Page	Title of schematic page	Rev.	Date
01	Page List	1A	
02	Block Diagram	1A	
03	Change List	1A	
04	SNB 1/4(HOST&PCIE)	1A	
05	SNB 2/4(DDR3 I/F)	1A	
06	SNB 3/4(POWER)	1A	
07	SNB 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	WPCE791L & FLASH	1A	
17	CRT/LVDS/CAMERA	1A	
18	CARD READER(RTS5209)	1A	
19	HDMI/THERMAL	1A	
20	USB	1A	
21	LAN (RTL8111F)	1A	
22	WLAN/KB-BL	1A	
23	HDD/ODD/G-SENSOR/TP/FAN	1A	
24	Audio ALC258-GR	1A	
25	LED/RF/PS	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(OZ8117)	1A	
35	POWER VGA_VCC1.8/VCC1.0	1A	
36	Thames_S3_PCIE	1A	
37	Thames_S3_Main	1A	
38	Thames_S3_Power_and_NC	1A	
39	Thames_S3_MEMORY	1A	

Page	Title of schematic page	Rev.	Date
40	Thames_S3_DDR3 BGA9	1A	
41	HOLE/EMI/KB	1A	
42	IO PORT LIST	1A	
		1A	

* : No mount
E@ : For DIS GFX only
I@ : For INT GFX only

[HK6][ZR] Chief River BLOCK DIAGRAM

02

DDR3 : 1.5V

Dual Channel

P14~P15

DDR3 : 1066/1333/1600 MHz

intel

Ivy Bridge

rPGA 988

(37.5mm X 37.5mm)

DDR SYSTEM MEMORY

PCI-E X16

FDI

DMI

P4~P7

PCIE2

5GT/s

AMD

Thames

Package type : GB1b-64

P36 ~ P39

VRAM

1GB / 512MB

P40

X8

2.7GT/s

FDI

DMI

X4

5GT/s

INT_CRT

P17

INT_LVDS

P17

INT_HDMI

P19

intel

<PCH>

Panther Point

mBGA 989

(25mm X 25mm)

iGFX Interfaces

SATA Gen3

SATA Gen2

USB

HDA

SPI

P8~P13

P21 HDD SATA0 6Gb/s

P21 ODD SATA4 3Gb/s

Camera P17

PORT10

WiMax/BT P22

PORT9

USB I/O P20

PORT4

USB I/O P20

PORT2

USB I/O P20

PORT1

USB I/O P20

PORT0

USB 2.0

USB 3.0

5GT/s

PCI-Express Gen2

PCIE3

PCIE1

PCIE2

Giga-LAN

RTL8111F

P21

RJ45

P21

WLAN/Widi/BT P22

BT Combo : Atheros WB195

WiMAX : Kelsey Peak KSP(612BNXHWG)

802.11bgn/Intel/KsP_1x2_BBY

Card Reader

RTS5209

P18

MS

SD-XC

Audio CODEC

ALC258-GR

P24

Azalia

HDA

HP Jack

MIC Jack

SPK

DMIC

P24

P24

P24

P24

SPI ROM

8MB

P9

Share ROM

LPC

EC

NPCE885L

P16

Touch Pad

P20

Keyboard

P25

Power LED

Sleep LED

SATA LED

Battery LED

RF LED

SCROLED

CAPSLED

NUMLED

CARD LED

Button

QWA#

VAIO#

ASSIST#

Power SW

Note:

HM65 does not support USB 6 & 7

HM65 does not support SATA 2 & 3

Change List

P04--Add R441 51_4 for TDO.
P06--R183 & R188 change 100 +/- 5% to 100 +/- 1%.
P08-- R70 Don't Mount.
P09-- add R431 1M pull low.(For HDA_SYNC_R).
P09-- Add R442 [210/F_4] & R443[100/F_4] .(For PCH_JTAG_TDO_R).
P16-- Add KR57 10K_4 pull low. (For RSMRST#)
P24-- AR8 change from 22_4 to 0_4.(For ACZ_BITCLK)
P27-- PR345 change value from 22 to 220 ohm.(for +1.5V discharg)
P41-- Add C659,C660,C661,C662 [0.1U_4].(for DRAM module)

(2011/9/8)

P05--R172 [0 ohm] DNI; R171[0 ohm] Mount.(For DRAMRST_CNTRL_EC]
P08--R255 [0 ohm] DNI; R438 [0 ohm] Mount(For SUSACK#)
P08--R439 [0 ohm] DNI (For PCIE_WAKE#)
P08--R69 [0 ohm] DNI; R144[10K_4] (For DPWROK)
P12--R424 [0 ohm] DNI ; Q35 [2N7002] mount. (For +3_S5_DSW)
P12--Mount R428 [22 ohm]; R429 [1M_4]; C508[2200P_4]; Q36[DDTC144EUA]. (For +3_S5_DSW)
P16--KR56 [0 ohm] Mount(For PCIE_WAKE#)
P29--Add PQ291(For +5V_S5_DSW)
P29--PR356 pull high change from +5V_S5 to +5V_S5_DSW.
P29--PR362 pull high change from +5V_S5 to +5V_S5_DSW.
P29--PR365 pull high change from +5V_S5 to +5V_S5_DSW.
P29--PU104.15 pull high change from +5V_S5 to +5V_S5_DSW.

(2011/9/20)

P24--AR9 change value from 22 to 33 ohm.
P24--AC25 Don't mount
P27--PR314 change value from 470K to 0 ohm.
P27--PC453 delete
P28--PR367 change value from 820K to 470K.
P28--PR371 change value from 680K to 180K.
P28--PR372 change value from 20K to 100K.
P34--VPR49 change value from 20K to 0 ohm.
P35--VPR35 change value from 0 to 850K.
P35--VPC28 mount 0.01uF.

(2011/9/21)

P23--Add C670 0.1uF(For Freescale)

(2011/9/26)

P4--U7.5 change net from "+3V" to "+3V_S5".
P8--R253 change pull high from "+3V_S5_DSW" to "+3V_SUS".
P8--R103 change value from 1K/F to 1K/D.
P12-- Add C674[1uF]
P20--Add R445 [100K_4].
P23--U27.9 pin Net "HDD_INTERRUPT2" Cancel.
P26--KU1.26 change net from "HDD_INTERRUPT2" to "2540A_CTL3"

(2011/9/27)

P9--R49[33 ohm] & Q2[2N7002] mount.(for ACZ_SYNC)
P9--R432[0 ohm] no mount.(for ACZ_SYNC)
P19--Add U32,R447,R446,C675(Add Thermal sensor for HDD)

(2011/9/29)

P10--C359,C360 change value from 12PF to 15PF.
P16--Add KR58[100K]. (For DEEP_EC_EN pull high)
P37--VC82,VC83 change value to 27PF.(For VY1)
P40--mount VC460[330uF].(for +1.5V ripple)

(2011/9/30)

P8--Add R448[10K].(For PCIE_WAKE#_1 pull high)
P8--U16.E22 change Net to "DPWROK"
P16--KC17 don't Mount.(For 6237LDO5 glitch)
P16--KU1.77 change net to "DPWROK".
P16--Add KR59[100K] .(for DPWROK)
P16--Add KD9[RB501V-40].
P22--Add U33 (for 2nd source of KB Blight power) .
P27--Add PC676[0.01uF]. (Reduce SHDN noise)
P33--PC421 change from 10U/25V/X5R/1206 to 10U/25V/X5R_8.
P41--Add C677,C678,C679 [0.1uF].(For +3V_S5 Noise)

(2011/10/3)

P12--Q36 change to "2N7002".
P16--U2 change to "G9091-33".

P27--Add PQ295,PR514,PR516,PR515,PQ294,PC677,PR517,PR518,PR505(For DS3 power)
P42-- resver EMI capa C680,C681,C682,C683,C684,C685,C686,C687
,C688,C689,C690,C691,C692,C693,C694,C695,C696,C697,C698,C699,C700,C701,C702,C703,
C704,C705,C706,C707,C708,C709,C710,C711,C712,C713

P08--U16.D10 cancel net"SLP_S5#".
P16--KU1.109 change net to"DEEP_EC_EN".
P16--KU1.83 cancel net "SLP_S5#"

(2011/10/4)

P10--Change "PCIE_REQ_CARD#" from U16.A8 to U16.V10.
P10--Delete R390,R391,R392
P10--Pin C46,C44,E40 add Net for thermal sensor test.
P19-- Add Q40,Q41,Q43,Q45 [PDTC144EU]
P19-- Add Q39,Q38,Q42,Q44 [2N7002DW]
P19-- Add R449,R450,R452,R453,R455,R456,R458,R459[100K]
P19-- Add R451,R454,R457,R460[22K].
P39--VR47 , VR49 change value to 240ohm.
P39--VR56 change value to 4.99K.
P39--VR55 change value to 51 ohm.

(2011/10/6)

P23- reserver R461 ,R462 for TP SMbus

(2011/10/7)

P11- change R244 pull high source form +3V to +3V_S5

Quanta Computer Inc.
PROJECT :Chief River

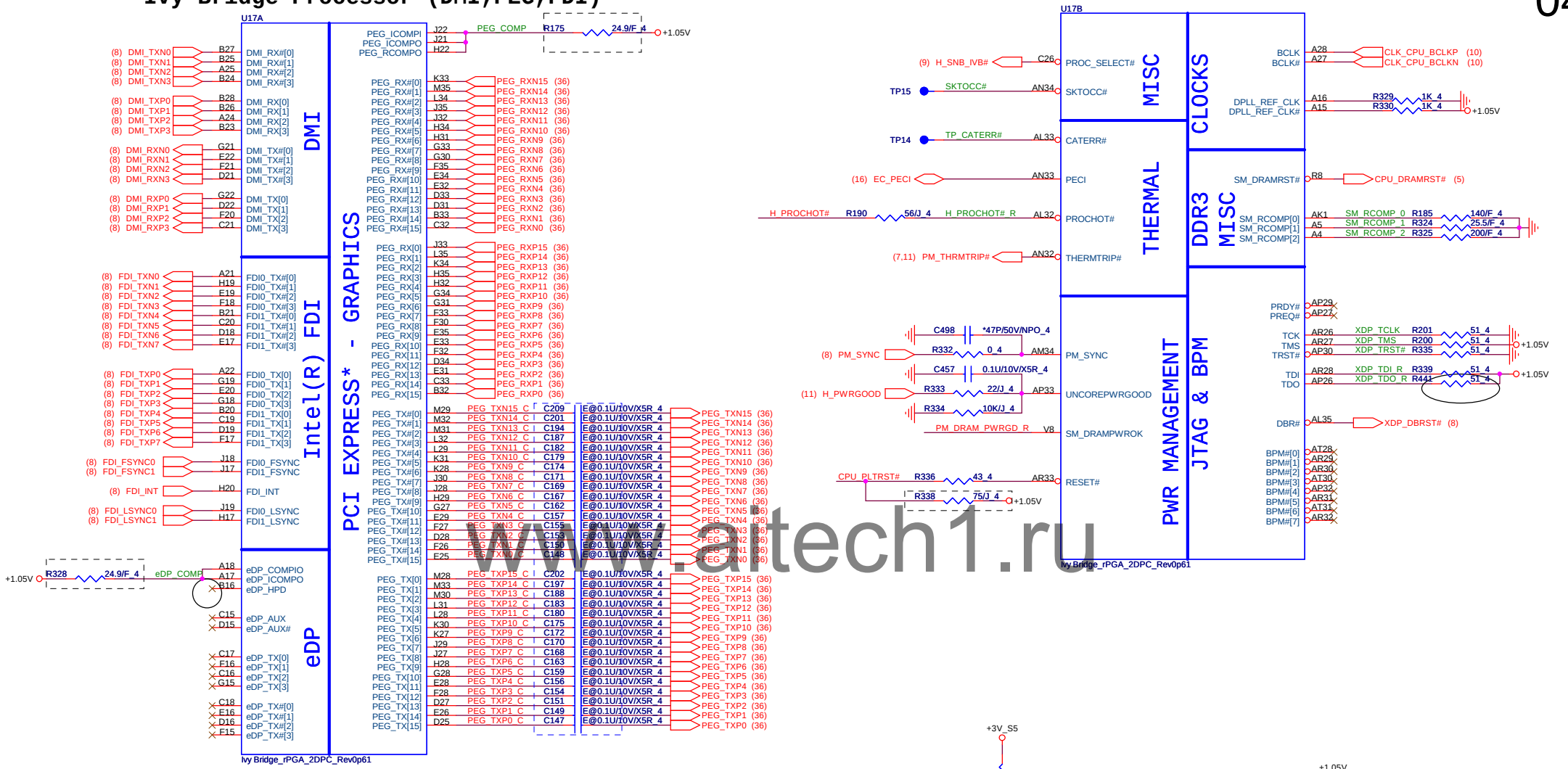
Size	Document Number	Rev
	Change List	1A

Date: Wednesday, November 02, 2011 Sheet 3 of 42

Ivy Bridge Processor (DMI,PEG,FDI)

Ivy Bridge Processor (CLK,MISC,JTAG)

04



SNB_IVB#:
- It is NC when using Sandy Bridge.(1.05V)
- For next generation processor it will be grounded in package.(1.0V)

FDI Disabling (Discrete Only)

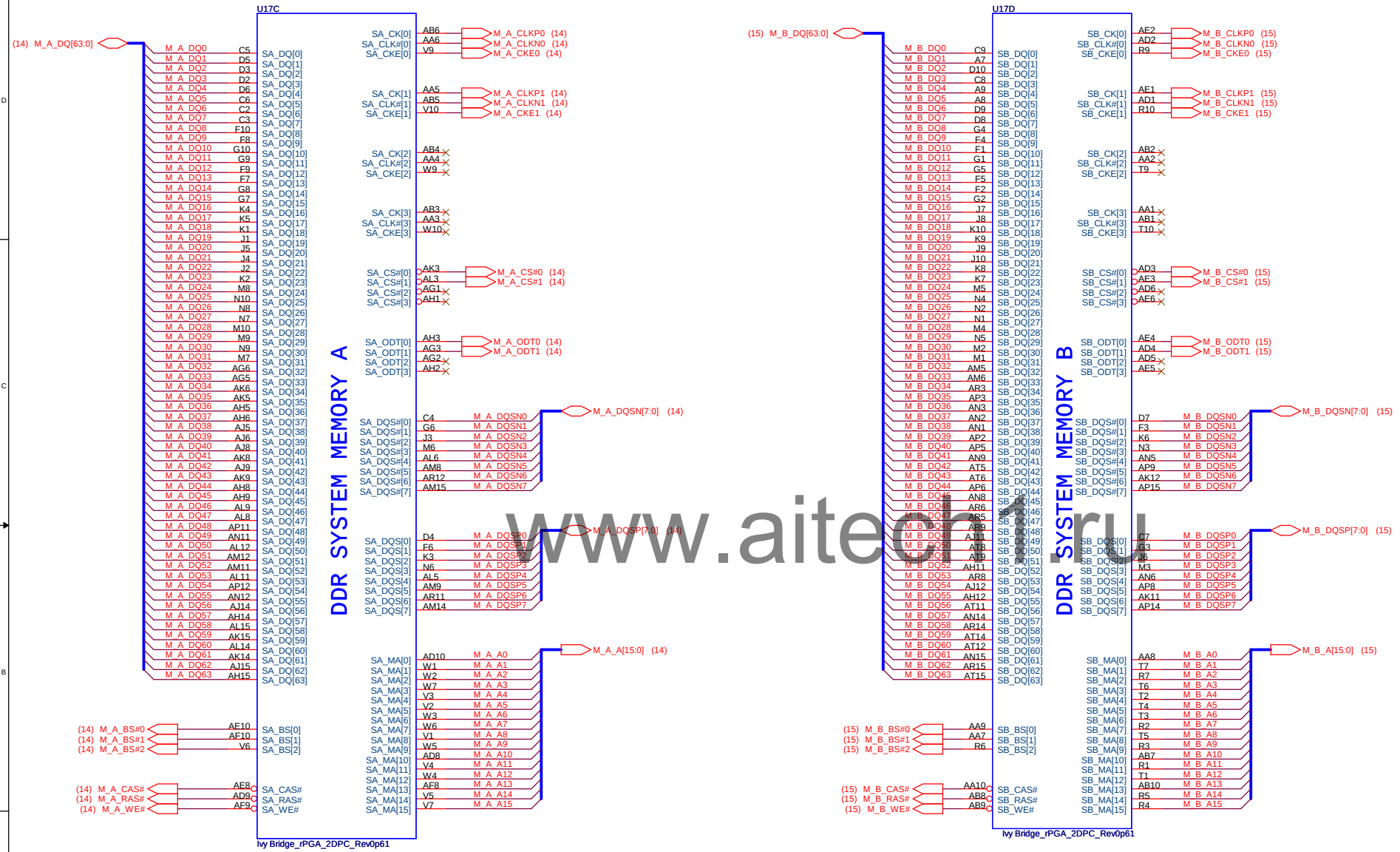
-FDI_FSYNC (J18/J17/J19/H17) can gang all these 4 signals together and tie them with only one 1K resistor to GND (DG V0.5 Ch2.2.9).
- FDI_INT connect to GND with 1K ohm.

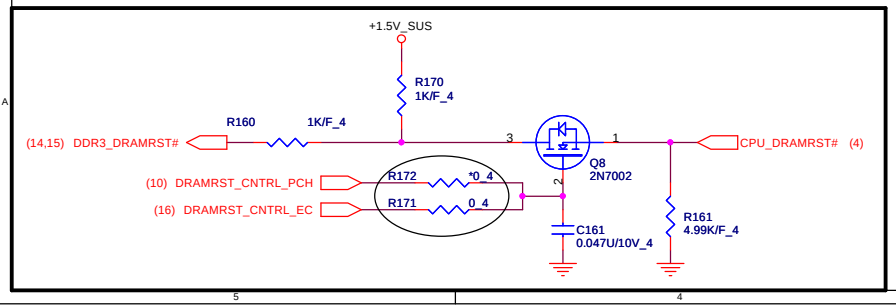
1.Level 1 Environment-related Substances Should Never be Used.
2.Recycled Resin and Coated Wire should be procured from Green Partners.

Quanta Computer Inc.
PROJECT : Chief River

Size	Document Number	Rev
	SNB/IVB 1/4	1A
Date: Wednesday, November 02, 2011	Sheet 4 of 42	

Ivy Bridge Processor (DDR3)





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

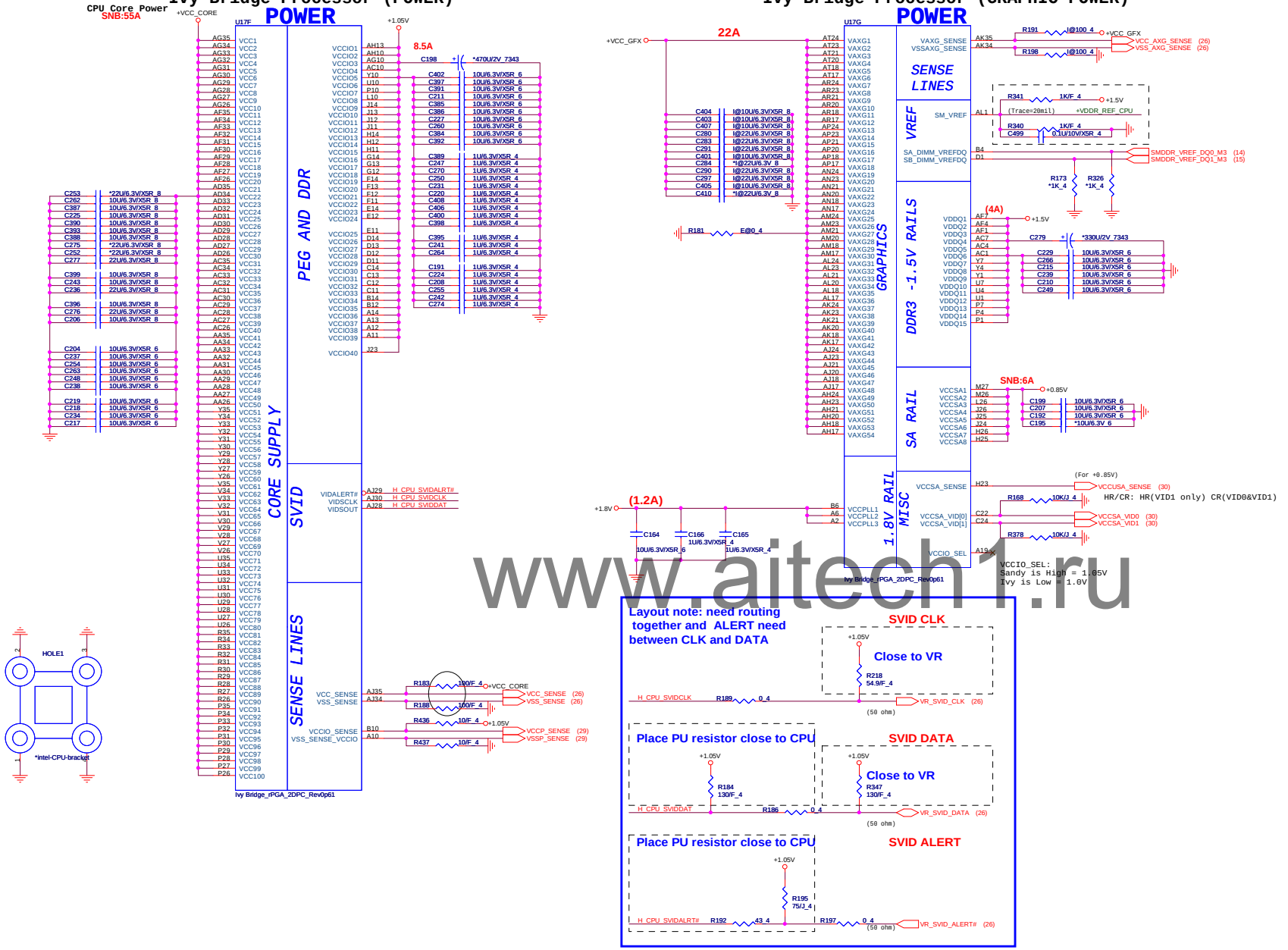
Quanta Computer Inc.
PROJECT : Chief River

Size	Document Number	Rev
	SNB/IVB 2/4	1A
Date: Wednesday, November 02, 2011	Sheet 5 of 42	

Ivy Bridge Processor (POWER)

Ivy Bridge Processor (GRAPHIC POWER)

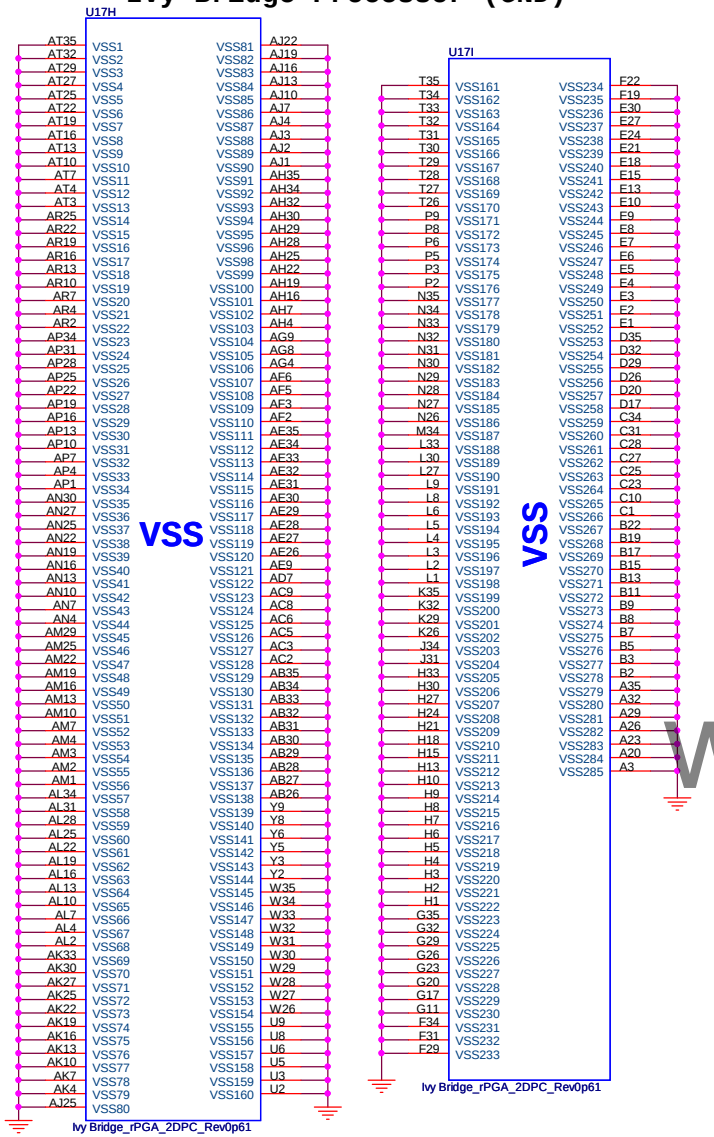
CPU Core Power
SNB:55A



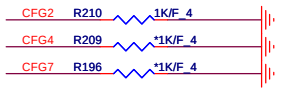
1.Level 1 Environment-related Substances Should Never be Used.
2.Recycled Resin and Coated Wire should be procured from Green Partners.

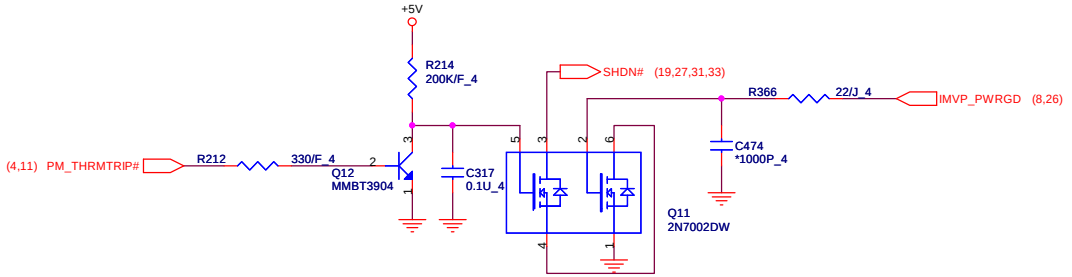
Quanta Computer Inc.			
PROJECT : Chief River			
Size	Document Number		Rev
	SNB/IVB 3/4		1A
Date: Wednesday, November 02, 2011	Sheet 6	of 42	

Ivy Bridge Processor (GND)



Ivy Bridge Processor (RESERVED, CFG)

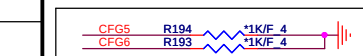




Processor Strapping

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

	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)

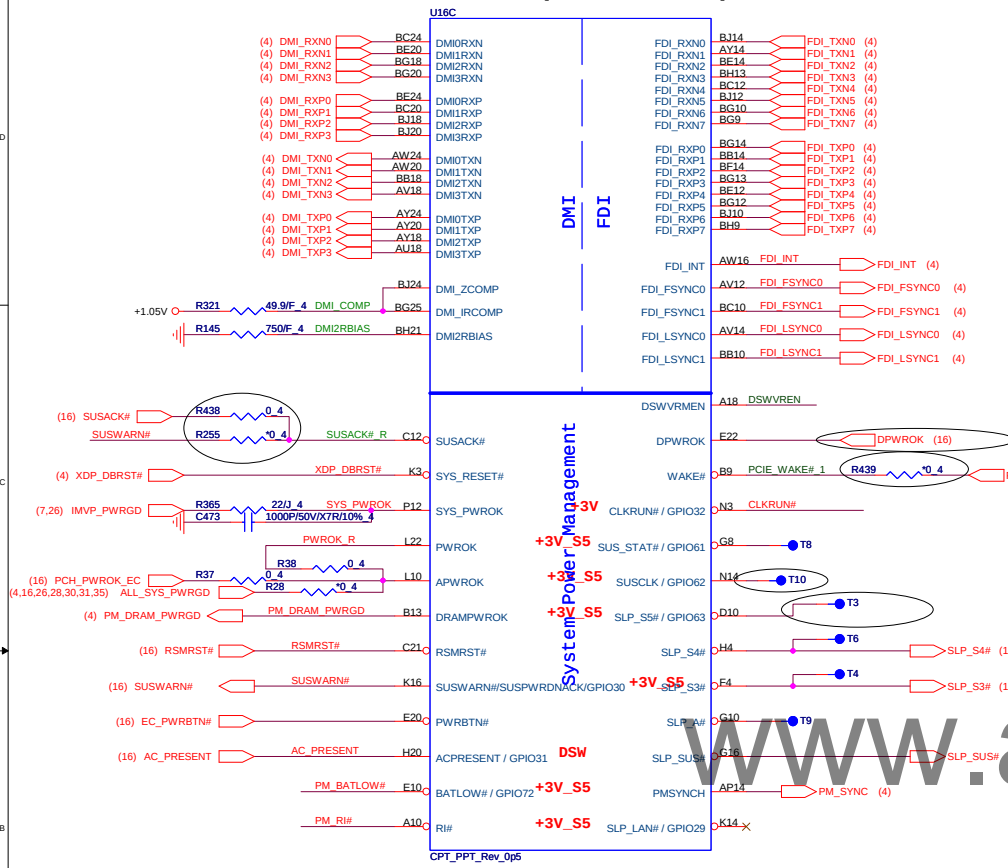
11: (Default) x16 - X16 PEG interface
10: PEG x8 x8 bifurcation enableddisabled
01: Reserved - (Device 1 function 1 disabled ; function 2 enabled)
00: x8,x4,x4 - Device 1 functions 1 and 2 enabled

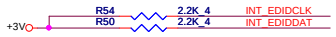
1.Level 1 Environment-related Substances Should Never be Used.
2.Recycled Resin and Coated Wire should be procured from Green Partners.

Quanta Computer Inc.
PROJECT : Chief River

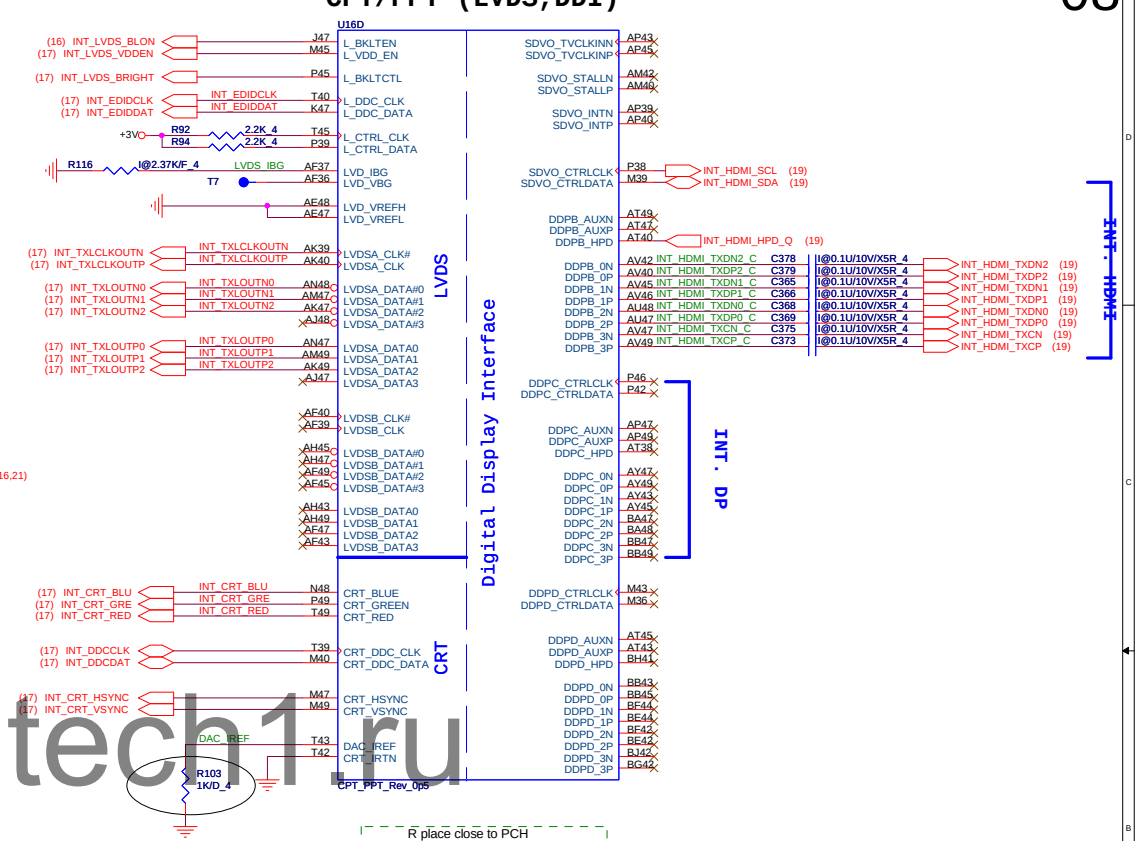
Size	Document Number	Rev
	SNB/IVB 4/4	1A
Date: Wednesday, November 02, 2011	Sheet 7 of 42	

CPT/PPT (DMI,FDI,PM)





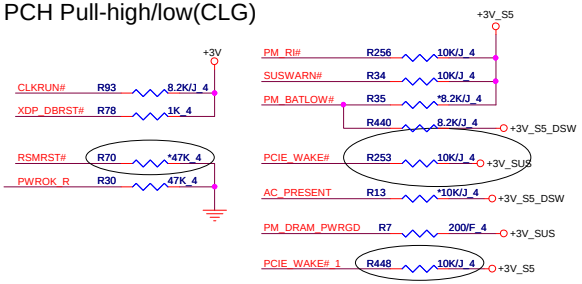
CPT/PPT (LVDS,DDI)

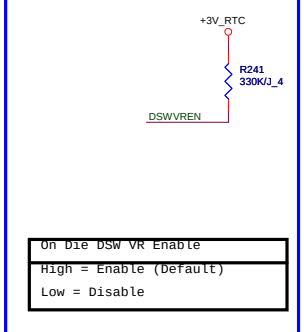


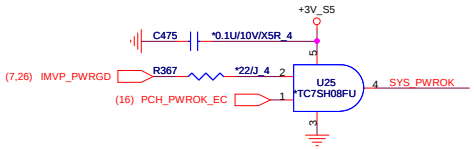
R place close to PCH

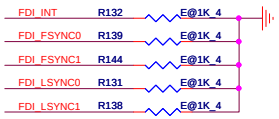
R90 I@150/F_4 INT_CRT_BLU
R95 I@150/F_4 INT_CRT_GRE
R100 I@150/F_4 INT_CRT_RED

PCH Pull-high/low(CLG)







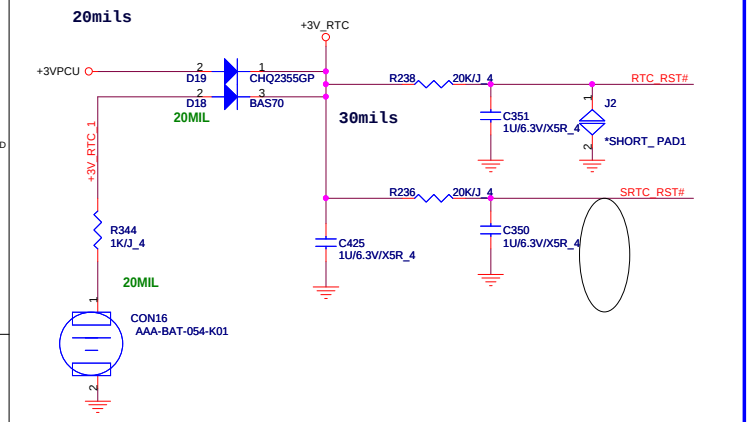


1.Level 1 Environment-related Substances Should Never be Used.
2.Recycled Resin and Coated Wire should be procured from Green Partners.

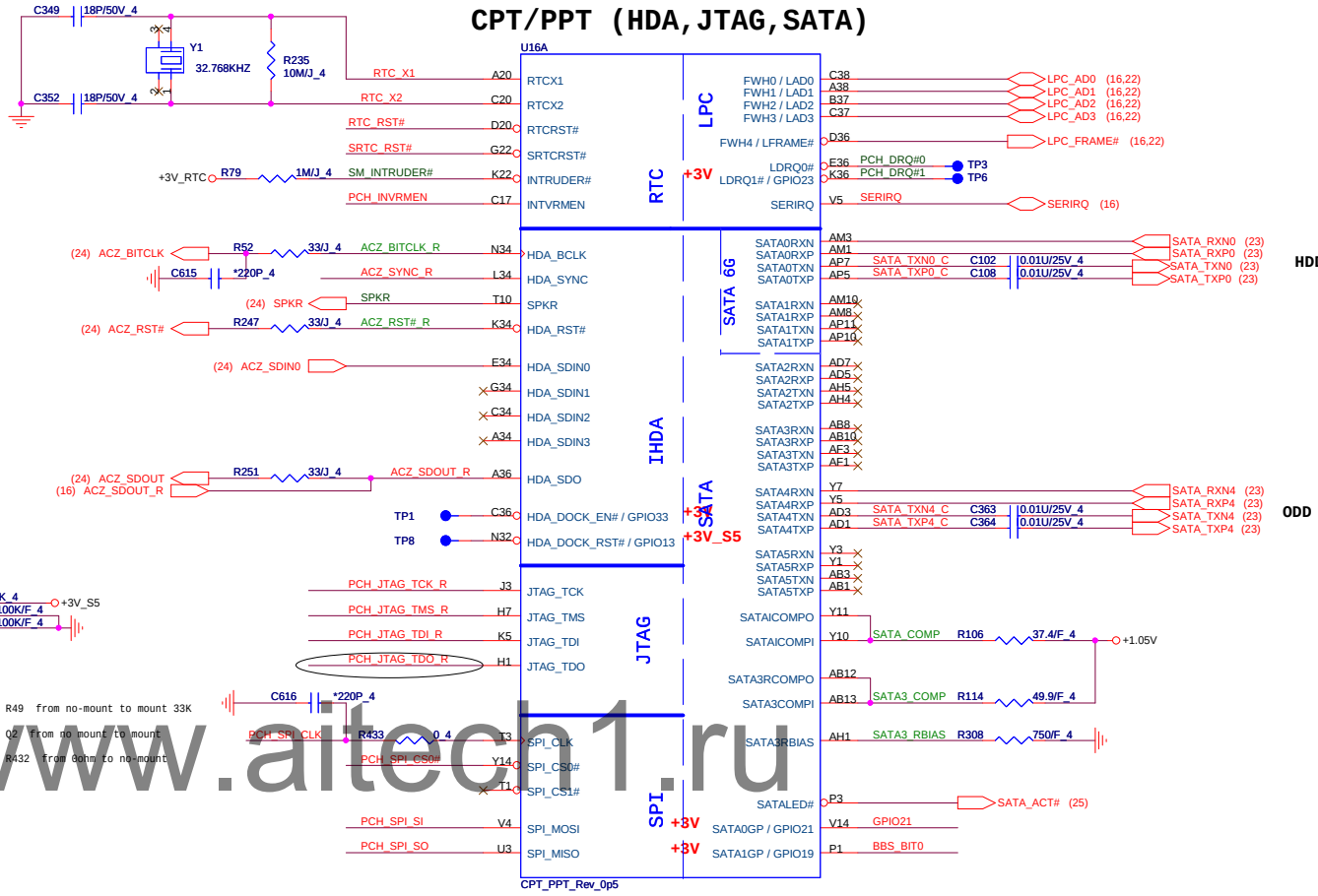
Quanta Computer Inc.
PROJECT : Chief River

Size	Document Number	Rev
	CPT/PTT 1/6	1A
Date: Wednesday, November 02, 2011	Sheet 8 of 42	

RTC Circuitry(RTC)

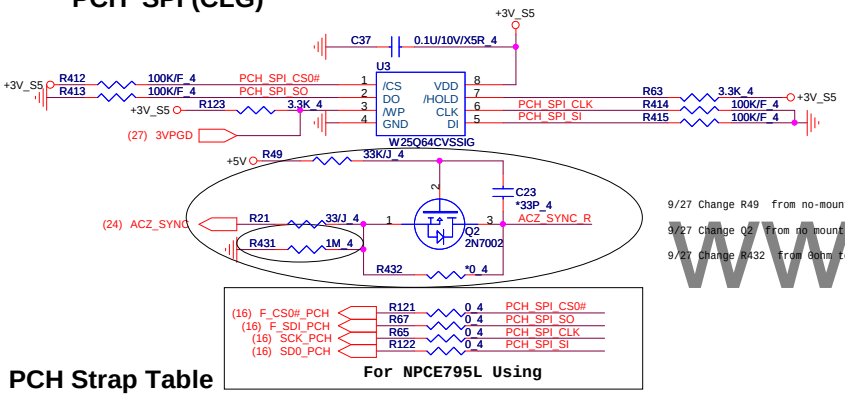


CPT/PPT (HDA,JTAG,SATA)



PCH SPI (CLG)

MX25L3205DM2I-12G: AKE39FP0Z00
W25X32VSSIG: AKE39ZP0N00

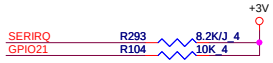


9/27 Change R49 from no-mount to mount 33K
9/27 Change Q2 from no mount to mount
9/27 Change R432 from 0ohm to no-mount

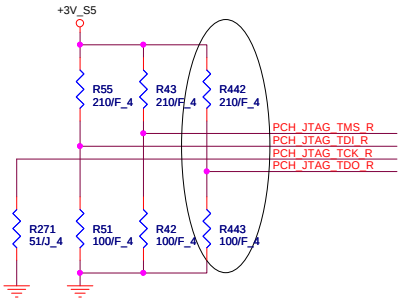
PCH Strap Table

Pin Name	Strap description	Sampled	Configuration	HK1/HK2 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)	R270 *1K_4 PCI_GNT3# (10)
INTVRMEN	Integrated 1.05V VRM enable	ALWAYS	**Should be always pull-up**	+3V_RTC R242 330K/J_4 PCH_INVRMEN
GNT1# / GPIO51	Boot BIOS Selection 1 [bit-1]	PWROK	GNT1# / GNT0# / Boot Location: 1 / 1 / **SPI** *; 0 / 0 / LPC	**Default weak pull-up on GNT0/1#** **[Need external pull-down for LPC BIOS]**
GPIO19	Boot BIOS Selection 0 [bit-0]	PWROK		TP47 BBS_BIT1 (10) TP43 BBS_BIT0
HDA_SDO	Flash Descriptor Security	PWROK	0 = Default (weak pull-down 20K) 1 = Enabled	**ACZ_SDOUT_R**
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)	R140 2.2K_4 +1.8V R320 1K_4 NV_CLE (11) H_SNB_IVB# (4)
GPIO28	On-die PLL Voltage Regulator	RSMRST#	0 = Disable 1 = Enable (Default)	TP44 PLL_ODVR_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 R29 1K_4 ACZ_SYNC_R

HR/CR: PROCSEL#



PCH JTAG Debug (CLG)



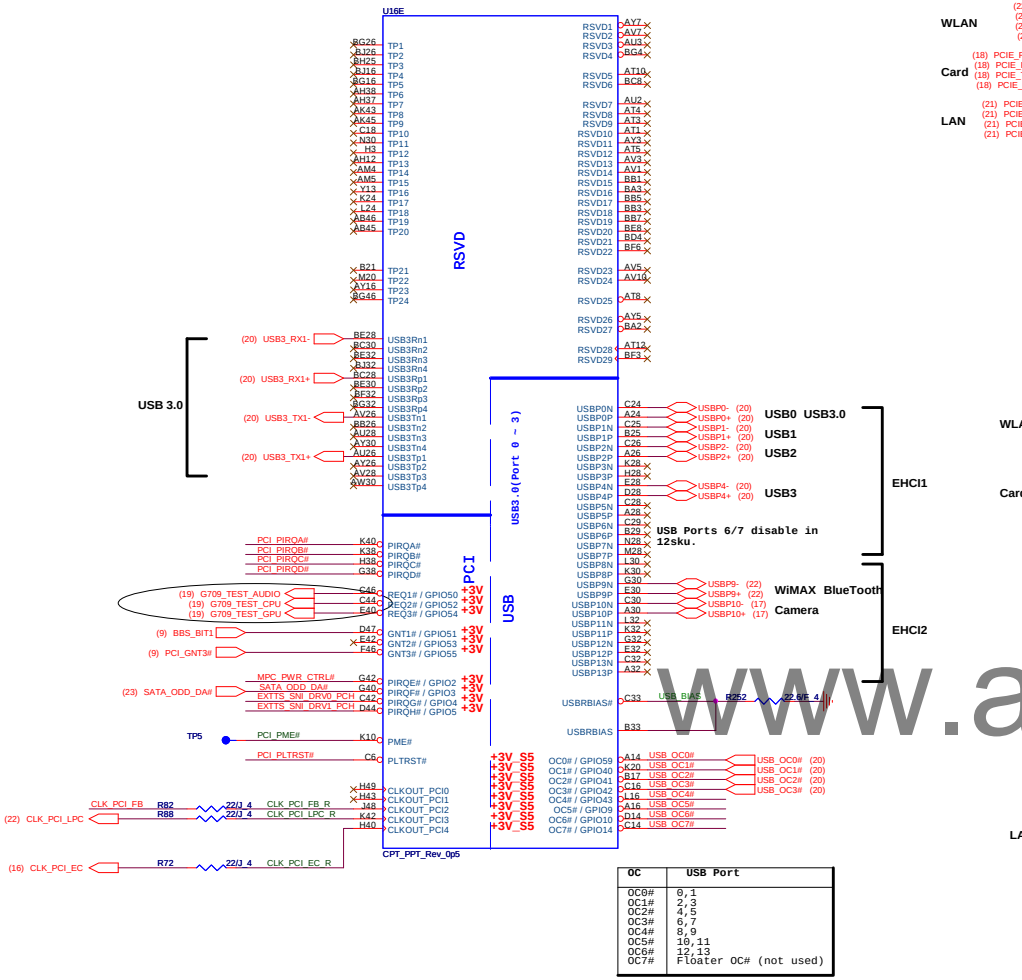
1.Level 1 Environment-related Substances Should Never be Used.
2.Recycled Resin and Coated Wire should be procured from Green Partners.

Quanta Computer Inc.
PROJECT : Chief River

Size	Document Number	Rev
	CPT/PPT 2/6	1A

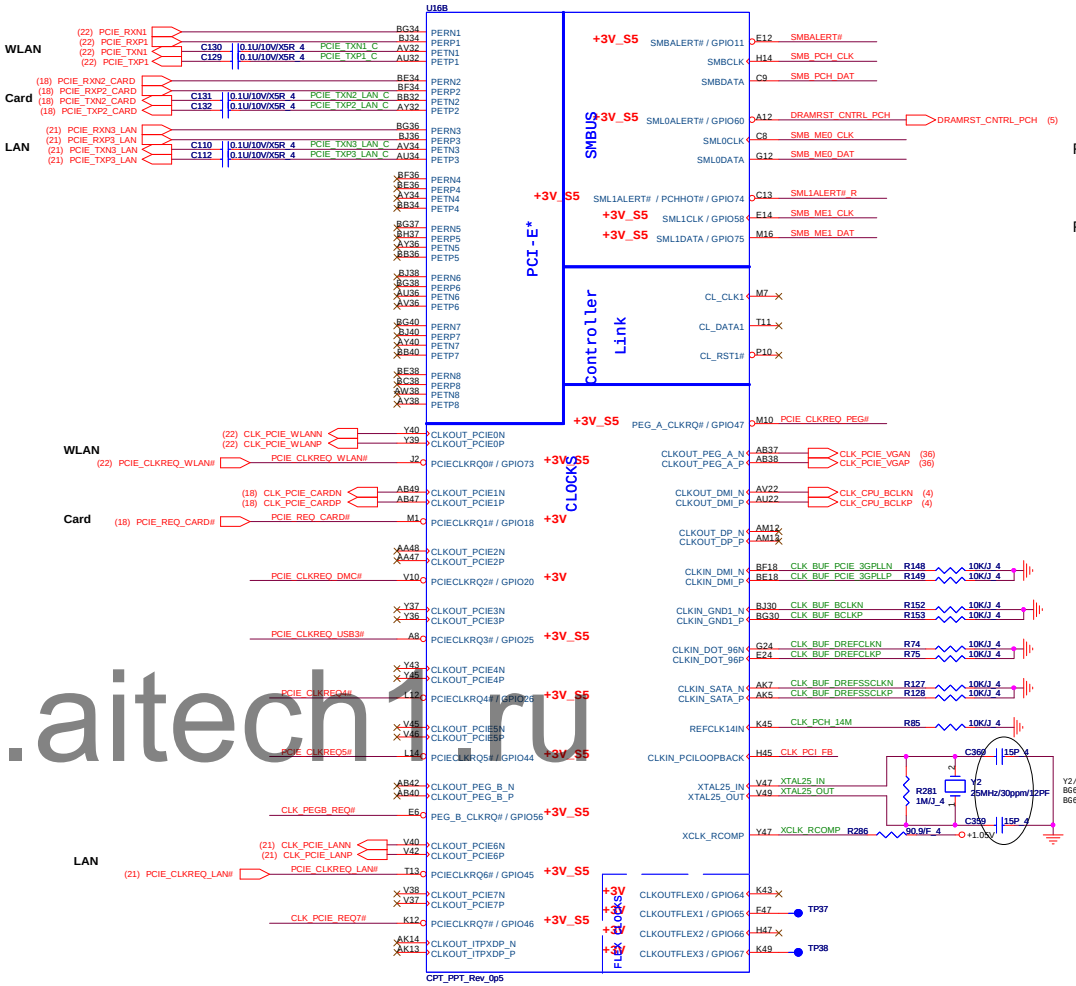
Date: Wednesday, November 02, 2011 Sheet 9 of 42

CPT/PPT (PCI,USB,NVRAM)

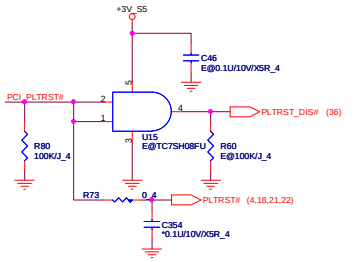


OC	USB Port
OC0#	0,1
OC1#	2,3
OC2#	4,5
OC3#	6,7
OC4#	8,9
OC5#	10,11
OC6#	12,13
OC7#	Floater OC# (not used)

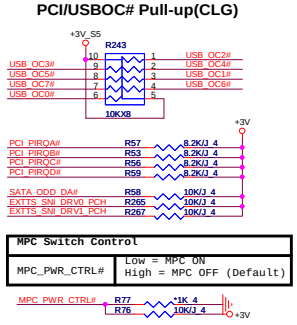
CPT/PPT (PCI-E,SMBUS,CLK)



PLTRST#(CLG)

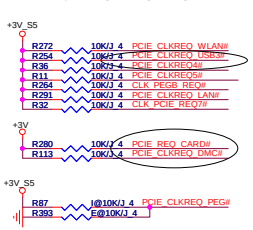


PCI/USBOC# Pull-up(CLG)

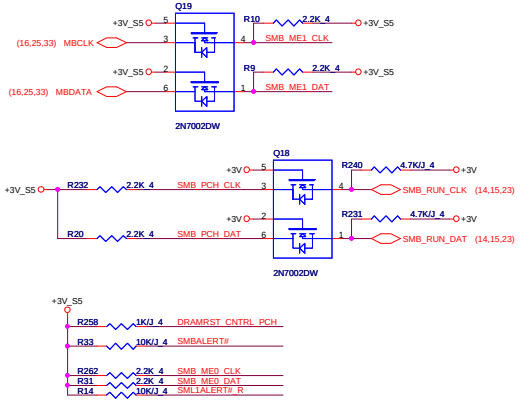


MPC Switch Control	
MPC_PWR_CTRL#	Low = MPC ON High = MPC OFF (Default)

CLK_REQ/Strap Pin(CLG)



SMBus/Pull-up(CLG)



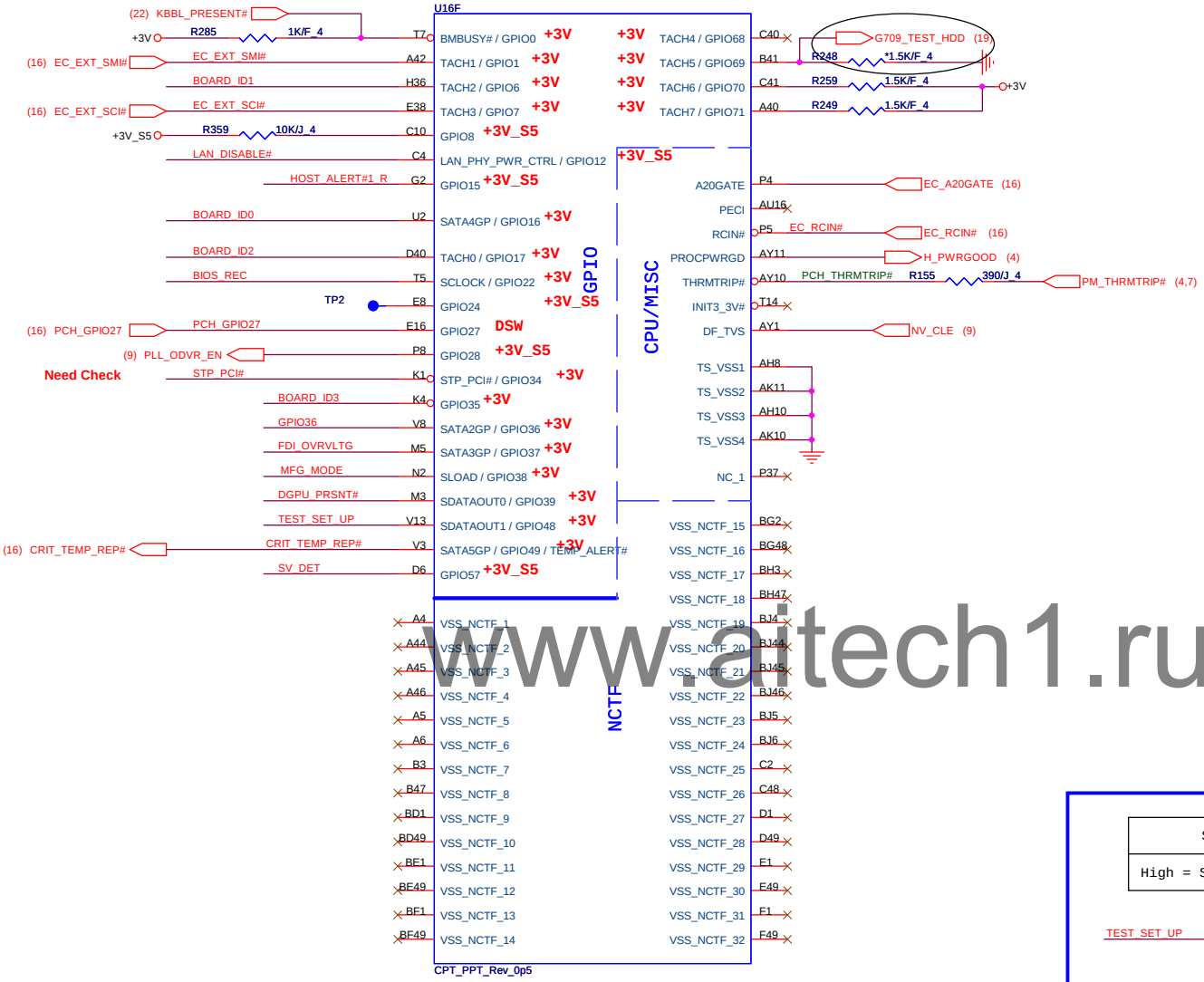
1.Level 1 Environment-related Substances Should Never be Used.
2.Recycled Resin and Coated Wire should be procured from Green Partners.

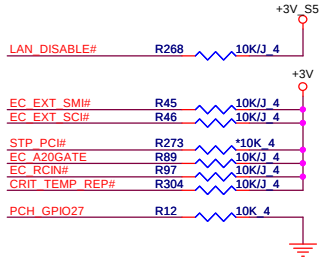
Quanta Computer Inc.
PROJECT : Chief River

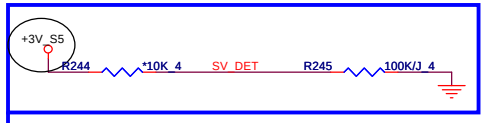
Size	Document Number	Rev
	CPT/PPT 3/6	1A

Date: Wednesday, November 02, 2011 Sheet 10 of 42

CPT/PPT (GPIO,VSS_NCTF,RSVD)



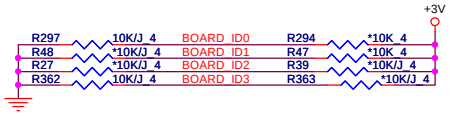




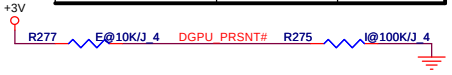
	R363(High) R362(Low) Board ID3	R294(High) R297(low) Board ID0
14"/HK6	0	0
15"/HK5	0	1
17"/HK7	1	0

Board ID1 (VRAM Vendor)	Samaung(1)	Hynix(0)
R47(High)	Stuff	No Stuff
R48(Low)	No Stuff	Stuff

Board ID2		
14" 4PCS	1G	512M
15" 8PCS	1G	2G
R39(High)	Stuff	No Stuff
R27(Low)	No Stuff	Stuff



PCBA SKU	Discrete	UMA
R277(Pull High)	Stuff	No Stuff
R275(Pull Low)	No Stuff	Stuff

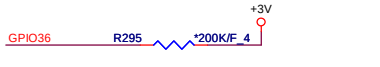


SV_SET_UP
High = Strong (Default)

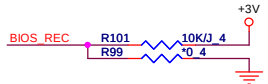
Intel ME Crypto Transport Layer Security (TLS) cipher suite
Low = Disable (Default)
High = Enable

MFG-TEST

FDI TERMINATION VOLTAGE OVERRIDE	LOW - Tx, Rx terminated to same voltage



DMI TERMINATION VOLTAGE OVERRIDE	Low = Tx, Rx terminated to same voltage (DC Coupling Mode) (DEFAULT)



BIOS RECOVERY	High = Disable (Default) Low = Enable

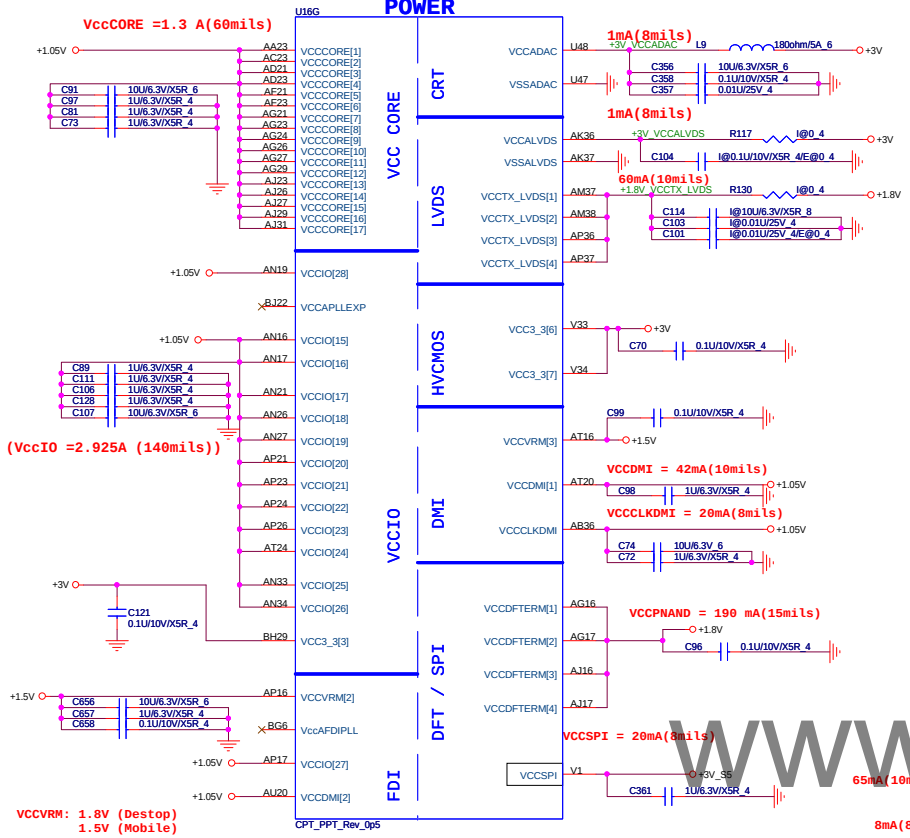
1.Level 1 Environment-related Substances Should Never be Used.
2.Recycled Resin and Coated Wire should be procured from Green Partners.

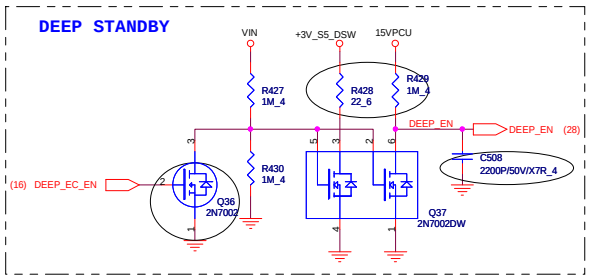
Quanta Computer Inc.
PROJECT : Chief River

Size	Document Number	Rev
	CPT/PPT 4/6	1A

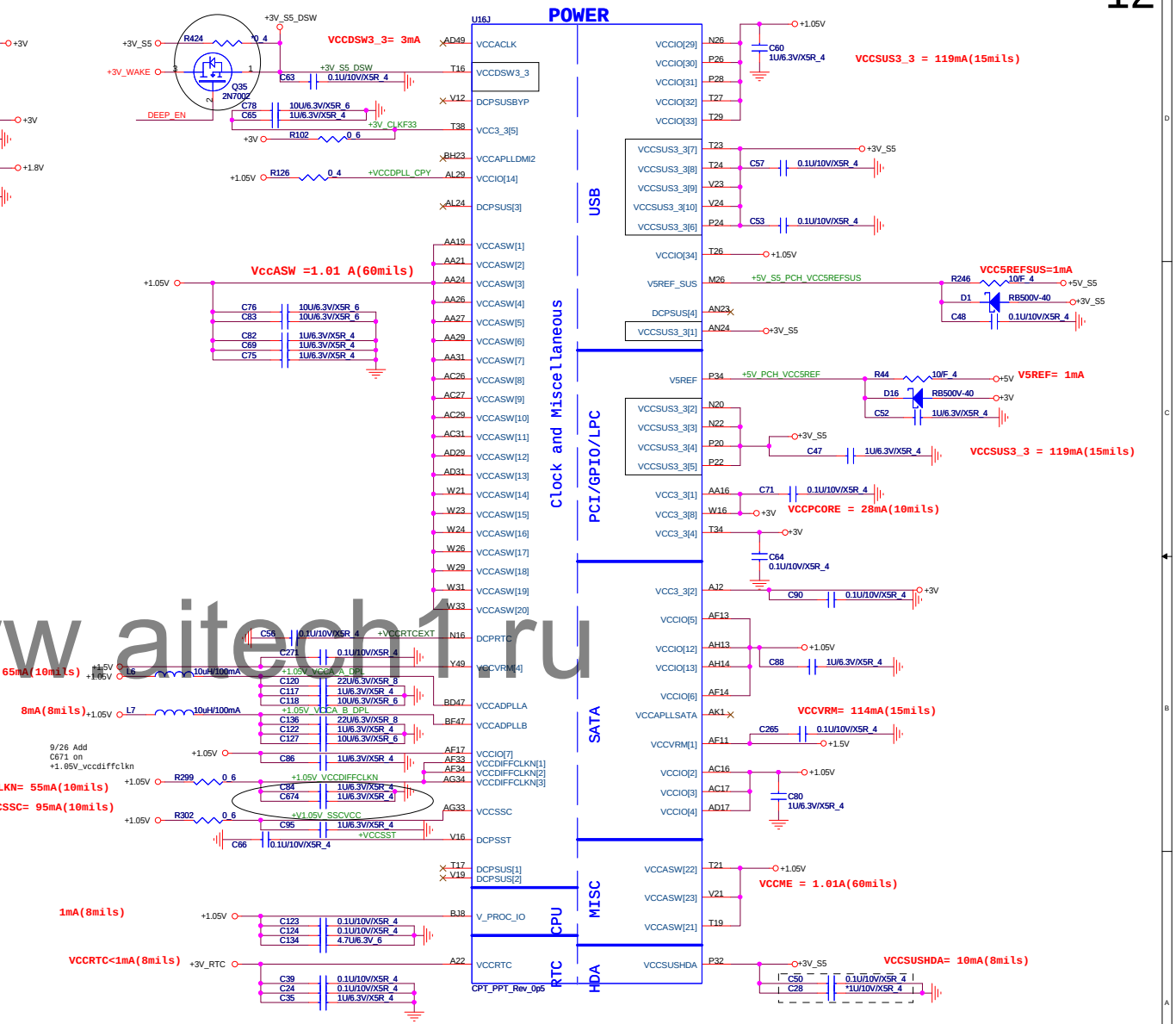
Date: Wednesday, November 02, 2011 Sheet 11 of 42

PCH5(CLG) CPT/PPT (POWER)





CPT/PPT (POWER)



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

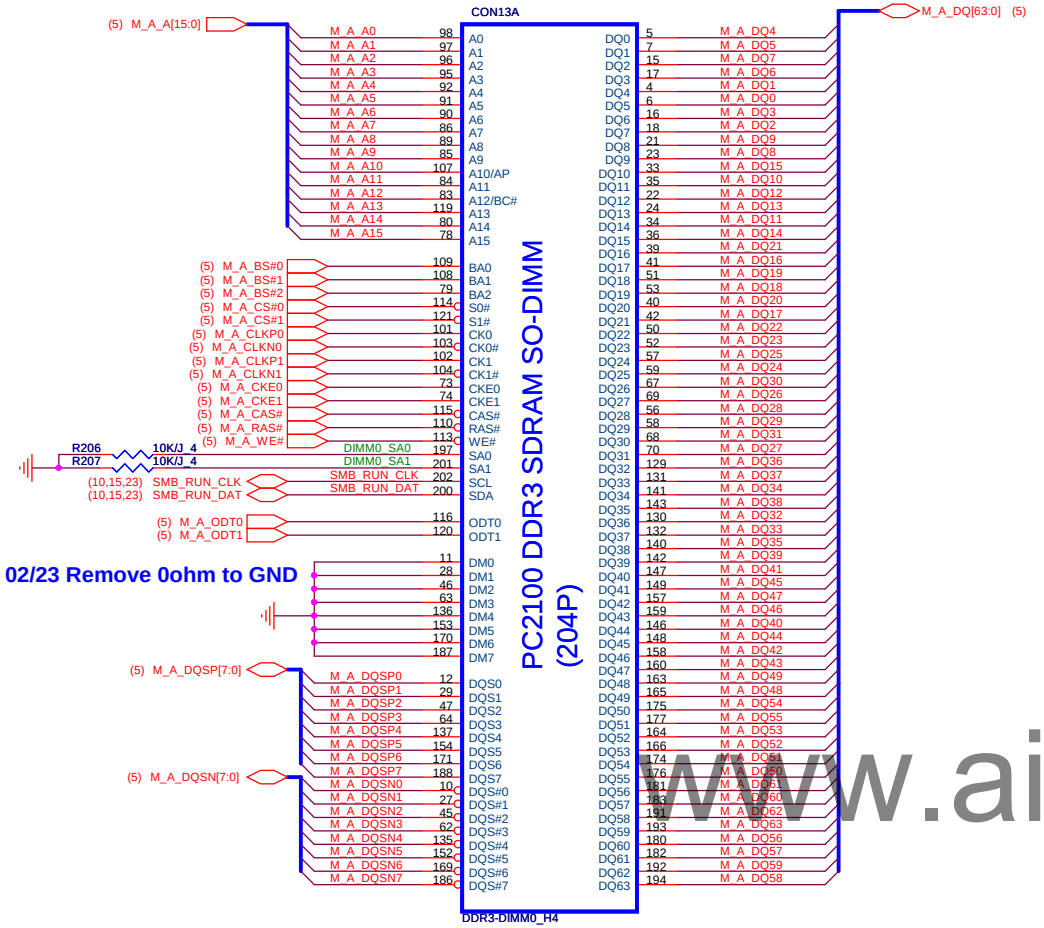
Size	Document Number	Rev
	CPT/PPT 5/6	1A
Date: Wednesday, November 02, 2011	Sheet 12 of 42	

CPT/PPT (GND)

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

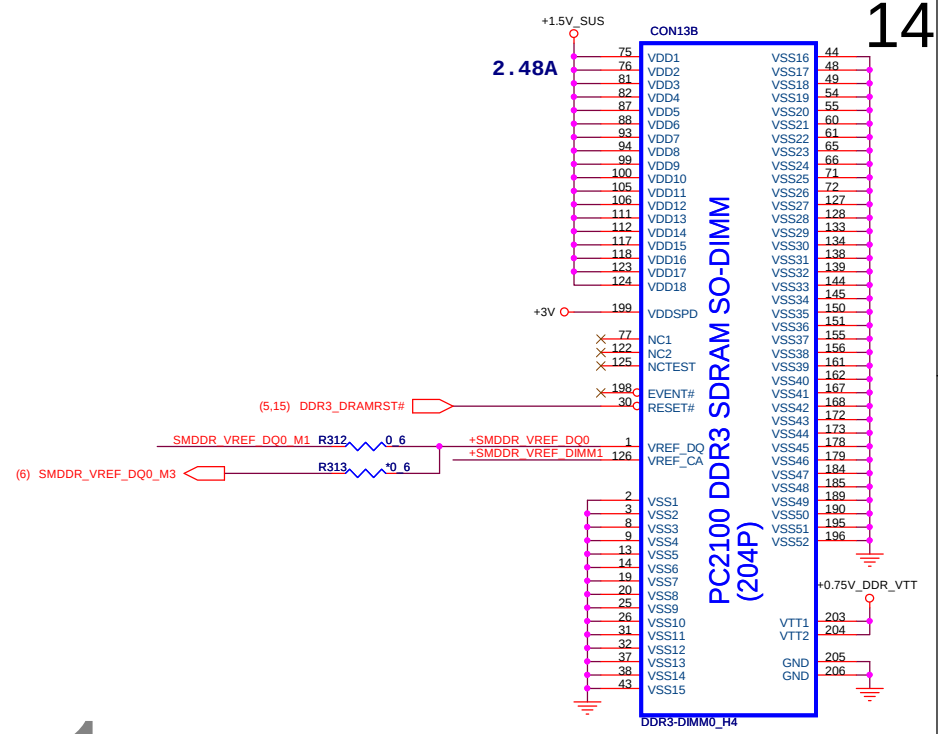
Quanta Computer Inc.
PROJECT : Chief River

Size	Document Number	Rev
	CPT/PPT 6/6	1A
Date: Wednesday, November 02, 2011	Sheet 13 of 42	

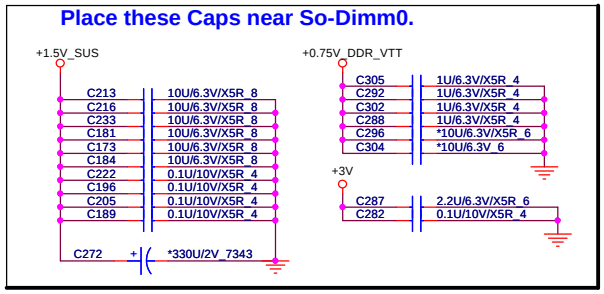


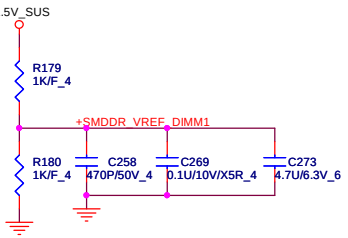
02/23 Remove 0ohm to GND

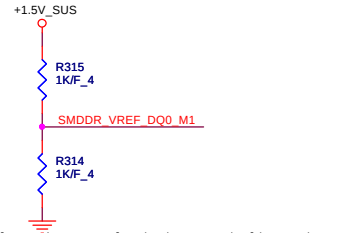
RUV Type

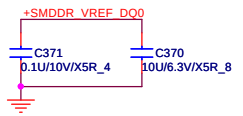


RUV Type







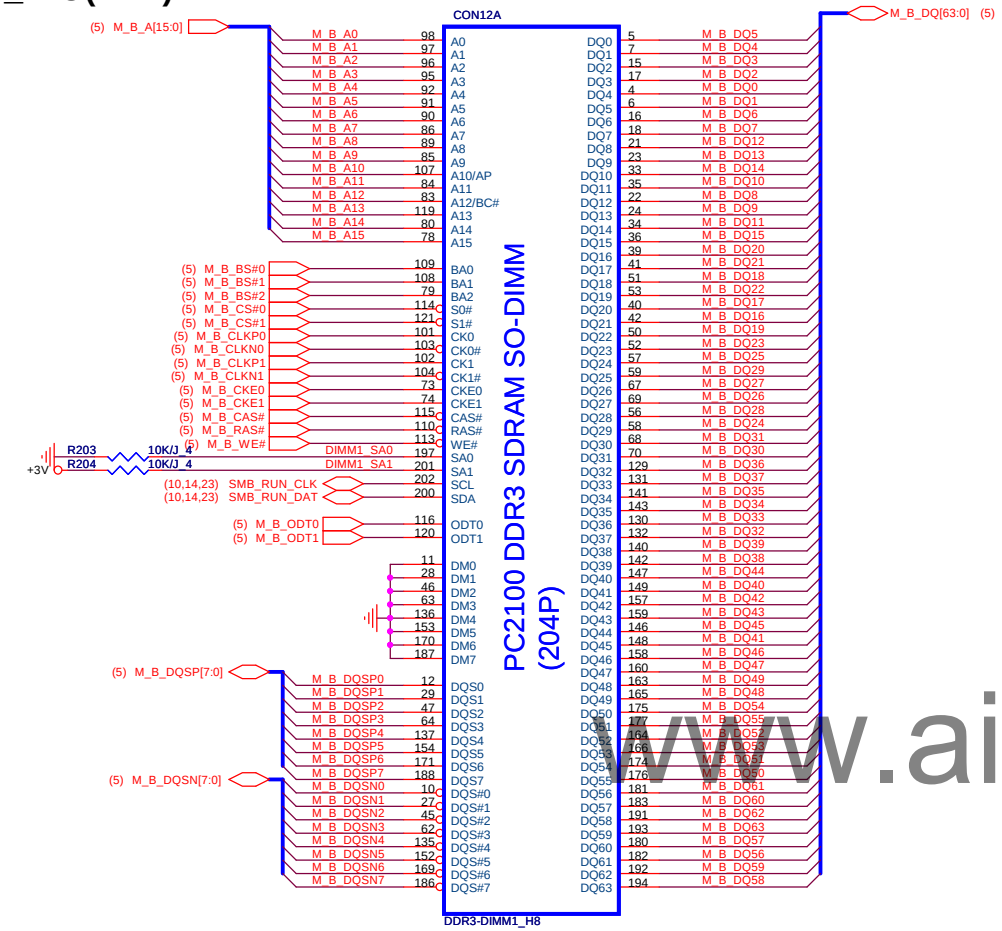


1.Level 1 Environment-related Substances Should Never be Used.
2.Recycled Resin and Coated Wire should be procured from Green Partners.

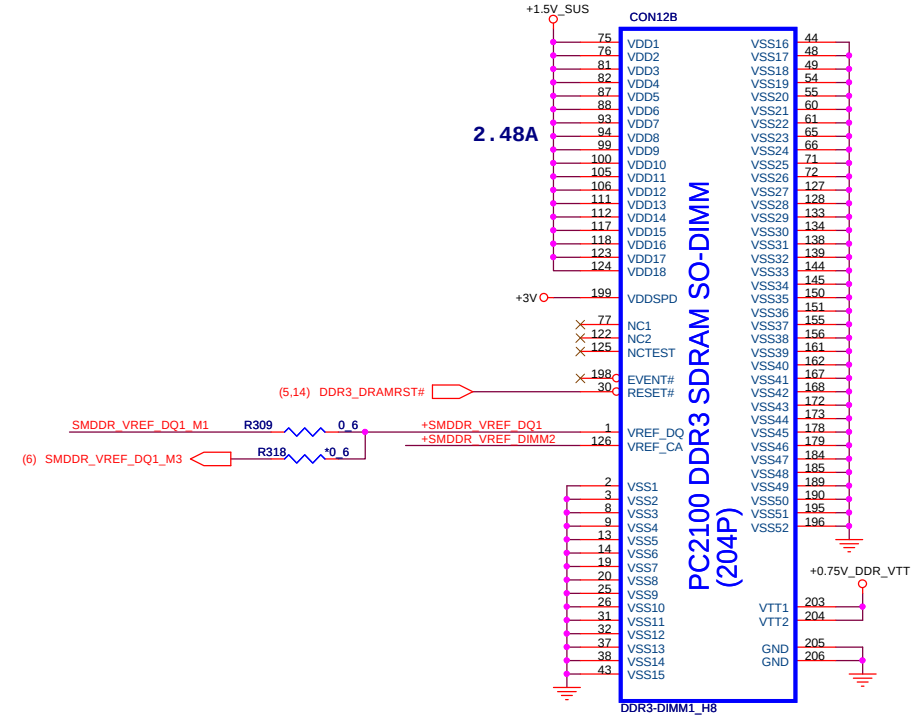
Quanta Computer Inc.
PROJECT : Chief River

Size	Document Number	Rev
	DDRIII SO-DIMM-0	1A
Date: Wednesday, November 02, 2011	Sheet 14 of 42	

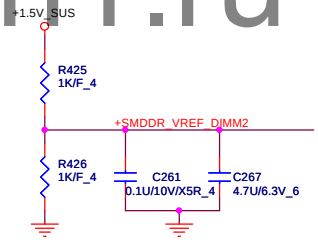
DDR_RVS(DDR)



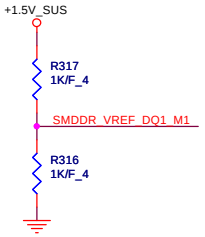
RUV Type



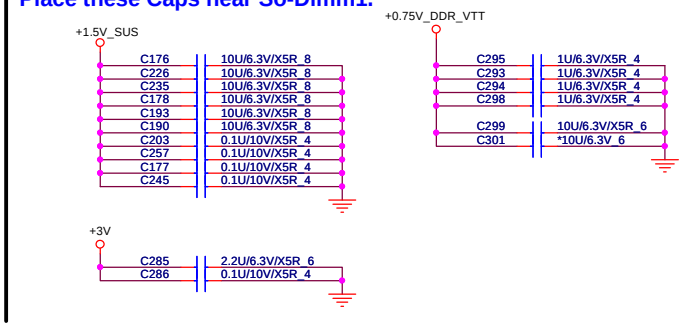
RUV Type



VREF DQ1 M1 Solution



Place these Caps near So-Dimm1.



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-1	1A
Date: Wednesday, November 02, 2011	Sheet 15 of 42	

**** Straping 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

9/29 Del KC17 10U 0805

KC17 *10U/6.3V/X5R_8
KC5 0.1U/10V/X5R_4
KC2 0.1U/10V/X5R_4
KC14 0.1U/10V/X5R_4
KC8 0.1U/10V/X5R_4
KC3 0.1U/10V/X5R_4
KC10 0.1U/10V/X5R_4
KC16 *10U/6.3V/X5R_8
KC13 0.1U/10V/X5R_4

KU1 NPCE885L

LPC: LAD0/GPIOF1, LAD1/GPIOF2, LAD2/GPIOF3, LAD3/GPIOF4, LRESET#/GPIOF7, LCLK/GPIOF5, LFRAME#/GPIOF6
A/D: GA20/GPIO85, SERIRQ/GPIOF0, SMI#/GPIO65, ECSCI#/GPIO54, KBRST#/GPIO86
D/A: GPIO67/PWUREQ#
SPI: F_SDI/F_SDIO1, F_SDIO/F_SDIO0, F_SCK, F_CS0#
PWM: A_PWM0/GPIO15, B_PWM/GPIO21, C_PWM/GPIO13, D_PWM/GPIO32, H_PWM/GPIO33, G_PWM/GPIO66, E_PWM/GPIO45, F_PWM/GPIO40
K/B: KBSIN0/GPIOA0/N2TCK, KBSIN1/GPIOA1/N2TMS, KBSIN2/GPIOA2, KBSIN3/GPIOA3, KBSIN4/GPIOA4, KBSIN5/GPIOA5, KBSIN6/GPIOA6, KBSIN7/GPIOA7, KBSOUT0/GPOB0/JENK#**, KBSOUT1/GPIOB1/TCK, KBSOUT2/GPIOB2/TMS, KBSOUT3/GPIOB3/TDI, KBSOUT4/GPOB4/JEN0#**, KBSOUT5/GPIOB5/TDO, KBSOUT6/GPIOB6/RDY#, KBSOUT7/GPIOB7, KBSOUT8/GPIOC0, KBSOUT9/GPOC1/SDP_VIS#, KBSOUT10/P80_CLK/GPIOC2, KBSOUT11/P80_DAT/GPIOC3, KBSOUT12/GPIO64, KBSOUT13/GPIO63, KBSOUT14/GPIO62, KBSOUT15/GPIO61/XOR_OUT, KBSOUT16/GPIO60, KBSOUT17/GPIO57
GPIO: GPIO24/H_GPIO01, TA1/GPIO56, TMS/SDA3B/GPIO43, GPIO51
CIR: CIRRXL/GPIO34, CIRRXM/SDA4B/TRST#/GPIO46, SIN_CR/CIRRXM/GPIO87
PS/2: RDY#/GPIO52/PSDAT3, TDO/GPIO50/PSCLK3, PSDAT2/GPIO27, PSCLK2/GPIO26, PSDAT1/GPIO35, PSCLK1/GPIO37
PECI: PECI, VTT, TCK/SCL3B/GPIO42/Thermal Alarm
SM BUS I/O Expansion: TA2/GPIO20/IOX_DIN_DIO, TB1/GPIO14, TB2/GPIO01, SCL1/GPIO17/N2TCK, SDA1/GPIO22/N2TMS, SCL2/GPIO73, SDA2/GPIO74, SCL3A/GPIO23, SDA3A/GPIO31, SCL4A/GPIO47, SDA4A/GPIO53, GPIO00/EXTCLK, GPIO06/IOX_DOUT, **TEST#GPO82/IOX_LDSH, **XORTR#GPO84/IOX_SCLK, CLKOUT/GPIO55/IOX_DIM_DIO
SPI_DI/GPIO77, **SPI_DO/GPO76, SPI_SCK/GPIO75
VREF, VCC_POR#, VCORF
VCC POWER ON RESET

Magnetic Lid Switch

KU4 E-CMOS
+3VPCU, IN, OUT, GND, LID#

E-CMOS :AL002618001/EC2618NLB1GR
PROLIFIC : AL003661003/PT3661-BB
BCD : AL009249000/AH9249NTR-G1

35001

KD4 RB501V-40
KR23 1K/F_4
KR27 4.7K_4
KR16 2.2K_4
KR19 2.2K_4
KR20 *100K_4
KU2 R5G05000N753NF (PGM, RSET, VSS, VCC, PIO, SDA, SCK, CNVSS, GND)
BATT_RST#, BATT_ID (32), 35001_SDA, 35001_SCK
KC7 *1000P/50V/X7R/10%_4
KC9 *1000P/50V/X7R/10%_4

TBCLK KR51 4.7K_4 +3V
TBDATA KR52 4.7K_4 +3V

KR31 3.3K_4 MBCLK
KR32 3.3K_4 MBDATA
KR3 4.7K_4 MBCLK_BAT
KR1 4.7K_4 MBDATA_BAT

ALL_SYS_PWRGD KR2 1K/F_4 +3V

MBATV KC11 0.01U_4
ISENS_IN KC12 0.01U_4

EC_WAKE_ON KR50 100K/F_4
S5_ON KR18 100K/F_4 +3VPCU
DEEP_EC_EN KR58 100K/F_4

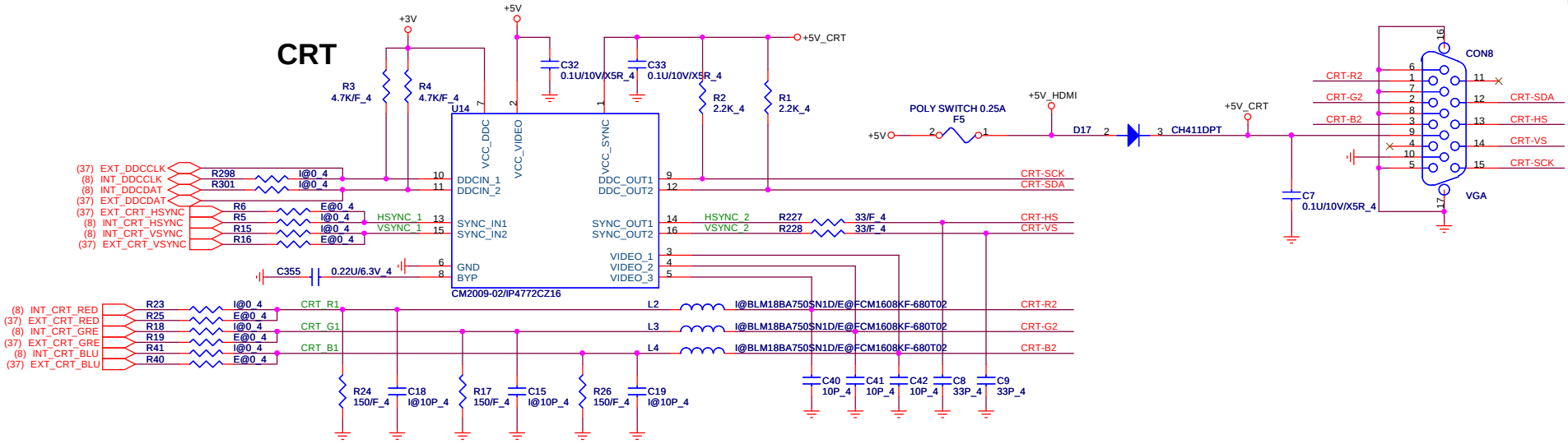
KR55 100K/F_4 +3VPCU
KR54 *0_4

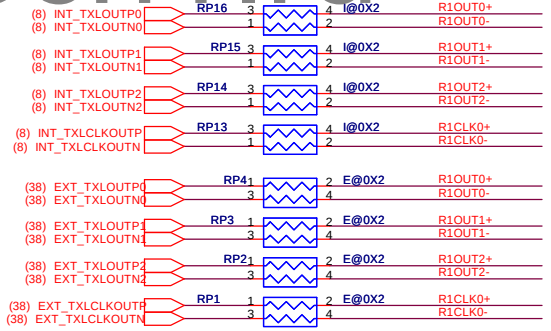
KD9 RB501V-40 DPWROK
KD8 RB501V-40 RSMRST#
KD7 RB501V-40 PCH_PWROK_EC
(27) 5VPGD

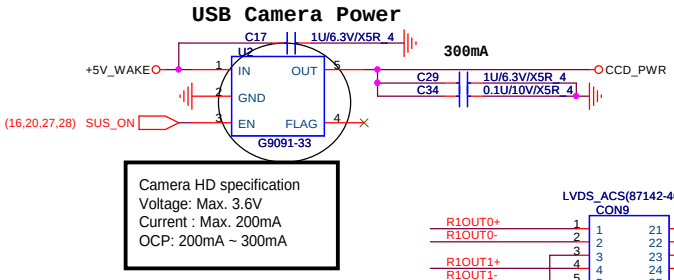
KR30 0_4

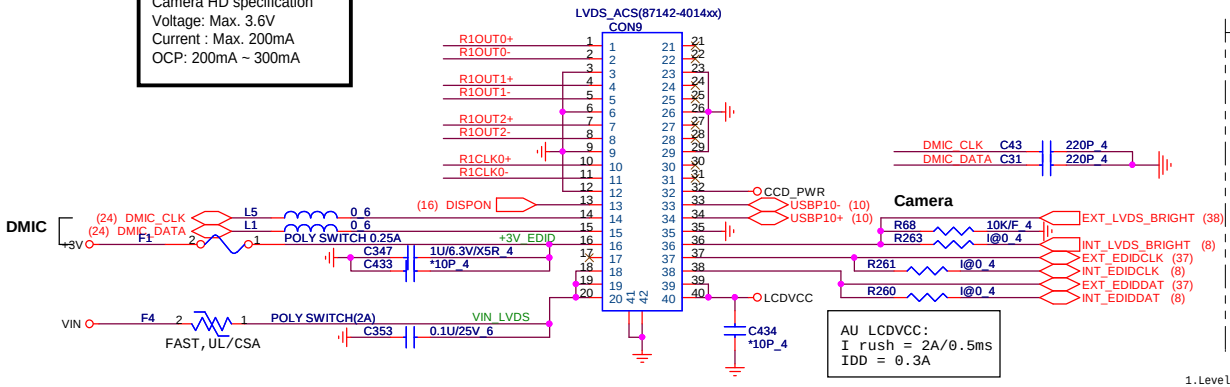
1.Level 1 Environment-related Substances Should Never be Used.
2.Recycled Resin and Coated Wire should be procured from Green Partners.

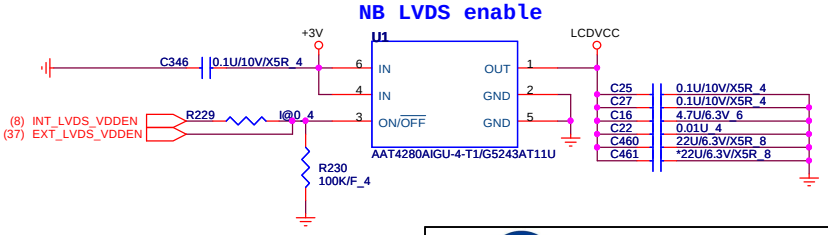
Quanta Computer Inc.
PROJECT : Chief River
Size | Document Number: NPCE885L | Rev: 1A
Date: Wednesday, November 02, 2011 | Sheet 16 of 42







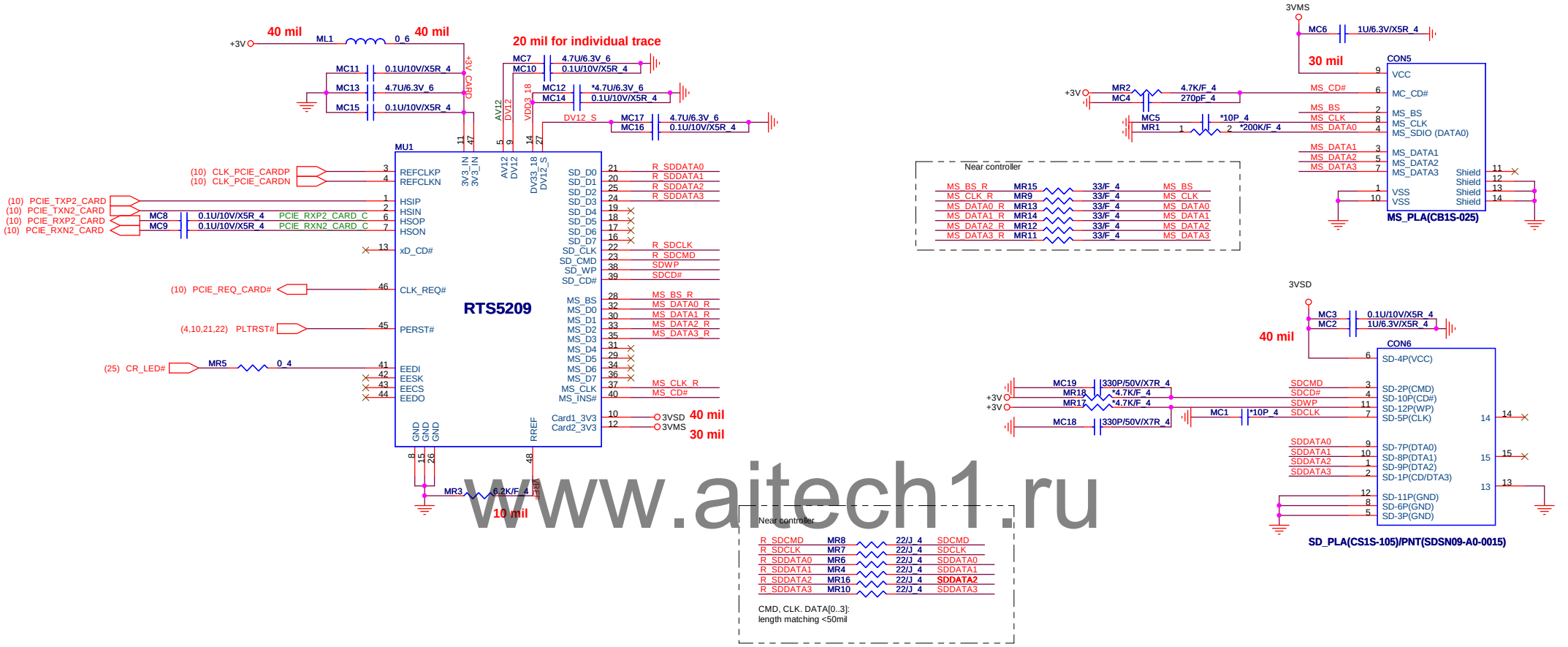




1.Level 1 Environment-related Substances Should Never be Used.
2.Recycled Resin and Coated Wire should be procured from Green Partners.

Quanta Computer Inc.
PROJECT :Chief River

Size	Document Number	Rev
	CRT/LVDS	1A
Date: Wednesday, November 02, 2011	Sheet 17 of 42	

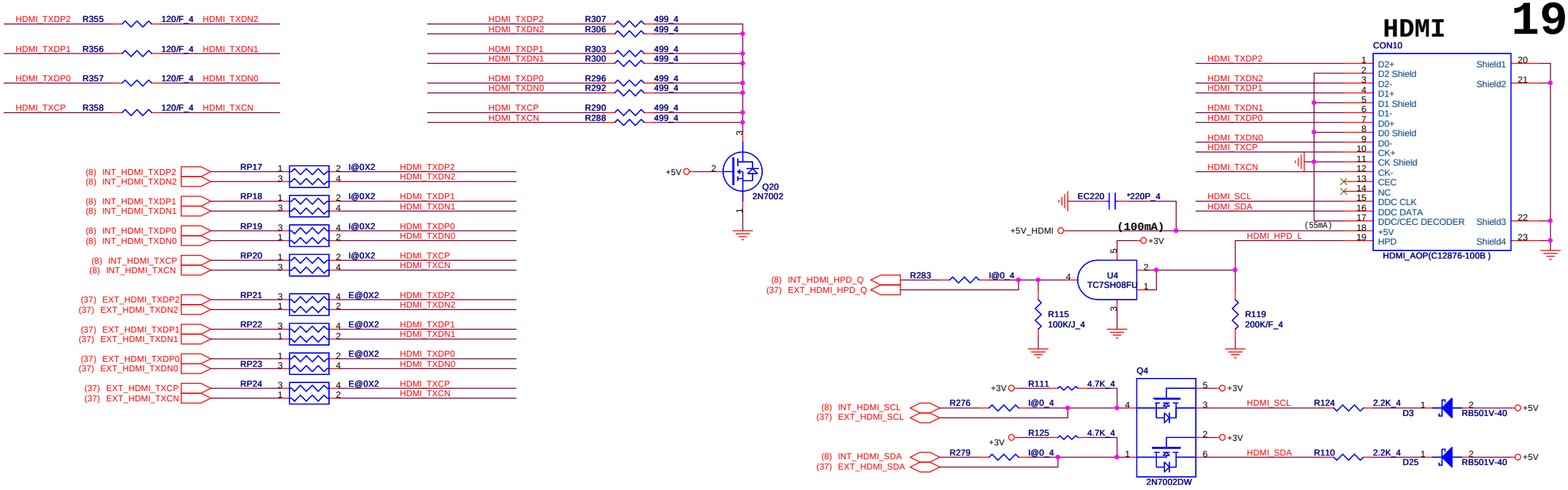


1.Level 1 Environment-related Substances Should Never be Used.
2.Recycled Resin and Coated Wire should be procured from Green Partners.

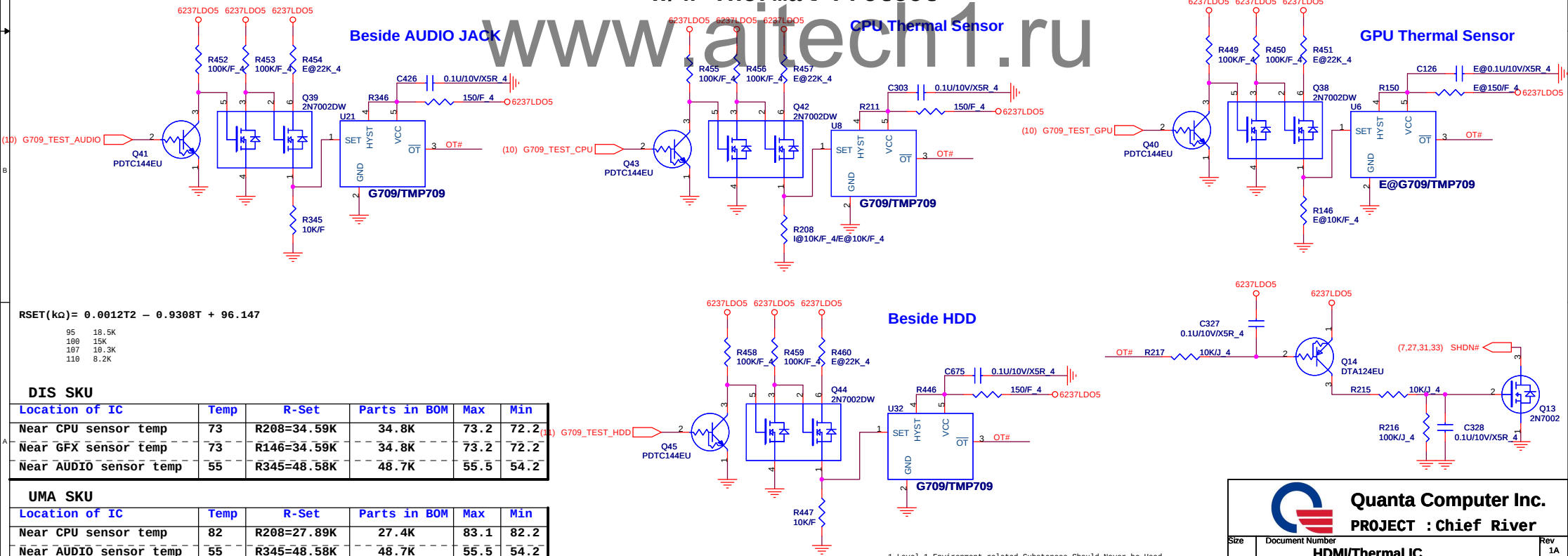
Quanta Computer Inc.
PROJECT : Chief River

Size	Document Number	Rev
	CARD	1A
Date: Wednesday, November 02, 2011	Sheet 18 of 42	

HDMI



H/W Thermal Protect



DIS SKU

Location of IC	Temp	R-Set	Parts in BOM	Max	Min
Near CPU sensor temp	73	R208=34.59K	34.8K	73.2	72.2
Near GFX sensor temp	73	R146=34.59K	34.8K	73.2	72.2
Near AUDIO sensor temp	55	R345=48.58K	48.7K	55.5	54.2

UMA SKU

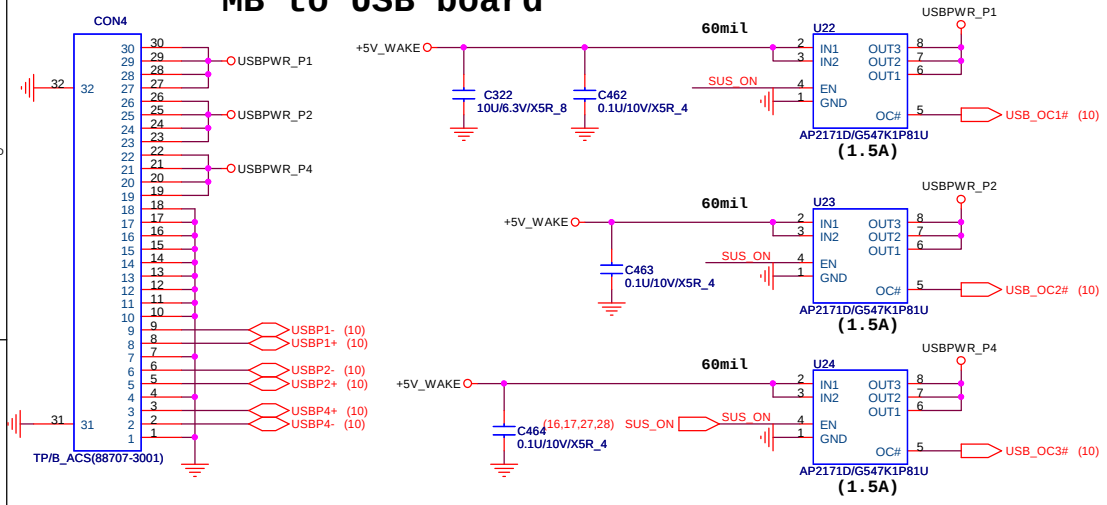
Location of IC	Temp	R-Set	Parts in BOM	Max	Min
Near CPU sensor temp	82	R208=27.89K	27.4K	83.1	82.2
Near AUDIO sensor temp	55	R345=48.58K	48.7K	55.5	54.2

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

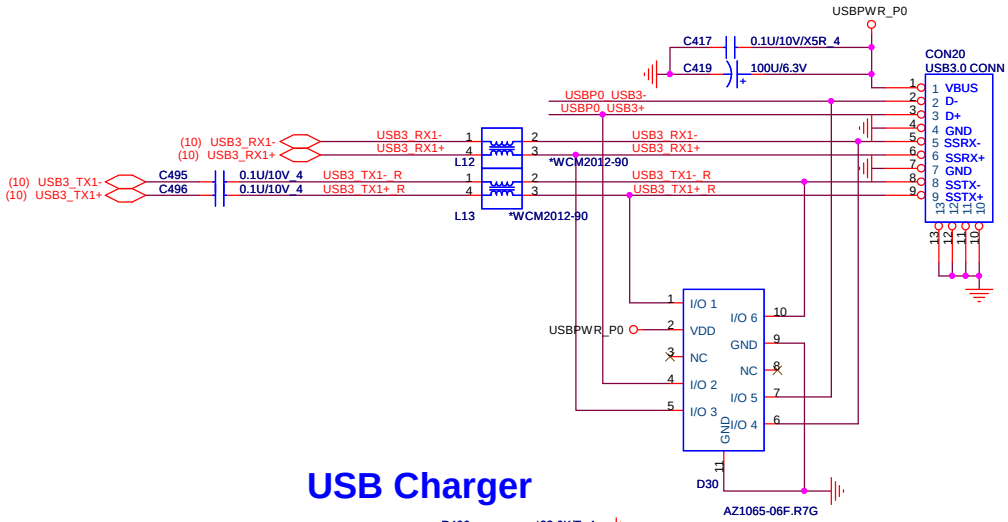
Quanta Computer Inc.
PROJECT : Chief River

Size	Document Number	Rev
	HDMI/Thermal IC	1A
Date: Wednesday, November 02, 2011	Sheet 19 of 42	

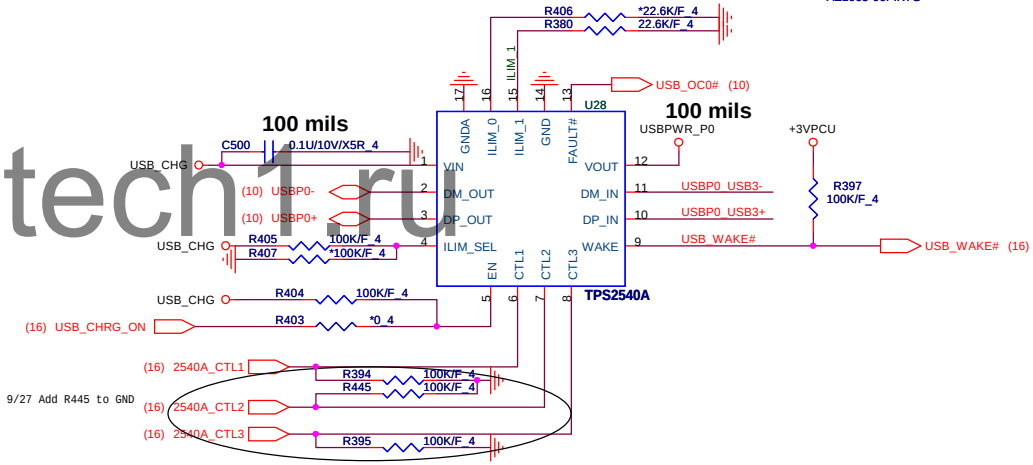
MB to USB board



USB 3.0 PORT0



USB Charger



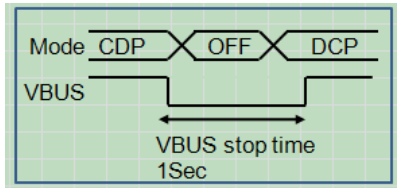
CTL_1	CTL_2	CTL_3	TPS 2540A/2543 Truth Table
0	0	0	OUT discharge, power switch OFF
0	X	1	DCP,Auto-detect(S3/S4/S5, 1.5A)
X	1	0	SDP, USB2.0 mode(S0, 0.5A)
1	0	0	DCP, BC SPEC1.2 only(S3/Deep standby/S4/S5, 1.5A)
1	0	1	DCP, Divider mode only(S3/S4/S5, 1.5A)
1	1	1	CDP (S0, 1.5A)

System State	USB Battery Charging Setting	
	Disable	Enable
S0	SDP	CDP
S3	SDP	DCP
Deep Standby	SDP (VBUS OFF)	DCP
S4	SDP (VBUS OFF)	DCP
S5	SDP (VBUS OFF)	DCP

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

TPS-2540A	TPS-2543	MODE	AC/DC Mode C1	C2	C3	ILIM_SEL
S0	S0	SDP	X(1)	1	0	X
S0	S0	CDP	1	1	1	1
S3(Wake Enable)	X	SDP	1	1	0	1
S3(Charger Mode)	S3	DCP	1	X(0)	0	1
S4	S4	DCP	1	X(0)	0	1
S5	S5	DCP	1	X(0)	0	1
Discharge	Discharge	DIS	0	0	0	X

port mode change, VBUS must be stopped for 1s



DCP: BC 1.2 only.

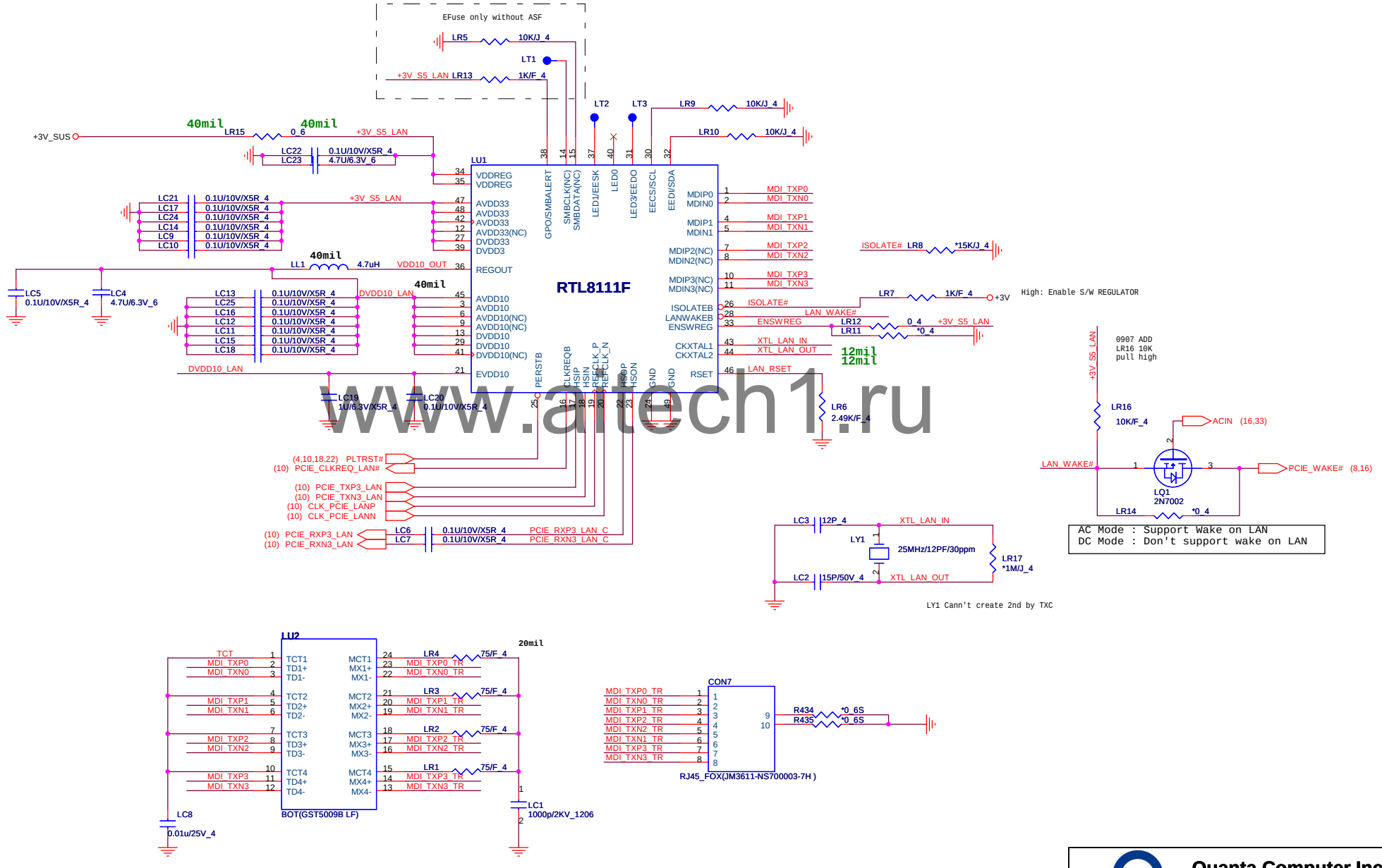
USB WAKE	
1	No device plug(LDO)
0	Device plug(Switch Power)

ILIM_SEL	(I LIMIT(A)= 48000/R)	
HI	I_LIM_1	
LO	I_LIM_0	48000/22.6K=2.123A

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
	USB/USB Charger	1A
Date: Wednesday, November 02, 2011	Sheet 20 of 42	

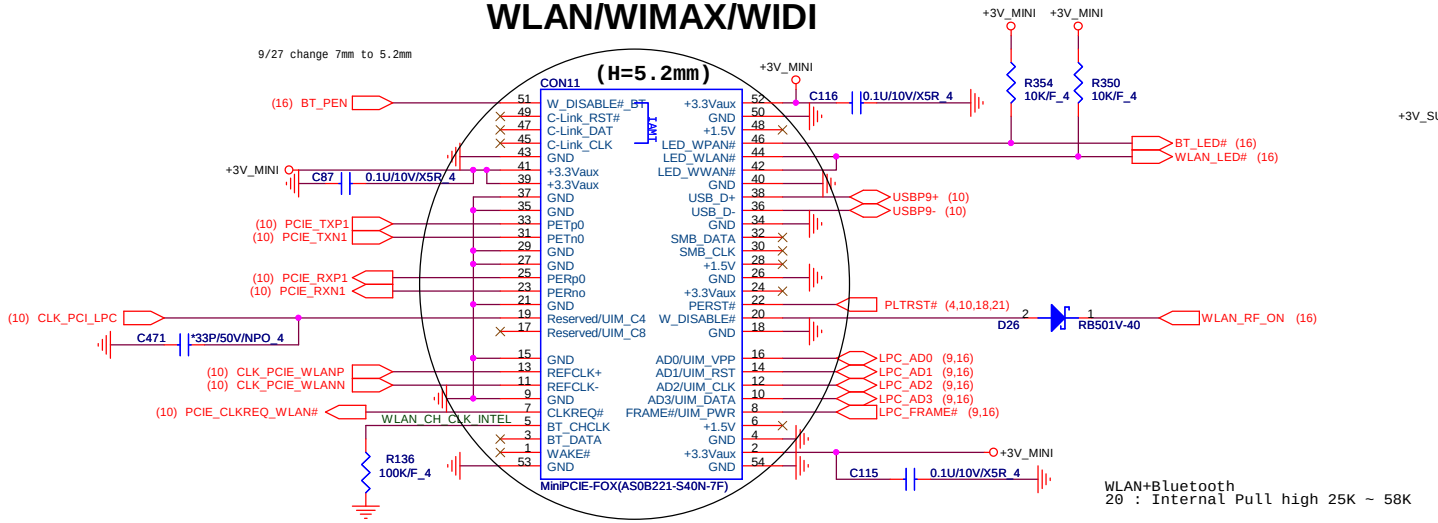


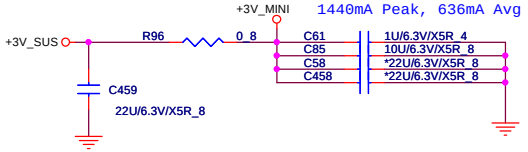
1.Level 1 Environment-related Substances Should Never be Used.
2.Recycled Resin and Coated Wire should be procured from Green Partners.

Quanta Computer Inc.
PROJECT : Chief River

Size	Document Number	Rev
	LAN RTL8111F	1A
Date: Wednesday, November 02, 2011	Sheet 21 of 42	

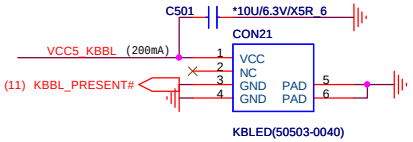
WLAN/WIMAX/WIDI

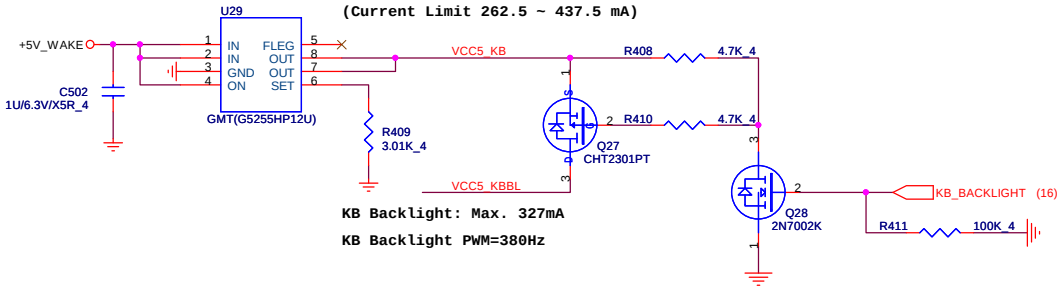


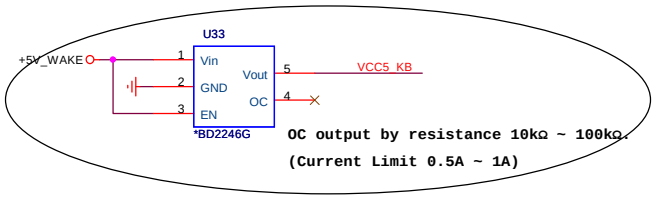


WLAN+Bluetooth
20 : Internal Pull high 25K ~ 58K

KB BACKLIGHT





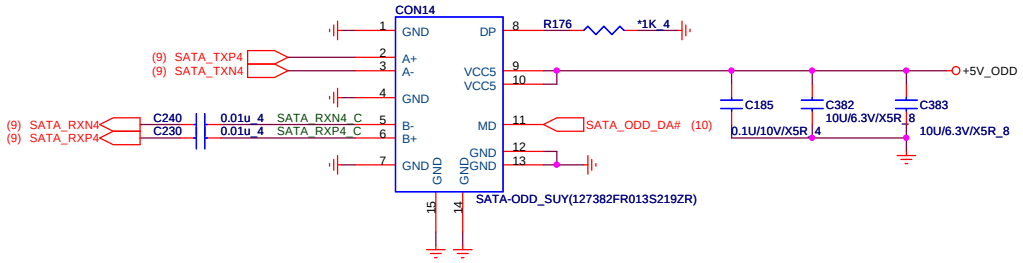


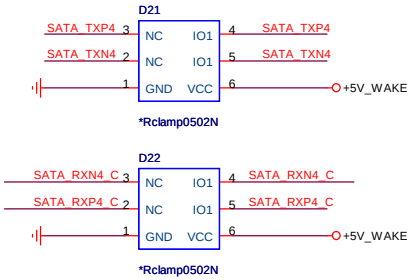
1.Level 1 Environment-related Substances Should Never be Used.
2.Recycled Resin and Coated Wire should be procured from Green Partners.

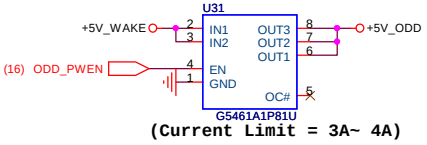
Quanta Computer Inc.
PROJECT : Chief River

Size	Document Number	Rev
	WLAN/KB BL	1A
Date: Wednesday, November 02, 2011	Sheet 22 of 42	

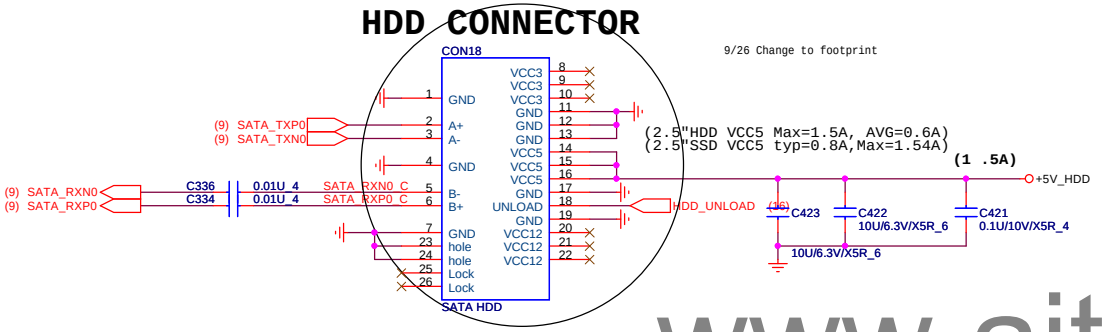
ODD CONNECTOR

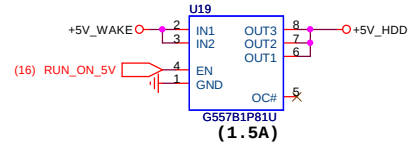


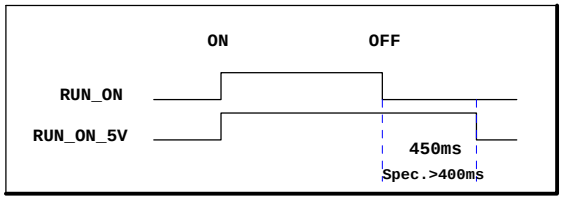


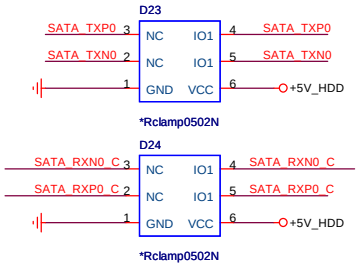


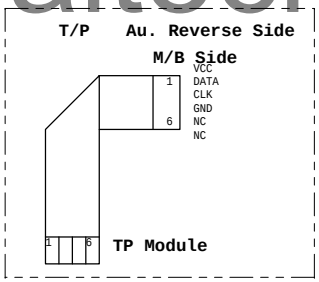
HDD CONNECTOR



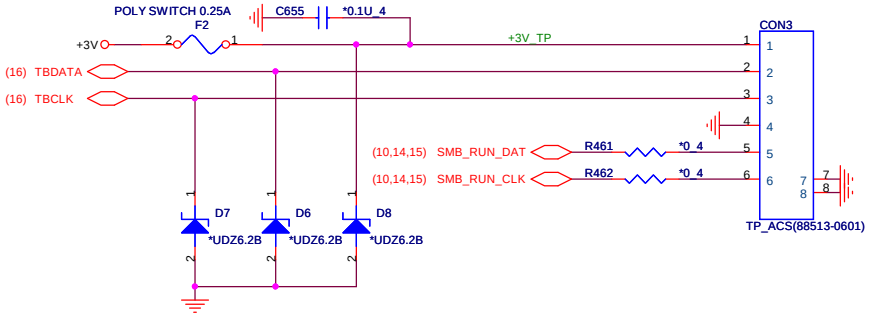




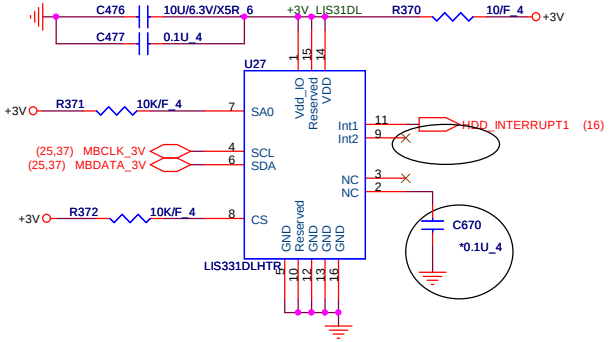




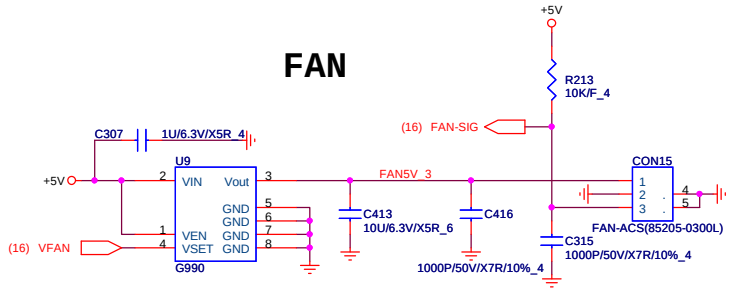
T/P Board to T/P



HDD PROTECT

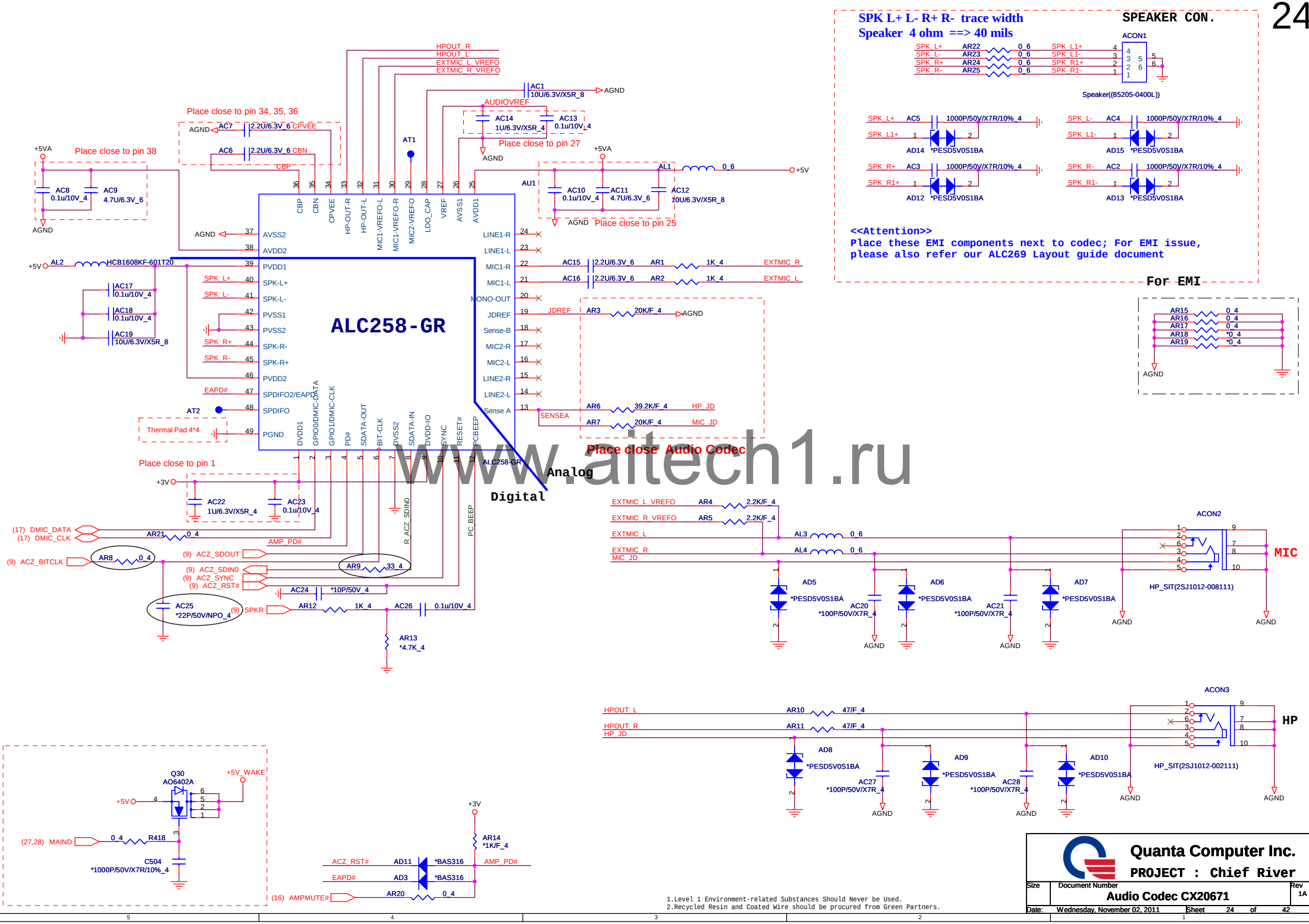


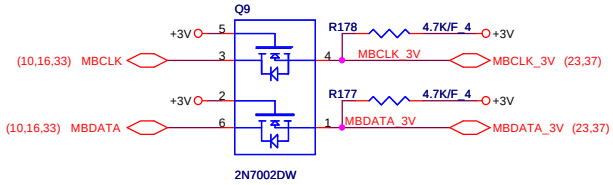
FAN



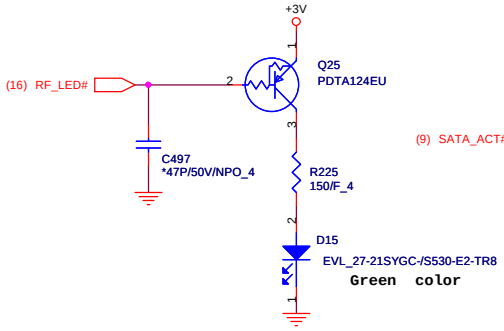
1.Level 1 Environment-related Substances Should Never be Used.
2.Recycled Resin and Coated Wire should be procured from Green Partners.

Quanta Computer Inc.		
PROJECT : Chief River		
Size	Document Number: HDD/ODD/TP/FAN	Rev: 1A
Date: Wednesday, November 02, 2011	Sheet 23 of 42	

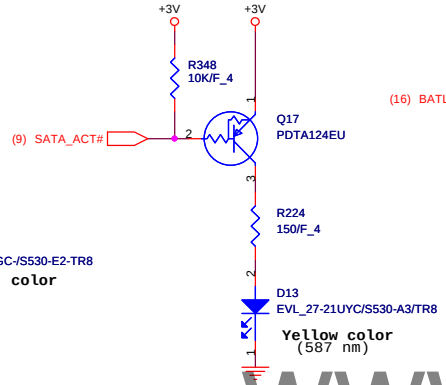




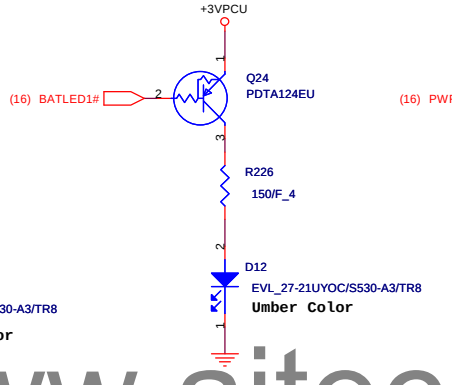
RF LED



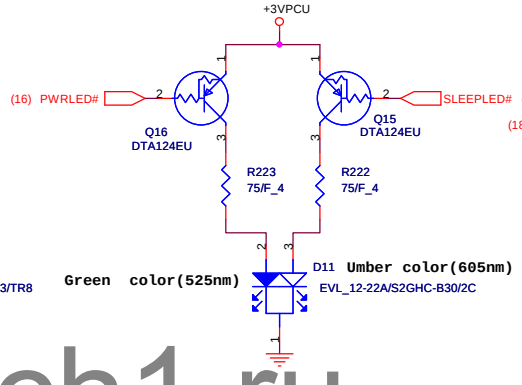
SATA LED



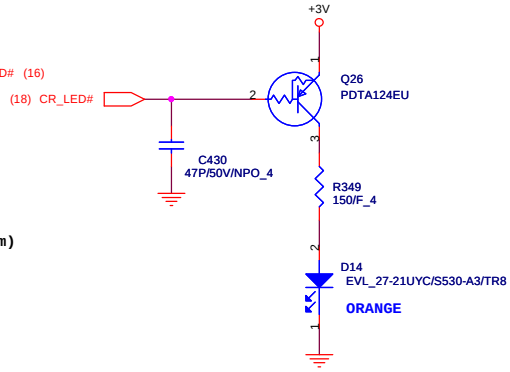
BATTERY LED



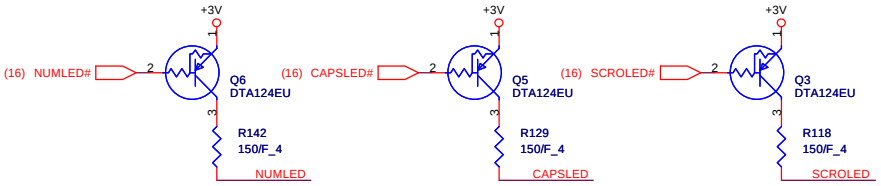
Power/Sleep LED

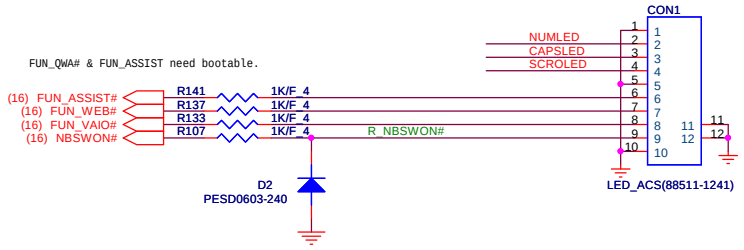


CARD LED



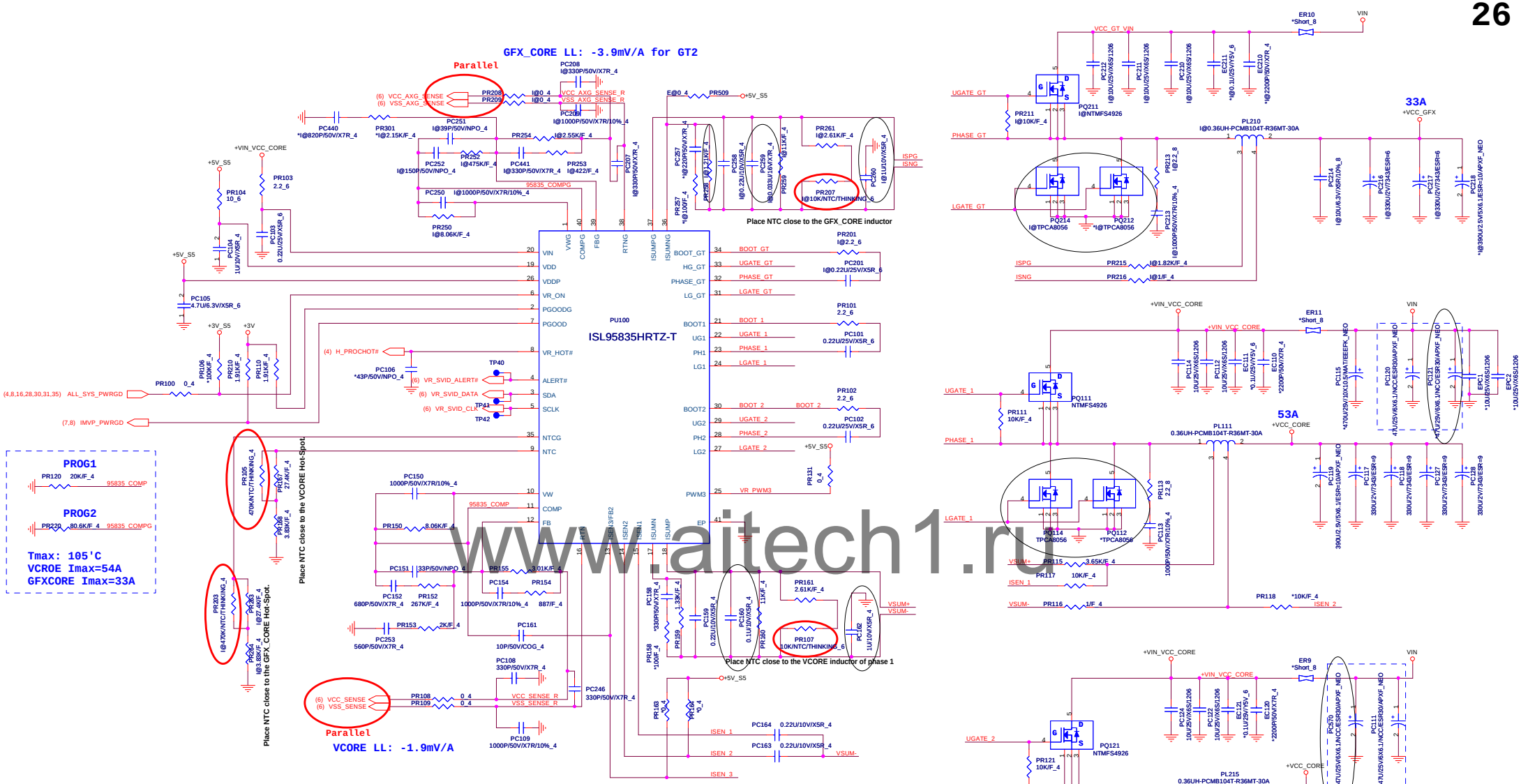
Power SW Board Connector





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

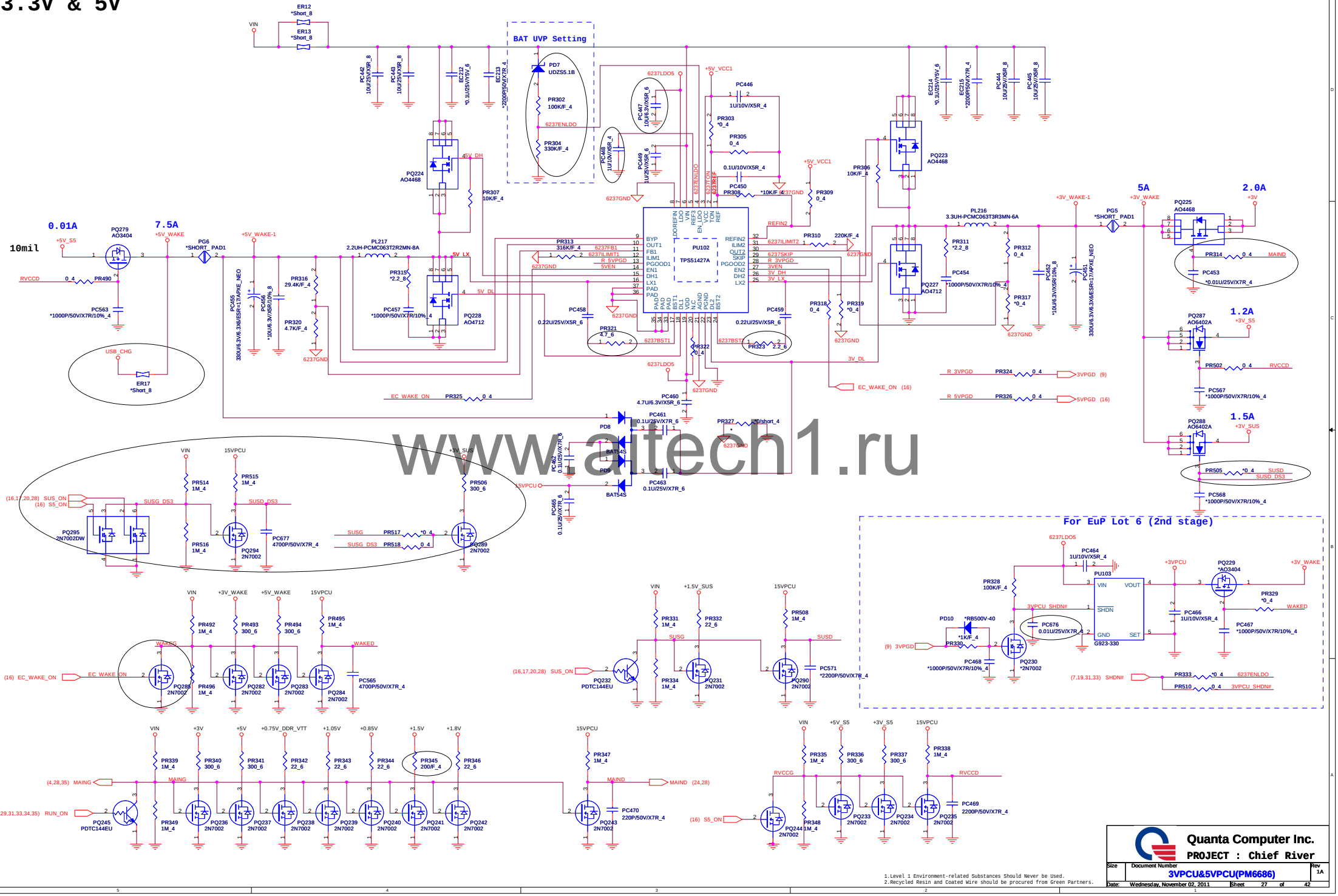
Quanta Computer Inc. PROJECT : Chief River		
Size	Document Number: LED/RF/KB/PS	Rev: 1A
Date: Wednesday, November 02, 2011	Sheet 25 of 42	



Quanta Computer Inc.	
PROJECT : Chief River	
Size	Document Number: +VCC_CORE (ISL95835) — Rev: ES1
Date: Wednesday, November 02, 2011	Sheet 26 of 42

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

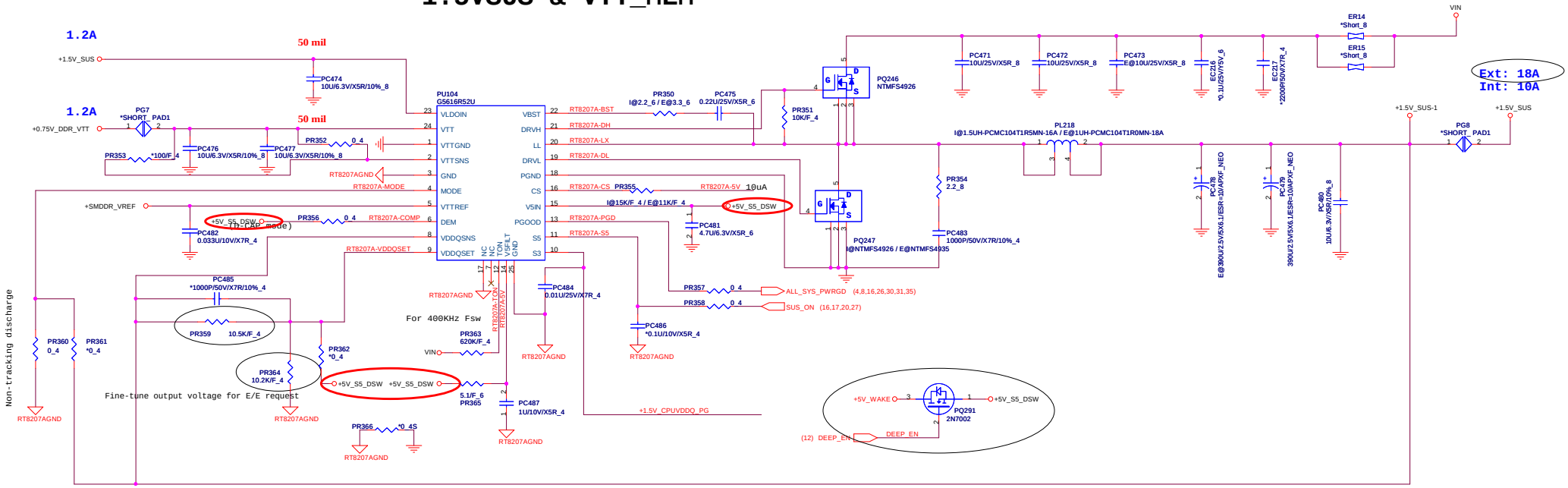
3.3V & 5V

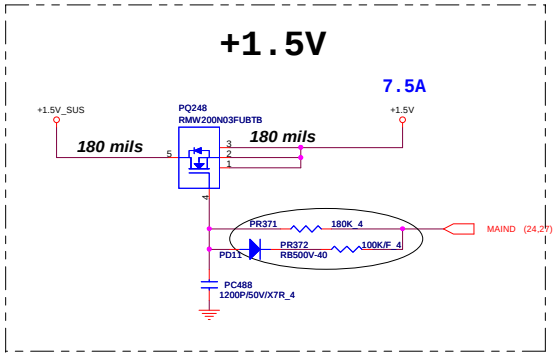


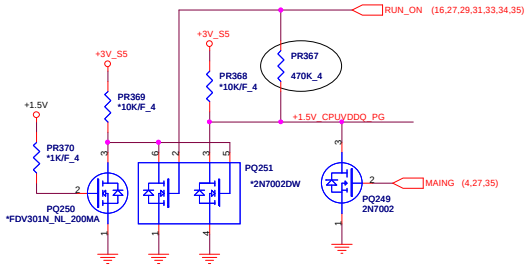
1.Level 1 Environment-related Substances Should Never be Used.
2.Recycled Resin and Coated Wire should be procured from Green Partners.

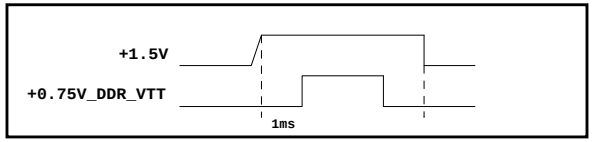
Quanta Computer Inc.		
PROJECT : Chief River		
Size	Document Number	Rev
	3VPCU&5VPCU(PM6686)	1A
Date: Wednesday, November 02, 2011	Sheet 27 of 42	

1.5VSUS & VTT_MEM









MODE	DISCHARGE MODE
+5V	No discharge
+1.5V	Tracking discharge
GND	Non-tracking discharge

VDDQSET	VDDQ(V)	VTTREF & VTT	NOTE
GND	1.5 fixed	VDDQSNS/2	DDR3
5V	1.8 fixed	VDDQSNS/2	DDR2
FB-Resistor	Adjustable	VDDQSNS/2	1.5V<VDDQ<3V

VTT = VTTREF = VDDQSNS/2 = 0.75V

STATE	S3	S5	1.5VSUS	VTTREF	VTT
S0	1	1	on	on	on
S3	0	1	on	on	off
S4/S5	0	0	off	off	off

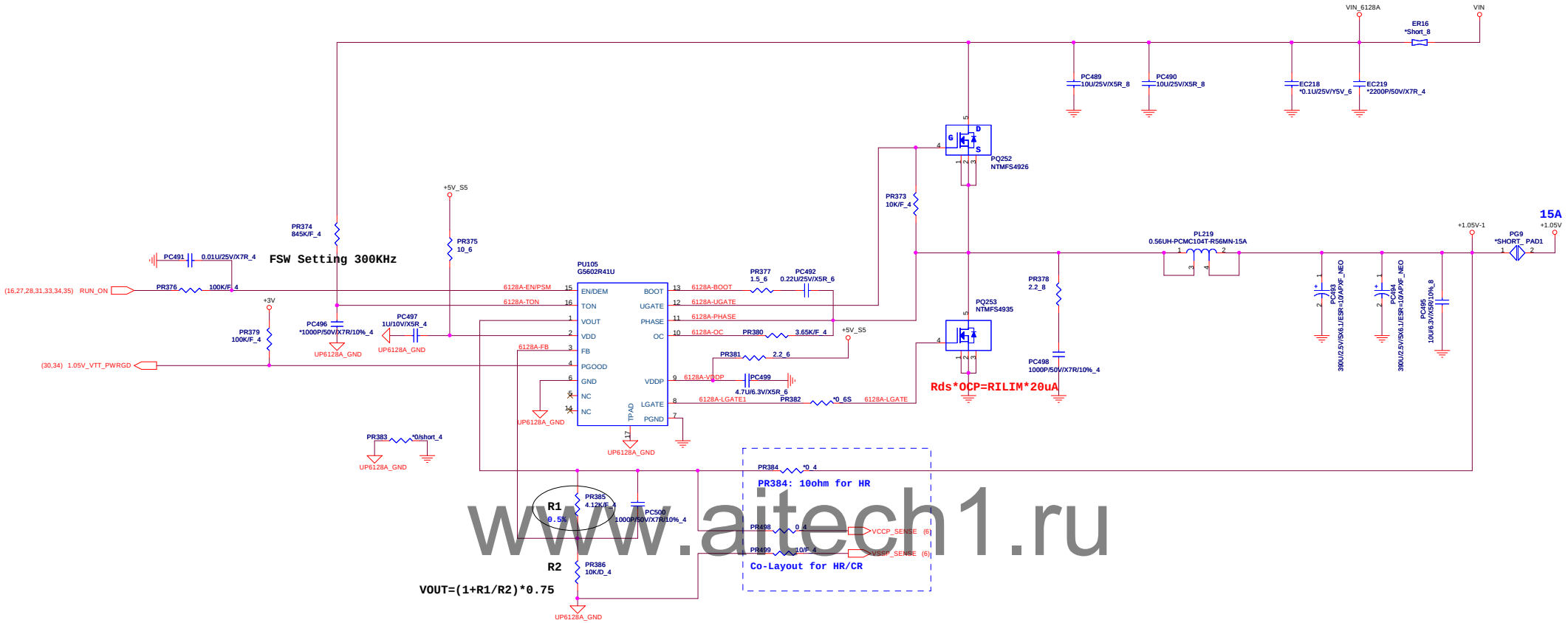
1.Level 1 Environment-related Substances Should Never be Used.
2.Recycled Resin and Coated Wire should be procured from Green Partners.

Quanta Computer Inc.
PROJECT : Chief River

Size	Document Number	Rev
	1.5VSUS/VTT_MEM	1A

Date: Wednesday, November 02, 2011 Sheet 28 of 42

+1.05V / 15.0A



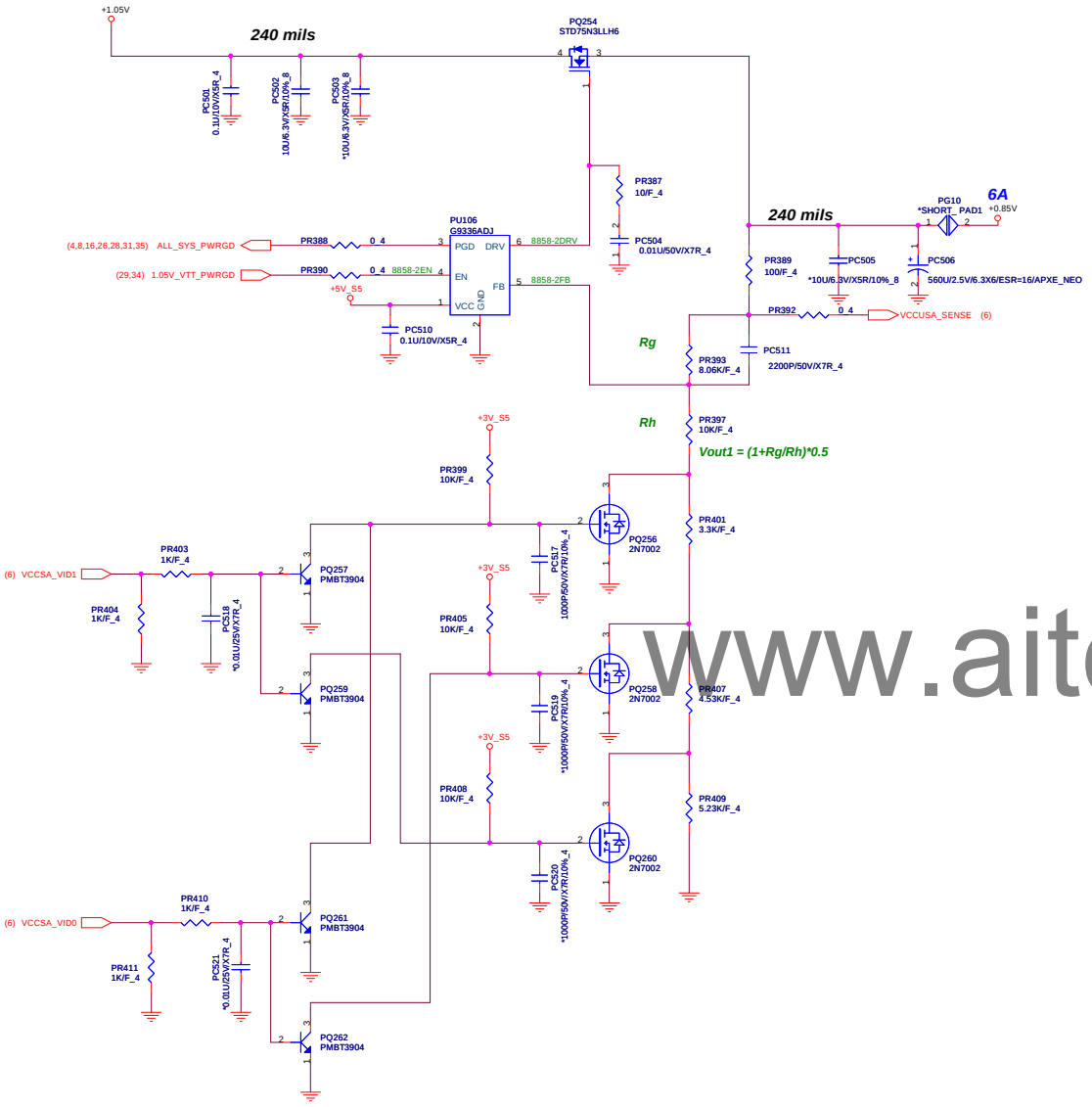
1.Level 1 Environment-related Substances Should Never be Used.
2.Recycled Resin and Coated Wire should be procured from Green Partners.

Quanta Computer Inc.
PROJECT : Chief River

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

Date: Wednesday, November 02, 2011 Sheet 29 of 42

VCCSA

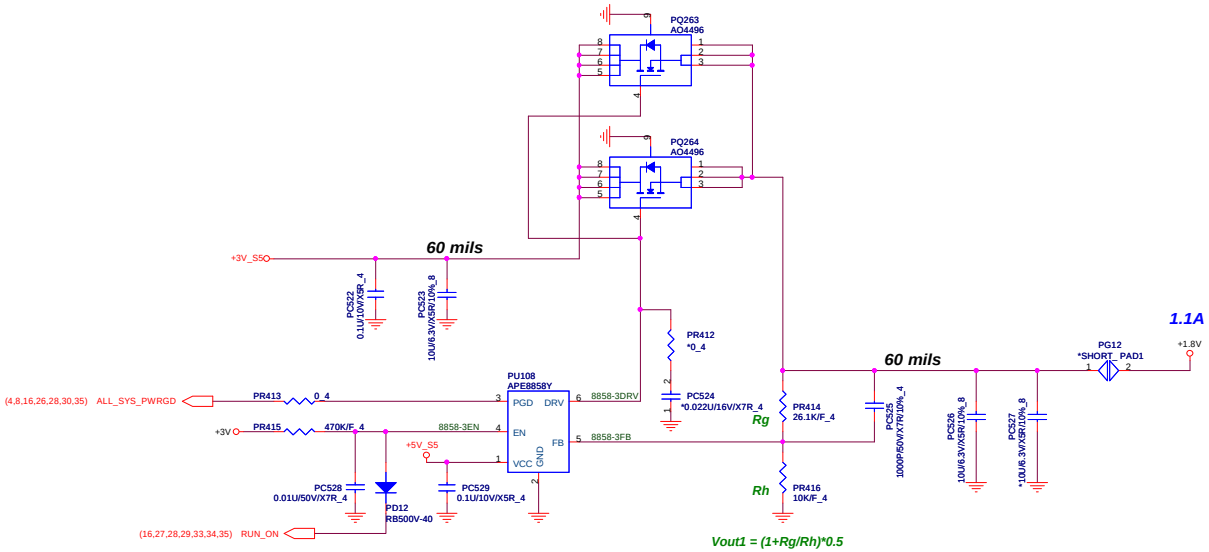


VID 0	VID 1	+0.85V
0	0	0.9V
0	1	0.8V
1	0	0.725V
1	1	0.675V

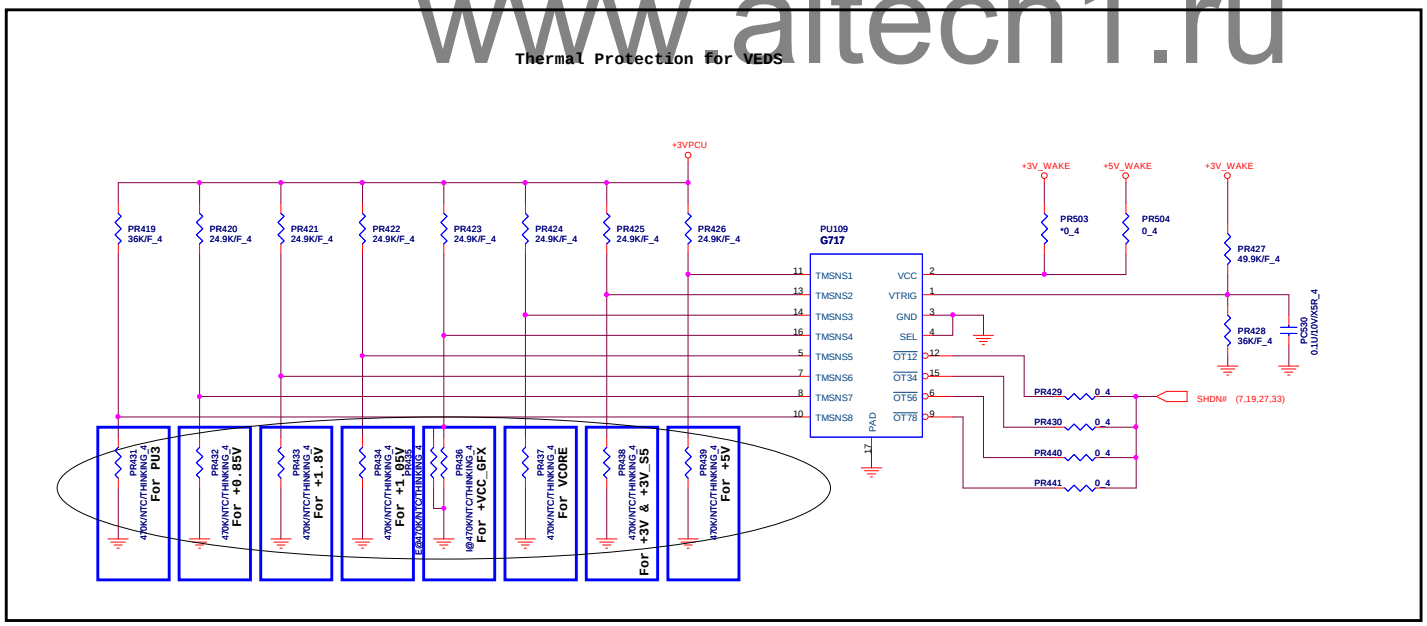
Delete the PC513.

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

VCC1.8



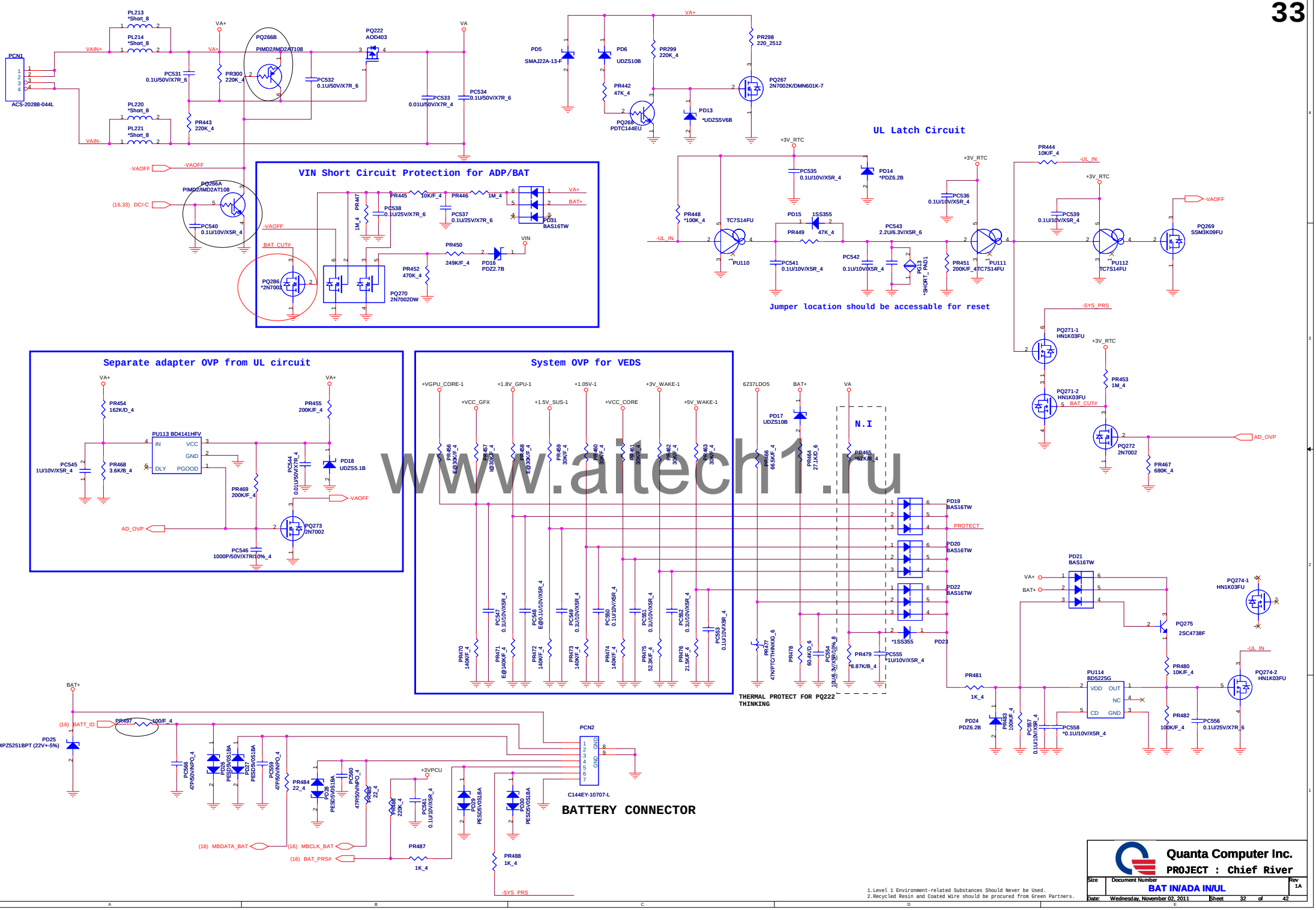
Thermal Protection for VEDS

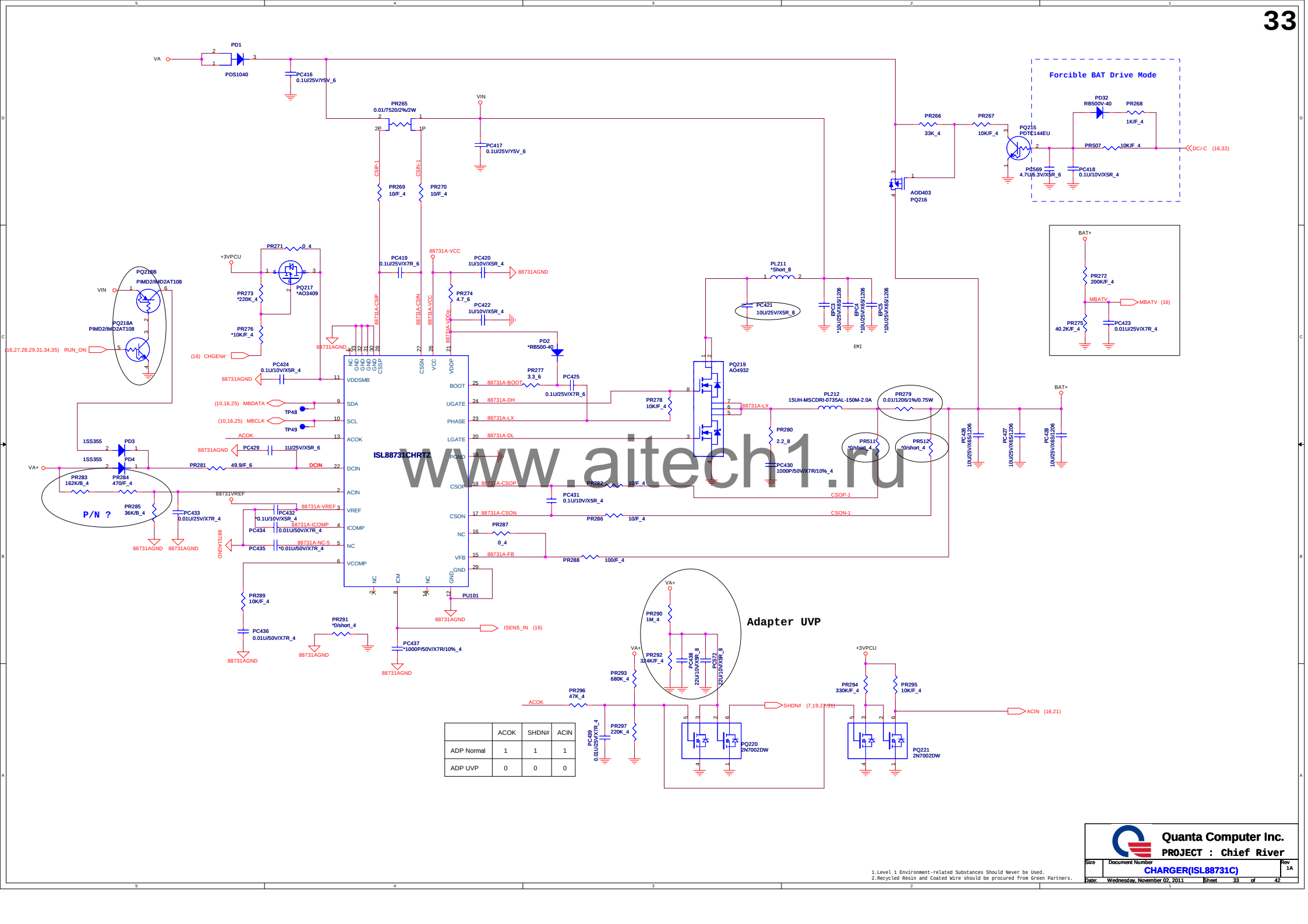


1.Level 1 Environment-related Substances Should Never be Used.
2.Recycled Resin and Coated Wire should be procured from Green Partners.

Quanta Computer Inc.
PROJECT : Chief River

Size	Document Number	Rev
	VCC1.8	1A
Date: Wednesday, November 02, 2011	Sheet 31 of 42	





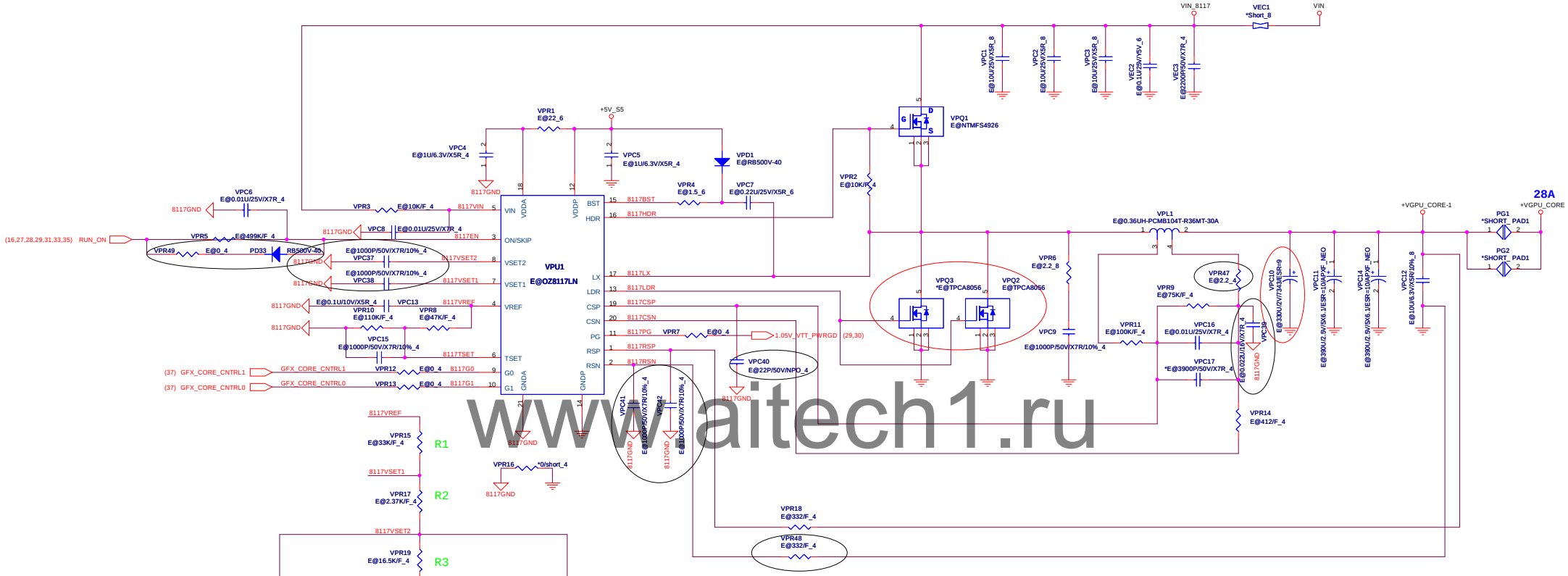
	ACOK	SHDN#	ACIN
ADP Normal	1	1	1
ADP UVP	0	0	0

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

Quanta Computer Inc.
PROJECT : Chief River

Size	Document Number	Rev
	CHARGER(ISL88731C)	1A

Date: Wednesday, November 02, 2011 Sheet 33 of 42



AMD-THOMAS 23x23 & 29X29

External VGA_CORE Voltage Setting:

GFX_CORE_CNTRL0	GFX_CORE_CNTRL1	VGA_CORE
0	0	1.00V
0	1	0.95V
1	0	0.90V
1	1	0.875V

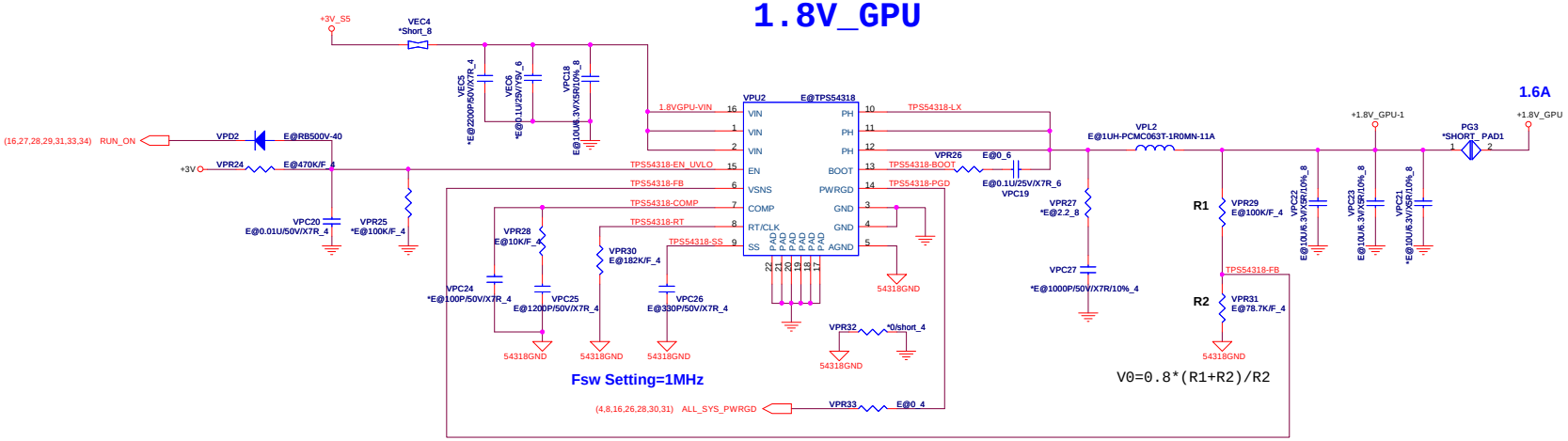
1.Level 1 Environment-related Substances Should Never be Used.
2.Recycled Resin and Coated Wire should be procured from Green Partners.

Quanta Computer Inc.
PROJECT : Chief River

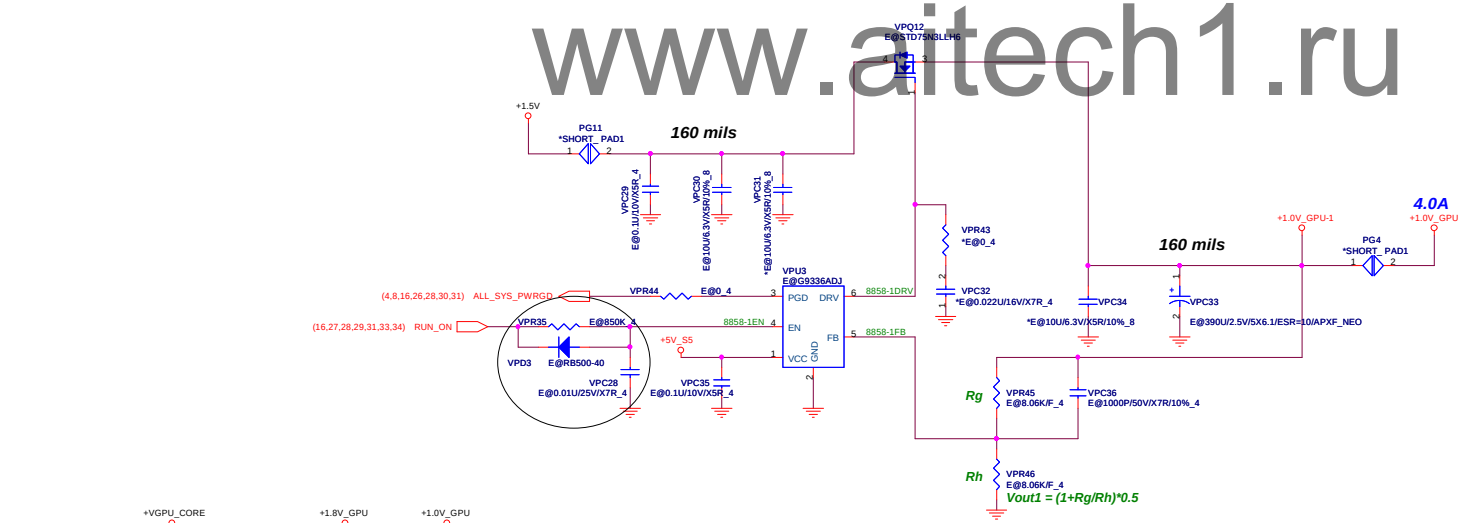
Size	Document Number	Rev
	VGA_CORE (OZ8117)	1A

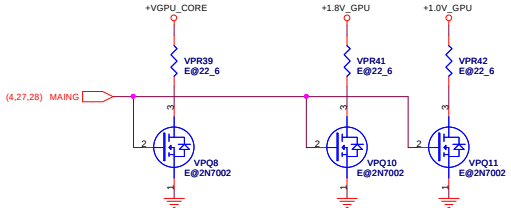
Date: Wednesday, November 02, 2011 Sheet 34 of 42

1.8V_GPU



+1.0V_GPU (Support VRAM 900MHz)

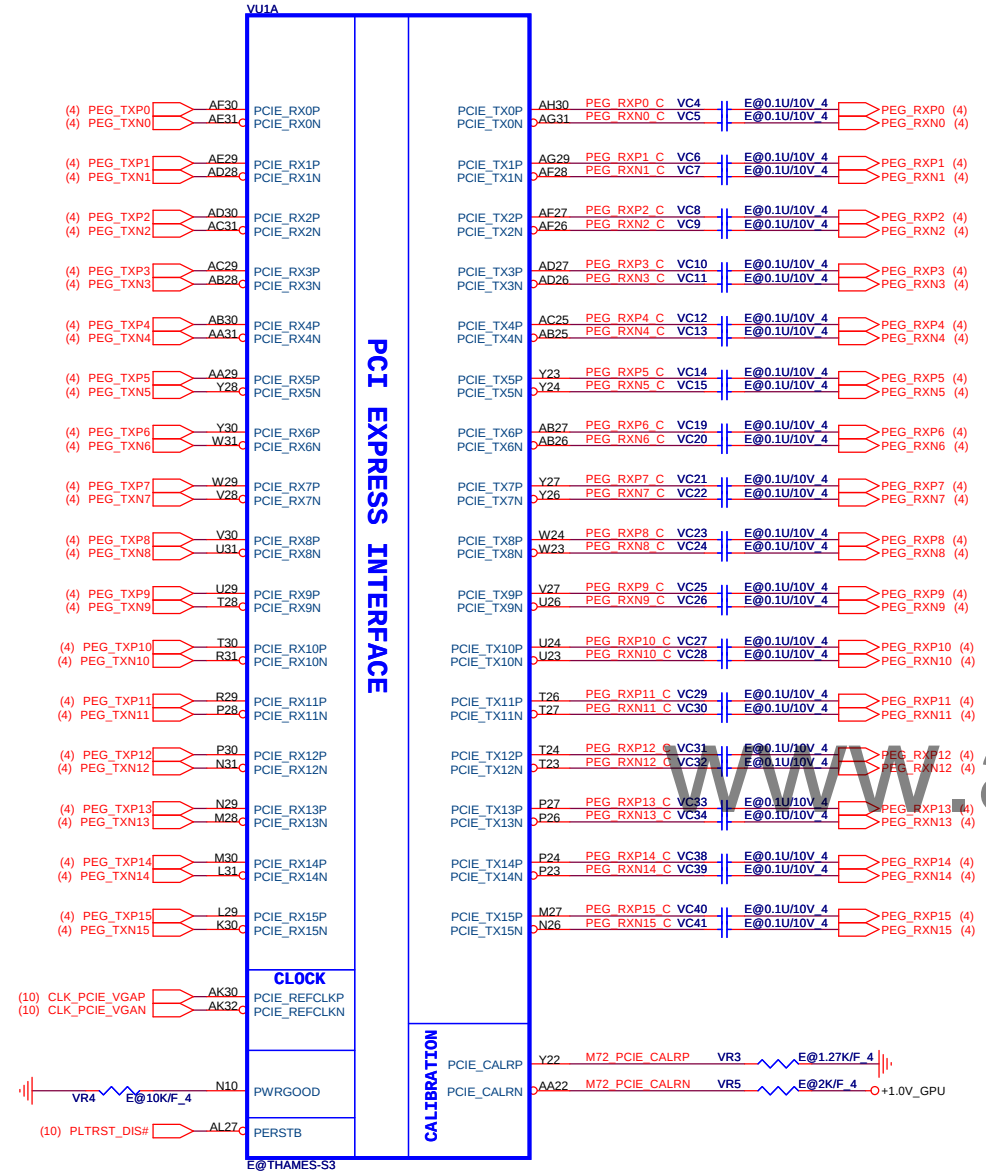


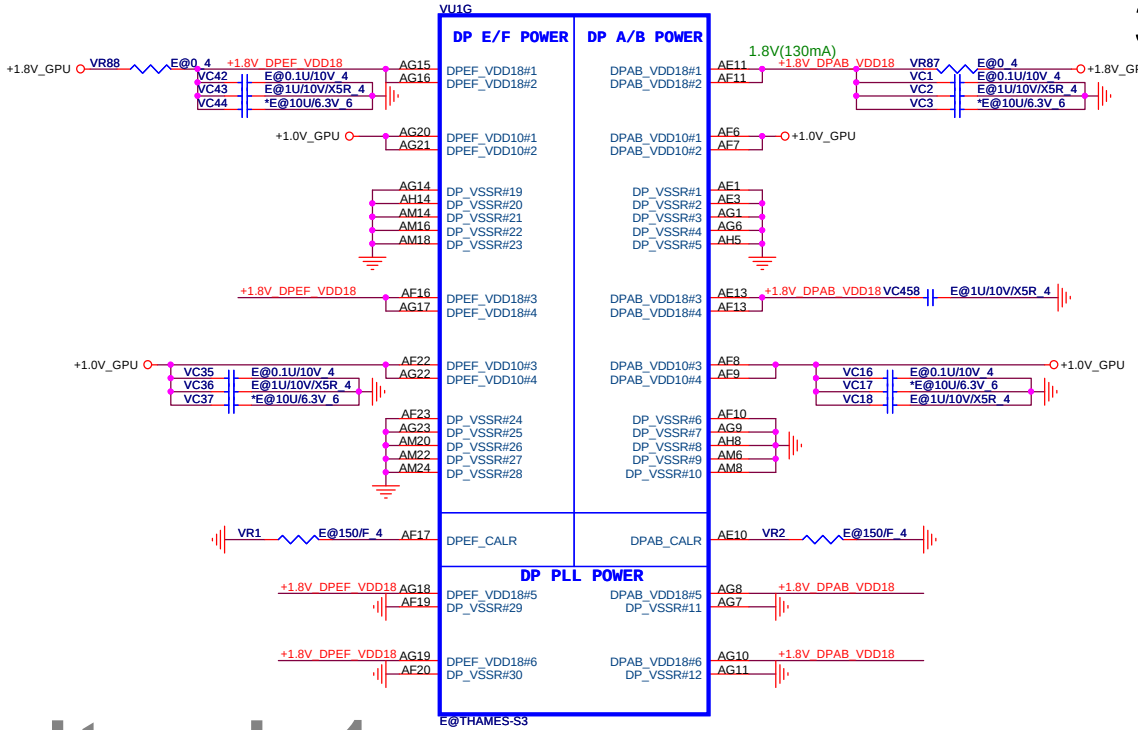


1.Level 1 Environment-related Substances Should Never be Used.
2.Recycled Resin and Coated Wire should be procured from Green Partners.

Quanta Computer Inc.
PROJECT : Chief River

Size	Document Number	Rev
	1.8_GPU / 1.0_GPU	1A
Date: Wednesday, November 02, 2011	Sheet 35 of 42	





Quanta Computer Inc.			
PROJECT : Chief River			
Size	Document Number: THAMES		Rev: 1A
Date: Wednesday, November 02, 2011	Sheet 36 of 42		

	PWRCNTL0	PWRCNTL1	V-CORE
L	0	0	1.0V
M	0	1	0.95V
H	1	0	0.9V
TBD	1	1	0.875V

Memory Straps	MCLK:900Mhz	RAM_ TYPE_CFG3	RAM_ TYPE_CFG2	RAM_ TYPE_CFG1	RAM_ TYPE_CFG0
900 MHz 2Gb(128M*16) Hynix_Vega die	H5TQ2G63BFR-11C	0	0	0	0
900 MHz 2Gb(128M*16) Samsung_C die	K4W2G1646C-HC11	0	0	0	1
900 MHz 1Gb(64M*16) Hynix_Vega die	H5TQ1G63DFR-11C	0	0	1	0
900 MHz 1Gb(64M*16) Samsung_G die	K4W1G1646G-BC11	0	0	1	1

VRAM TYPE

+1.8V_GPU

VR9 E@10K/J_4 RAM_TYPE_CFG0 — VR100 *E@10K/J_4
VR8 *E@10K/J_4 RAM_TYPE_CFG1 — VR101 *E@10K/J_4
VR7 *E@10K/J_4 RAM_TYPE_CFG2 — VR102 *E@10K/J_4
VR6 *E@10K/J_4 RAM_TYPE_CFG3 — VR103 *E@10K/J_4

APERTURE SIZE

Databook mean : 512MB 1GMB memory setting should be 256MB

+3V
VR45 E@10K/J_4 RAM_CFG0
VR98 *E@10K/J_4 RAM_CFG1
VR97 *E@10K/J_4 RAM_CFG2

MEMORY APERTURE SIZE SELECT			
MEMORY SIZE	CFG2 GPIO13	CFG1 GPIO12	CFG0 GPIO11
128MB	0	0	0
256MB	0	0	1
64MB	0	1	0

It is a shared pin strap with CONFIG[2:0] if BIOS_ROM_EN is set to 0.

CONFIGURATION STRAPS

ALLOW FOR PULLUP PADS FOR THESE STRAPS AND IF THESE GPIOS ARE USED, THEY MUST NOT CONFLICT DURING RESET

RECOMMENDED SETTINGS
0= DO NOT INSTALL RESISTOR
1 = INSTALL 10K RESISTOR
X = DESIGN DEPENDANT
NA = NOT APPLICABLE

STRAPS	PIN	DESCRIPTION OF DEFAULT SETTINGS	
TX_PWRS_ENB	GPIO0	**Transmitter Power Savings Enable** 0: 50% Tx output swing for mobile mode 1: full Tx output swing (Default setting for Desktop)	0
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)	0
BIF_GEN2_EN_A	GPIO2	Enable CLKREQ# Power Management 0 - CLKREQ# power management capability is disabled 1 - CLKREQ# power management capability is enabled	1
RSVD BIF_VGA_DIS RSVD	GPIO8 GPIO9 GPIO21	VGA ENABLED	0 0 0
BIOS_ROM_EN	GPIO_22_ROMCSB	ENABLE EXTERNAL BIOS ROM	0
ROMIDCFG(2:0)	GPIO[13:11]	SERIAL ROM TYPE OR MEMORY APERTURE SIZE SELECT	0 0 1
VIP_DEVICE_STRAP_ENA	V2SYNC	IGNORE VIP DEVICE STRAPS	0
RSVD AUD[1] AUD[0]	GENERICC HSYNC VSYNC	AUD[1] AUD[0] 0 0 No audio function 0 1 Audio for DisplayPort and HDMI if dongle is detected 1 0 Audio for DisplayPort only 1 1 Audio for both DisplayPort and HDMI	0 0 11

AMD RESERVED CONFIGURATION STRAPS

ALLOW FOR PULLUP PADS FOR THESE STRAPS AND IF THESE GPIOS ARE USED, THEY MUST NOT CONFLICT DURING RESET

H2SYNC GENERICC

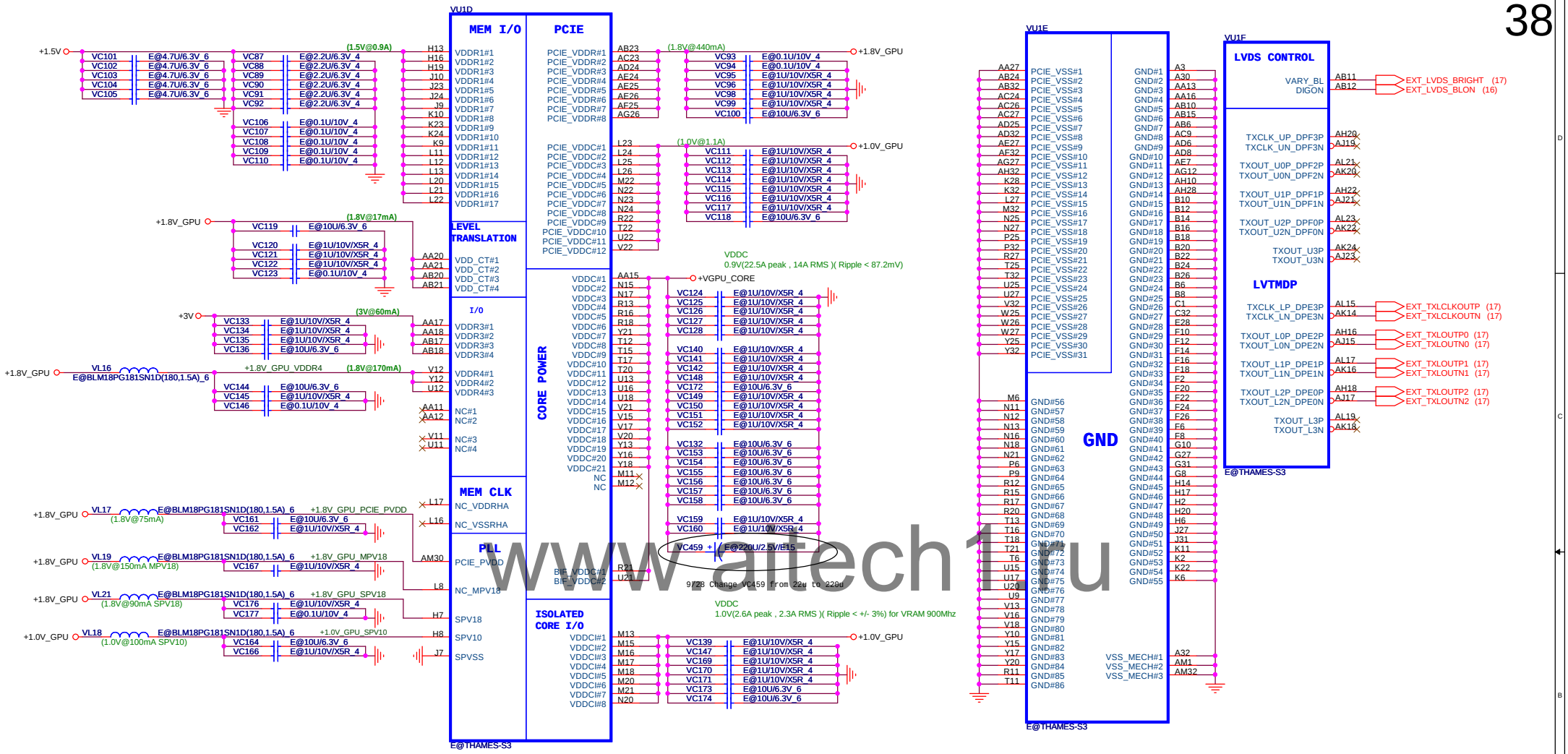
PULLUP PADS ARE NOT REQUIRED FOR THESE STRAPS BUT IF THESE GPIOS ARE USED, THEY MUST NOT CONFLICT DURING RESET

GPIO21_BB_EN

Quanta Computer Inc.
PROJECT : Chief River

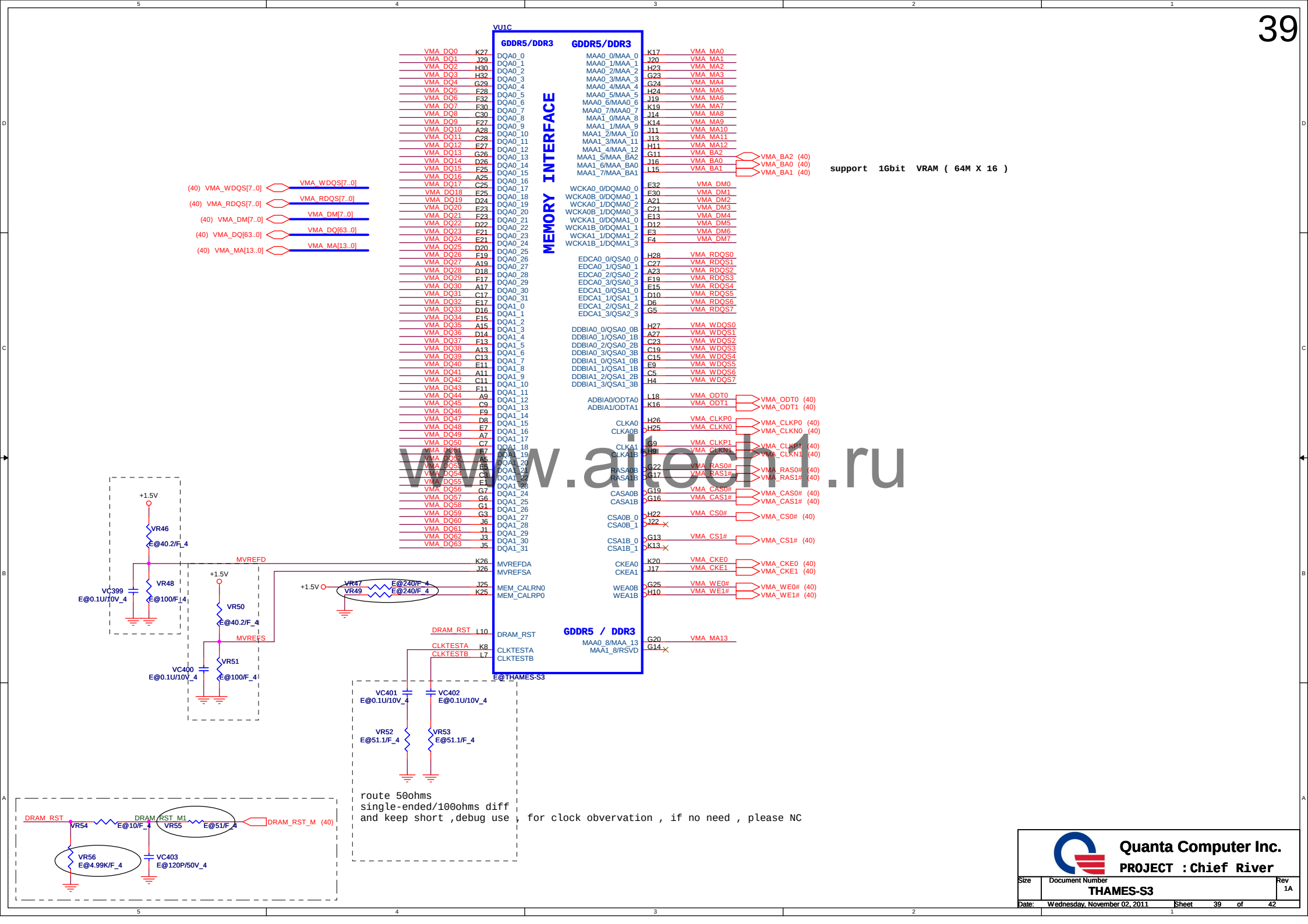
Size	Document Number	Rev
	THAMES-S3	1A

Date: Wednesday, November 02, 2011 Sheet 37 of 42



Quanta Computer Inc.
PROJECT : Chief River

Size	Document Number	Rev
	THAMES-S3	1A
Date: Wednesday, November 02, 2011	Sheet 38 of 42	



Quanta Computer Inc.		
PROJECT : Chief River		
Size	Document Number: THAMES-S3	Rev: 1A
Date: Wednesday, November 02, 2011	Sheet 39 of 42	

512MB DDR3

(39) VMA_MA[13..0]
(39) VMA_DM[7..0]
VMA_MA[13..0]
(39) VMA_DQ[63..0]
(39) VMA_RDQS[7..0]
(39) VMA_WDQS[7..0]

VU12

VREFC_VMA1
VREFD_VMA1
VMA_MA0 VMA_MA1 VMA_MA2 VMA_MA3 VMA_MA4 VMA_MA5 VMA_MA6 VMA_MA7 VMA_MA8 VMA_MA9 VMA_MA10 VMA_MA11 VMA_MA12 VMA_MA13
VMA_DQ18 VMA_DQ23 VMA_DQ16 VMA_DQ19 VMA_DQ17 VMA_DQ20 VMA_DQ21 VMA_DQ22 VMA_DQ7 VMA_DQ3 VMA_DQ5 VMA_DQ1 VMA_DQ4 VMA_DQ0 VMA_DQ6 VMA_DQ2
(39) VMA_BA0 (39) VMA_BA1 (39) VMA_BA2
(39) VMA_CLKP0 (39) VMA_CLKN0 (39) VMA_CKE0
(39) VMA_ODT0 (39) VMA_CS0# (39) VMA_RAS0# (39) VMA_CAS0# (39) VMA_WE0#
VMA_RDQS2 VMA_RDQS0
VMA_DM2 VMA_DM0
VMA_WDQS2 VMA_WDQS0
(39) DRAM_RST_M
VMA_ZQ1
+1.5V
Should be 240 Ohms +-1%
VR57 E@243/F_4
100-BALL SDRAM DDR3
K4W1G1646E-HC12

VU13

VREFC_VMA2
VREFD_VMA2
VMA_MA0 VMA_MA1 VMA_MA2 VMA_MA3 VMA_MA4 VMA_MA5 VMA_MA6 VMA_MA7 VMA_MA8 VMA_MA9 VMA_MA10 VMA_MA11 VMA_MA12 VMA_MA13
VMA_DQ15 VMA_DQ12 VMA_DQ13 VMA_DQ10 VMA_DQ14 VMA_DQ8 VMA_DQ9 VMA_DQ11 VMA_DQ25 VMA_DQ30 VMA_DQ24 VMA_DQ28 VMA_DQ26 VMA_DQ29 VMA_DQ27 VMA_DQ31
VMA_BA0 VMA_BA1 VMA_BA2
VMA_CLKP0 VMA_CLKN0 VMA_CKE0
VMA_ODT0 VMA_CS0# VMA_RAS0# VMA_CAS0# VMA_WE0#
VMA_RDQS1 VMA_RDQS3
VMA_DM1 VMA_DM3
VMA_WDQS1 VMA_WDQS3
DRAM_RST_M
VMA_ZQ2
+1.5V
Should be 240 Ohms +-1%
VR58 E@243/F_4
100-BALL SDRAM DDR3
K4W1G1646E-HC12

VU14

VREFC_VMA3
VREFD_VMA3
VMA_MA0 VMA_MA1 VMA_MA2 VMA_MA3 VMA_MA4 VMA_MA5 VMA_MA6 VMA_MA7 VMA_MA8 VMA_MA9 VMA_MA10 VMA_MA11 VMA_MA12 VMA_MA13
VMA_DQ36 VMA_DQ35 VMA_DQ39 VMA_DQ34 VMA_DQ38 VMA_DQ32 VMA_DQ37 VMA_DQ33 VMA_DQ43 VMA_DQ46 VMA_DQ40 VMA_DQ47 VMA_DQ42 VMA_DQ45 VMA_DQ41 VMA_DQ44
VMA_BA0 VMA_BA1 VMA_BA2
(39) VMA_CLKP1 (39) VMA_CLKN1 (39) VMA_CKE1
(39) VMA_ODT1 (39) VMA_CS1# (39) VMA_RAS1# (39) VMA_CAS1# (39) VMA_WE1#
VMA_RDQS4 VMA_RDQS5
VMA_DM4 VMA_DM5
VMA_WDQS4 VMA_WDQS5
DRAM_RST_M
VMA_ZQ3
+1.5V
Should be 240 Ohms +-1%
VR59 E@243/F_4
100-BALL SDRAM DDR3
K4W1G1646E-HC12

VU15

VREFC_VMA4
VREFD_VMA4
VMA_MA0 VMA_MA1 VMA_MA2 VMA_MA3 VMA_MA4 VMA_MA5 VMA_MA6 VMA_MA7 VMA_MA8 VMA_MA9 VMA_MA10 VMA_MA11 VMA_MA12 VMA_MA13
VMA_DQ49 VMA_DQ52 VMA_DQ50 VMA_DQ54 VMA_DQ48 VMA_DQ51 VMA_DQ53 VMA_DQ55 VMA_DQ60 VMA_DQ58 VMA_DQ63 VMA_DQ57 VMA_DQ61 VMA_DQ56 VMA_DQ62 VMA_DQ59
VMA_BA0 VMA_BA1 VMA_BA2
VMA_CLKP1 VMA_CLKN1 VMA_CKE1
VMA_ODT1 VMA_CS1# VMA_RAS1# VMA_CAS1# VMA_WE1#
VMA_RDQS6 VMA_RDQS7
VMA_DM6 VMA_DM7
VMA_WDQS6 VMA_WDQS7
DRAM_RST_M
VMA_ZQ4
+1.5V
Should be 240 Ohms +-1%
VR60 E@243/F_4
100-BALL SDRAM DDR3
K4W1G1646E-HC12

VREFC_VMA1 / VREFD_VMA1

+1.5V
VR61 E@4.99K/F_4
VR62 E@4.99K/F_4
VR69 E@4.99K/F_4
VR70 E@4.99K/F_4
VC404 E@0.1U/10V_4
VC405 E@0.1U/10V_4

VREFC_VMA2 / VREFD_VMA2

+1.5V
VR63 E@4.99K/F_4
VR64 E@4.99K/F_4
VR71 E@4.99K/F_4
VR72 E@4.99K/F_4
VC406 E@0.1U/10V_4
VC407 E@0.1U/10V_4

VREFC_VMA3 / VREFD_VMA3

+1.5V
VR65 E@4.99K/F_4
VR66 E@4.99K/F_4
VR73 E@4.99K/F_4
VR74 E@4.99K/F_4
VC408 E@0.1U/10V_4
VC409 E@0.1U/10V_4

VREFC_VMA4 / VREFD_VMA4

+1.5V
VR67 E@4.99K/F_4
VR68 E@4.99K/F_4
VR75 E@4.99K/F_4
VR76 E@4.99K/F_4
VC410 E@0.1U/10V_4
VC411 E@0.1U/10V_4

VMA_CLKP0 / VMA_CLKN0 / VMA_CLKP1 / VMA_CLKN1

VR77 E@56.2/F_4
VR78 E@56.2/F_4
VR79 E@56.2/F_4
VR80 E@56.2/F_4
VMA_CLK0_COMM
VMA_CLK1_COMM
VC428 E@0.01U/25V_4
VC445 E@0.01U/25V_4

+1.5V decoupling

VC412 VC413 VC414 VC415 VC416 VC417 VC418 VC419 E@1U/10V/X5R_4
VC420 VC421 VC422 VC423 VC424 VC425 VC426 VC427 E@1U/10V/X5R_4
VC429 VC430 VC431 VC432 VC433 VC434 VC435 VC436 E@1U/10V/X5R_4
VC437 VC438 VC439 VC440 VC441 VC442 VC443 VC444 E@1U/10V/X5R_4
VC446 VC447 VC448 VC449 VC450 E@4.7U/6.3V_6
VC461 *E@330U/2.5V
VC451 VC452 VC453 VC454 VC455 VC456 VC457 E@4.7U/6.3V_6
VC460 E@330U/2.5V

Quanta Computer Inc.
PROJECT : Chief River
Size: Document Number: THAMES-S3 Rev: 1A
Date: Wednesday, November 02, 2011 Sheet 40 of 42

H43 *H-C157D87PT
H44 *H-C157D91PT
H45 *H-C157D91PT
H46 *H-C157D87PT
H-C157D87PT

H34 *HG-HK6-4
H35 *HG-HK6-3P
H36 *HG-HK6-11
H39 *HG-C295D157P2
H42 *HG-HK6-10
H49 *HG-HK6-11
H51 *HG-HK6-13
H54 *HG-HK6-11P
H48 *H-HK6-11
H53 *HG-HK6-13
H38 *HG-HK6-5

H60 *h-o98x87d98x87n
H13 *O-HK6-2
H57 *H-TC5_5BC4I3D3P2
H58 *H-TC5_5BC4I3D3P2
H59 *H-C256d157pt
H50 *HG-HK6-11
H40 *HG-HK6-7
H37 *HG-C197D98P2
H33 *HG-HK6-12
H10 *H-C197D0PT
H11 *H-C197D0PT
H12 *H-C256D0PT

J3 *SHORT_ PAD1
J4 *SHORT_ PAD1
J5 *SHORT_ PAD1
J6 *SHORT_ PAD1
J7 *SHORT_ PAD1
J8 *SHORT_ PAD1

+3V_S5
C677 0.1U/10V/X5R_4
C678 0.1U/10V/X5R_4
C679 0.1U/10V/X5R_4

VIN
C624 10U/25V/X6S/1206
C626 *10U/25V/X6S/1206
C627 *10U/25V/X6S/1206
C628 *10U/25V/X6S/1206
C629 *10U/25V/X6S/1206
C630 *22U_1206
C631 1U/25V/X5R_6
C632 1U/25V/X5R_6
C633 1U/25V/X5R_6
C634 1U/25V/X5R_6
C635 1U/25V/X5R_6
C636 1U/25V/X5R_6
C637 *1U/25V/X5R_6

+1.5V_SUS
C659 0.1U/10V/X5R_4
C660 0.1U/10V/X5R_4
C661 0.1U/10V/X5R_4
C662 0.1U/10V/X5R_4
+1.5V

+3V
C617 10U/6.3V/X5R_6
C619 10U/6.3V/X5R_6
C621 1000P/50V/X7R/10%_4
C623 1000P/50V/X7R/10%_4

KEY BOARD Connector

CON2
KB(50503-02441-001)

RP6 RP8 RP9 RP10 RP11 RP12 22X4

(16) MY15 MY14 MY13 MY12 MY11 MX7 MY10 MX6 MX5 MY9 MX4 MY8 MY7 MY6 MY5 MY4 MY3 MX3 MY2 MY1 MY0 MX2 MX1 MX0

MY15_R MY14_R MY13_R MY12_R MY11_R MX7_R MY10_R MX6_R MX5_R MY9_R MX4_R MY8_R MY7_R MY6_R MY5_R MY4_R MY3_R MX3_R MY2_R MY1_R MY0_R MX2_R MX1_R MX0_R

+3VPCU
MX0 R163 10K/J_4
MX1 R162 10K/J_4
MX2 R159 10K/J_4
MX3 R156 10K/J_4
MX4 R154 10K/J_4
MX5 R151 10K/J_4
MX6 R147 10K/J_4
MX7 R143 10K/J_4

+1.8V_GPU
C594 1000P/50V/X7R/10%_4
C597 1000P/50V/X7R/10%_4

+1.8V_GPU
C606 1000P/50V/X7R/10%_4
C609 1000P/50V/X7R/10%_4
C612 1000P/50V/X7R/10%_4
+VGPU_CORE

C640 *10U/6.3V/X5R_8
C641 *22U/6.3V/X5R_8
+3V

+1.5V
C509 1000P/50V/X7R/10%_4
+VGPU_CORE

+5V
C511 1000P/50V/X7R/10%_4
C514 1000P/50V/X7R/10%_4
+5V_WAKE

+5V
C519 1000P/50V/X7R/10%_4
C522 1000P/50V/X7R/10%_4
C525 1000P/50V/X7R/10%_4
C528 1000P/50V/X7R/10%_4
C638 1000P/50V/X7R/10%_4
C639 1000P/50V/X7R/10%_4
+3V_S5

+5V
C535 1000P/50V/X7R/10%_4
C538 1000P/50V/X7R/10%_4
C541 1000P/50V/X7R/10%_4
+3V

+5V
C546 1000P/50V/X7R/10%_4

+3V_S5
C558 1000P/50V/X7R/10%_4
C563 1000P/50V/X7R/10%_4
C565 1000P/50V/X7R/10%_4
C567 1000P/50V/X7R/10%_4
C570 1000P/50V/X7R/10%_4
C573 1000P/50V/X7R/10%_4
C576 1000P/50V/X7R/10%_4
C579 1000P/50V/X7R/10%_4
C582 1000P/50V/X7R/10%_4
C585 1000P/50V/X7R/10%_4
C588 1000P/50V/X7R/10%_4
C591 1000P/50V/X7R/10%_4
+3V

+3V_S5
C600 1000P/50V/X7R/10%_4
C603 1000P/50V/X7R/10%_4
C607 1000P/50V/X7R/10%_4
C610 1000P/50V/X7R/10%_4
C613 1000P/50V/X7R/10%_4
+5V_WAKE

LC26 *10U/6.3V/X5R_8
+3V_SUS

+VGPU_CORE
C602 1000P/50V/X7R/10%_4

+5V_WAKE
C523 1000P/50V/X7R/10%_4
C526 1000P/50V/X7R/10%_4
+3V

C531 1000P/50V/X7R/10%_4
C533 1000P/50V/X7R/10%_4
C536 1000P/50V/X7R/10%_4
C539 1000P/50V/X7R/10%_4
C542 1000P/50V/X7R/10%_4
C544 1000P/50V/X7R/10%_4
C547 1000P/50V/X7R/10%_4
C549 1000P/50V/X7R/10%_4
C550 1000P/50V/X7R/10%_4
C553 1000P/50V/X7R/10%_4
C556 1000P/50V/X7R/10%_4
C559 1000P/50V/X7R/10%_4
C562 1000P/50V/X7R/10%_4

+3V
C568 1000P/50V/X7R/10%_4
C571 1000P/50V/X7R/10%_4
C574 1000P/50V/X7R/10%_4
C577 1000P/50V/X7R/10%_4
C580 1000P/50V/X7R/10%_4
C583 1000P/50V/X7R/10%_4
C586 1000P/50V/X7R/10%_4
C589 1000P/50V/X7R/10%_4
C592 1000P/50V/X7R/10%_4
C595 1000P/50V/X7R/10%_4
C598 1000P/50V/X7R/10%_4
C601 1000P/50V/X7R/10%_4
C604 1000P/50V/X7R/10%_4
C608 1000P/50V/X7R/10%_4
C611 1000P/50V/X7R/10%_4
C614 1000P/50V/X7R/10%_4

VIN
C513 1000P/50V/X7R/10%_4
C516 1000P/50V/X7R/10%_4
C532 1000P/50V/X7R/10%_4
C530 1000P/50V/X7R/10%_4
C527 1000P/50V/X7R/10%_4
C534 1000P/50V/X7R/10%_4
C537 1000P/50V/X7R/10%_4
C540 1000P/50V/X7R/10%_4
C543 1000P/50V/X7R/10%_4
C545 1000P/50V/X7R/10%_4

VIN
C551 1000P/50V/X7R/10%_4
C554 1000P/50V/X7R/10%_4
+1.8V_GPU
C557 1000P/50V/X7R/10%_4
C560 1000P/50V/X7R/10%_4
+VGPU_CORE

+VCC_CORE
C569 1000P/50V/X7R/10%_4
C572 1000P/50V/X7R/10%_4
C575 1000P/50V/X7R/10%_4
C578 1000P/50V/X7R/10%_4
C581 1000P/50V/X7R/10%_4
C584 1000P/50V/X7R/10%_4
C587 1000P/50V/X7R/10%_4
C590 1000P/50V/X7R/10%_4
C593 1000P/50V/X7R/10%_4
C596 1000P/50V/X7R/10%_4
+1.5V

FOR EMI REQUIREMENT 1003C

+5V_WAKE
C680 *0.1U/10V/X5R_4
C681 *0.1U/10V/X5R_4
C682 *0.1U/10V/X5R_4
C683 *0.1U/10V/X5R_4

+3V
C684 *0.1U/10V/X5R_4
C685 *0.1U/10V/X5R_4
C686 *0.1U/10V/X5R_4
C687 *0.1U/10V/X5R_4
C688 *0.1U/10V/X5R_4
C689 *0.1U/10V/X5R_4

+3V_S5
C690 *0.1U/10V/X5R_4

+5V
C691 *0.1U/10V/X5R_4
C692 *0.1U/10V/X5R_4
C693 *0.1U/10V/X5R_4
C694 *0.1U/10V/X5R_4
C695 *0.1U/10V/X5R_4
C696 *0.1U/10V/X5R_4

+0.85V
C697 *0.1U/10V/X5R_4
+1.05V
C698 *0.1U/10V/X5R_4

+3V_SUS
C699 *0.1U/10V/X5R_4
C700 *0.1U/10V/X5R_4
C701 *0.1U/10V/X5R_4
C702 *0.1U/10V/X5R_4
C703 *0.1U/10V/X5R_4

+1.8V
C704 *0.1U/10V/X5R_4
+0.75V_DDR_VTT
C705 *0.1U/10V/X5R_4

+5V_HDD
C706 *0.1U/10V/X5R_4
USB_CHG
C707 *0.1U/10V/X5R_4

USBPWR_P0
C708 *0.1U/10V/X5R_4
USBPWR_P1
C709 *0.1U/10V/X5R_4
USBPWR_P2
C710 *0.1U/10V/X5R_4
USBPWR_P4
C711 *0.1U/10V/X5R_4

+5V_HDMI
C712 *0.1U/10V/X5R_4
VIN
C713 *0.1U/25V/X7R_6

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 : HK5

Size	Document Number	Rev
	HOLE/EMI/KB	1A
Date: Wednesday, November 02, 2011	Sheet 41 of 42	

USB PORT Architecture for EVT	
PORT 0	IO Port
PORT 1	IO Port
PORT 2	IO Port
PORT 3	N/A
PORT 4	IO Port
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	N/A
PORT 12	N/A
PORT 13	N/A

PCIE BUS	
PORT 1	WLAN Port
PORT 2	CARD READER
PORT 3	GLAN(RTL8111E)
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	Function
ISL88731CHRTZ	0001 001X	Charger
AMD Thames	0100 0001	Graphice
LIS331DL	0011 001X	G Sensor

	R363(High) R362(Low)	R294(High) R297(low)
	Board ID3	Board ID0
14"/HK6	0	0
15"/HK5	0	1
17"/HK7	1	0

Board ID1 (VRAM Vendor)	Samaung(1)	Hynix(0)
R47(High)	Stuff	No Stuff
R48(Low)	No Stuff	Stuff

Board ID2		
14" 4PCS	1G	512M
15" 8PCS	1G	2G
R39(High)	Stuff	No Stuff
R27(Low)	No Stuff	Stuff

PCBA SKU	Discrete	UMA
R277(Pull High)	Stuff	No Stuff
R275(Pull Low)	No Stuff	Stuff