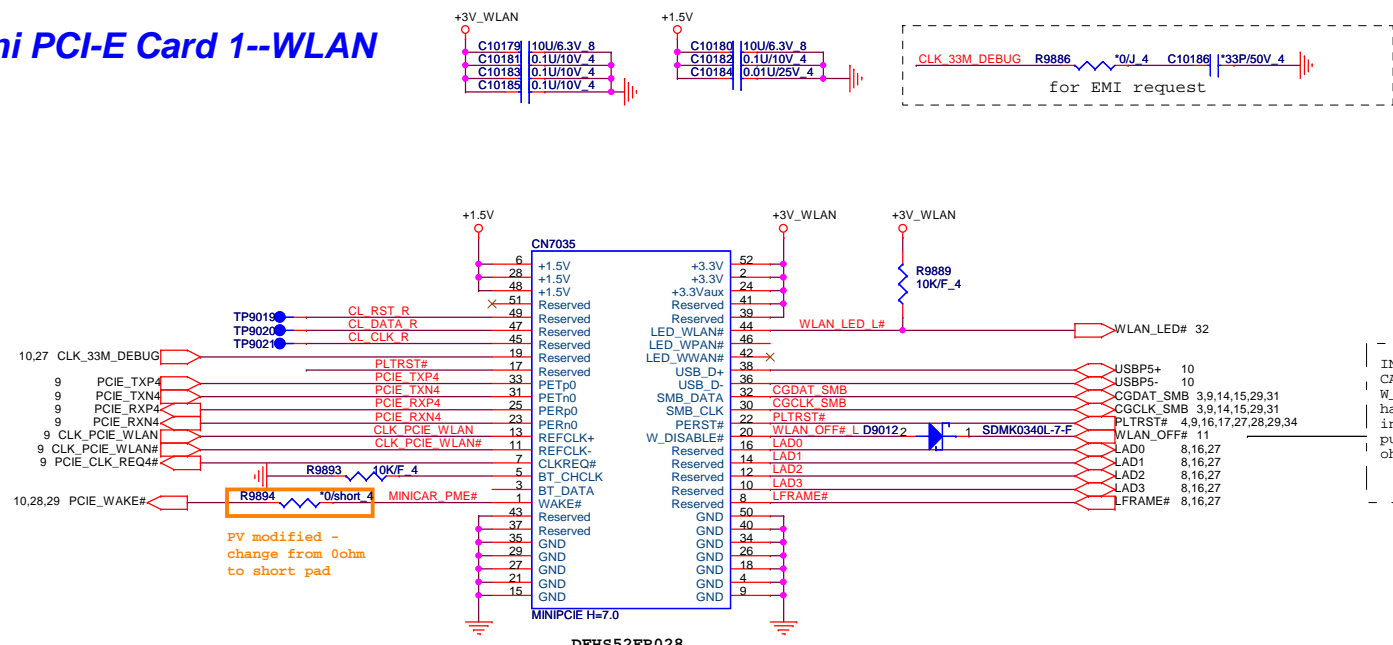


**PROJECT : SX6**  
Quanta Computer Inc.

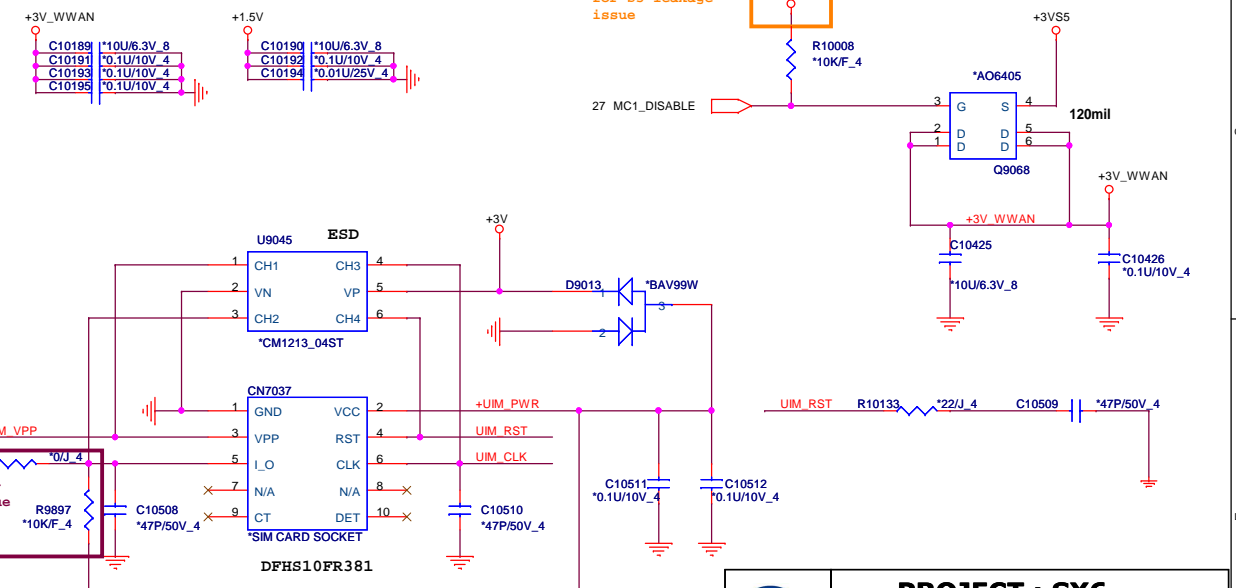
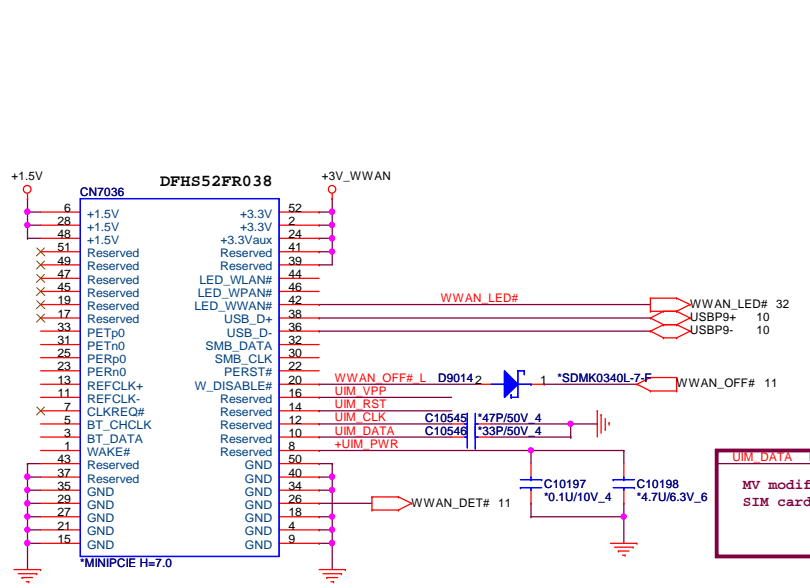
Size Custom	Document Number <b>BT/WC/FT/ESATA/USB/LED</b>	Rev 2B
Date: Thursday, December 17, 2009   Sheet 32 of 43		



### Mini PCI-E Card 1--WLAN



### Mini PCI-E Card 2 --WWAN



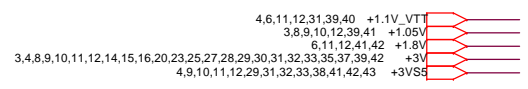
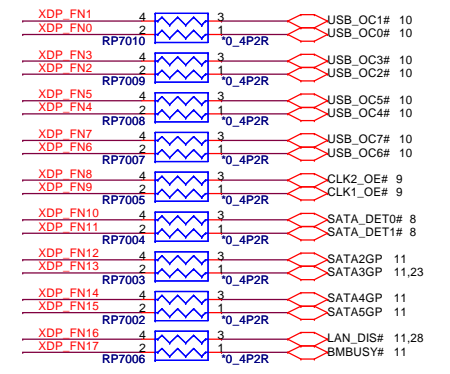
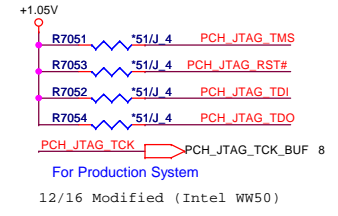
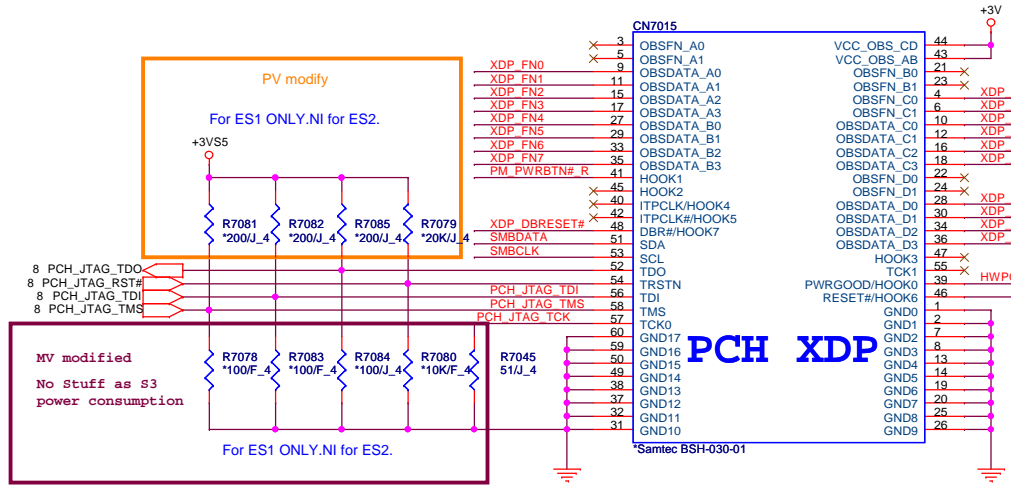
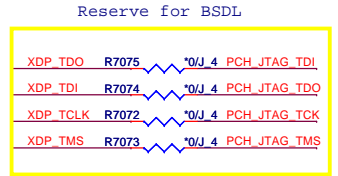
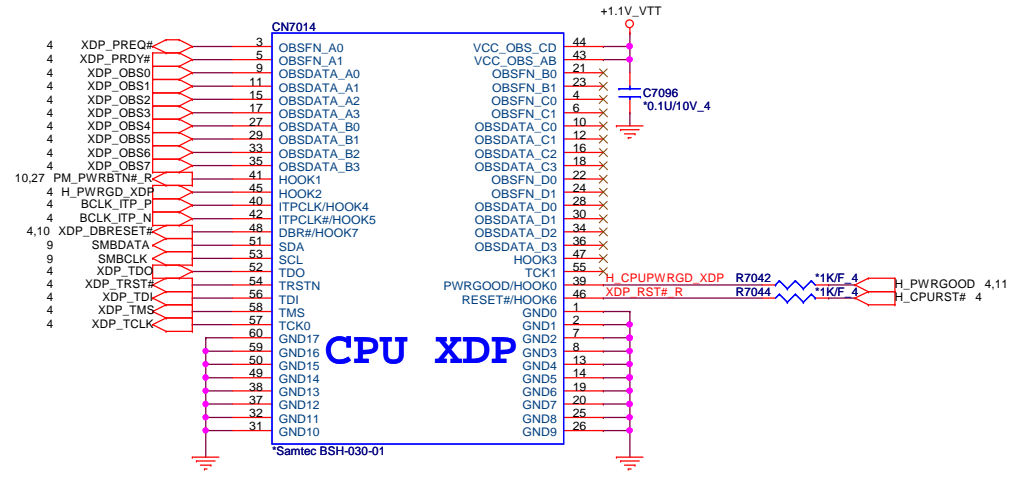
20,21,22,29,42 +1.5V  
3,4,8,9,10,11,12,14,15,16,20,23,25,27,28,29,30,31,32,34,35,37,39,42 +3V  
8,10,23,25,27,31,32,36,37,38 +3VPCU  
12,20,23,24,25,31,32,35,42 +5V

**PROJECT : SX6**  
Quanta Computer Inc.

**NB5**

Size Custom Document Number **MINI PCIE CONN X2** Rev 2B

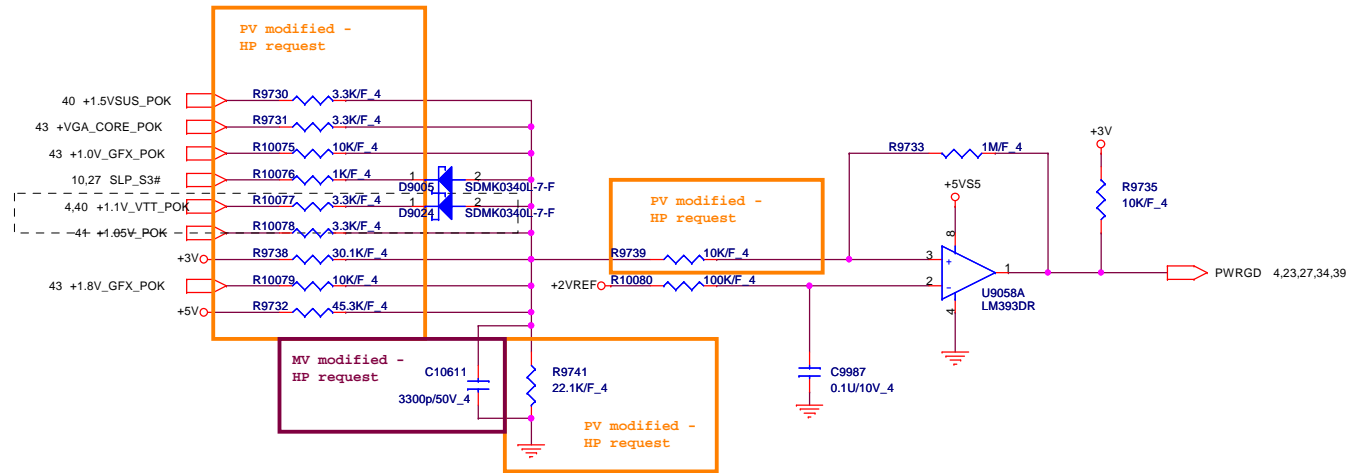
Date: Tuesday, December 15, 2009 Sheet 33 of 43



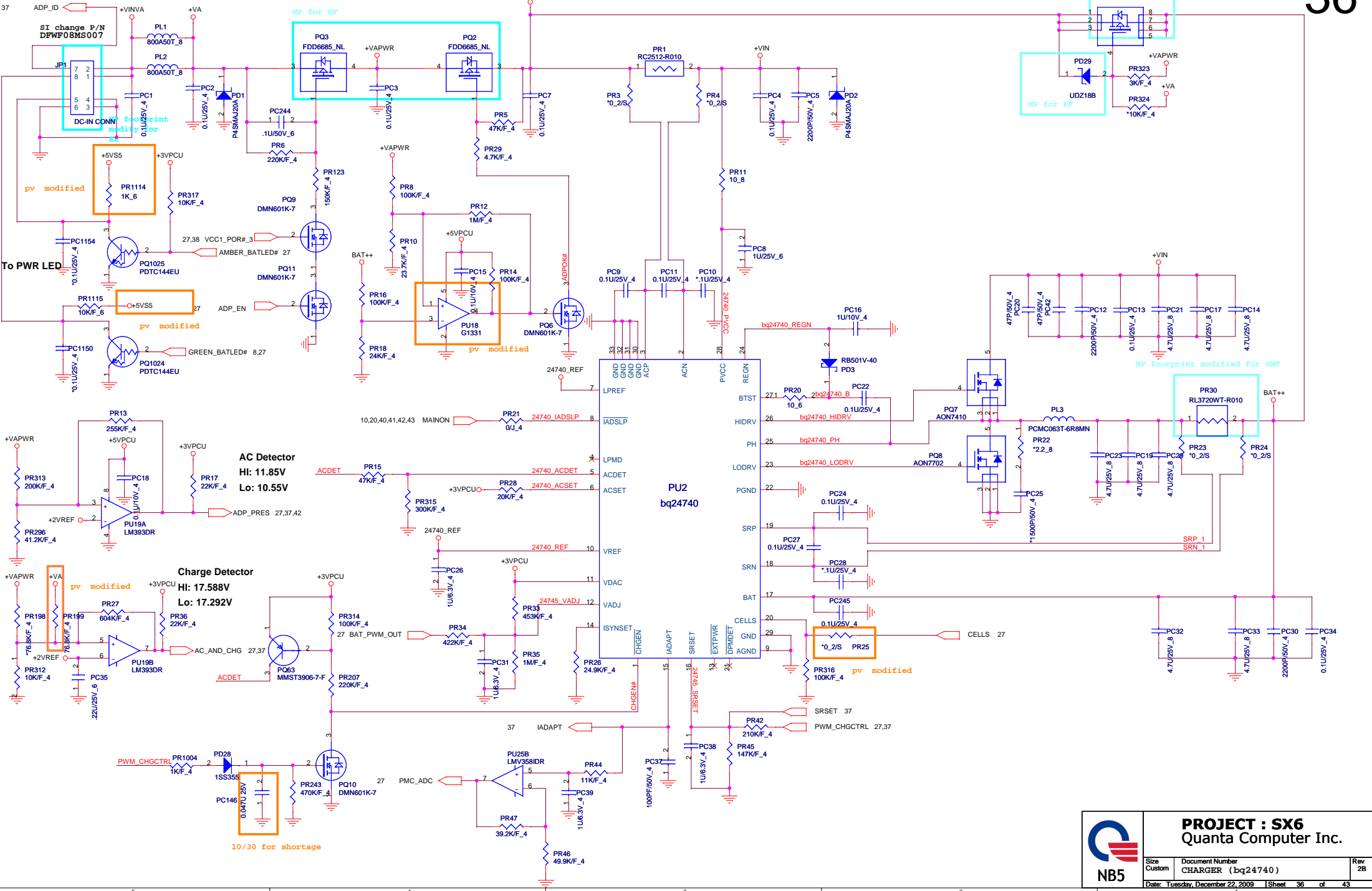
**PROJECT : SX6**  
Quanta Computer Inc.


**NB5**

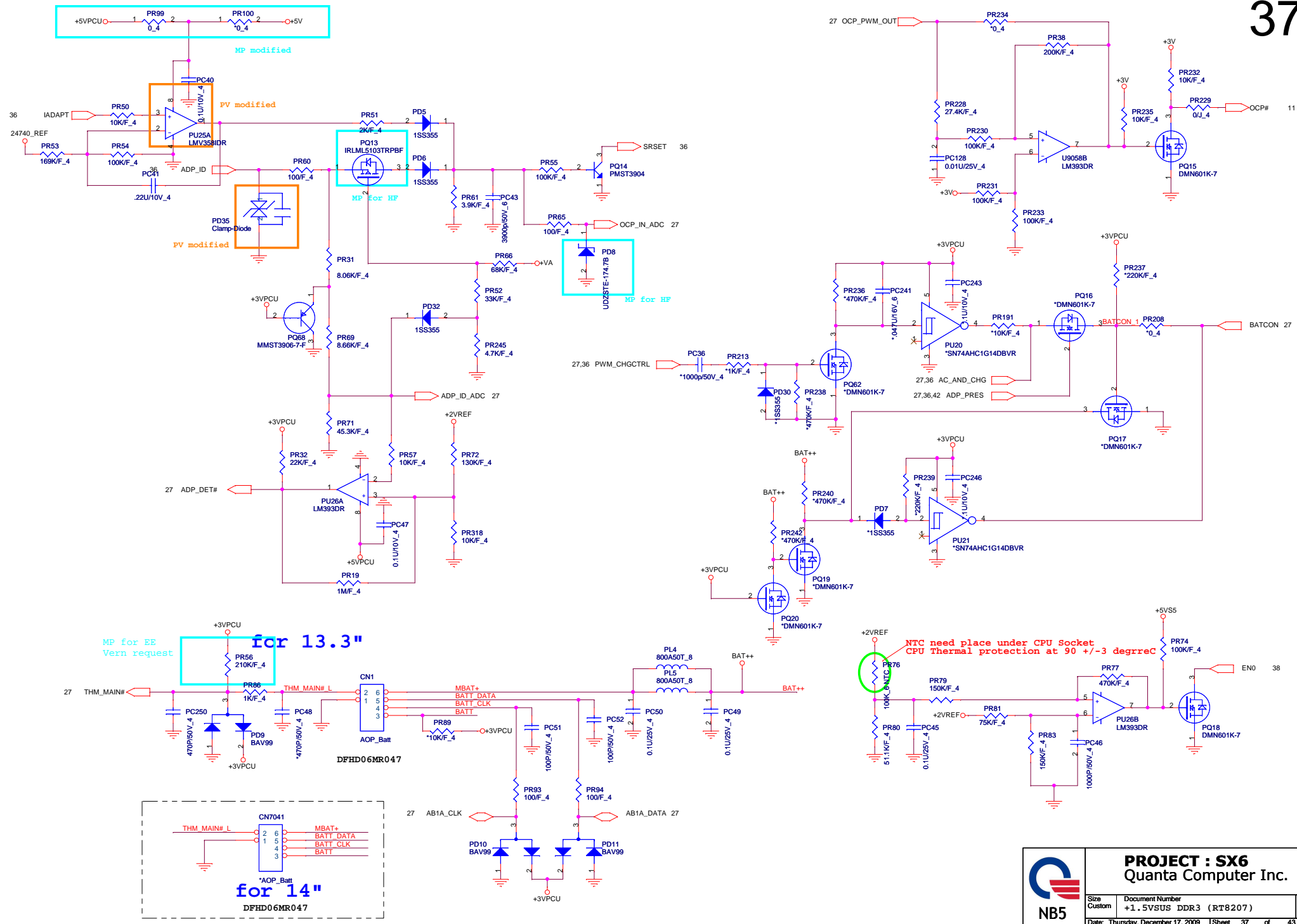
Size Custom	Document Number XDP/BRAIDWOOD	Rev 2B
Date Tuesday, December 15, 2009		Sheet 34 of 43



DC-IN Connector



	<b>PROJECT : SX6</b>									
	Quanta Computer Inc.									
	<table border="1"> <tr> <td>Size</td> <td>Document Number</td> <td>Rev</td> </tr> <tr> <td>Custom</td> <td>CHARGER (bq24740)</td> <td>2B</td> </tr> </table>	Size	Document Number	Rev	Custom	CHARGER (bq24740)	2B	<table border="1"> <tr> <td>Date: Tuesday, December 22, 2009</td> <td>Sheet 36 of 43</td> </tr> </table>		Date: Tuesday, December 22, 2009
Size	Document Number	Rev								
Custom	CHARGER (bq24740)	2B								
Date: Tuesday, December 22, 2009	Sheet 36 of 43									



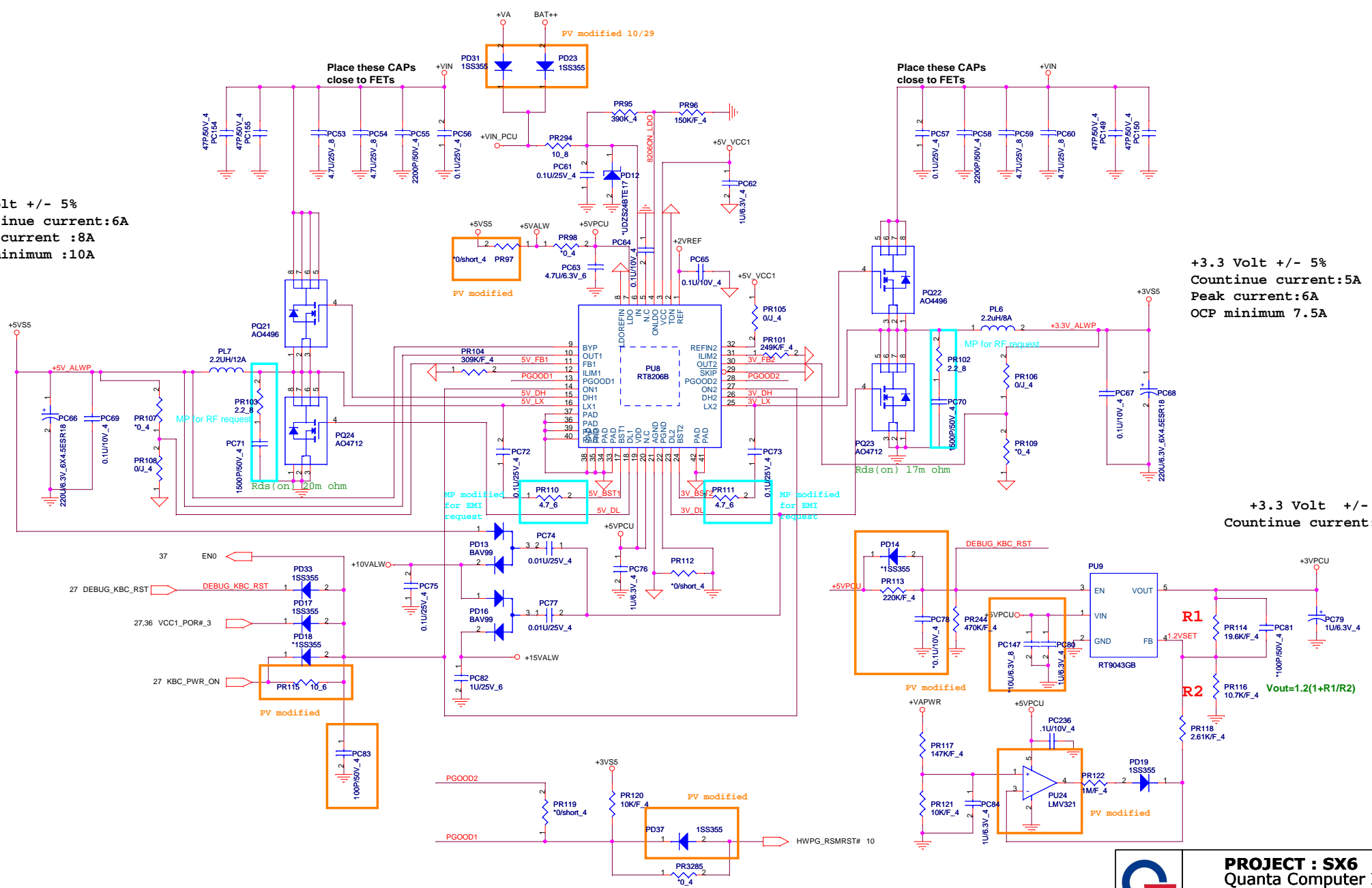
	<b>PROJECT : SX6</b>	
	Quanta Computer Inc.	
	Size Custom	Document Number +1.5VSUS DDR3 (RT8207)
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DC/DC +3V\_ALW/+5V\_ALW/+5V\_ALW2 /+15V\_ALW

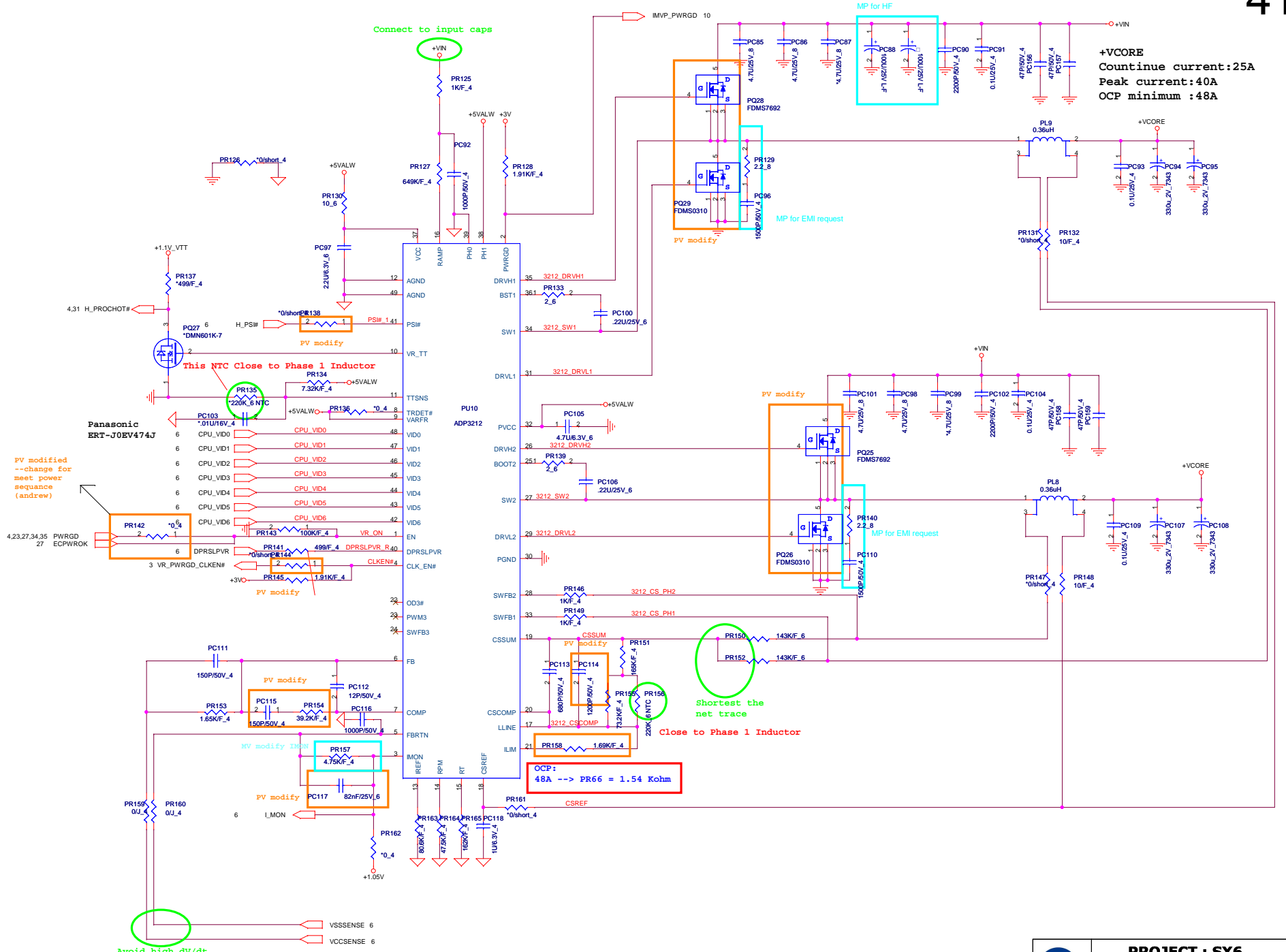
+5 Volt +/- 5%  
Countinue current:6A  
Peak current :8A  
OCP minimum :10A

+3.3 Volt +/- 5%  
Countinue current:5A  
Peak current:6A  
OCP minimum 7.5A

+3.3 Volt +/- 5%  
Countinue current: 100mA



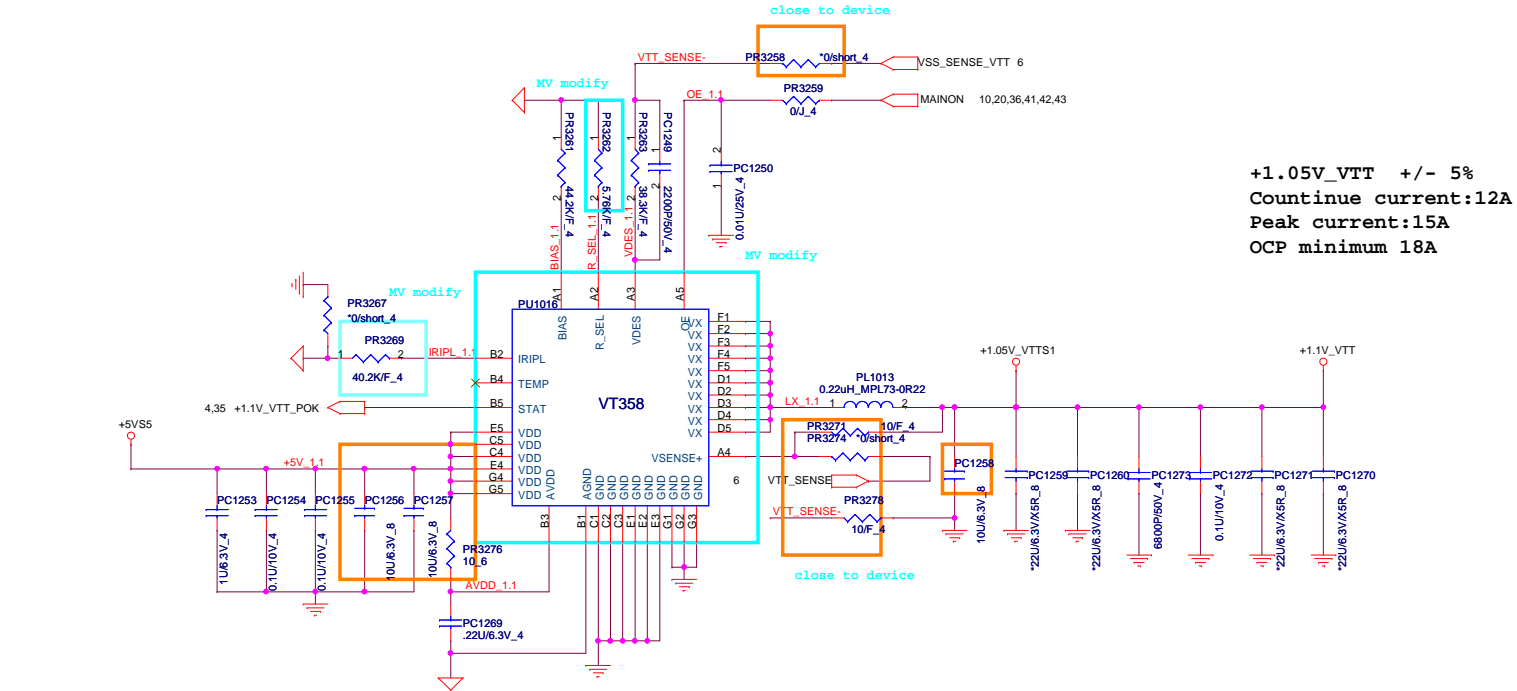
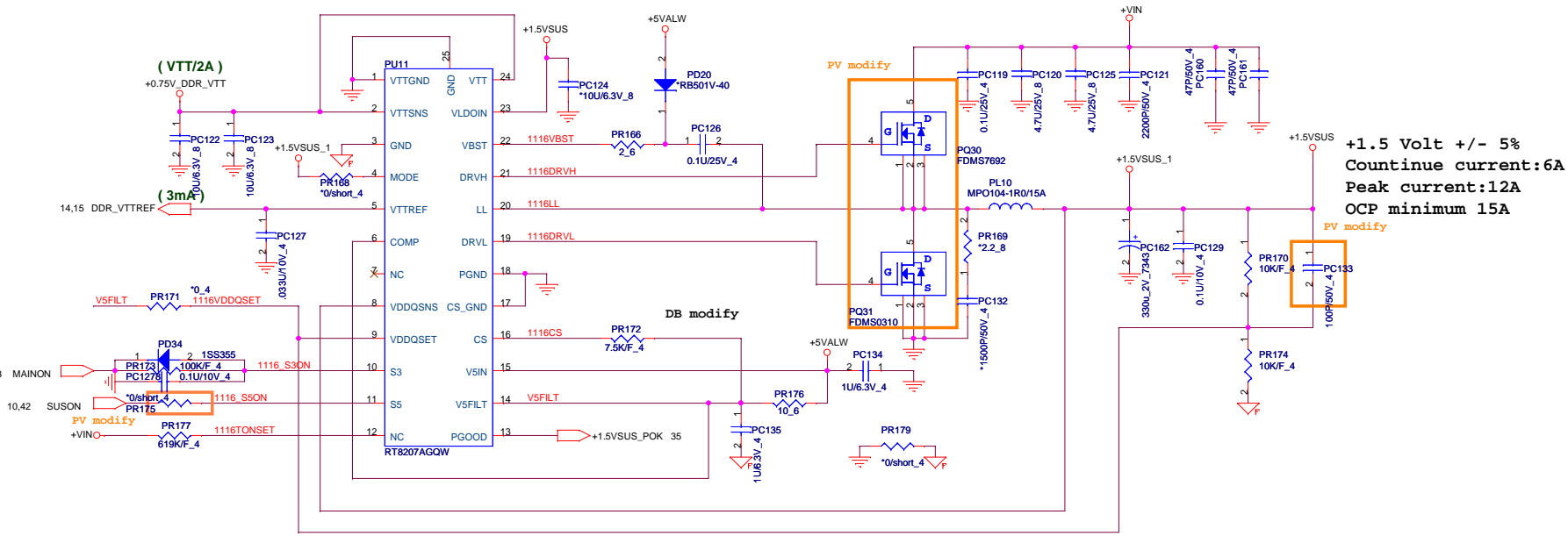
	<b>PROJECT : SX6</b> Quanta Computer Inc.	
	Size Custom	Document Number +5V/+3V (RT8206B)
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**+VCORE**  
 Countinue current:25A  
 Peak current:40A  
 OCP minimum :48A

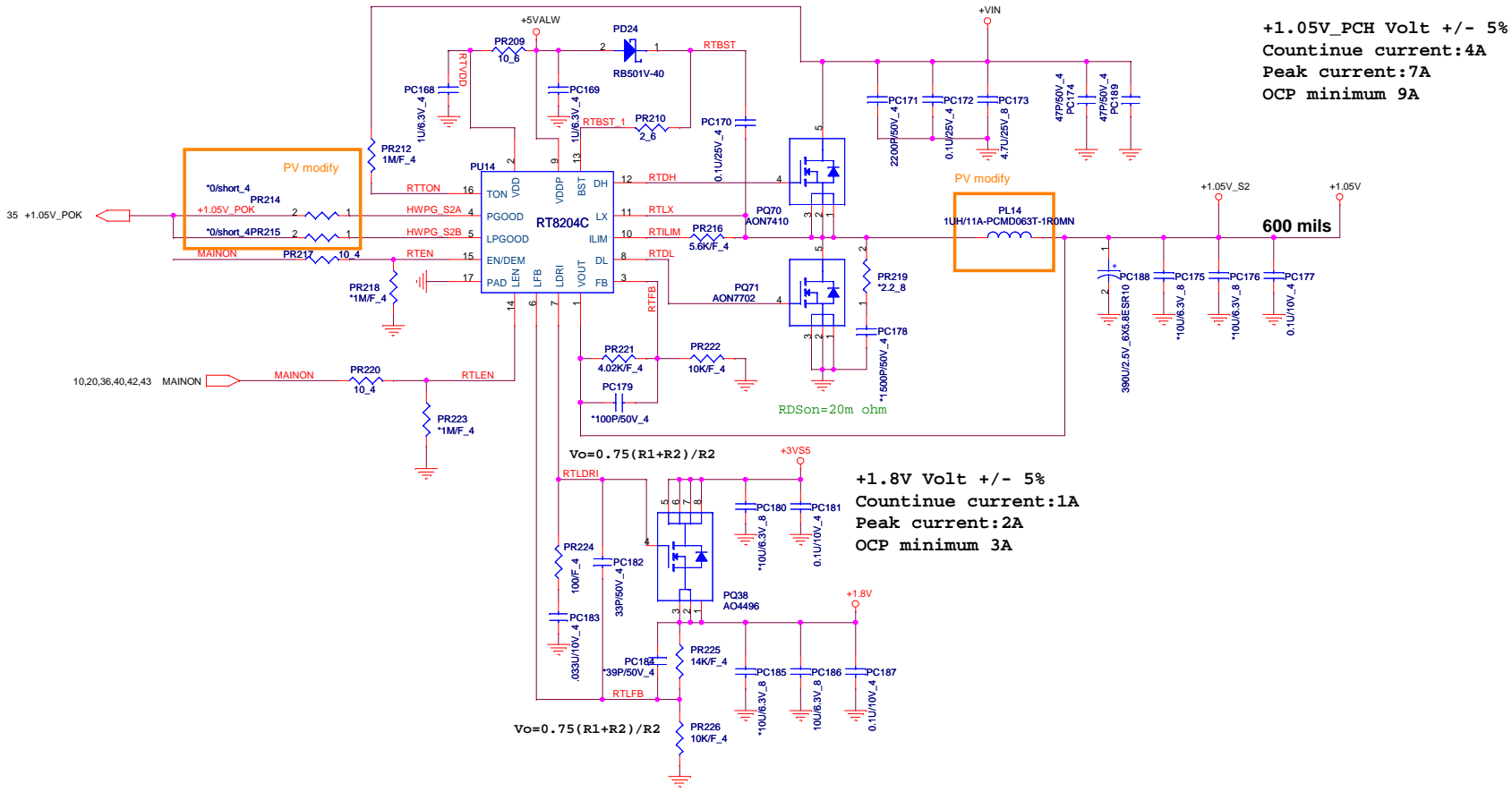
OCP: 48A --> PR66 = 1.54 Kohm


	<b>PROJECT : SX6</b>	
	Quanta Computer Inc.	
Size Custom	Document Number CPU Core ( ADP3212 )	Rev 2B
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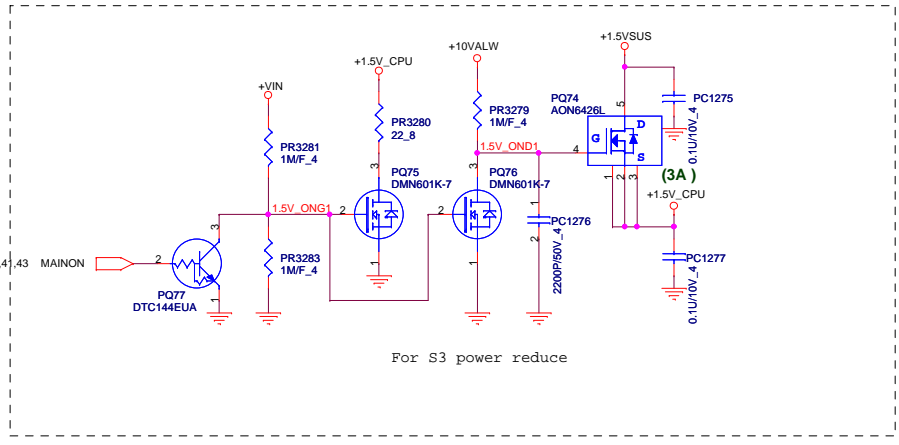
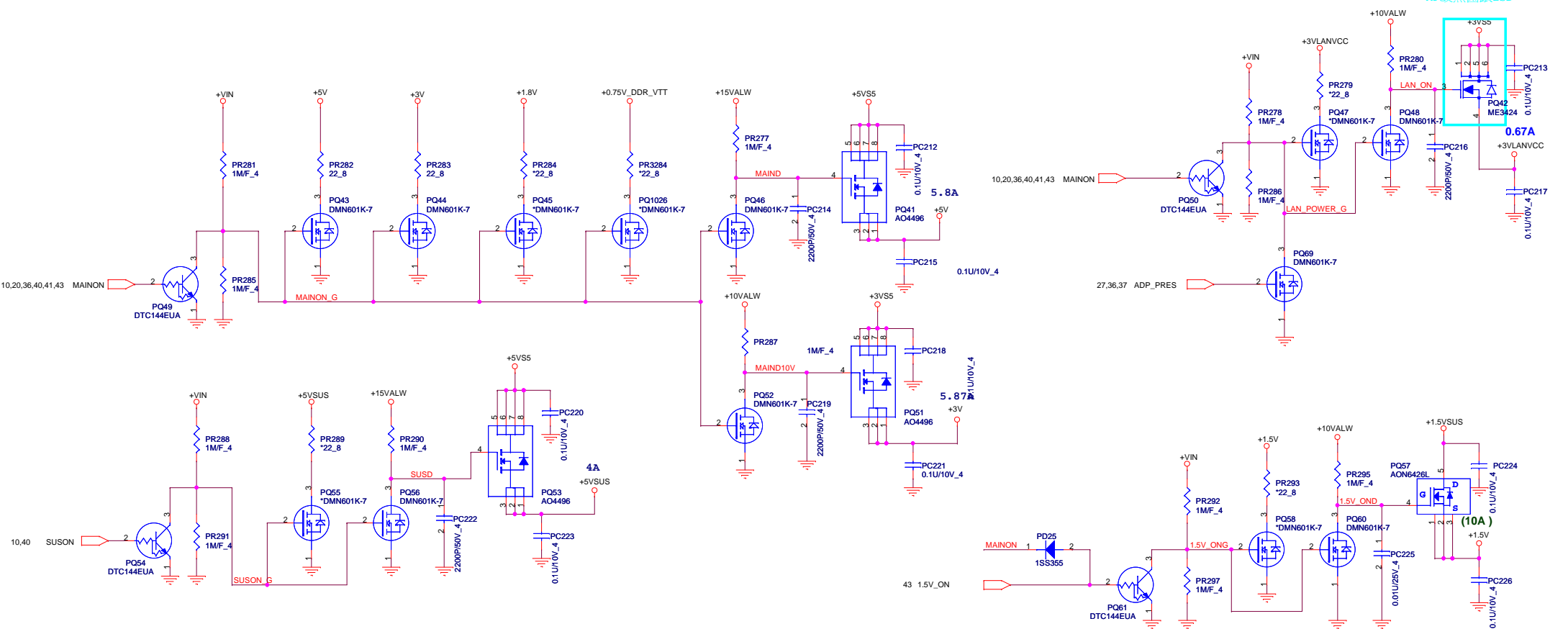
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	Quanta Computer Inc.	
	Size Custom	Document Number DDR3 (RT8207)
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	<b>PROJECT : SX6</b>	
	Quanta Computer Inc.	
	Size Custom	Document Number PCH +1.05V
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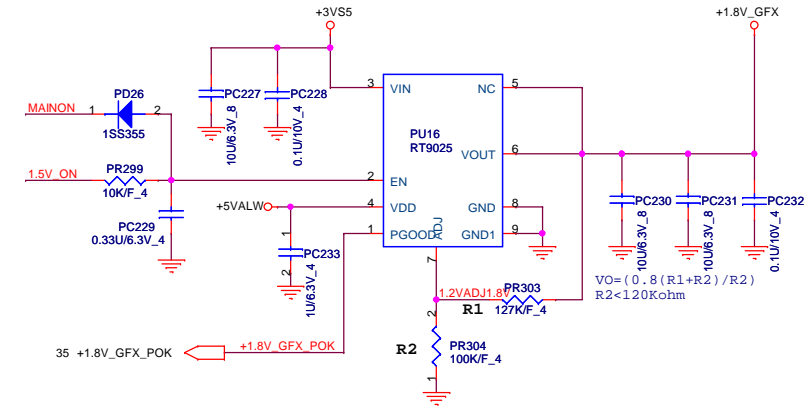
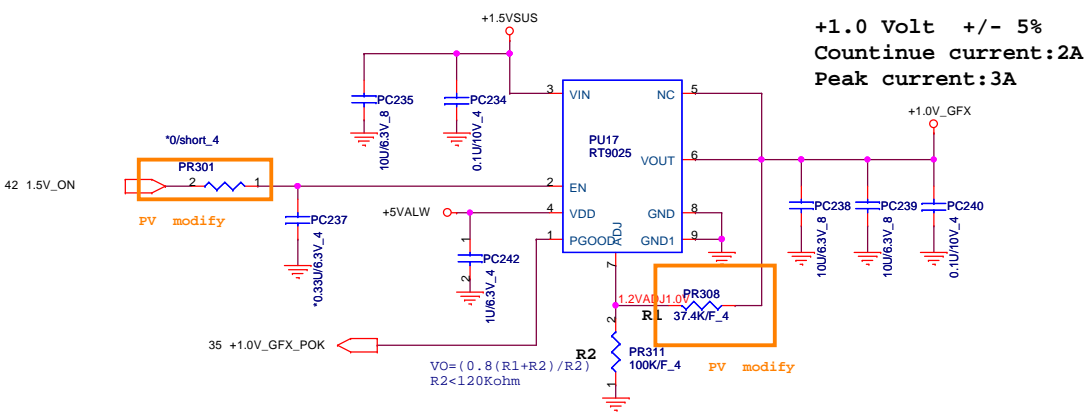
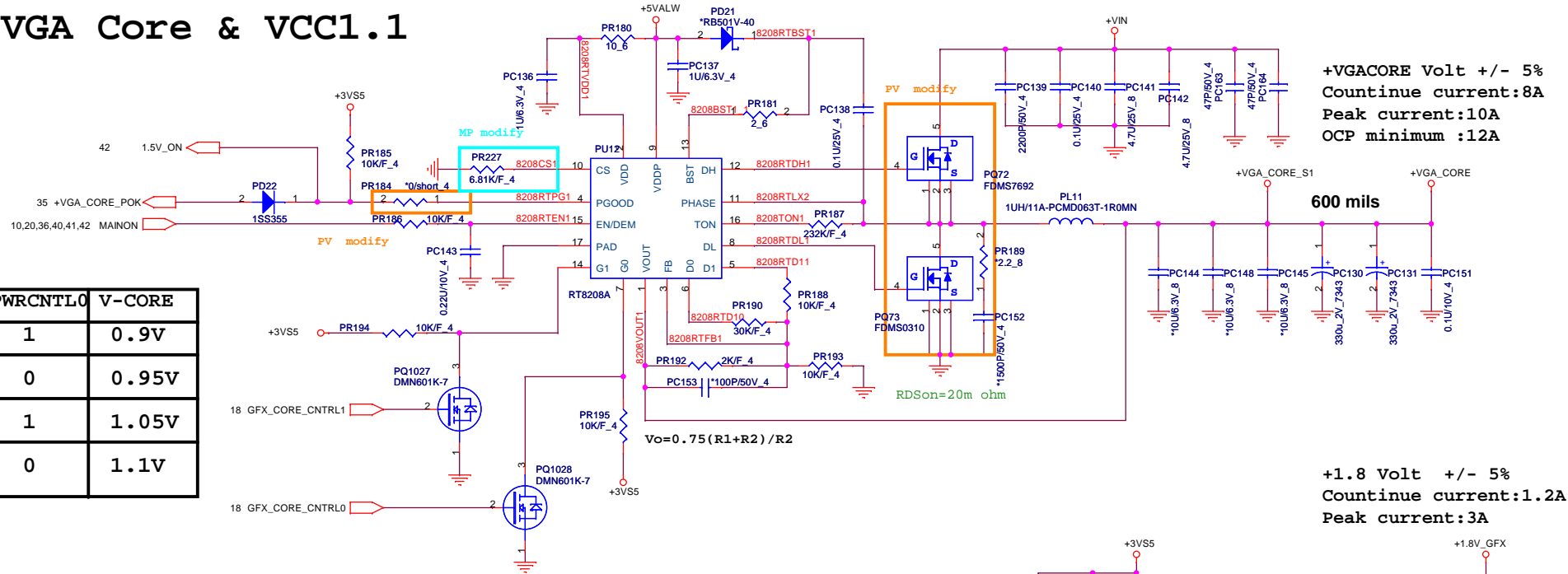
MP改無鹵跟ESD




For S3 power reduce

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	Quanta Computer Inc.		
	Size Custom	Document Number DISCHARGE / 3VS5 / 5VS5 / LAN	
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# VGA Core & VCC1.1





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 Quanta Computer Inc.

Size Custom Document Number  
 VGA Core/+1.8VGFX/1.0VGFX Rev 2B

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