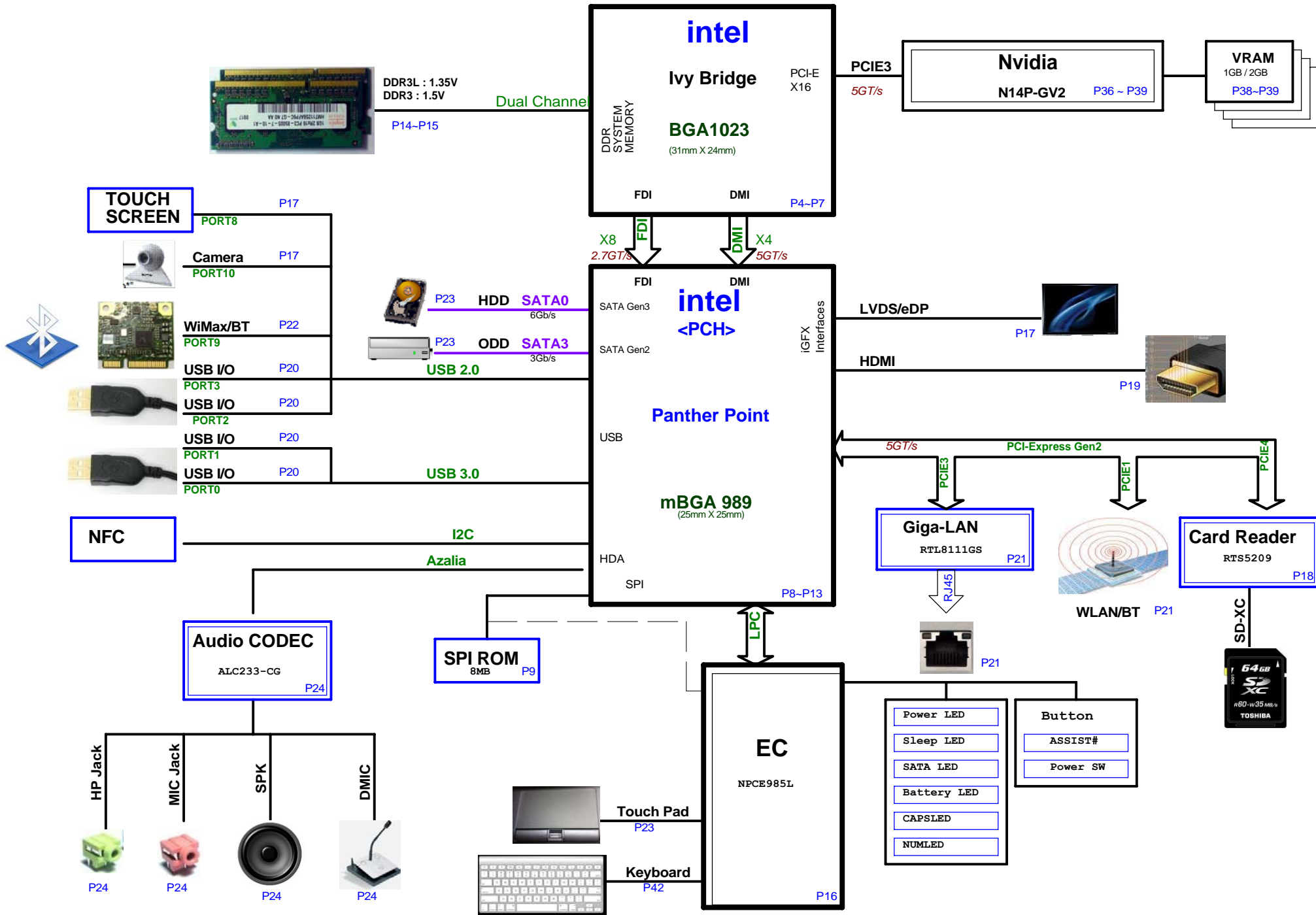


Page	Title of schematic page	Rev.	Date
01	Page List	1A	
02	Block Diagram	1A	
03	Change List	1A	
04	IVY 1/4 (HOST&PCIE)	1A	
05	IVY 2/4 (DDR3 I/F)	1A	
06	IVY 3/4 (POWER)	1A	
07	IVY 4/4 (GND/Strap)	1A	
08	PCH 1/6 (DMI/FDI/VIDEO)	1A	
09	PCH 2/6 (SATA/RTC/HDA/LPC)	1A	
10	PCH 3/6 (PCIE/USB/CLK/NV)	1A	
11	PCH 4/6 (GPIO/CPU/STRAP)	1A	
12	PCH 5/6 (POWER)	1A	
13	PCH 6/6 (GND)	1A	
14	DDR3 DIMM-0-STD	1A	
15	DDR3 DIMM-1-STD	1A	
16	WPCE985L & FLASH	1A	
17	LVDS/CAMERA	1A	
18	CARD READER (RTS5209)	1A	
19	HDMI/THERMAL	1A	
20	USB	1A	
21	LAN (RTL8111GS)	1A	
22	WLAN/KB-BL	1A	
23	HDD/ODD/G-SENSOR/TP/FAN	1A	
24	Audio ALC233-CG	1A	
25	LED/PS/DMIC	1A	
26	POWER +VCC_CORE (ISL95835)	1A	
27	POWER 3VPCU&RVCC5 (PM6686)	1A	
28	POWER 1.5VSUS/VTT_MEM	1A	
29	POWER +1.05V (G5602R41U) -15A	1A	
30	POWER VCCSA/VCCIO	1A	
31	POWER VCC1.8/Thermal	1A	
32	POWER (BAT IN / ADA IN/ UL)	1A	
33	POWER CHARGER (ISL88731C)	1A	
34	POWER VGA_CORE (RT8812A)	1A	
35	POWER VCC1.5_VRAM/1.05V	1A	
36	NVIDIA N14 GB2-64 PCIE 1/4	1A	
37	NVIDIA N14 GB2-64 TMDS 2/4	1A	
38	NVIDIA N14 GB2-64 VRAM 3/4	1A	
39	NVIDIA N14 GB2-64 VRAM 4/4	1A	

Page	Title of schematic page	Rev.	Date
42	HOLE/EMI/KB	1A	
43	AUDIO Woofer	1A	
44	IO PORT LIST	1A	
		1A	

* : No mount
L@ : For LVDS output
D@ : For eDP output
E@ : For DIS GFX
I@ : For UMA

Chief River ULV BLOCK DIAGRAM



Change List

MB_SCH_PVT_001

P22-Add R333 0_6S.
P22- U15 don't mount
P22-Add Q32(2N7002).
P22-Add R335(100K_4).

Reason : Modify circuit for KB Backlight.
Possible Risk: No.

MB_SCH_PVT_002

P23-CON11.11 delete net"DATA_ODD_DA#"
P10-U17.G40 delete net"SATA_ODD_DA#".
P10-Delete R64(10K_4).

Reason : Modify circuit for Zero Power ODD.
Possible Risk: No.

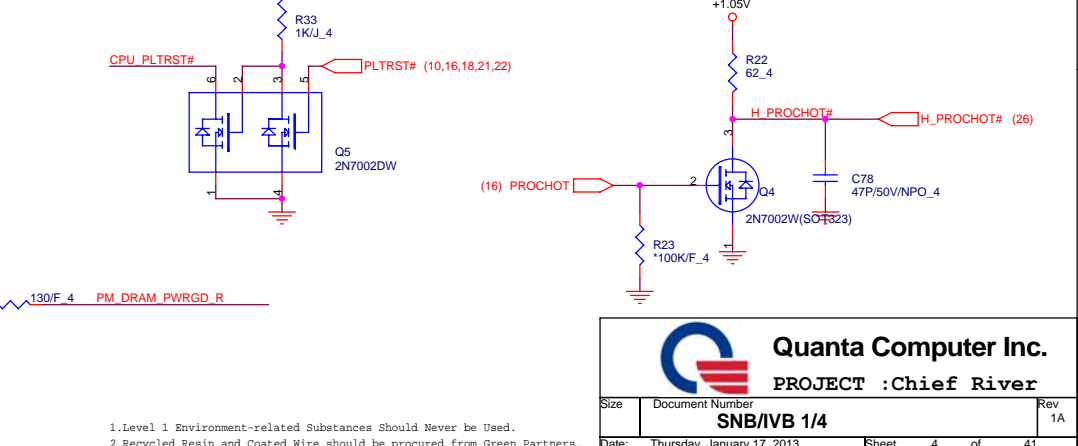
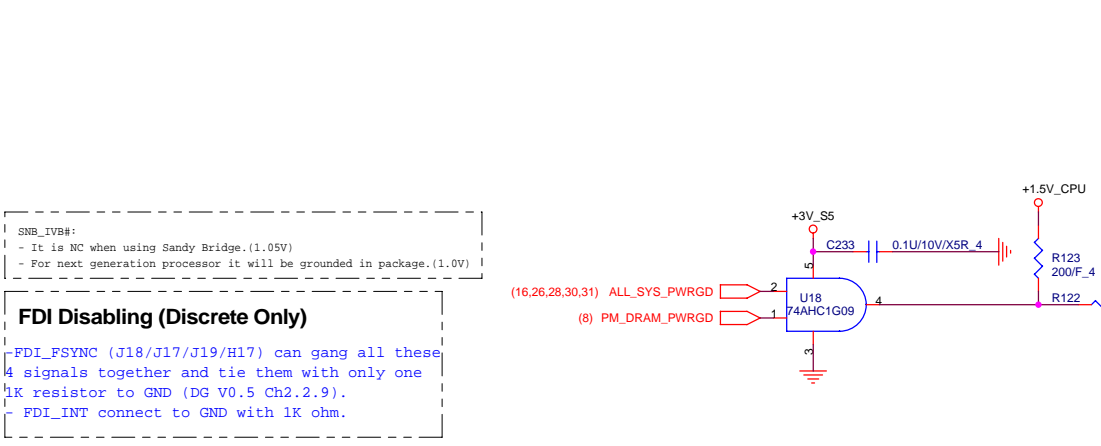
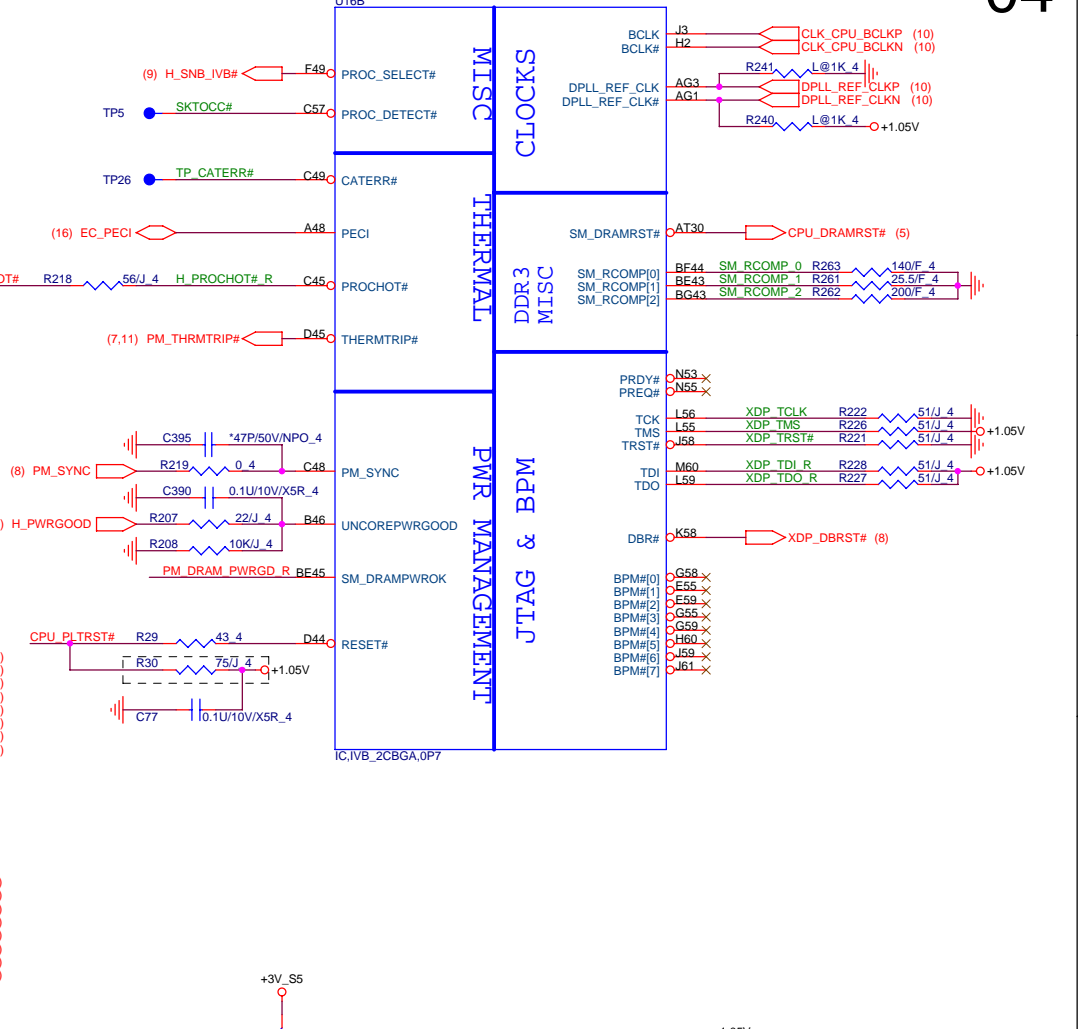
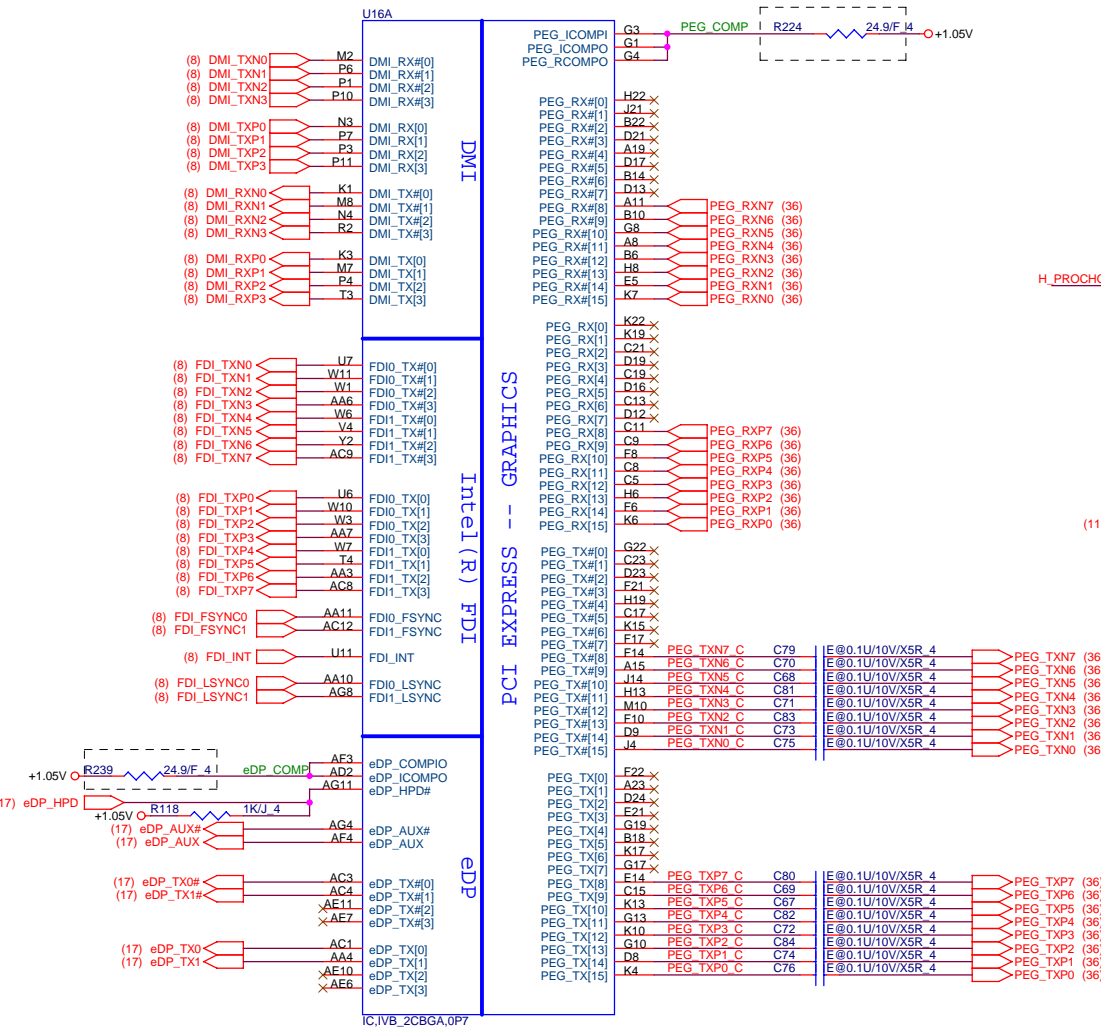
MB_SCH_PVT_002

P08-ADD 0.1UF on "PCH_PWROK_EC"

Reason : Modify circuit for ESD.
Possible Risk: No.

Ivy Bridge Processor (DMI, PEG, FDI)

Ivy Bridge Processor (CLK, MISC, JTAG)



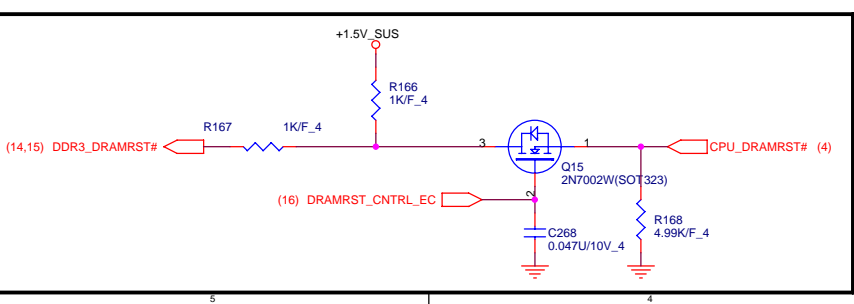
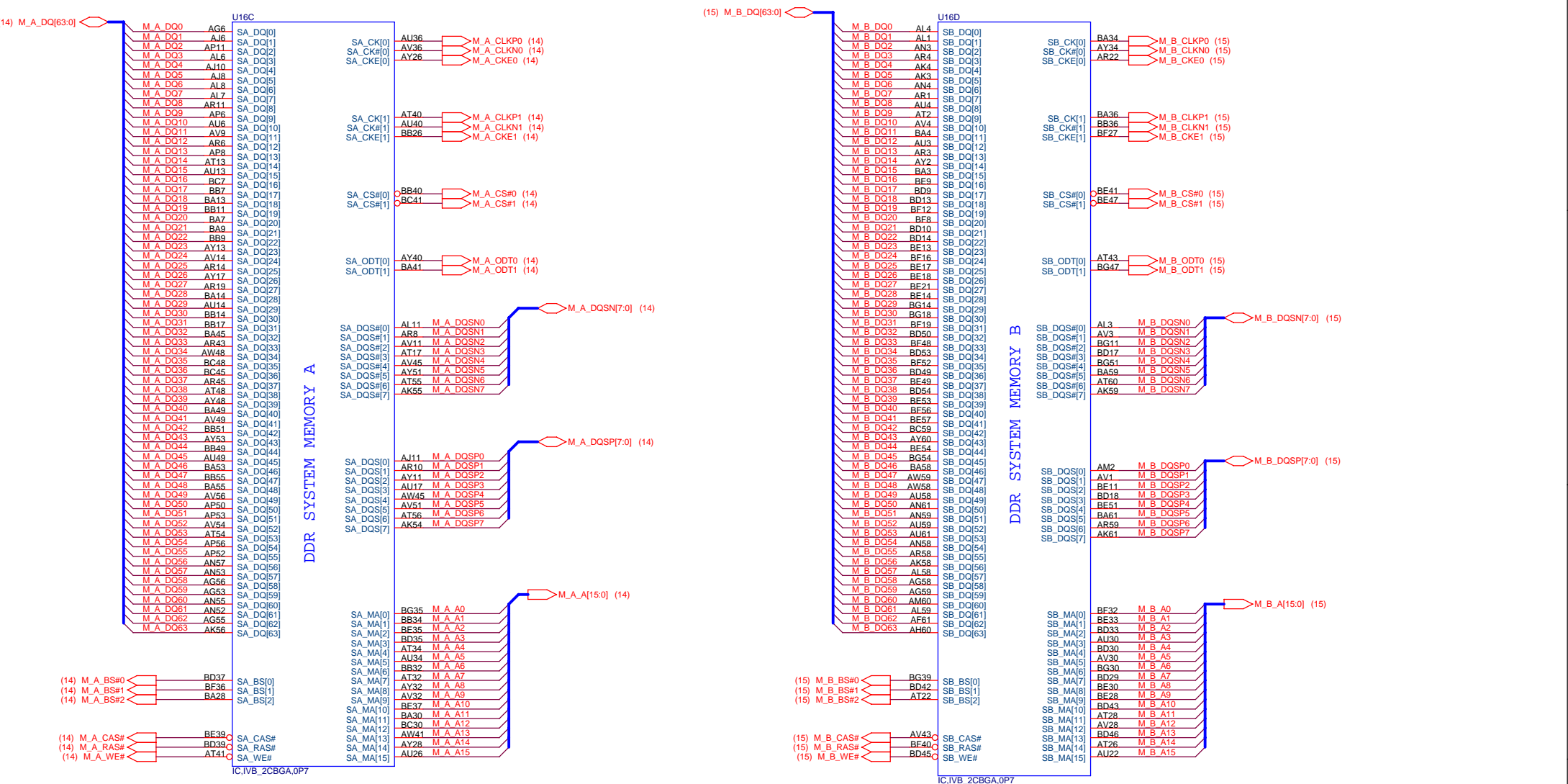
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Size	Document Number	Rev
	SNB/IVB 1/4	1A

Date: Thursday, January 17, 2013 Sheet 4 of 41

1. Level 1 Environment-related Substances Should Never be Used.
2. Recycled Resin and Coated Wire should be procured from Green Partners.

Ivy Bridge Processor (DDR3)



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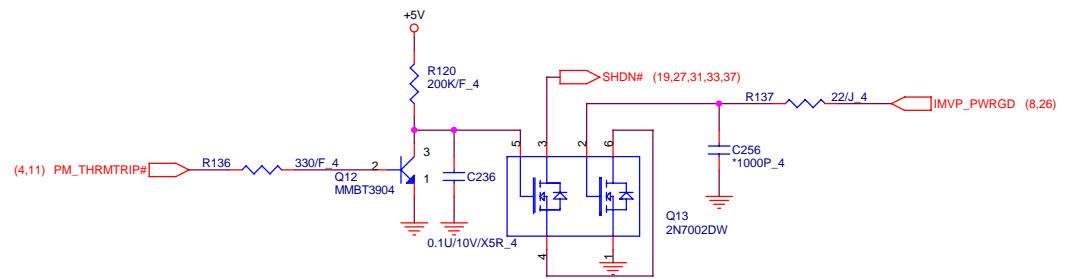
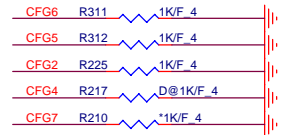
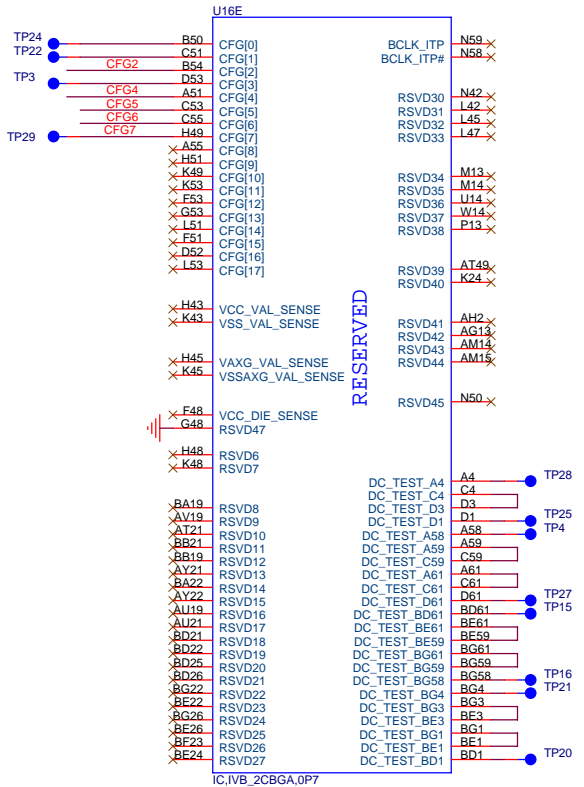
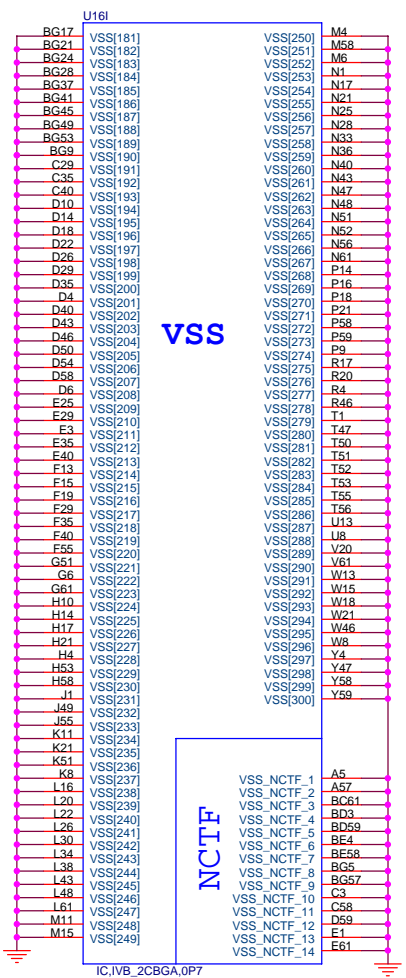
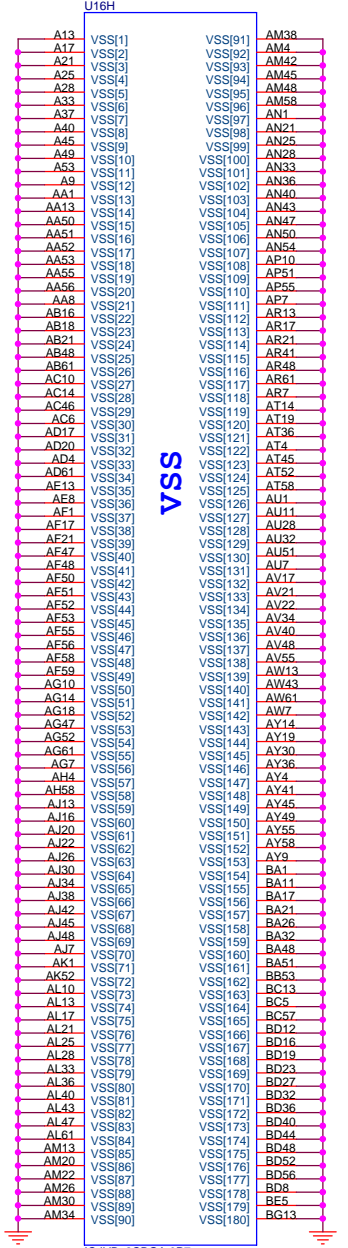
Size	Document Number	Rev	
	SNB/IVB 2/4	1A	

1.Level 1 Environment-related Substances Should Never be Used.
 2.Recycled Resin and Coated Wire should be procured from Green Partners.

Date: Thursday, January 17, 2013 Sheet 5 of 41

Ivy Bridge Processor (GND)

Ivy Bridge Processor (RESERVED, CFG)



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

Processor Strapping

	1	0
CFG2 (PEG Static Lane Reversal)	Normal Operation	Lane Reversed
CFG4 (DP Presence Strap)	Disable; No physical DP attached to eDP	Enable; An ext DP device is connected to eDP
CFG7 (PEG Defer Training)	PEG train immediately following xxRESETB de assertion	PEG wait for BIOS training

CFG[6:5] (PCIe Port Bifurcation Straps)

11: (Default) x16 - X16 PEG interface
 10: PEG x8 x8 bifurcation enabled/disabled
 01: Reserved - (Device 1 function 1 disabled ; function 2 enabled)
 00: x8,x4,x4 - Device 1 functions 1 and 2 enabled

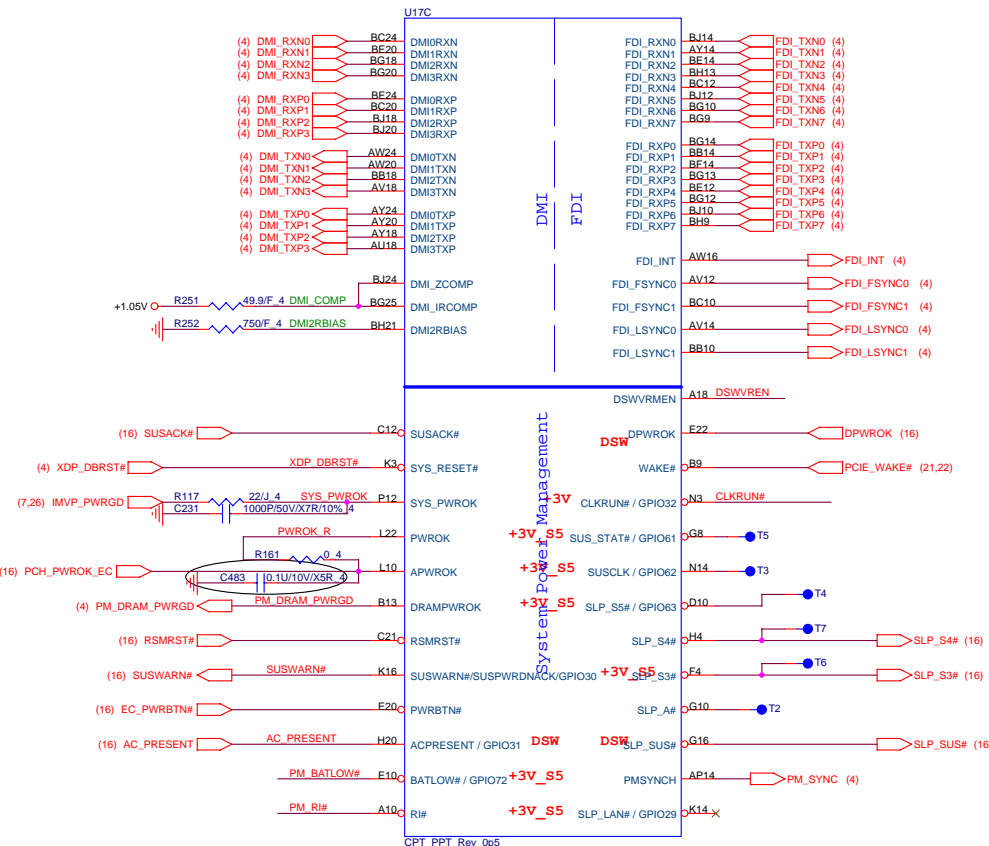
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Size Document Number **SNB/IVB 4/4** Rev 1A

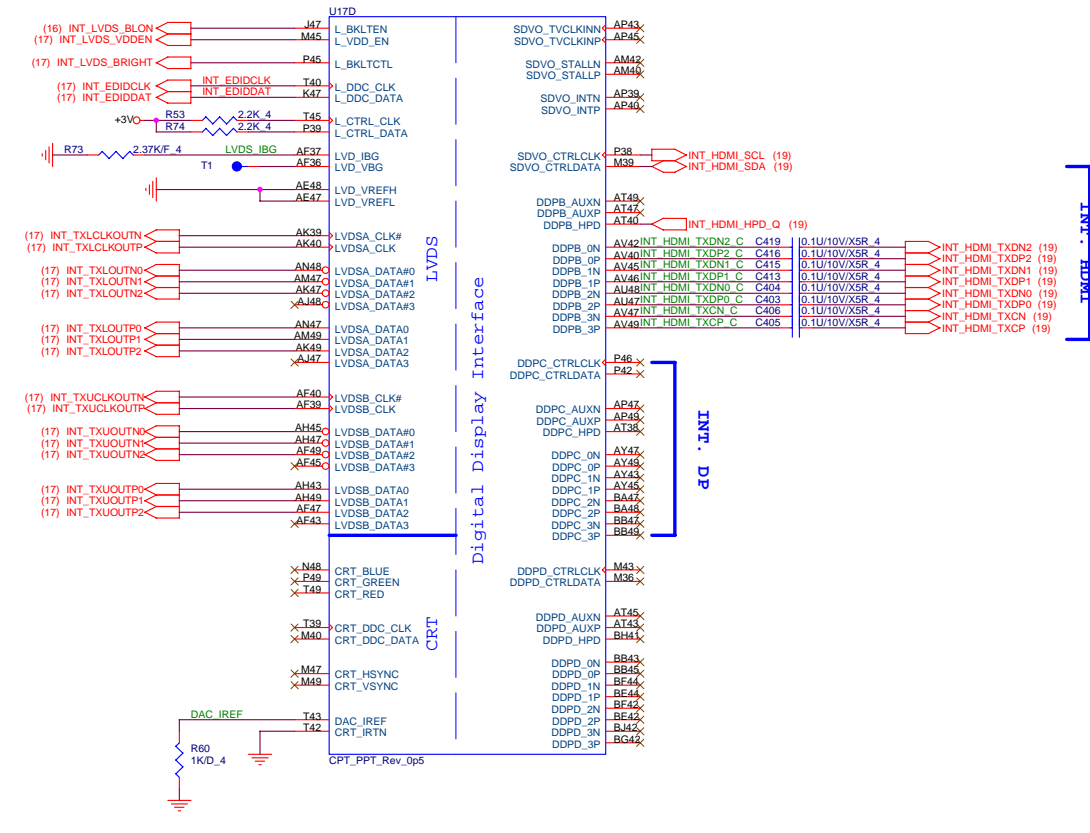
Date: Thursday, January 17, 2013 Sheet 7 of 41

1.Level 1 Environment-related Substances Should Never be Used.
 2.Recycled Resin and Coated Wire should be procured from Green Partners.

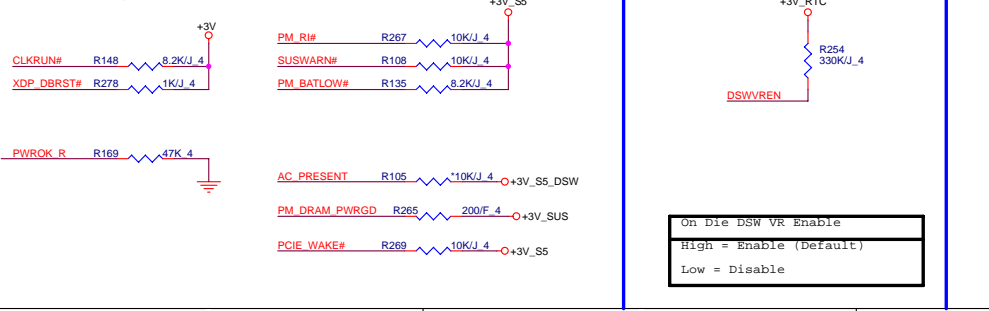
CPT/PPT (DMI, FDI, PM)



CPT/PPT (LVDS, DDI)

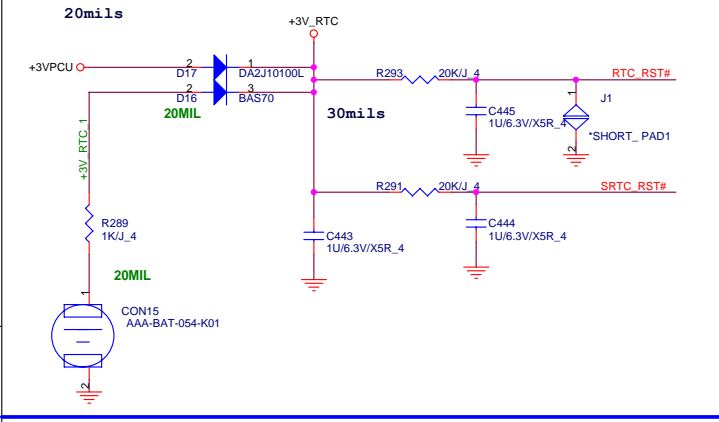


PCH Pull-high/low (CLG)



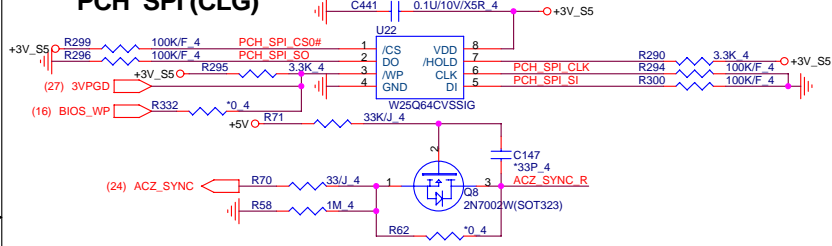
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CPT/PTT 1/6
Rev 1A

RTC Circuitry(RTC)



MX25L3205DM2I-12G: AKE39FP0Z00
W25X32VSSIG: AKE39ZPON00

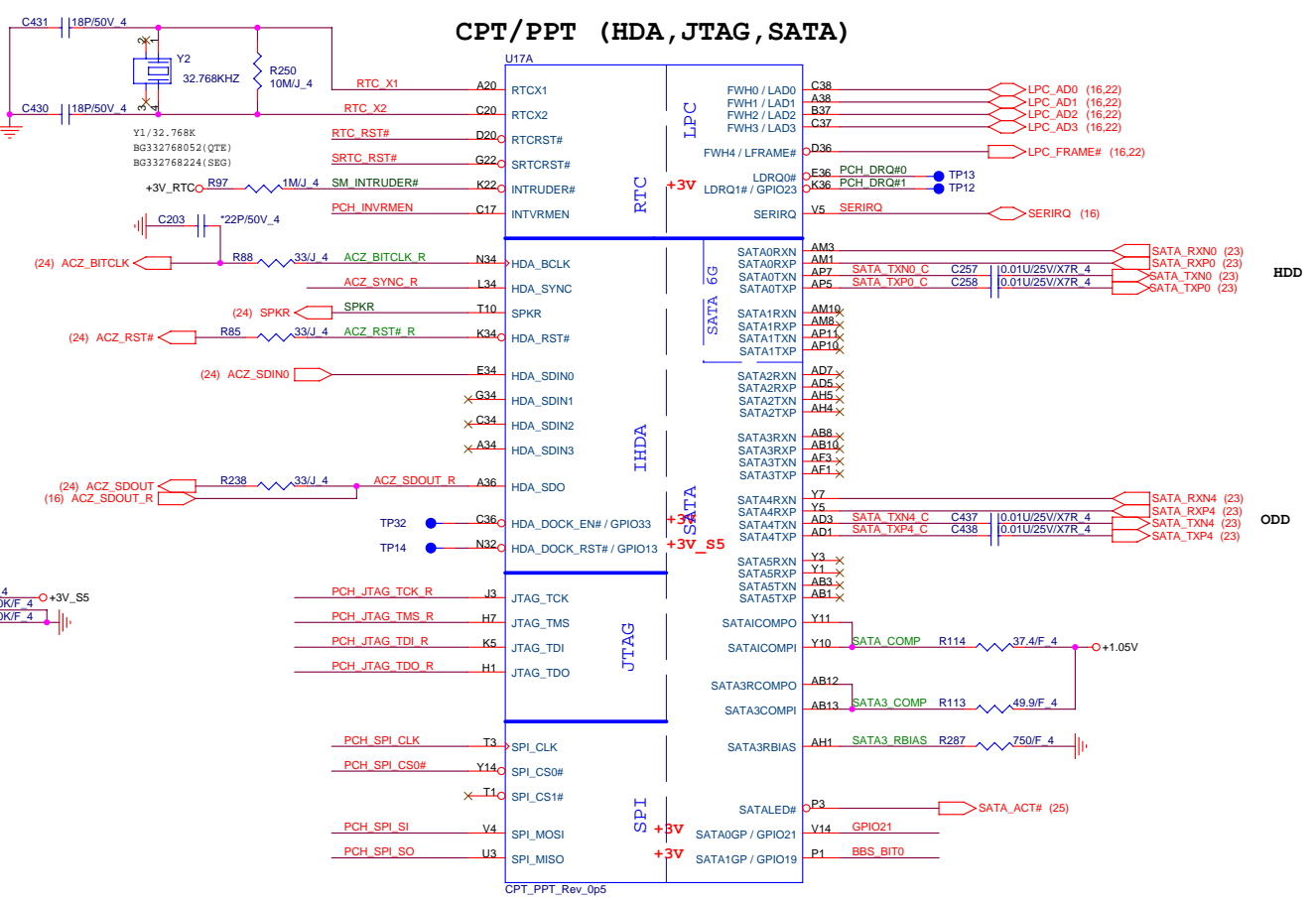
PCH SPI (CLG)



Pin Name	Strap description	Sampled	Configuration	Note
(16) F_CS0#_PCH		R298	0.4	PCH_SPI_CS0#
(16) F_SDI_PCH		R297	0.4	PCH_SPI_SO
(16) SCK_PCH		R292	0.4	PCH_SPI_CLK
(16) SDI_PCH		R301	0.4	PCH_SPI_SI

For NPCE885L Using

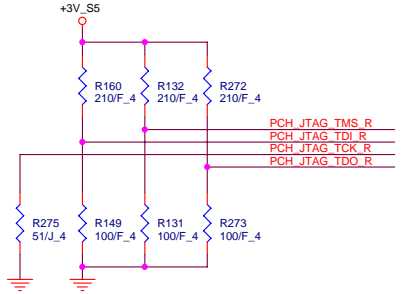
CPT/PPT (HDA, JTAG, SATA)



PCH Strap Table

Pin Name	Strap description	Sampled	Configuration	Note									
SPKR	No reboot mode setting	PWROK	0 = Default (weak pull-down 20K) 1 = Setting to No-Reboot mode	SPKR									
PCI_GNT3# / GPIO55	Top-Block Swap Override	PWROK	0 = "top-block swap" mode 1 = Default (weak pull-up 20K)	TP7 ● — PCL_GNT3# (10)									
INTVRMEN	Integrated 1.05V VRM enable	ALWAYS	Should be always pull-up	+3V_RTC — R255 — 330K/J_4 — PCH_INVRMEN									
GNT1# / GPIO51	Boot BIOS Selection 1 [bit-1]	PWROK	Default weak pull-up on GNT0/1# [Need external pull-down for LPC BIOS]										
GPIO19	Boot BIOS Selection 0 [bit-0]	PWROK	<table border="1"> <thead> <tr> <th>GNT#</th> <th>GNT#</th> <th>Boot Location</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>1</td> <td>SPI *</td> </tr> <tr> <td>0</td> <td>0</td> <td>LPC</td> </tr> </tbody> </table>	GNT#	GNT#	Boot Location	1	1	SPI *	0	0	LPC	TP30 ● — BBS_BIT1 (10) TP33 ● — BBS_BIT0
			GNT#	GNT#	Boot Location								
1	1	SPI *											
0	0	LPC											
HDA_SDO	Flash Descriptor Security	PWROK	0 = Default (weak pull-down 20K) 1 = Enabled										
DF_TVS	DMI/FDI Termination voltage	PWROK	0 = Set to Vss for Ivy Bridge 1 = Set to Vcc for Sandy Bridge (weak pull-down 20K)	R282 — 2.2K_4 — +1.8V R276 — 1K/J_4 — NV_CLE (11) H_SNB_IVB# (4)									
GPIO28	On-die PLL Voltage Regulator	RSMRST#	0 = Disable 1 = Enable (Default)	TP19 ● — PLL_ODVVR_EN (11)									
HDA_SYNC	On-Die PLL VR Voltage Select	RSMRST	0 = Support by 1.8V (weak pull-down) 1 = Support by 1.5V	+3V_S5 — R65 — 1K/J_4 — ACZ_SYNC_R									

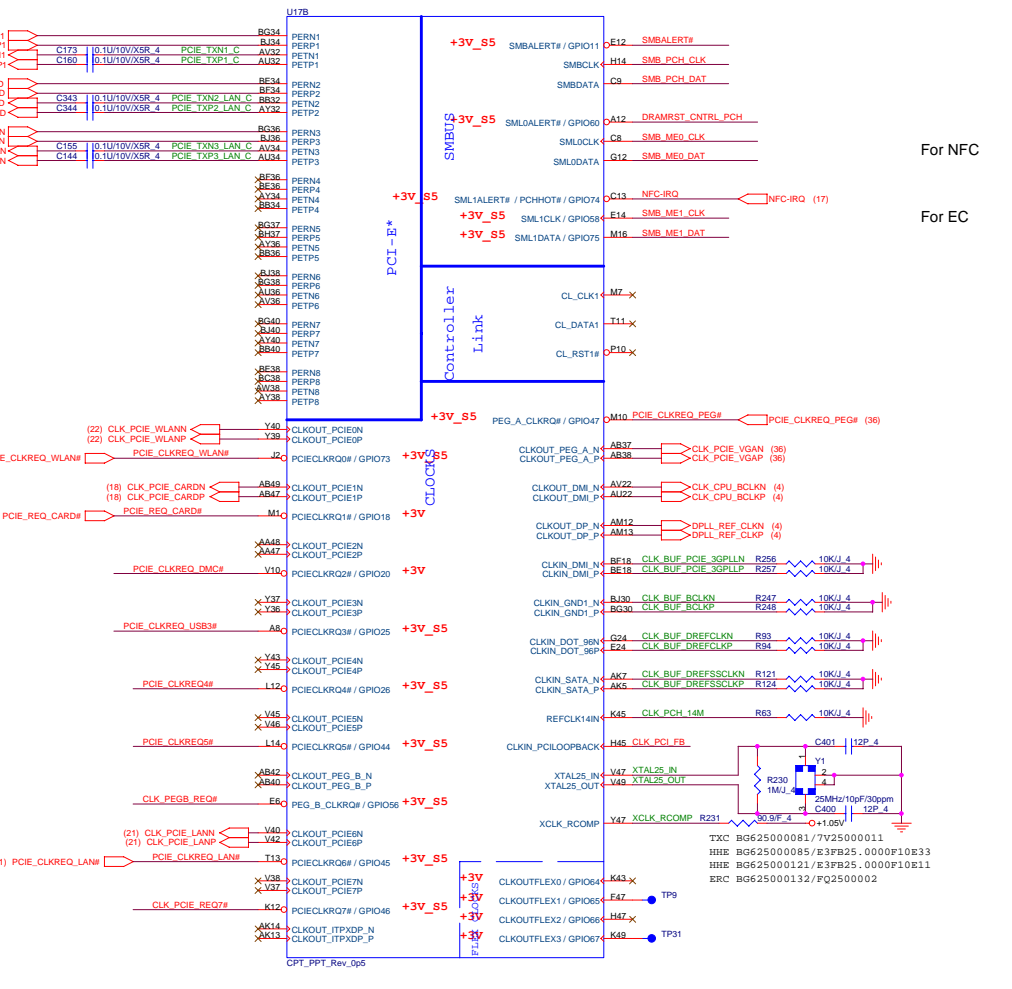
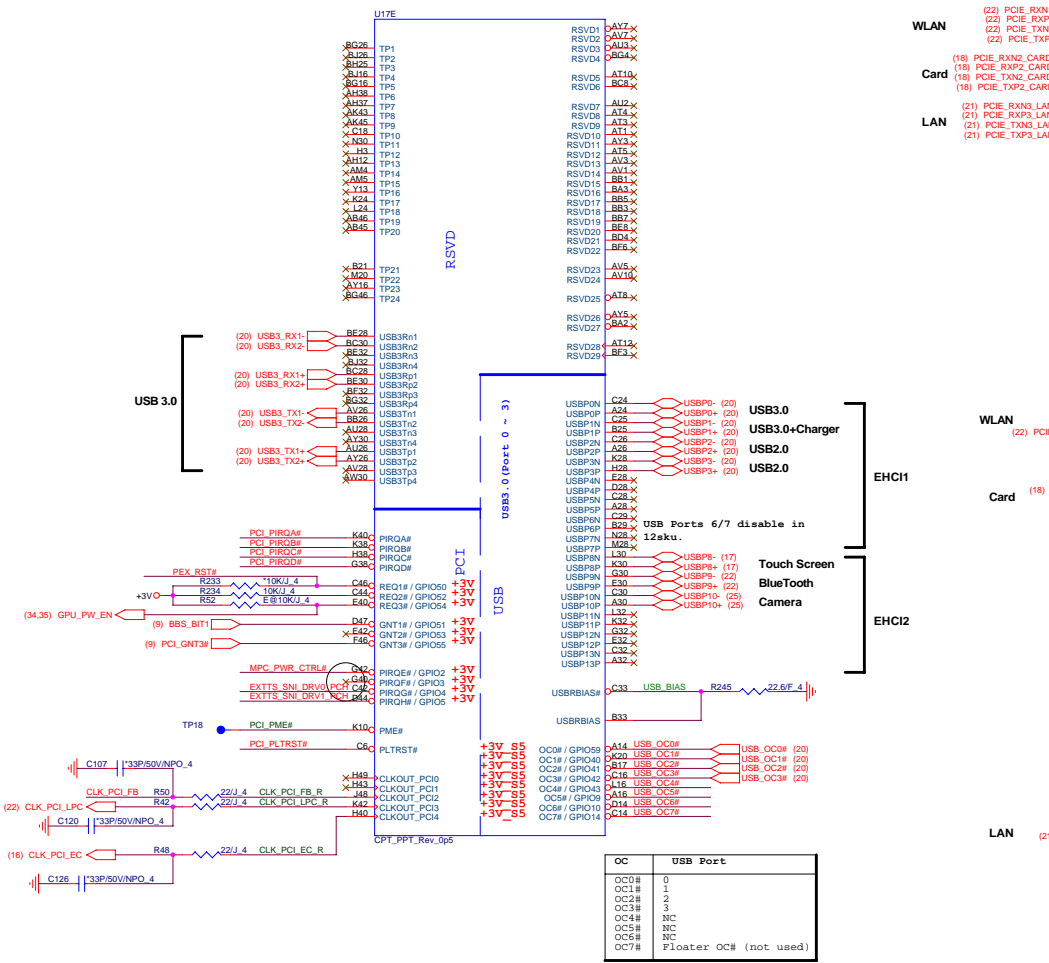
PCH JTAG Debug (CLG)



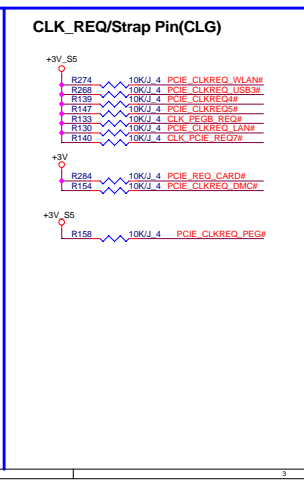
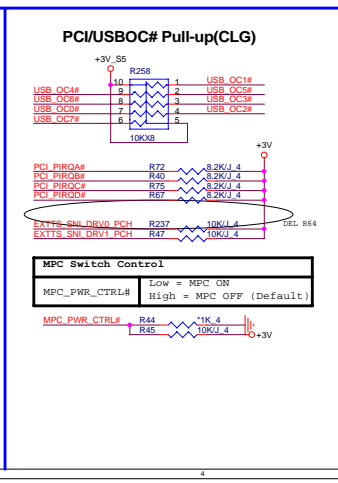
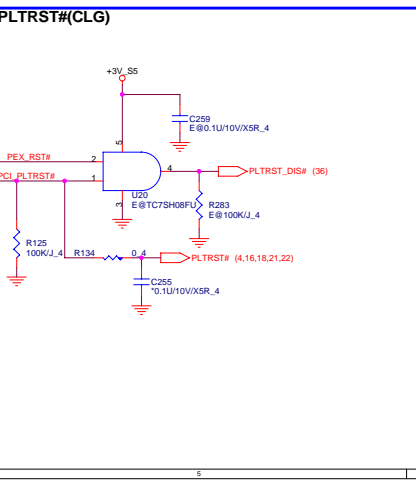
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CPT/PPT (PCI, USB, NVRAM)

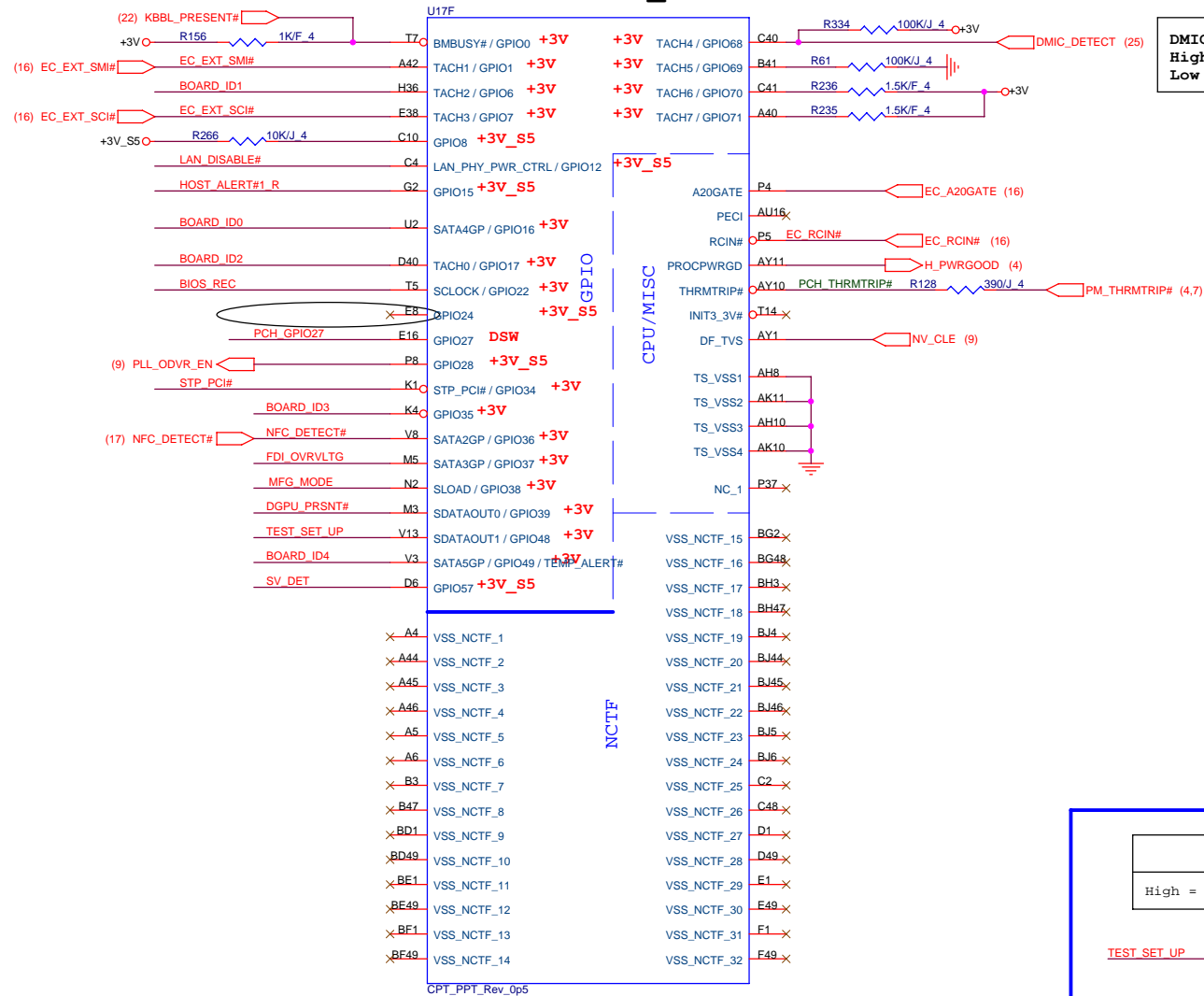


For NFC
For EC

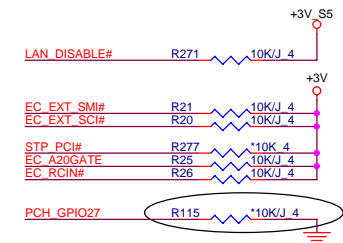


CPT/PPT (GPIO, VSS_NCTF, RSVD)

GPIO Pull-up/Pull-down(CLG)



DMIC_DETECT:
 High : Single DMIC
 Low : Dual DMIC



Change to no mount

	0	1
Board ID0	CaspiCRA1-CaspiCRB1 HK8-HK9	SuperiorCRA1-SuperiorCRB1 GD5-GD6
Board ID1	HK8/GD5 14"	HK9/GD6 15"

SV_SET_UP

High = Strong (Default)

TEST_SET_UP R143 10K/J 4

HOST_ALERT#1_R R270 1K/J 4

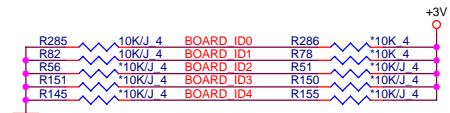
Intel ME Crypto Transport Layer Security (TLS) cipher suite

Low = Disable (Default)

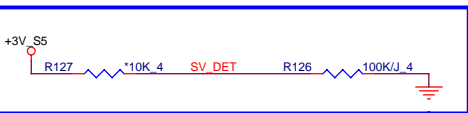
High = Enable

MFG-TEST

MFG_MODE R281 10K/J 4



PCBA SKU	Discrete	UMA
R280 (Pull High)	Stuff	No Stuff
R279 (Pull Low)	No Stuff	Stuff



FDI TERMINATION VOLTAGE OVERRIDE

LOW - Tx, Rx terminated to same voltage

NFC Detect

High : No NFC Module Plug
Low : NFC Module Plug

BIOS RECOVERY

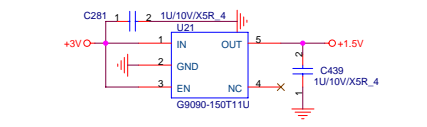
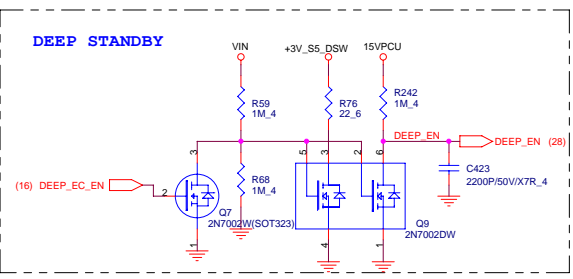
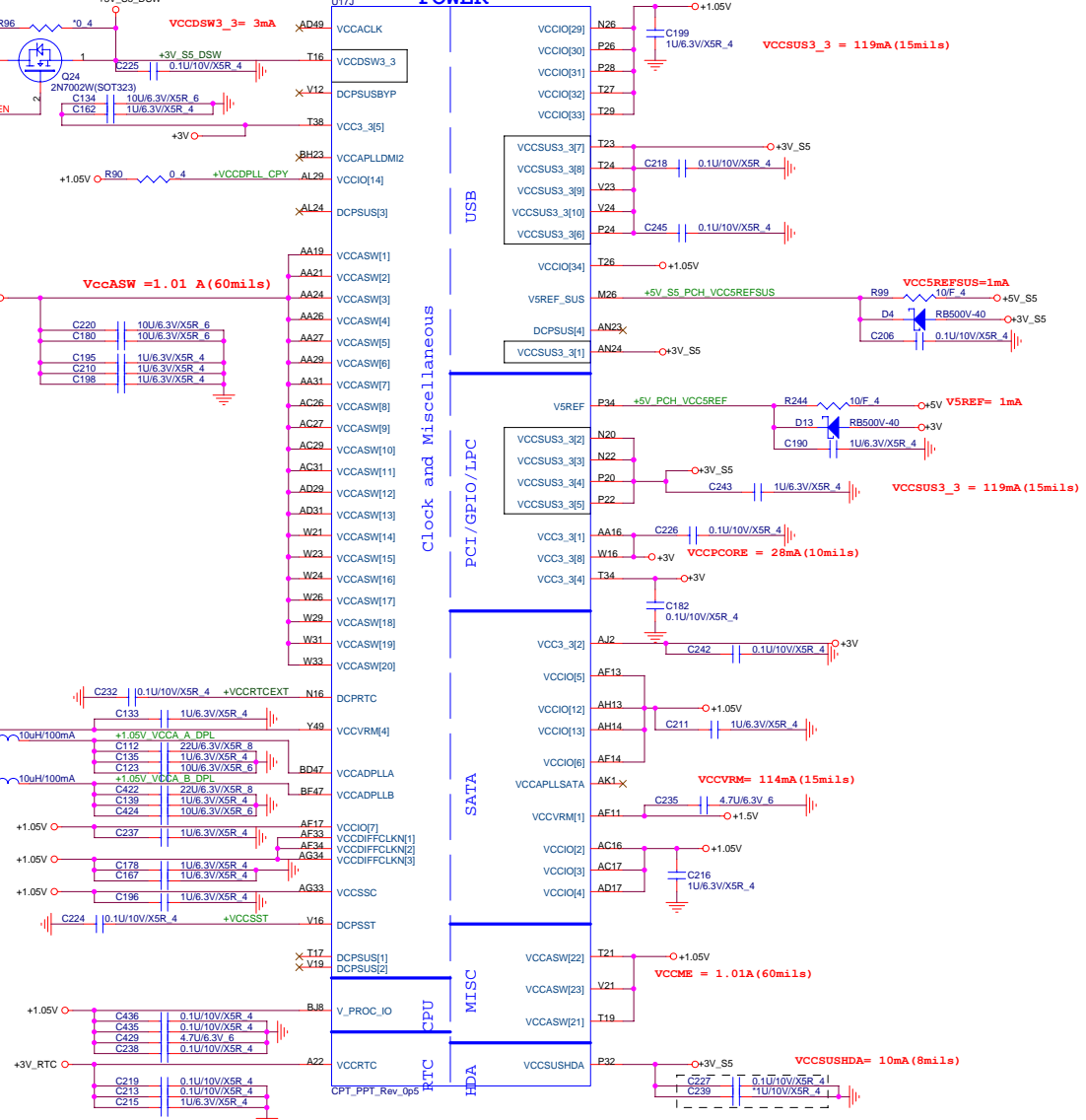
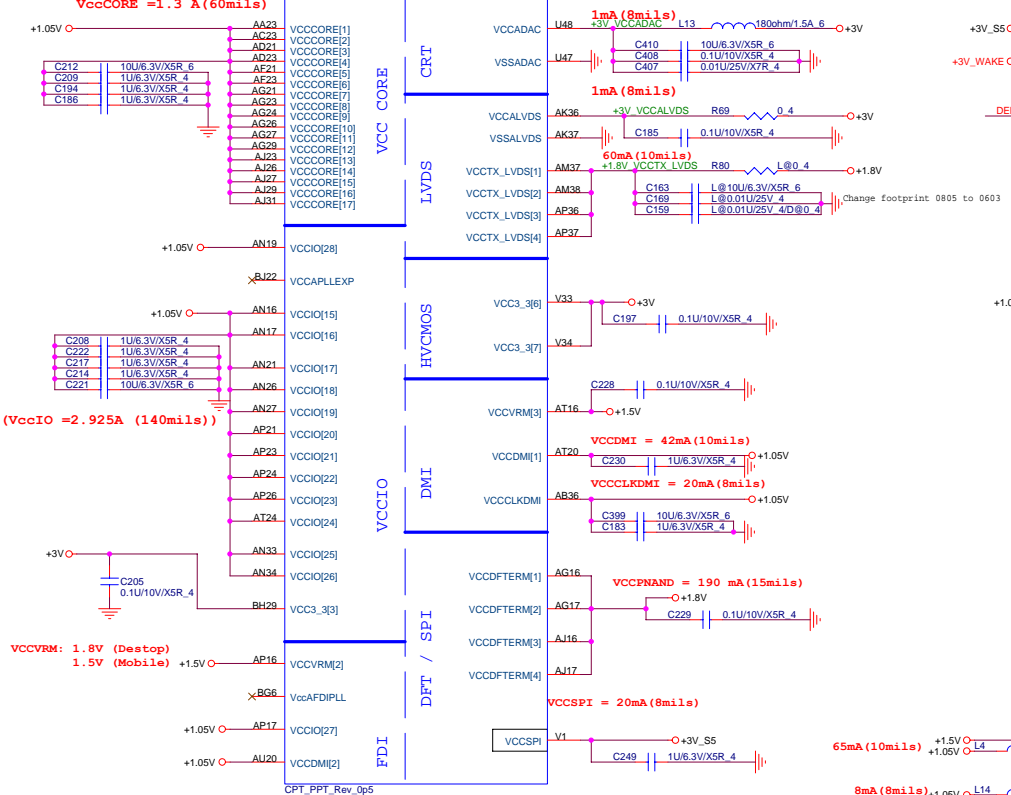
High = Disable (Default)
Low = Enable

PROJECT :Chief River

PCH5 (CLG)

CPT/PPT (POWER)

CPT/PPT (POWER)



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Size	Document Number	Rev
	CPT/PPT 5/6	1A

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CPT/PPT (GND)

U171

H5	VSS[0]		
AA17	VSS[1]	VSS[80]	AK38
AA2	VSS[2]	VSS[81]	AK4
AA3	VSS[3]	VSS[82]	AK42
AA33	VSS[4]	VSS[83]	AK46
AA34	VSS[5]	VSS[84]	AK8
AB11	VSS[6]	VSS[85]	AL16
AB14	VSS[7]	VSS[86]	AL17
AB38	VSS[8]	VSS[87]	AL19
AB4	VSS[9]	VSS[88]	AL2
AB43	VSS[10]	VSS[89]	AL21
AB5	VSS[11]	VSS[90]	AL23
AB7	VSS[12]	VSS[91]	AL26
AC19	VSS[13]	VSS[92]	AL27
AC2	VSS[14]	VSS[93]	AL31
AC21	VSS[15]	VSS[94]	AL33
AC24	VSS[16]	VSS[95]	AL34
AC33	VSS[17]	VSS[96]	AL48
AC34	VSS[18]	VSS[97]	AM11
AC48	VSS[19]	VSS[98]	AM14
AD10	VSS[20]	VSS[99]	AM36
AD11	VSS[21]	VSS[100]	AM39
AD12	VSS[22]	VSS[101]	AM43
AD13	VSS[23]	VSS[102]	AM45
AD19	VSS[24]	VSS[103]	AM46
AD24	VSS[25]	VSS[104]	AM7
AD26	VSS[26]	VSS[105]	AN2
AD27	VSS[27]	VSS[106]	AN29
AD33	VSS[28]	VSS[107]	AN3
AD34	VSS[29]	VSS[108]	AN31
AD36	VSS[30]	VSS[109]	AP12
AD37	VSS[31]	VSS[110]	AP19
AD38	VSS[32]	VSS[111]	AP28
AD39	VSS[33]	VSS[112]	AP30
AD4	VSS[34]	VSS[113]	AP32
AD40	VSS[35]	VSS[114]	AP38
AD42	VSS[36]	VSS[115]	AP4
AD43	VSS[37]	VSS[116]	AP42
AD45	VSS[38]	VSS[117]	AP46
AD46	VSS[39]	VSS[118]	AR2
AD8	VSS[40]	VSS[119]	AR2
AE2	VSS[41]	VSS[120]	AR48
AE3	VSS[42]	VSS[121]	AT11
AE10	VSS[43]	VSS[122]	AT13
AE12	VSS[44]	VSS[123]	AT18
AD14	VSS[45]	VSS[124]	AT22
AD16	VSS[46]	VSS[125]	AT26
AF16	VSS[47]	VSS[126]	AT28
AF19	VSS[48]	VSS[127]	AT30
AF24	VSS[49]	VSS[128]	AT32
AF26	VSS[50]	VSS[129]	AT34
AF27	VSS[51]	VSS[130]	AT39
AF29	VSS[52]	VSS[131]	AT42
AF31	VSS[53]	VSS[132]	AT46
AF38	VSS[54]	VSS[133]	AT7
AF4	VSS[55]	VSS[134]	AU24
AF42	VSS[56]	VSS[135]	AU30
AF46	VSS[57]	VSS[136]	AV16
AF5	VSS[58]	VSS[137]	AV20
AF7	VSS[59]	VSS[138]	AV24
AF8	VSS[60]	VSS[139]	AV30
AG19	VSS[61]	VSS[140]	AV38
AG2	VSS[62]	VSS[141]	AV4
AG31	VSS[63]	VSS[142]	AV43
AG48	VSS[64]	VSS[143]	AV8
AH11	VSS[65]	VSS[144]	AW14
AH3	VSS[66]	VSS[145]	AW18
AH36	VSS[67]	VSS[146]	AW2
AH39	VSS[68]	VSS[147]	AW22
AH40	VSS[69]	VSS[148]	AW26
AH42	VSS[70]	VSS[149]	AW28
AH46	VSS[71]	VSS[150]	AW32
AH7	VSS[72]	VSS[151]	AW34
AJ19	VSS[73]	VSS[152]	AW36
AJ21	VSS[74]	VSS[153]	AW48
AJ24	VSS[75]	VSS[154]	AV11
AJ33	VSS[76]	VSS[155]	AY12
AJ34	VSS[77]	VSS[156]	AY22
AK12	VSS[78]	VSS[157]	AY28
AK3	VSS[79]	VSS[158]	

CPT_PPT_Rev_0p5



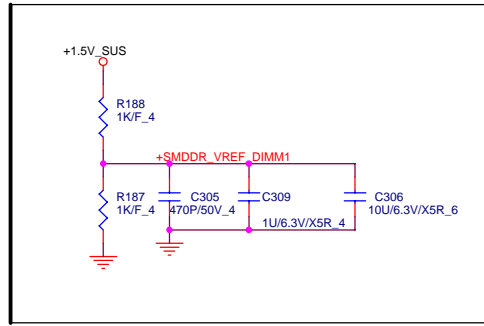
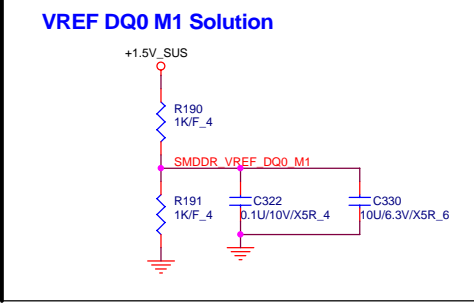
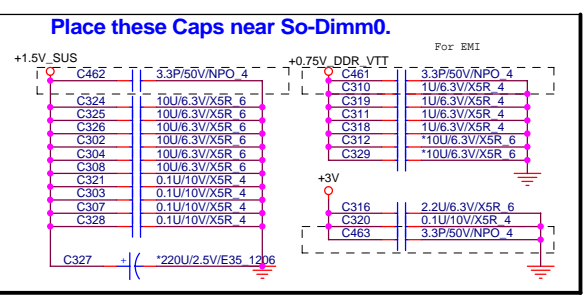
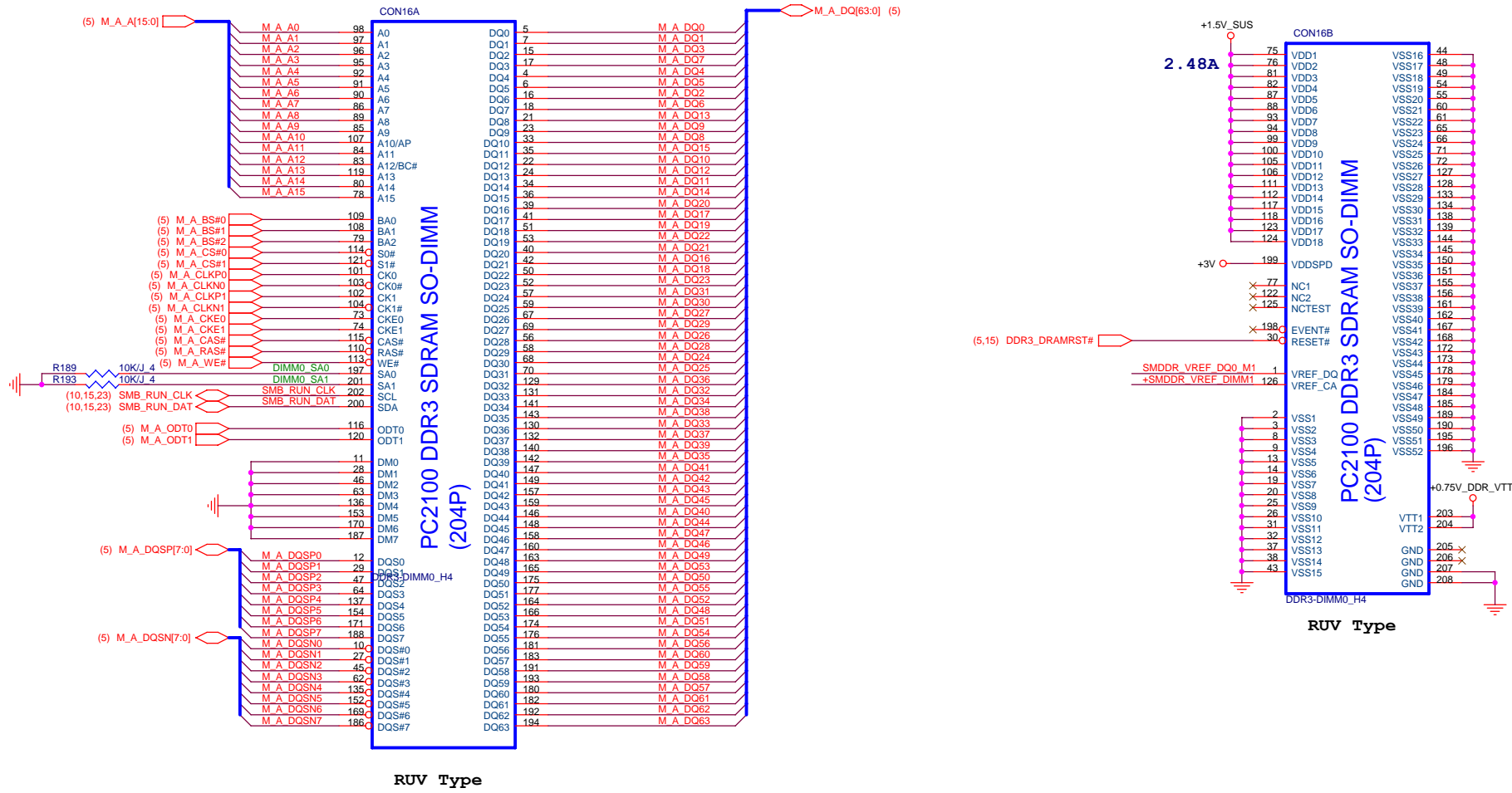
AY4	VSS[159]	VSS[269]	H46
AY42	VSS[160]	VSS[280]	K18
AY46	VSS[161]	VSS[281]	K26
AY8	VSS[162]	VSS[282]	K39
B11	VSS[163]	VSS[283]	K46
B15	VSS[164]	VSS[284]	K7
B19	VSS[165]	VSS[285]	L18
B23	VSS[166]	VSS[286]	L2
B27	VSS[167]	VSS[287]	L20
B31	VSS[168]	VSS[288]	L26
B35	VSS[169]	VSS[289]	L28
B39	VSS[170]	VSS[290]	L36
B7	VSS[171]	VSS[291]	L48
F45	VSS[172]	VSS[292]	M12
BB12	VSS[173]	VSS[293]	P16
BB16	VSS[174]	VSS[294]	M18
BB20	VSS[175]	VSS[295]	M22
BB24	VSS[176]	VSS[296]	M24
BB28	VSS[177]	VSS[297]	M30
BB30	VSS[178]	VSS[298]	M32
BB38	VSS[179]	VSS[299]	M34
BB4	VSS[180]	VSS[300]	M38
BB48	VSS[181]	VSS[301]	M4
BC14	VSS[182]	VSS[302]	M46
BC18	VSS[183]	VSS[303]	M48
BC2	VSS[184]	VSS[304]	N18
BC22	VSS[185]	VSS[305]	P30
BC26	VSS[186]	VSS[306]	P47
AN2	VSS[187]	VSS[307]	P11
BC34	VSS[188]	VSS[308]	P18
BC36	VSS[189]	VSS[309]	T33
BC40	VSS[190]	VSS[310]	P40
BC42	VSS[191]	VSS[311]	P43
BC48	VSS[192]	VSS[312]	P47
BD48	VSS[193]	VSS[313]	P7
BD5	VSS[194]	VSS[314]	R2
BE22	VSS[195]	VSS[315]	R48
BE26	VSS[196]	VSS[316]	T12
BE40	VSS[197]	VSS[317]	T31
BE10	VSS[198]	VSS[318]	T37
BE12	VSS[199]	VSS[319]	T4
BE16	VSS[200]	VSS[320]	W34
BF20	VSS[201]	VSS[321]	T46
BF22	VSS[202]	VSS[322]	T47
BF24	VSS[203]	VSS[323]	T8
BF28	VSS[204]	VSS[324]	V11
BD3	VSS[205]	VSS[325]	V17
BF30	VSS[206]	VSS[326]	V26
BF38	VSS[207]	VSS[327]	V27
BF40	VSS[208]	VSS[328]	V29
BF8	VSS[209]	VSS[329]	V31
BG17	VSS[210]	VSS[330]	V36
BG21	VSS[211]	VSS[331]	V39
BG33	VSS[212]	VSS[332]	V43
BG44	VSS[213]	VSS[333]	V7
BG8	VSS[214]	VSS[334]	W17
BH11	VSS[215]	VSS[335]	W19
BH15	VSS[216]	VSS[336]	W2
BH17	VSS[217]	VSS[337]	W27
BH19	VSS[218]	VSS[338]	W48
H10	VSS[219]	VSS[339]	Y12
BH27	VSS[220]	VSS[340]	Y38
BH31	VSS[221]	VSS[341]	Y4
AV4	VSS[222]	VSS[342]	Y46
BH33	VSS[223]	VSS[343]	Y8
BH35	VSS[224]	VSS[344]	BG29
BH39	VSS[225]	VSS[345]	N24
BH43	VSS[226]	VSS[346]	N24
BH7	VSS[227]	VSS[347]	AD47
D12	VSS[228]	VSS[348]	D43
D16	VSS[229]	VSS[349]	BE10
D18	VSS[230]	VSS[350]	BE11
D22	VSS[231]	VSS[351]	BE14
D24	VSS[232]	VSS[352]	G14
D26	VSS[233]		H16
D30	VSS[234]		T36
D32	VSS[235]		BG22
D34	VSS[236]		BG24
D38	VSS[237]		C22
D42	VSS[238]		AP13
D48	VSS[239]		M14
E18	VSS[240]		AP3
E26	VSS[241]		AP1
G18	VSS[242]		BE16
G20	VSS[243]		BC16
G26	VSS[244]		BG28
G28	VSS[245]		BJ28
G36	VSS[246]		
G48	VSS[247]		
H12	VSS[248]		
H18	VSS[249]		
H22	VSS[250]		
H24	VSS[251]		
H26	VSS[252]		
H30	VSS[253]		
H32	VSS[254]		
H34	VSS[255]		
F3	VSS[256]		
	VSS[257]		
	VSS[258]		

CPT_PPT_Rev_0p5



Quanta Computer Inc.
 PROJECT :Chief River
 CPT/PPT 6/6
 Date: Thursday, January 17, 2013 Sheet 13 of 41

1.Level 1 Environment-related Substances Should Never be Used.
 2.Recycled Resin and Coated Wire should be procured from Green Partners.

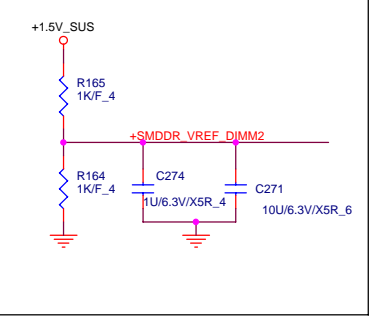
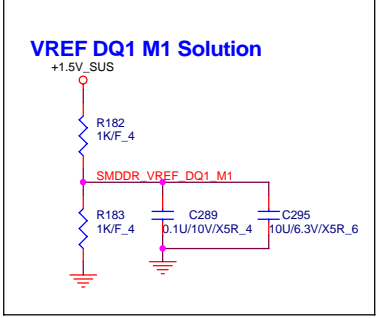
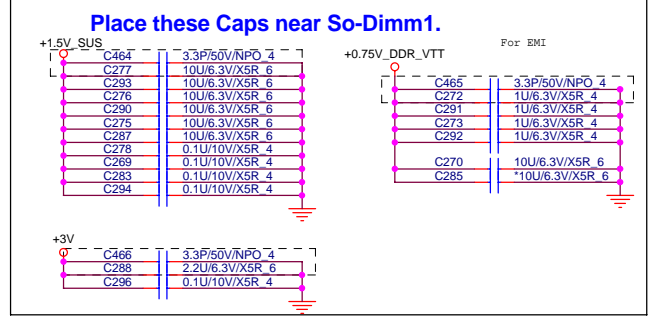
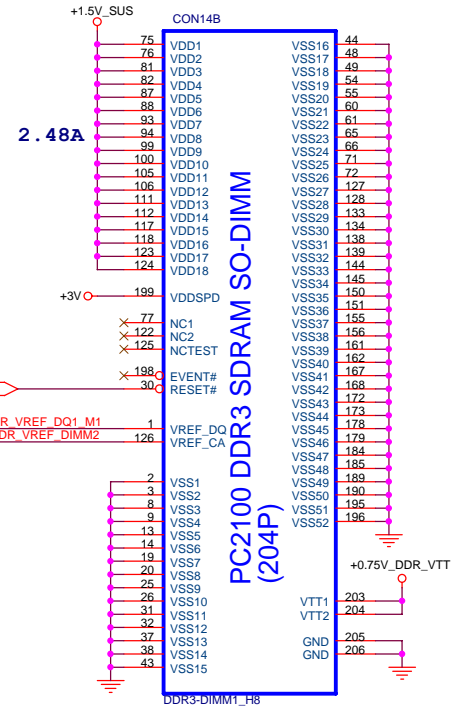
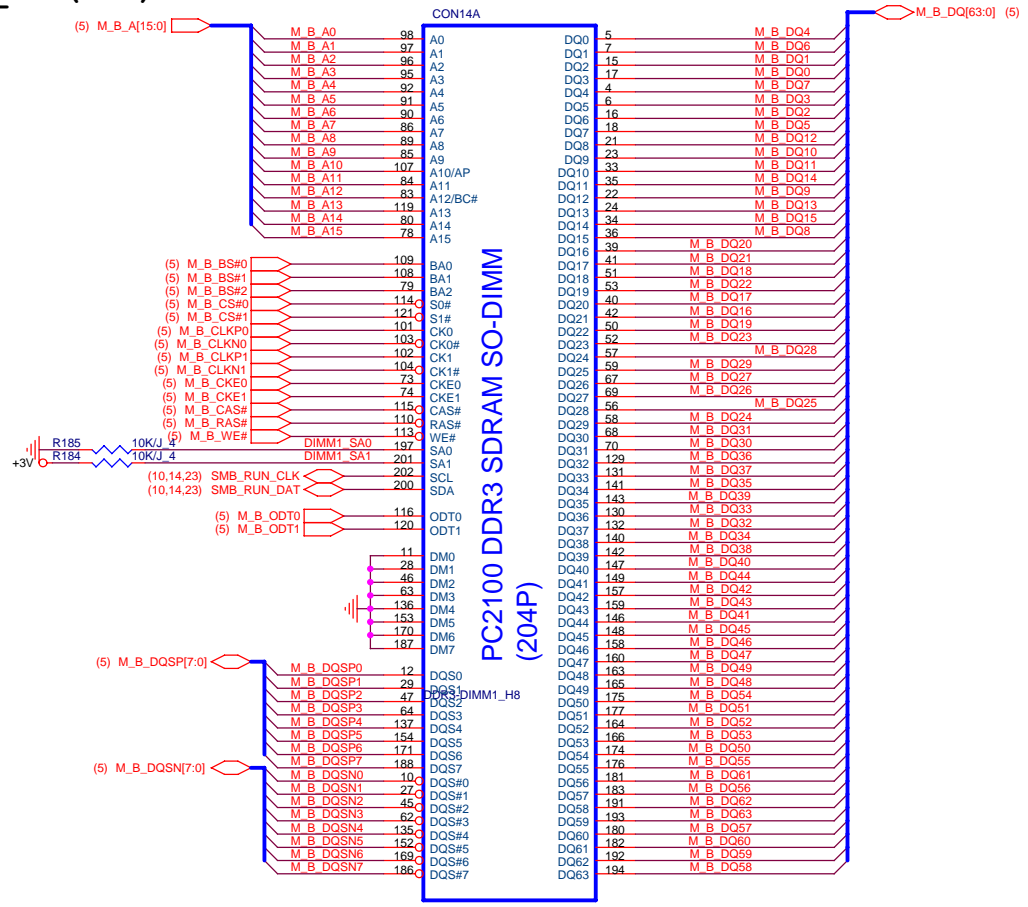


Quanta Computer Inc.
PROJECT :Chief River

Size	Document Number	Rev
	DDRIII SO-DIMM-0	1A
Date	Thursday, January 17, 2013	Sheet 14 of 41

1.Level 1 Environment-related Substances Should Never be Used.
2.Recycled Resin and Coated Wire should be procured from Green Partners.

DDR_RVS (DDR)



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PROJECT :Chief River

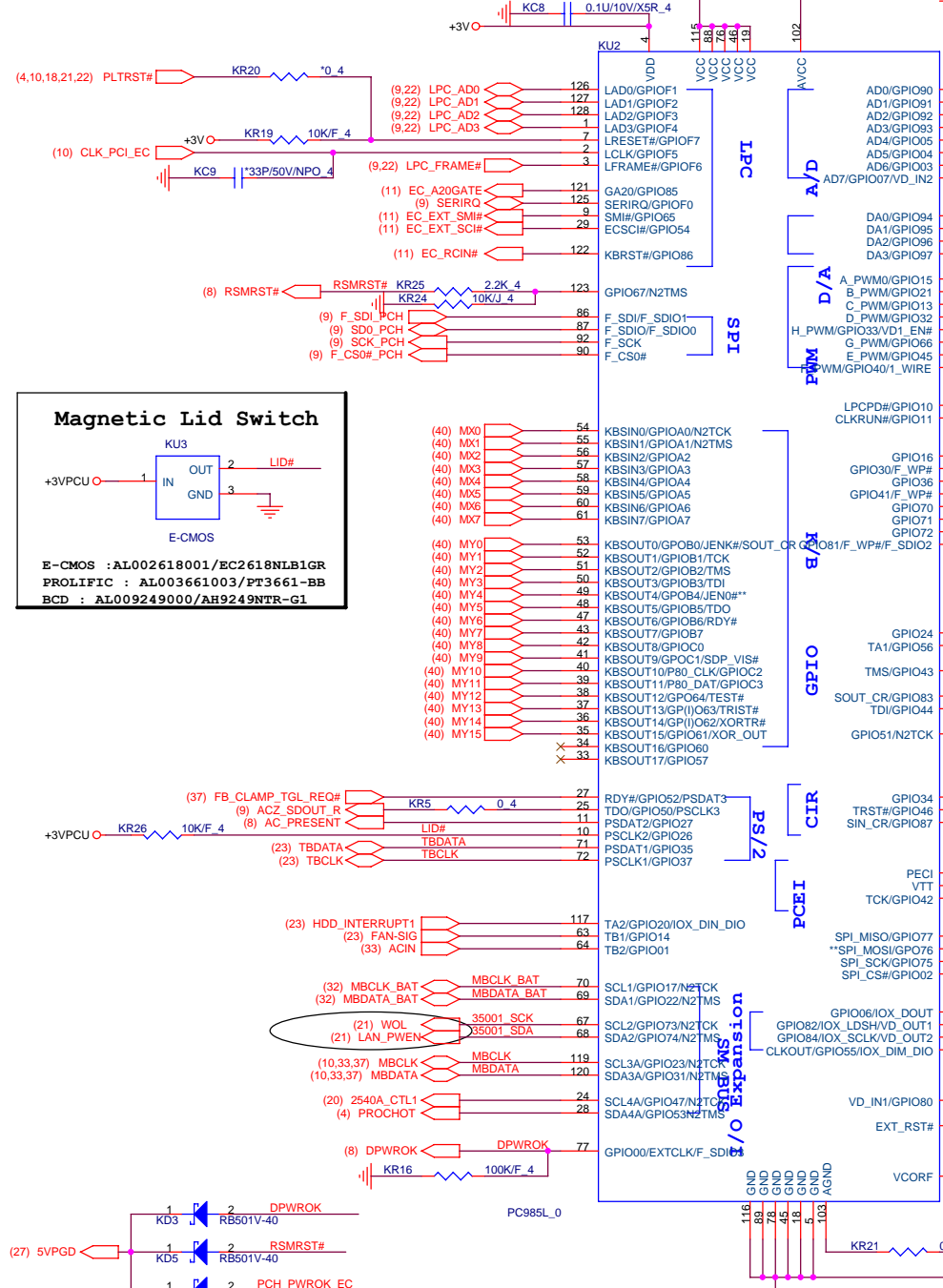
Size Document Number Rev 1A
DDRIII SO-DIMM-1

Date: Thursday, January 17, 2013 Sheet 15 of 41

1. Level 1 Environment-related Substances Should Never be Used.
2. Recycled Resin and Coated Wire should be procured from Green Partners.

**** Strapping Pin, Can not pull low.**
 Note the input leakage current to the strap pins must be less than 10uA.

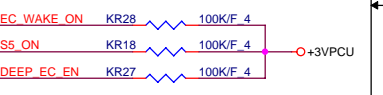
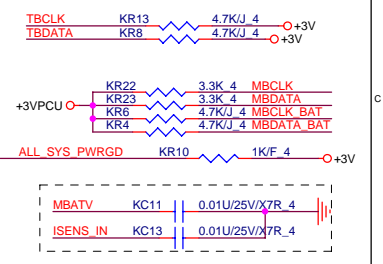
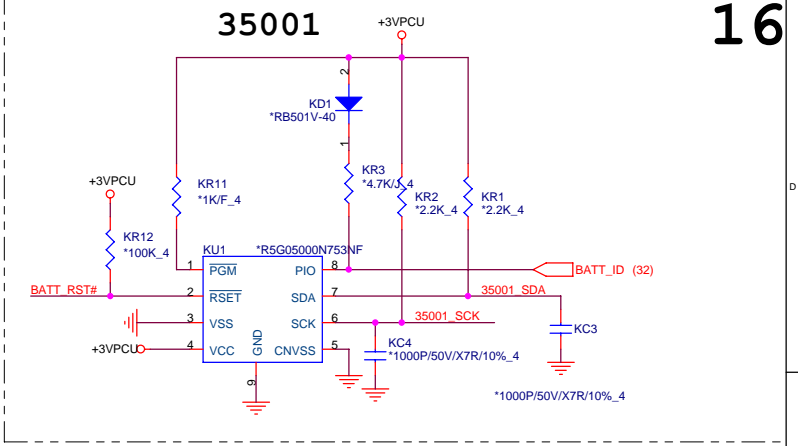
Since ECSCI is OD, no need for a back-drive protection diode on this signal. But note there is internal PU in chipset at default



Magnetic Lid Switch

E-CMOS

E-CMOS : AL002618001/EC2168NLB1GR
 PROLIFIC : AL003661003/PT3661-BB
 BCD : AL009249000/AH9249NTR-G1



DRAM VOLTAGE SET
 Low : 1.5V
 High : 1.35V

MODEL ID	
High	HK8/HK9(KR29 mount KR30 no mount)
Low	GD5/GD6(KR29 no mount KR30 mount)

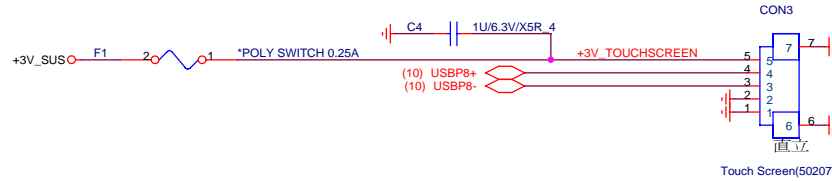
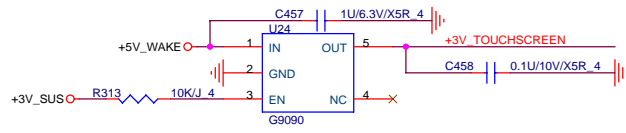
Quanta Computer Inc.
PROJECT : Chief River

Size: Document Number: NPCE885L Rev: 1A

Date: Thursday, January 17, 2013 Sheet: 16 of 41

1. Level 1 Environment-related Substances Should Never be Used.
 2. Recycled Resin and Coated Wire should be procured from Green Partners.

Touch Screen

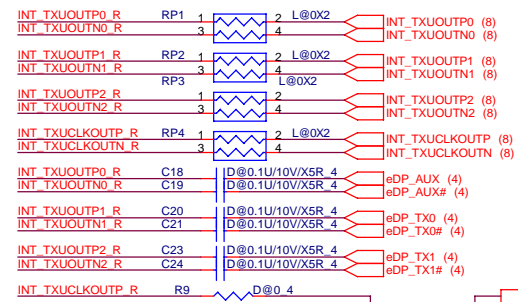
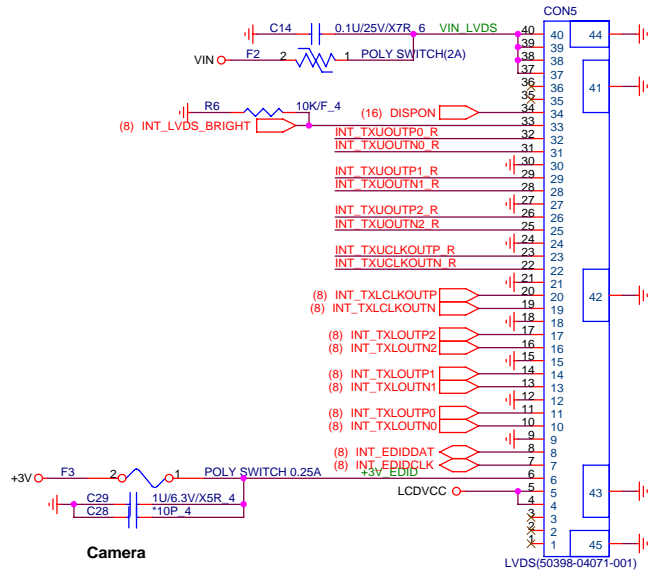


NFC module :
 Vender : Samsung SNC-i20
 Power consumption : Max. 160mW/48mA
 Power Ripple +/- 50mV

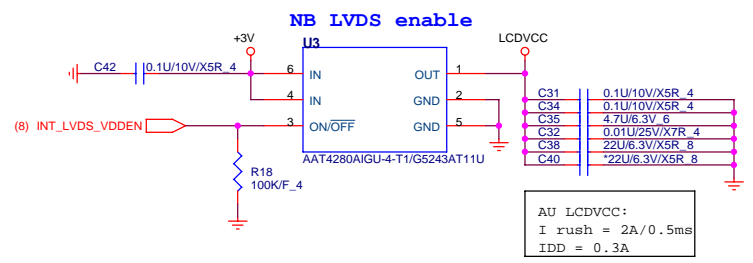
Touch Screen(50207)

FAST, UL/CSA

LVDS

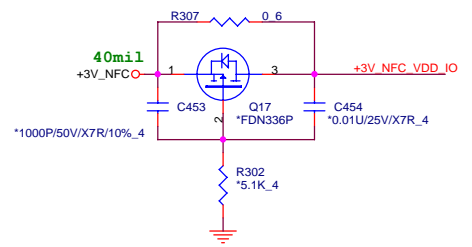
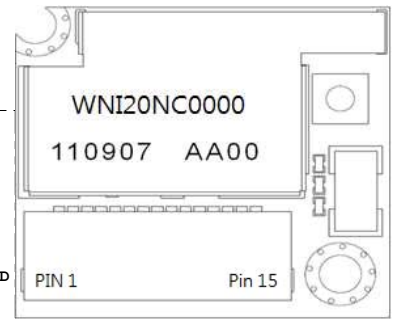
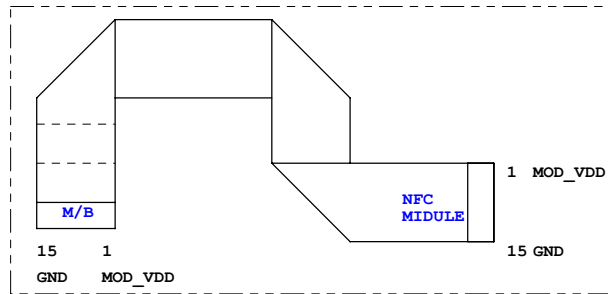
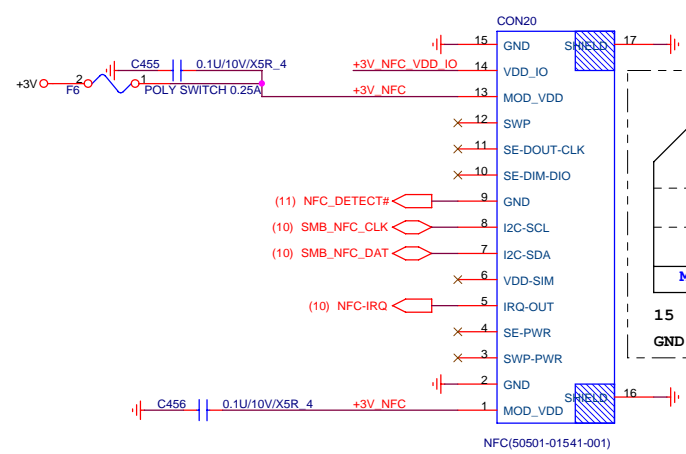


Camera HD specification
 Voltage: Max. 3.6V
 Current : Max. 200mA
 OCP: 200mA ~ 300mA



AU LCDVCC:
 I rush = 2A/0.5ms
 IDD = 0.3A

NFC

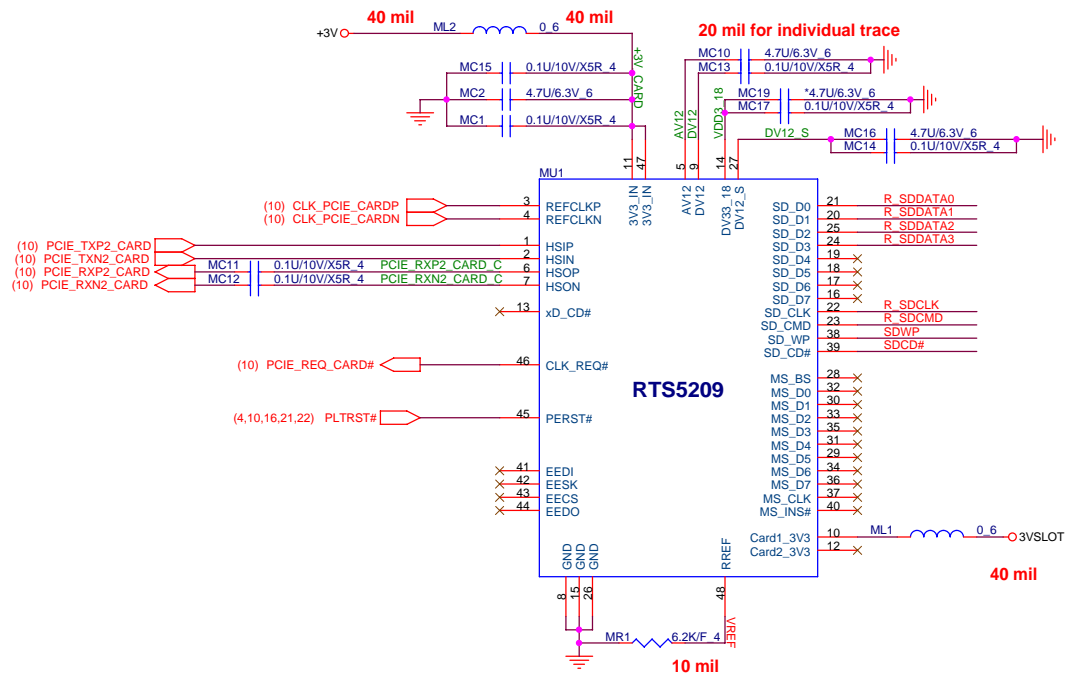


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 PROJECT :Chief River

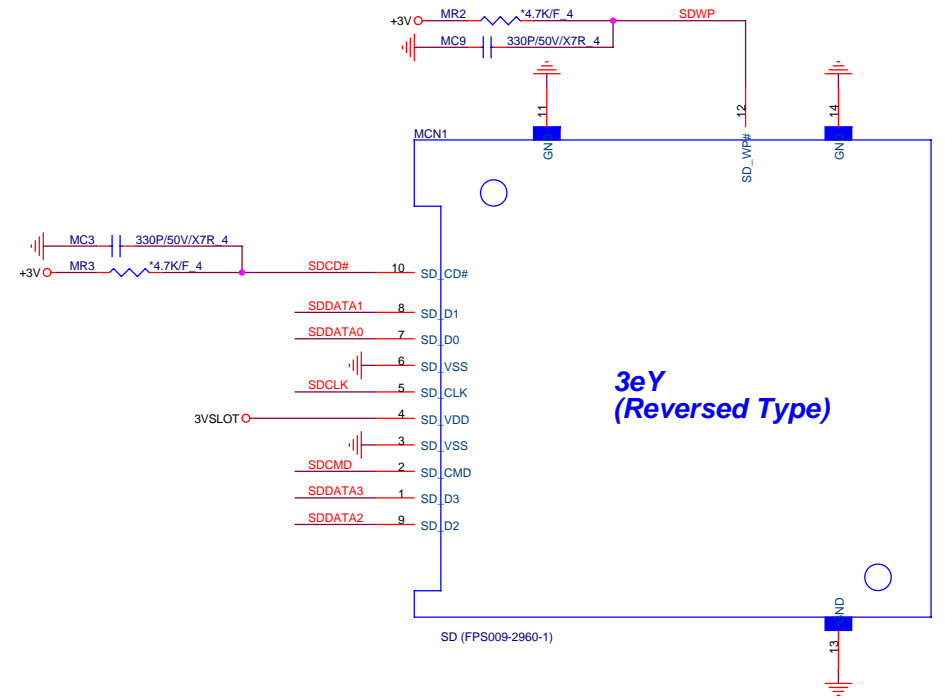
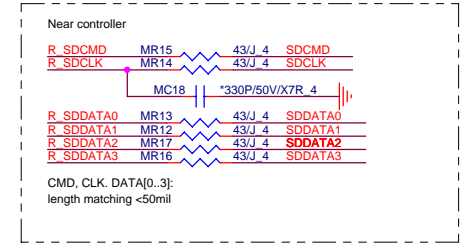
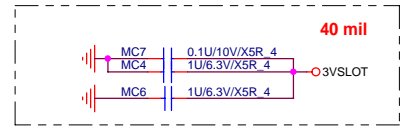
Size	Document Number	Rev
	CRT/LVDS	1A

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1. Level 1 Environment-related Substances Should Never be Used.
 2. Recycled Resin and Coated Wire should be procured from Green Partners.



These component need to close to Slot

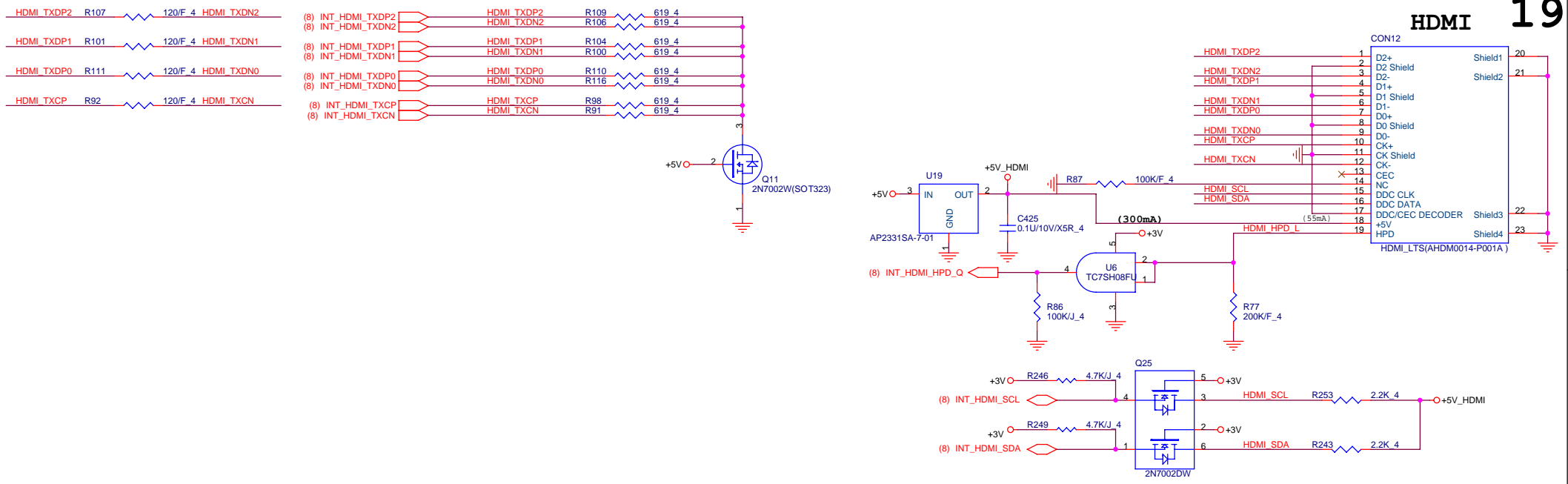


Quanta Computer Inc.
PROJECT :Chief River

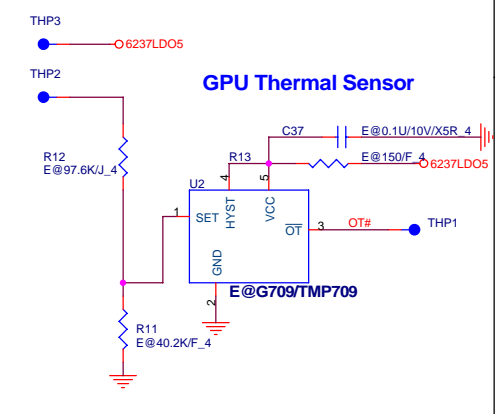
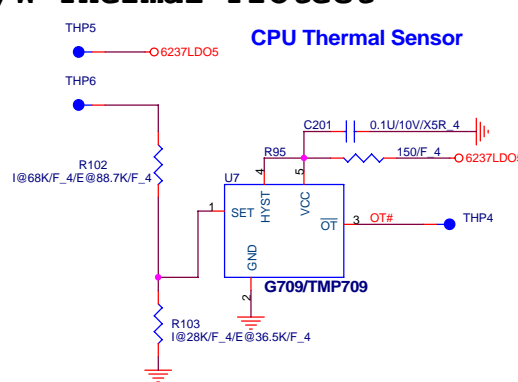
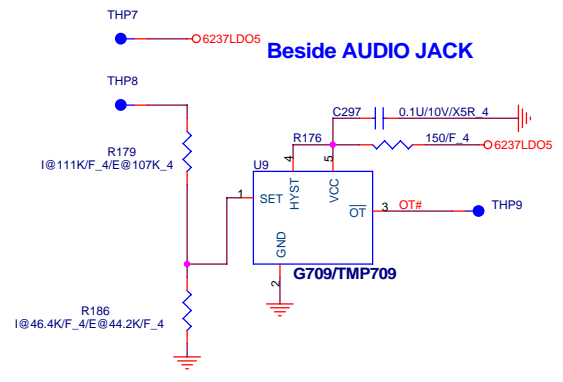
Size Document Number CARD Rev 1A

Date: Thursday, January 17, 2013 Sheet 18 of 41

1.Level 1 Environment-related Substances Should Never be Used.
2.Recycled Resin and Coated Wire should be procured from Green Partners.



H/W Thermal Protect

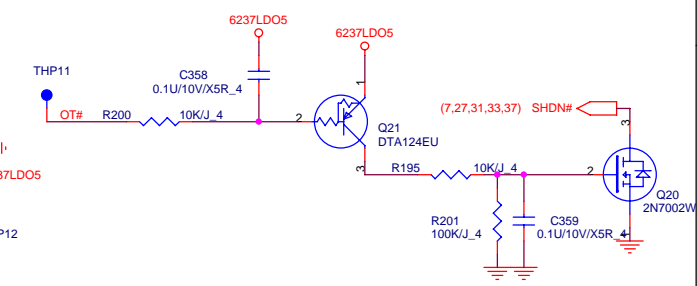
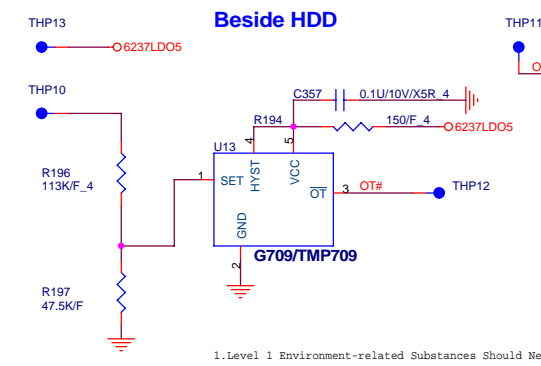



RSET(kΩ) = 0.0012T² - 0.9308T + 96.147

95	18.5K
100	15K
107	10.3K
110	8.2K

Location of IC	Temp	R-Set	Parts in BOM	Max	Min
Near CPU sensor temp	70	R208=36.87K	36.5K	71	70
Near GFX sensor temp	65	R146=40.72K	40.2K	66.3	65.1
Near AUDIO sensor temp	60	R345=44.62K	44.2K	61.2	60

Location of IC	Temp	R-Set	Parts in BOM	Max	Min
Near CPU sensor temp	81	R208=28.63K	28K	82.3	81.4
Near AUDIO sensor temp	58	R345=46.2K	46.4K	58.4	57.1



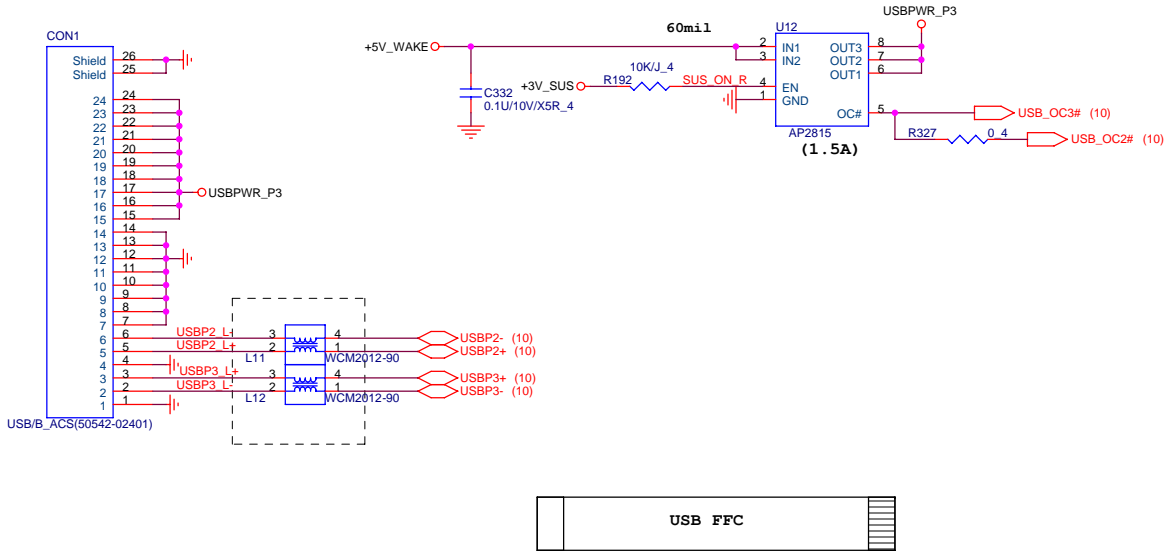


Quanta Computer Inc.
PROJECT :Chief River

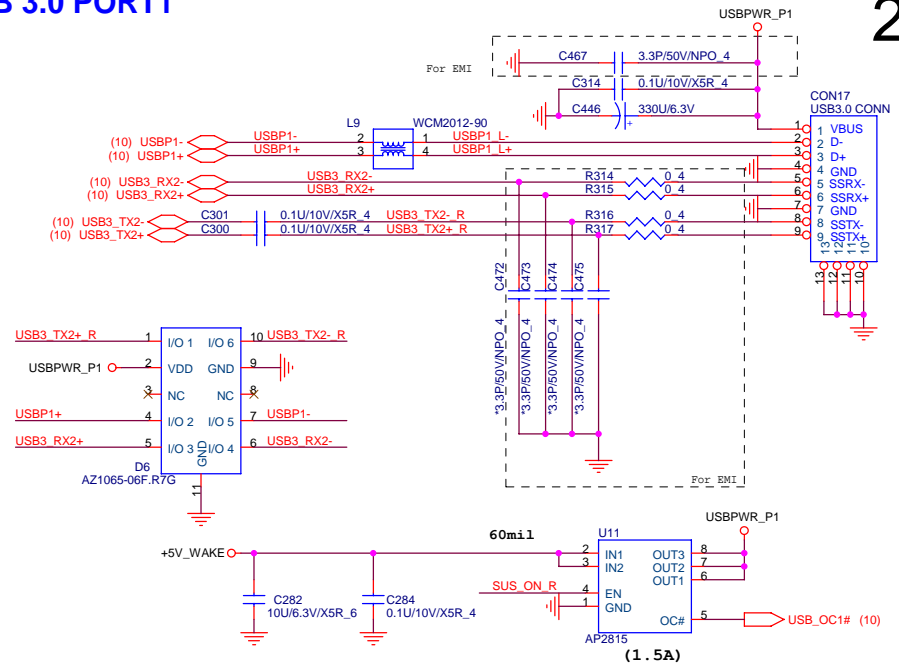
Size	Document Number	Date
	HDMI/Thermal IC	Thursday, January 17, 2013
	Sheet 19 of 41	Rev 1A

1.Level 1 Environment-related Substances Should Never be Used.
2.Recycled Resin and Coated Wire should be procured from Green Partners.

MB to USB board

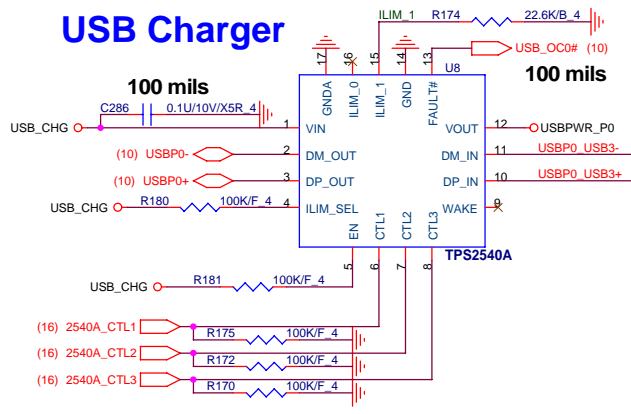
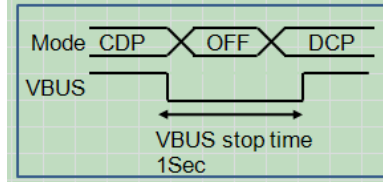


USB 3.0 PORT1

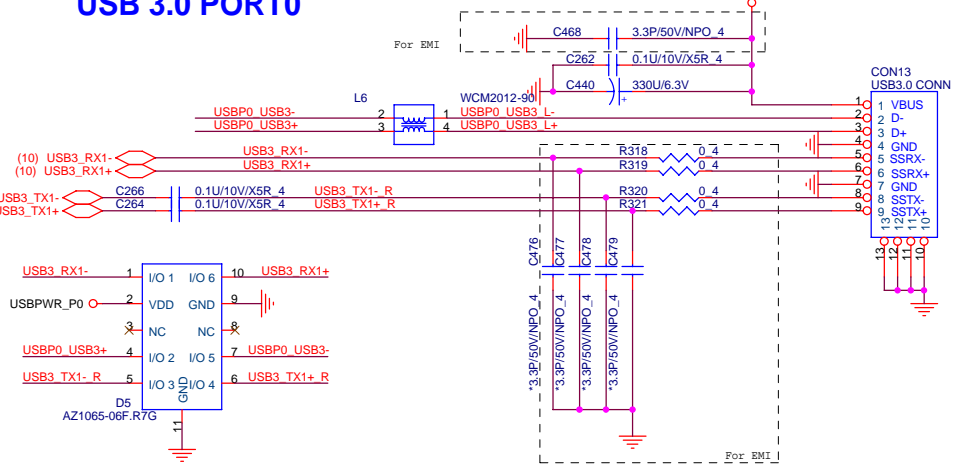


USB Charger

SDP : Standard Downstream Port
 CDP : Charging downstream port
 DCP : Dedicated Charging Port
 Enable/Disable : setting by BIOS



USB 3.0 PORT0



CTL_1	CTL_2	CTL_3	TPS 2540A/2543 Truth Table
0	0	0	OUT discharge, power switch OFF
0	X	1	DCP, Auto-detect(S3/S4/S5, 1.5A)
X	1	0	SDP, USB2.0 mode(S0, 0.5A)
1	0	0	DCP, BC SPEC1.2 only(S3/Deep standby/S4/S5, 1.5A)
1	0	1	DCP, Divider mode only(S3/S4/S5, 1.5A)
1	1	1	CDP (S0, 1.5A)

System State	USB Battery Charging Setting	
	Disable	Enable
S0	SDP (X 1 0)	CDP (1 1 1)
S3	SDP (X 1 0)	DCP BC (1 0 0)
DS3	Charger OFF (0 0 0)	DCP BC (1 0 0)
S4	Charger OFF (0 0 0)	DCP BC (1 0 0)
S5	Charger OFF (0 0 0)	DCP BC (1 0 0)

ILIM_SEL (I_LIMIT(A)= 48000R)	
HI	I_LIM_1
LO	I_LIM_0

48000/22.6K=2.123A

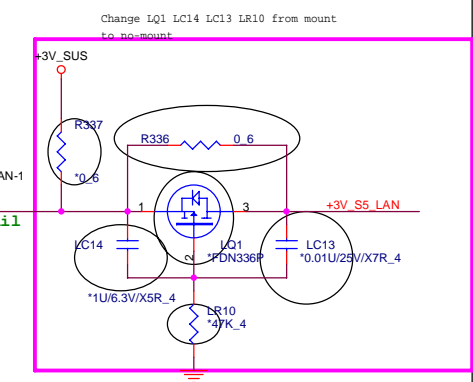
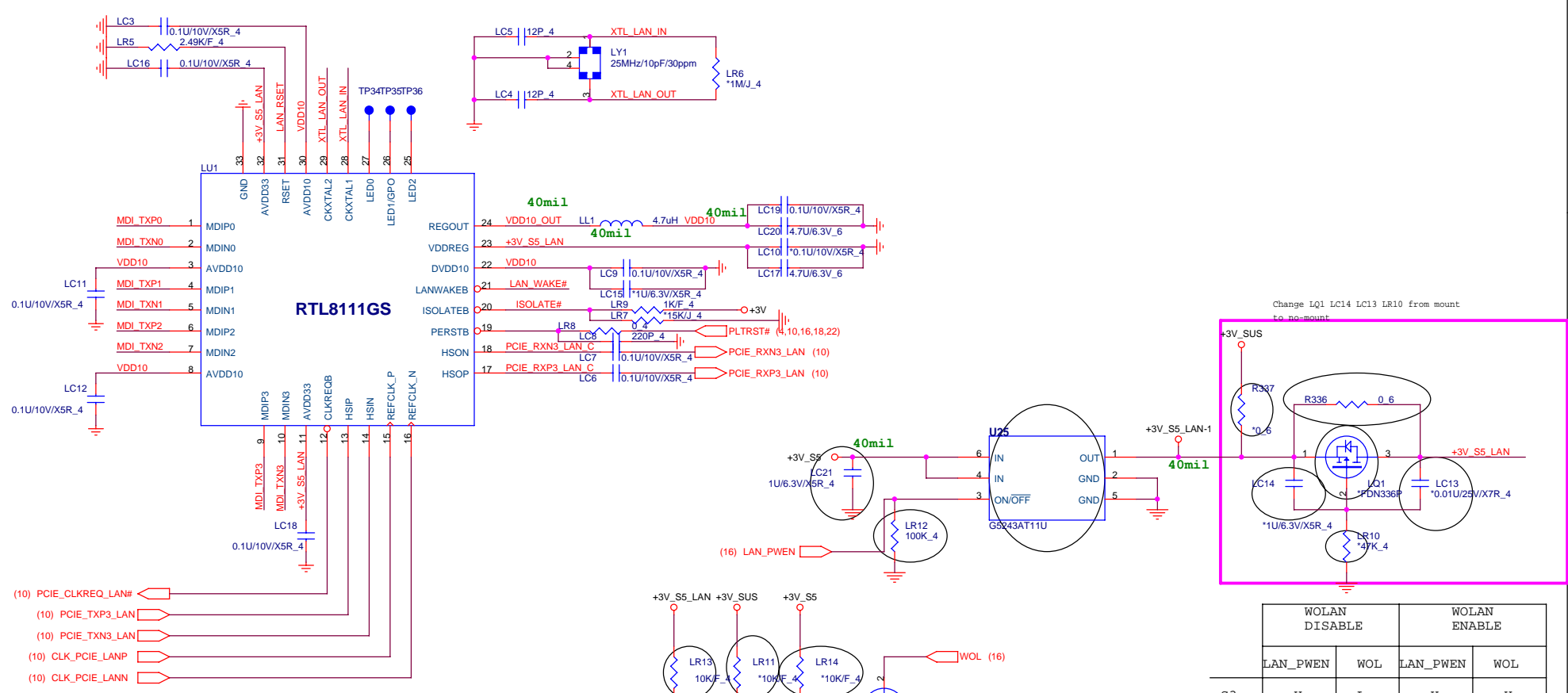
Quanta Computer Inc.

PROJECT : Chief River

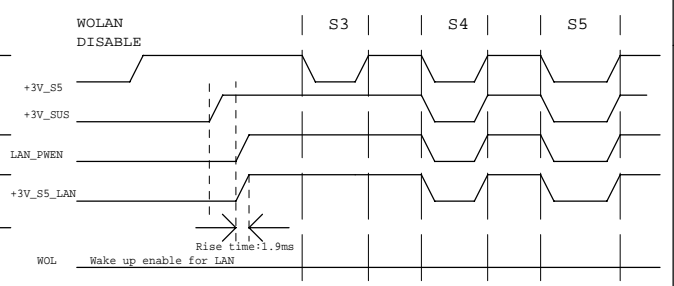
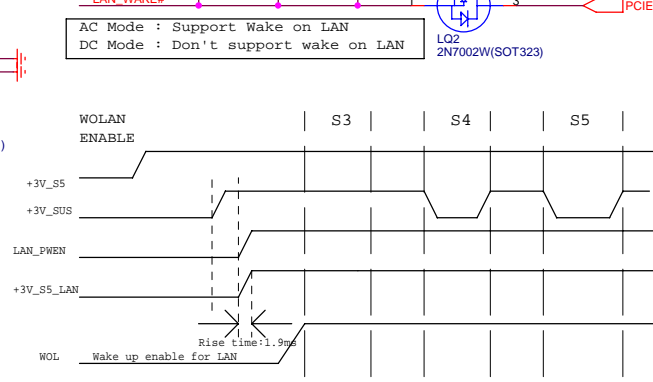
USB/USB Charger

Size	Document Number	Rev
Date	Thursday, January 17, 2013	1A

1. LEVEL 1 Environment-Related Substances should Never be Used.
 2. Recycled Resin and Coated Wire should be procured from Green Partners.



	WOLAN DISABLE		WOLAN ENABLE	
	LAN_PWEN	WOL	LAN_PWEN	WOL
S3	H	L	H	H
S4	L	L	H	H
S5	L	L	H	H

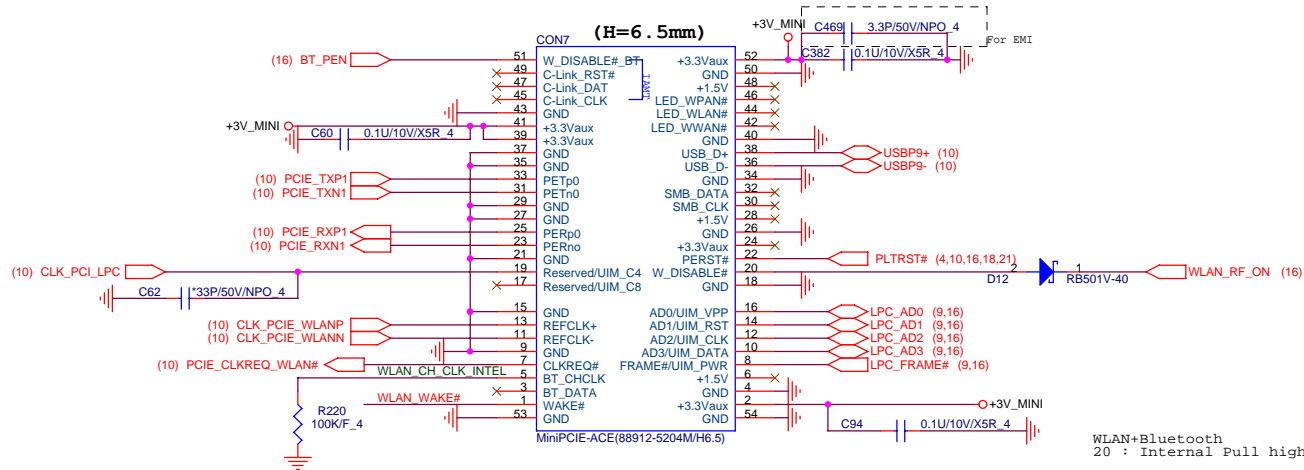


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PROJECT : Chief River
Giga LAN RTL8111GS

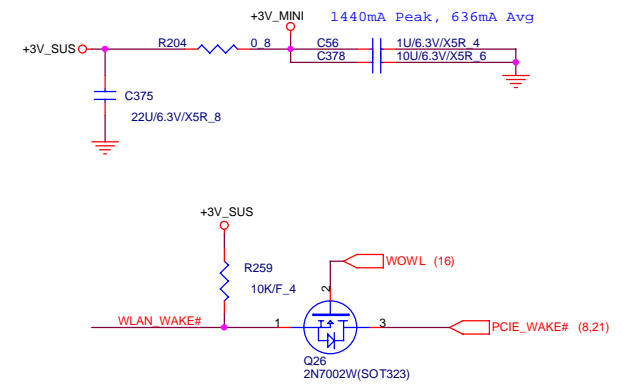
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							Rev 1A

1.Level 1 Environment-related Substances Should Never be Used.
2.Recycled Resin and Coated Wire should be procured from Green Partners.

WLAN/WIMAX/WIDI

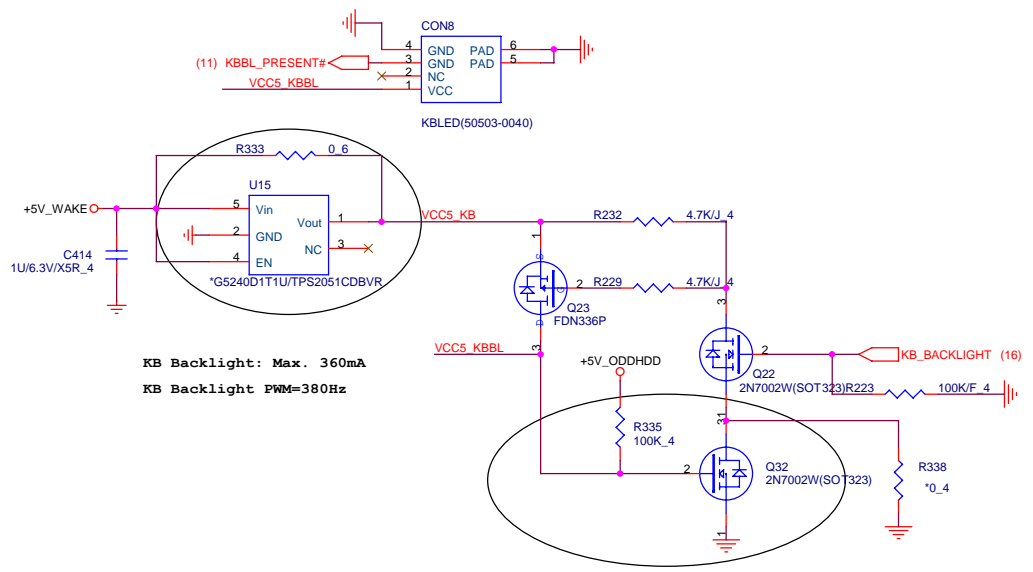


WLAN+Bluetooth
20 : Internal Pull high 25K ~ 58K



AC Mode : Support Wake on WLAN
DC Mode : Don't support wake on WLAN

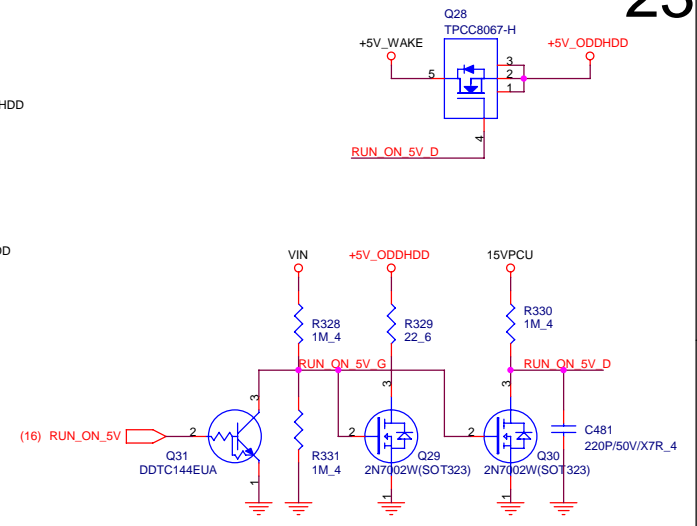
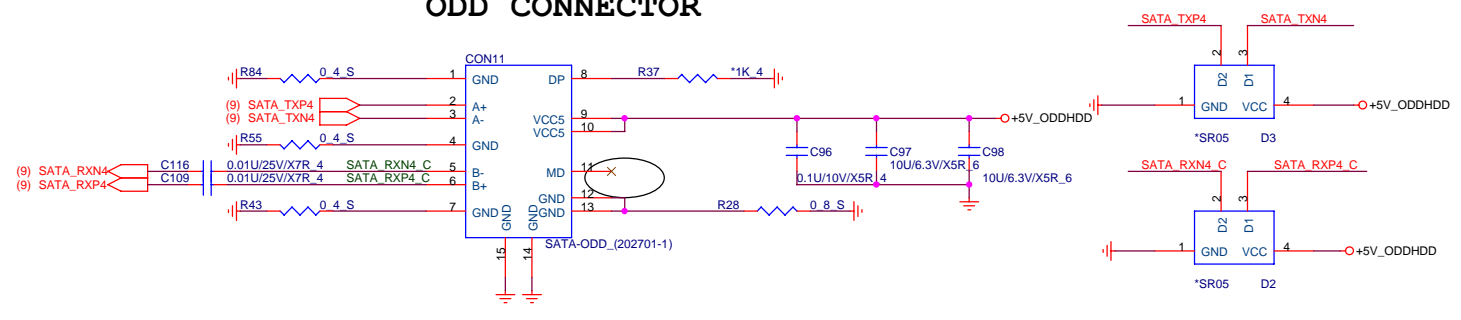
KB BACKLIGHT



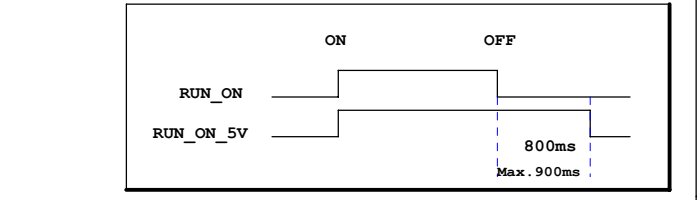
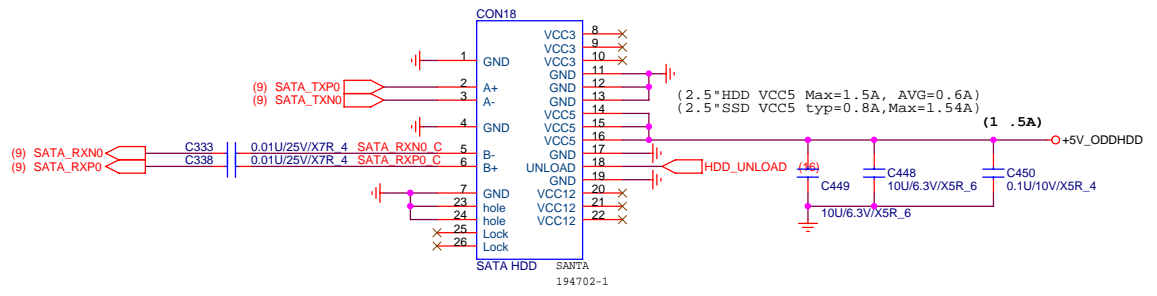
KB Backlight: Max. 360mA
KB Backlight PWM=380Hz

		Quanta Computer Inc. PROJECT :Chief River	
		Size Document Number WLAN/KB BL	Rev 1A
1.Level 1 Environment-related Substances Should Never be Used. 2.Recycled Resin and Coated Wire should be procured from Green Partners.		Date: Thursday, January 17, 2013	Sheet 22 of 41

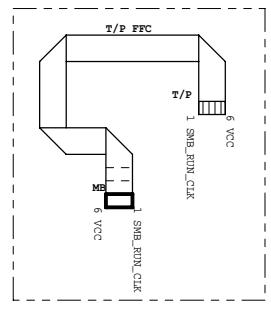
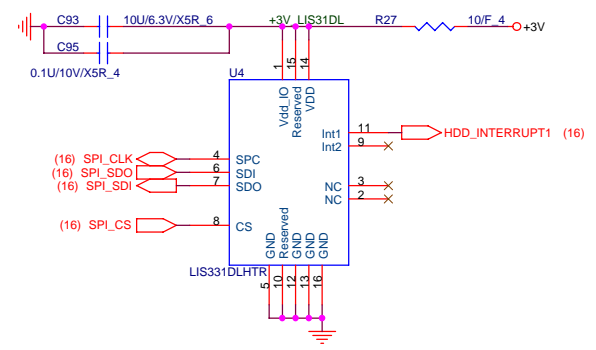
ODD CONNECTOR



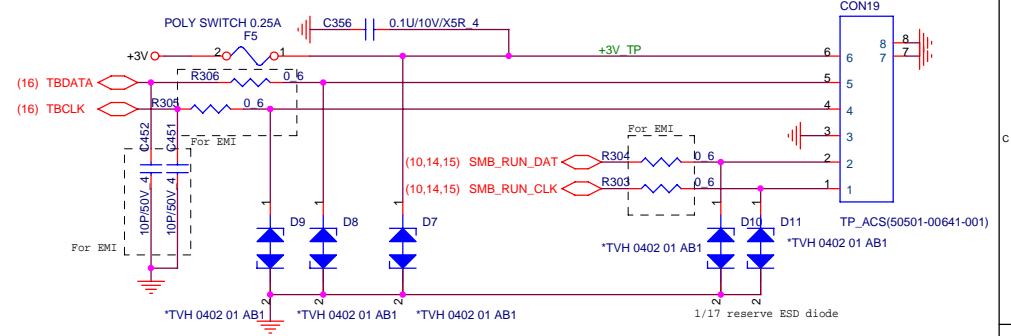
HDD CONNECTOR



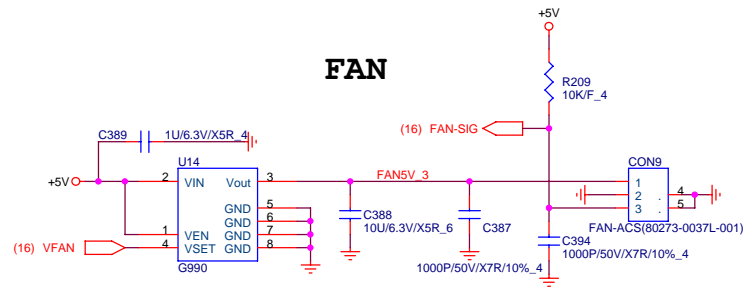
HDD PROTECT SPI INTERFACE



T/P Board to T/P



FAN

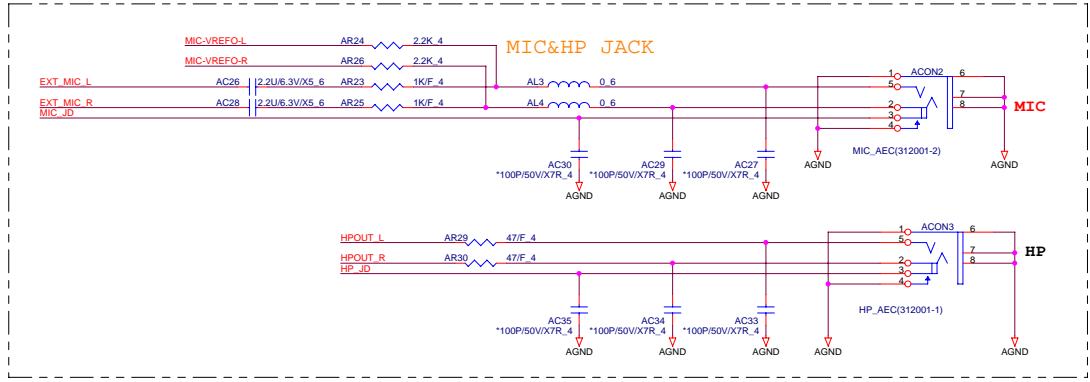
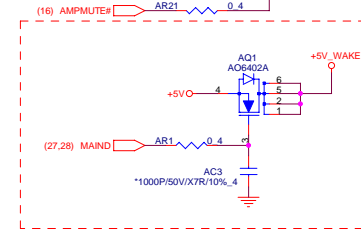
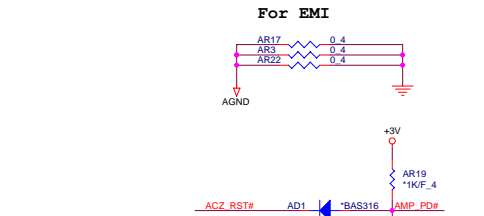
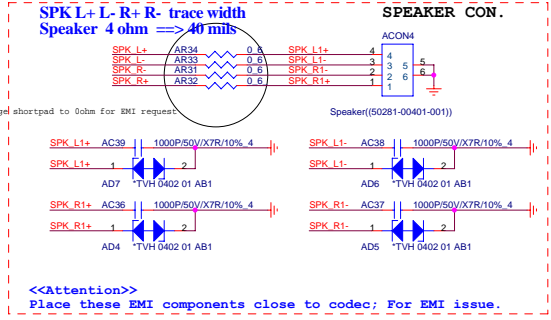
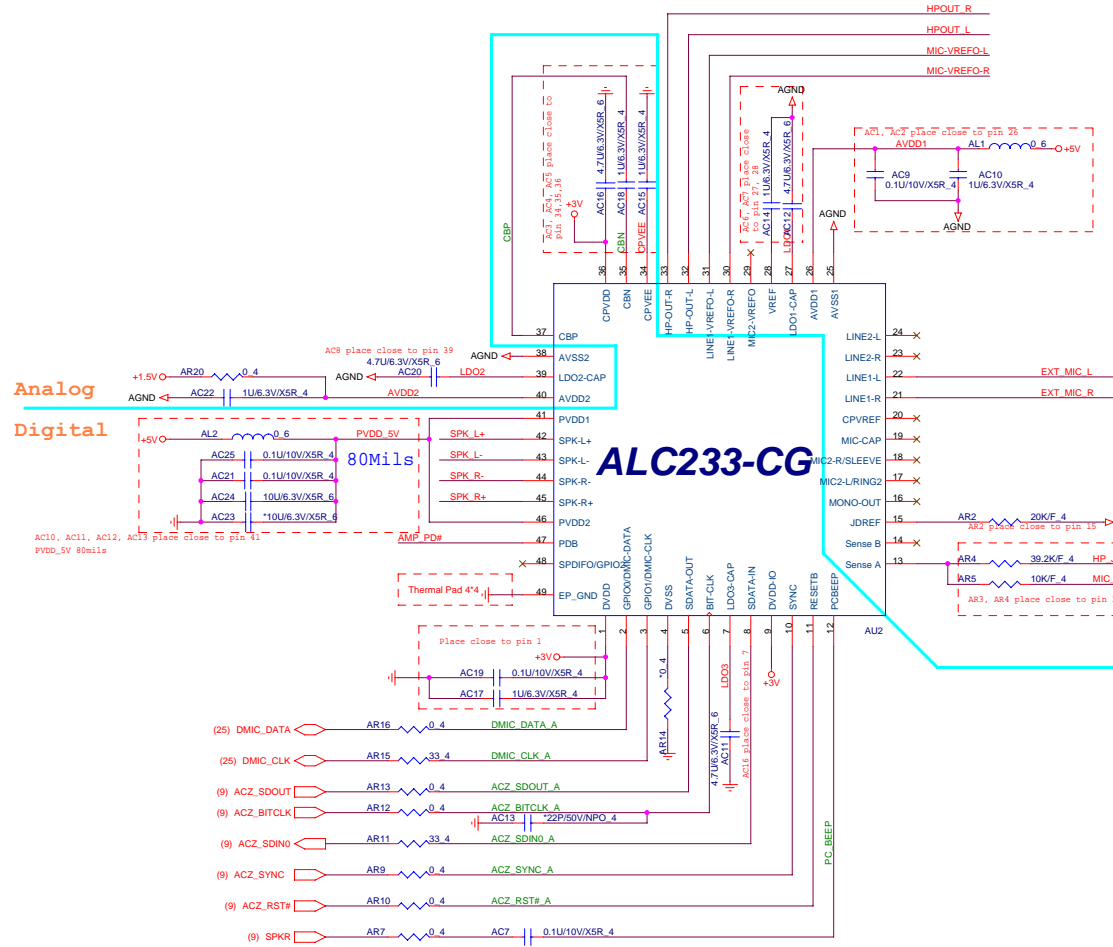


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HDD/ODD/TP/FAN

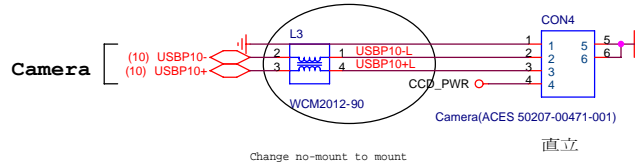
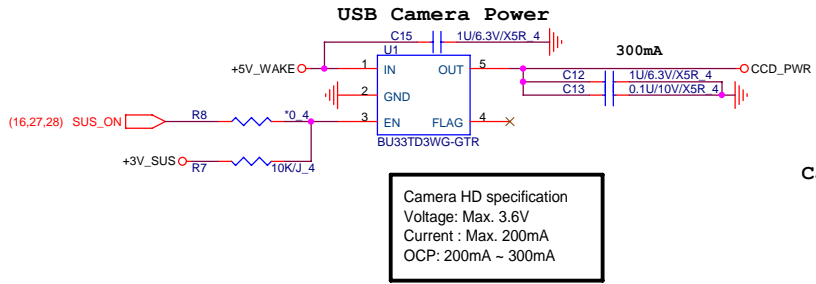
Size	Document Number	Rev
		1A

Date: Thursday, January 17, 2013 Sheet 23 of 41

1. Level 1 Environment-related Substances Should Never be Used.
 2. Recycled Resin and Coated Wire should be procured from Green Partners.



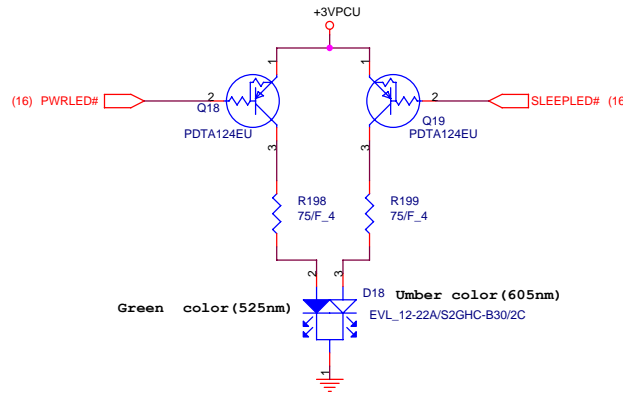
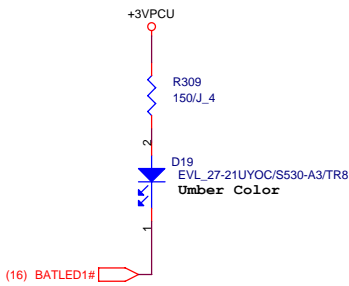
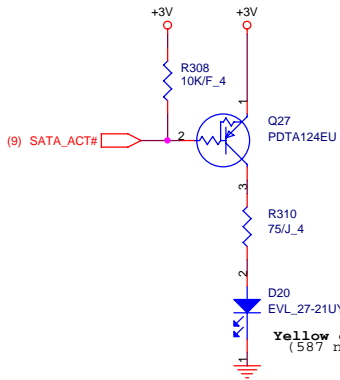
Camera



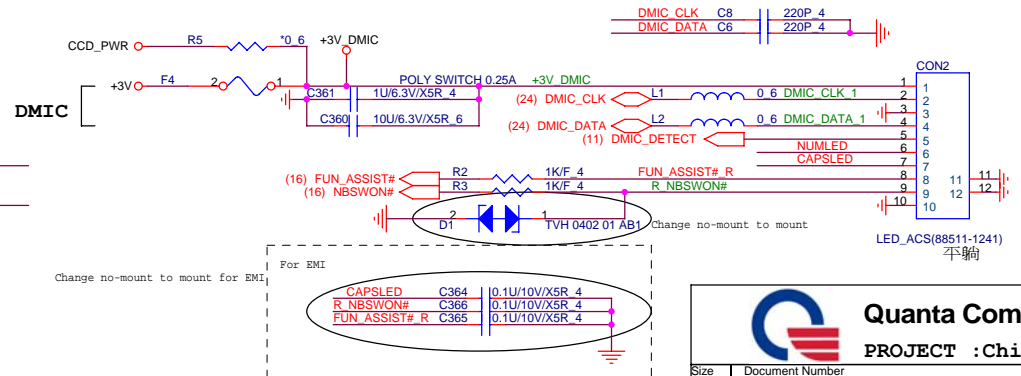
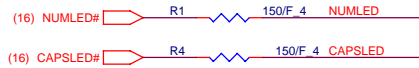
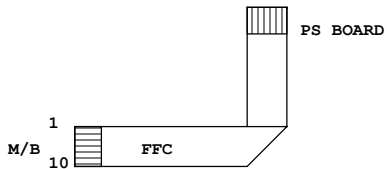
SATA LED

BATTERY LED

Power/Sleep LED



Power SW Board Connector



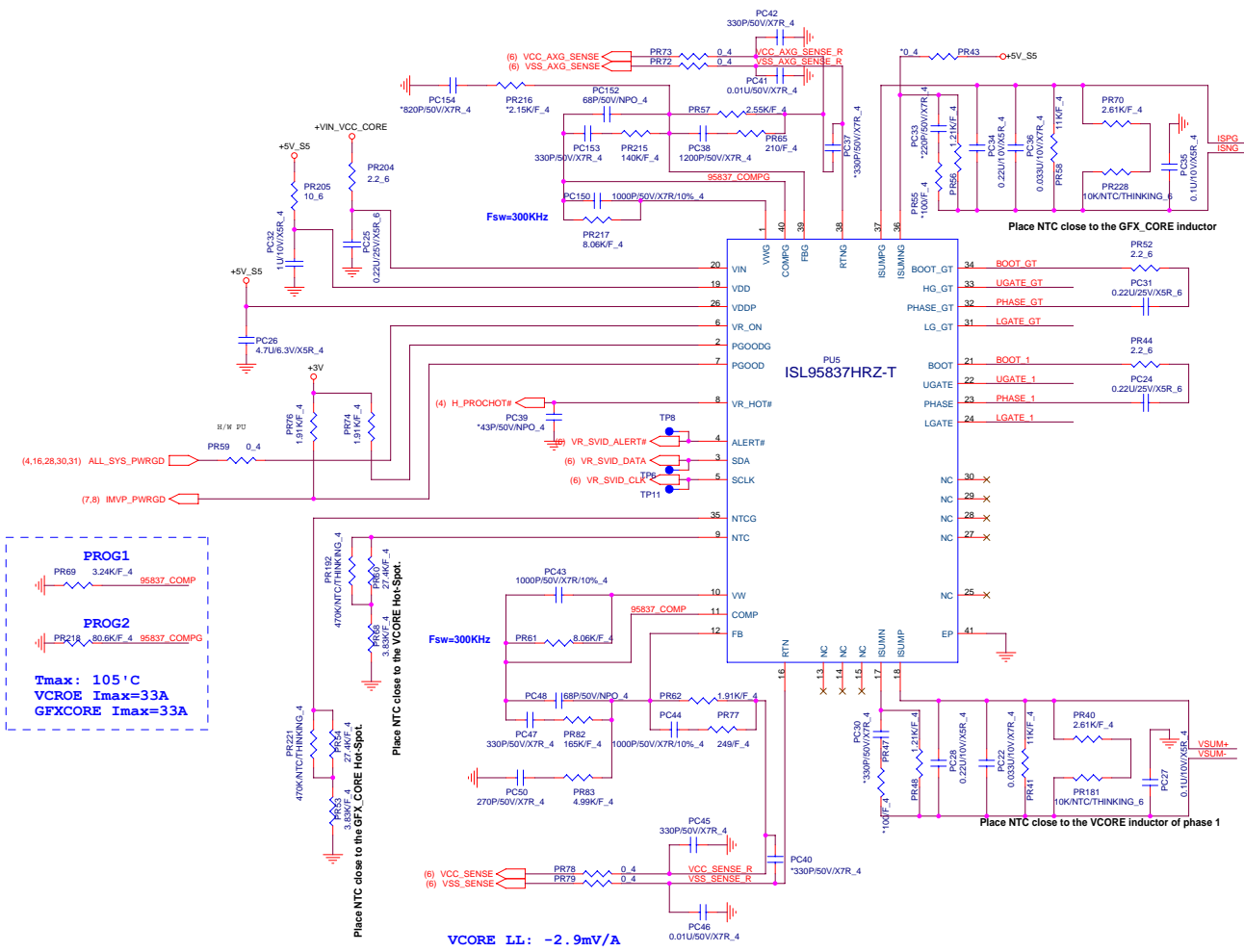
Quanta Computer Inc.
PROJECT :Chief River

Size Document Number **LED/RF/KB/PS** Rev 1A

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1.Level 1 Environment-related Substances Should Never be Used.
 2.Recycled Resin and Coated Wire should be procured from Green Partners.

GFX_CORE LL: -3.9mV/A for GT2

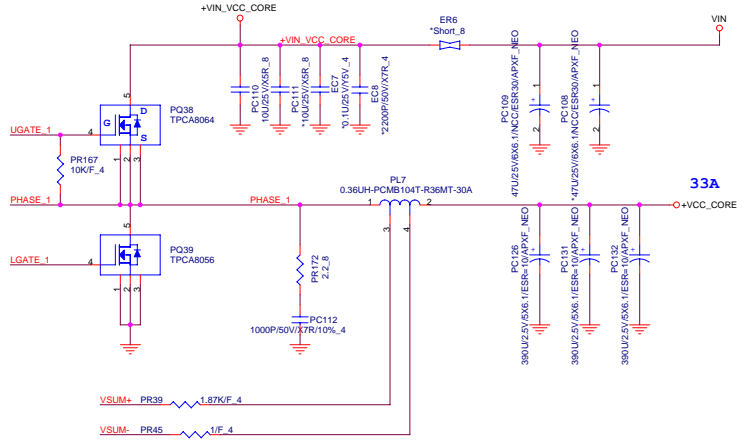
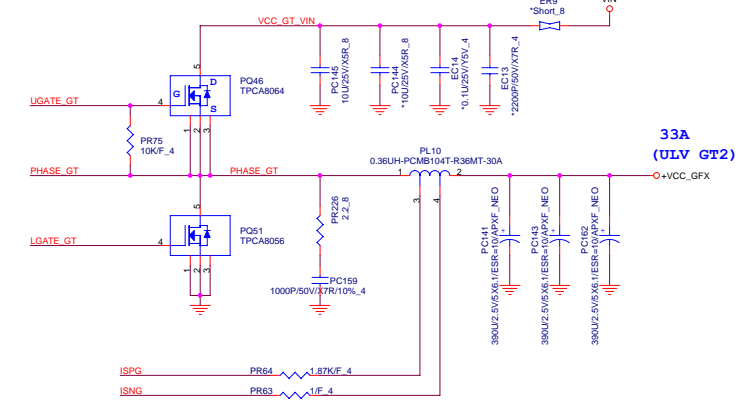


PROG1
PR69 3.24K/F_4 95837_COMP

PROG2
PR21 60.6K/F_4 95837_COMP

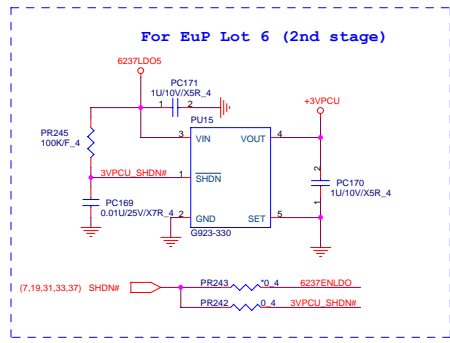
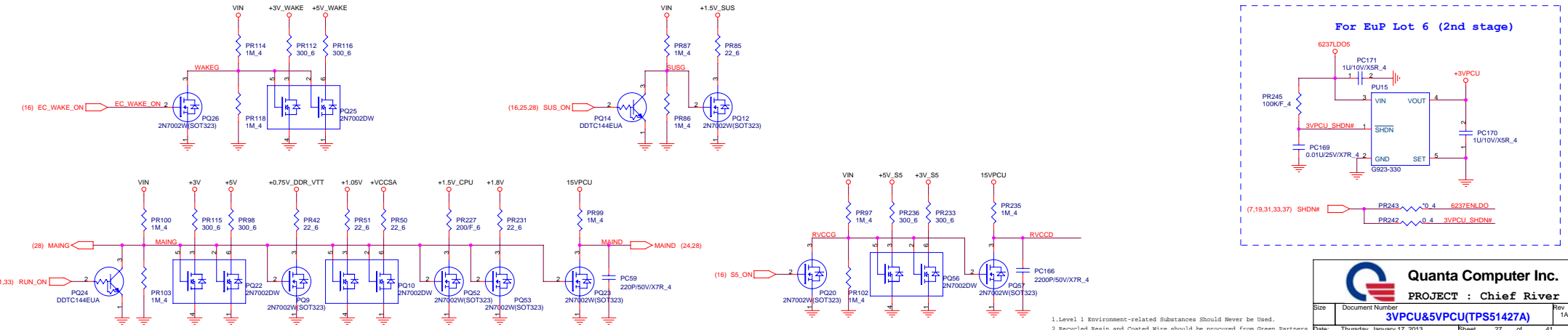
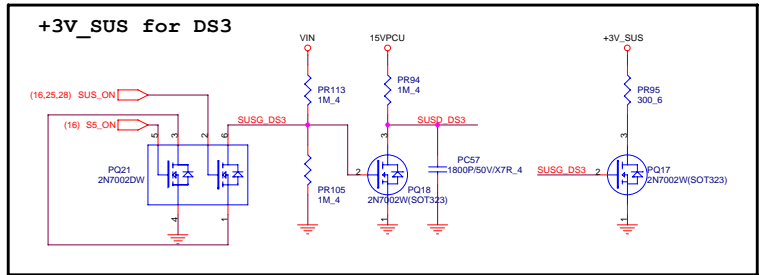
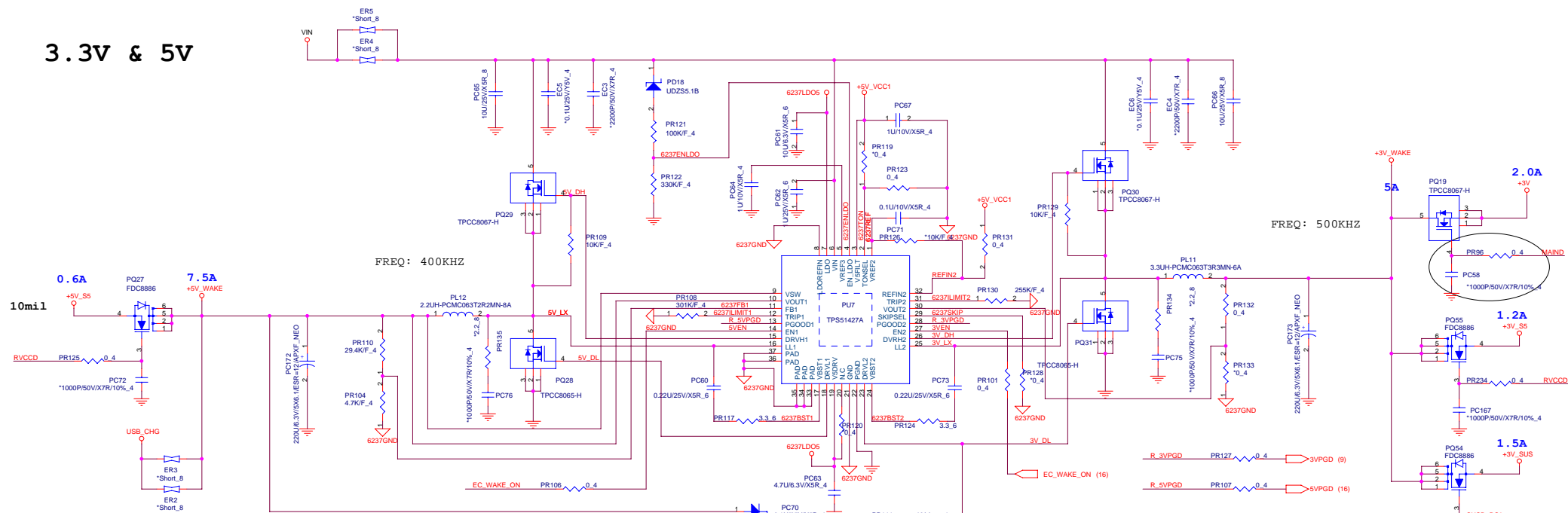
Tmax : 105 °C
VCORE Imax=33A
GFXCORE Imax=33A

VCORE LL: -2.9mV/A



1. Level 1 Environment-related Substances should Never be Used.
2. Recycled Resin and Coated Wire should be procured from Green Partners.

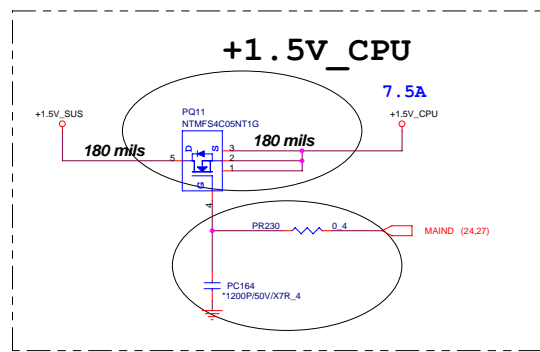
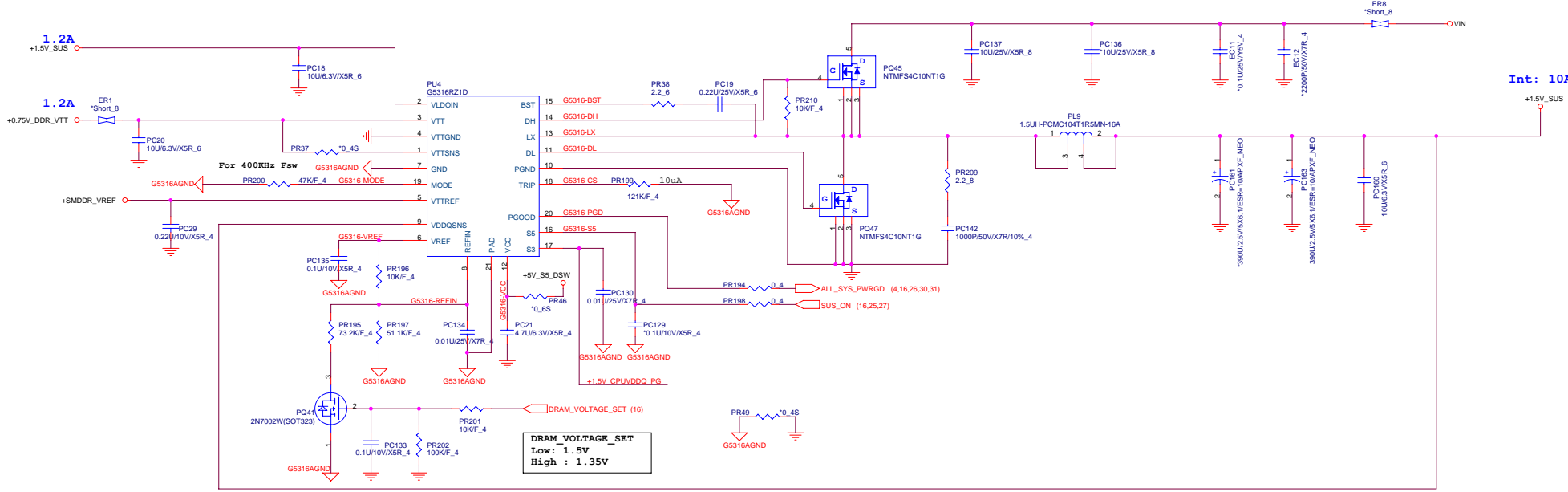
3.3V & 5V



Quanta Computer Inc.
PROJECT : Chief River
3VPCU&5VPCU(TPS51427A)

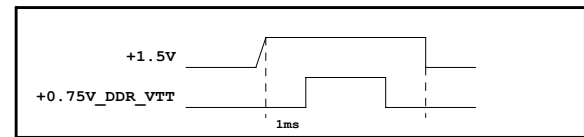
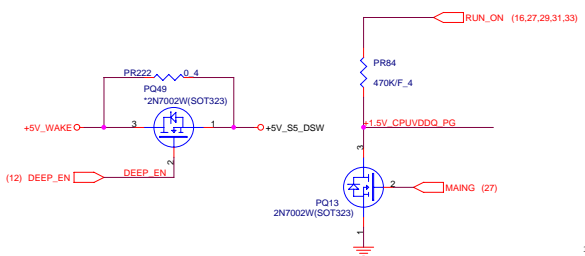
Size Document Number Rev
1A

1.5VSUS & VTT_MEM



MODE	Resistor on Mode	Fsw	Discharge Mode
3	200Kohm	400KHz	Tracking discharge
2	100Kohm	300KHz	Tracking discharge
1	68Kohm	300KHz	Non-tracking discharge
0	47Kohm	400KHz	Non-tracking discharge

STATE	S3	S5	1.5VSUS	VTTREF	VTT
S0	1	1	On	On	On
S3	0	1	On	On	Off/High Z
S4/S5	0	0	Off	Off	Off



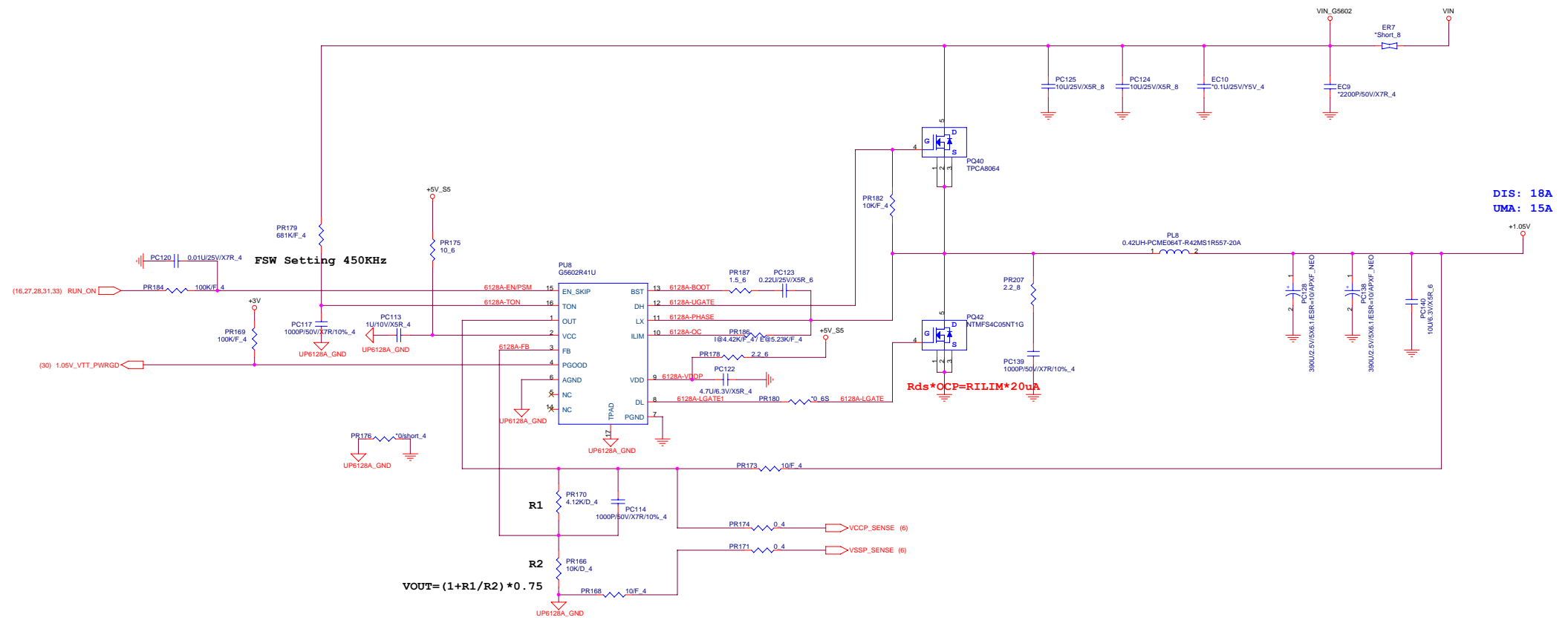
Quanta Computer Inc.
PROJECT : Chief River

Size Document Number
1.5VSUS/VTT_MEM Rev 1A

Date: Thursday, January 17, 2013 Sheet 28 of 41

1. Level 1 Environment-related Substances should Never be Used.
 2. Recycled Resin and Coated Wire should be procured from Green Partners.

+1.05V / 15.0A

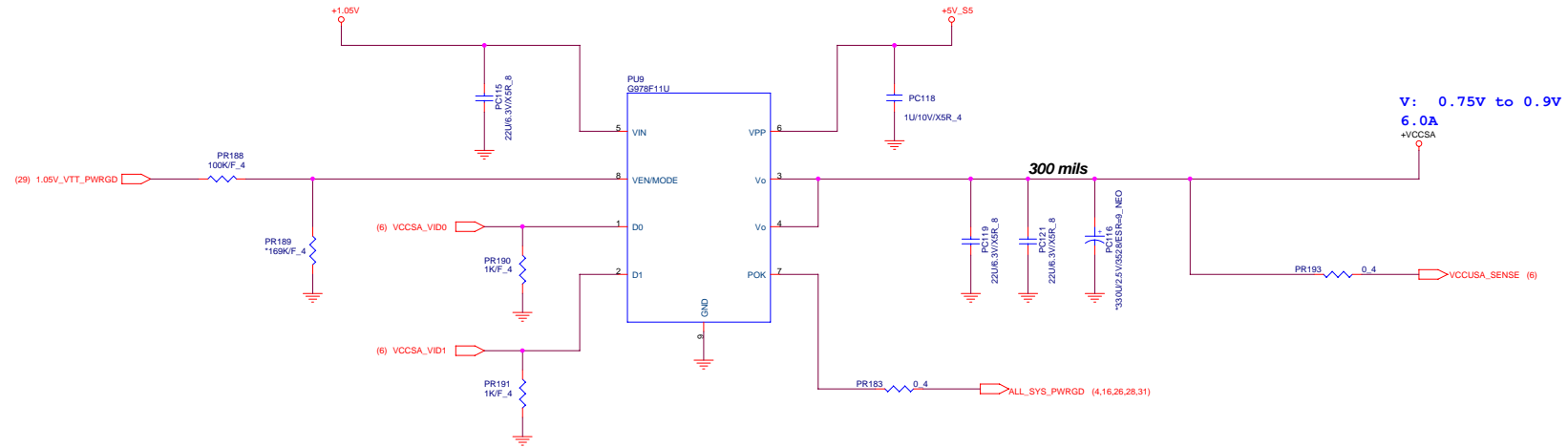


Quanta Computer Inc.
PROJECT : Chief River

Size Document Number **+1.05V (UP1522RQDD)-15A** Rev 1A

1. Level 1 Environment-related Substances Should Never be Used.
 2. Recycled Resin and Coated Wire should be procured from Green Partners. Date: Thursday, January 17, 2013 Sheet 29 of 41

+VCCSA

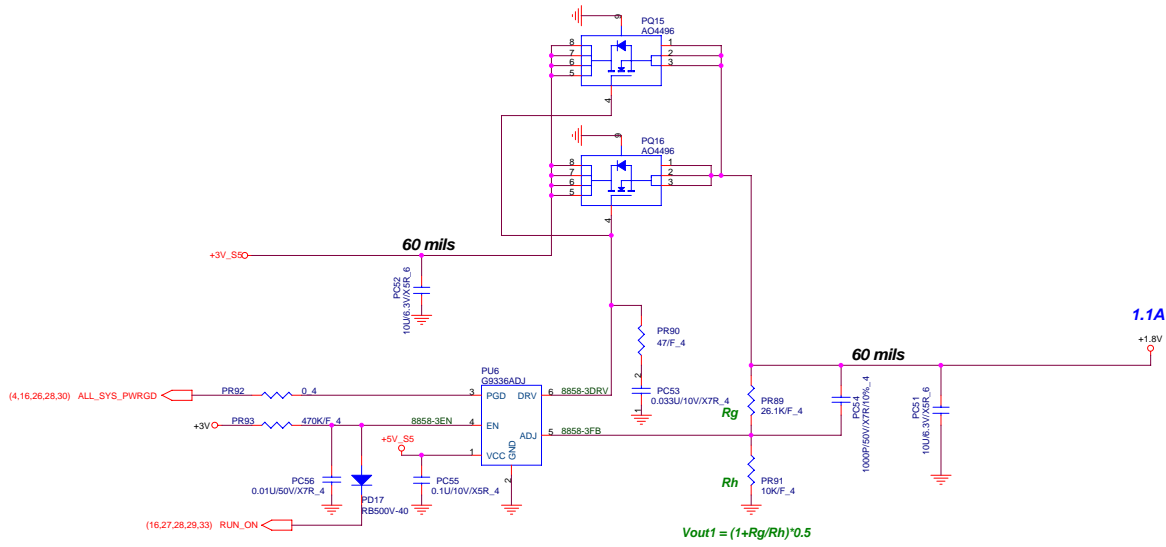


For Chief River ULV

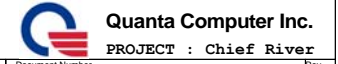
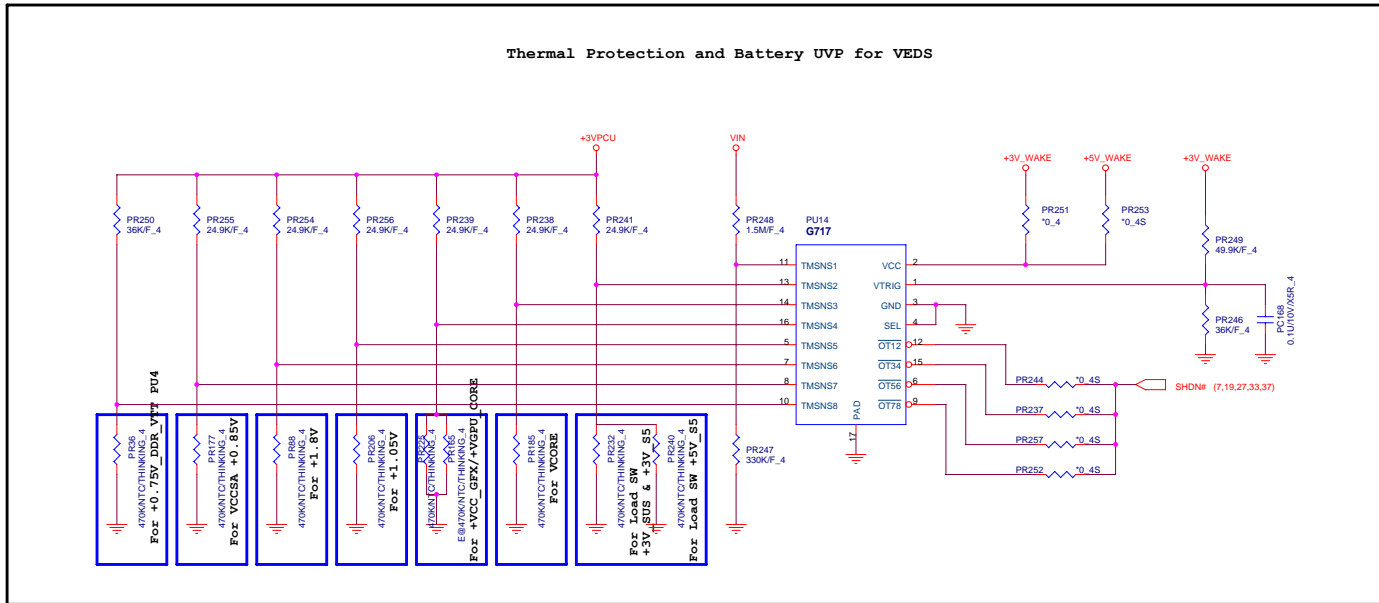
VCCSA_VID0	VCCSA_VID1	+VCCSA
0	0	0.9V
0	1	0.85V
1	0	0.775V
1	1	0.75V

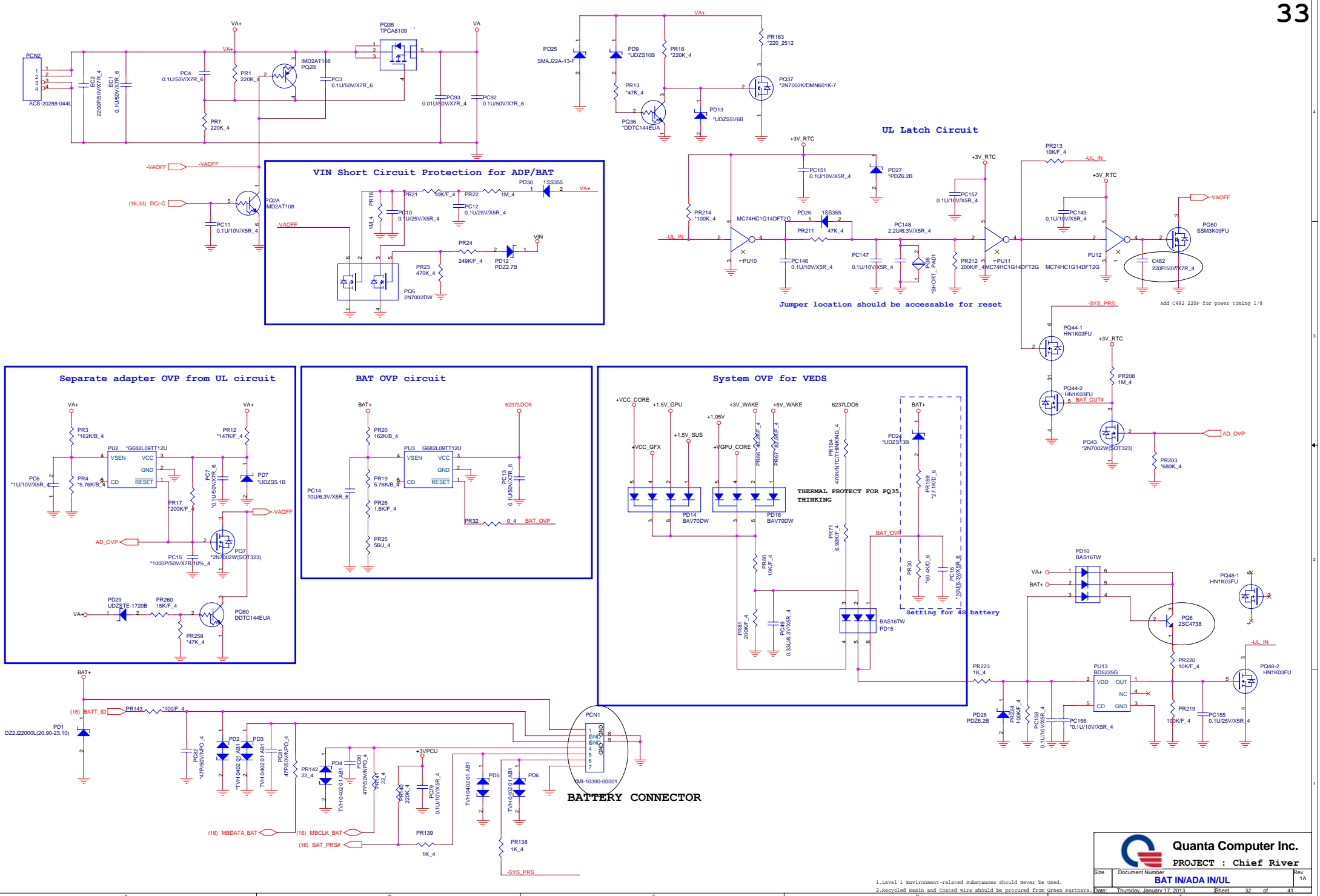
1. Level 1 Environment-related Substances should Never be Used.
 2. Recycled Resin and Coated Wire should be procured from Green Partners.


VCC1.8



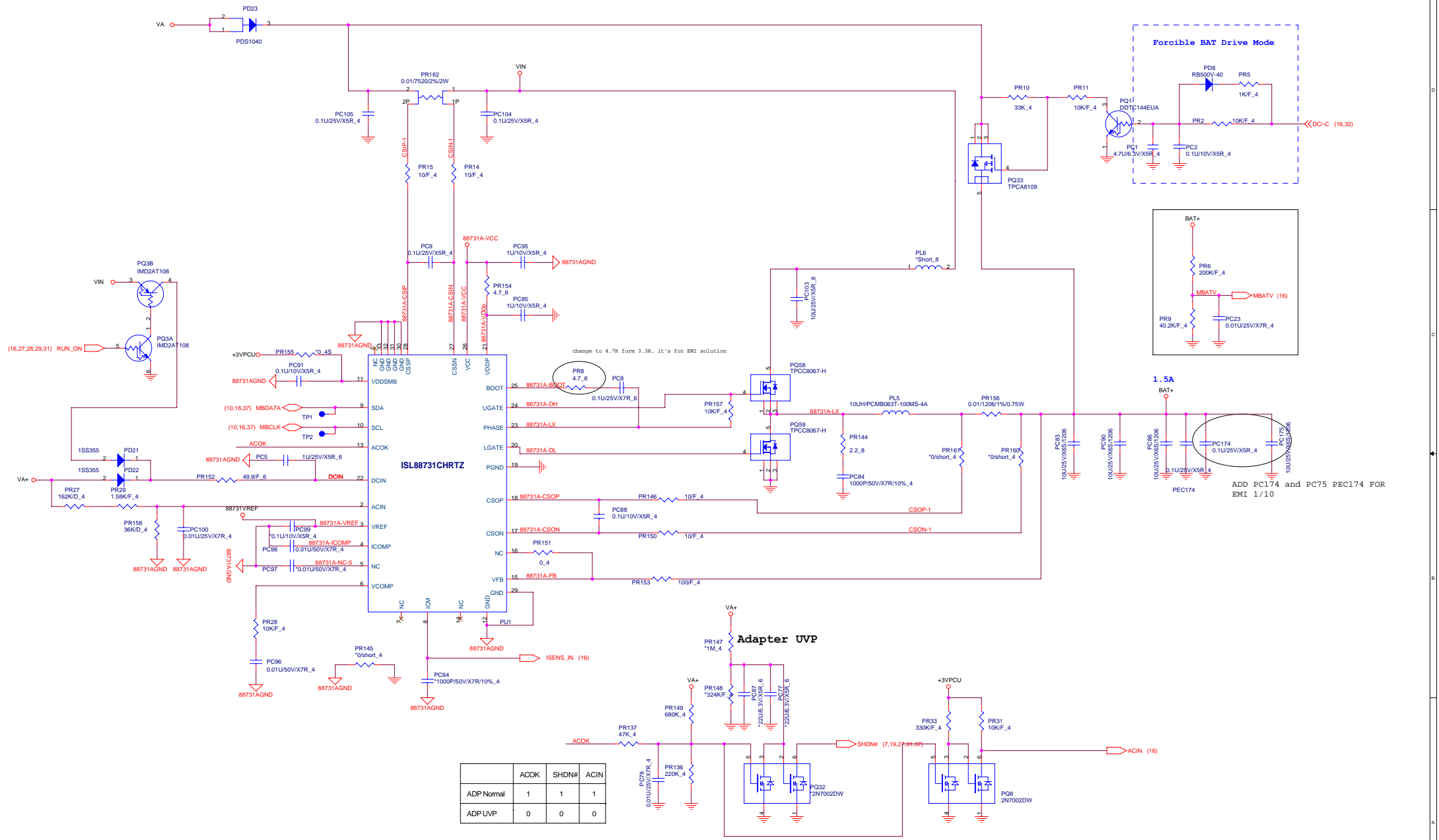
Thermal Protection and Battery UVP for VEDS





 Quanta Computer Inc. PROJECT : Chief River		Size	Document Number	Rev
			BAT IN/ADA IN/UL	1A

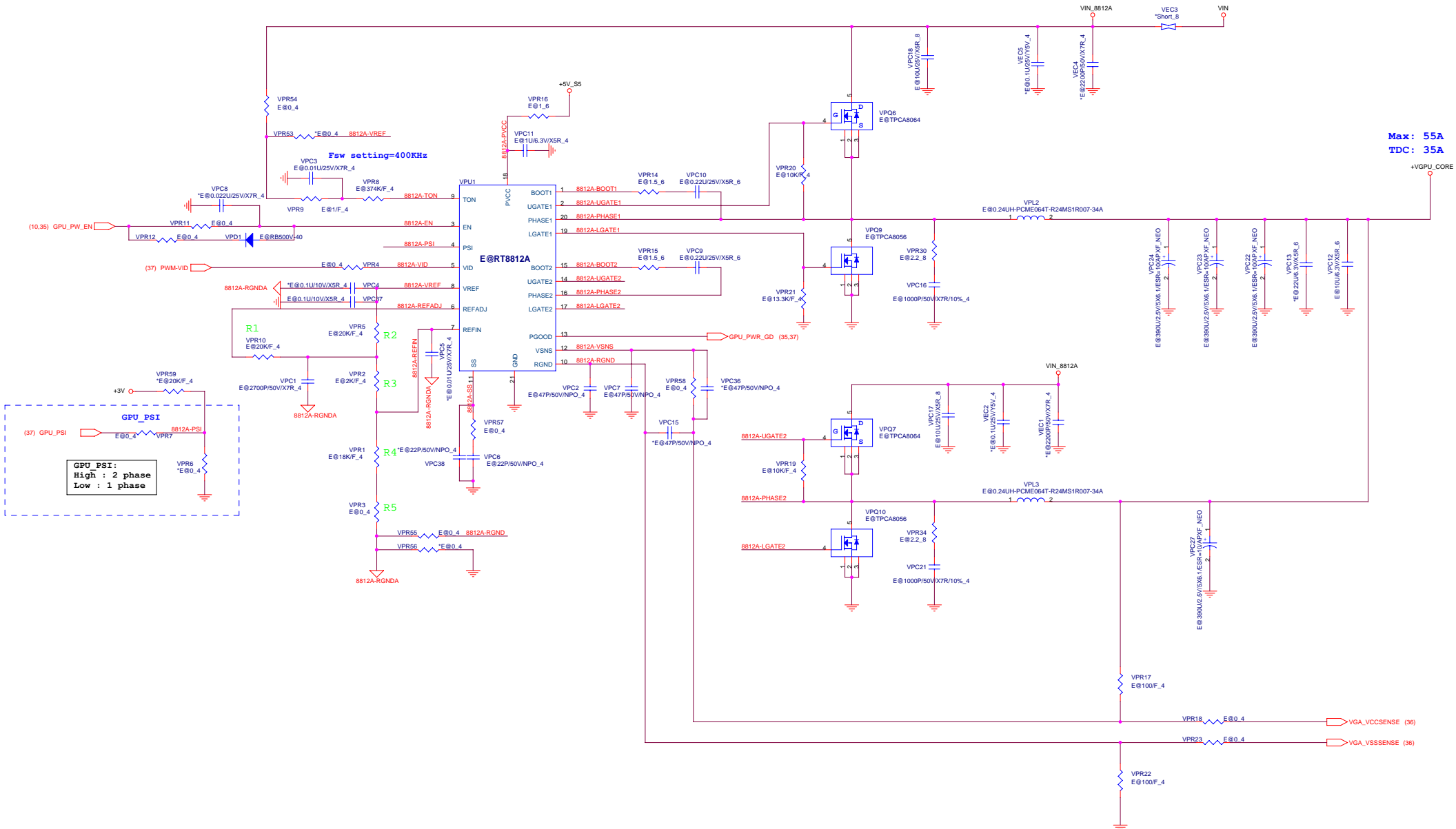
1. Level 1 Environment-related Substances Should Never be Used.
 2. Recycled Resin and Coated Wire should be procured from Green Partners. Date: Thursday, January 17, 2013. Sheet 32 of 41



	ACOK	SHDN#	ACIN
ADP Normal	1	1	1
ADP UVP	0	0	0

1. Level 1 Environment-related Substances Should Never be Used.
 2. Recycled Resin and Coated Wire should be procured from Green Partners.

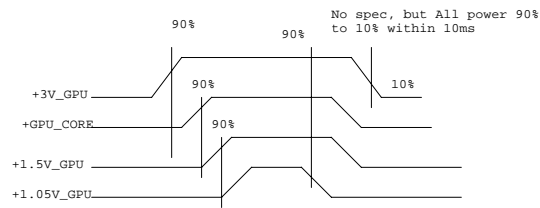
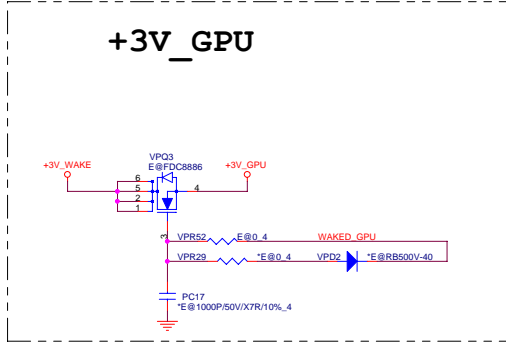
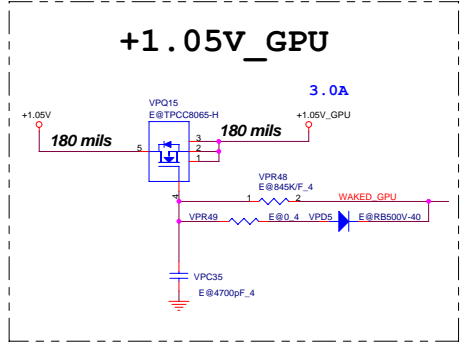
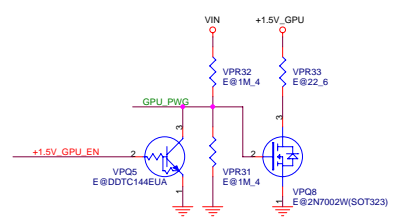
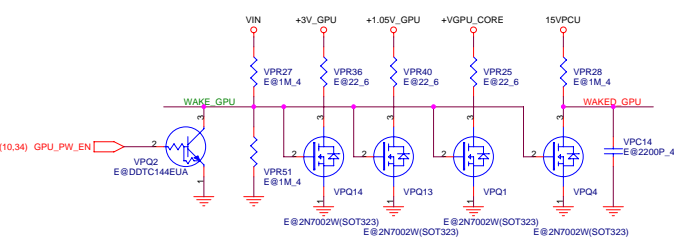
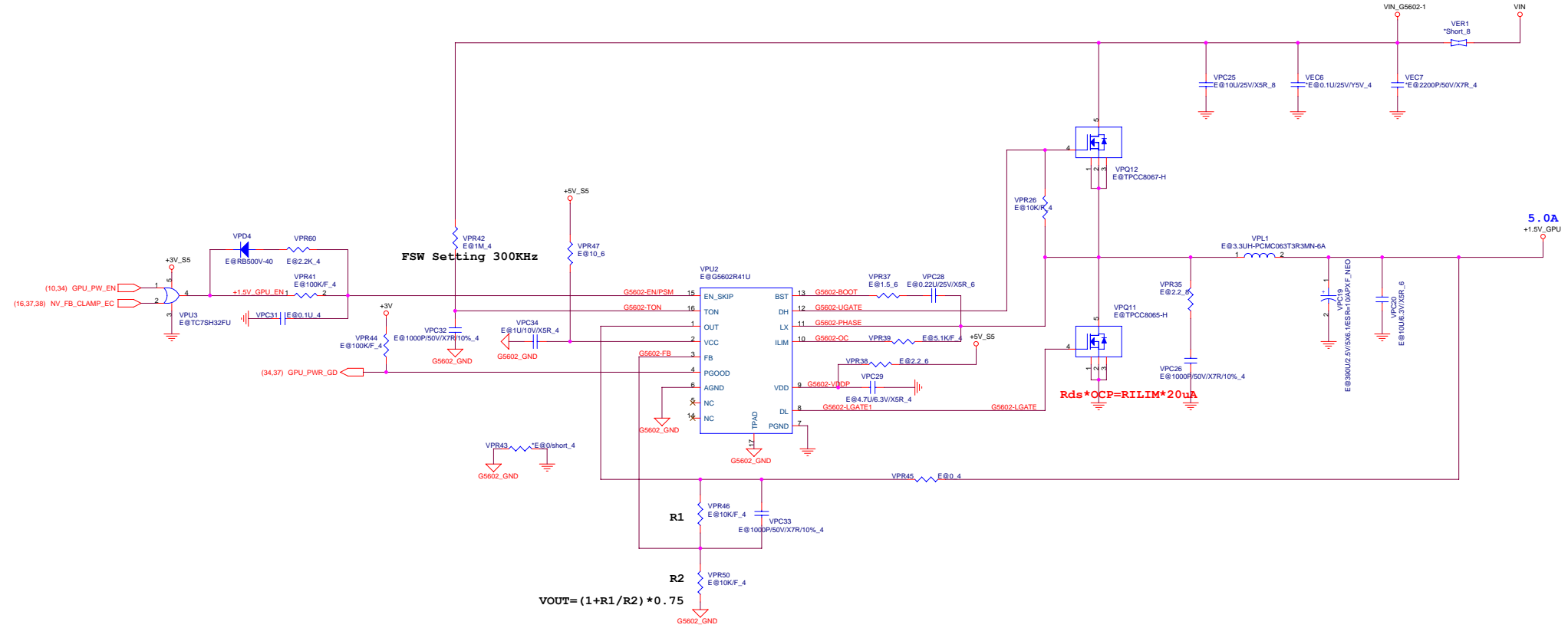
VGA-CORE

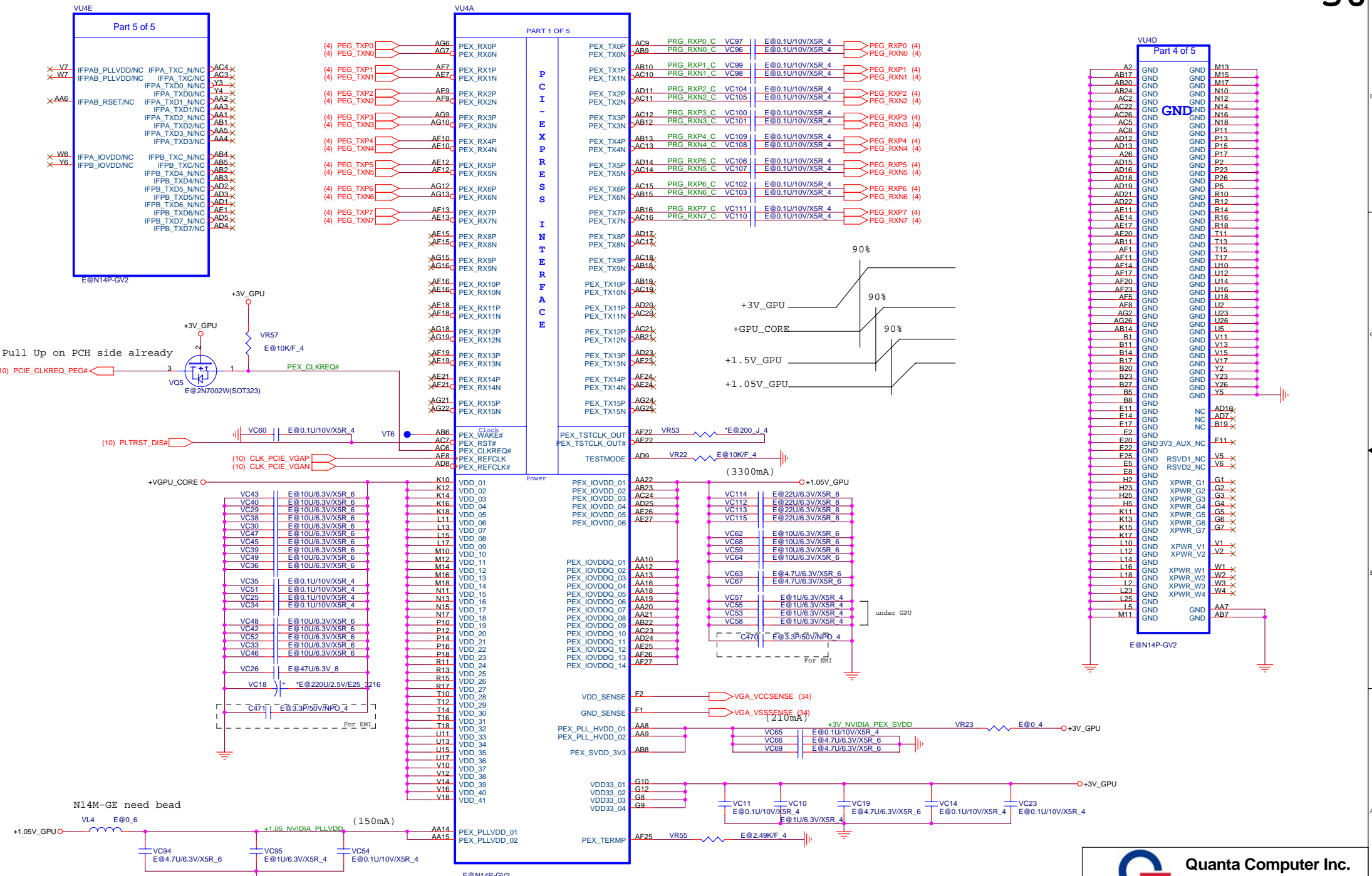


Max : 55A
TDC : 35A

GPU_PSI:
High : 2 phase
Low : 1 phase

1. Level 1 Environment-related Substances Should Never be Used.
2. Recycled Resin and Coated Wire should be procured from Green Partners. Date: Thursday, January 17, 2013 Sheet 34 of 41





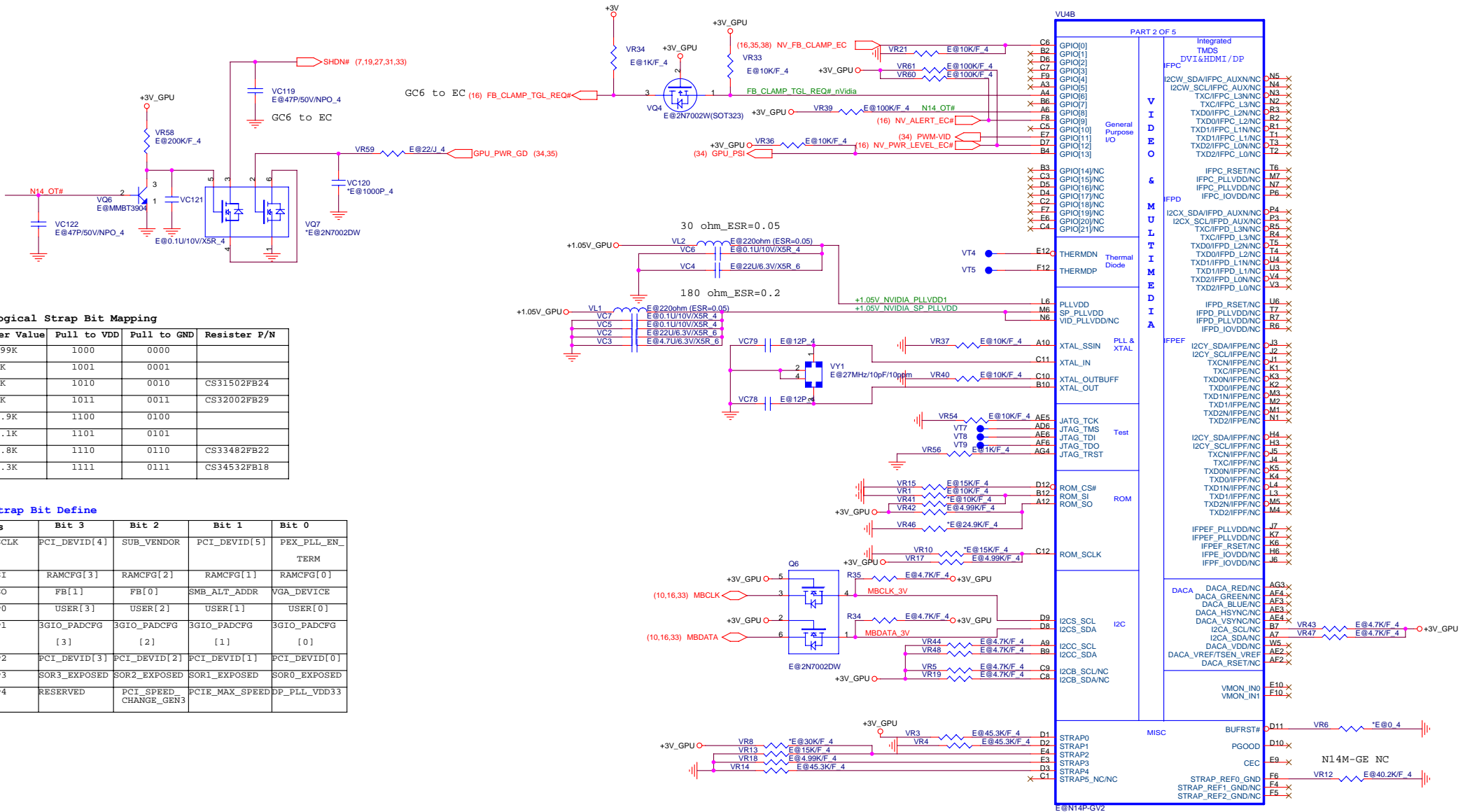
Quanta Computer Inc.
PROJECT : Huron River

Size: Document Number: **Nvidia 1/4** Rev 1A

1.Level 1 Environment-related Substances Should Never be Used.
 2.Recycled Resin and Coated Wire should be procured from Green Partners.

Date: Thursday, January 17, 2013 Sheet 36 of 41

For GC6 GPU Monitor Status (FB_CLAMP_MON)



N14 Logical Strap Bit Mapping

Resistor Value	Pull to VDD	Pull to GND	Resistor P/N
4.99K	1000	0000	
10K	1001	0001	
15K	1010	0010	CS31502FB24
20K	1011	0011	CS32002FB29
24.9K	1100	0100	
30.1K	1101	0101	
34.8K	1110	0110	CS33482FB22
45.3K	1111	0111	CS34532FB18

N14 Strap Bit Define

Straps	Bit 3	Bit 2	Bit 1	Bit 0
ROM_SCLK	PCI_DEVID[4]	SUB_VENDOR	PCI_DEVID[5]	PEX_PLL_EN_TERM
ROM_SI	RAMCFG[3]	RAMCFG[2]	RAMCFG[1]	RAMCFG[0]
ROM_SO	FB[1]	FB[0]	SMB_ALT_ADDR	VGA_DEVICE
STRAP0	USER[3]	USER[2]	USER[1]	USER[0]
STRAP1	3GIO_PADCFG[3]	3GIO_PADCFG[2]	3GIO_PADCFG[1]	3GIO_PADCFG[0]
STRAP2	PCI_DEVID[3]	PCI_DEVID[2]	PCI_DEVID[1]	PCI_DEVID[0]
STRAP3	SOR3_EXPOSED	SOR2_EXPOSED	SOR1_EXPOSED	SOR0_EXPOSED
STRAP4	RESERVED	PCI_SPEED_CHANGE_GEN3	PCI_MAX_SPEED	DP_PLL_VDD33

	VRAM Capacity	VRAM Vender	ID	VR1	Mfr P/N	Quanta P/N
N14M-LP	128Mx16 DDR3	Samsung	0111	PD45.3K	K4W2G1646E-BC11	AKD5MGGT525
		Hynix	0110	PD34.8K	H5TQ2G63DPR-11C	AKD5MGWTW15
N14P-GV2	256Mx16 DDR3	Samsung	0011	PD20K	K4W4G1646B-HC11	AKD5MGWT525
		Hynix	0010 (TBD)	PD15K	H5TC4G63APR-11C	AKD5PGWTW10

Quanta Computer Inc.
PROJECT : Huron River

Size: Document Number: Nvidia 2/4 Rev 1A

Date: Thursday, January 17, 2013 Sheet 37 of 41

1. Level 1 Environment-related Substances Should Never be Used.
2. Recycled Resin and Coated Wire should be procured from Green Partners.

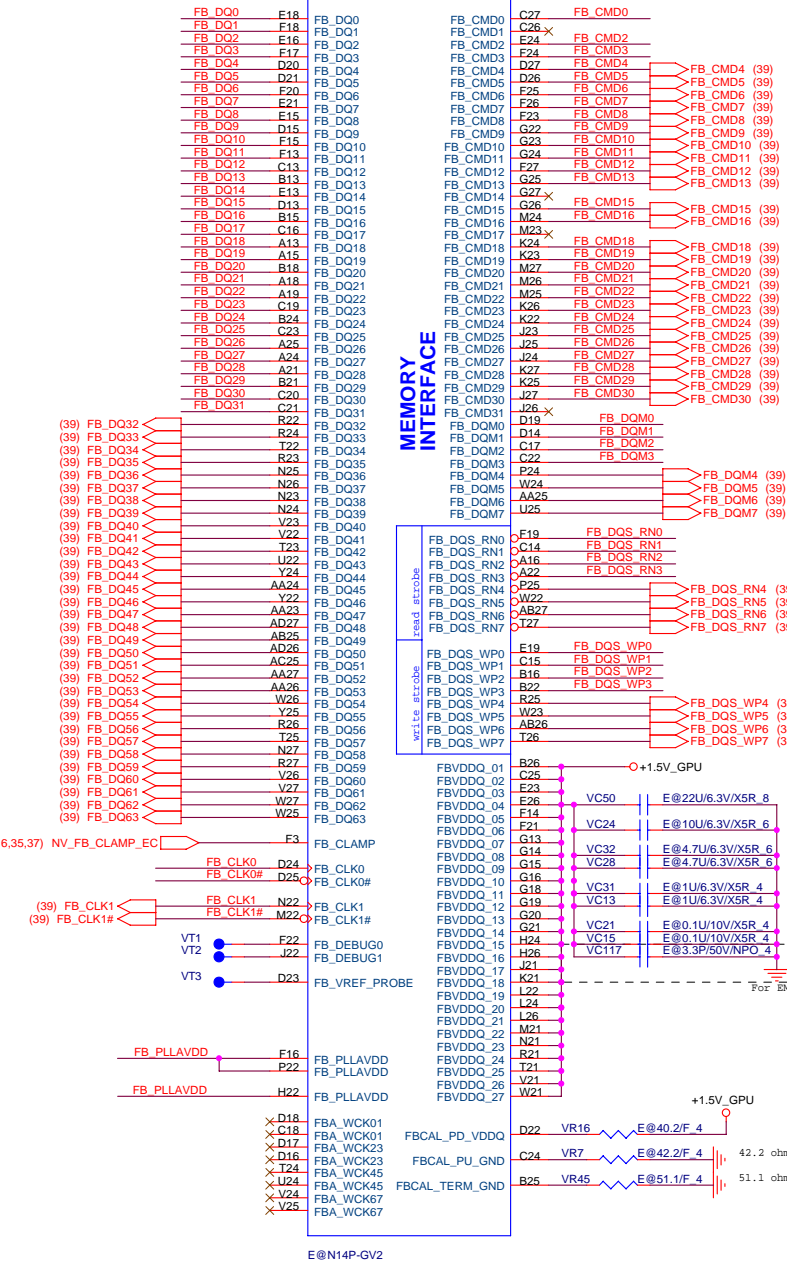
Down Side VRAM TOP/BOT

VU4C Part 3 of 5

MEMORY INTERFACE

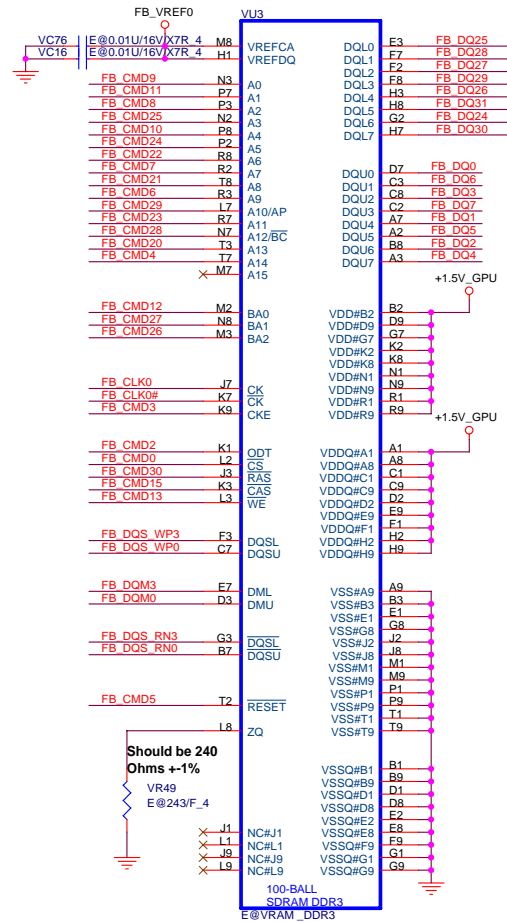
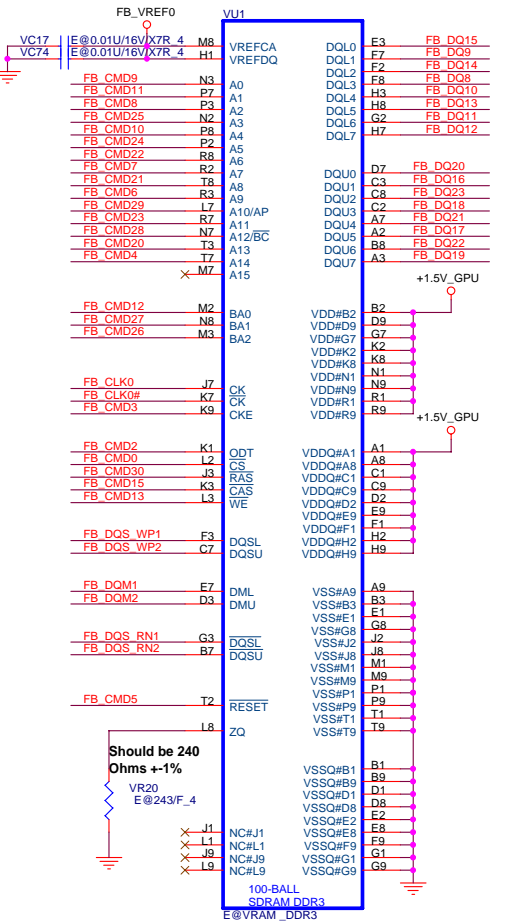
DATA STROBE

WRITE STROBE

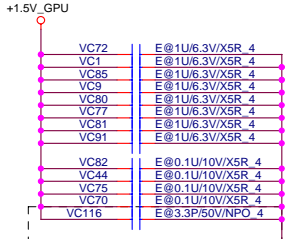


TOP

BOT



Place around VU2 and VU3

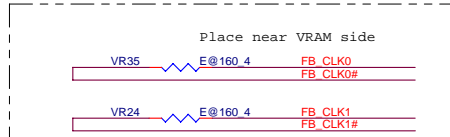
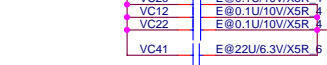


Should be 240 Ohms +/-1%

Should be 240 Ohms +/-1%

need find Bead 30 ohm@100Mhz

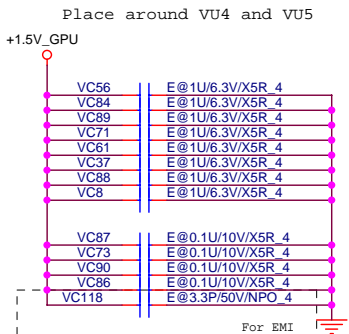
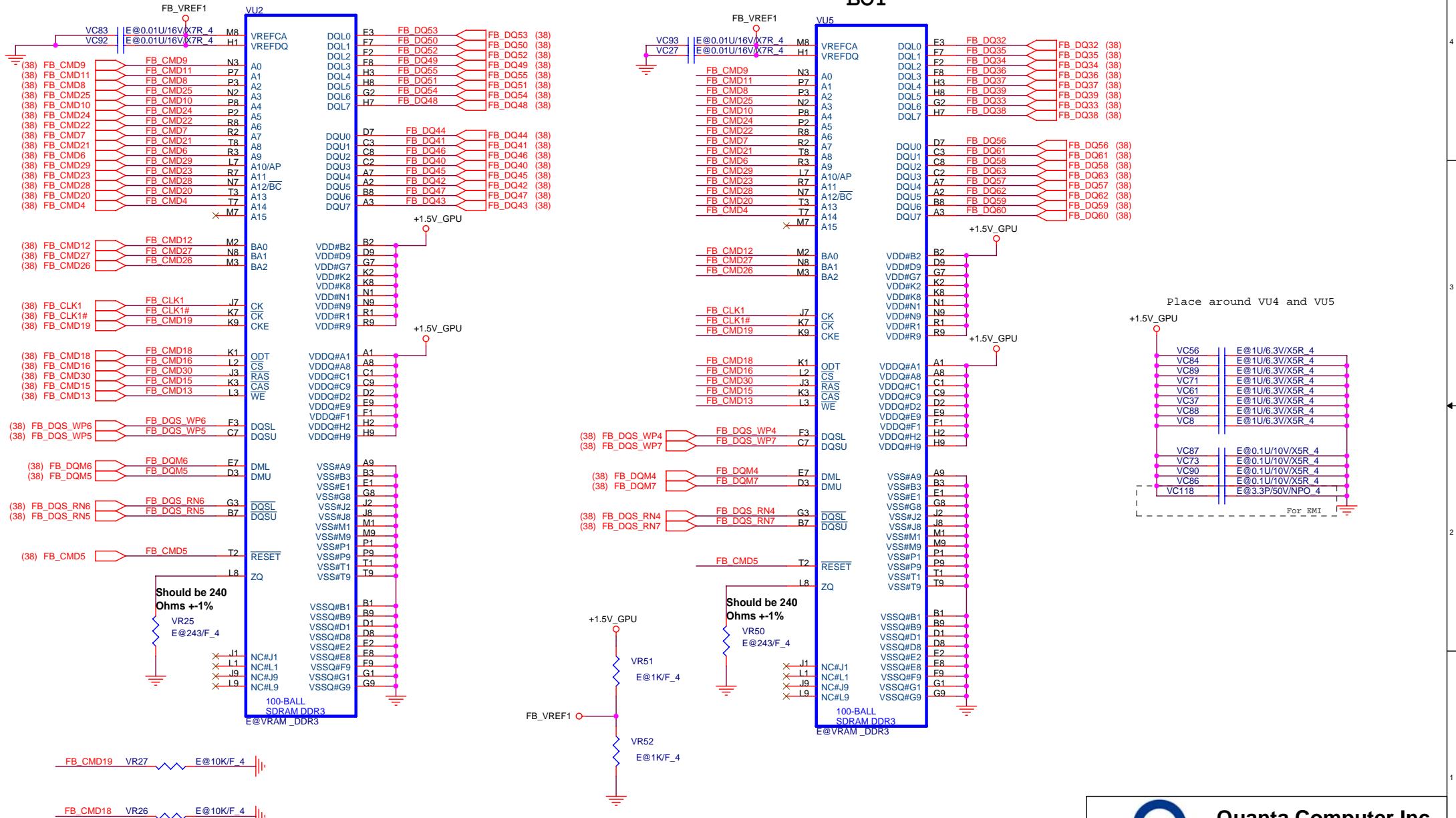
ESR=0.01



Up Side VRAM TOP/BOT

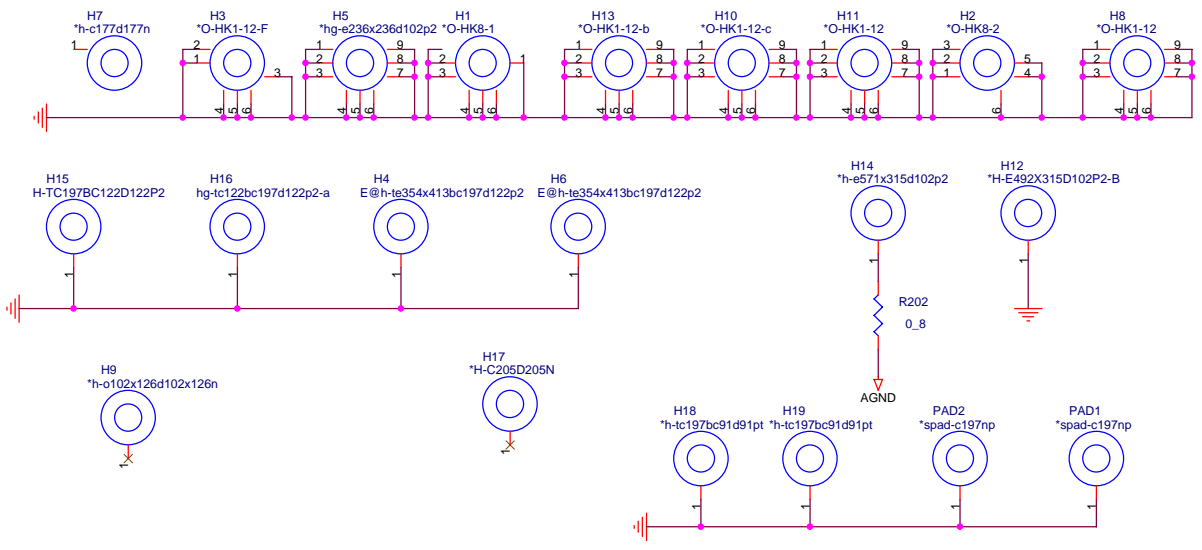
TOP

BOT

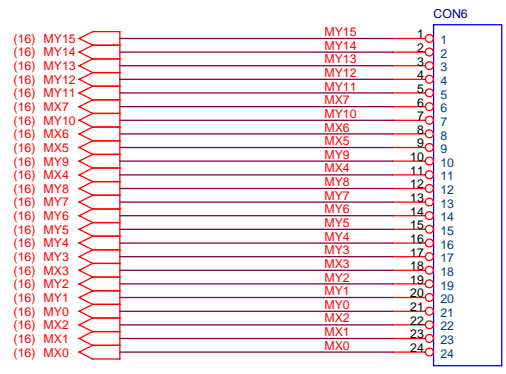


		Quanta Computer Inc. PROJECT : Huron River	
		Size Document Number VRAM 4/4	Rev 1A
Date: Thursday, January 17, 2013		Sheet 39 of 41	

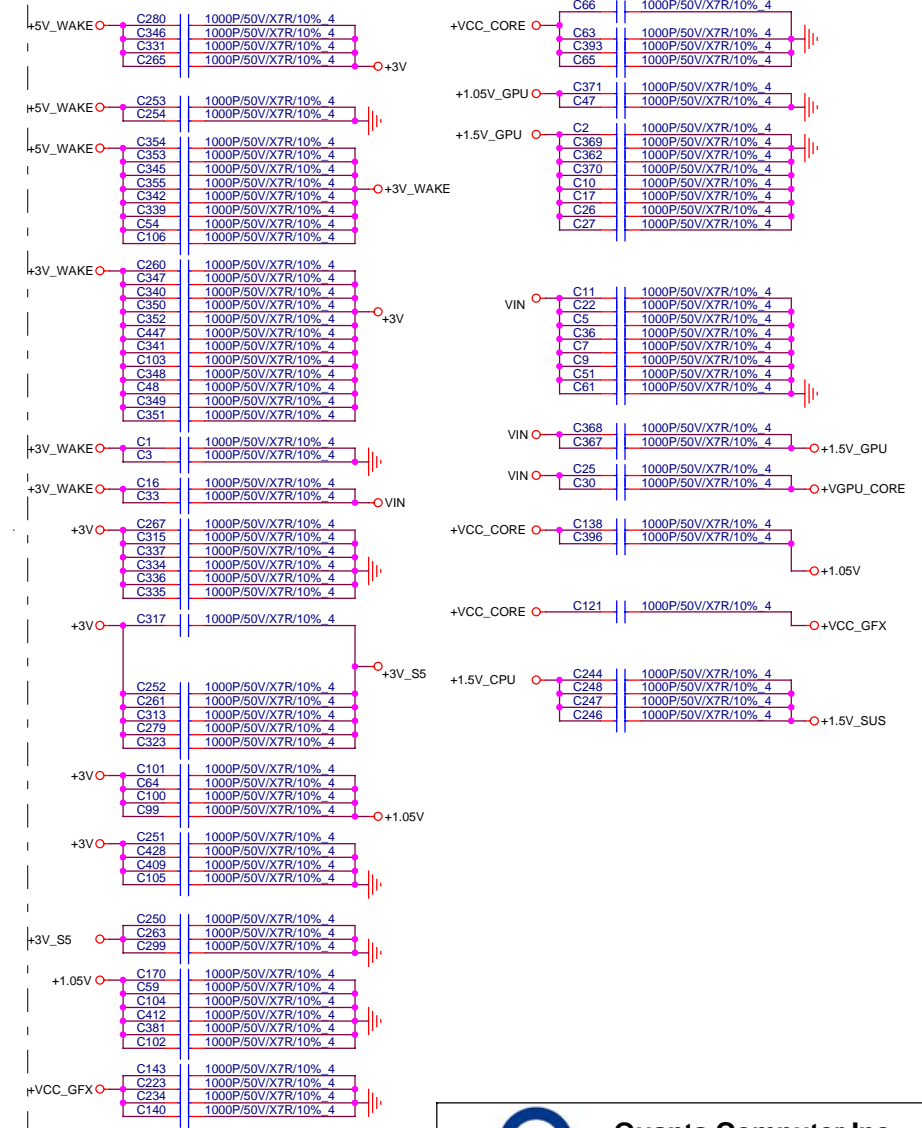
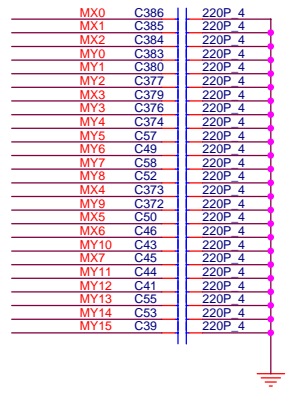
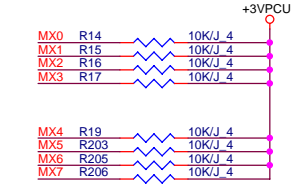
1. Level 1 Environment-related Substances Should Never be Used.
 2. Recycled Resin and Coated Wire should be procured from Green Partners.



KEY BOARD Connector



KB(50503-02441-001)



1. Level 1 Environment-related Substances Should Never be Used.
 2. Recycled Resin and Coated Wire should be procured from Green Partners.

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PROJECT : HK5

Size	Document Number	Rev
	HOLE/EMI/KB	1A
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USB PORT Architecture	
PORT 0	USB3.0
PORT 1	USN3.0
PORT 2	USN2.0
PORT 3	USB2.0
PORT 4	NFC
PORT 5	N/A
PORT 6	N/A
PORT 7	N/A
PORT 8	N/A
PORT 9	WiMax/BT
PORT 10	Camera
PORT 11	Card Reader
PORT 12	Touch Screen
PORT 13	N/A

PCI-E BUS	
PORT 1	WLAN Port
PORT 2	CARD READER
PORT 3	GLAN (RTL8111G)
PORT 4	N/A
PORT 5	N/A
PORT 6	N/A
PORT 7	N/A
PORT 8	N/A

SATA BUS	
PORT 0	HDD
PORT 1	N/A
PORT 2	N/A
PORT 3	N/A
PORT 4	ODD
PORT 5	N/A

SM BUS	MBCLK/MBDATA	WRITE	READ	Function
ISL88731CHRTZ	0001 001X	0001 0010	0001 0011	Charger
Nvidia	1001 1110	-	1001 1110	Graphice
LIS331DL	0011 101X	0011 1010	0011 1011	G Sensor

SM BUS	MBCLK_BAT/MBDATA_BAT	WRITE	READ	Function
VGP-BPS35A	0001 011X	0001 0110	0001 0111	Battery

SM BUS	SMB_PCH_CLK/SMB_PCH_DAT	WRITE	READ	Function
DIMM Module0	1010 000X	1010 0000	1010 0001	DDRIII
DIMM Module 1	1010 010X	1010 0100	1010 0101	DDRIII
Synaptics	0010 110X	0010 1100	0010 1101	Click PAD

	0	1
Board ID0	CaspiCRA1-CaspiCRB1 HK8-HK9	SuperiorCRA1-SuperiorCRB1 GD5-GD6
Board ID1	HK8/GD5 14"	HK9/GD6 15"

PCBA SKU	Discrete	UMA
R280 (Pull High)	Stuff	No Stuff
R279 (Pull Low)	No Stuff	Stuff

	S0	S3	DS3	S4	S5 (Charger Enable)	S5 (Charger Disable)	S5 (Soft OFF) (WoL Disable)	S5 (Soft OFF) (WoL Enable)
RUN_ON	H	L	L	L	L	L	L	L
+3V	H	L	L	L	L	L	L	L
+5V	H	L	L	L	L	L	L	L
+0.75V_DDR_VTT	H	L	L	L	L	L	L	L
+1.05V	H	L	L	L	L	L	L	L
+0.85V	H	L	L	L	L	L	L	L
+1.5V	H	L	L	L	L	L	L	L
+1.8V	H	L	L	L	L	L	L	L
+1.8V_GPU	H	L	L	L	L	L	L	L
+1.0V_GPU	H	L	L	L	L	L	L	L
+VGPU_CORE	H	L	L	L	L	L	L	L
+VCC_GFX	H	L	L	L	L	L	L	L
+VCC_CORE	H	L	L	L	L	L	L	L
SUS_ON	H	H	H	L	L	L	L	L
+1.5V_SUS	H	H	H	L	L	L	L	L
S5_ON	H	H	L	H	L	L	L	H
+5V_S5	H	H	L	H	L	L	L	H
+3V_S5	H	H	L	H	L	L	L	H
EC_WAKE_ON	H	H	H	H	H	L	L	H
+3V_WAKE	H	H	H	H	H	L	L	H
+5V_WAKE	H	H	H	H	H	L	L	H
DEEP_EC_EN	H	H	H	H	L	L	L	L
+3V_S5_DSW	H	H	H	H	L	L	L	L
+3V_SUS	H	H	L	L	L	L	L	L

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