| 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_PCIE I/F/DP Power | 1A | |
| 37 | Thames_IO & STRAP | 1A | |
| 38 | Thames_MEMORY/THERM | 1A | |
| 39 | Thames_POWER | 1A | |

| Page | Title of schematic page | Rev. | Date |
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| 40 | Thames_DDR3_A_512M | 1A | |
| 41 | Thames_DDR3_B_512M | 1A | |
| 42 | HOLE/EMI/KB | 1A | |
| 43 | IO PORT LIST | 1A | |

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

# ZS/HK5 Chief River BLOCK DIAGRAM

02

DDR3 : 1.5V

Dual Channel

P14~P15

DDR3 : 1066/1333/1600 MHz

**intel**

Ivy Bridge

PCI-E X16

DDR SYSTEM MEMORY

rPGA 988
(37.5mm X 37.5mm)

FDI DMI

P4~P7

PCIE2

5GT/s

**AMD**

Thames-Pro

Package type : GB1b-128

P36 ~ P39

VRAM
1GB / 2GB
P40 ~ P41

VRAM
1GB / 2GB
P40 ~ P41

X8 2.7GT/s FDI

DMI X4 5GT/s

Camera P17
PORT10

WiMax/BT P21
PORT12

USB I/O P20
PORT3

USB I/O P20
PORT1

USB I/O P20
PORT2

USB I/O P20
PORT0

P21 HDD SATA0 6Gb/s

P21 ODD SATA3 3Gb/s

**intel**

<PCH>

FDI DMI

SATA Gen3

SATA Gen2

iGFX Interfaces

Panther Point

USB

USB 2.0

USB 3.0

mBGA 989
(25mm X 25mm)

HDA

SPI

P8~P13

INT_CRT

P17

INT_LVDS

P17

INT_HDMI

P19

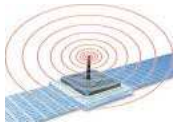
5GT/s PCI-Express Gen2

PCIE6 PCIE1 PCIE4

**Giga-LAN**
RTL8111F
P21

RJ45

P21



WLAN/Widi/BT P21
BT Combo : Atheros WB195
WiMAX : Kelsey Peak KSP(612BNXHWG)
802.11bgn/Intel/KsP_1x2_BD

**Card Reader**
RTS5209
P18

MS SD-XC

**Audio CODEC**
ALC258-GR
P24

Azalia

HP Jack MIC Jack SPK DMIC

P24

P24

P24

P24

**SPI ROM**
8MB
P9

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

**HK5_MB_SCH_PVT_001**

P21--Add LQ2[CHT2301PT],LR18[47K],LC27[0.01UF],LC26[1U].

P21--No mount LR15[0 ohm].

P21--LR16 pin1 connect to "+3V_S5".

Reason : Modify circuit for LAN power Rise time.
Possible Risk: No.

**HK5_MB_SCH_PVT_002**

P22--Delete R409[3.01K].

P22--U29 value change to "G5240/TPS2051".

Reason : Modify circuit for K/B Backlight protect.
Possible Risk: No.

**HK5_MB_SCH_PVT_003**

P4--Delete R332[0 ohm].

P5--Delete R171[0 ohm].

P6--Delete R189,R186,R197[0 ohm].

P8--Delete R438,R38,R37,R439[0 ohm].

P9--Delete R121,R67,R65,R122[0 ohm].

P10--Delete R73[0 ohm].

P12--Delete R102,R126,R299,R302[0 ohm]

P14--Delete R312[0 ohm]

P15--Delete R309[0 ohm]

P16--Delete KR39,KR60,KR6,KR30[0 ohm]

P18--Delete ML1,MR5[0 ohm]

P21--Delete LR12[0 ohm]

P22--Delete R96[0 ohm]

P23--Delete R461 ,R462 [0 ohm]

P24--Delete AL1,AR21,AR8,AR23,AR24,AR25,AR22,AR15,AR16,AR17,AL3,AL4,R418,AR20[0 ohm]

P27--Delete PR490,PR502[0 ohm]

P31--Delete PR504[0 ohm]

Reason : Cancel 0 ohm.
Possible Risk: No.

**HK5_MB_SCH_PVT_004**

P27--Delete PR513.

Reason : Cancel 0 ohm.
Possible Risk: No.

**HK5_MB_SCH_PVT_005**

P26--PR100,PR108,PR109 change to short PAD.

P27--PR325,PR318,PR324,PR326 change to short PAD.

P28--PR352,PR356,PR360,PR357,PR358 change to short PAD.

P30--PR388,PR390,PR392 change to short PAD.

P31--PR413,PR429,PR430,PR440,PR441 change to short PAD.

P33--PR271 change to short PAD.

Reason : Cancel 0 ohm.
Possible Risk: No.

**HK5_MB_SCH_PVT_006**

P23--reserve D9 and D10

Reason : reserve ESD diode
Possible Risk: No.

**HK5_MB_SCH_PVT_007**

P25--change CON1 form 12Pin to 10pin

Reason : delete samll board LID fuction
Possible Risk: No.

**HK5_MB_SCH_PVT_008**

P42-- Del J5,J6,J7,J8,J9,J10 for EMI request

Reason : For EMI
Possible Risk:
No.

**HK5_MB_SCH_PVT_009**

P23-- Delete reserve ESD diode D23 ,D24

Reason : ESD test PASS , we don't need to reserve
Possible Risk: No.

**HK5_MB_SCH_PVT_010**

P23-- change ODD ESD diode form Rclamp0502n to SR05

Reason : for SMT issue , Rclamp0502n easy to short , we change to SR05 and still reserve it
Possible Risk: No.

**HK5_MB_SCH_PVT_011**

P25-- change R225 form 150ohm to 40.2ohm

Reason : for W/L LED dark issue
Possible Risk: No.

**HK5_MB_SCH_PVT_012**

P25-- change R224 R226 R349 form 150ohm to 75ohm

Reason : for HDD ,Battery and card reader LED dark issue
Possible Risk: No.

**HK5_MB_SCH_PVT_013**

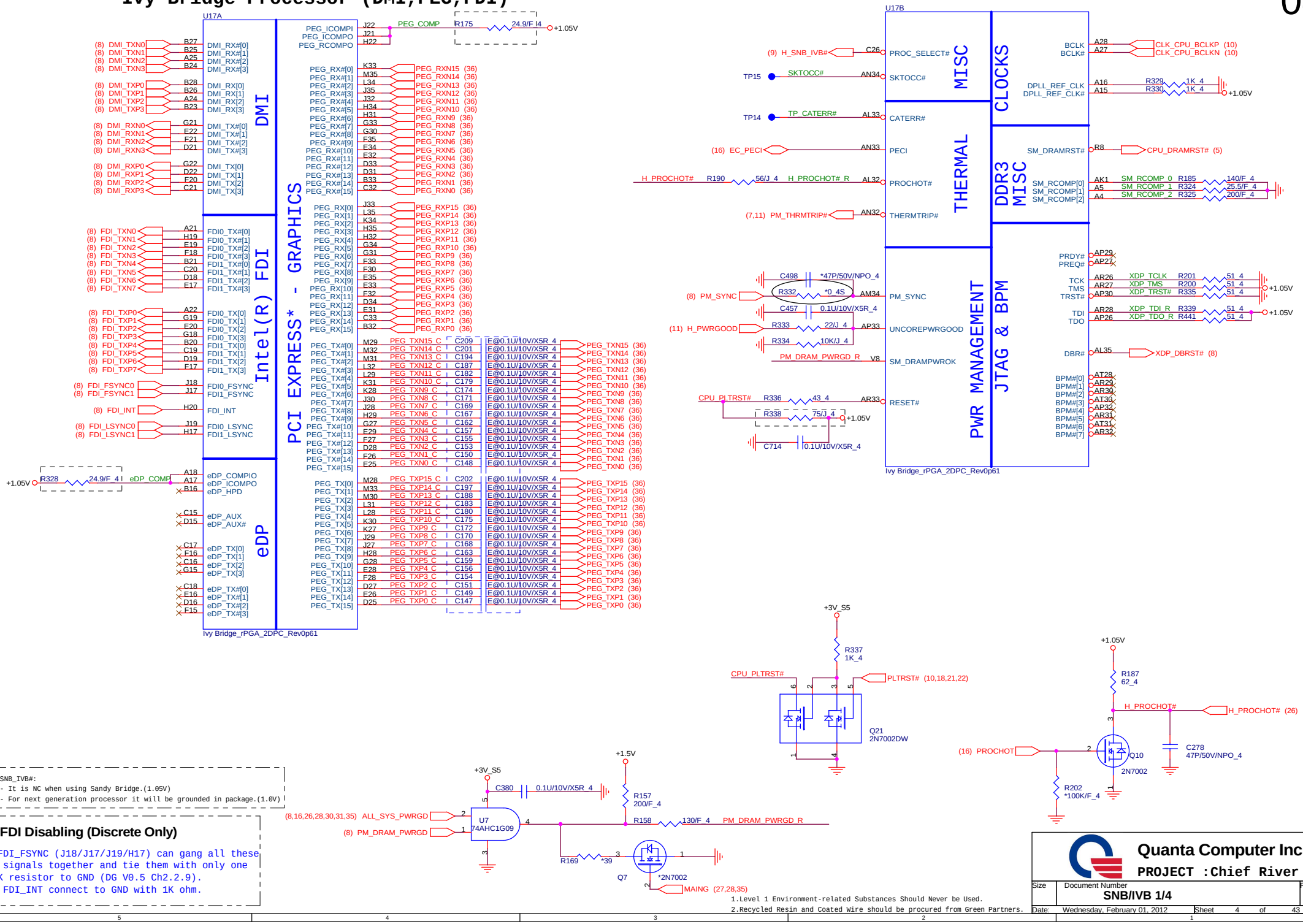
P23-- add R461 ,R462 [0ohm]

Reason : customer requirement for TP SMBUS signal
Possible Risk: No.

# Ivy Bridge Processor (DMI,PEG,FDI)

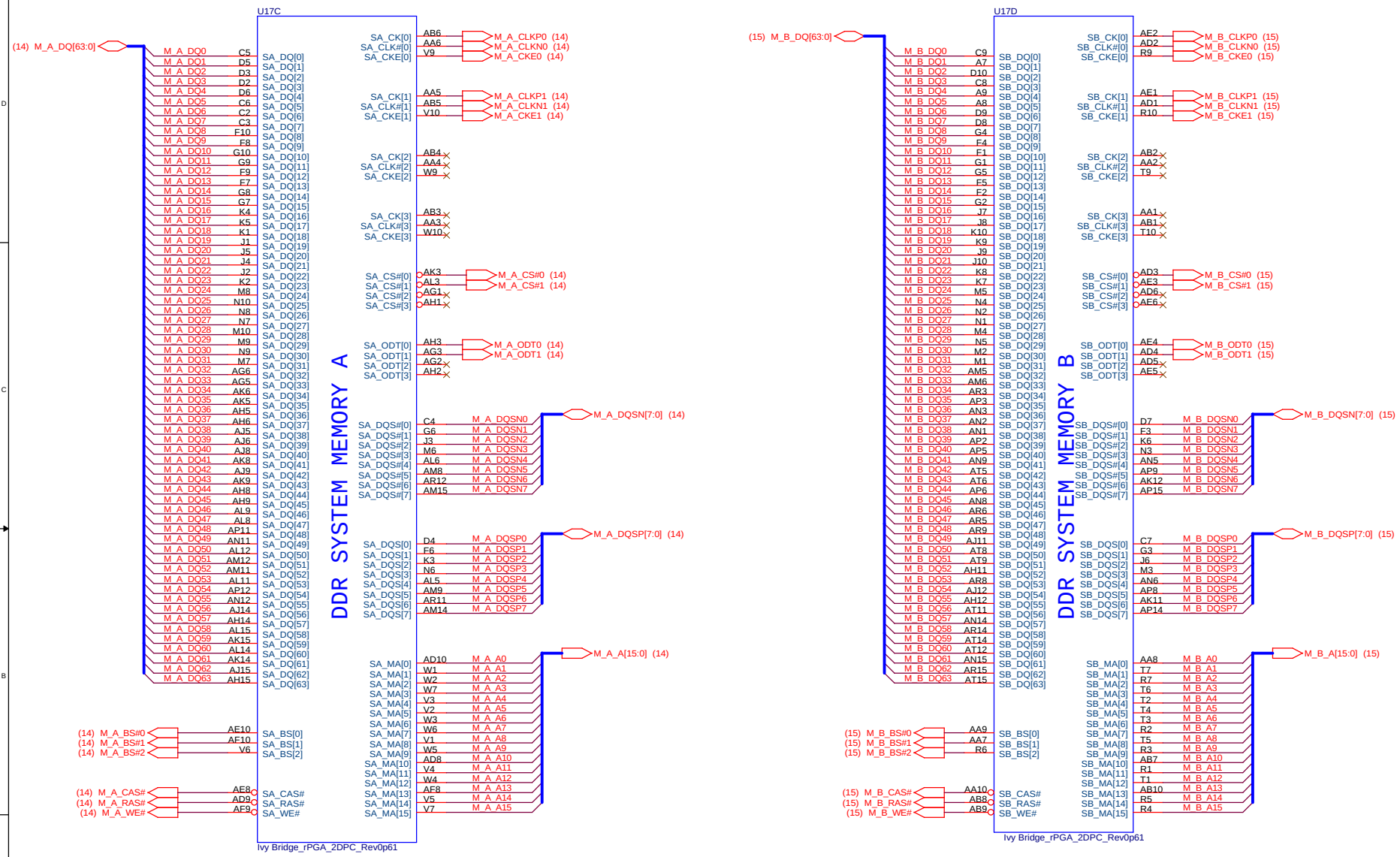
# Ivy Bridge Processor (CLK,MISC,JTAG)

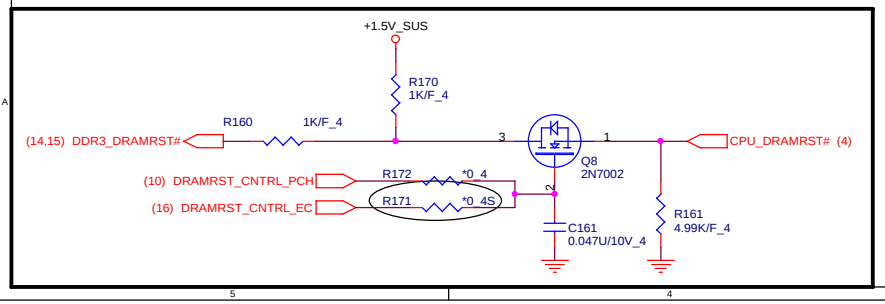
04



# 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.

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PROJECT :Chief River

| Size | Document Number | Rev |
|---|---|---|
| | SNB/IVB 2/4 | 1A |
| Date: | Wednesday, February 01, 2012 | Sheet 5 of 43 |

# Ivy Bridge Processor (POWER)

CPU Core Power
SNB:55A

+VCC_CORE

U17F

POWER

CORE SUPPLY

PEG AND DDR

SVID

SENSE LINES

8.5A

+1.05V

C198 *470U/2V_7343

Ivy Bridge_rPGA_2DPC_Rev0p61

HOLE1

*intel-CPU-bracket

# Ivy Bridge Processor (GRAPHIC POWER)

U17G

POWER

22A

+VCC_GFX

GRAPHICS

SENSE LINES

VREF

DDR3 - 1.5V RAILS

SA RAIL

1.8V RAIL

MISC

(4A)

SNB:6A

(1.2A)

+1.8V

Ivy Bridge_rPGA_2DPC_Rev0p61

VCCIO_SEL:
Sandy is High = 1.05V
Ivy is Low = 1.0V

HR/CR: HR(VID1 only) CR(VID0&VID1)

**Layout note: need routing together and ALERT need between CLK and DATA**

SVID CLK

Close to VR

R218 54.9/F_4

H_CPU_SVIDCLK R189 *0_4S VR_SVID_CLK (26)

(50 ohm)

Place PU resistor close to CPU

SVID DATA

Close to VR

R184 130/F_4

R347 130/F_4

H_CPU_SVIDDAT R186 *0_4S VR_SVID_DATA (26)

(50 ohm)

Place PU resistor close to CPU

SVID ALERT

R195 75/J_4

H_CPU_SVIDALRT# R192 43_4 R197 *0_4S VR_SVID_ALERT# (26)

(50 ohm)

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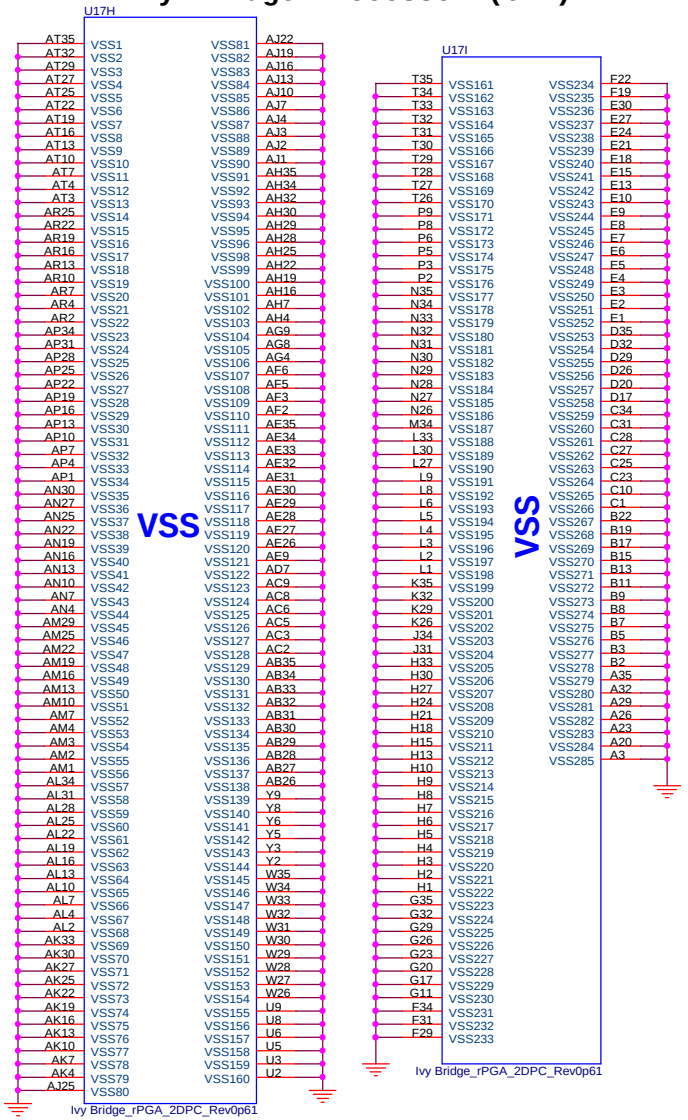
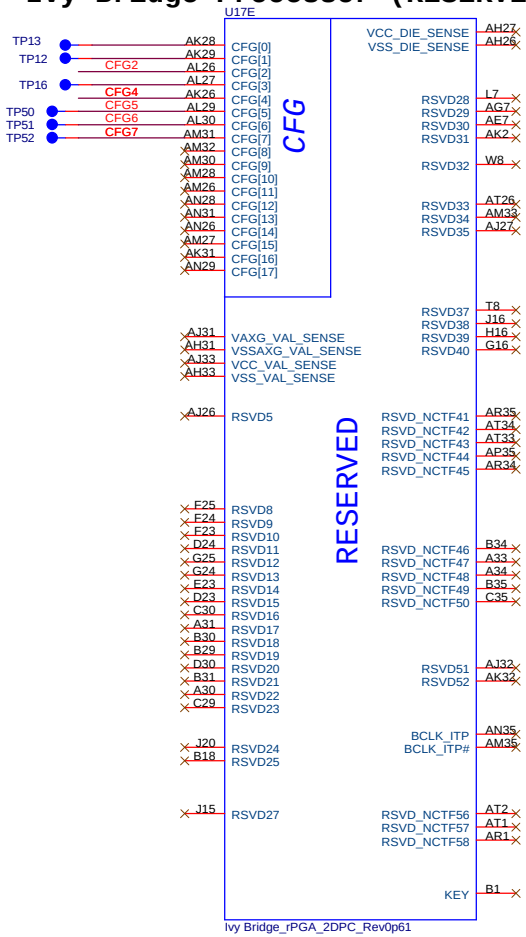
| Size | Document Number | Rev |
|---|---|---|
| | SNB/IVB 3/4 | 1A |

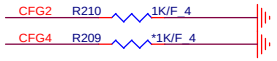
Date: Wednesday, February 01, 2012 Sheet 6 of 43

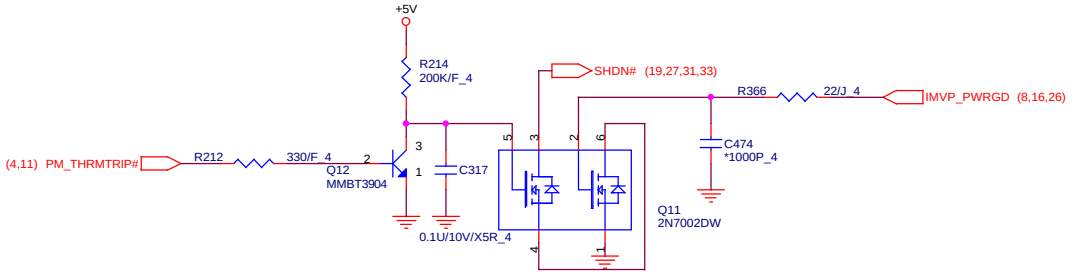
## Ivy Bridge Processor (GND)




## 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.

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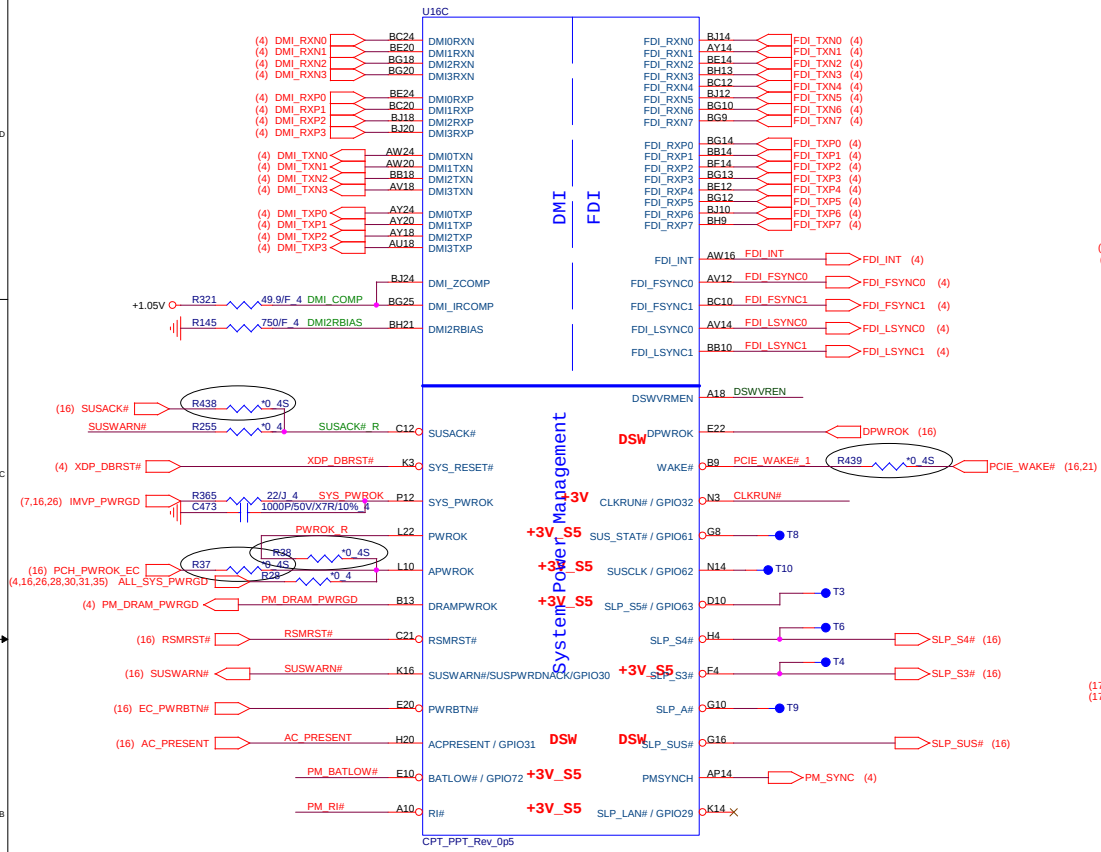
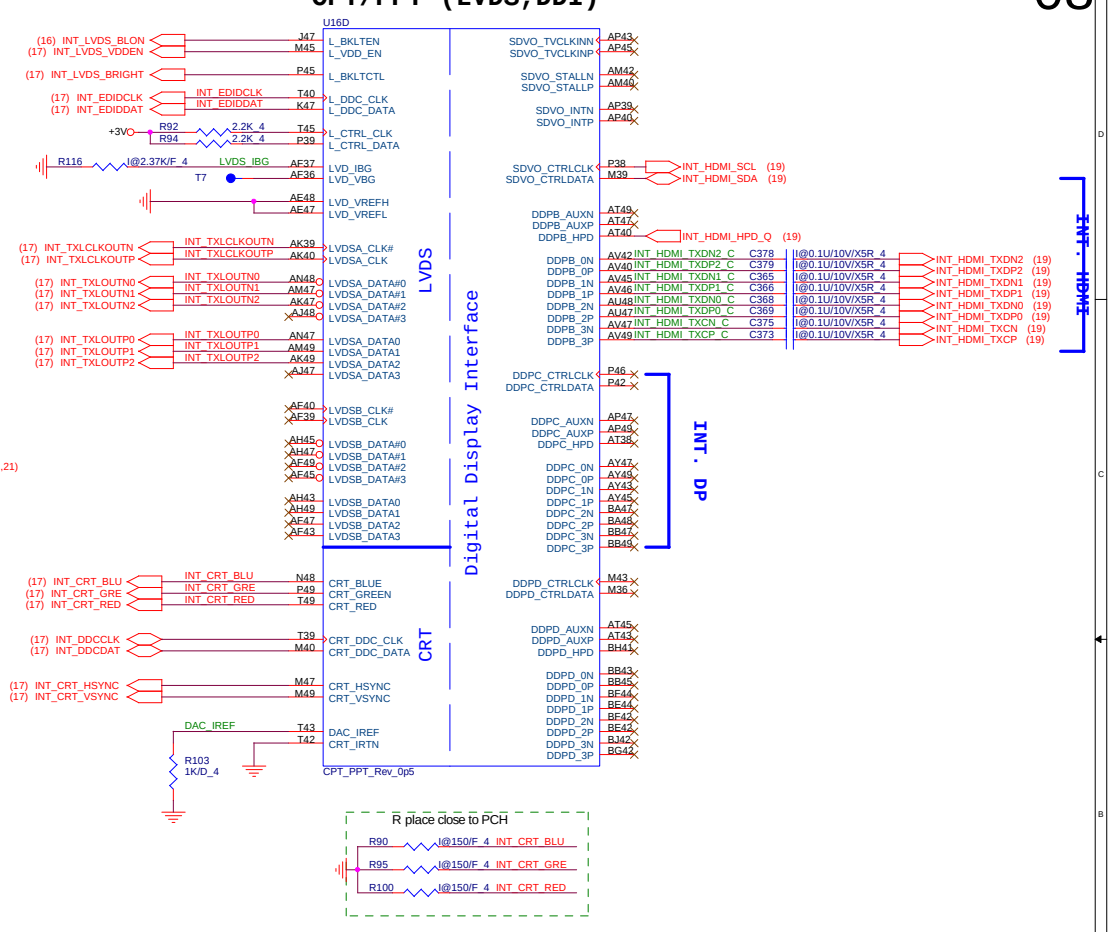
| Size | Document Number | Rev |
|---|---|---|
| | SNB/IVB 4/4 | 1A |

Date: Wednesday, February 01, 2012 Sheet 7 of 43

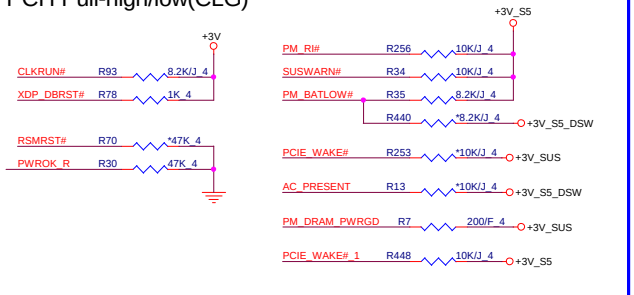
# CPT/PPT (DMI,FDI,PM)

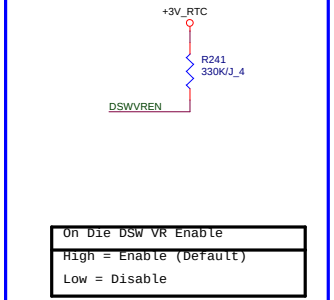


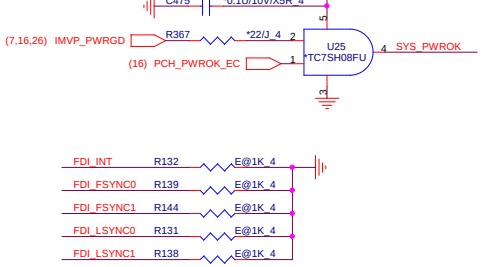

# CPT/PPT (LVDS,DDI)




## PCH Pull-high/low(CLG)




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

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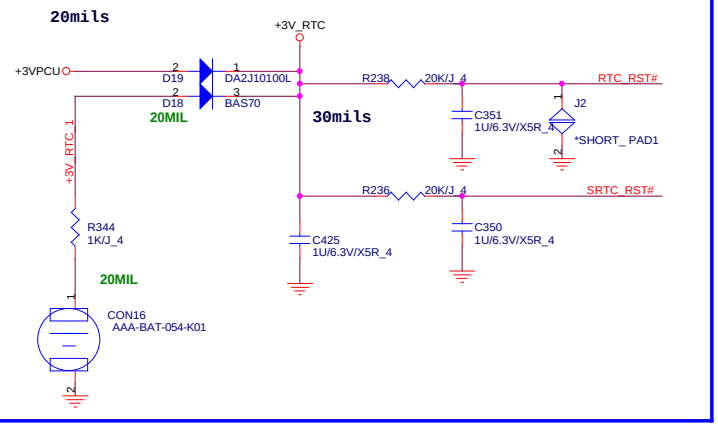
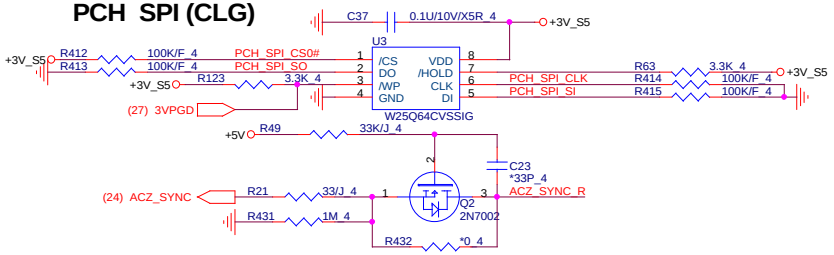
| Size | Document Number | Rev |
|---|---|---|
| | CPT/PTT 1/6 | 1A |
| Date: Wednesday, February 01, 2012 | Sheet 8 of 43 | |

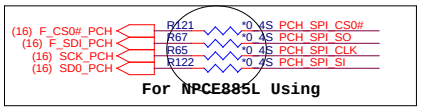
# RTC Circuitry(RTC)




MX25L3205DM2I-12G: AKE39FP0Z00
W25X32VSSIG: AKE39ZP0N00

# PCH SPI (CLG)

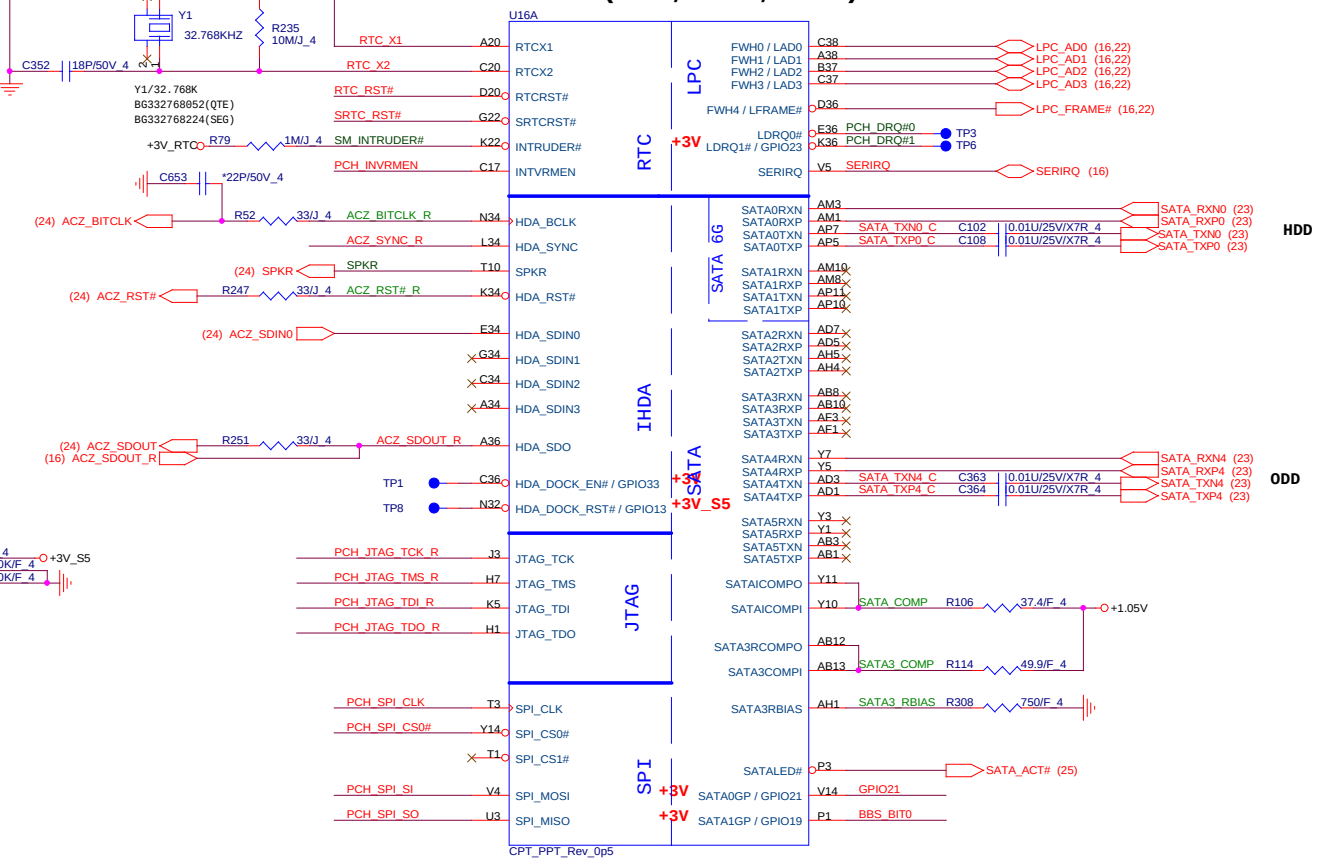


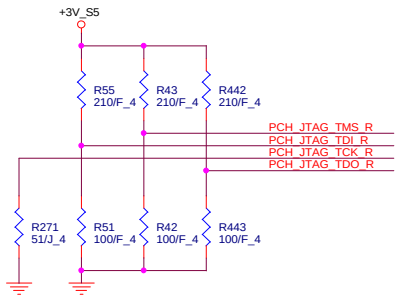

# PCH Strap Table

| Pin Name | Strap description | Sampled | Configuration | HK1/HK2 note |
|---|---|---|---|---|
| SPKR | No reboot mode setting | PWROK | 0 = Default (weak pull-down 20K)<br>1 = Setting to No-Reboot mode | SPKR |
| PCI_GNT3# / GPIO55 | Top-Block Swap Override | PWROK | 0 = "top-block swap" mode<br>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#<br>[Need external pull-down for LPC BIOS] |
| GPIO19 | Boot BIOS Selection 0 [bit-0] | PWROK | | TP47 BBS_BIT1 (10)<br>TP43 BBS_BIT0 |
| HDA_SDO | Flash Descriptor Security | PWROK | 0 = Default (weak pull-down 20K)<br>1 = Enabled | ACZ_SDOUT_R |
| DF_TVS | DMI/FDI Termination voltage | PWROK | 0 = Set to Vss for Ivy Bridge<br>1 = Set to Vcc for Sandy Bridge<br>(weak pull-down 20K) | R140 2.2K_4 +1.8V<br>R320 1K_4 NV_CLE (11)<br>H_SNB_IVB# (4) |
| GPIO28 | On-die PLL Voltage Regulator | RSMRST# | 0 = Disable<br>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)<br>1 = Support by 1.5V | +3V_S5 R29 1K_4 ACZ_SYNC_R |

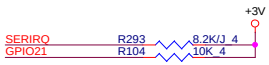
# CPT/PPT (HDA,JTAG,SATA)




# PCH JTAG Debug (CLG)




HR/CR: PROCSEL#




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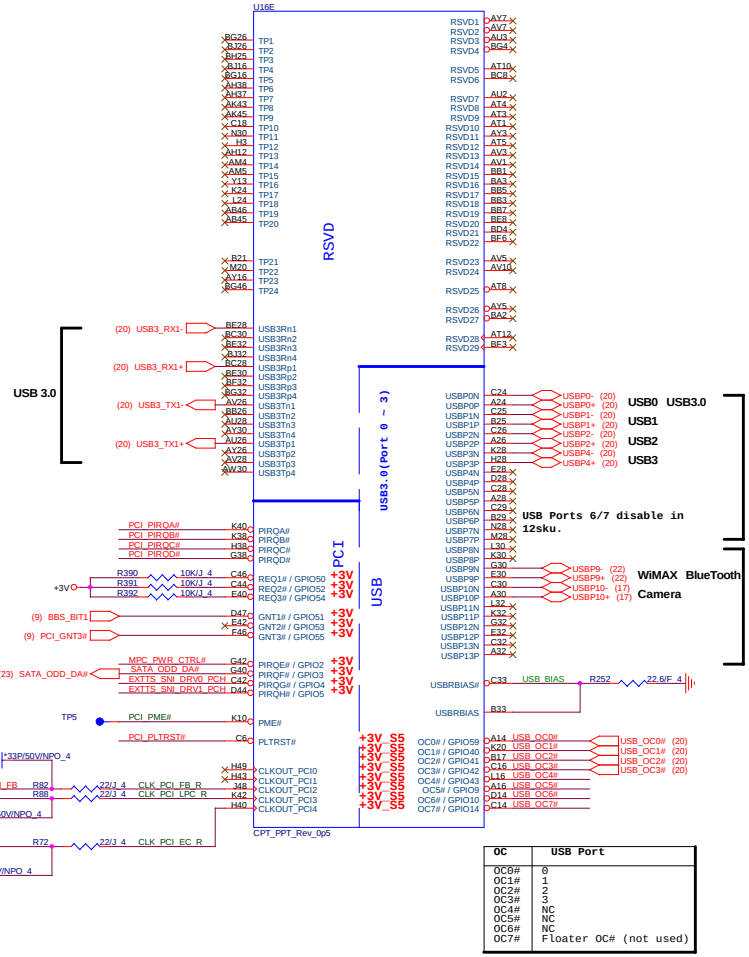
| Size | Document Number | Rev |
|---|---|---|
| | CPT/PPT 2/6 | 1A |

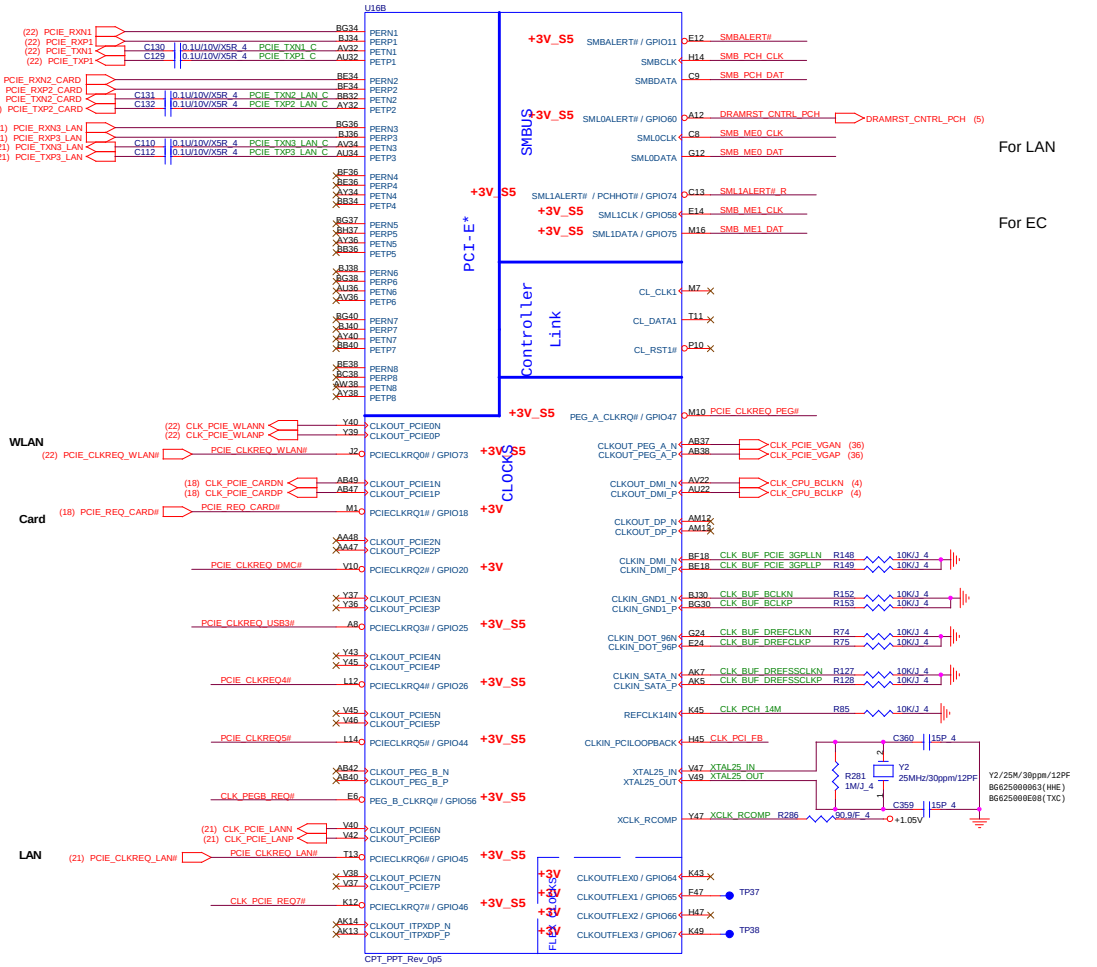
Date: Wednesday, February 01, 2012 Sheet 9 of 43

# CPT/PPT (PCI,USB,NVRAM)

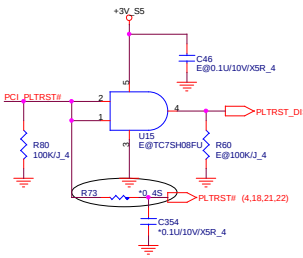



| OC | USB Port |
|---|---|
| OC0# | 0 |
| OC1# | 1 |
| OC2# | 2 |
| OC3# | 3 |
| OC4# | NC |
| OC5# | NC |
| OC6# | NC |
| OC7# | Floater OC# (not used) |

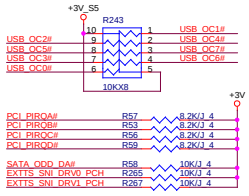
# CPT/PPT (PCI-E,SMBUS,CLK)




## PLTRST#(CLG)

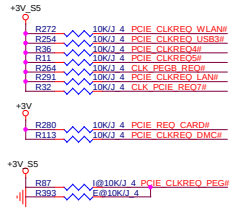


## PCI/USBOC# Pull-up(CLG)

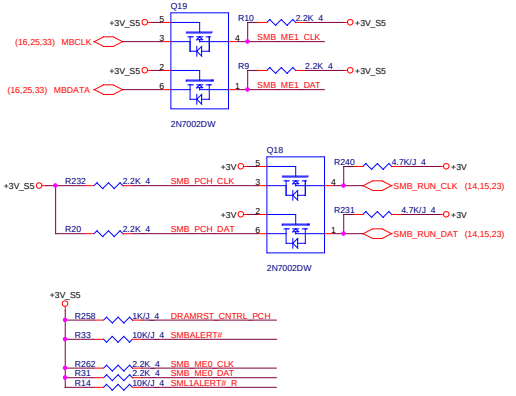


| MPC Switch Control | |
|---|---|
| MPC_PWR_CTRL# | Low = MPC ON<br>High = MPC OFF (Default) |

## CLK_REQ/Strap Pin(CLG)



## SMBus/Pull-up(CLG)



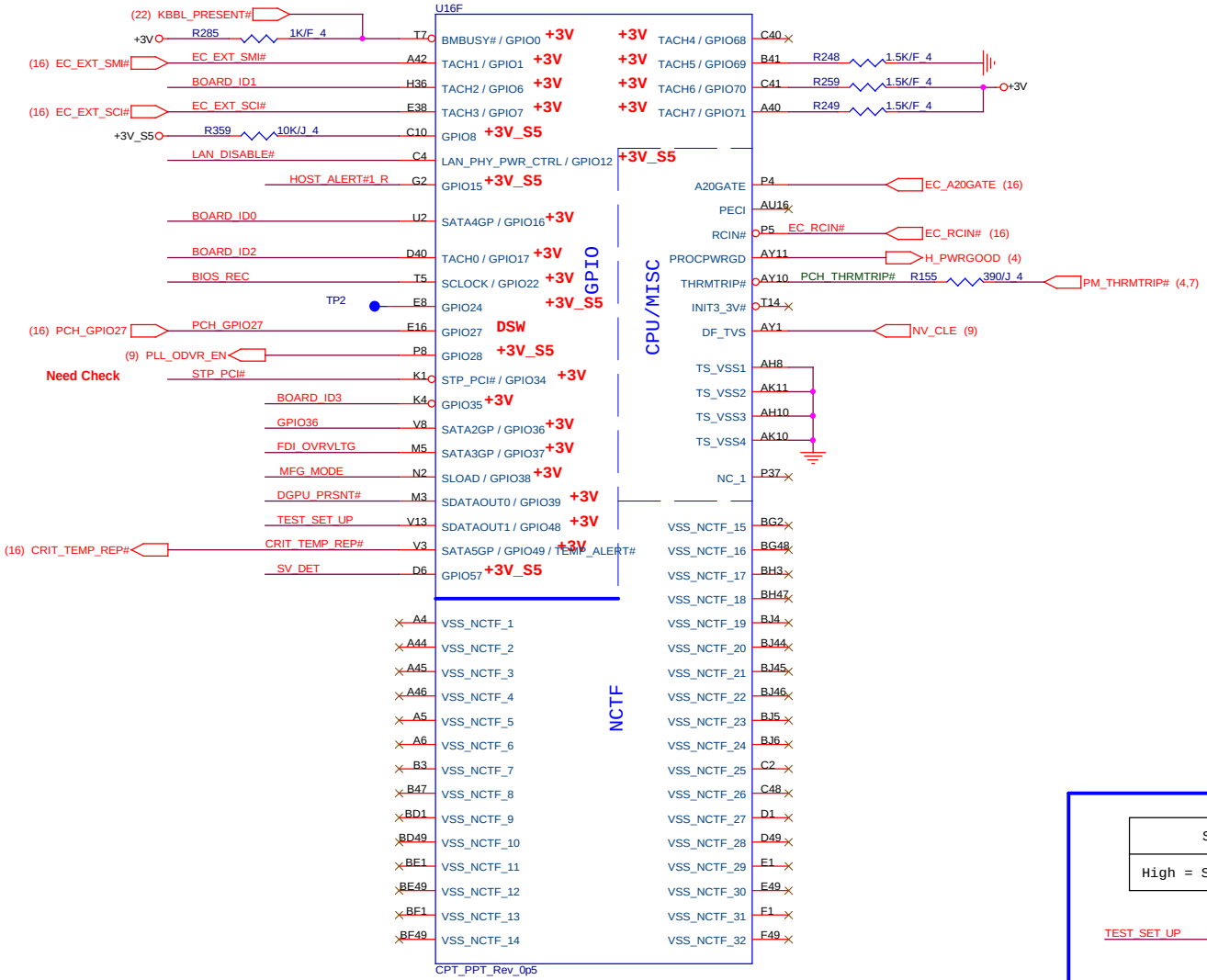

1.Level 1 Environment-related Substances Should Never be Used.
2.Recycled Resin and Coated Wire should be procured from Green Partners.

Quanta Computer Inc.
PROJECT :Chief River

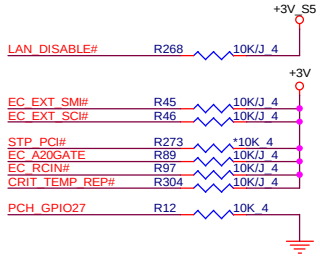
| Size | Document Number | Rev |
|---|---|---|
| | CPT/PPT 3/6 | 1A |
| Date: Wednesday, February 01, 2012 | Sheet 10 of 43 | |

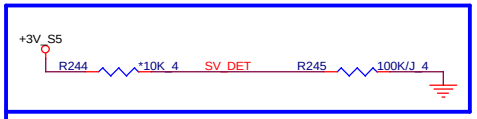
# CPT/PPT (GPIO,VSS_NCTF,RSVD)






## GPIO Pull-up/Pull-down(CLG)



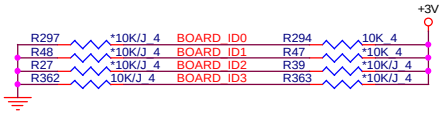




R363(High) R362(Low) R294(High) R297(low)

| | Board ID3 | Board ID0 |
|---|---|---|
| 14"/HK6/HK76 | 0 | 0 |
| 14"/HK6/HK70 | 1 | 0 |
| 15"/HK5/HM76 | 0 | 1 |
| 15"/HK5/HM70 | 1 | 1 |

| 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 |

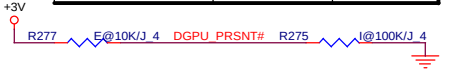



| SV_SET_UP |
|---|
| High = Strong (Default) |



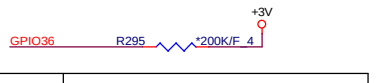
| Intel ME Crypto Transport Layer Security (TLS) cipher suite |
|---|
| Low = Disable (Default) |
| High = Enable |

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

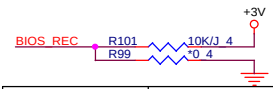




| FDI TERMINATION VOLTAGE OVERRIDE | LOW - Tx, Rx terminated to same voltage |
|---|---|




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




| BIOS RECOVERY | High = Disable (Default) Low = Enable |
|---|---|

**MFG-TEST**

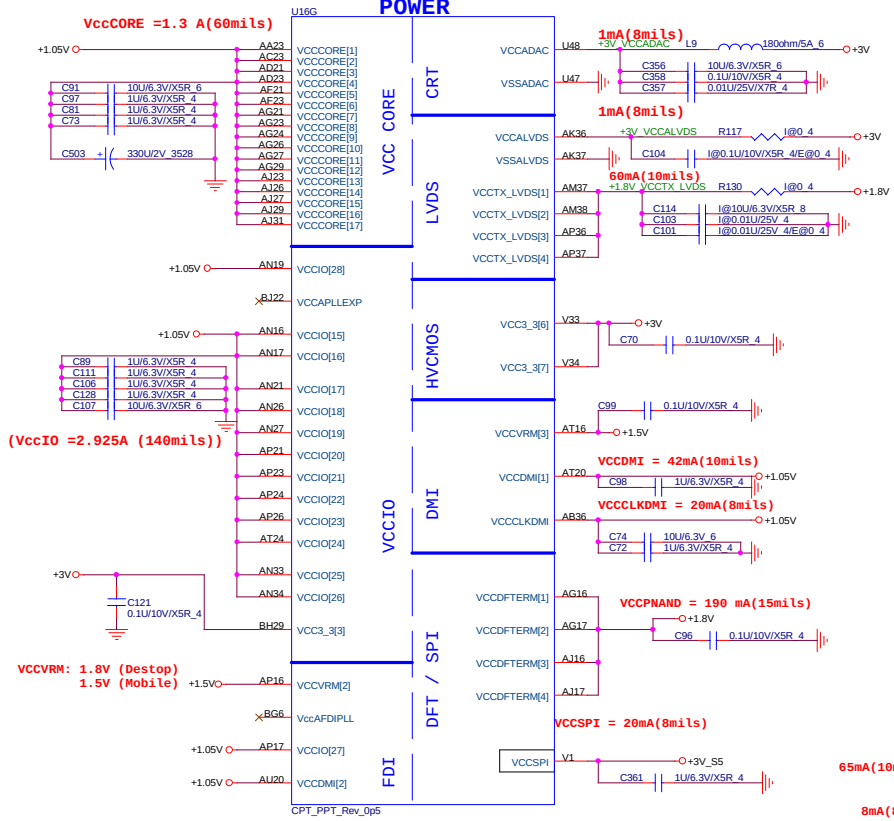

1.Level 1 Environment-related Substances Should Never be Used.
2.Recycled Resin and Coated Wire should be procured from Green Partners.

Quanta Computer Inc.
PROJECT :Chief River

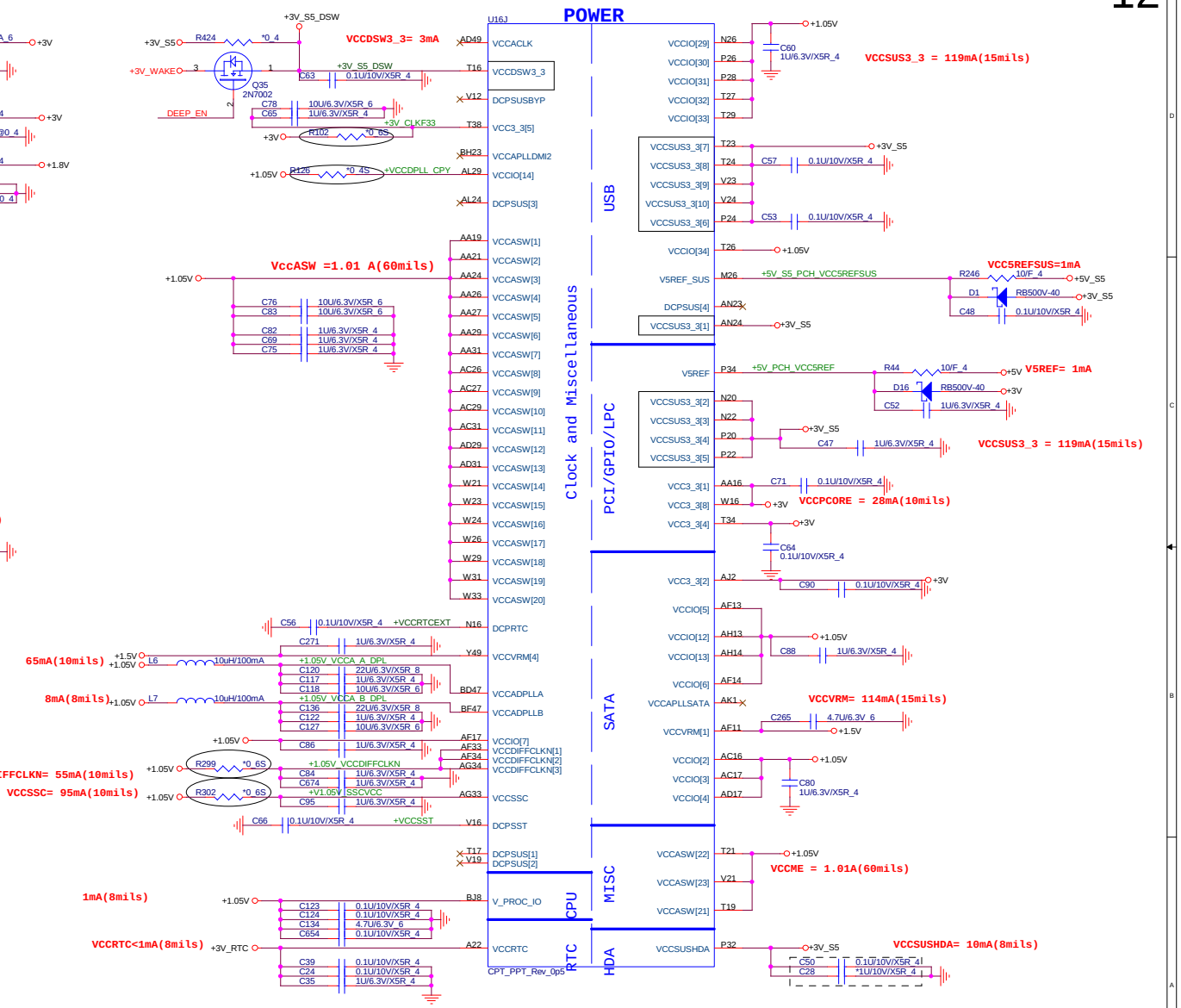
| Size | Document Number | Rev |
|---|---|---|
| | CPT/PPT 4/6 | 1A |

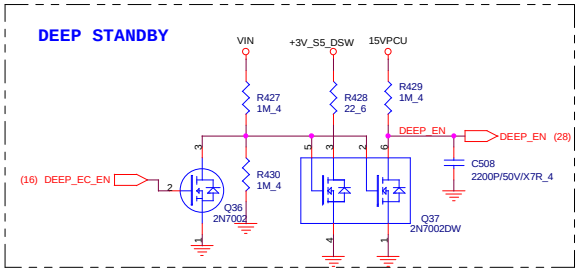
Date: Wednesday, February 01, 2012 Sheet 11 of 43

# 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.

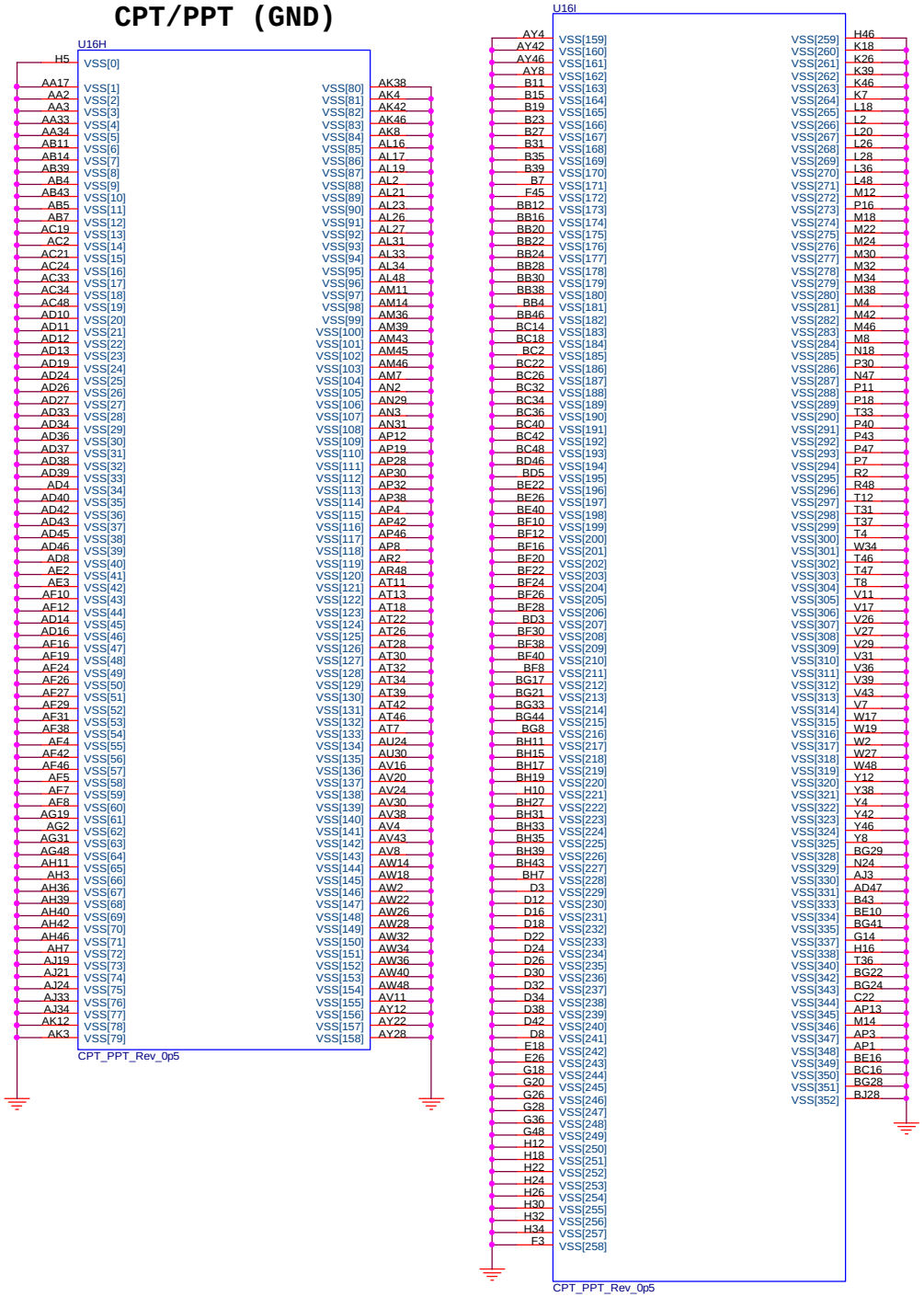
Quanta Computer Inc.
PROJECT :Chief River

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

Date: Wednesday, February 01, 2012 Sheet 12 of 43

# CPT/PPT (GND)





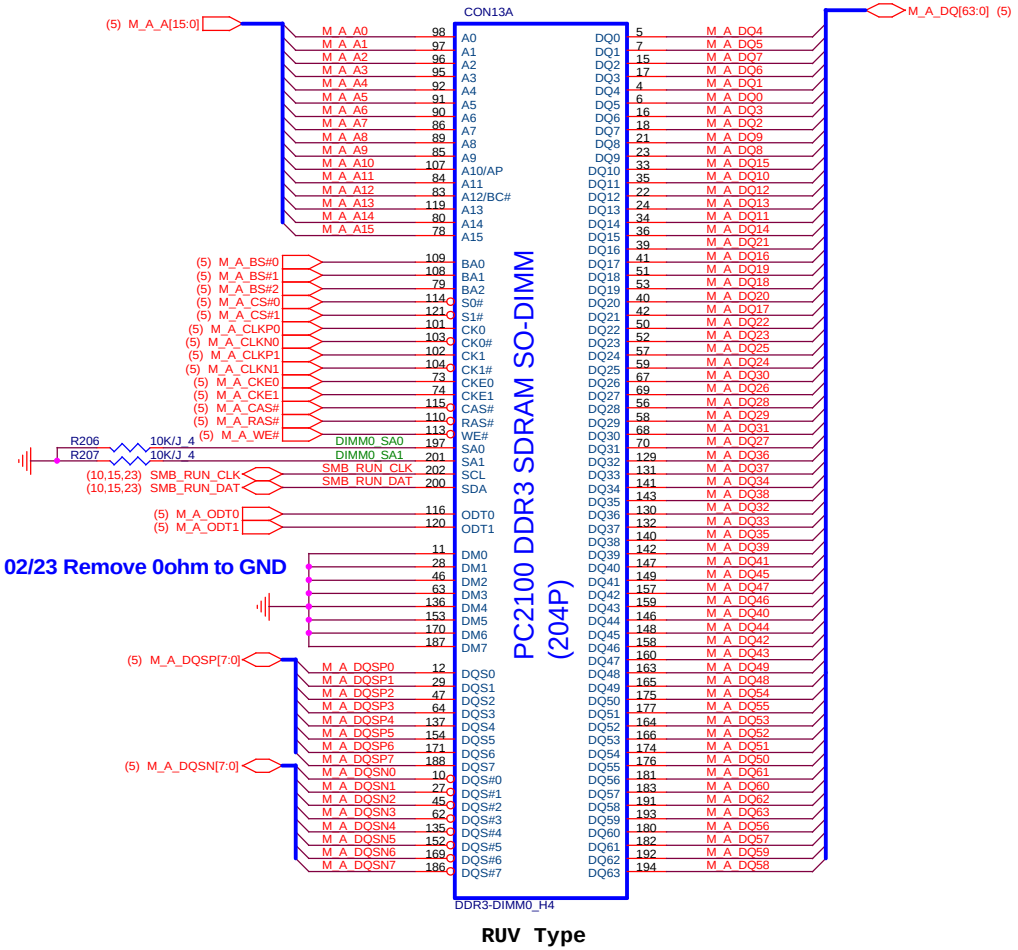


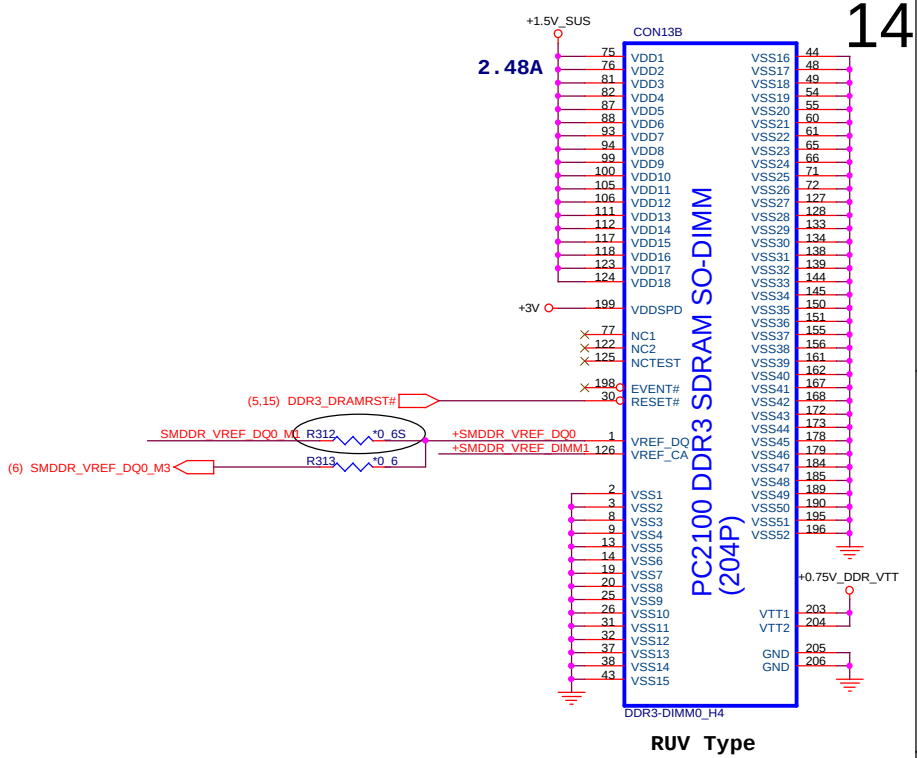


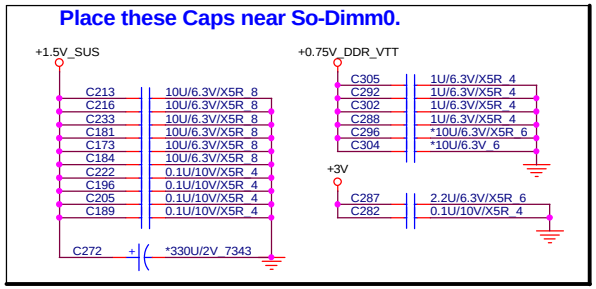
1.Level 1 Environment-related Substances Should Never be Used.
2.Recycled Resin and Coated Wire should be procured from Green Partners.

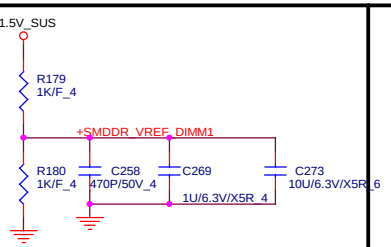
Quanta Computer Inc.
PROJECT :Chief River

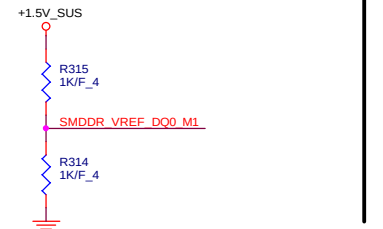
| Size | Document Number | Rev |
|---|---|---|
| | CPT/PPT 6/6 | 1A |
| Date: Wednesday, February 01, 2012 | Sheet 13 of 43 | |

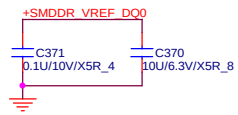


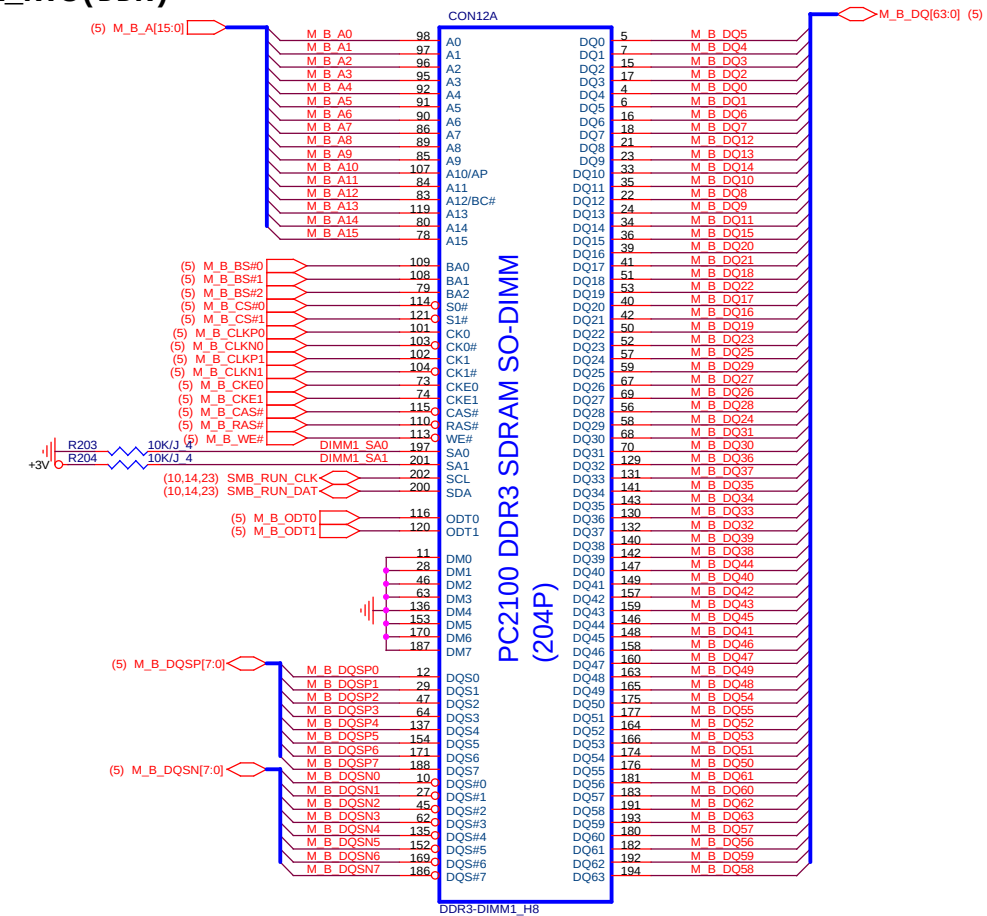




1.Level 1 Environment-related Substances Should Never be Used.
2.Recycled Resin and Coated Wire should be procured from Green Partners.

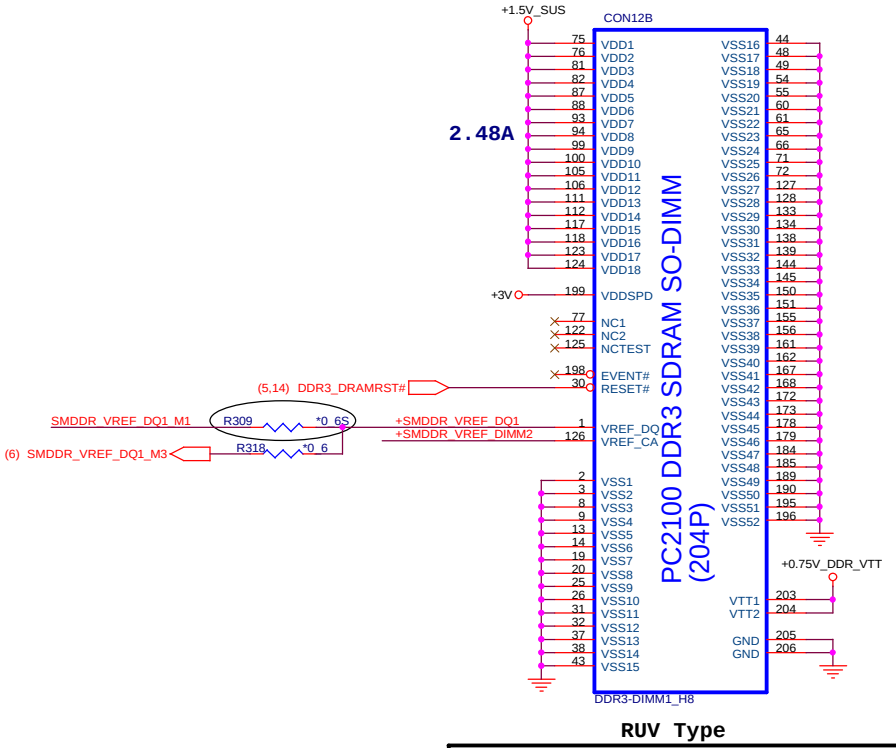
Quanta Computer Inc.
PROJECT :Chief River

| Size | Document Number | Rev |
|---|---|---|
| | DDRIII SO-DIMM-0 | 1A |
| Date: Wednesday, February 01, 2012 | Sheet 14 of 43 | |

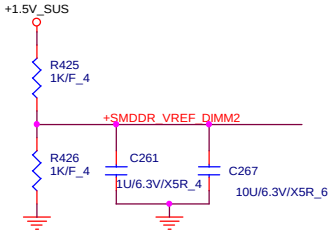
# DDR_RVS(DDR)



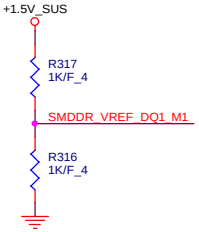

**RUV Type**



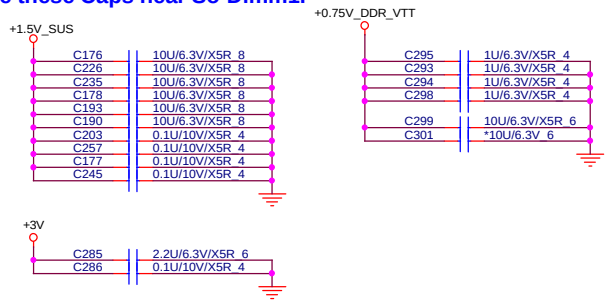

**RUV Type**




## 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.

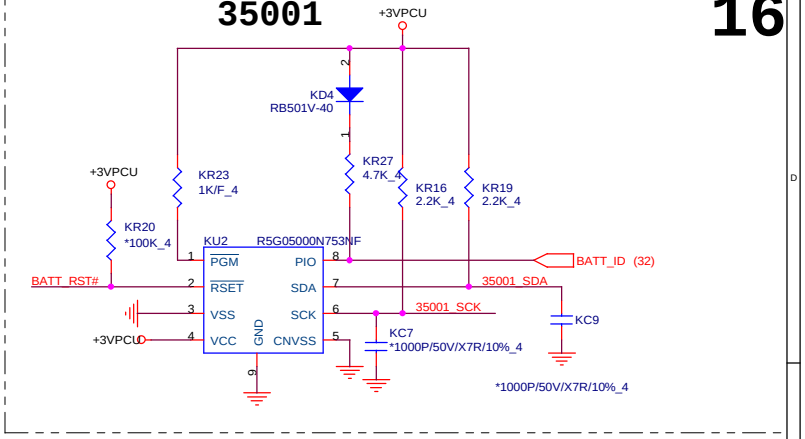
Quanta Computer Inc.
PROJECT :Chief River

| Size | Document Number | Rev |
|---|---|---|
| | DDRIII SO-DIMM-1 | 1A |
| Date: Wednesday, February 01, 2012 | Sheet 15 of 43 | |

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

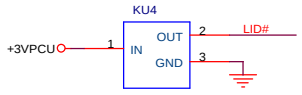
Since ECSCI is OD, no need for a back-drive protection diode on this signal. But note there is internal PU in chipset at default

# 35001




# 16

## Magnetic Lid Switch




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

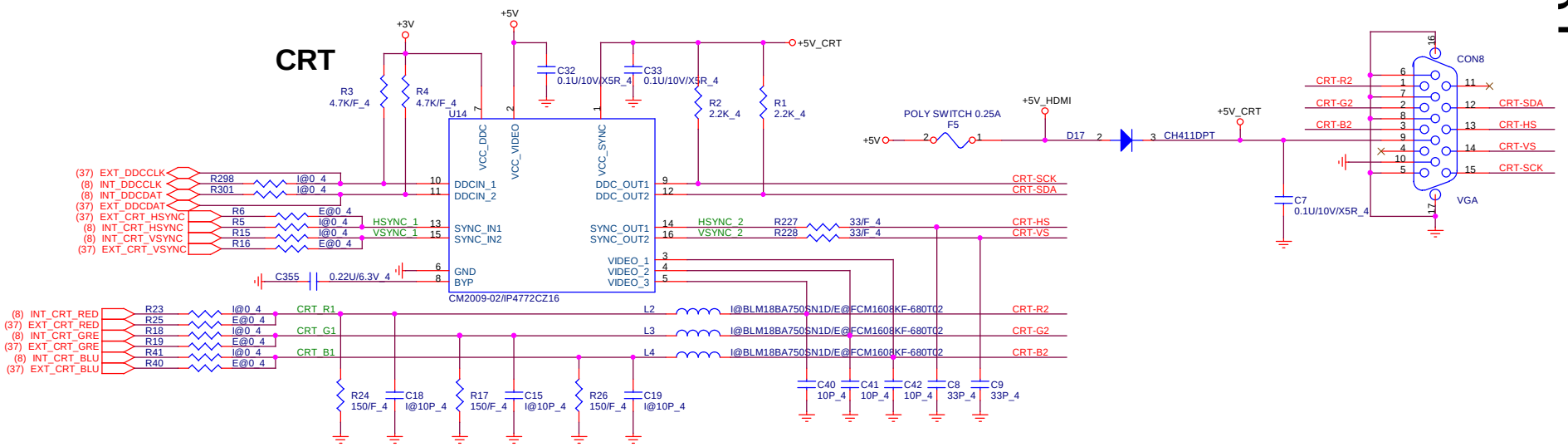



1.Level 1 Environment-related Substances Should Never be Used.
2.Recycled Resin and Coated Wire should be procured from Green Partners.

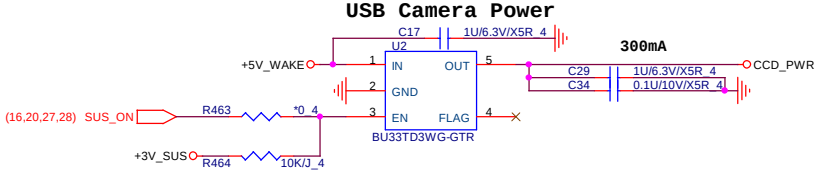
**Quanta Computer Inc.**
**PROJECT :Chief River**

| Size | Document Number | Rev |
|---|---|---|
| | NPCE885L | 1A |
| Date: Wednesday, February 01, 2012 | Sheet 16 of 43 | |

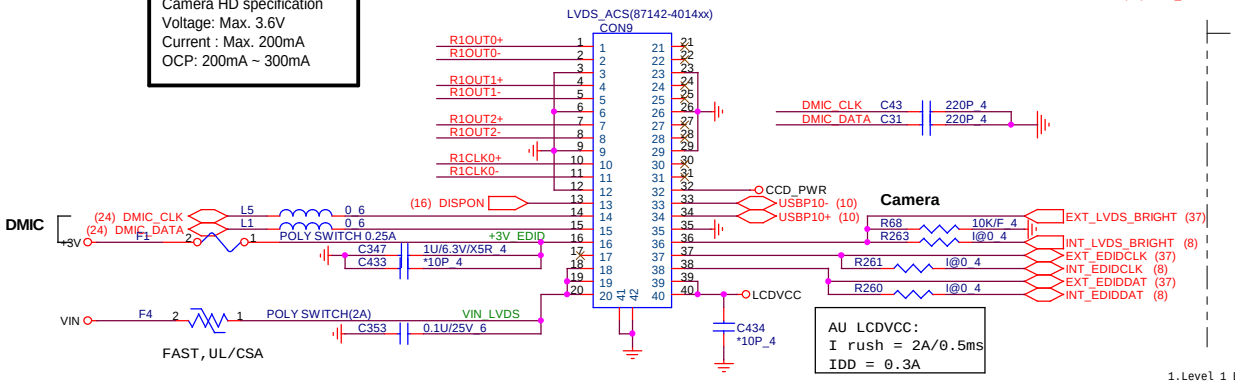
# CRT



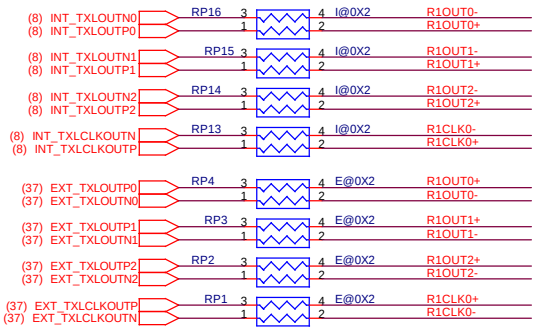

## USB Camera Power



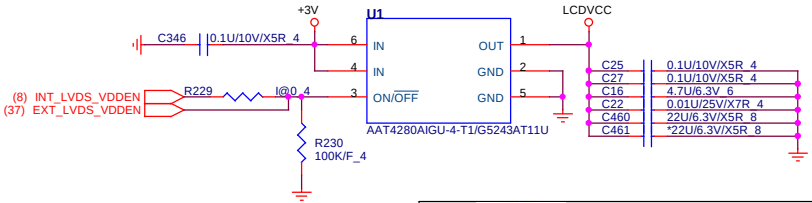

Camera HD specification
Voltage: Max. 3.6V
Current : Max. 200mA
OCP: 200mA ~ 300mA




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



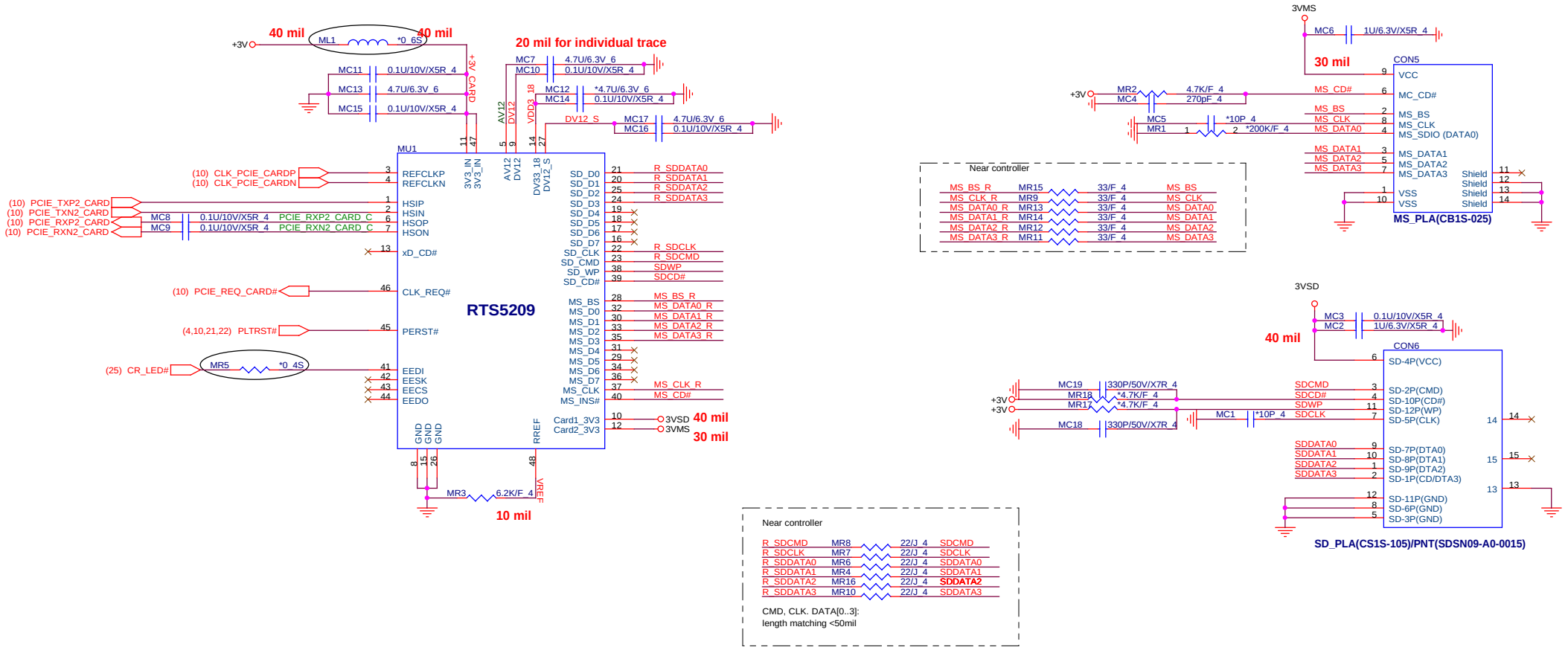

## NB LVDS enable




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 |
|---|---|---|
| | CRT/LVDS | 1A |
| Date: Wednesday, February 01, 2012 | Sheet 17 of 43 | |

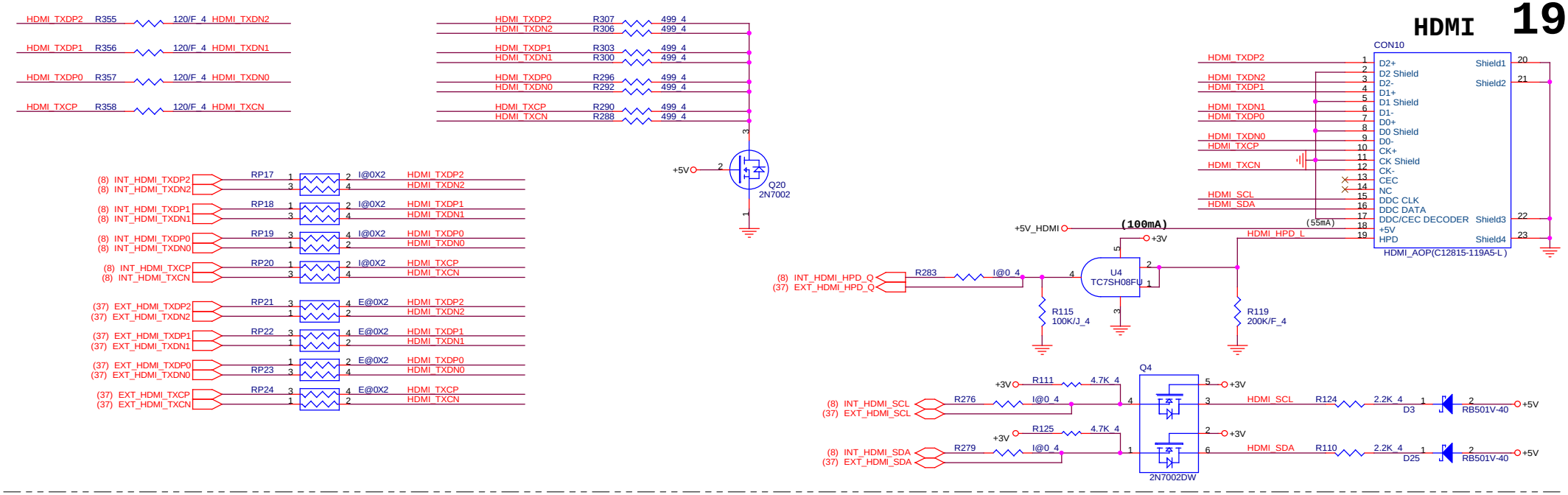



1.Level 1 Environment-related Substances Should Never be Used.
2.Recycled Resin and Coated Wire should be procured from Green Partners.

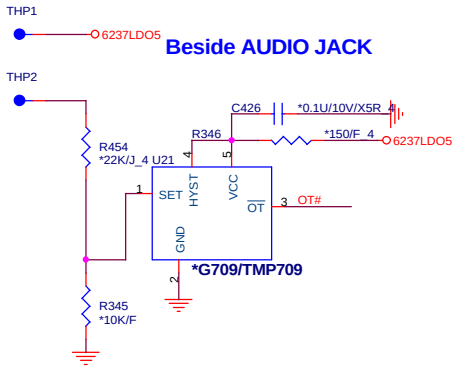
Quanta Computer Inc.
PROJECT :Chief River

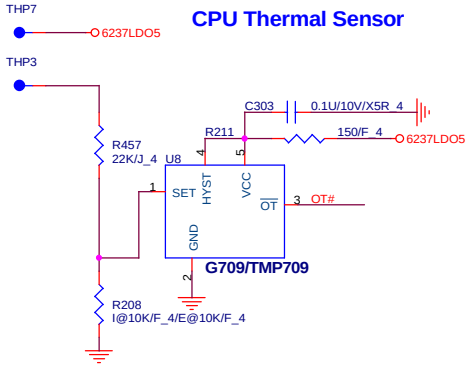
| Size | Document Number | Rev |
|---|---|---|
| | CARD | 1A |
| Date: Wednesday, February 01, 2012 | Sheet 18 of 43 | |

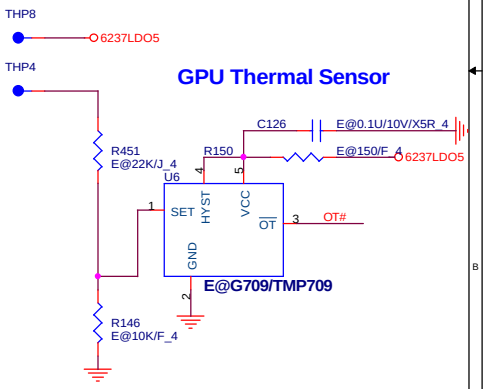
# HDMI 19




# H/W Thermal Protect




**RSET(kΩ)= 0.0012T2 – 0.9308T + 96.147**

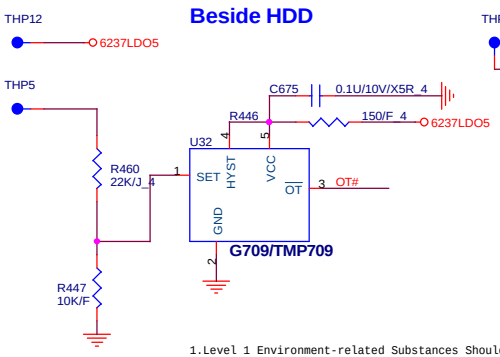
| | |
|---|---|
| 95 | 18.5K |
| 100 | 15K |
| 107 | 10.3K |
| 110 | 8.2K |

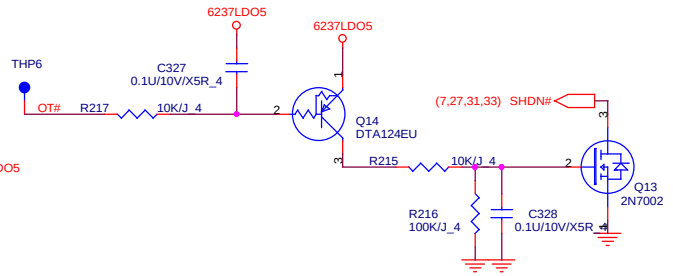
## DIS SKU

| 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 |



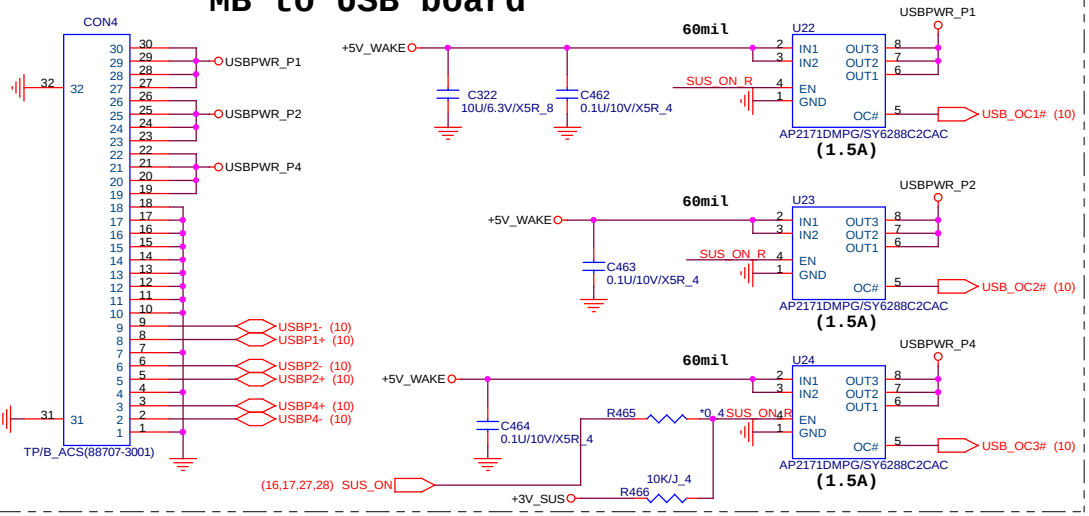




1.Level 1 Environment-related Substances Should Never be Used.
2.Recycled Resin and Coated Wire should be procured from Green Partners.

Quanta Computer Inc.
PROJECT :Chief River

| Size | Document Number | Rev |
|---|---|---|
| | HDMI/Thermal IC | 1A |
| Date: Friday, February 03, 2012 | Sheet 19 of 43 | |

# MB to USB board



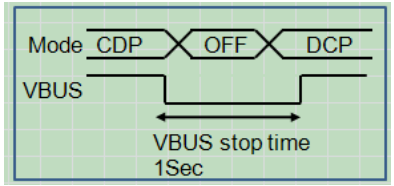

| System State | USB Battery Charging Setting | |
|---|---|---|
| | Disable | Enable |
| S0 | SDP | CDP |
| S3 | SDP | DCP |
| Deep Standby | SDP (VBUS OFF) | DCP |
| S4 | SDP (VBUS OFF) | DCP |
| S5 | SDP (VBUS OFF) | DCP |

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

| 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) |

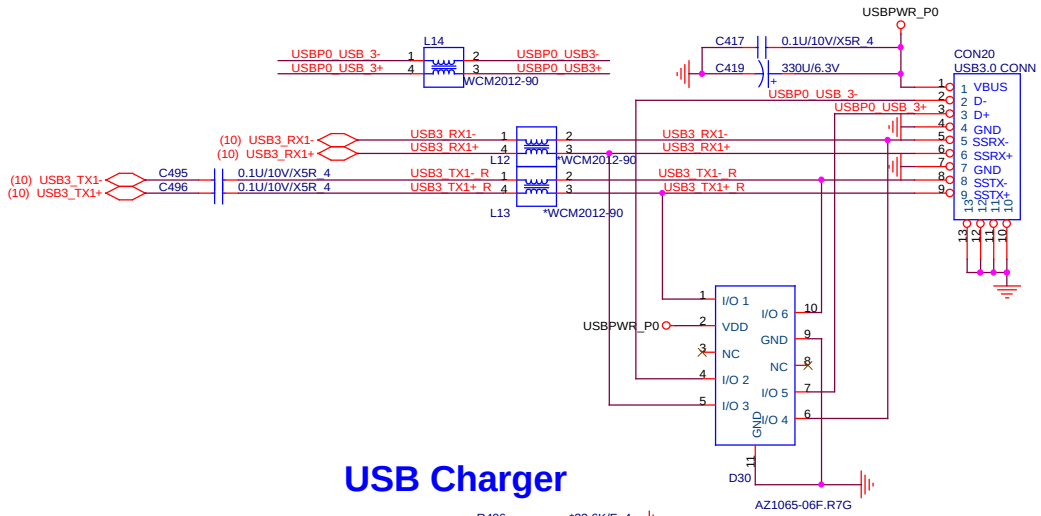
| TPS-2540A | TPS-2543 | MODE | AC/DC Mode C1 | C2 | C3 | ILIM_SEL |
|---|---|---|---|---|---|---|
| S0 | S0 | SDP | X(1) | 1 | 0 | X |
| S0 | S0 | CDP | 1 | 1 | 1 | 1 |
| S3(Wake Enable) | X | SDP | 1 | 1 | 0 | 1 |
| S3(Charger Mode) | S3 | DCP | 1 | X(0) | 0 | 1 |
| S4 | S4 | DCP | 1 | X(0) | 0 | 1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

**DCP: BC 1.2 only.**

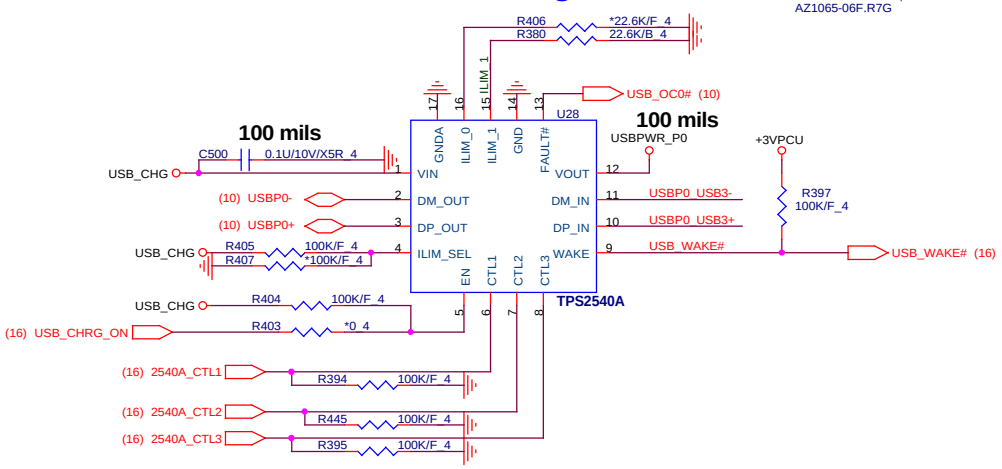



1.Level 1 Environment-related Substances Should Never be Used.
2.Recycled Resin and Coated Wire should be procured from Green Partners.

# USB 3.0 PORT0




# USB Charger

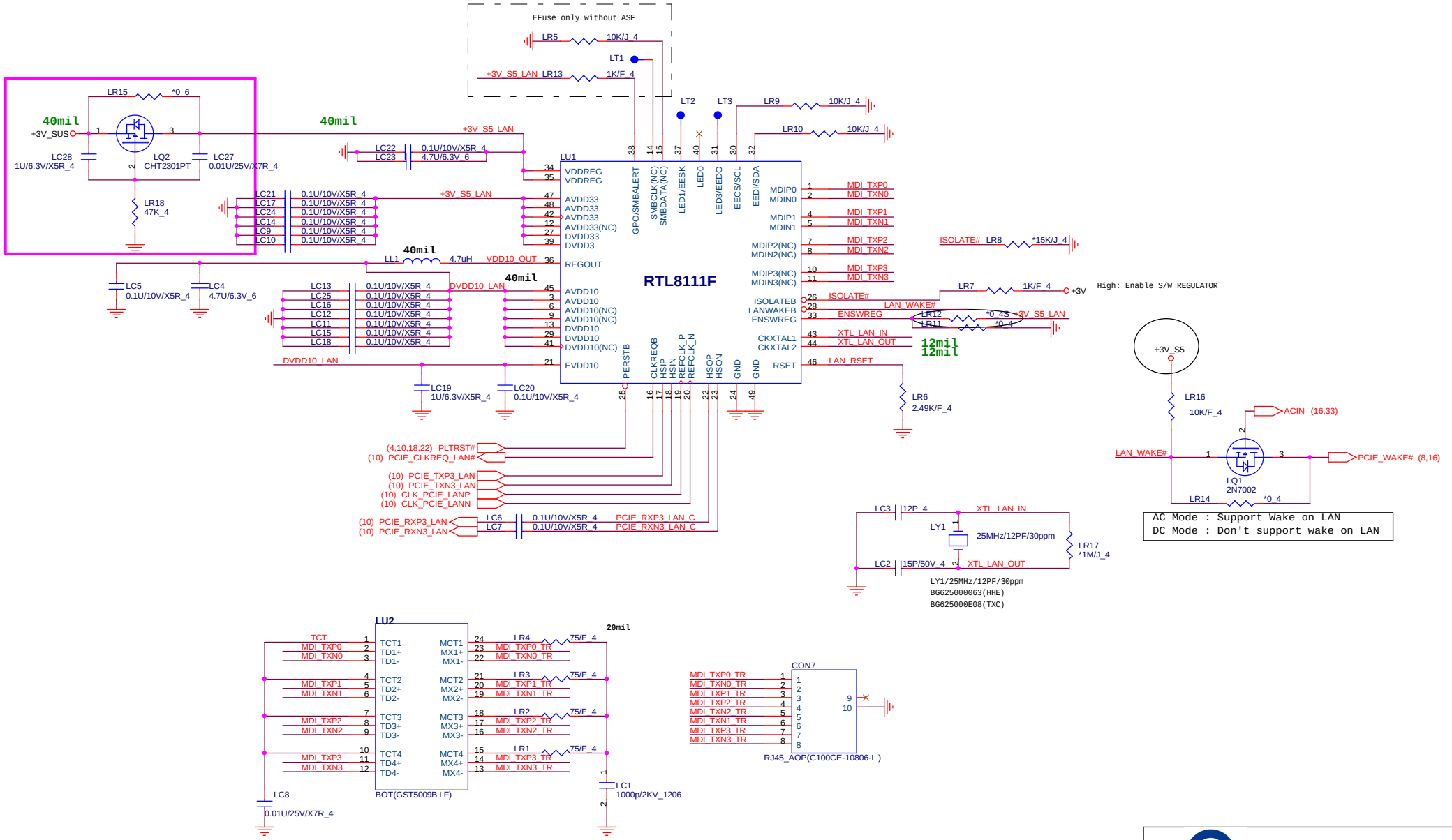



| USB WAKE | |
|---|---|
| 1 | No device plug(LDO) |
| 0 | Device plug(Switch Power) |

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

Quanta Computer Inc.
PROJECT :Chief River

| Size | Document Number | Rev |
|---|---|---|
| | USB/USB Charger | 1A |
| Date: Thursday, February 02, 2012 | Sheet 20 of 43 | |

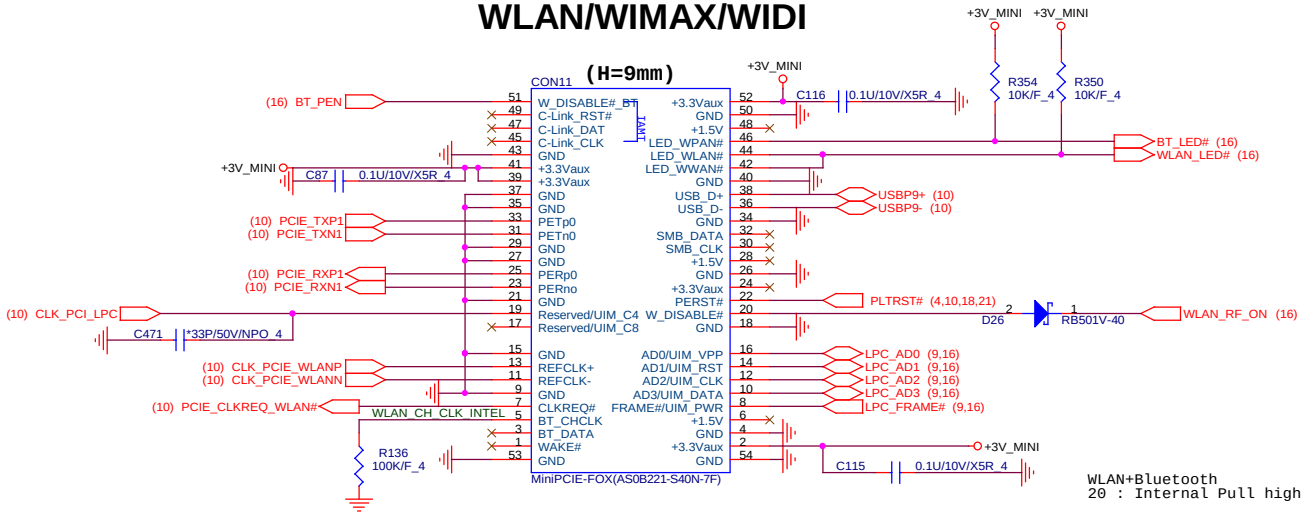


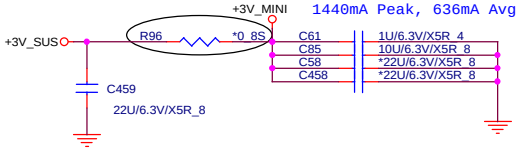

1.Level 1 Environment-related Substances Should Never be Used.
2.Recycled Resin and Coated Wire should be procured from Green Partners.

Quanta Computer Inc.
PROJECT : Chief River

| Size | Document Number | Rev |
|---|---|---|
| | LAN RTL8111E | 1A |
| Date: Wednesday, February 01, 2012 | Sheet 21 of 43 | |

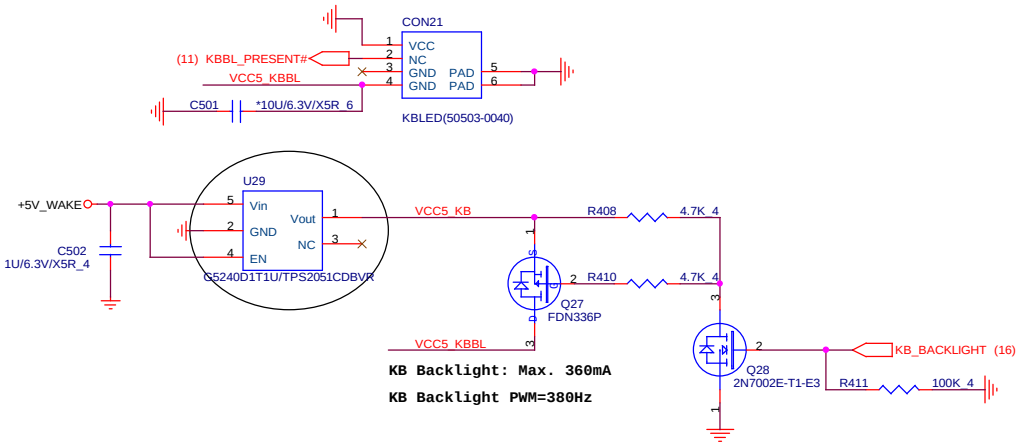
# WLAN/WIMAX/WIDI

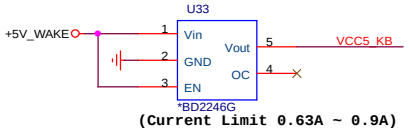



WLAN+Bluetooth
20 : Internal Pull high 25K ~ 58K

# KB BACKLIGHT



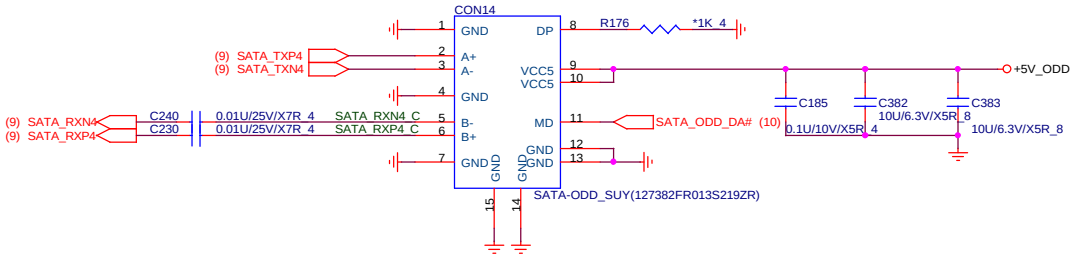



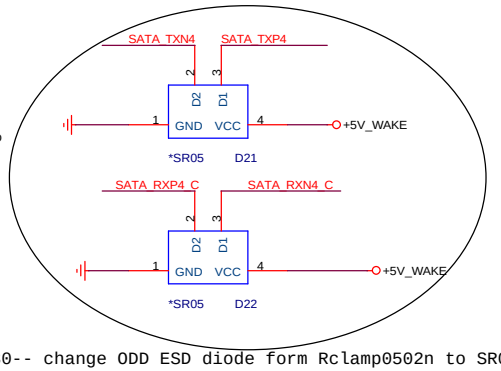

1.Level 1 Environment-related Substances Should Never be Used.
2.Recycled Resin and Coated Wire should be procured from Green Partners.

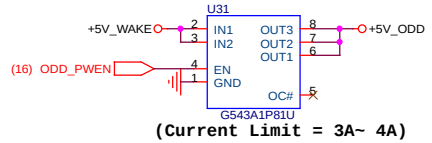
Quanta Computer Inc.
PROJECT :Chief River

| Size | Document Number | Rev |
|---|---|---|
| | WLAN/KB BL | 1A |
| Date: Wednesday, February 01, 2012 | Sheet 22 of 43 | |

# ODD CONNECTOR



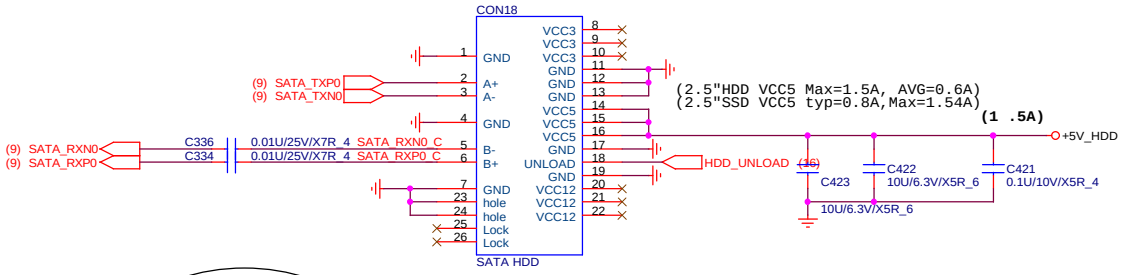



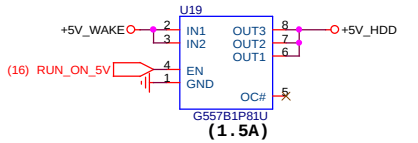

(Current Limit = 3A~ 4A)

0130-- change ODD ESD diode form Rclamp0502n to SR05

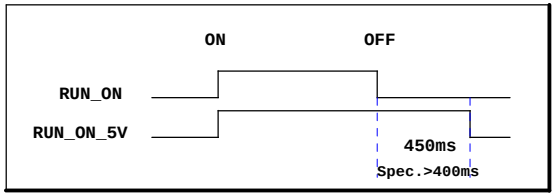
# HDD CONNECTOR




(2.5"HDD VCC5 Max=1.5A, AVG=0.6A)
(2.5"SSD VCC5 typ=0.8A,Max=1.54A)
(1 .5A)

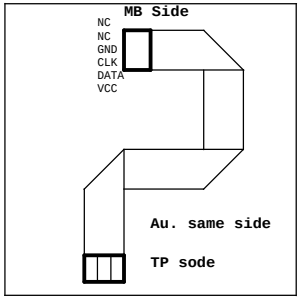


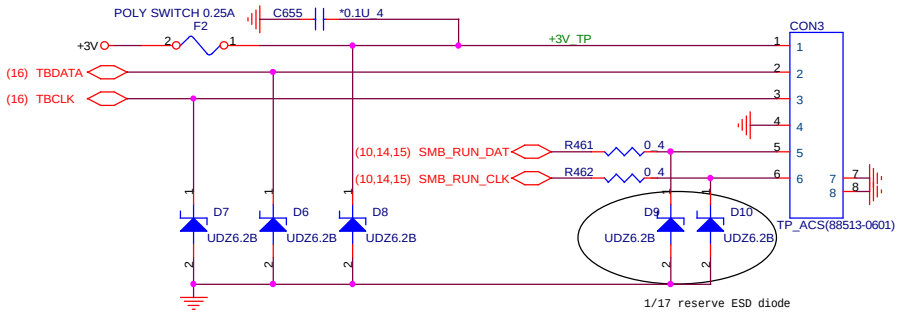

(1.5A)




01/30 del D23 , D24 ESD diode

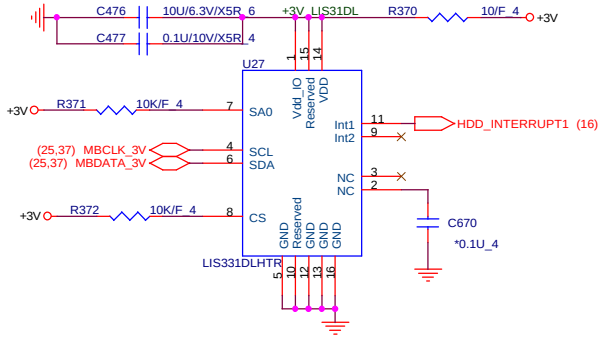
# T/P Board to T/P



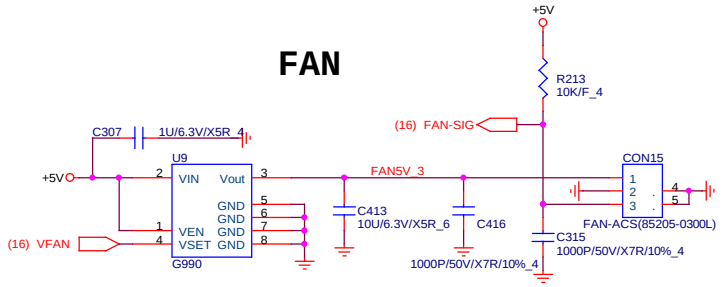




1/17 reserve ESD diode

# 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 | Rev |
|---|---|---|
| | HDD/ODD/TP/FAN | 1A |

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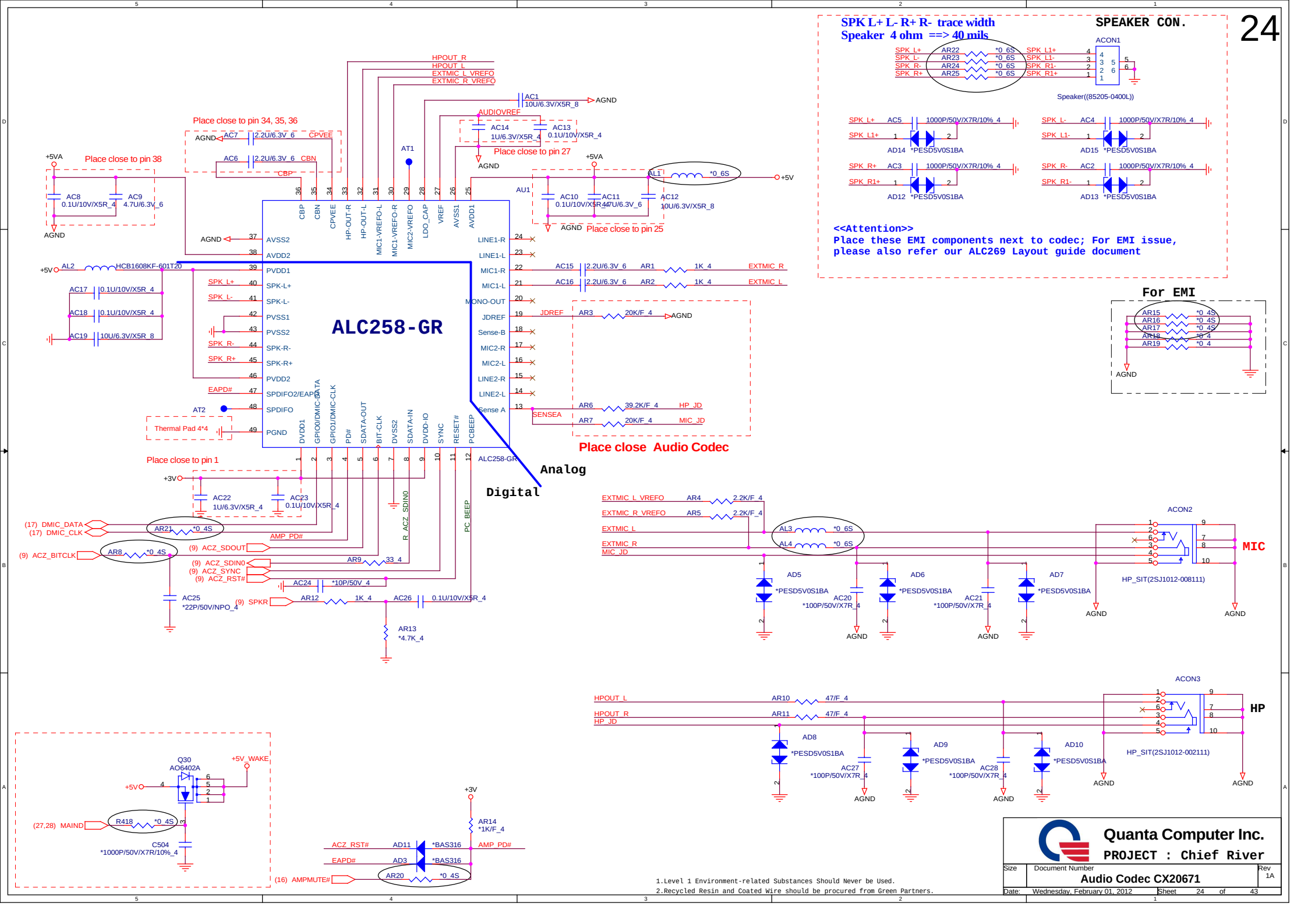
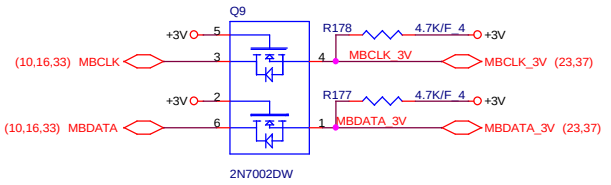
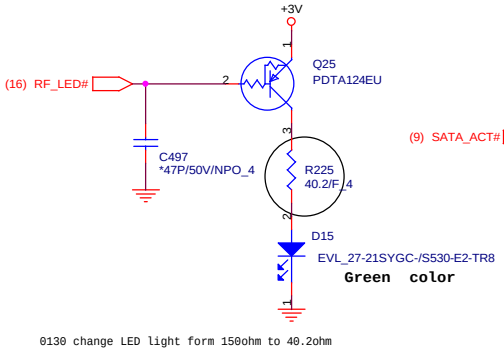



| | |
|---|---|
| Quanta Computer Inc. | |
| PROJECT : Chief River | |
| Size | Document Number: Audio Codec CX20671 — Rev: 1A |
| Date: Wednesday, February 01, 2012 | Sheet 24 of 43 |

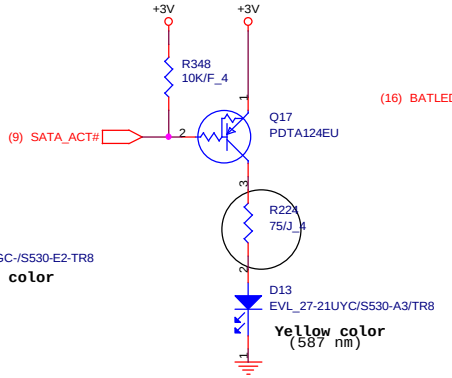



## RF LED



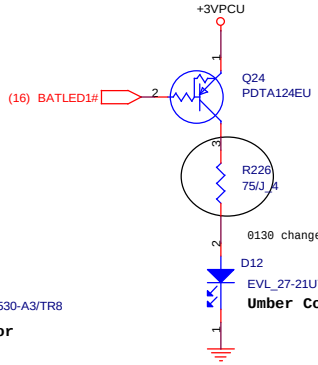

0130 change LED light form 150ohm to 40.2ohm

## SATA LED



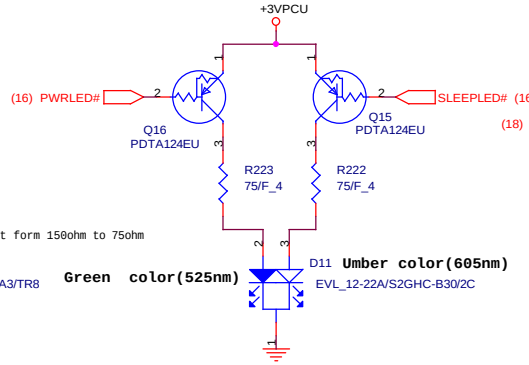

0130 change LED light form 150ohm to 75ohm

## BATTERY LED

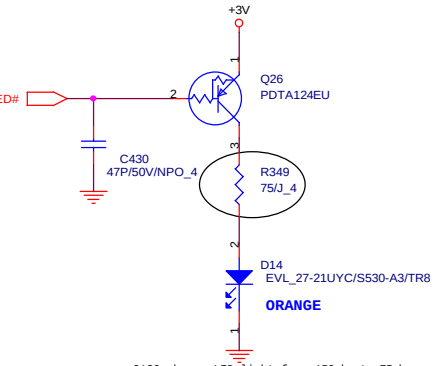



0130 change LED light form 150ohm to 75ohm

## Power/Sleep LED

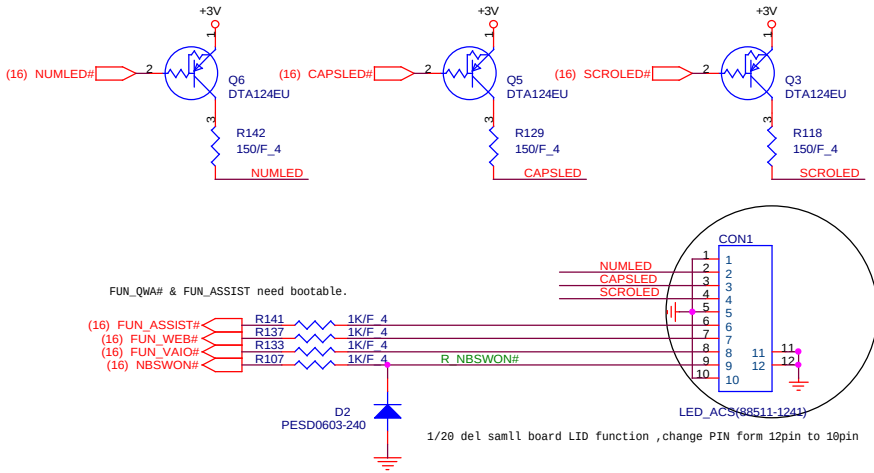



## CARD LED




0130 change LED light form 150ohm to 75ohm

## Power SW Board Connector

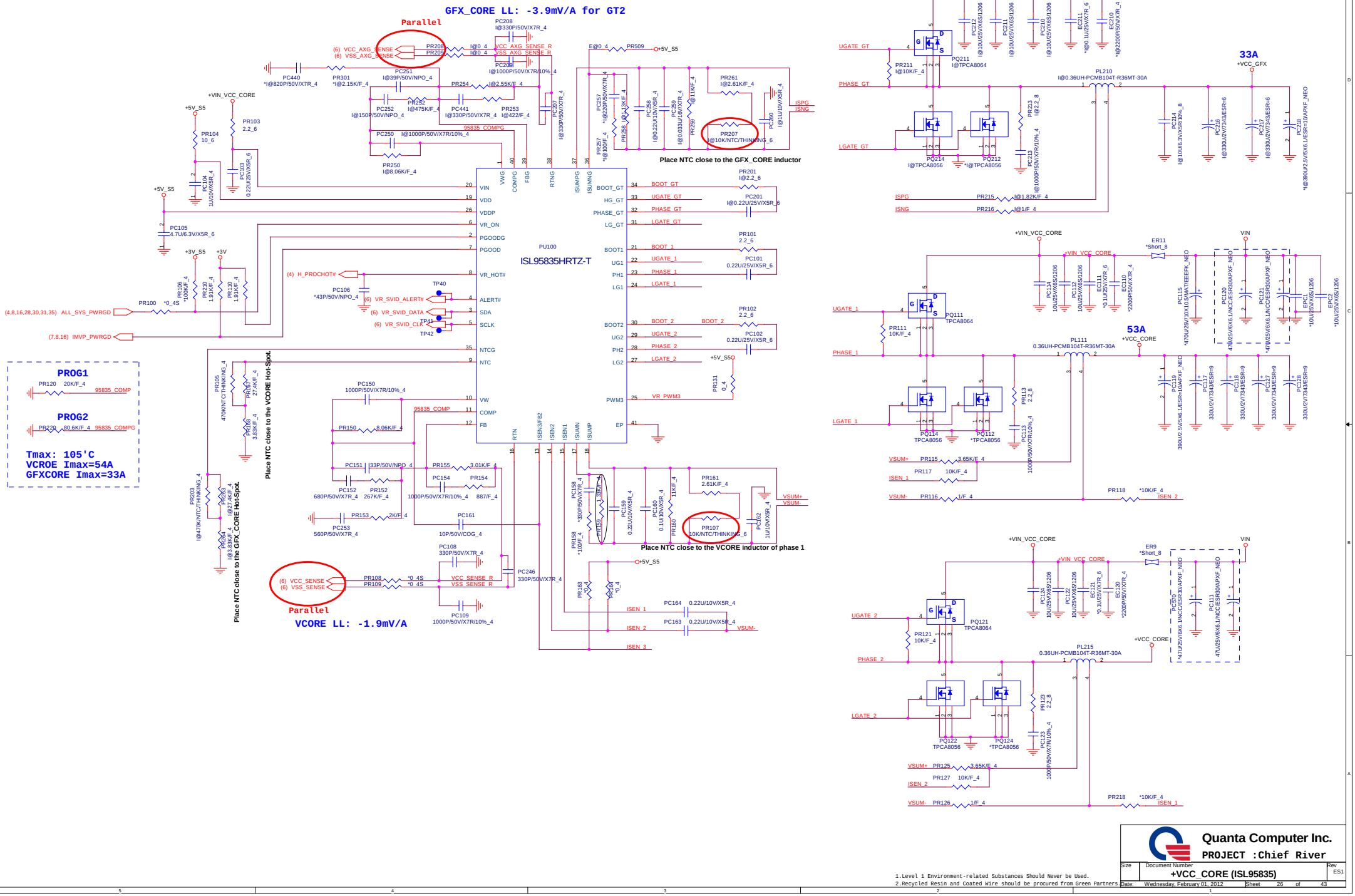



1/20 del samll board LID function ,change PIN form 12pin to 10pin

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**

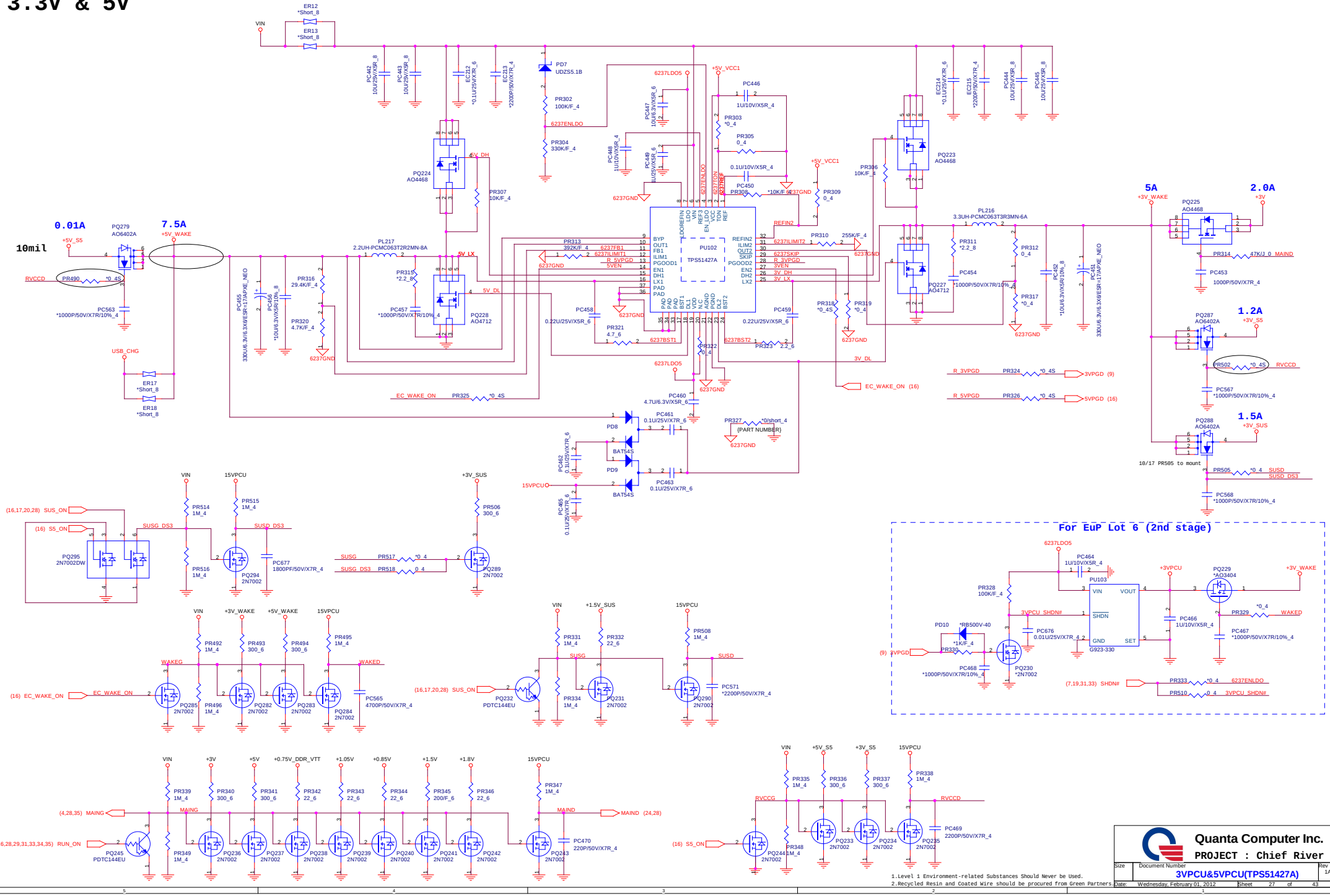
| Size | Document Number | Rev |
|---|---|---|
| | LED/RF/KB/PS | 1A |
| Date: Wednesday, February 01, 2012 | Sheet 25 of 43 | |




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

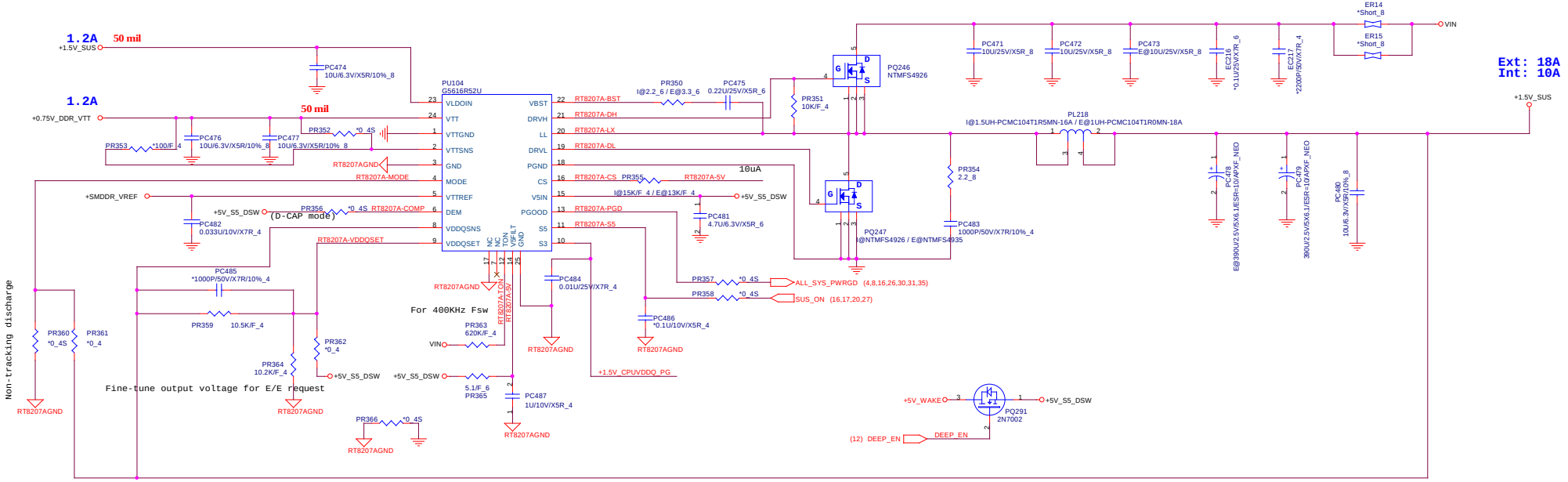


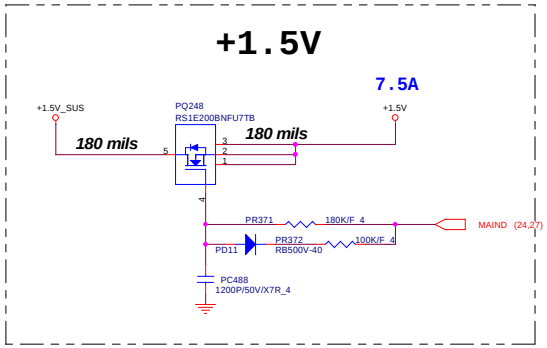


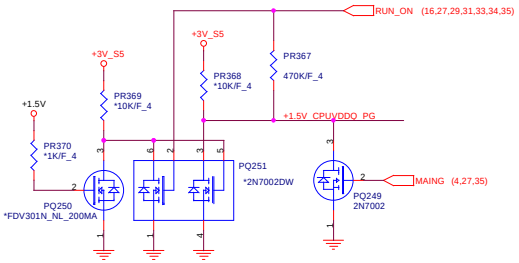

Quanta Computer Inc.
PROJECT : Chief River

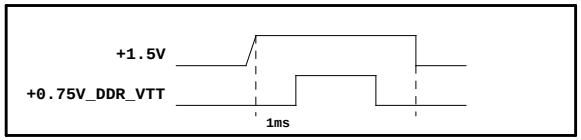
| Size | Document Number | Rev |
|---|---|---|
| | 3VPCU&5VPCU(TPS51427A) | 1A |
| Date: Wednesday, February 01, 2012 | Sheet 27 of 43 | |

# 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

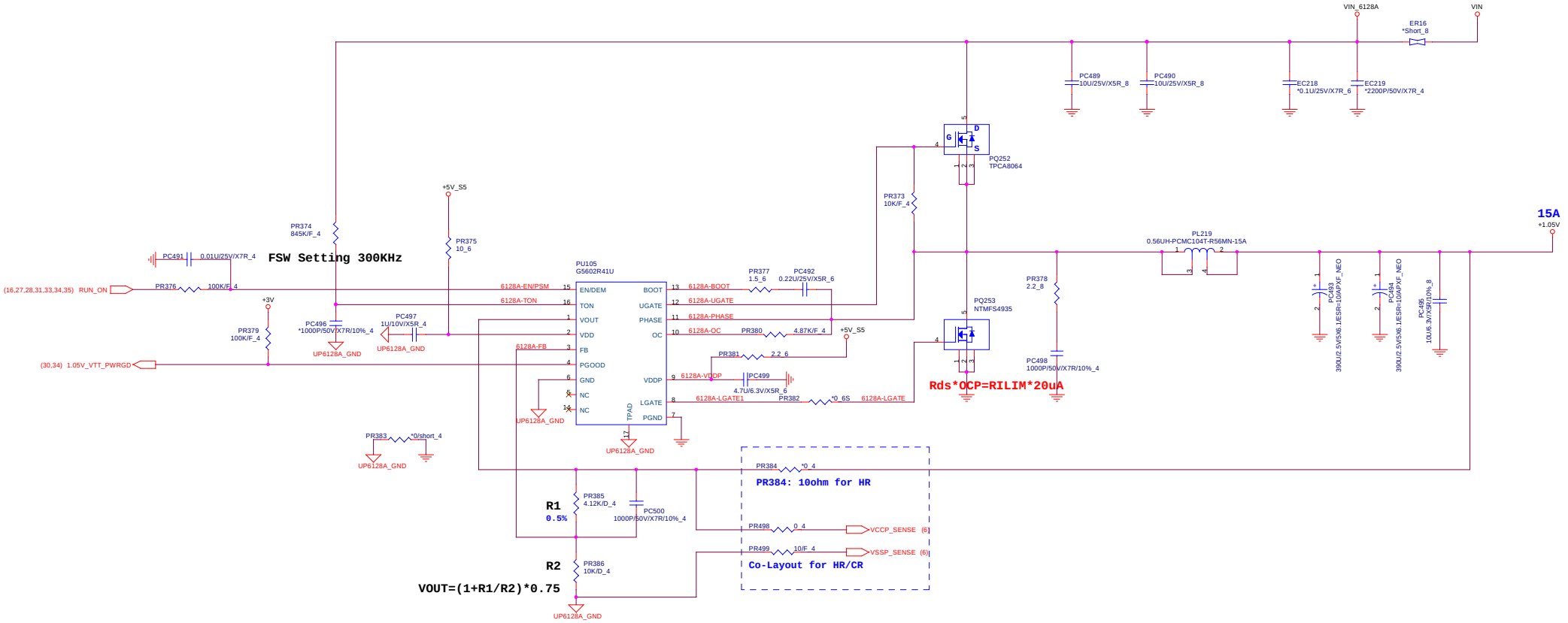
| STATE | S3 | S5 | 1.5VSUS | VTTREF | VTT |
|---|---|---|---|---|---|
| S0 | 1 | 1 | on | on | on |
| S3 | 0 | 1 | on | on | off |
| S4/S5 | 0 | 0 | off | off | off |

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, February 01, 2012 | Sheet 28 of 43 | |

# +1.05V / 15.0A

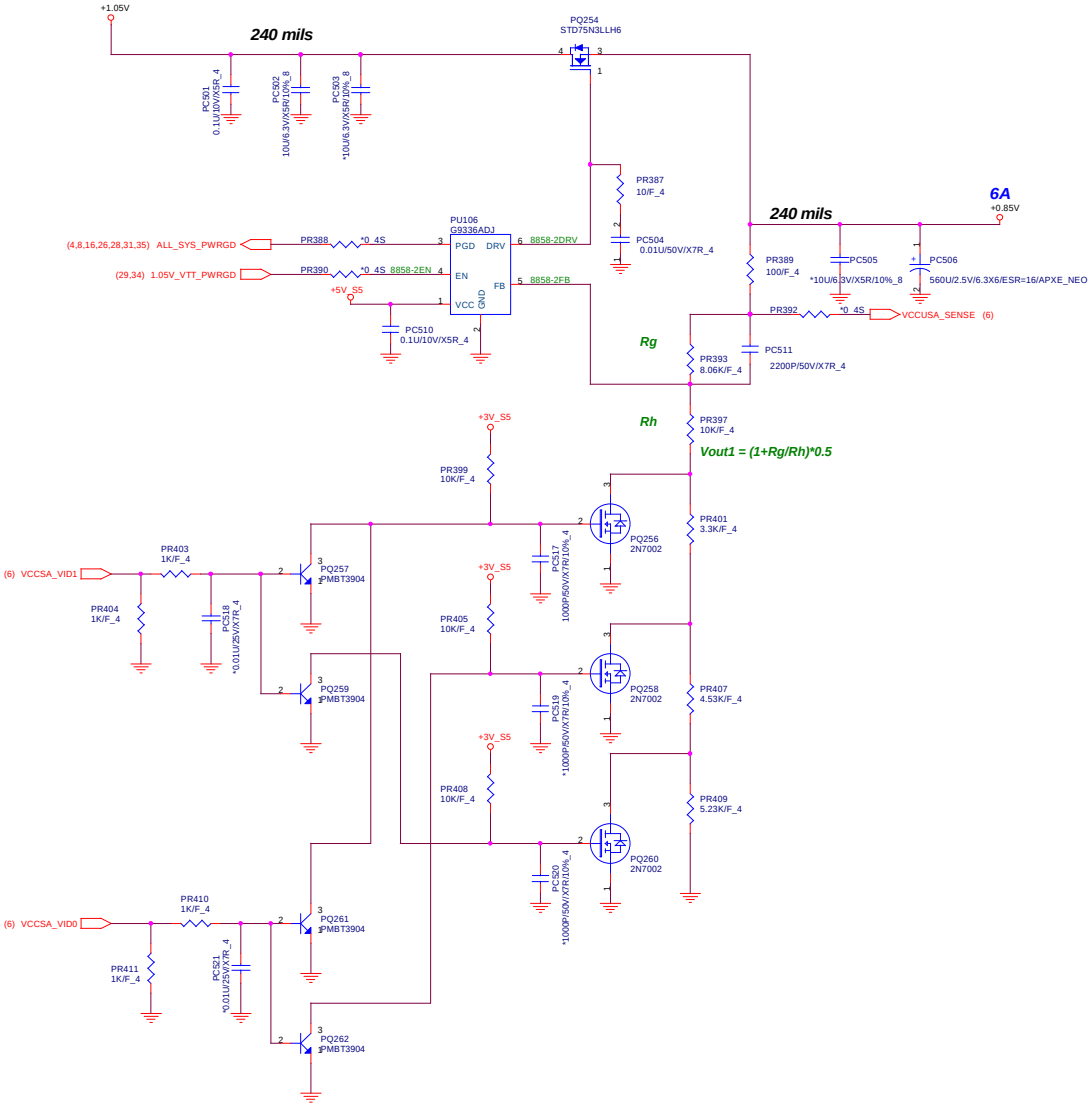



1.Level 1 Environment-related Substances Should Never be Used.
2.Recycled Resin and Coated Wire should be procured from Green Partners.

Quanta Computer Inc.
PROJECT : Chief River

| Size | Document Number | Rev |
|---|---|---|
| | +1.05V (UP1522RQDD)-15A | 1A |
| Date: Thursday, February 02, 2012 | Sheet 29 of 43 | |

# VCCSA




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

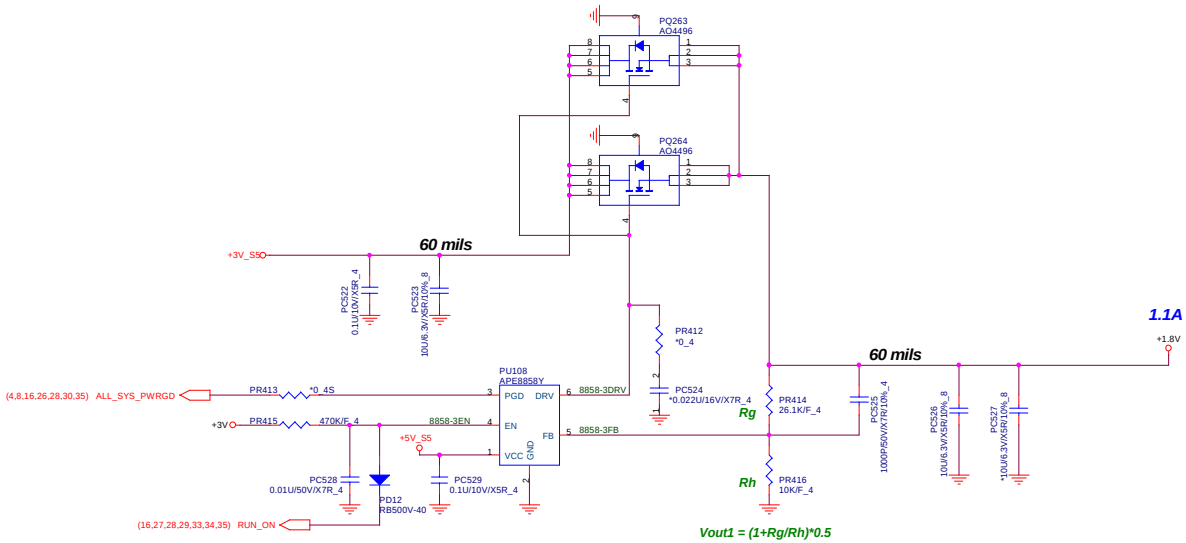
# VCCIO

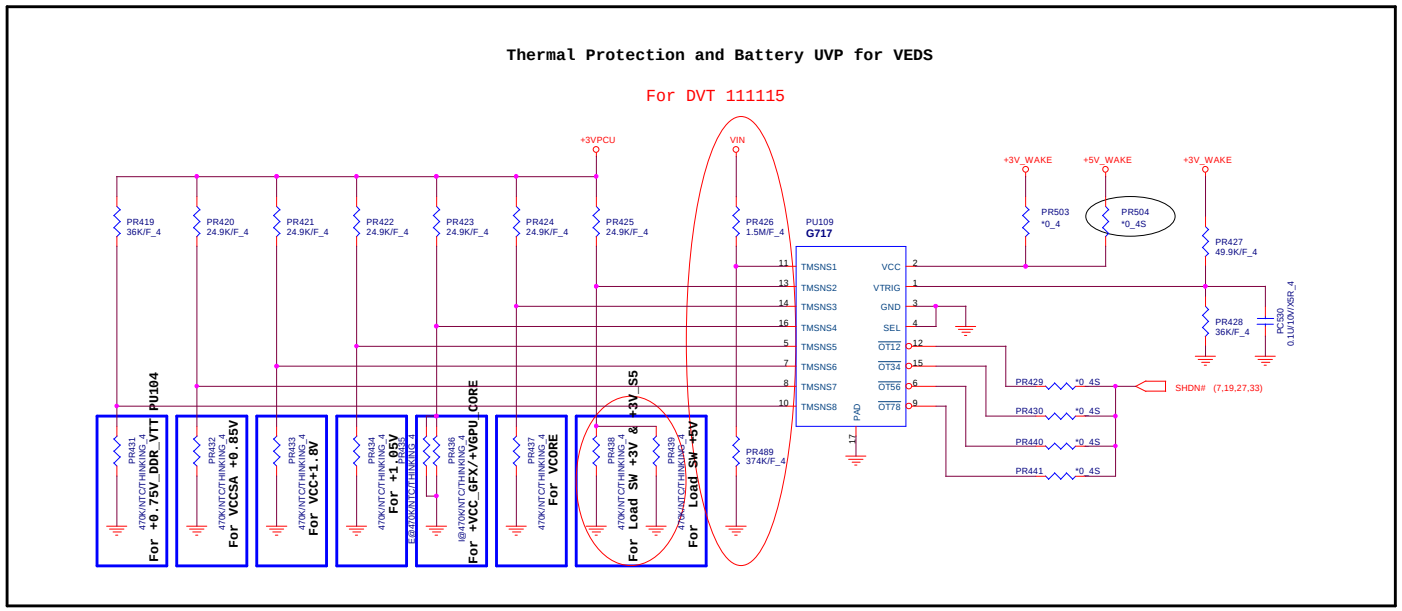

1.Level 1 Environment-related Substances Should Never be Used.
2.Recycled Resin and Coated Wire should be procured from Green Partners.

Quanta Computer Inc.
PROJECT : Chief River

| Size | Document Number | Rev |
|---|---|---|
| | VCCSA / VCCIO | 1A |
| Date: Wednesday, February 01, 2012 | Sheet 30 of 43 | |

# VCC1.8

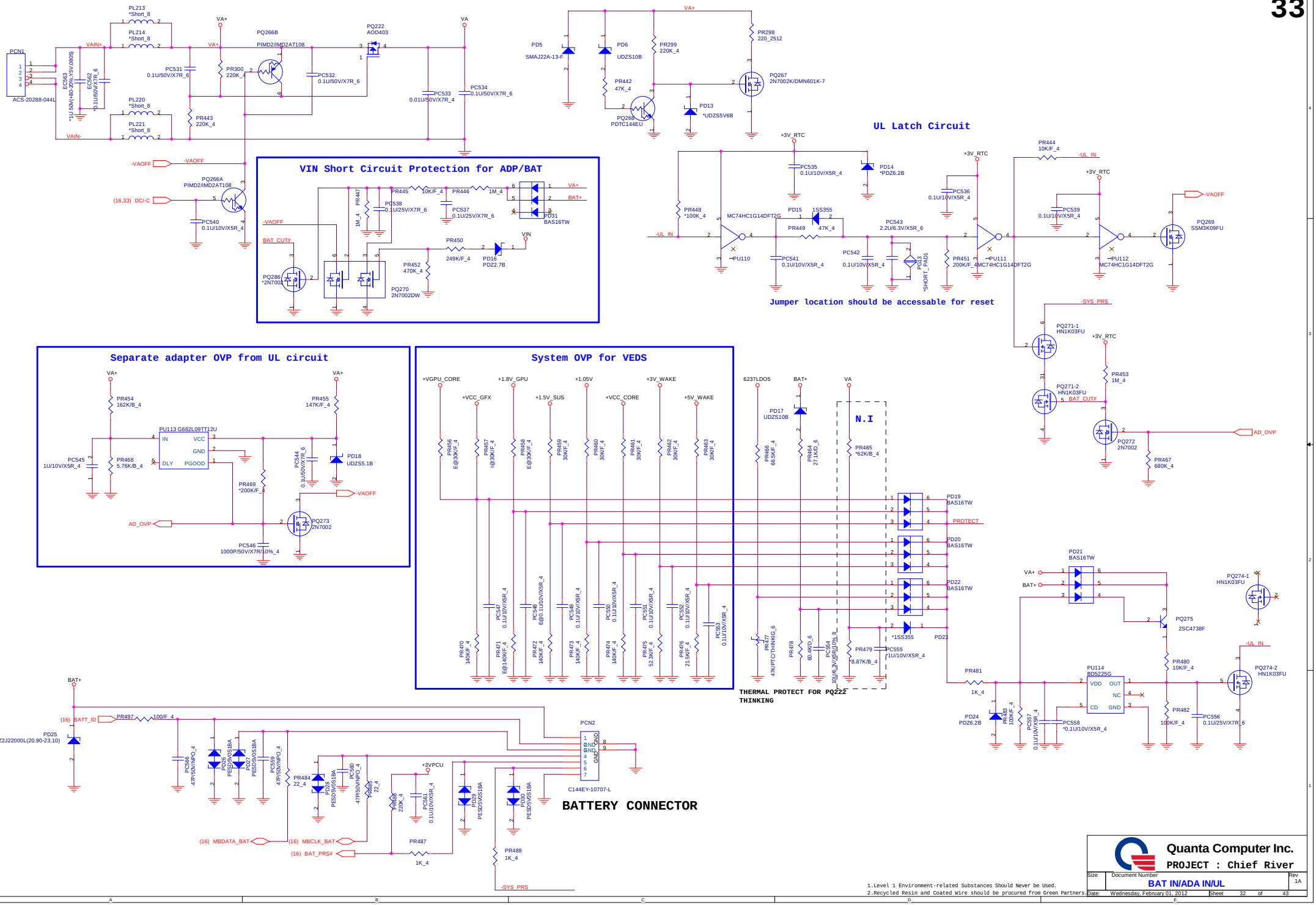



1.Level 1 Environment-related Substances Should Never be Used.
2.Recycled Resin and Coated Wire should be procured from Green Partners.

Quanta Computer Inc.
PROJECT : Chief River

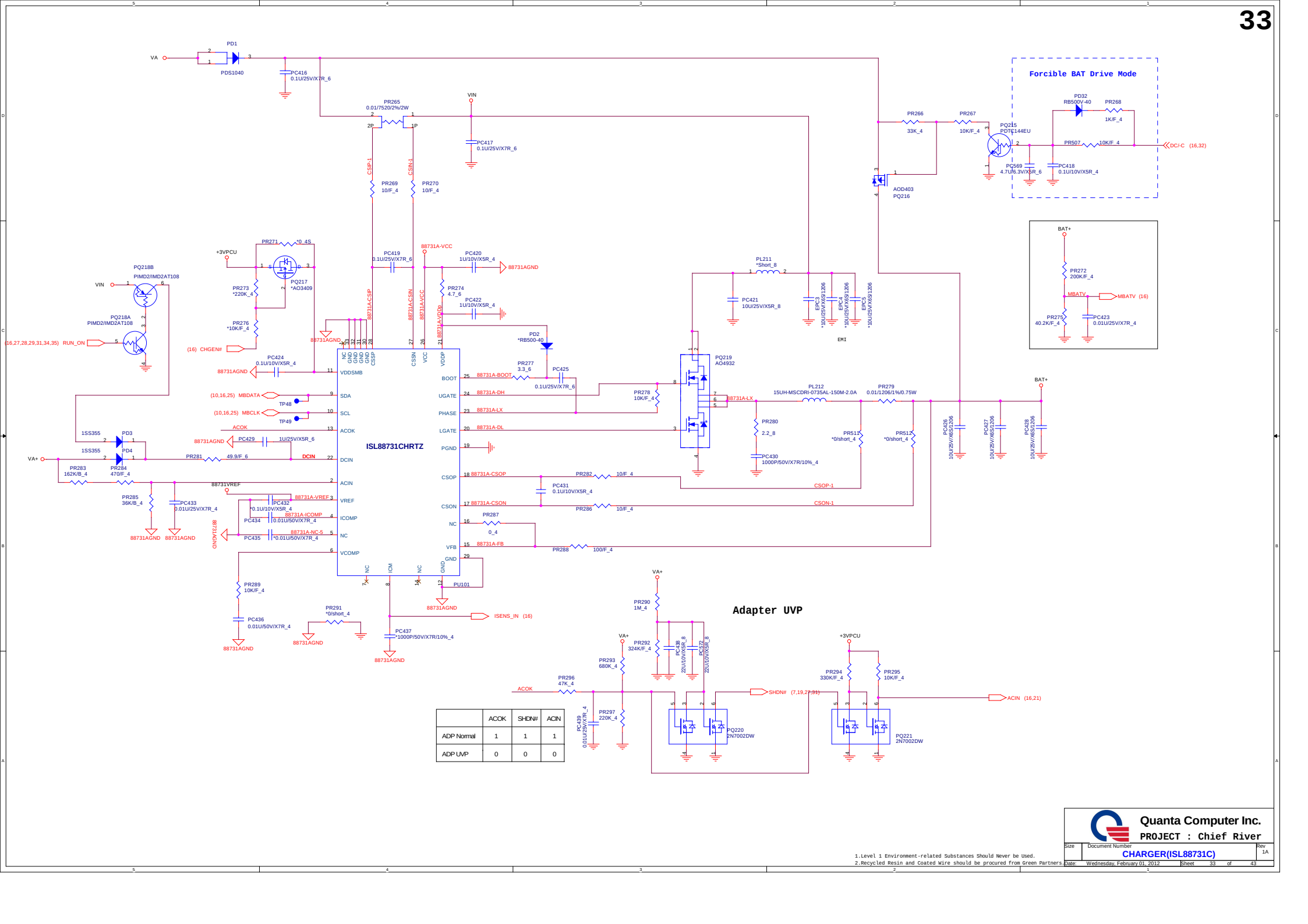
| Size | Document Number | Rev |
|---|---|---|
| | VCC1.8 | 1A |
| Date: Wednesday, February 01, 2012 | Sheet 31 of 43 | |




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 |
|---|---|---|
| | BAT IN/ADA IN/UL | 1A |
| Date: Wednesday, February 01, 2012 | Sheet 32 of 43 | |

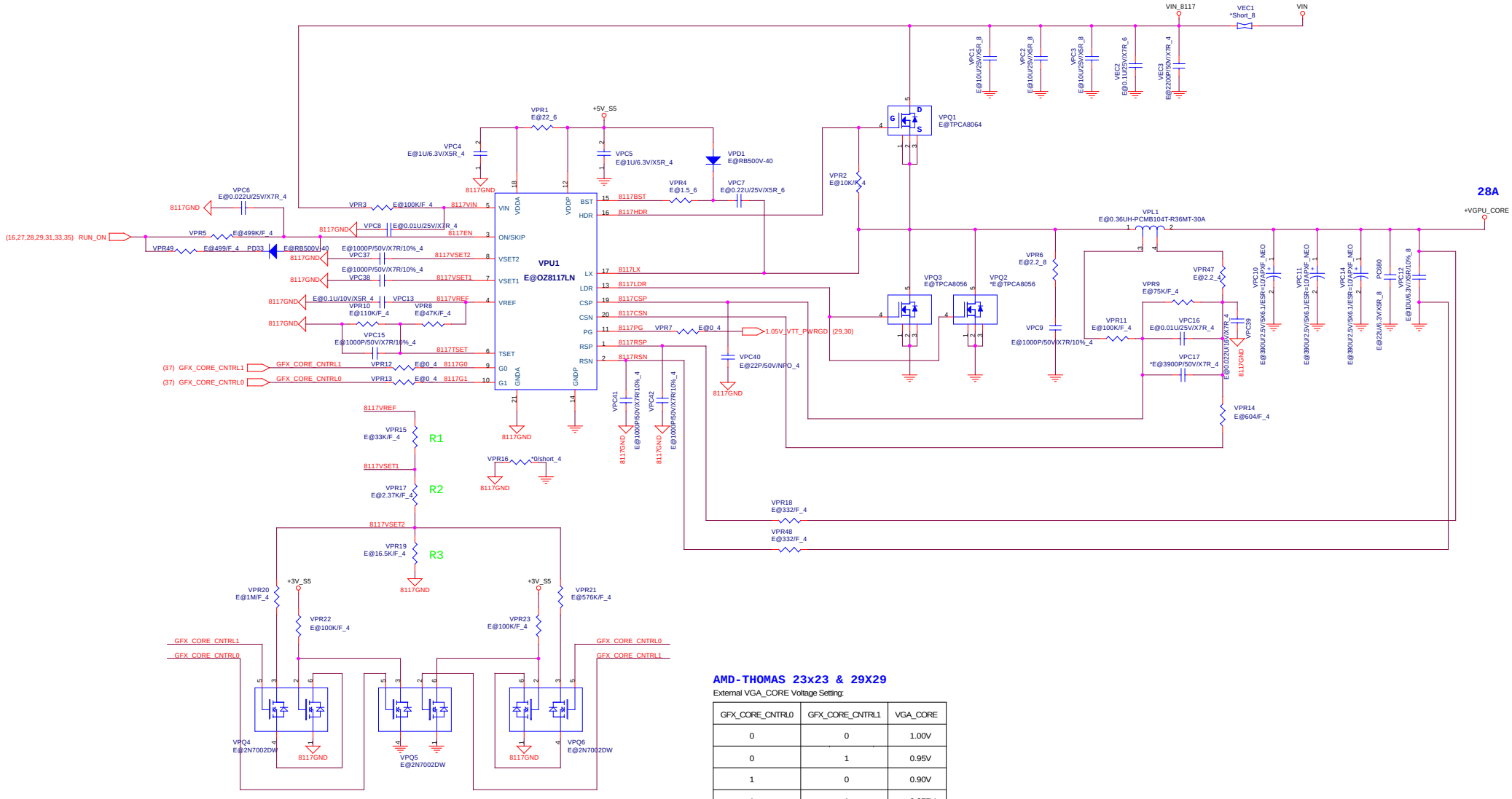



1.Level 1 Environment-related Substances Should Never be Used.
2.Recycled Resin and Coated Wire should be procured from Green Partners.

Quanta Computer Inc.
PROJECT : Chief River

| Size | Document Number | Rev |
|---|---|---|
| | CHARGER(ISL88731C) | 1A |

Date: Wednesday, February 01, 2012 Sheet 33 of 43




**AMD-THOMAS 23x23 & 29X29**

External VGA_CORE Voltage Setting:

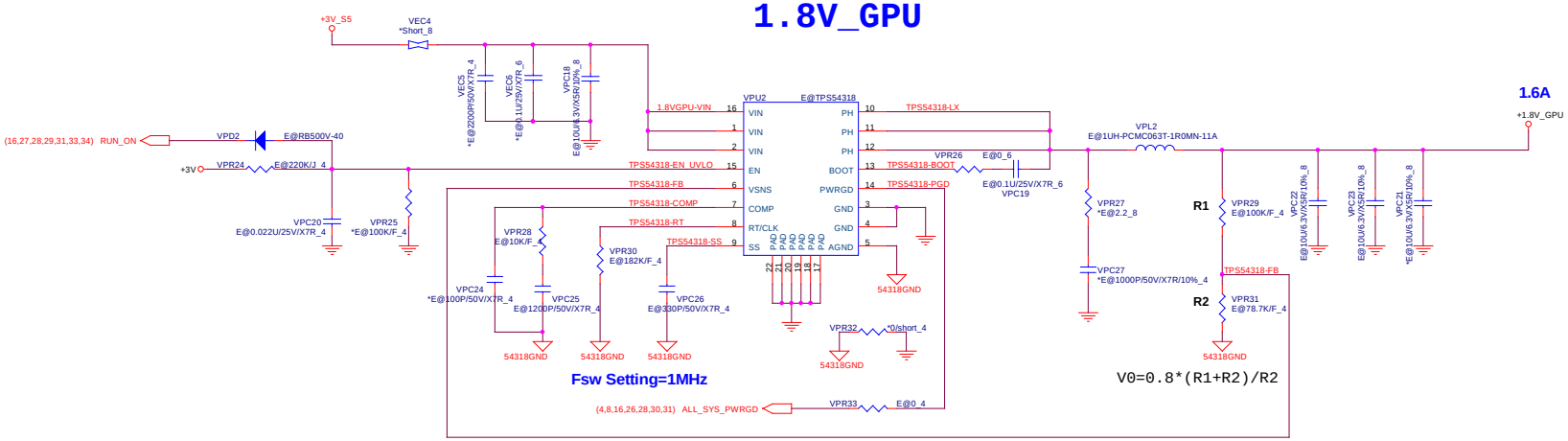
| GFX_CORE_CNTRL0 | GFX_CORE_CNTRL1 | VGA_CORE |
|---|---|---|
| 0 | 0 | 1.00V |
| 0 | 1 | 0.95V |
| 1 | 0 | 0.90V |
| 1 | 1 | 0.875V |

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

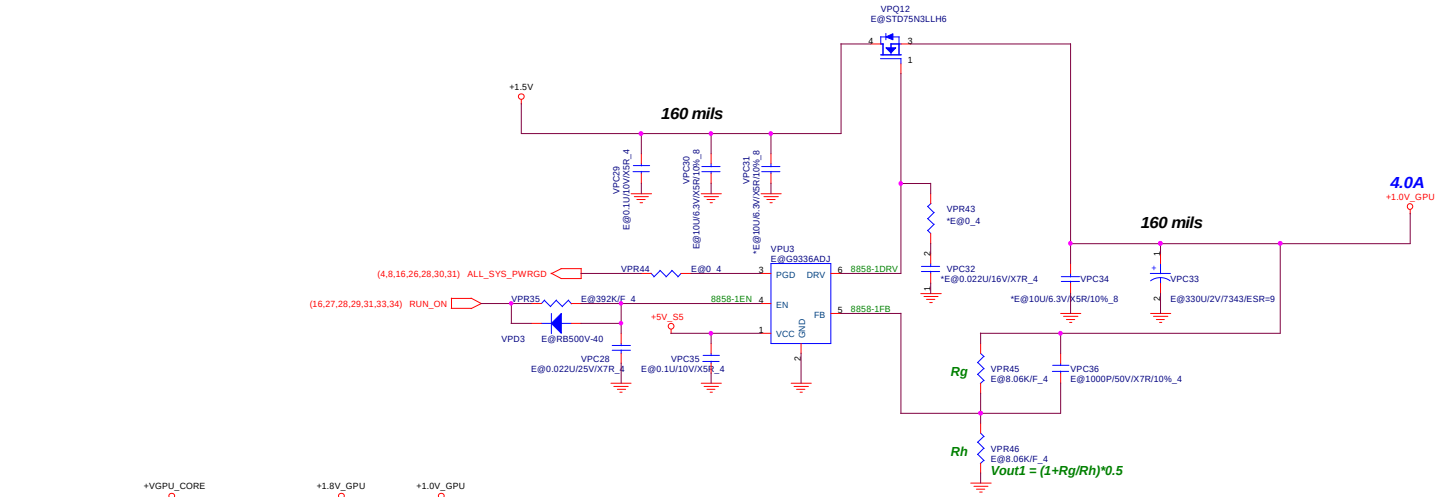
Quanta Computer Inc.
PROJECT : Chief River

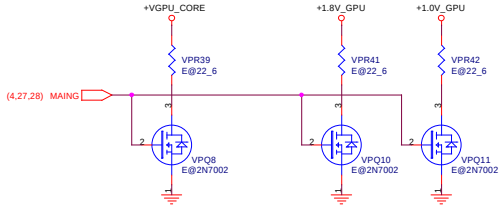
| Size | Document Number | Rev |
|---|---|---|
| | VGA_CORE (OZ8117) | 1A |
| Date: Wednesday, February 01, 2012 | Sheet 34 of 43 | |

# 1.8V_GPU




# +1.0V_GPU (Support VRAM 900MHz)

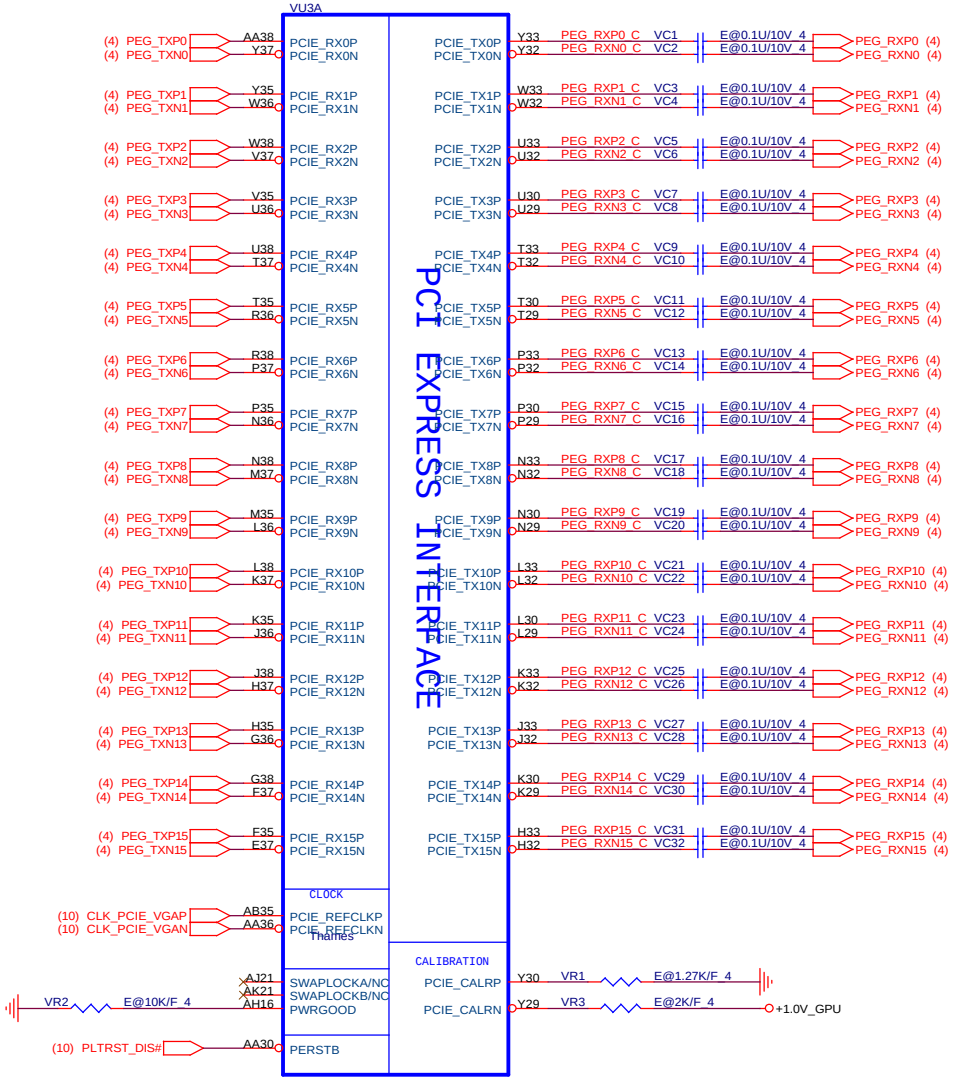


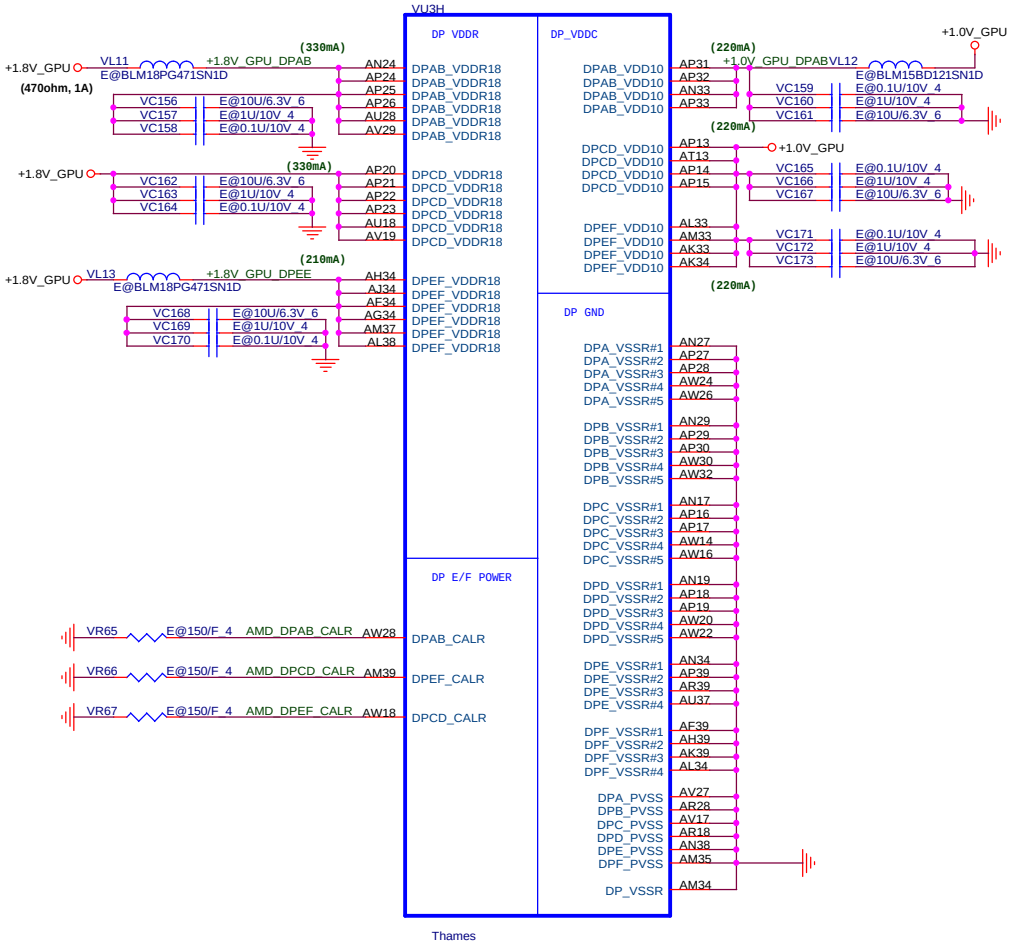




1.Level 1 Environment-related Substances Should Never be Used.
2.Recycled Resin and Coated Wire should be procured from Green Partners.

Quanta Computer Inc.
PROJECT : Chief River

| Size | Document Number | Rev |
|---|---|---|
| | 1.8_GPU / 1.0_GPU | 1A |
| Date: Wednesday, February 01, 2012 | Sheet 35 of 43 | |




**Thames necessary Power-on sequence**

**All power rails reach nominal within 20ms**

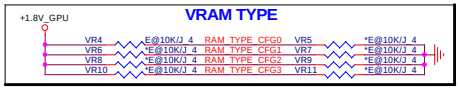
**1 => +3V_GPU**
**2 => +VDDC_CORE**
**3 => +1.0V_GPU**
**3 => +1.8V_GPU**

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 |
|---|---|---|
| | Thames/PCIE | 1A |
| Date: Wednesday, February 01, 2012 | Sheet 36 of 43 | |

## VRAM TYPE




Note : Required Frequency = 900 MHz

| 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 |




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

## APERTURE SIZE

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




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

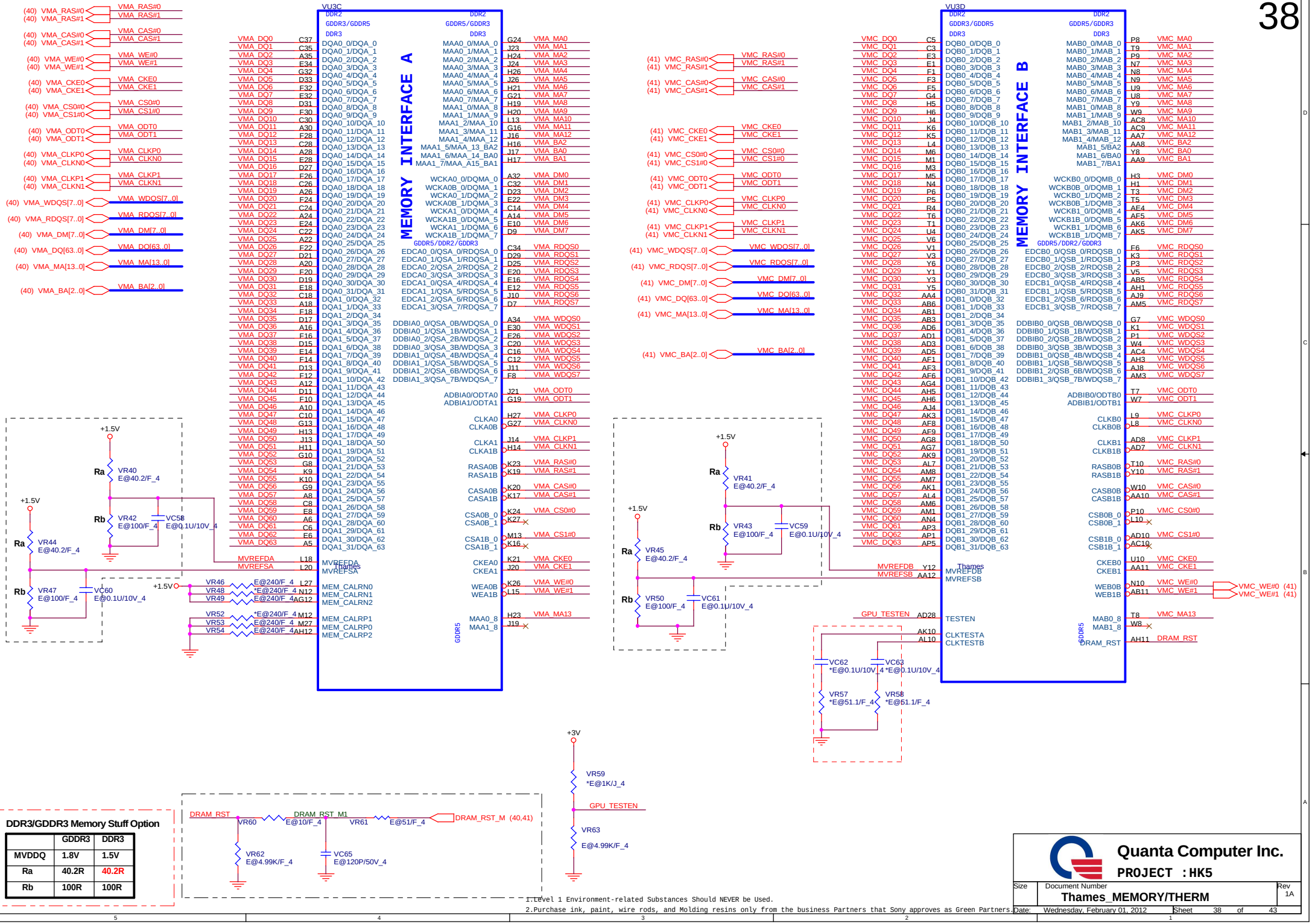



| CONFIGURATION STRAPS | | | |
|---|---|---|---|
| STRAPS | PIN | DESCRIPTION | SET |
| TX_PWRS_ENB | GPIO0 | PCIE FULL TX OUTPUT SWING<br>0 = 50% Tx output swing<br>1 = Full Tx output swing | 0 |
| TX_DEEMPH_EN | GPIO1 | PCIE TRANSMITTER DE-EMPHASIS ENABLED<br>0 = Disable ; 1 = Enable | 0 |
| BIF_GEN2_EN_A | GPIO2 | 0 = Advertises the PCIe device as 2.5 GT/s capable at power-on.<br>1 = Advertises the PCIe device as 5.0 GT/s capable at power-on. | 1 |
| GPIO_5_AC_BATT (M96-M2) | GPIO5 | 1 = AC (Performance mode)<br>0 = Battery saving mode | 1 |
| VGA_DIS | GPIO9 | 0: VGA Controller capacity enabled<br>1: The device will not be recognized as the system's VGA controller | 0 |
| BIOS_ROM_EN | GPIO22 | Enable external BIOS ROM device<br>0 = Disable ; 1 = Enable | 0 |
| AUD[1]<br>AUD[0] | VGAHSYNC<br>VGAVSYNC | AUD[1:0]:<br>00 - No audio function;<br>01 - Audio for DisplayPort only;<br>10 - Audio for DisplayPort and HDMI if dongle is detected;<br>11 - Audio for both DisplayPort and HDMI. | 11 |
| VIP_DEVICE_STRAP_EN | BIOS_ROM_EN | VIP Device Strap Enable<br>0 = Disable ; 1 = Enable | 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 : HK5

| Size | Document Number | Rev |
|---|---|---|
| | Thames_IO&STRAP | 1A |
| Date: Wednesday, February 01, 2012 | Sheet 37 of 43 | |




**DDR3/GDDR3 Memory Stuff Option**

| | GDDR3 | DDR3 |
|---|---|---|
| MVDDQ | 1.8V | 1.5V |
| Ra | 40.2R | 40.2R |
| Rb | 100R | 100R |

1.Level 1 Environment-related Substances Should NEVER be Used.
2.Purchase ink, paint, wire rods, and Molding resins only from the business Partners that Sony approves as Green Partners.

Quanta Computer Inc.
PROJECT : HK5

| Size | Document Number | Rev |
|---|---|---|
| | Thames_MEMORY/THERM | 1A |

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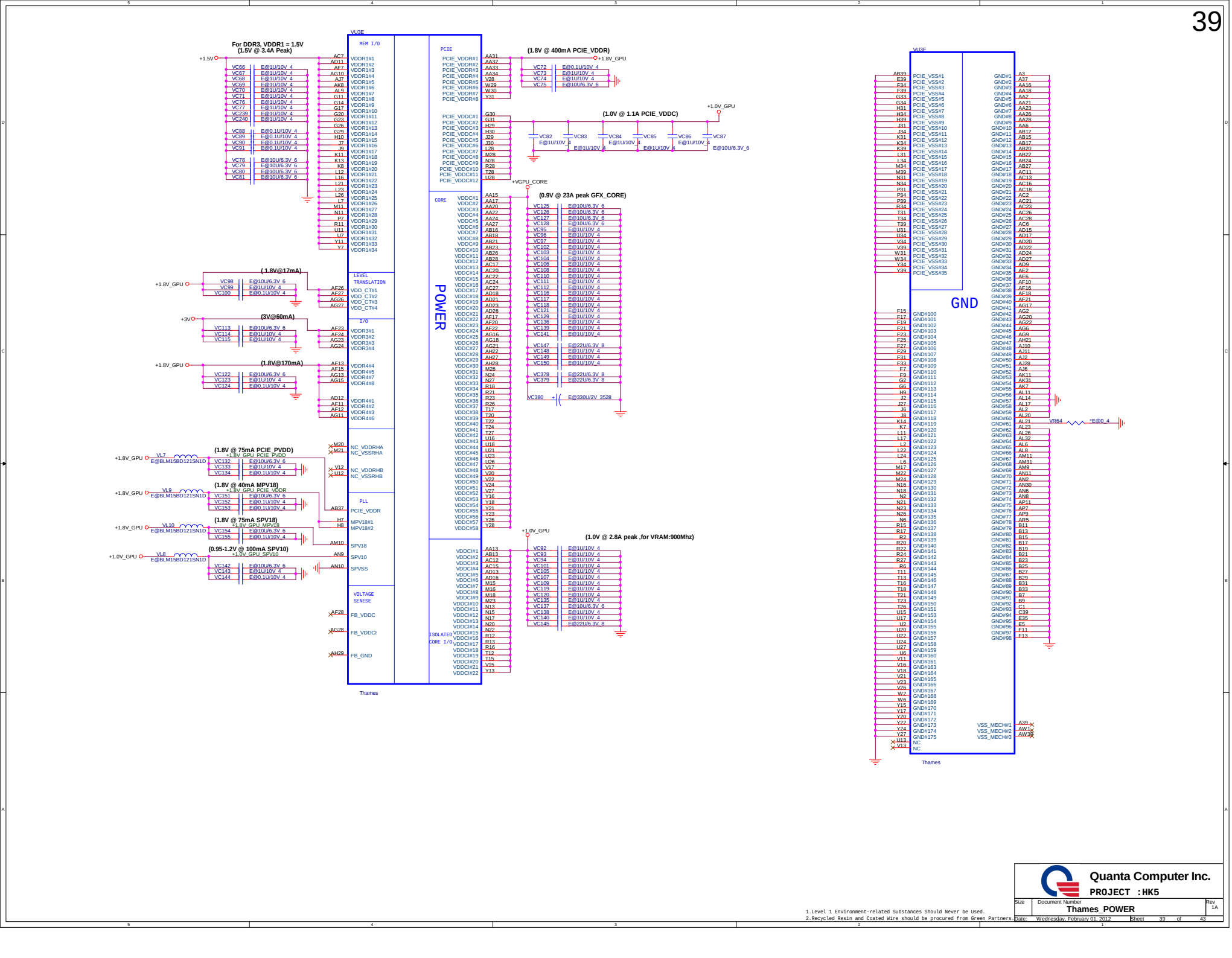


1.Level 1 Environment-related Substances Should Never be Used.
2.Recycled Resin and Coated Wire should be procured from Green Partners.

Quanta Computer Inc.
PROJECT :HK5

| Size | Document Number | Rev |
|---|---|---|
| | Thames_POWER | 1A |

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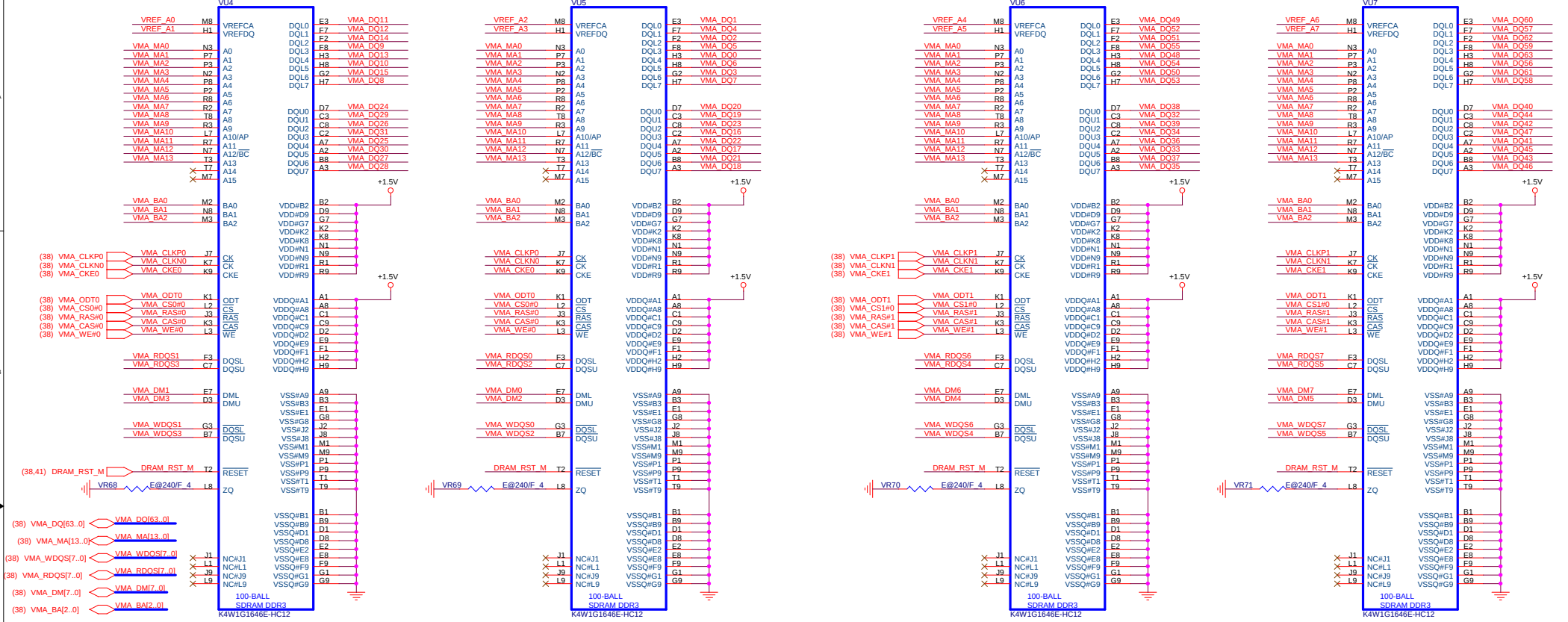
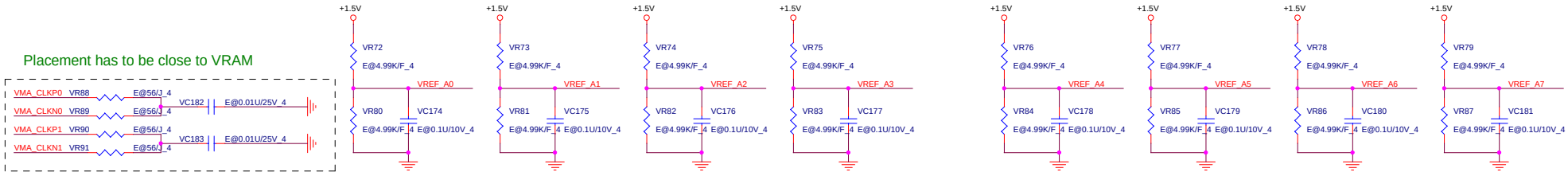
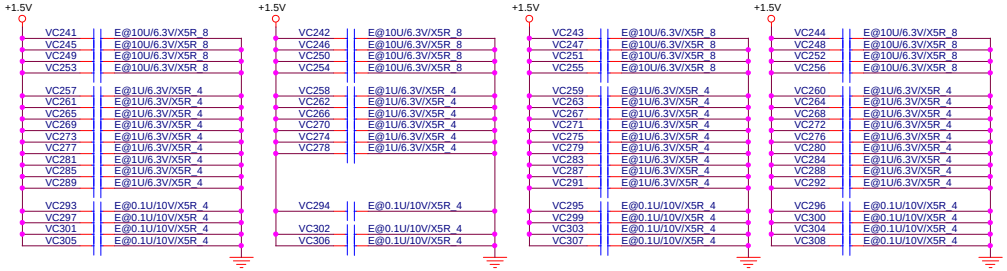
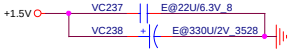
# DDR3 64MX16, CH A : 512MB




Placement has to be close to VRAM



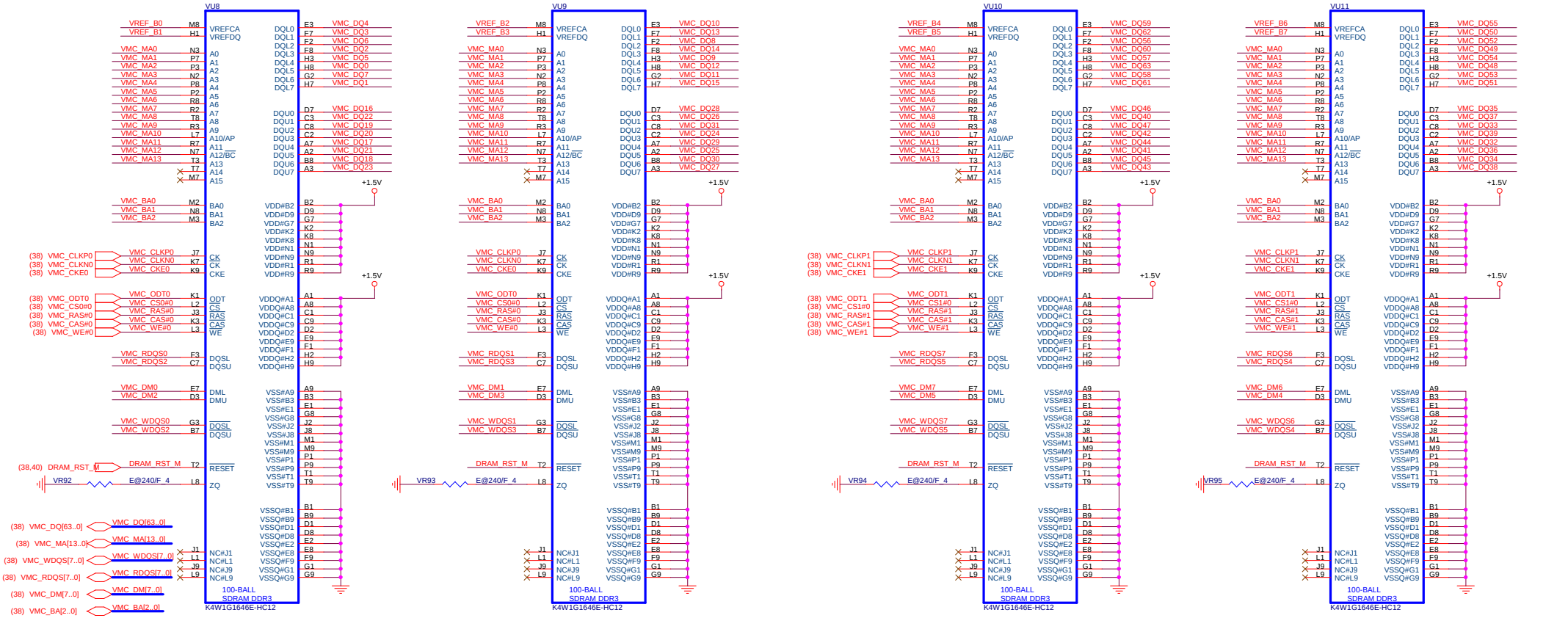



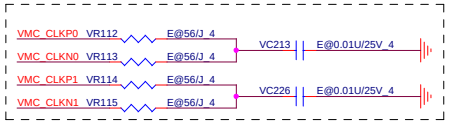

1.Level 1 Environment-related Substances Should Never be Used.
2.Recycled Resin and Coated Wire should be procured from Green Partners.

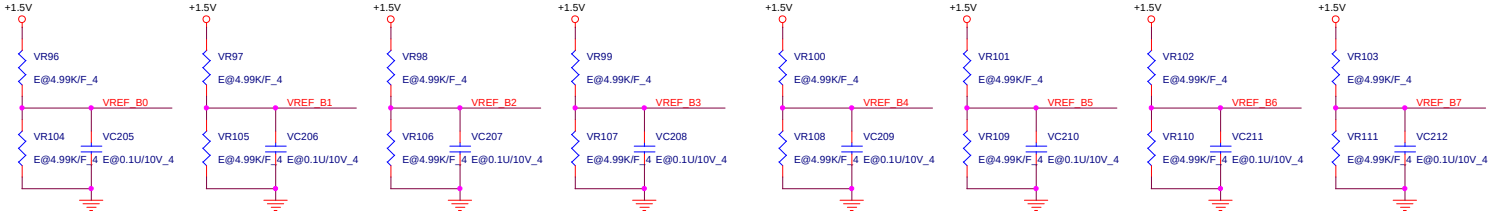
Quanta Computer Inc.
PROJECT : HK5

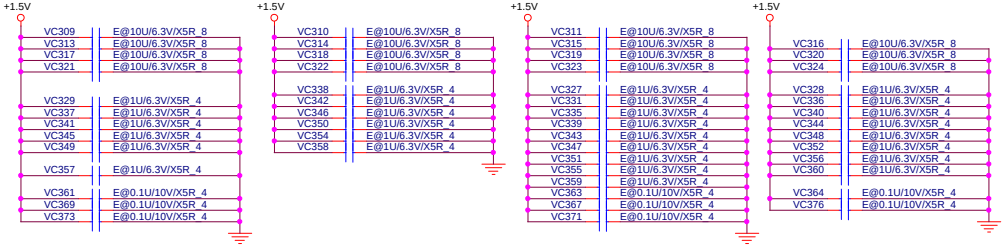
| Size | Document Number | Rev |
|---|---|---|
| | Thames_DDR3_A_512M | 1A |
| Date: | Wednesday, February 01, 2012 | Sheet 40 of 43 |

# DDR3 64MX16, CH B : 512MB




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 |
|---|---|---|
| | Thames_DDR3_B_512M | 1A |

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WLAN PCH

H8 *H-C197D158P2
H-C197D158P2
H27 h-tc5_5bc4i3d3p2
H56 h-tc5_5bc4i3d3p2
H10 *O-HK1-3
H19 *HG-C236D102P2
H16 *O-HK1-3
H7 *O-HK1-12
H18 *o-hk5-1
H23 *O-HK1-5
H25 *O-HK1-6
H24 *O-HK1-7
H44 *HK1-F
H42 *HK1-D
H41 *HK1-C
H60 *h-tsbc207d157p2-1
H61 *h-tsbc207d157p2-2
H4 *O-HK1-11
H34 *HG-TSBSD102P2
H13 *O-HK1-17
H54 *HK1-N
H55 *H-C91D91N
H62 *h-tsbsd102p2-0
H9 *O-HK1-10
H11 *O-HK1-9
H15 *O-HK1-8
H26 *H-C197D158P2
H14 *O-HK1-16
H12 *O-HK1-15
H3 *H-C177D91PT
H2 *H-C177D91PT
H20 *O-HK1-14
H17 *O-HK1-13
H30 *SPAD-RE177X79
H32 *SPAD-RE177X79

# KEY BOARD Connector

CON2
KB_ACS(88513-260N)
(16) MY15 (16) MY14 (16) MY13 (16) MY12 (16) MY11 (16) MX7 (16) MY10 (16) MX6 (16) MX5 (16) MY9 (16) MX4 (16) MY8 (16) MY7 (16) MY6 (16) MY5 (16) MY4 (16) MY3 (16) MX3 (16) MY2 (16) MY1 (16) MY0 (16) MX2 (16) MX1 (16) MX0 (16) MY17 (16) MY16
RP6 RP8 RP9 RP10 RP11 RP12 22X4
R164 22_4
R166 22_4
27
28
+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

VIN +1.5V
C550 C551 1000P/50V/X7R/10%_4
VIN +1.5V_SUS
C552 C553 C557 1000P/50V/X7R/10%_4
VIN +1.05V
C554 C556 C560 C561 1000P/50V/X7R/10%_4
+5V_WAKE +1.05V
C565 C566 C567 1000P/50V/X7R/10%_4
+5V
C555 C558 C559 1000P/50V/X7R/10%_4
+1.05V
C616 C617 C618 C619 1000P/50V/X7R/10%_4

VIN
C585_1 C587_1 C588_1 C643 C644 C645 C646 C647
0.1U/25V/X7R_6
1000P/50V/X7R/10%_4
+3V_S5 C589 0.1U/10V/X5R_4
+5V C593 1000P/50V/X7R/10%_4 +5V_WAKE
+5V C595 C596 C597 1000P/50V/X7R/10%_4 USB_CHG
+1.05V
C563 C620 C660 C661 C662 C663 C664 C665 C666 C667 C668 C669
0.1U/10V/X5R_4

+3V_S5 C601 C602 C603 1000P/50V/X7R/10%_4 +3V
+1.05V C605 C606 C607 1000P/50V/X7R/10%_4 +3V
+3V_S5 C612 1000P/50V/X7R/10%_4 USB_CHG
+1.05V C621 C622 1000P/50V/X7R/10%_4 +1.5V_SUS
+5V_WAKE
C638 C639 C648 C649 C583
1000P/50V/X7R/10%_4
0.1U/10V/X5R_4

+VCC_CORE C613 C614 C615 1000P/50V/X7R/10%_4
+VCC_GFX C625 1000P/50V/X7R/10%_4
+1.5V_SUS C626 C671 C672 C673 1000P/50V/X7R/10%_4 +1.5V
+VGPU_CORE C630 1000P/50V/X7R/10%_4 +1.5V
+VGPU_CORE C631 C632 1000P/50V/X7R/10%_4
+1.5V
C627 C633 C634 C635 C636 C637
0.1U/10V/X5R_4
1000P/50V/X7R/10%_4
+3V_WAKE C642 1000P/50V/X7R/10%_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 :HK5

| Size | Document Number | Rev |
|---|---|---|
| | HOLE/EMI/KB | 1A |
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| USB PORT Architecture | |
|---|---|
| PORT 0 | USB3.0 |
| PORT 1 | USN2.0 |
| PORT 2 | USN2.0 |
| PORT 3 | USB2.0 |
| PORT 4 | N/A |
| 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 | WRITE | READ | Function |
|---|---|---|---|---|
| ISL88731CHRTZ | 0001 001X | 0001 0010 | 0001 0011 | Charger |
| AMD Thames | 0100 0001 | - | 0100 0001 | Graphice |
| LIS331DL | 0011 101X | 0011 1010 | 0011 1011 | G Sensor |

| SM BUS | MBCLK_BAT/MBDATA_BAT | WRITE | READ | Function |
|---|---|---|---|---|
| VGP-BPS26 | 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 |

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 |

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