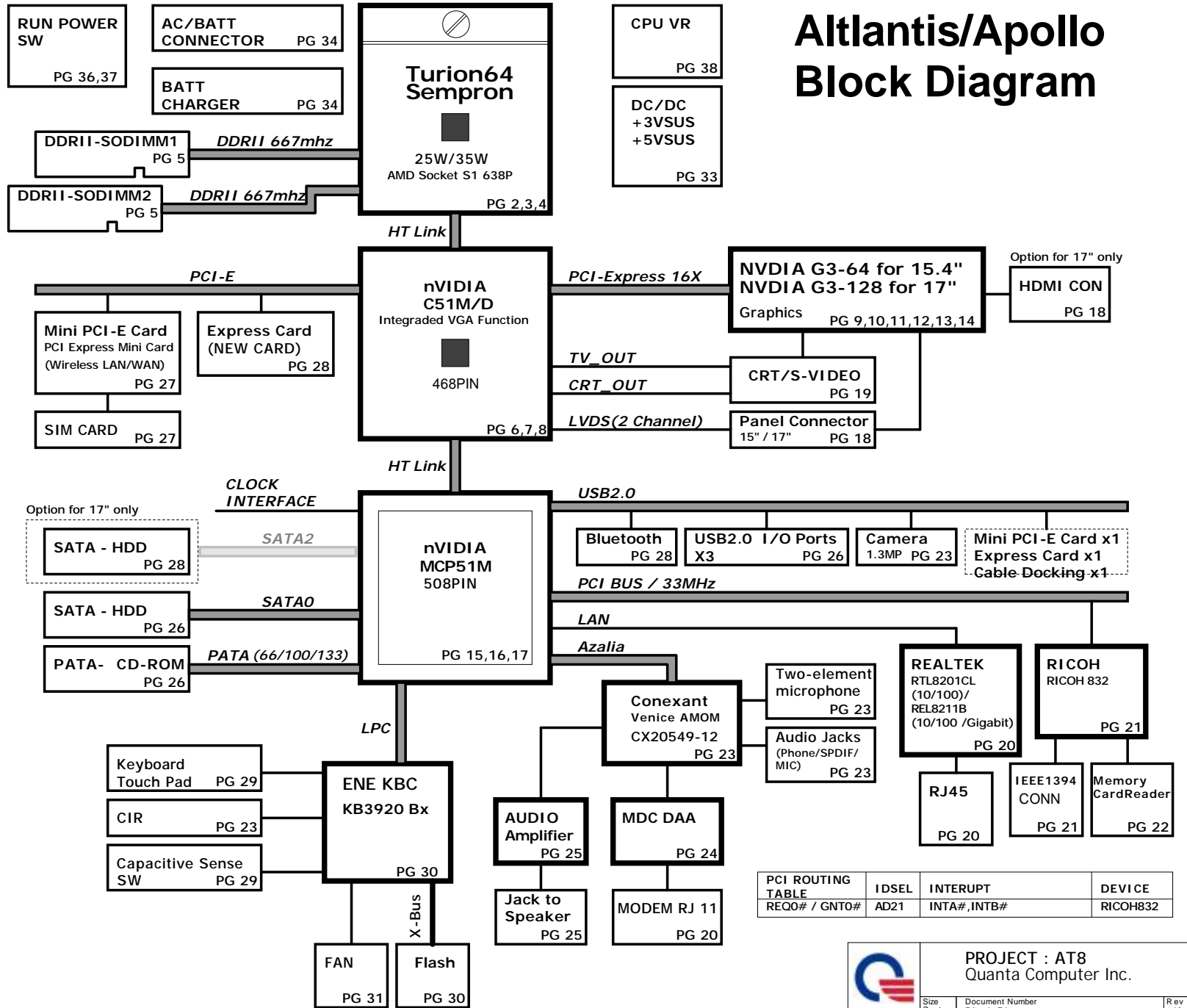


**PCB STACK UP**

- LAYER 1 : TOP
- LAYER 2 : SGND1
- LAYER 3 : IN1
- LAYER 4 : IN2
- LAYER 5 : VCC
- LAYER 6 : IN3
- LAYER 7 : SGND2
- LAYER 8 : BOT

- Cable Docking**
- TV\_OUT
  - VGA
  - RJ-45
  - CIR/Pwr btn
  - SPDIF Out
  - Stereo MIC
  - Headphone Jack
  - USB Port
  - VOL Cntr
- PG 31

# Atlantis/Apollo Block Diagram



**VAULE DEFINE**

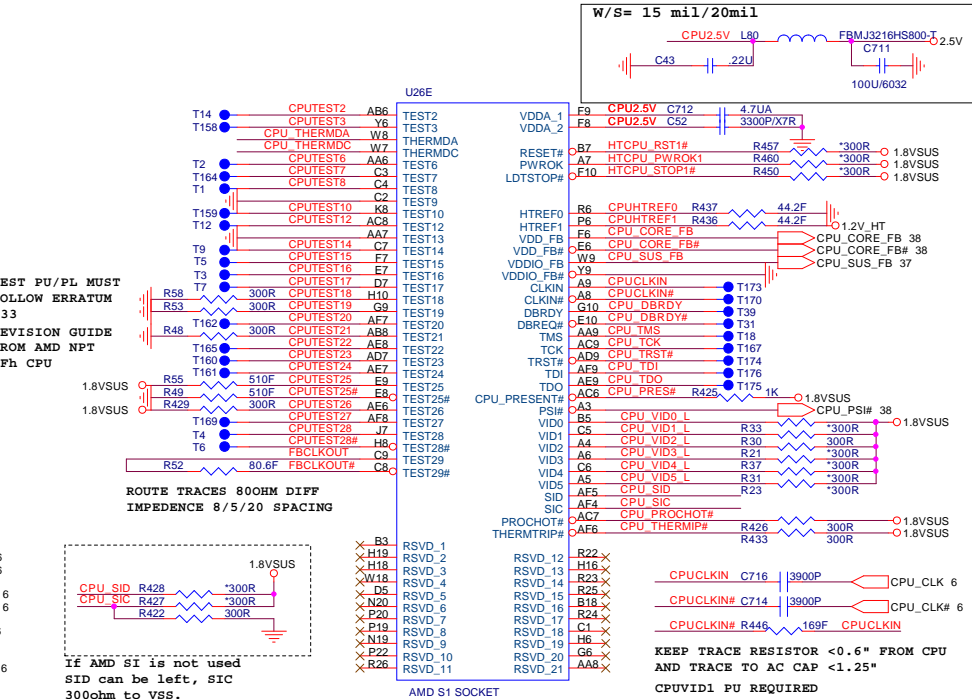
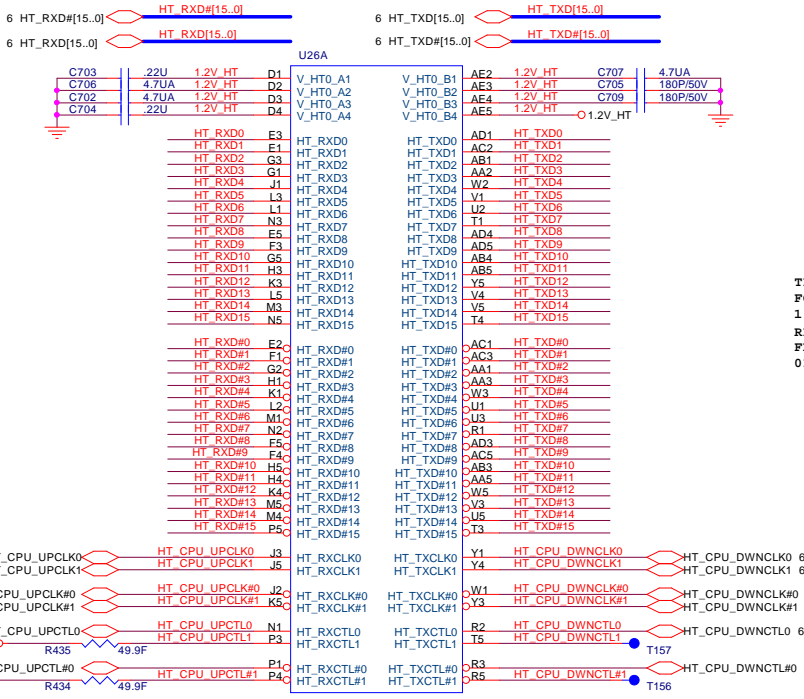
- A=0603,B=0805,C=1206,F=1%, OTHER IS 0402
- EXAMPLE
- 10R=10ohm(0402)
  - 10A=10ohm(0603)
  - 10B=10ohm(0805)
  - 10C=10ohm(1206)
  - 10/F=10ohm(0402 and 1%)

| PCI ROUTING TABLE | IDSEL | INTERUPT    | DEVICE   |
|-------------------|-------|-------------|----------|
| REQ0# / GNT0#     | AD21  | INTA#,INTB# | RICOH832 |

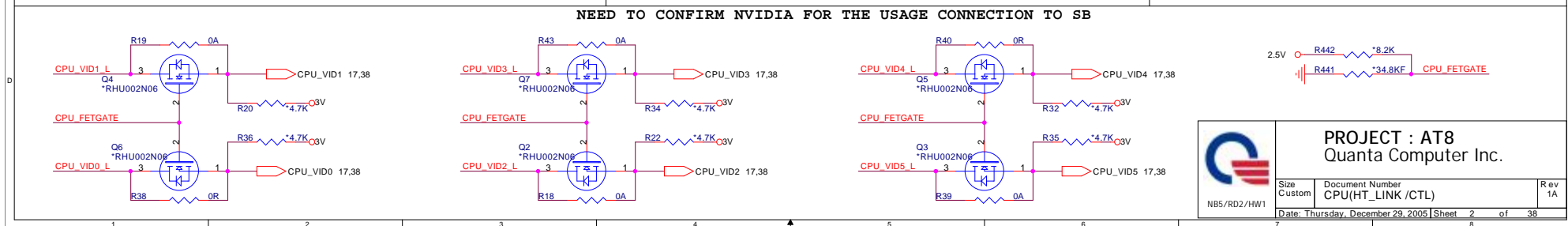
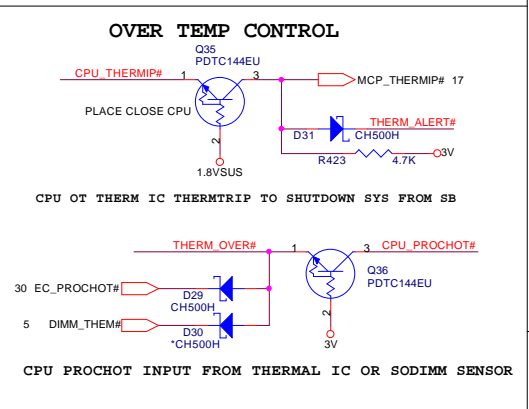
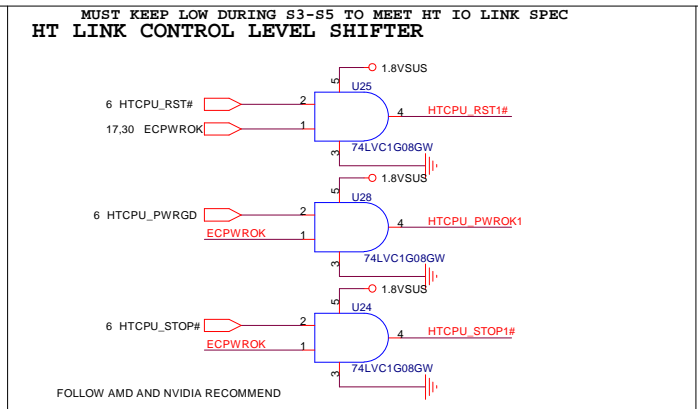
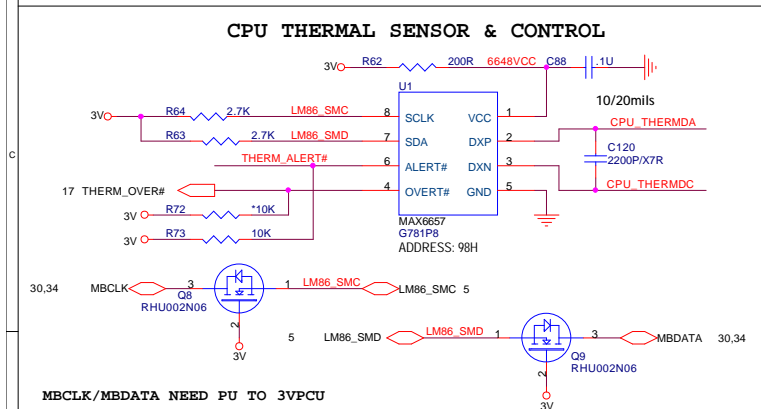
**PROJECT : AT8**  
Quanta Computer Inc.

|   |                               |        |
|---|-------------------------------|--------|
| Size Custom                                     | Document Number Block Diagram | Rev 1A |
| Date: Thursday, December 29, 2005 Sheet 1 of 38 |                               |        |

NB5/RD2/HW1



HT\_RXCTL1/HT\_RXCRL#1 MUST <1.5" FROM CPU PIN



**PROJECT : AT8**  
 Quanta Computer Inc.

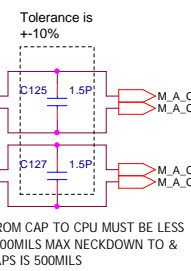
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|-----------------------------------|----------------------------------|---------------|
| Size Custom                       | Document Number CPU(HT_LINK/CTL) | Rev 1A        |
| Date: Thursday, December 29, 2005 |                                  | Sheet 2 of 38 |

NB5/RD2/HW1

U26B

|               |             |                |
|---------------|-------------|----------------|
| M_A D063 AA12 | MA_DATA[63] | Y13 M_A DOM7   |
| M_A D064 AB12 | MA_DATA[62] | Y16 M_A DOM6   |
| M_A D065 AB14 | MA_DATA[61] | Y19 M_A DOM5   |
| M_A D066 AB14 | MA_DATA[60] | AC24 M_A DOM4  |
| M_A D069 W11  | MA_DATA[59] | F24 M_A DOM3   |
| M_A D068 Y12  | MA_DATA[58] | E19 M_A DOM2   |
| M_A D057 AD13 | MA_DATA[57] | C15 M_A DOM1   |
| M_A D056 AB13 | MA_DATA[56] | E12 M_A DOM0   |
| M_A D055 AD15 | MA_DATA[55] |                |
| M_A D054 AB15 | MA_DATA[54] |                |
| M_A D053 AB12 | MA_DATA[53] |                |
| M_A D051 Y14  | MA_DATA[52] | W12 M_A DOS7   |
| M_A D050 W14  | MA_DATA[51] | Y15 M_A DOS6   |
| M_A D049 W16  | MA_DATA[50] | AB19 M_A DOS5  |
| M_A D048 AD15 | MA_DATA[49] | AD23 M_A DOS4  |
| M_A D047 Y18  | MA_DATA[48] | G22 M_A DOS3   |
| M_A D046 AD19 | MA_DATA[47] | C22 M_A DOS2   |
| M_A D045 AD21 | MA_DATA[46] | G16 M_A DOS1   |
| M_A D044 AB21 | MA_DATA[45] | W13 M_A DOS0   |
| M_A D043 AB18 | MA_DATA[44] | W15 M_A DOS#6  |
| M_A D042 AA18 | MA_DATA[43] | AB20 M_A DOS#5 |
| M_A D041 AA20 | MA_DATA[42] | AC23 M_A DOS#4 |
| M_A D040 Y20  | MA_DATA[41] | G21 M_A DOS#3  |
| M_A D039 AA22 | MA_DATA[40] | C21 M_A DOS#2  |
| M_A D038 Y22  | MA_DATA[39] | G15 M_A DOS#1  |
| M_A D037 W21  | MA_DATA[38] | H13 M_A DOS#0  |
| M_A D036 Y22  | MA_DATA[37] |                |
| M_A D035 AB22 | MA_DATA[36] |                |
| M_A D034 AB22 | MA_DATA[35] | E16 M_A CK1    |
| M_A D033 AB24 | MA_DATA[34] | E16 M_A CK1#   |
| M_A D032 Y24  | MA_DATA[33] |                |
| M_A D031 Y24  | MA_DATA[32] |                |
| M_A D030 H20  | MA_DATA[31] |                |
| M_A D029 E22  | MA_DATA[29] | Y16 M_A CK2    |
| M_A D028 E21  | MA_DATA[28] | AA16 M_A CK2#  |
| M_A D027 H19  | MA_DATA[27] |                |
| M_A D026 H24  | MA_DATA[26] |                |
| M_A D025 F22  | MA_DATA[25] |                |
| M_A D024 F20  | MA_DATA[24] |                |
| M_A D023 C23  | MA_DATA[23] |                |
| M_A D022 B22  | MA_DATA[22] |                |
| M_A D021 F18  | MA_DATA[21] | K22 M_A BA2    |
| M_A D020 E18  | MA_DATA[20] | R20 M_A BA1    |
| M_A D019 E20  | MA_DATA[19] | T22 M_A BA0    |
| M_A D018 D22  | MA_DATA[18] |                |
| M_A D017 C19  | MA_DATA[17] |                |
| M_A D016 G18  | MA_DATA[16] |                |
| M_A D015 G17  | MA_DATA[15] |                |
| M_A D014 C17  | MA_DATA[14] |                |
| M_A D013 E14  | MA_DATA[13] |                |
| M_A D012 E14  | MA_DATA[12] |                |
| M_A D011 H17  | MA_DATA[11] |                |
| M_A D09 E16   | MA_DATA[10] |                |
| M_A D08 H16   | MA_DATA[9]  |                |
| M_A D07 E13   | MA_DATA[7]  |                |
| M_A D06 C13   | MA_DATA[6]  |                |
| M_A D05 C13   | MA_DATA[5]  |                |
| M_A D04 H11   | MA_DATA[4]  |                |
| M_A D03 G14   | MA_DATA[3]  |                |
| M_A D02 H14   | MA_DATA[2]  |                |
| M_A D01 F12   | MA_DATA[1]  |                |
| M_A D00 G12   | MA_DATA[0]  |                |

AMD S1 SOCKET

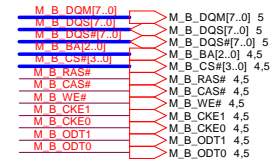
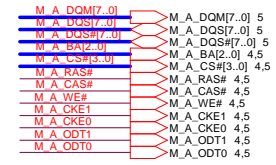
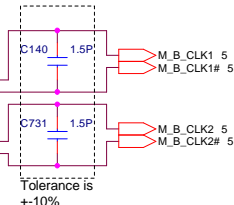


U26C

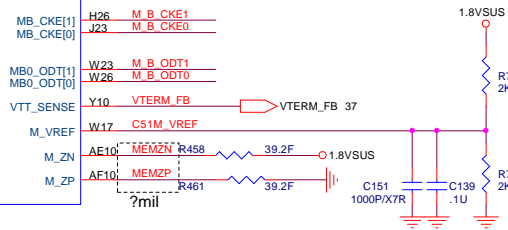
|               |             |          |               |
|---------------|-------------|----------|---------------|
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| M_B D062 AF11 | MB_DATA[62] | MB_DM[6] | AC16 M_B DOM6 |
| M_B D061 AE14 | MB_DATA[61] | MB_DM[5] | AE22 M_B DOM5 |
| M_B D060 AE14 | MB_DATA[60] | MB_DM[4] | AB26 M_B DOM4 |
| M_B D059 Y11  | MB_DATA[59] | MB_DM[3] | E22 M_B DOM3  |
| M_B D058 AB11 | MB_DATA[58] | MB_DM[2] | A22 M_B DOM2  |
| M_B D057 AF12 | MB_DATA[57] | MB_DM[1] | E16 M_B DOM1  |
| M_B D056 AF13 | MB_DATA[56] | MB_DM[0] | A12 M_B DOM0  |
| M_B D055 AF15 | MB_DATA[55] |          |               |
| M_B D054 AF16 | MB_DATA[54] |          |               |
| M_B D053 AF18 | MB_DATA[53] |          |               |
| M_B D052 AF19 | MB_DATA[52] |          |               |
| M_B D051 AD14 | MB_DATA[51] |          |               |
| M_B D050 AC14 | MB_DATA[50] |          |               |
| M_B D049 AE18 | MB_DATA[49] |          |               |
| M_B D048 AD18 | MB_DATA[48] |          |               |
| M_B D047 AD20 | MB_DATA[47] |          |               |
| M_B D046 AC20 | MB_DATA[46] |          |               |
| M_B D045 AF23 | MB_DATA[45] |          |               |
| M_B D044 AF24 | MB_DATA[44] |          |               |
| M_B D043 AF20 | MB_DATA[43] |          |               |
| M_B D042 AE20 | MB_DATA[42] |          |               |
| M_B D041 AD22 | MB_DATA[41] |          |               |
| M_B D040 AC22 | MB_DATA[40] |          |               |
| M_B D039 AE25 | MB_DATA[39] |          |               |
| M_B D038 AD26 | MB_DATA[38] |          |               |
| M_B D037 AA25 | MB_DATA[37] |          |               |
| M_B D036 AA26 | MB_DATA[36] |          |               |
| M_B D035 AE24 | MB_DATA[35] |          |               |
| M_B D034 AD24 | MB_DATA[34] |          |               |
| M_B D033 AA23 | MB_DATA[33] |          |               |
| M_B D032 AA24 | MB_DATA[32] |          |               |
| M_B D031 G24  | MB_DATA[31] |          |               |
| M_B D030 G23  | MB_DATA[30] |          |               |
| M_B D029 D26  | MB_DATA[29] |          |               |
| M_B D028 C26  | MB_DATA[28] |          |               |
| M_B D027 C22  | MB_DATA[27] |          |               |
| M_B D026 G25  | MB_DATA[26] |          |               |
| M_B D025 E24  | MB_DATA[25] |          |               |
| M_B D024 E23  | MB_DATA[24] |          |               |
| M_B D023 C24  | MB_DATA[23] |          |               |
| M_B D022 B24  | MB_DATA[22] |          |               |
| M_B D021 C20  | MB_DATA[21] |          |               |
| M_B D020 B20  | MB_DATA[20] |          |               |
| M_B D019 C25  | MB_DATA[19] |          |               |
| M_B D018 D24  | MB_DATA[18] |          |               |
| M_B D017 A21  | MB_DATA[17] |          |               |
| M_B D016 D20  | MB_DATA[16] |          |               |
| M_B D015 D18  | MB_DATA[15] |          |               |
| M_B D014 C18  | MB_DATA[14] |          |               |
| M_B D013 D14  | MB_DATA[13] |          |               |
| M_B D012 C14  | MB_DATA[12] |          |               |
| M_B D011 A20  | MB_DATA[11] |          |               |
| M_B D010 A19  | MB_DATA[10] |          |               |
| M_B D09 A16   | MB_DATA[9]  |          |               |
| M_B D08 A15   | MB_DATA[8]  |          |               |
| M_B D07 A13   | MB_DATA[7]  |          |               |
| M_B D06 D12   | MB_DATA[6]  |          |               |
| M_B D05 E11   | MB_DATA[5]  |          |               |
| M_B D04 G11   | MB_DATA[4]  |          |               |
| M_B D03 B14   | MB_DATA[3]  |          |               |
| M_B D02 A14   | MB_DATA[2]  |          |               |
| M_B D01 A11   | MB_DATA[1]  |          |               |
| M_B D00 C11   | MB_DATA[0]  |          |               |

AMD S1 SOCKET

TRACE FROM CAP TO CPU MUST BE LESS THAN 1200MILS MAX NECKDOWN TO & FROM CAPS IS 500MILS



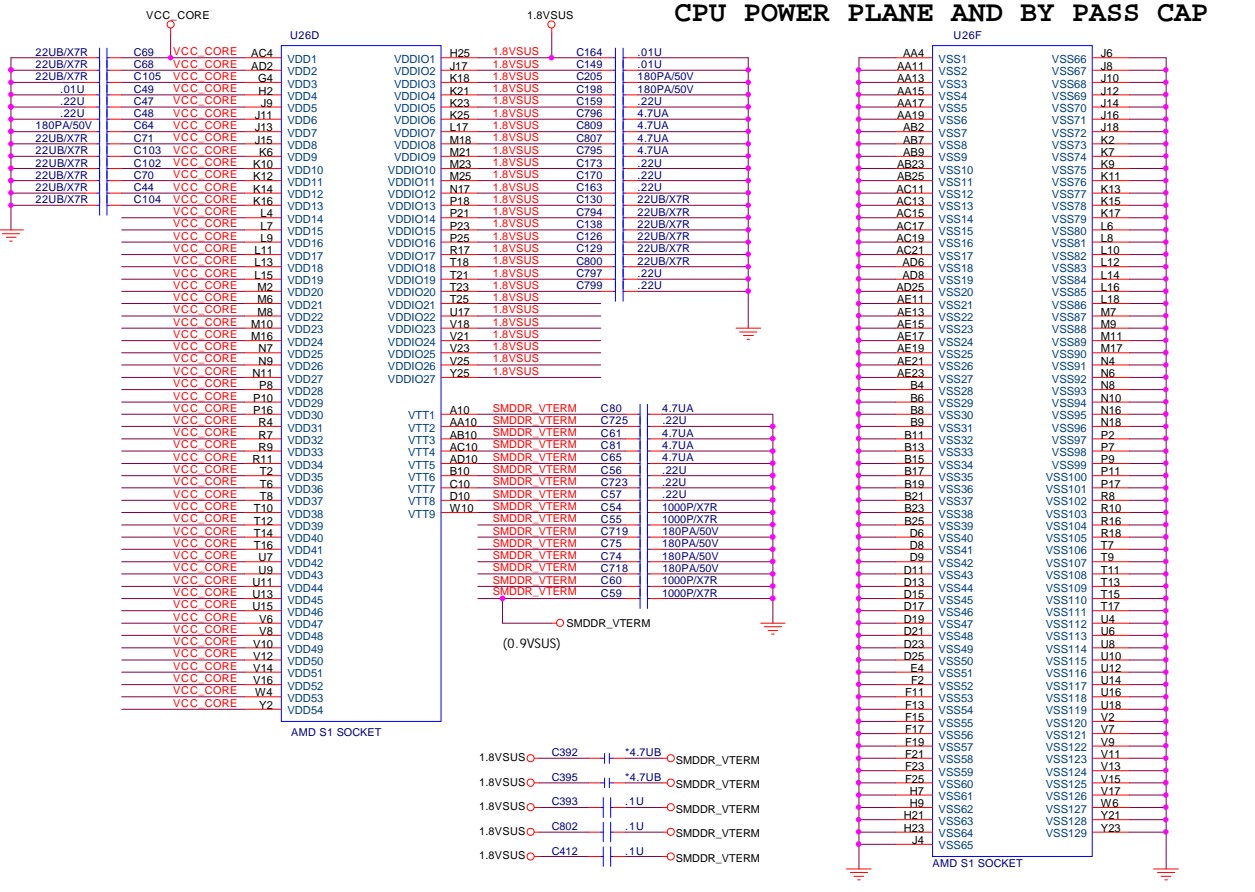
C51MVREF : W = 20MIL AND SPACE = 20MIL



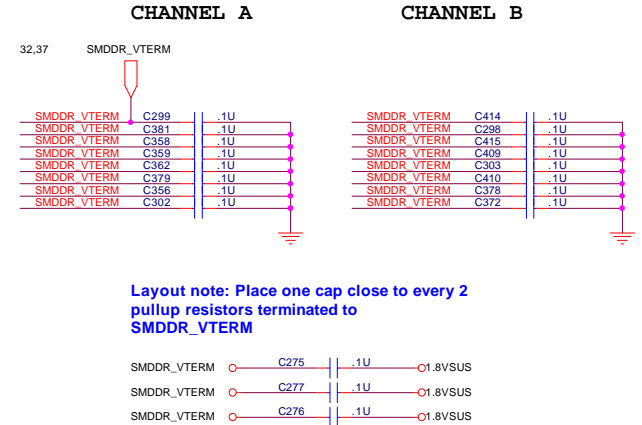
PROJECT : AT8  
Quanta Computer Inc.

|   |                            |        |
|---|----------------------------|--------|
| Size Custom                                     | Document Number CPU(MEM/F) | Rev 1A |
| Date: Thursday, December 29, 2005 Sheet 3 of 38 |                            |        |

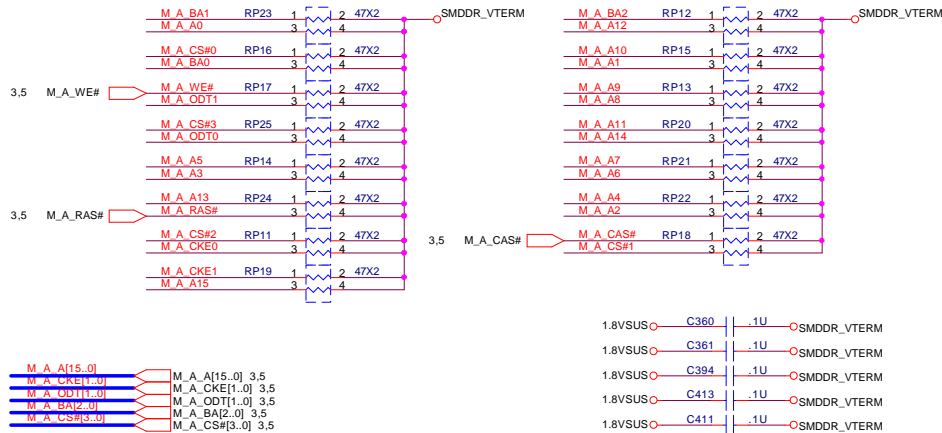
### CPU POWER PLANE AND BY PASS CAP



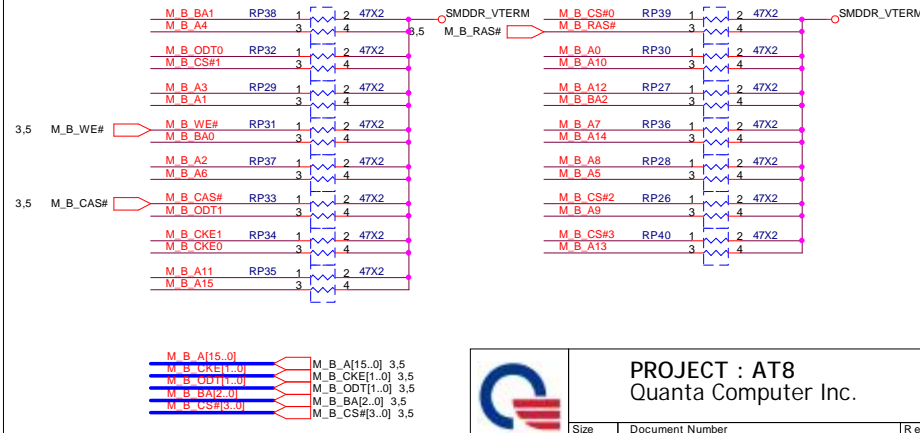
### DDR2 TERMINATION BYPASS CAP



### DDR1 CHANNEL A TERMINATION

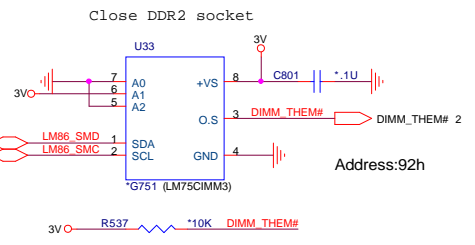
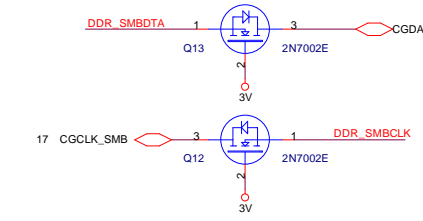
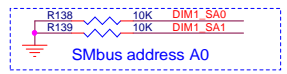
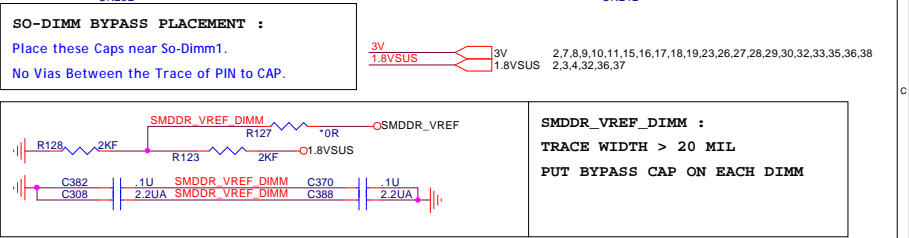
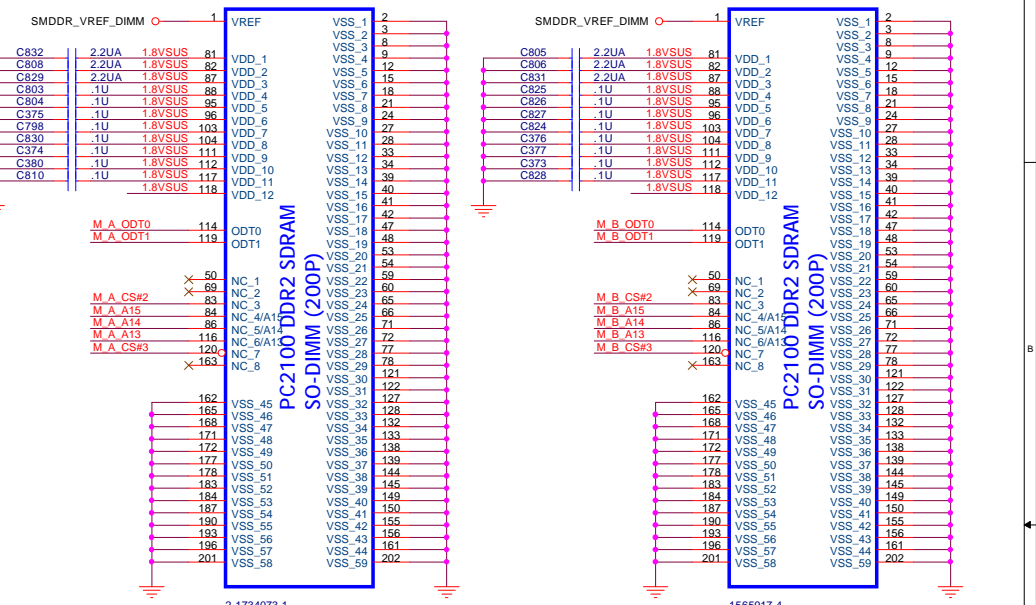
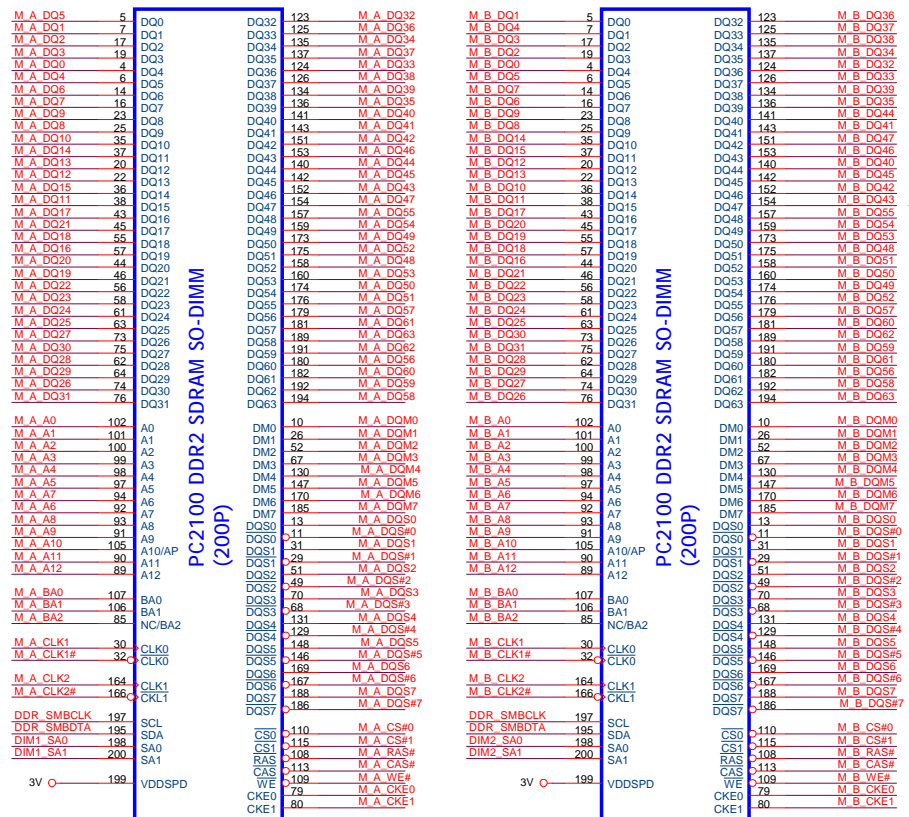
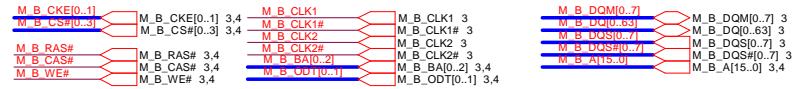
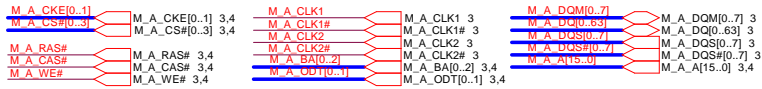


### DDR1 CHANNEL B TERMINATION



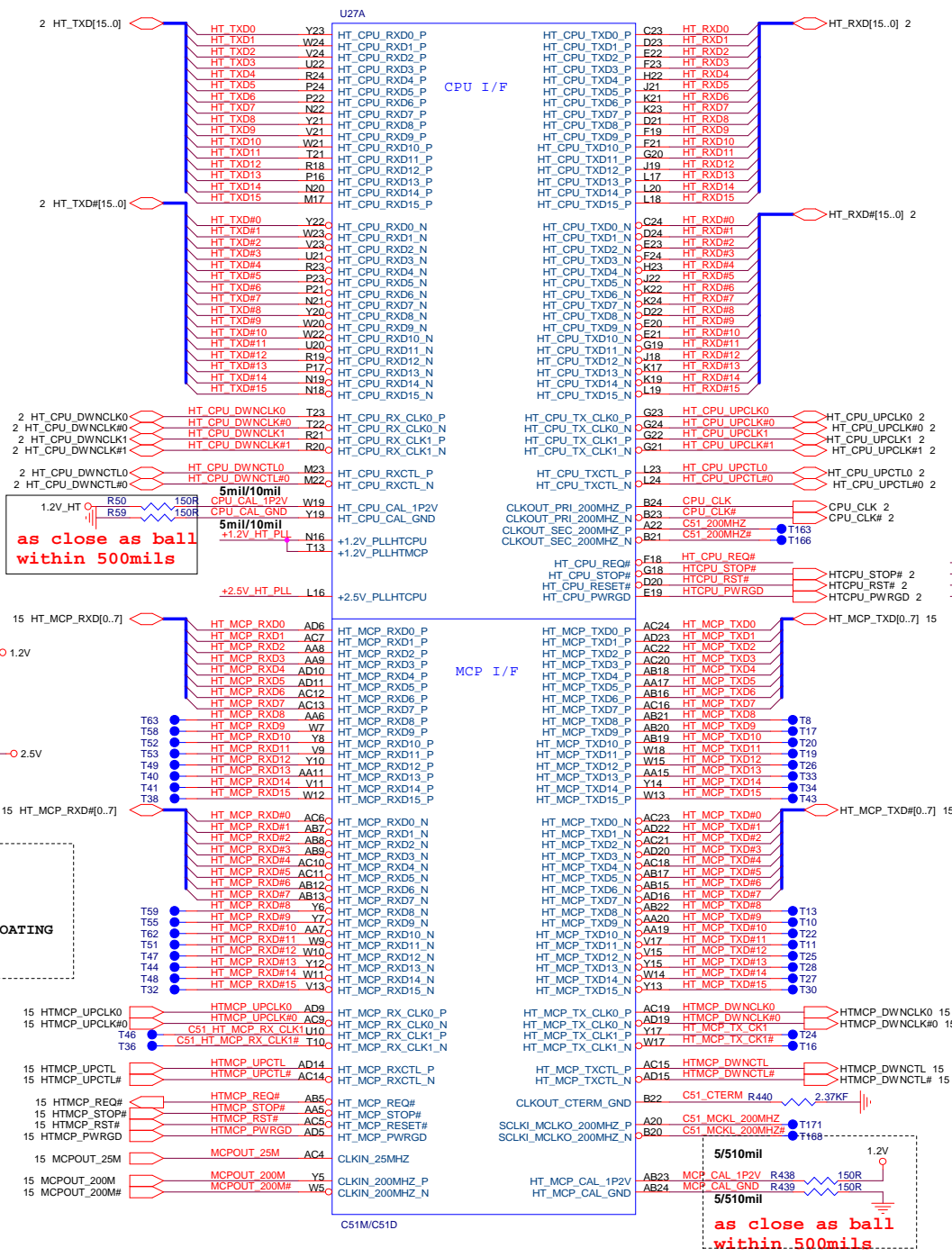
**PROJECT : AT8**  
Quanta Computer Inc.

|   |                                   |           |
|---|-----------------------------------|-----------|
| Size<br>Custom                                  | Document Number<br>CPU(Power/GND) | Rev<br>1A |
| Date: Thursday, December 29, 2005 Sheet 4 of 38 |                                   |           |



**PROJECT : AT8**  
**Quanta Computer Inc.**

|   |                            |        |
|---|----------------------------|--------|
| Size Custom                                     | Document Number CPU(MEM/F) | Rev 1A |
| Date: Thursday, December 29, 2005 Sheet 5 of 38 |                            |        |



as close as ball within 500mils

#note from nv design guide  
Pull-Hi for rise time  
0.25V

STUFF : 4X4 HT LINK/UNUSED PIN FLOATING  
NON-STUFF : 8X8 HT LINK(DEFAULT)

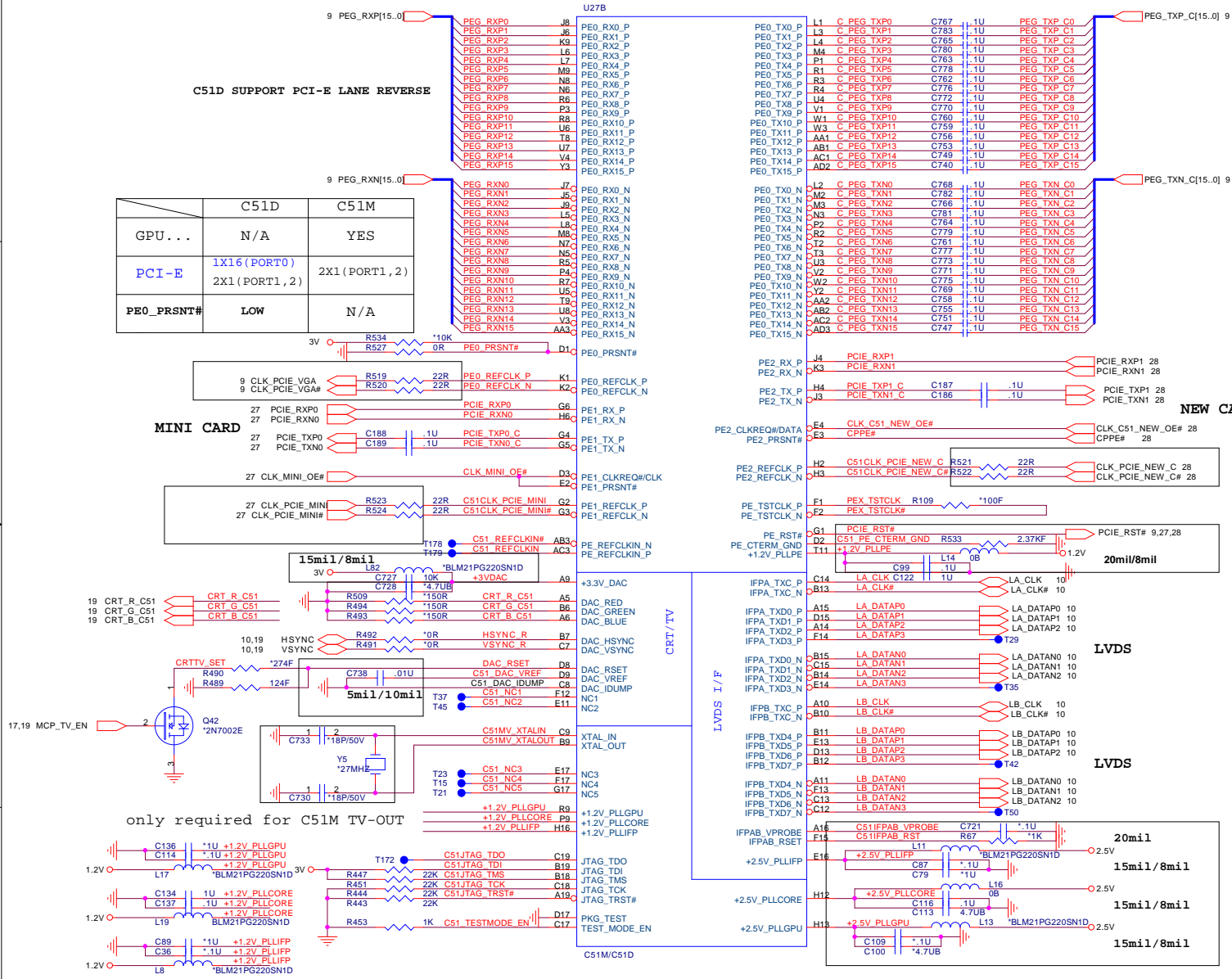
as close as ball within 500mils



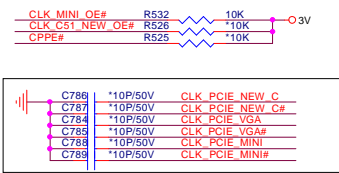
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| PROJECT : AT8<br>Quanta Computer Inc.             |                                  |        |
| Size Custom                                       | Document Number C51MV ( HT LINK) | Rev 1A |
| Date: Thursday, December 29, 2005   Sheet 6 of 38 |                                  |        |

C51D SUPPORT PCI-E LANE REVERSE

|            |                                |                |
|------------|--------------------------------|----------------|
|            | C51D                           | C51M           |
| GPU...     | N/A                            | YES            |
| PCI-E      | 1X16 (PORT0)<br>2X1 (PORT1, 2) | 2X1 (PORT1, 2) |
| PE0_PSRNT# | LOW                            | N/A            |



NEW CARD



| C51D Unused Power | Ball Terminations |
|-------------------|-------------------|
| C51D Signal Name  | Termination       |
| +1.2V_PLLGPU      | Leave NC          |
| +1.2V_PLLIFP      | Leave NC          |
| +2.5V_IFPA        | Leave NC          |
| +2.5V_IFPB        | Leave NC          |
| +2.5V_PLLIFP      | Leave NC          |
| +2.5V_PLLGPU      | Leave NC          |
| +3.3V_DAC         | to GND directly   |
| DAC_RSET          | 1240hm to GND     |
| DAC_VREF          | 0.01u to GND      |

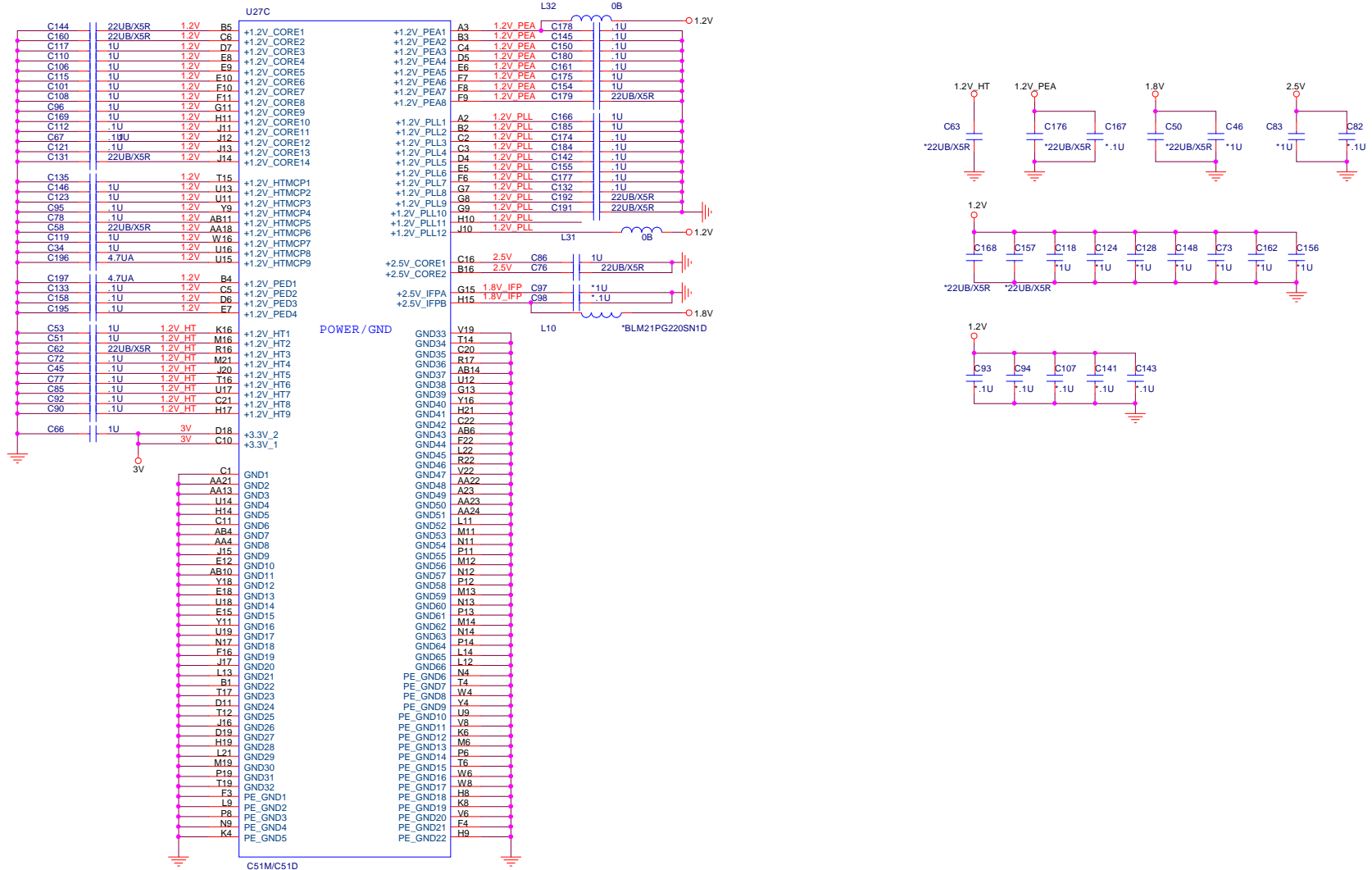
TRACE WIDTH :


|                 |               |
|-----------------|---------------|
| C51_PE_TERM_GND | 5mil/5mil     |
| C51IFPAB_VPROBE |               |
| C51IFPAB_RST    |               |
| C51_DAC_VREF    | 5mil/10mil    |
| +1.2V_PLLPE     | +1.2V_PLLIFP  |
| +2.5V_PLLIFP    | +1.2V_PLLCORE |
| +2.5V_PLLGPU    | +1.2V_PLLIFP  |
| +2.5V_PLLCORE   | +1.2V_PLLGPU  |

**PROJECT : AT8**  
Quanta Computer Inc.

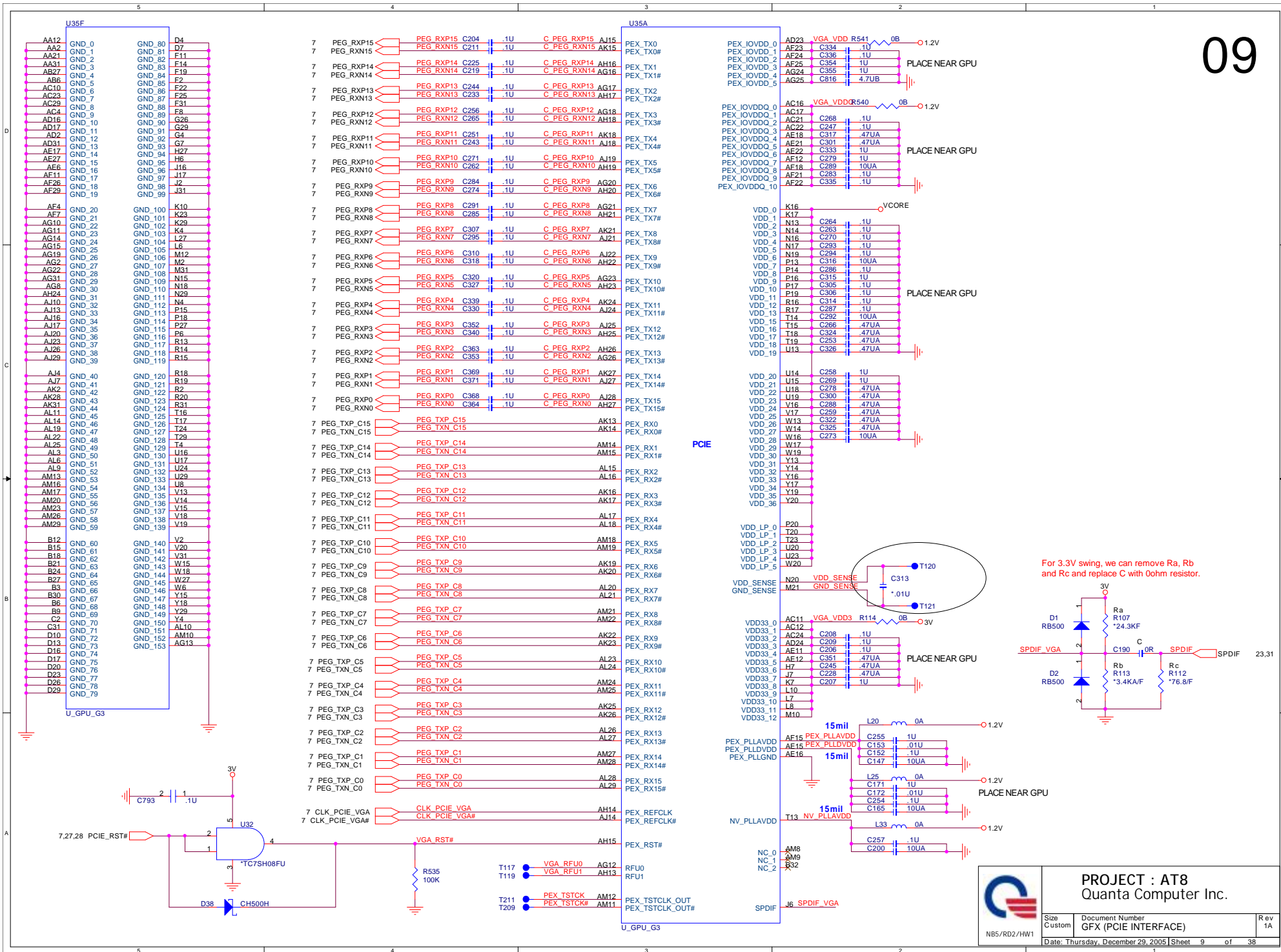
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|-----------------------------------|---------------------------------------|---------------|
| Size Custom                       | Document Number C51MV (PCI-E/LCD/RGB) | Rev 1A        |
| Date: Thursday, December 29, 2005 |                                       | Sheet 7 of 38 |


C51M/C51D POWER PLANE/GND & BYPASS

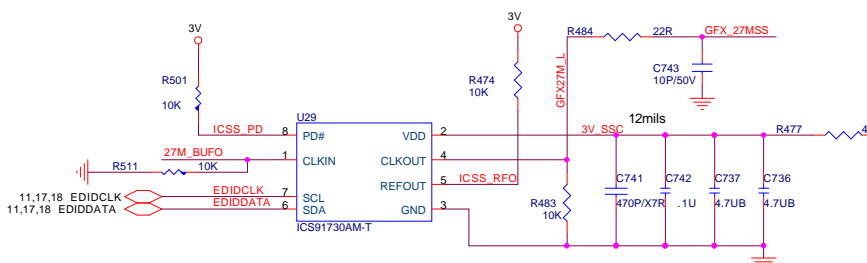
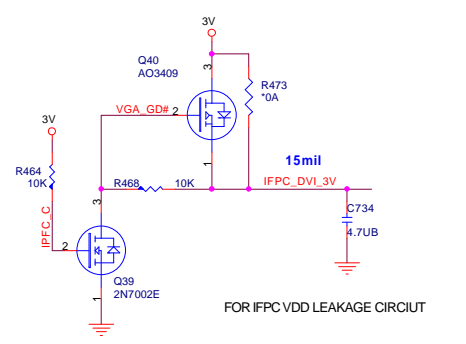
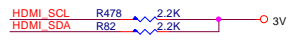
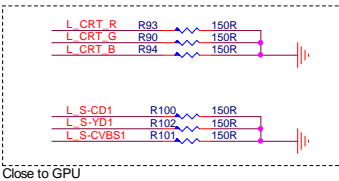
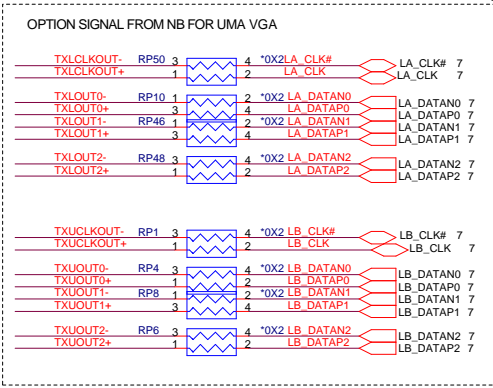
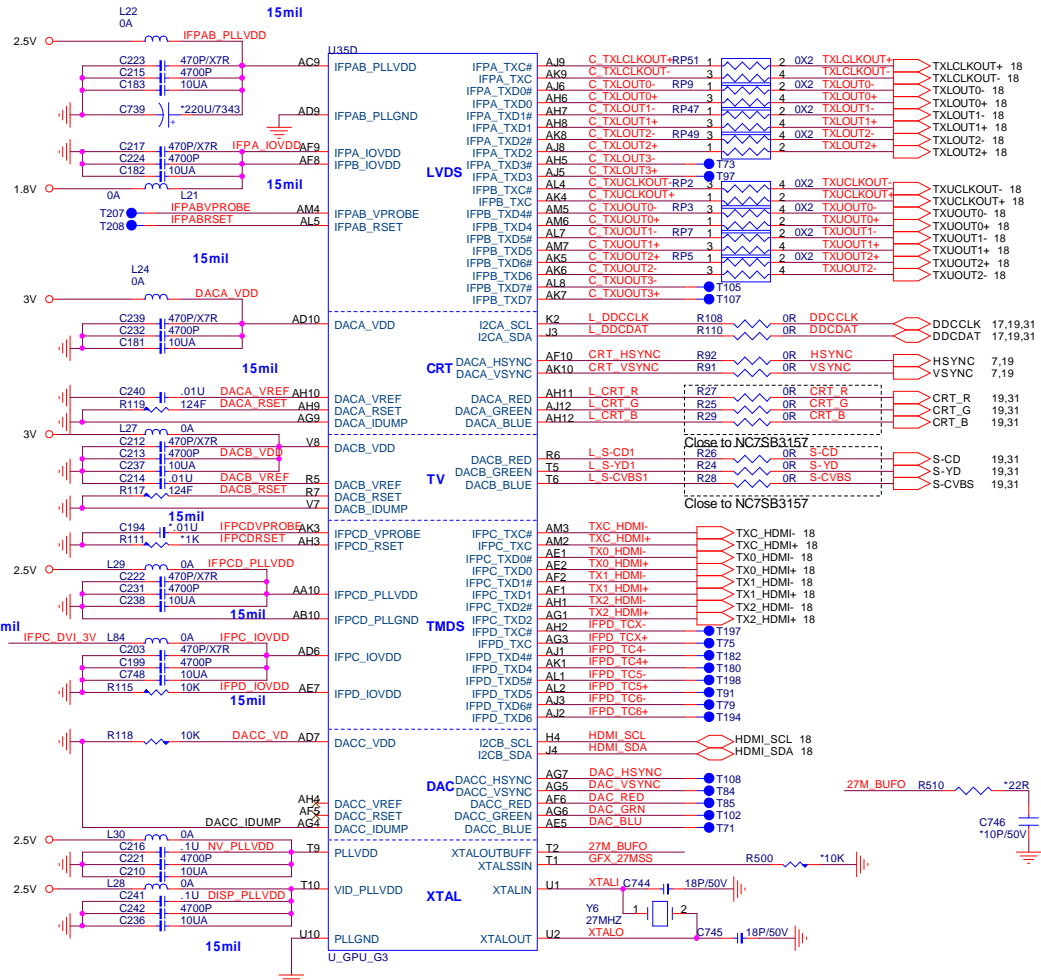


|  |  |  |
|--|--|--|
| <br>NB5/RDZ/HW1 | PROJECT : AT8<br>Quanta Computer Inc.              |  |
|  | Size Custom<br>Document Number<br>C51M (POWER/GND) | Date: Wednesday, January 11, 2006<br>Sheet 8 of 38 |



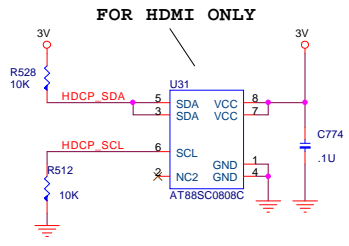
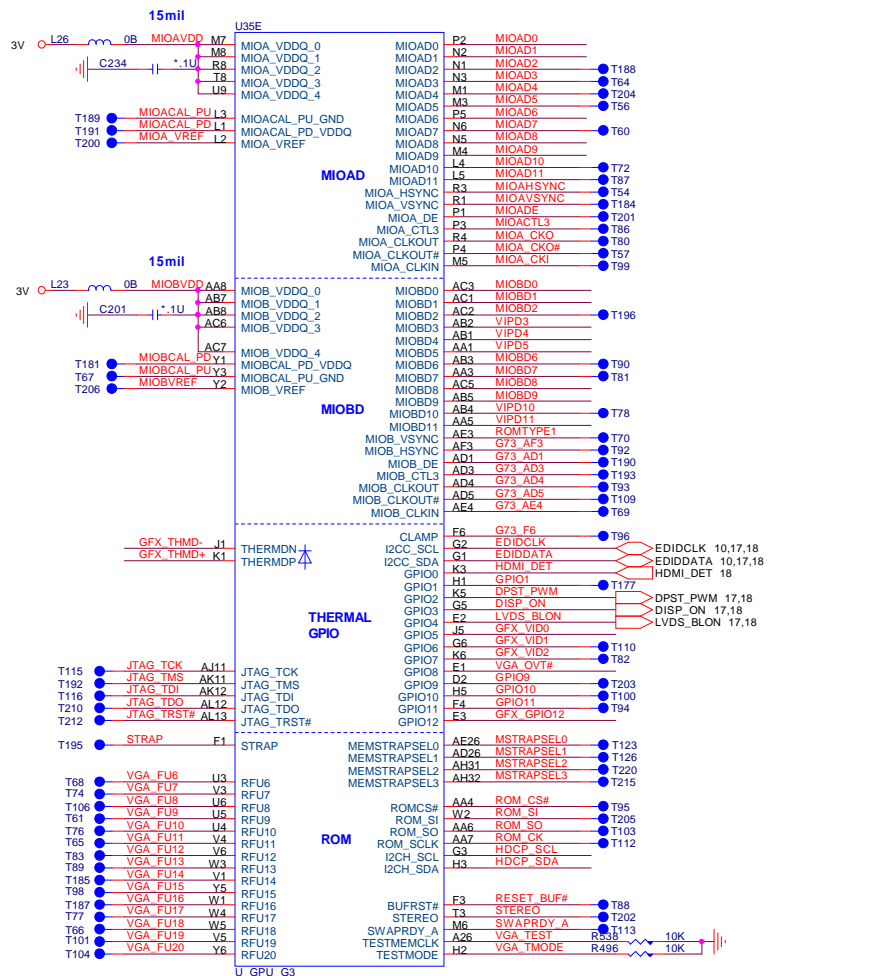


|   |  |   |                                   |
|---|--|---|-----------------------------------|
|  | <b>PROJECT : AT8</b><br>Quanta Computer Inc. |   | Rev<br>1A                         |
|   | Size<br>Custom                               | Document Number<br>GFX (PCIe INTERFACE) | Date: Thursday, December 29, 2005 |



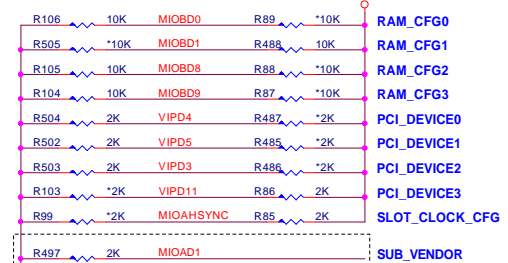
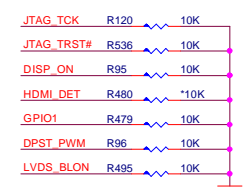
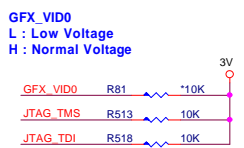
SPREAD SPECTRUM

|                |                                       |  |           |
|----------------|---------------------------------------|--|-----------|
|                | PROJECT : AT8                         |  | Rev<br>1A |
|                | Quantas Computer Inc.                 |  |           |
| Size<br>Custom | Document Number<br>GFX(LVDS, CRT, TV) | Date: Thursday, December 29, 2005 Sheet 10 of 38 |           |



PCI DEVICE

| PCI_DEVICE[3:0] | DESCRIPTION   |
|-----------------|---------------|
| 1000            | G72M/G73M     |
| 0111            | G72M-V/G73M-V |
| others          | Reserved      |



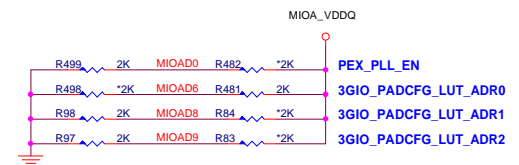
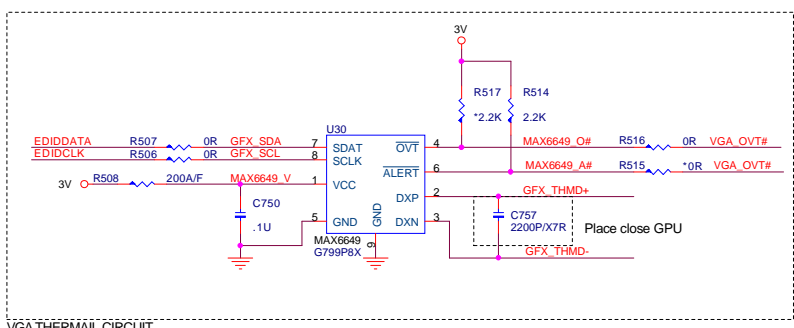
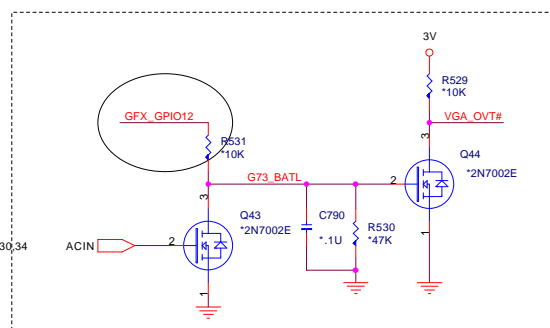
SHARE M/B SYSTEM BIOS, SUB\_VENDOR ID NEED PULL DOWN.

G72M VRAM Configuration Table

| RAM_CFG[3:0] | DESCRIPTION                 | Vendor   |
|--------------|-----------------------------|----------|
| 0000         | DDR2 16Mx16x4, 64bit, 128MB | Elpida   |
| 0001         | DDR2 16Mx16x4, 64bit, 128MB | Samsung  |
| 0010         | DDR2 16Mx16x4, 64bit, 128MB | Infineon |
| 0011         | DDR2 16Mx16x4, 64bit, 128MB | Hynix    |
| 0100         | Reserved                    |          |
| 0101         | DDR2 32Mx16x4, 64bit, 256MB | Samsung  |
| 0110         | DDR2 32Mx16x4, 64bit, 256MB | Infineon |
| 0111         | DDR2 32Mx16x4, 64bit, 256MB | Hynix    |
| 1000         | DDR2 16Mx16x2, 32bit, 64MB  | Elpida   |
| 1001         | DDR2 16Mx16x2, 32bit, 64MB  | Samsung  |
| 1010         | DDR2 16Mx16x2, 32bit, 64MB  | Infineon |
| 1011         | DDR2 16Mx16x2, 32bit, 64MB  | Hynix    |
| others       | Reserved                    |          |

G73M VRAM Configuration Table

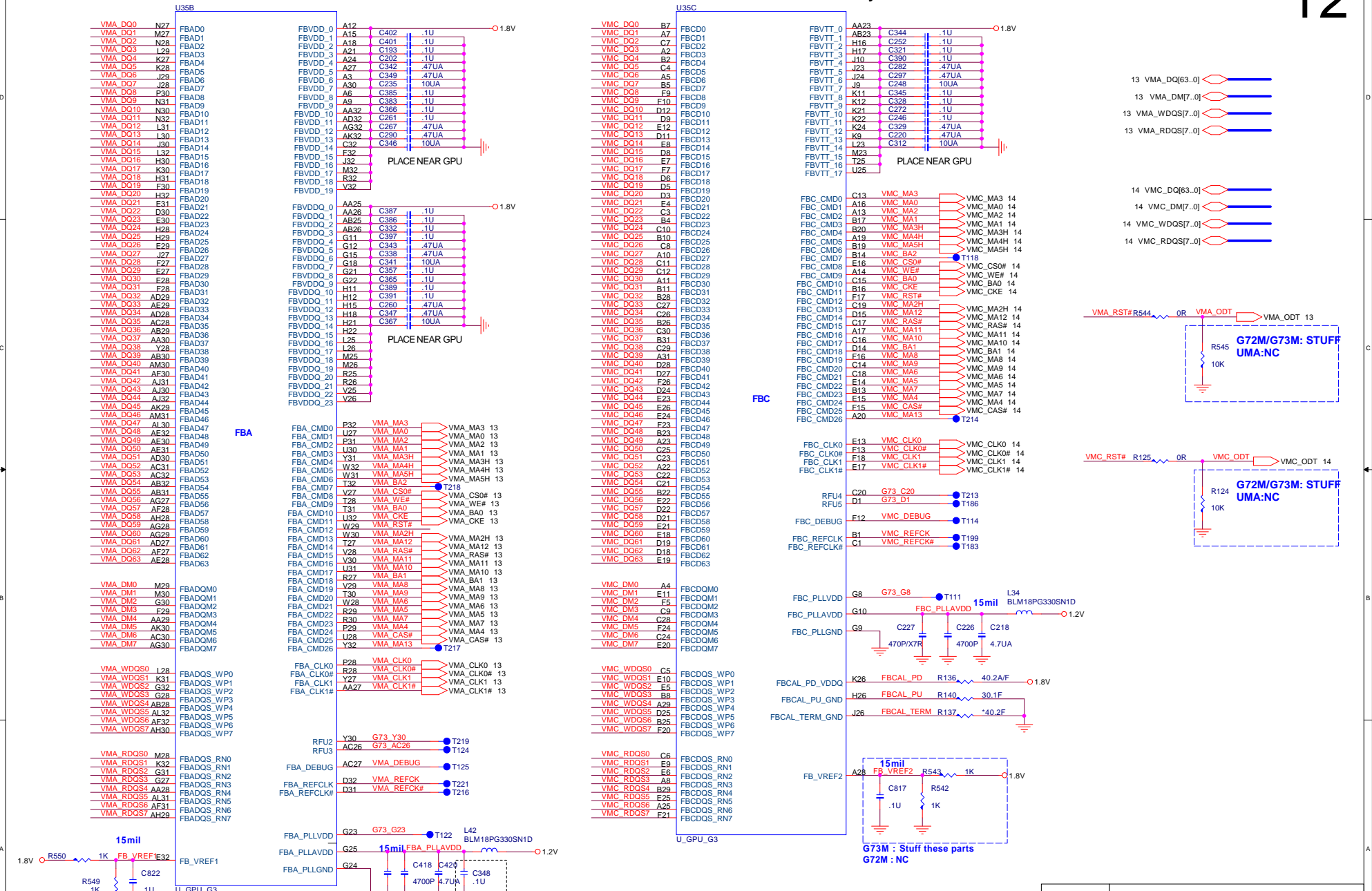
| RAM_CFG[3:0] | DESCRIPTION                  | Vendor   |
|--------------|------------------------------|----------|
| 0000         | DDR2 16Mx16x8, 128bit, 256MB | Elpida   |
| 0001         | DDR2 16Mx16x8, 128bit, 256MB | Samsung  |
| 0010         | DDR2 16Mx16x8, 128bit, 256MB | Infineon |
| 0011         | DDR2 16Mx16x8, 128bit, 256MB | Hynix    |
| 0100         | Reserved                     |          |
| 0101         | DDR2 32Mx16x8, 128bit, 512MB | Samsung  |
| 0110         | DDR2 32Mx16x8, 128bit, 512MB | Infineon |
| 0111         | DDR2 32Mx16x8, 128bit, 512MB | Hynix    |
| 1000         | DDR2 16Mx16x4, 64bit, 128MB  | Elpida   |
| 1001         | DDR2 16Mx16x4, 64bit, 128MB  | Samsung  |
| 1010         | DDR2 16Mx16x4, 64bit, 128MB  | Infineon |
| 1011         | DDR2 16Mx16x4, 64bit, 128MB  | Hynix    |
| 1100         | Reserved                     |          |
| 1101         | DDR2 32Mx16x4, 64bit, 256MB  | Samsung  |
| 1110         | DDR2 32Mx16x4, 64bit, 256MB  | Infineon |
| 1111         | DDR2 32Mx16x4, 64bit, 256MB  | Hynix    |



**PROJECT : AT8**  
Quanta Computer Inc.

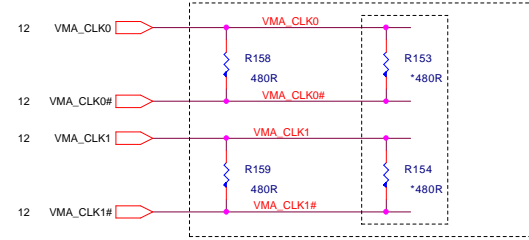
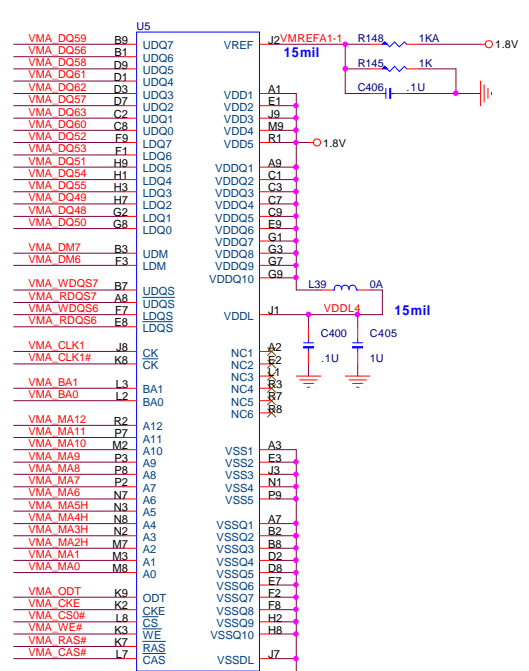
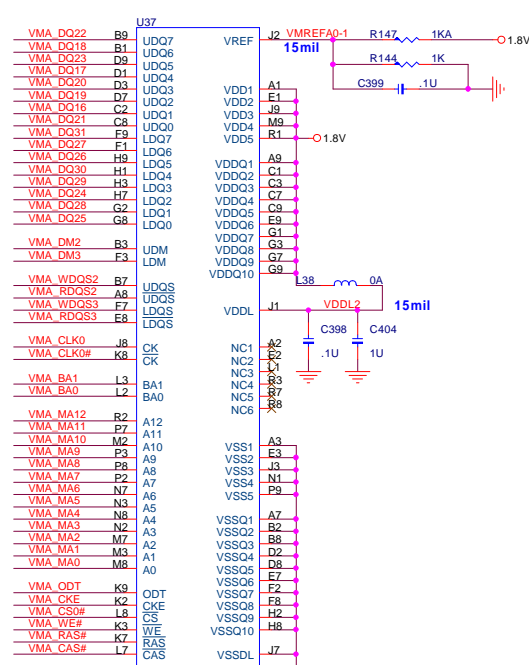
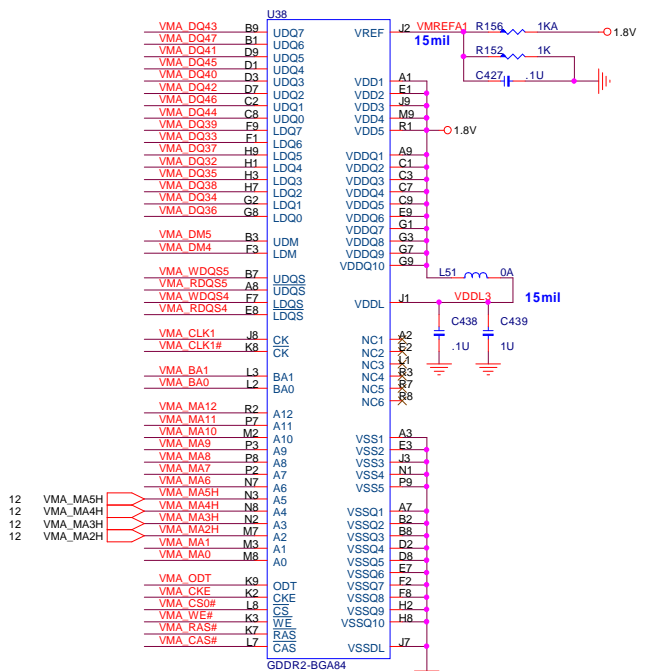
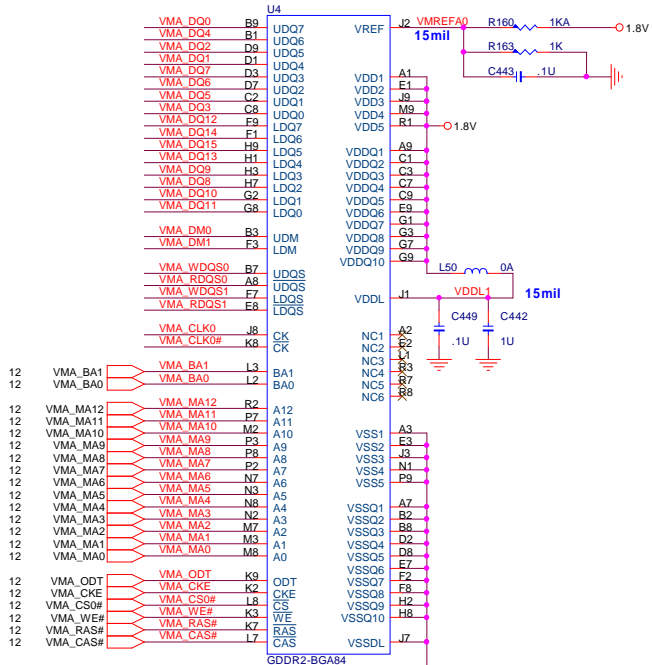
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|--|-----------------|--------|
| Size Custom                                      | Document Number | Rev 1A |
| GFX(ROM, GPIO, STRAP)                            |                 |        |
| Date: Thursday, December 29, 2005 Sheet 11 of 38 |                 |        |

Channel C is available on G73M only

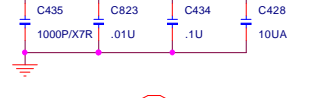
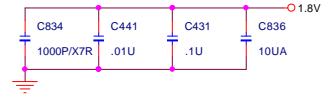
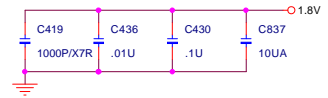
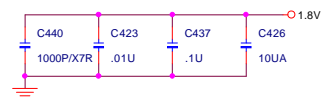


$VREF = FBVDDQ \cdot Rbot / (Rtop + Rbot)$

|  |                      |                     |        |
|--|----------------------|---------------------|--------|
|  | PROJECT : AT8        |                     | Rev 1A |
|  | Quanta Computer Inc. |                     |        |
| Size Custom                                      | Document Number      | GFX (MEM INTERFACE) |        |
| Date: Thursday, December 29, 2005 Sheet 12 of 38 |                      |                     |        |



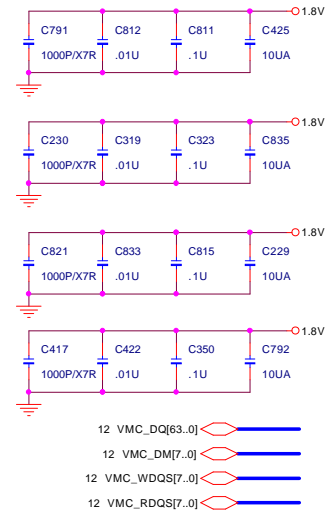
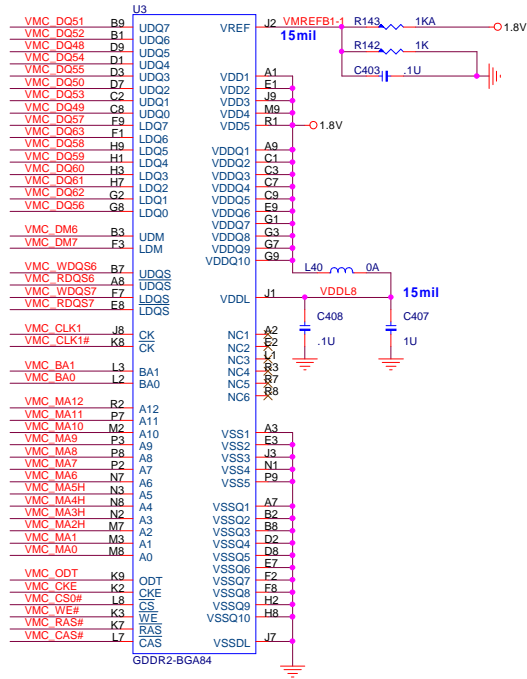
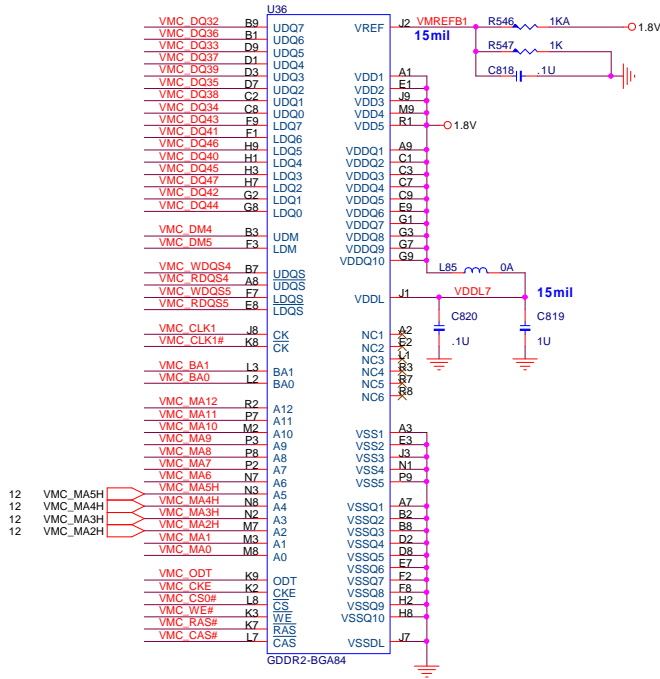
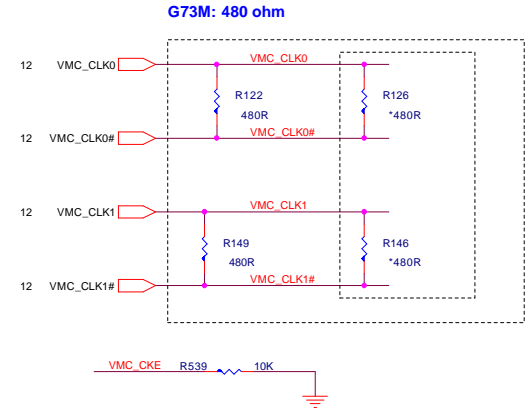
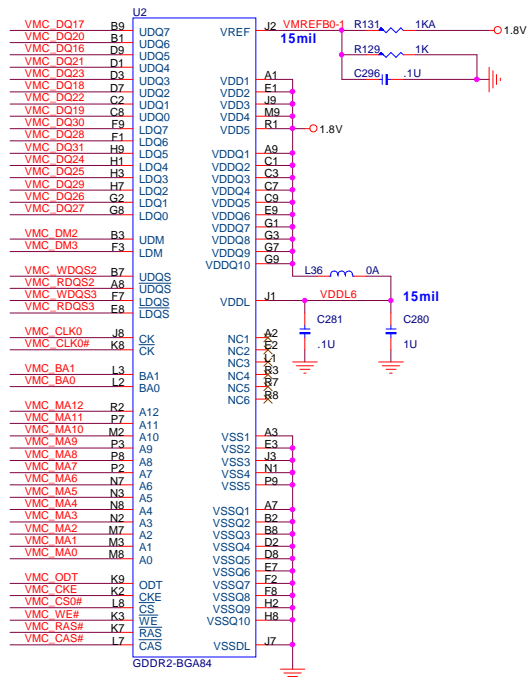
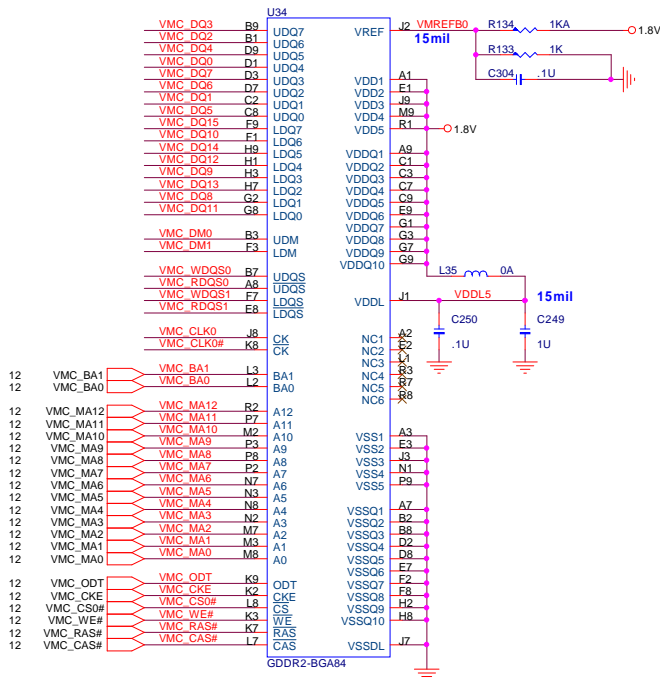
G72M: 120 ohm  
G73M: 480 ohm



- 12 VMA\_DQ[63..0]
- 12 VMA\_DM[7..0]
- 12 VMA\_WDQS[7..0]
- 12 VMA\_RDQS[7..0]

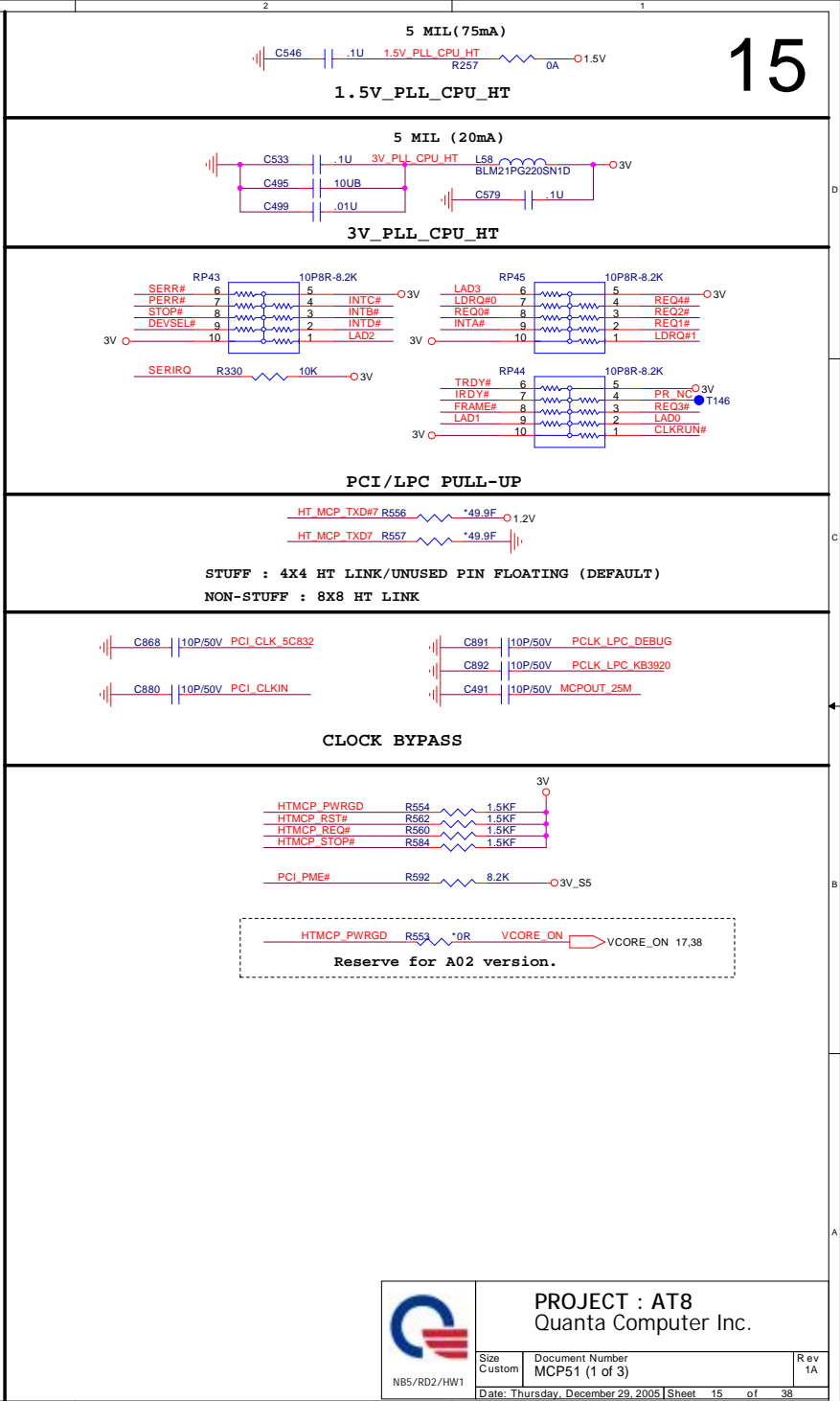
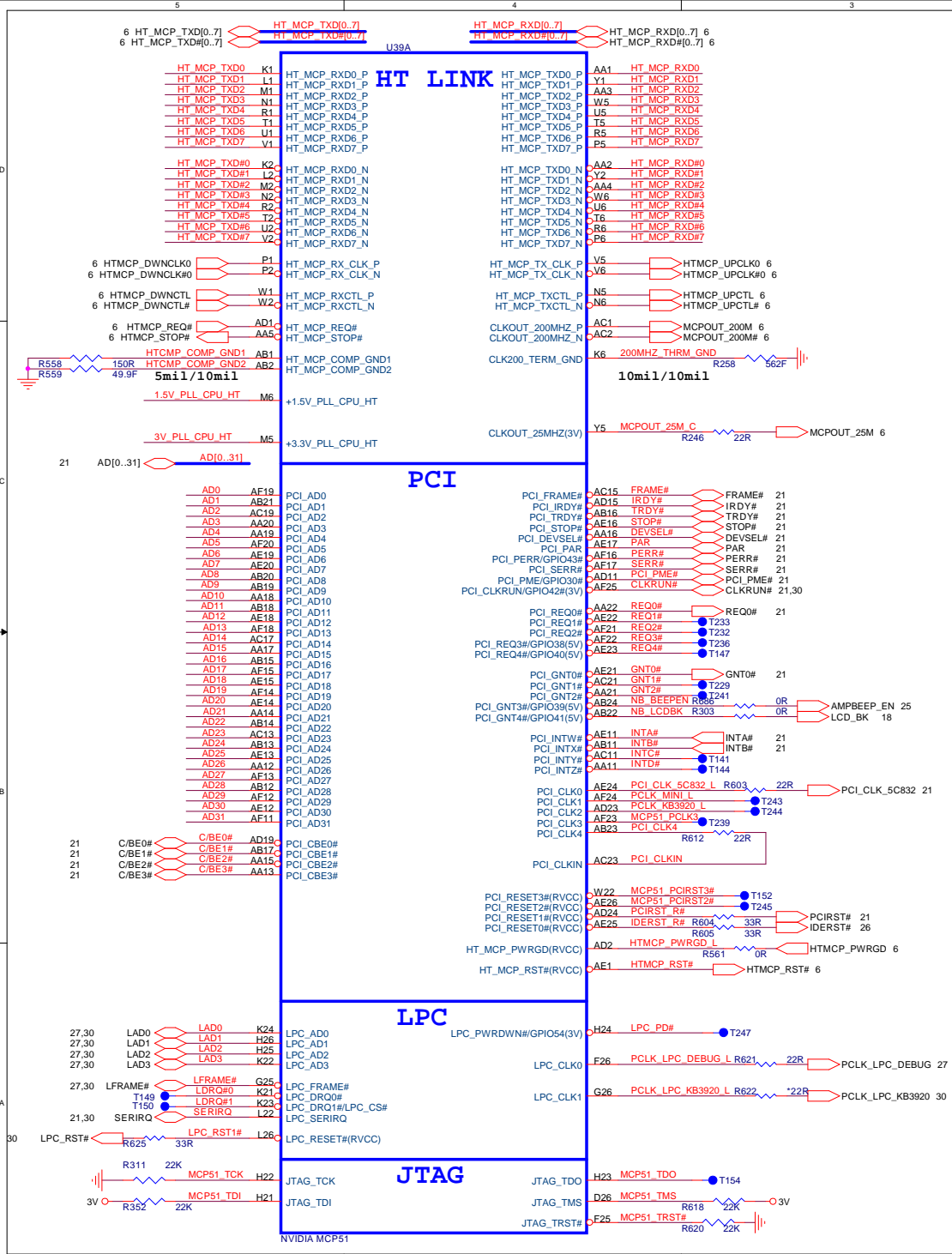
256Mb : AKD5JGAT\*05  
512Mb : AKD59G-T\*01


|  |  |                |
|--|--|----------------|
|  | PROJECT : AT8<br>Quanta Computer Inc.  |                |
|  | Size Custom<br>Document Number VRAM-1 (GDDR2)<br>Date: Thursday, December 29, 2005 | Sheet 13 of 38 |

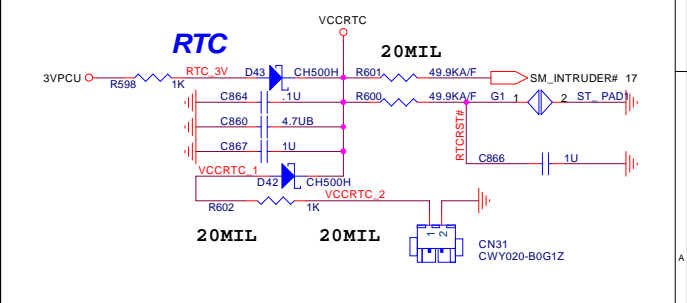
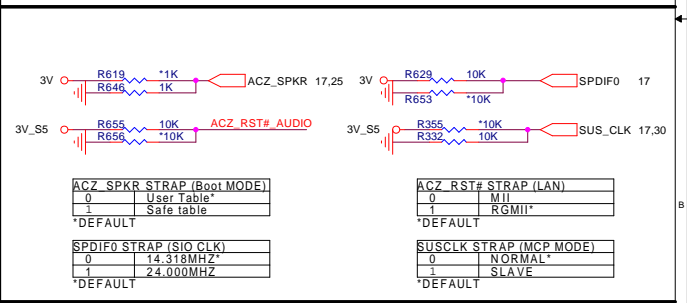
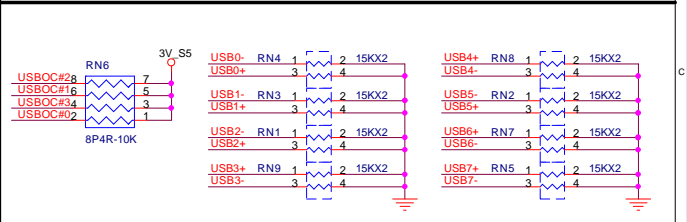
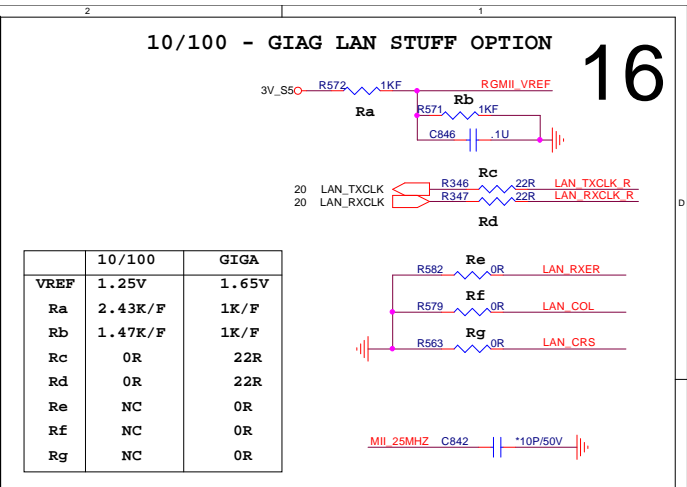
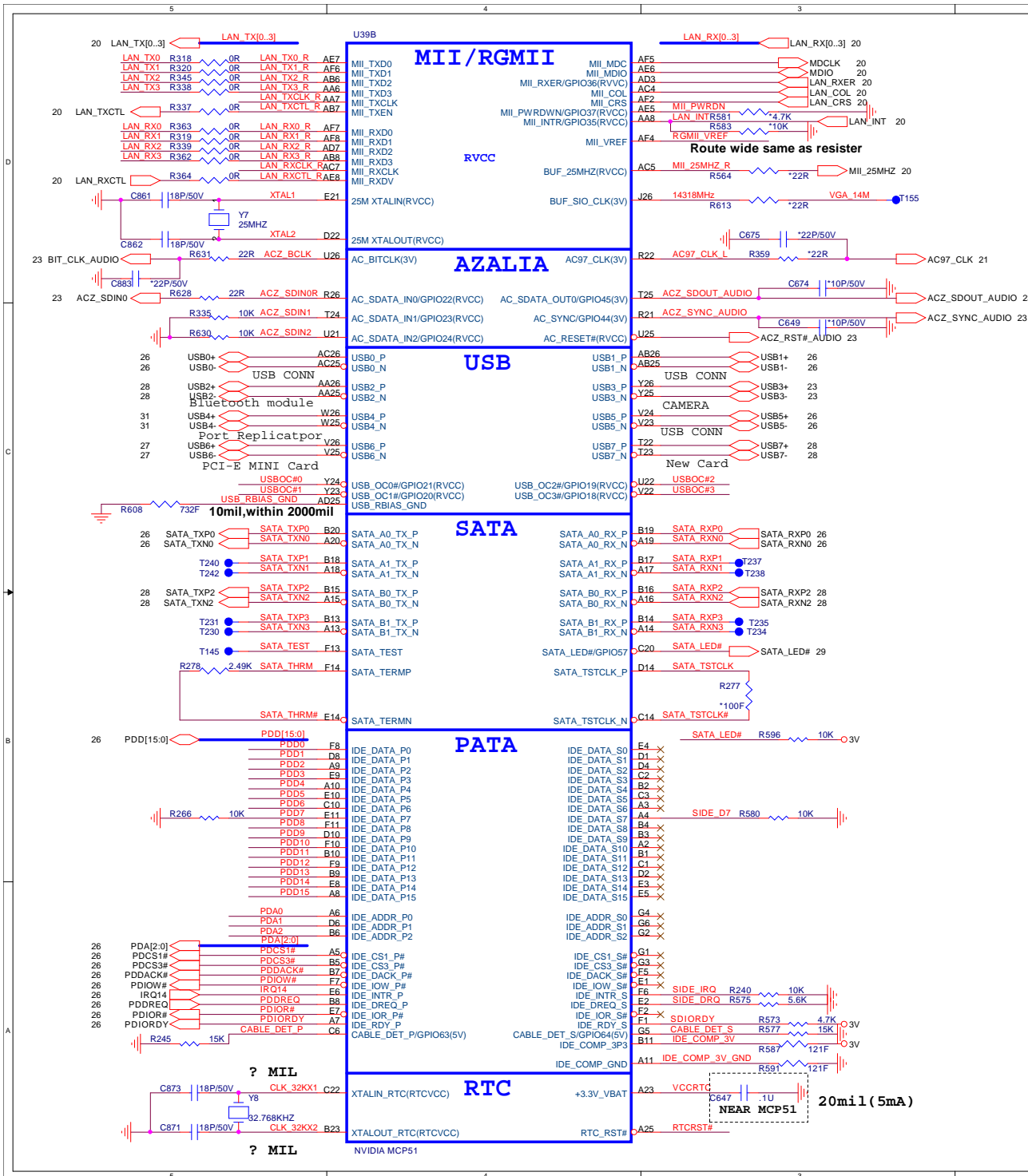


**PROJECT : AT8**  
**Quanta Computer Inc.**

|                                   |             |                 |        |
|-----------------------------------|-------------|-----------------|--------|
|                                   | Size Custom | Document Number | Rev 1A |
|                                   | NB5/RD2/HW1 | VRAM-2 (GDDR2)  |        |
| Date: Thursday, December 29, 2005 |             | Sheet 14 of 38  |        |



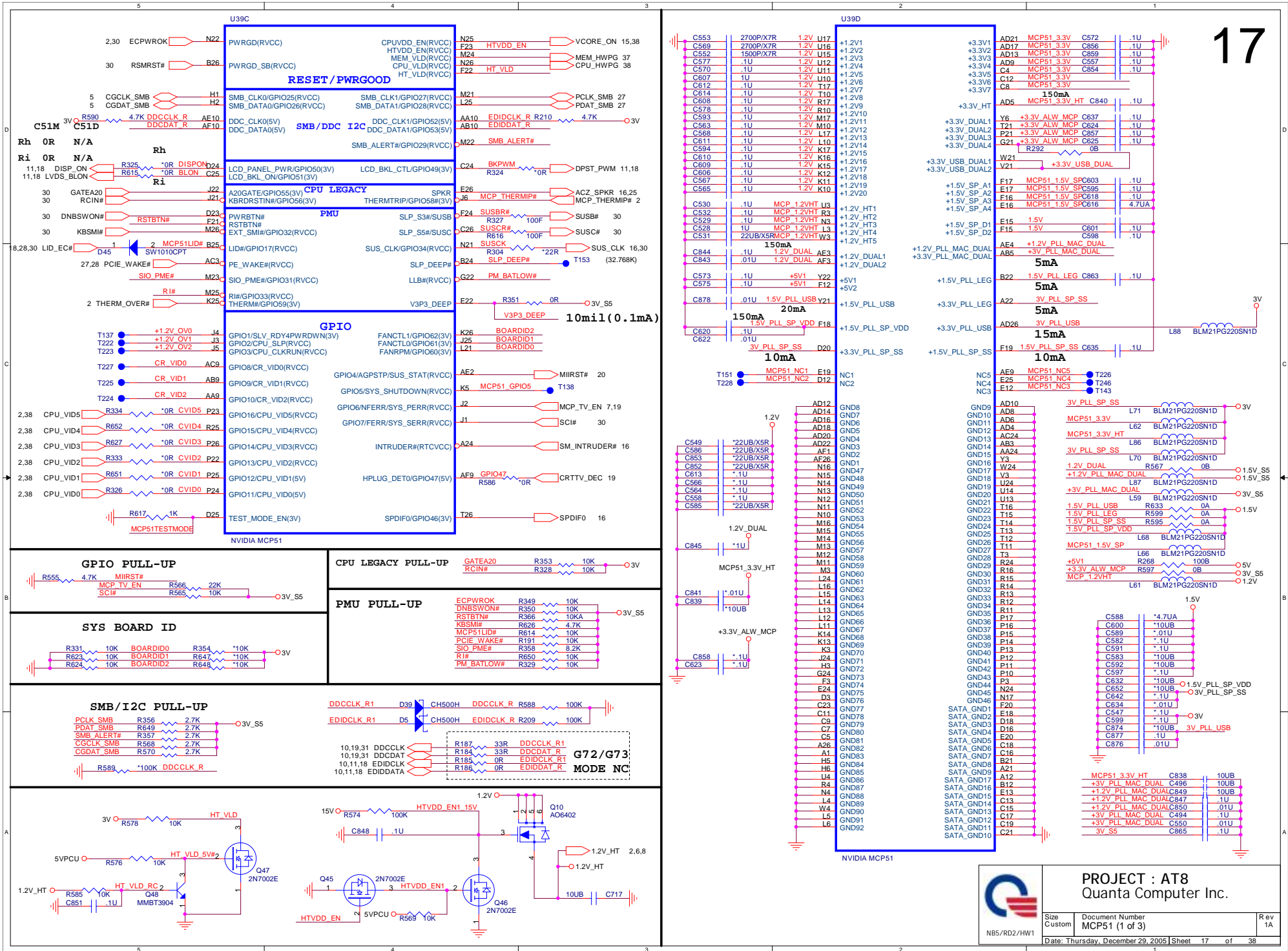
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|--|--|-----------------------------------|
| <br>N85/RD2/HW1 | <b>PROJECT : AT8</b><br>Quanta Computer Inc.     |                                   |
|  | Size Custom<br>Date: Thursday, December 29, 2005 | Document Number<br>MCP51 (1 of 3) |



**PROJECT : AT8**  
Quanta Computer Inc.

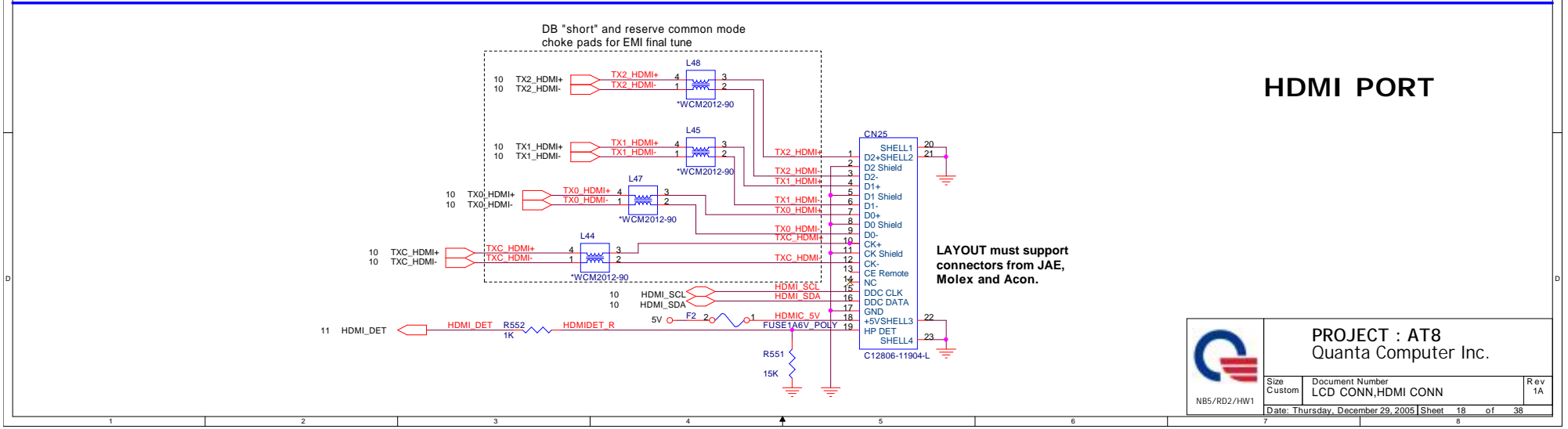
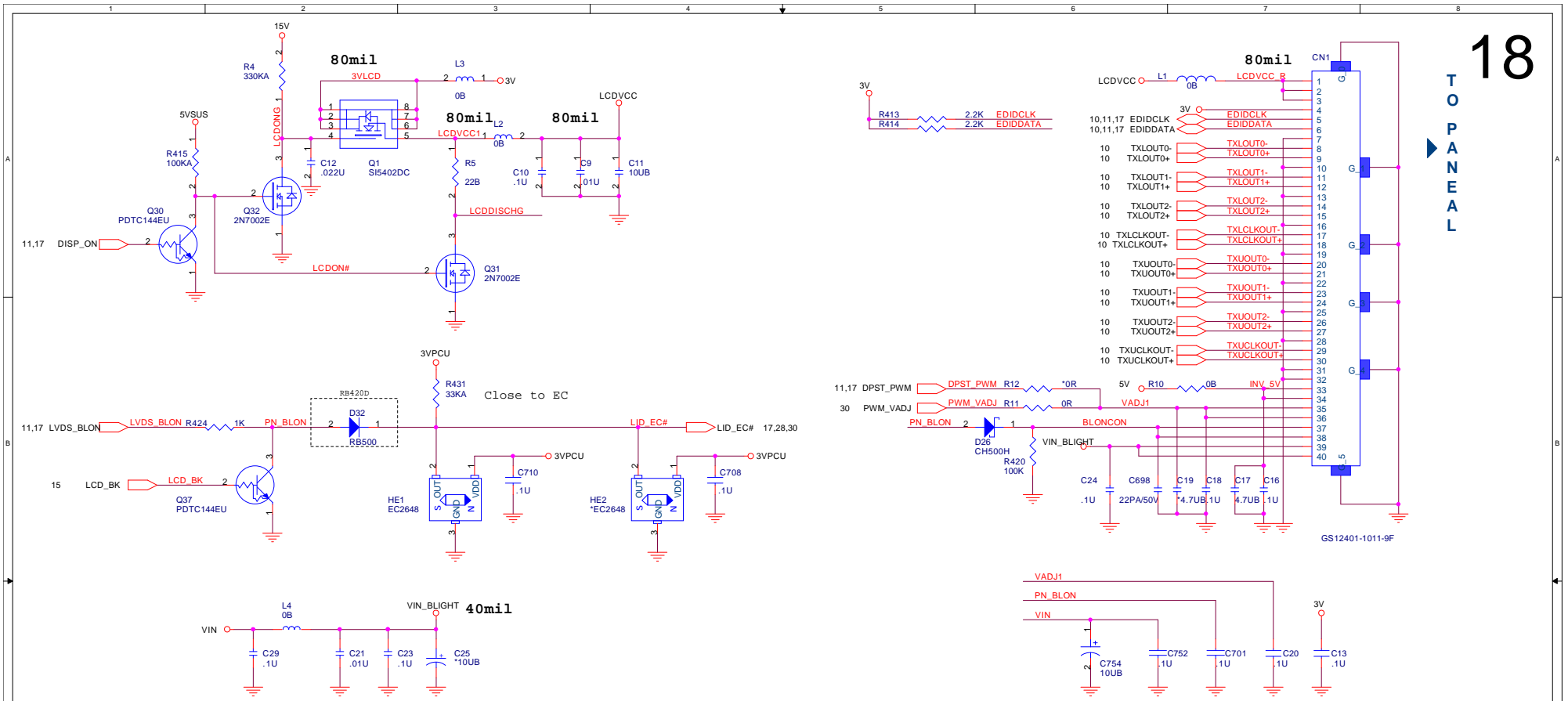
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|--|--------------------------------|--------|
| Size Custom                                      | Document Number MCP51 (1 of 3) | Rev 1A |
| Date: Thursday, December 29, 2005 Sheet 16 of 38 |                                |        |





**PROJECT : AT8**  
Quanta Computer Inc.

|  |                                |        |
|--|--------------------------------|--------|
| Size Custom                                      | Document Number MCP51 (1 of 3) | Rev 1A |
| Date: Thursday, December 29, 2005 Sheet 17 of 38 |                                |        |

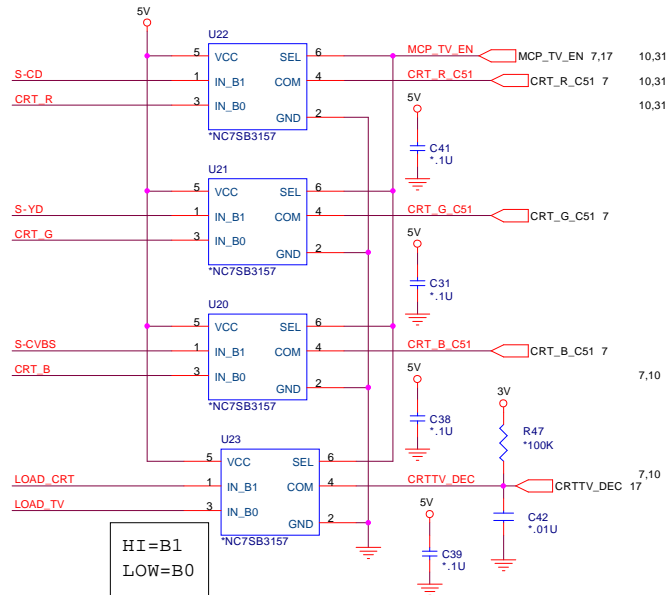


**PROJECT : AT8**  
Quanta Computer Inc.

|  |                                    |        |
|--|------------------------------------|--------|
| Size Custom                                      | Document Number LCD_CONN,HDMI_CONN | Rev 1A |
| Date: Thursday, December 29, 2005 Sheet 18 of 38 |                                    |        |

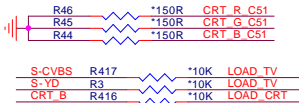
NB5/RD2/HW1

### CRT PORT



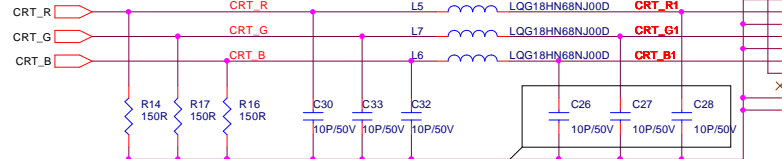
HI=B1  
LOW=B0

close within  
600mils

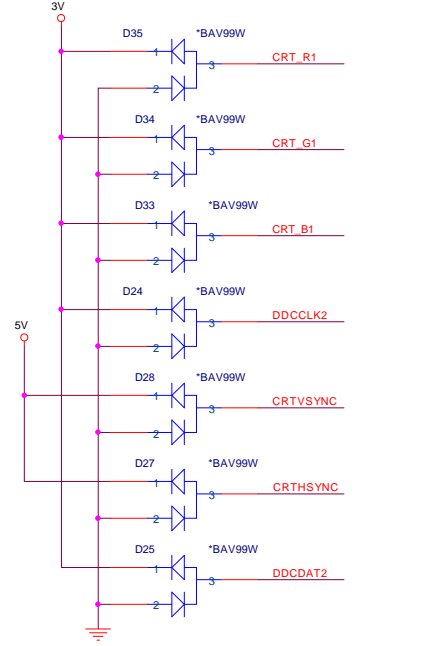
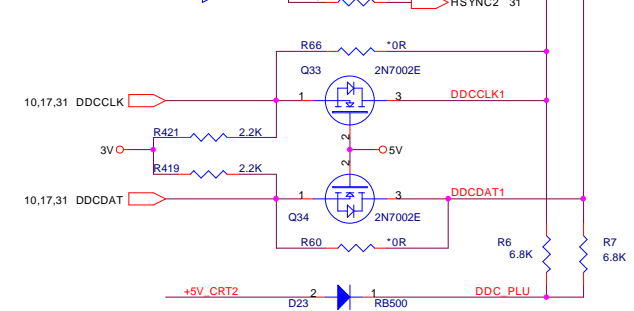
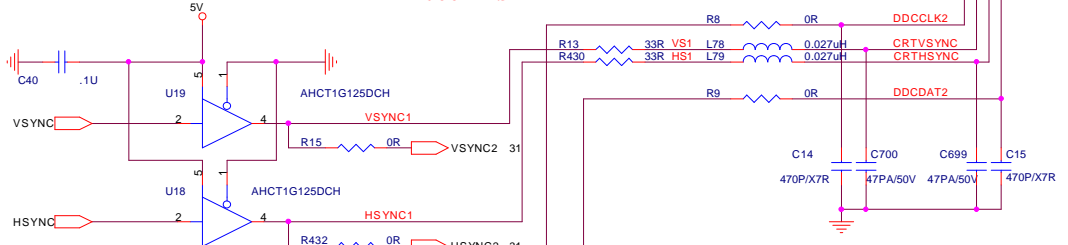


75-R as possible as  
closed to SB

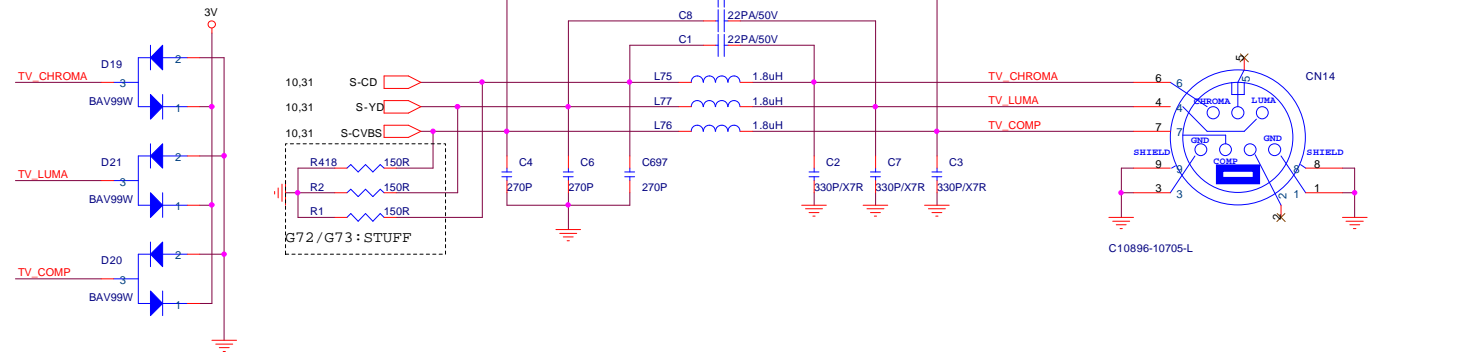
10,31  
10,31  
10,31



close conn within  
600mils

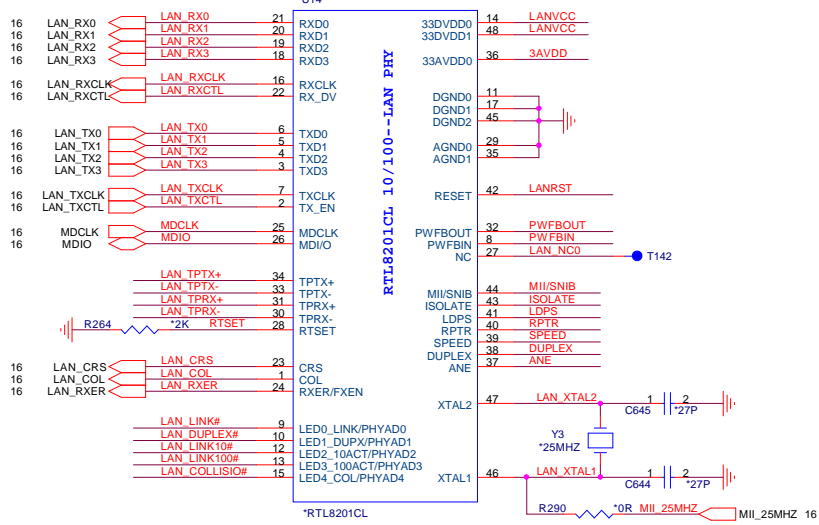


### TV\_OUT

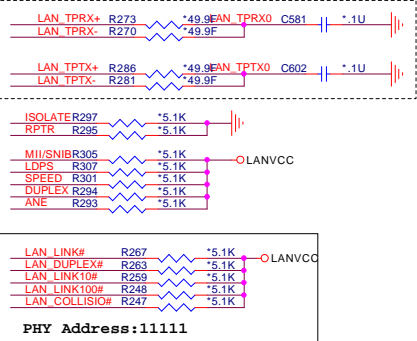


|  |                                       |                               |                |
|--|---------------------------------------|-------------------------------|----------------|
|  | PROJECT : AT8<br>Quanta Computer Inc. |                               | Rev<br>1A      |
|  | Size<br>Custom                        | Document Number<br>CRT_TV_OUT |                |
|  | Date: Thursday, December 29, 2005     |                               | Sheet 19 of 38 |

10/100M

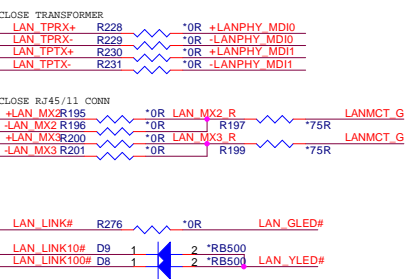


Close To RTL8201CL



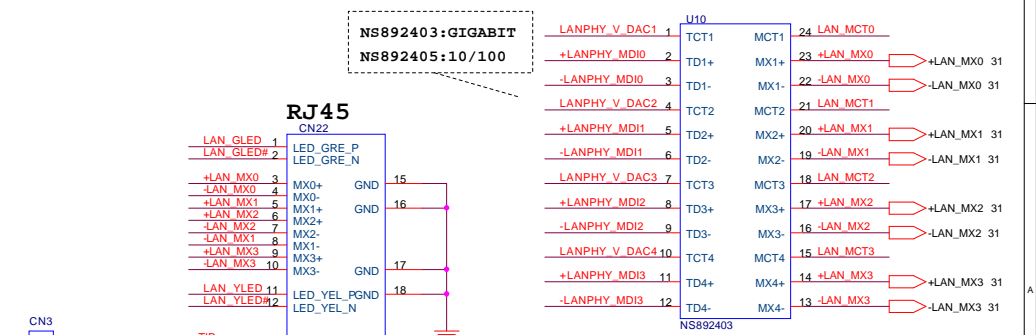
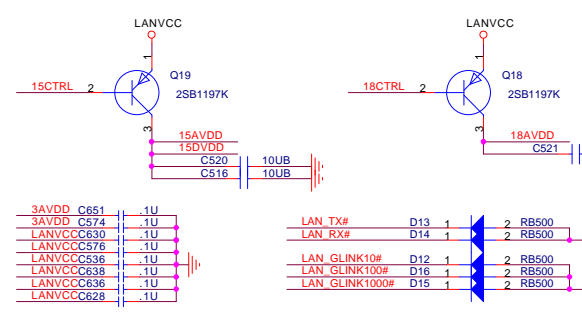
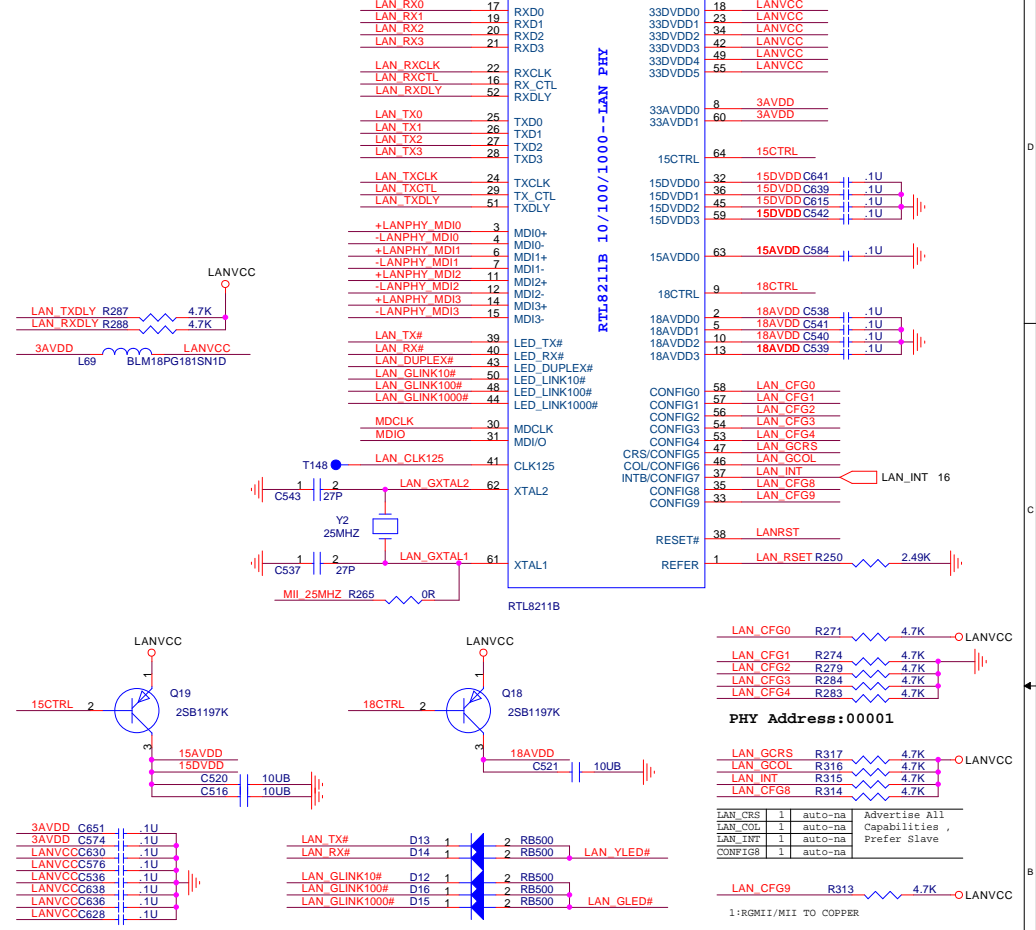
PHY Address:11111

|            |   |                                 |
|------------|---|---------------------------------|
| LAN_COL    | 1 | RTL8201BL LED                   |
| LAN_RXER_R | 0 | Default: RTL8201CL LED          |
| LAN_RXER_R | 1 | Fiber Mode                      |
| LAN_CRS    | 0 | Default: UTP Mode               |
| LAN_CRS    | 1 | Ensure operating at normal mode |



|              |      |     |           |
|--------------|------|-----|-----------|
| LAN_LINK#    | R276 | *0R | LAN_GLED# |
| LAN_LINK10#  | D9   | 1   | 2 *RB500  |
| LAN_LINK100# | D8   | 1   | 2 *RB500  |

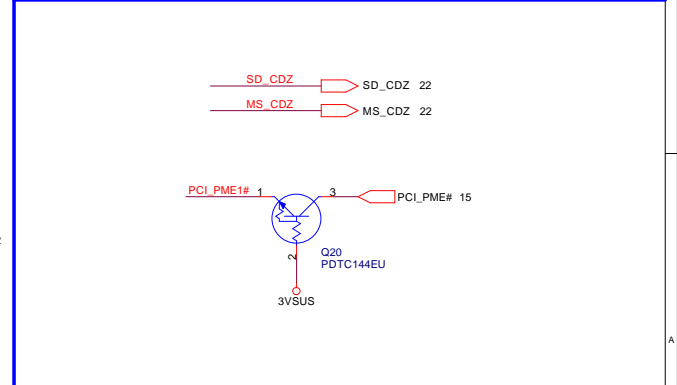
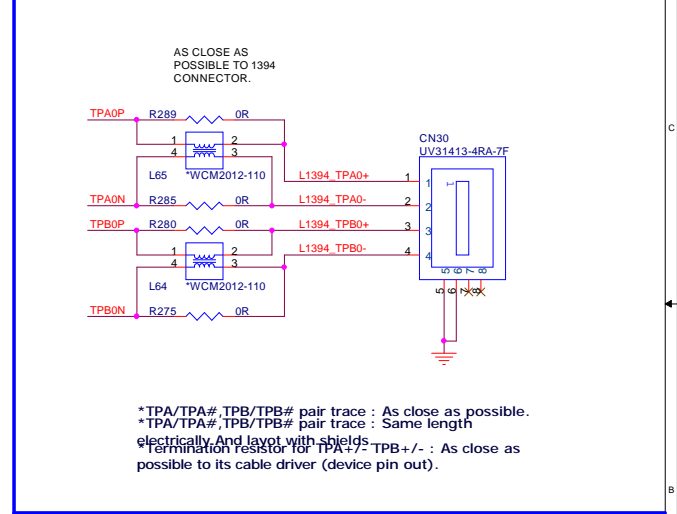
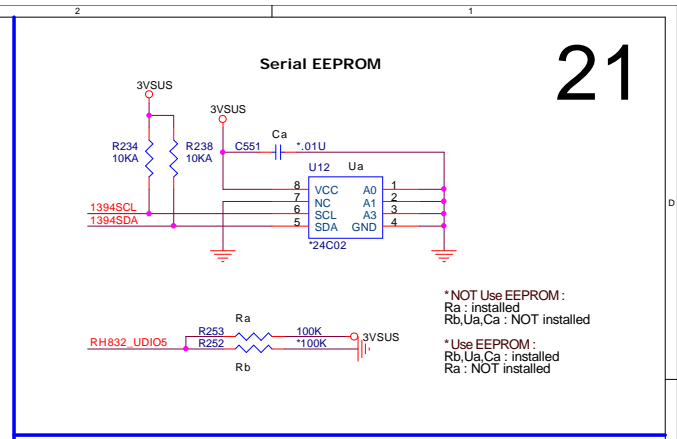
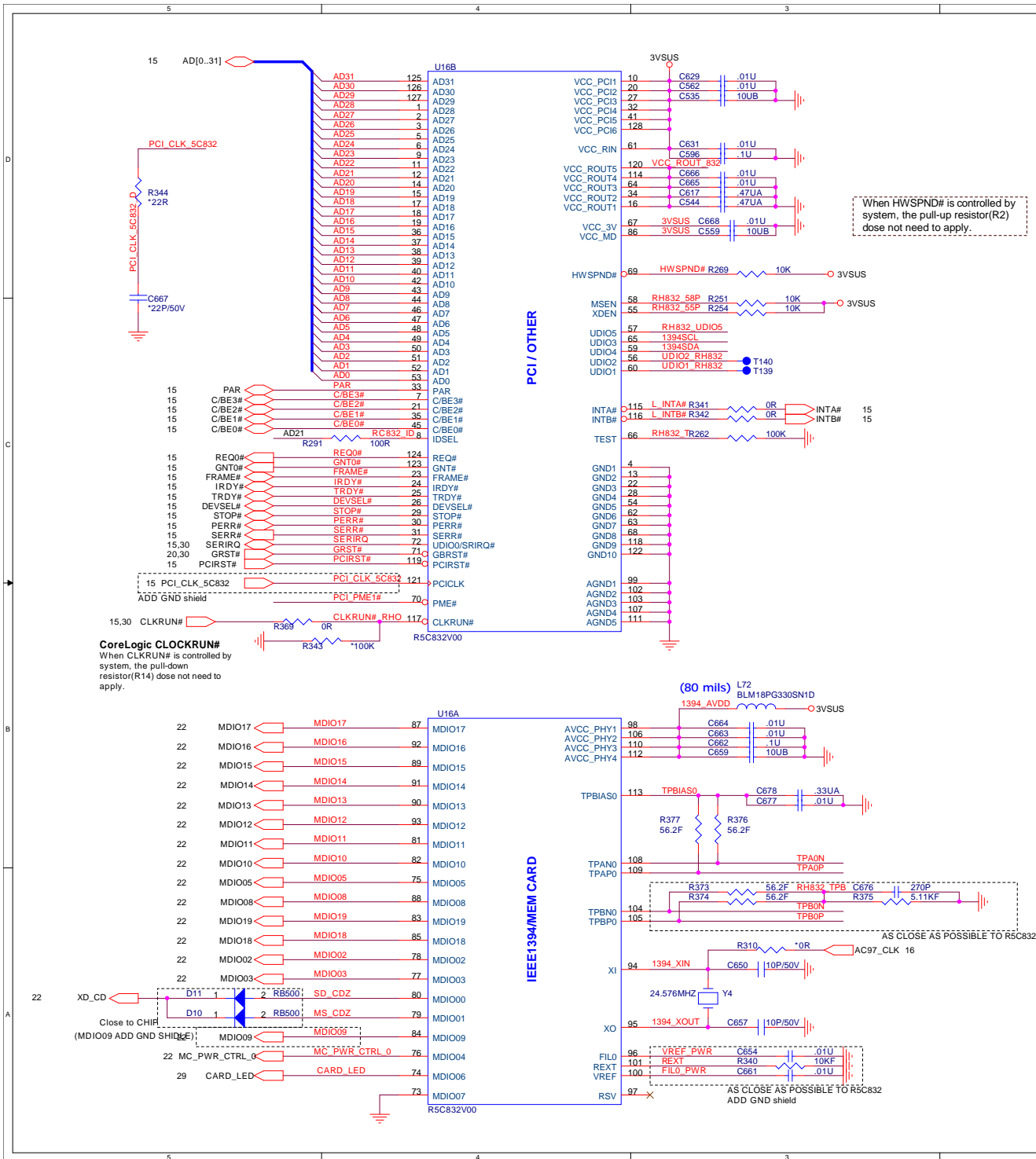
10/100/1000M



|              |      |     |           |
|--------------|------|-----|-----------|
| LAN_LINK#    | R276 | *0R | LAN_GLED# |
| LAN_LINK10#  | D9   | 1   | 2 *RB500  |
| LAN_LINK100# | D8   | 1   | 2 *RB500  |

**PROJECT : AT8**  
LAN PHY RTL8211B/8201CL,RJ45

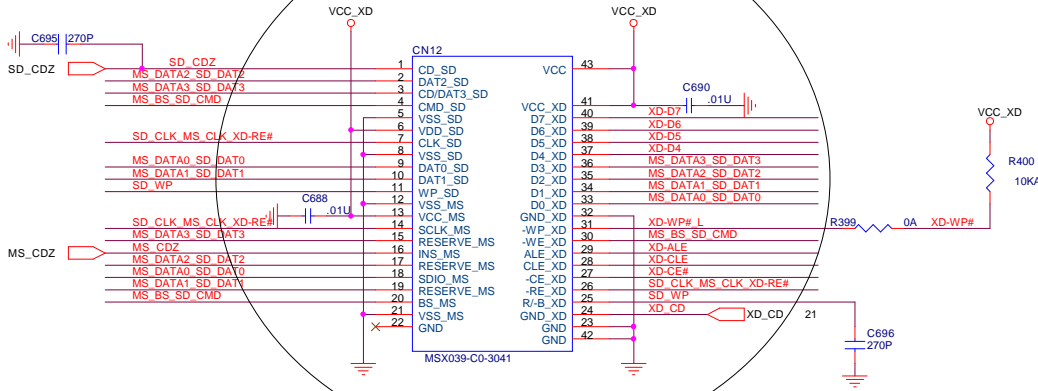
|                                  |                              |                |
|----------------------------------|------------------------------|----------------|
| Size Custom                      | Document Number              | Rev 1A         |
| Date: Tuesday, February 07, 2006 | LAN PHY RTL8211B/8201CL,RJ45 | Sheet 20 of 38 |



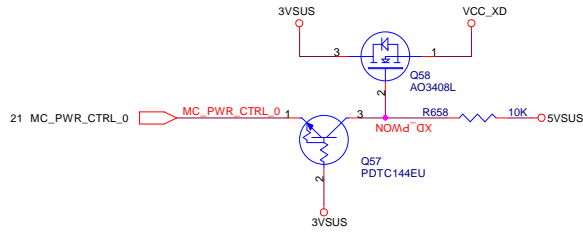
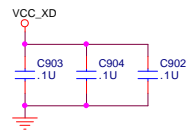
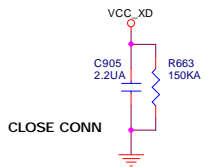
|  |   |                                   |
|--|---|-----------------------------------|
|  | <b>PROJECT : AT8</b><br>Quantas Computer Inc. |                                   |
|  | Size Custom<br>NB5/RD2/HW1                    | Document Number<br>R5C832 CONTROL |
| Date: Thursday, December 29, 2005 Sheet 21 of 38 |   |                                   |

**4 IN1 CARD READER**  
**XD, MMC/SD, MS/MSP**

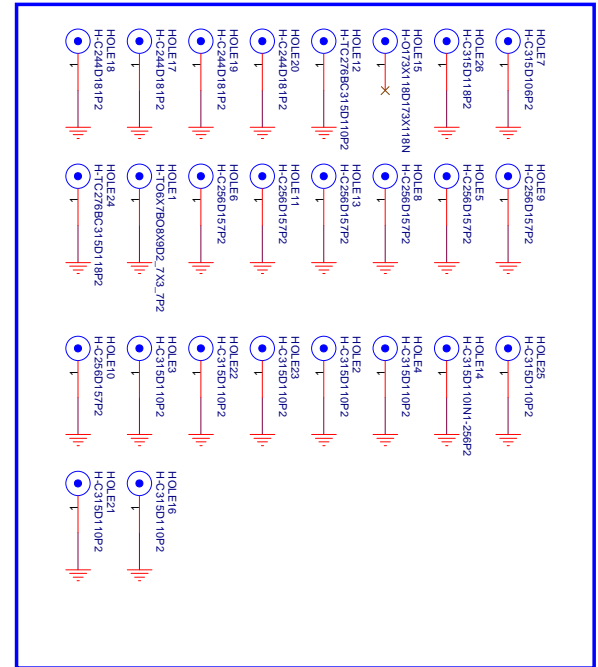
CHECK CONN.



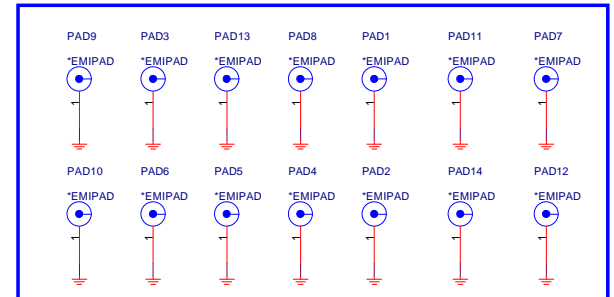
|    |        |      |     |                      |
|----|--------|------|-----|----------------------|
| 21 | MDIO03 | R398 | 56R | SD_WP                |
| 21 | MDIO17 | R409 | 56R | XD-D7                |
| 21 | MDIO16 | R408 | 56R | XD-D6                |
| 21 | MDIO15 | R407 | 56R | XD-D5                |
| 21 | MDIO14 | R406 | 56R | XD-D4                |
| 21 | MDIO13 | R405 | 56R | MS_DATA3_SD_DAT3     |
| 21 | MDIO12 | R404 | 56R | MS_DATA2_SD_DAT2     |
| 21 | MDIO11 | R403 | 56R | MS_DATA1_SD_DAT1     |
| 21 | MDIO10 | R402 | 56R | MS_DATA0_SD_DAT0     |
| 21 | MDIO08 | R397 | 56R | MS_BS_SD_CMD         |
| 21 | MDIO05 | R401 | 56R | XD-WP#               |
| 21 | MDIO19 | R396 | 56R | XD-ALE               |
| 21 | MDIO18 | R395 | 56R | XD-CLE               |
| 21 | MDIO02 | R394 | 56R | XD-CE#               |
| 21 | MDIO09 | R393 | 56R | SD_CLK_MS_CLK_XD-RE# |



SCREW HOLE



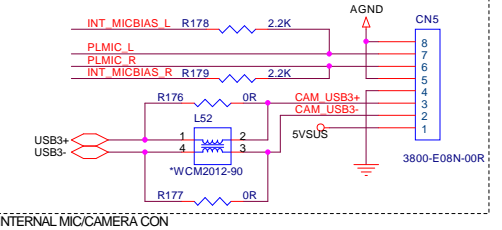
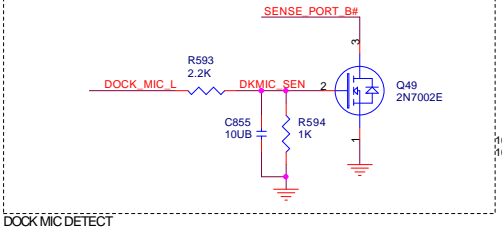
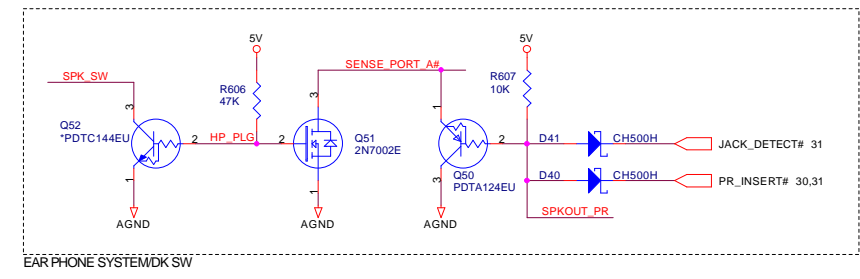
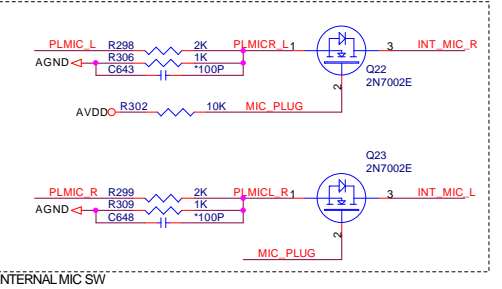
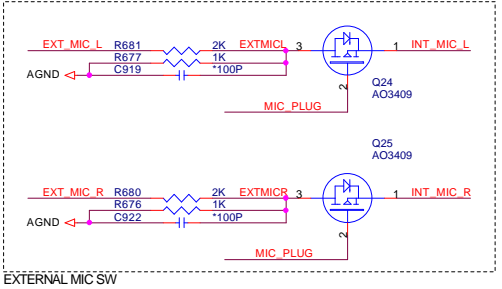
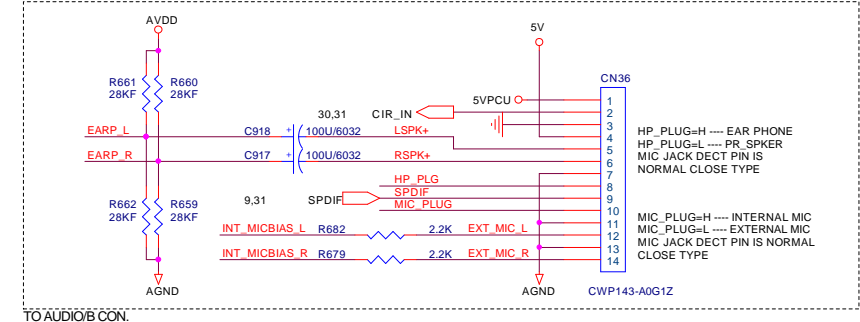
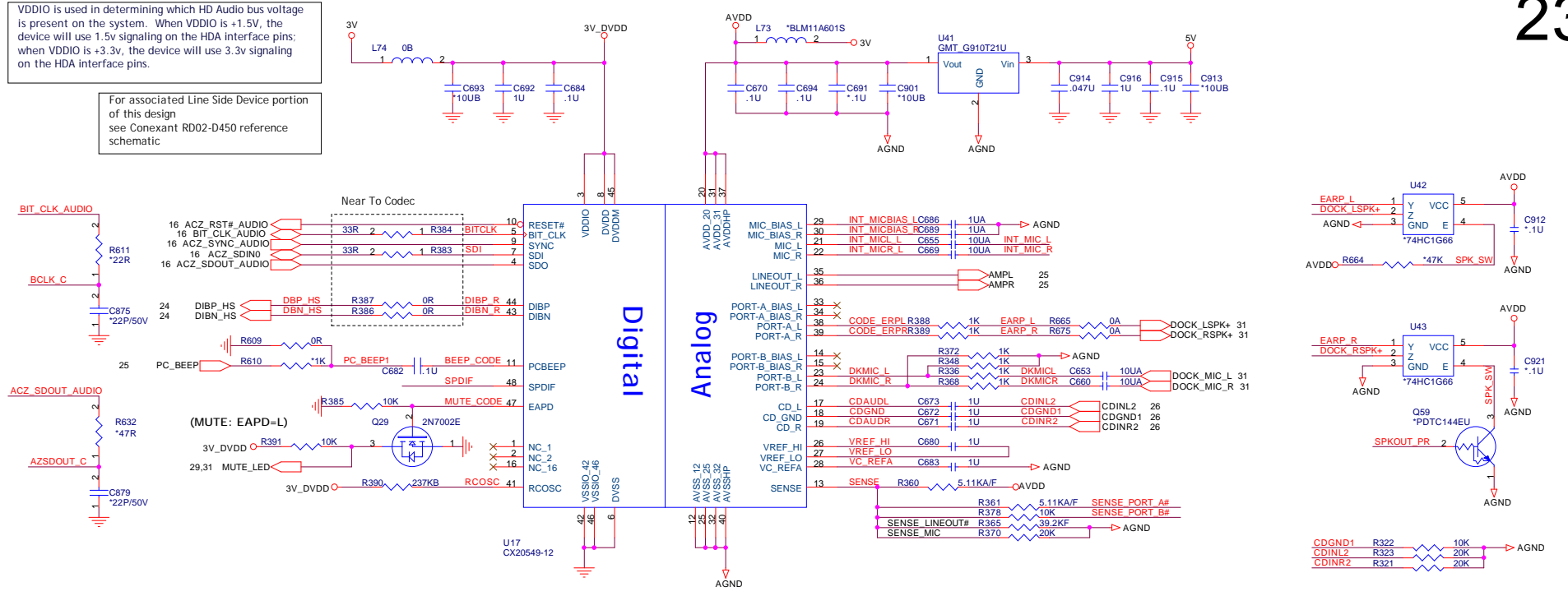
EMI PAD



|             |                                       |                                     |
|-------------|---------------------------------------|-------------------------------------|
|             | PROJECT : AT8<br>Quanta Computer Inc. |                                     |
|             | Size<br>Custom                        | Document Number<br>CARD READER CONN |
| NB5/RD2/HW1 | Date: Thursday, December 29, 2005     | Sheet 22 of 38                      |
|             |                                       | Rev<br>1A                           |

VDDIO is used in determining which HD Audio bus voltage is present on the system. When VDDIO is +1.5V, the device will use 1.5v signaling on the HDA interface pins; when VDDIO is +3.3v, the device will use 3.3v signaling on the HDA interface pins.

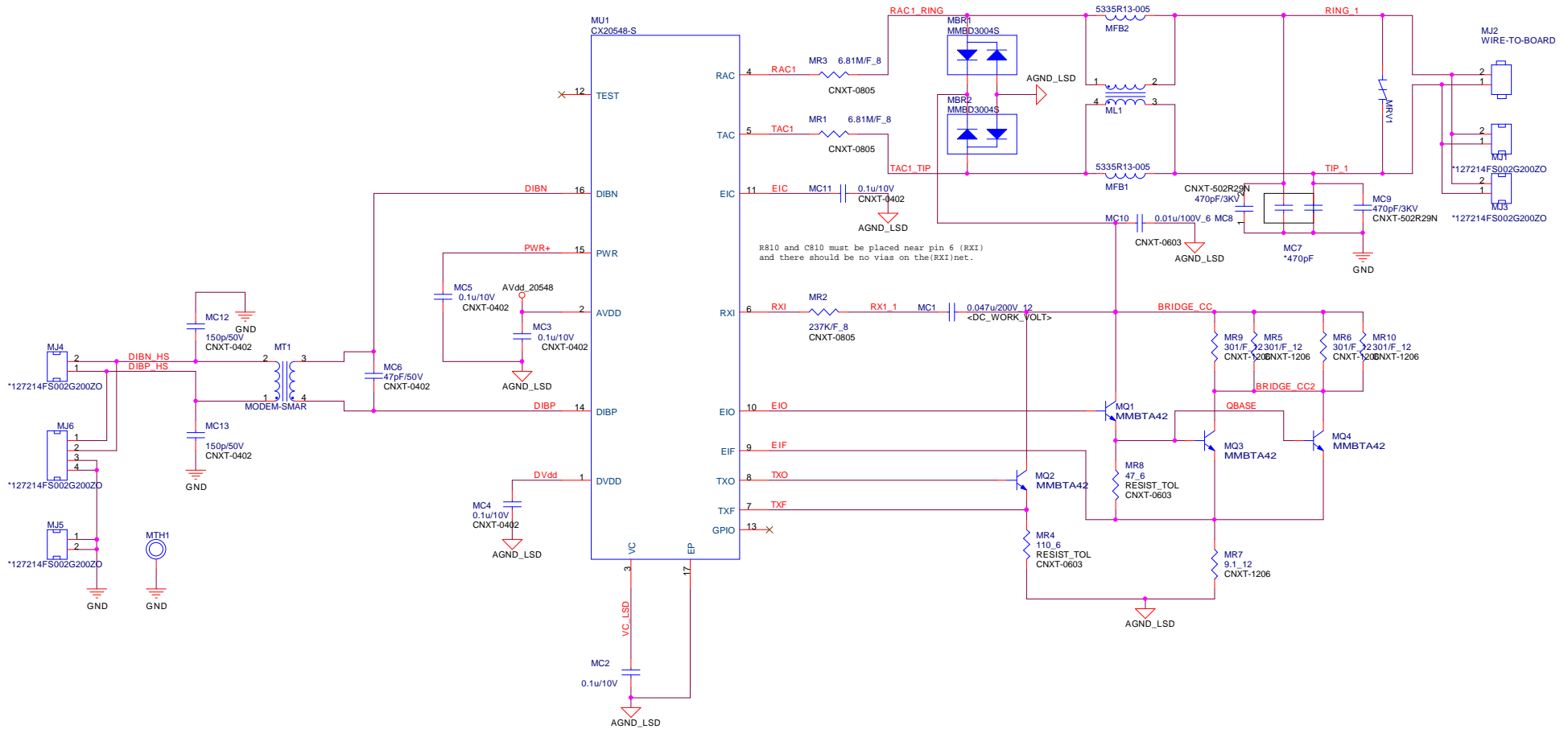
For associated Line Side Device portion of this design see Conexant RD02-D450 reference schematic



PROJECT : AT8  
Quanta Computer Inc.

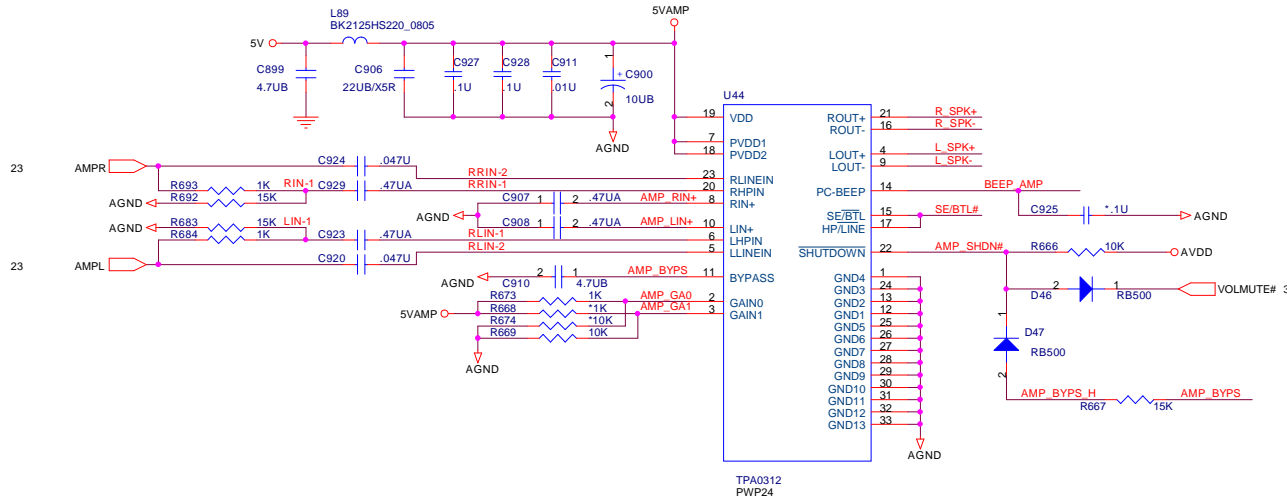
|                                   |  |                |
|-----------------------------------|--|----------------|
| Size Custom                       | Document Number Azalia CTRL_CONEXANT20549-12 | Rev 1A         |
| Date: Thursday, December 29, 2005 |  | Sheet 23 of 38 |

| Revision History |                 |                |
|------------------|-----------------|----------------|
| REV              | Description     | Date           |
| 0                | Initial Release | April 26, 2005 |
|                  |                 |                |
|                  |                 |                |



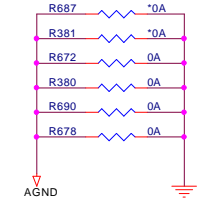
|  |   |  |
|--|---|--|
|  | PROJECT : AT8<br>Quantia Computer Inc.        |  |
|  | Size Custom<br>Document Number<br>MODEM (DAA) | Rev 1A<br>Date: Thursday, December 29, 2005 Sheet 24 of 38 |



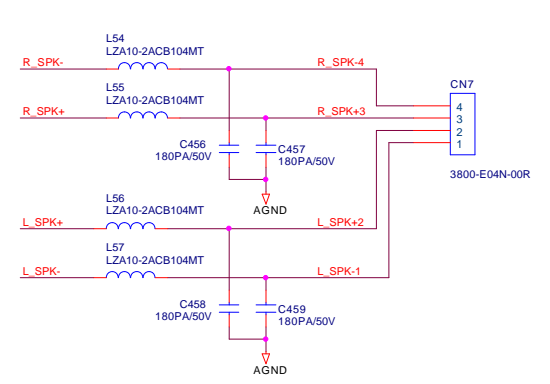


**0312 Gain Table**

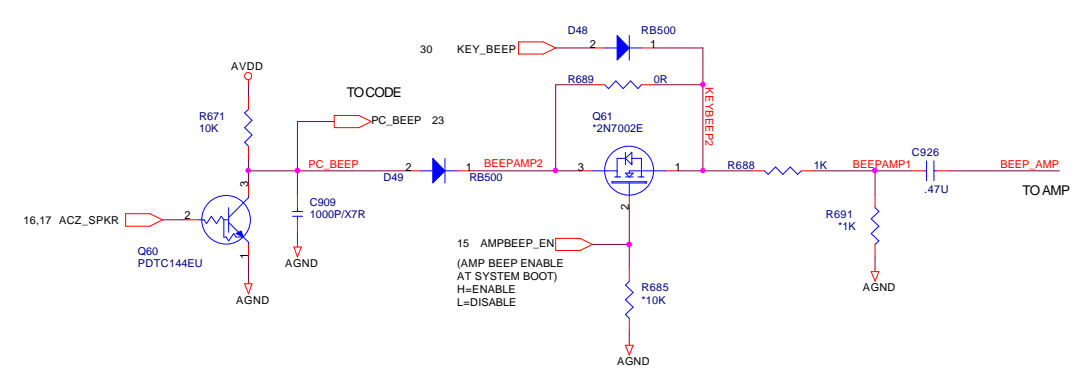
| GAIN0 | GAIN1 | SE/BTL | AV(INV) |
|-------|-------|--------|---------|
| 0     | 0     | 0      | 6dB     |
| 0     | 1     | 0      | 10dB    |
| 1     | 0     | 0      | 15.6dB  |
| 1     | 1     | 0      | 21.6dB  |
| x     | x     | 1      | 4.1dB   |



## INT. SPEAKER

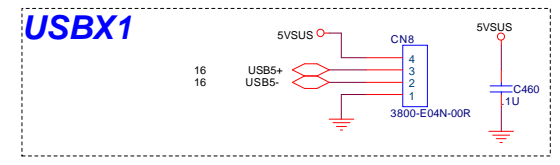
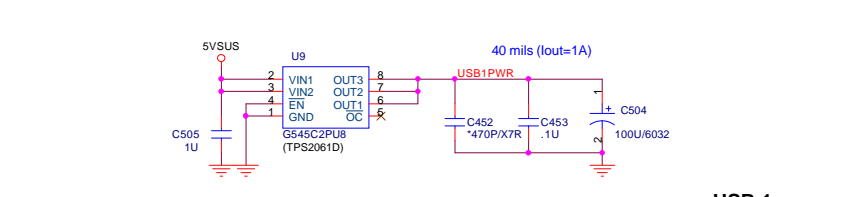
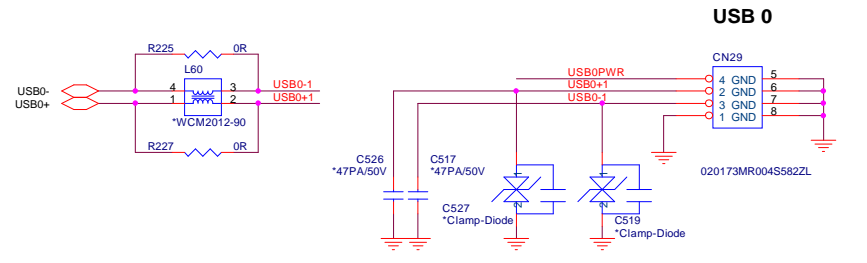
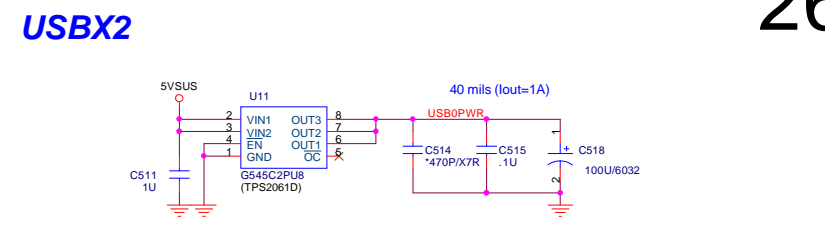
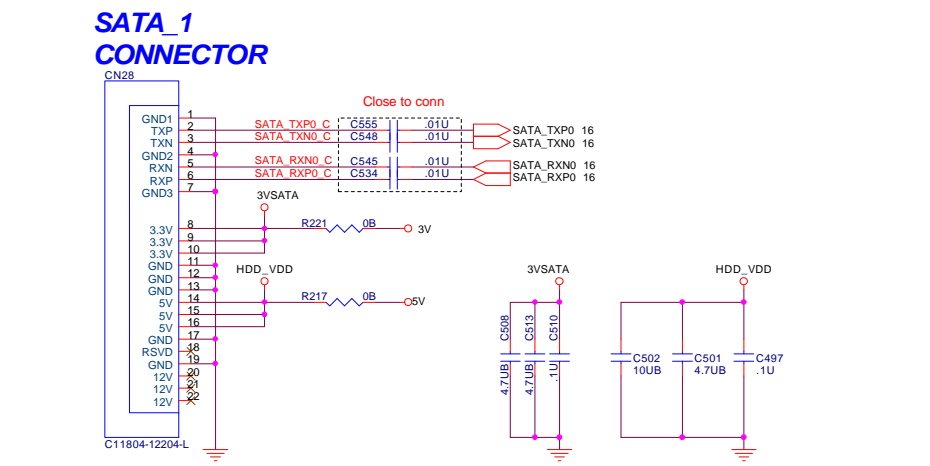
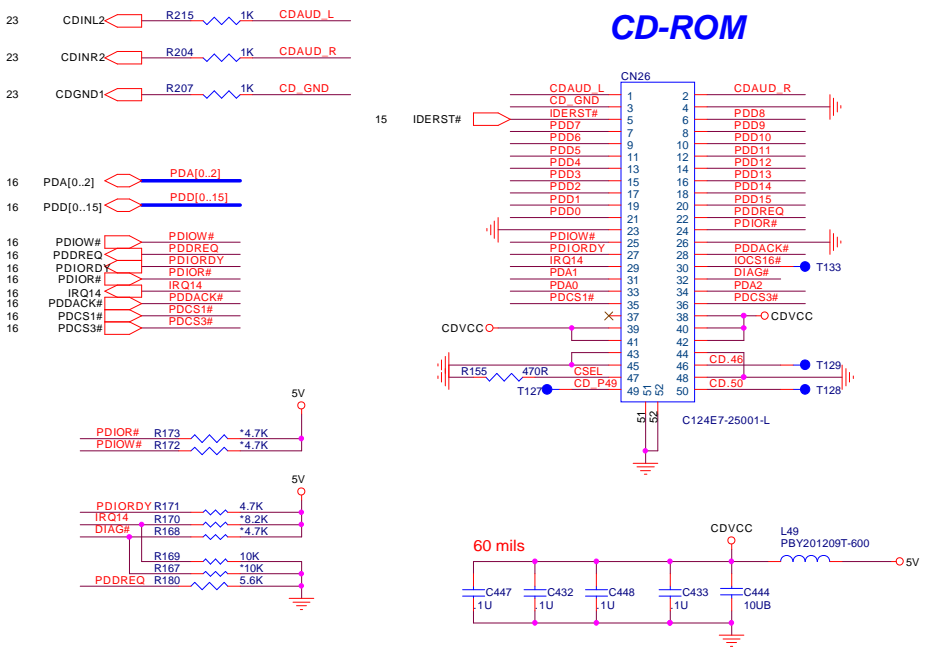


## PCSPK BEEP



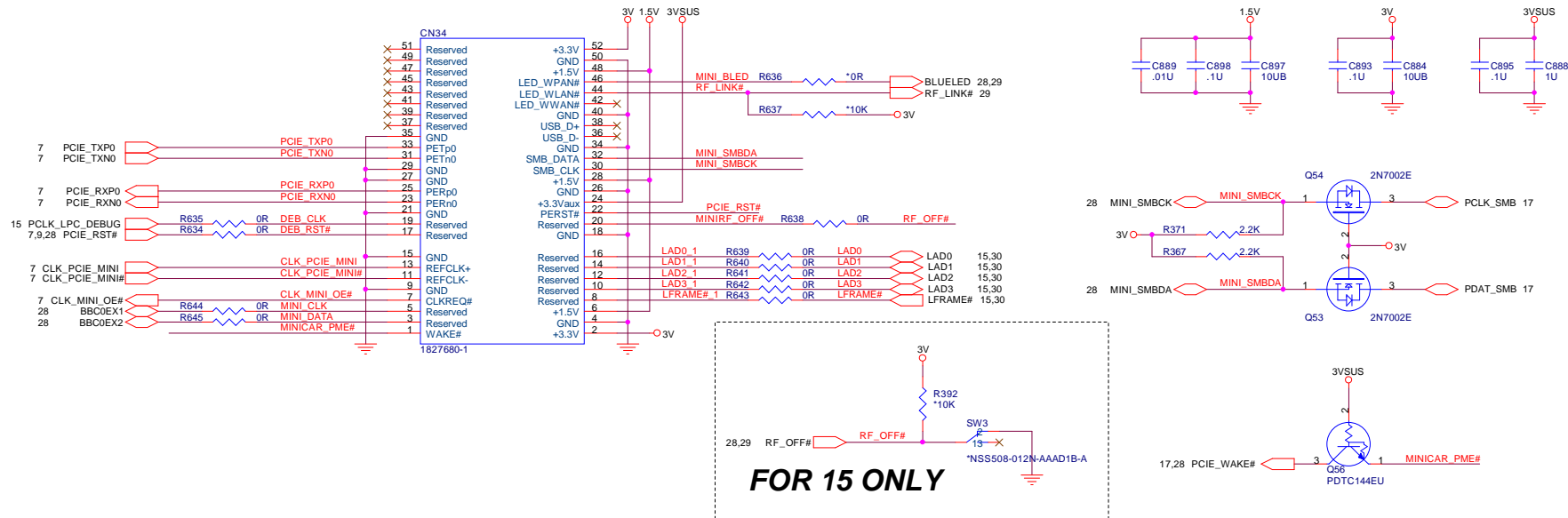
**PROJECT : AT8**  
Quant Computer Inc.

|  |   |                  |
|--|---|------------------|
| Size Custom  | Document Number<br><b>JACK, AMP_TPA0312</b> | Rev<br><b>1A</b> |
| Date: Thursday, December 29, 2005   Sheet 25 of 38 |   |                  |



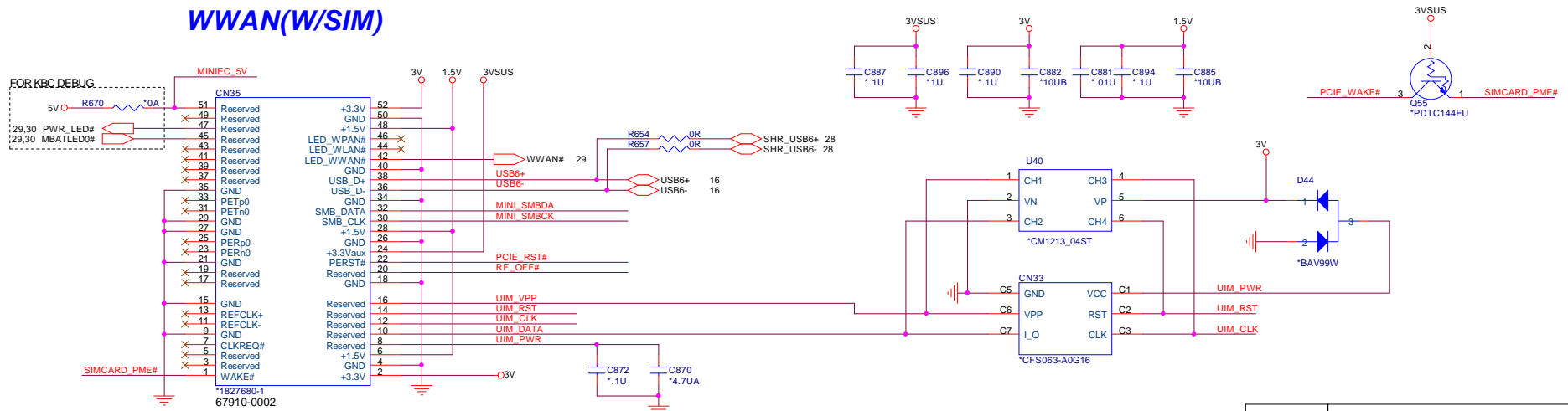
|  |   |           |
|--|---|-----------|
|  | PROJECT : AT8<br>Quanta Computer Inc.   |           |
|  | Size Custom<br>Document Number<br>SATA HDD, CD-ROM, USBX2<br>Date: Thursday, December 29, 2005   Sheet 26 of 38 | Rev<br>1A |


### Mini PCI-E Card 1 WLAN



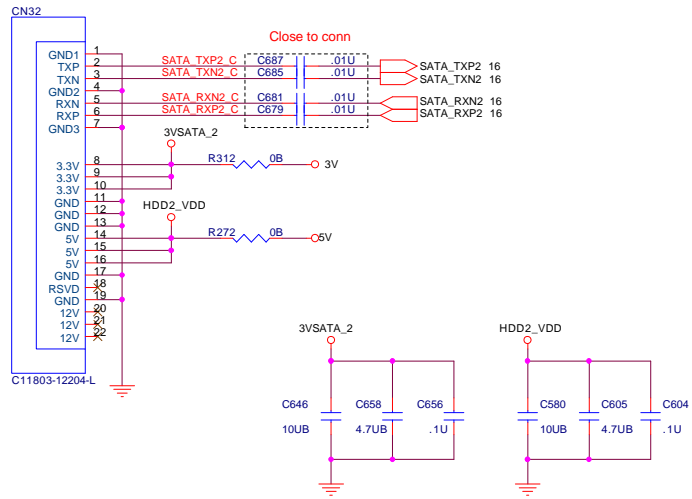
### Mini PCI-E Card 2 WWAN(W/SIM)

FOR 15 ONLY

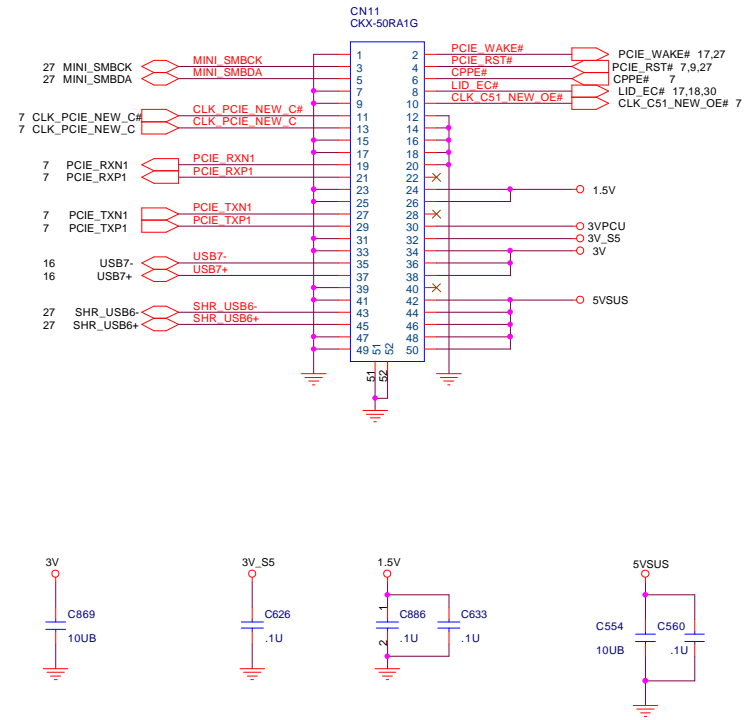


|  |  |   |
|--|--|---|
| <br>NB5/RD2/HW1 | <b>PROJECT : AT8</b><br>Quanta Computer Inc.     |   |
|  | Size Custom<br>Date: Thursday, December 29, 2005 | Document Number<br><b>MINI CARD</b><br>Sheet 27 of 38 |

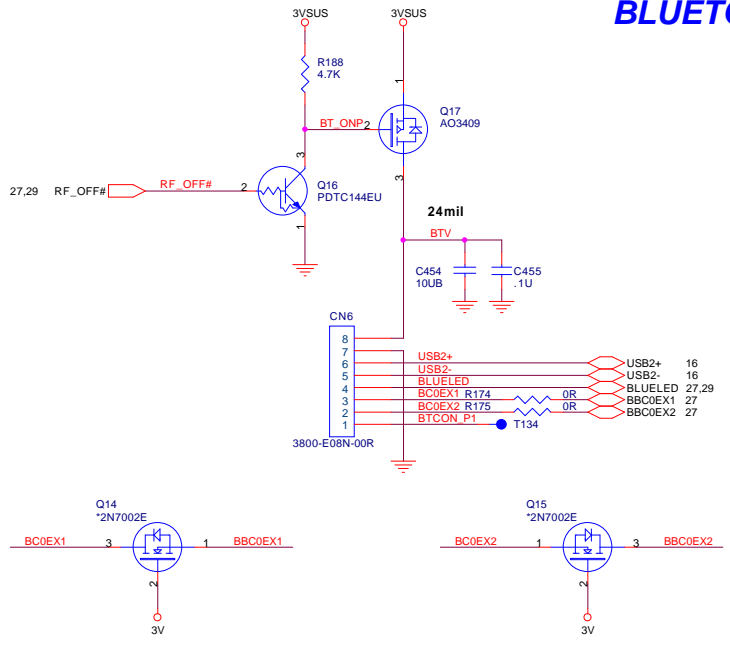
### SATA\_2 CONNECTOR For 17"W Second HDD




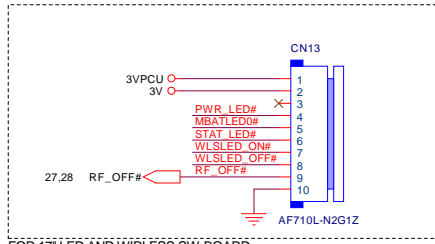
### NEWCARD



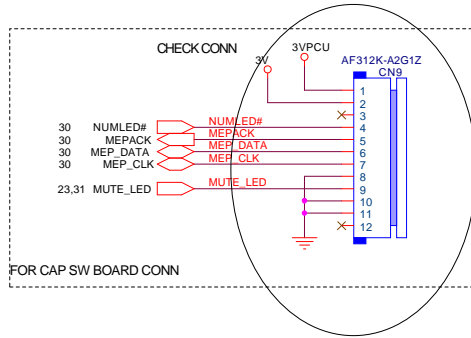
### BLUETOOTH



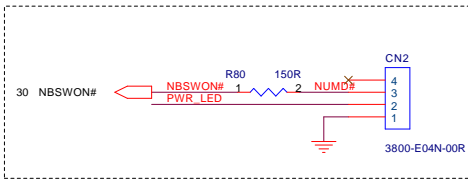
|  |  |                |
|--|--|----------------|
| <br>NB5/RD2/HW1 | <b>PROJECT : AT8</b><br>Quantia Computer Inc.                                      |                |
|  | Size Custom<br>Document Number<br>NEW CARD/BT<br>Date: Thursday, December 29, 2005 | Sheet 28 of 38 |



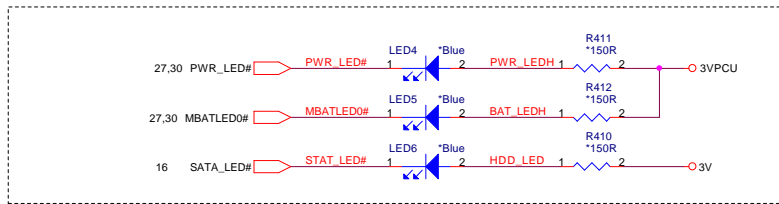
FOR 17" LED AND WIRLESS SW BOARD



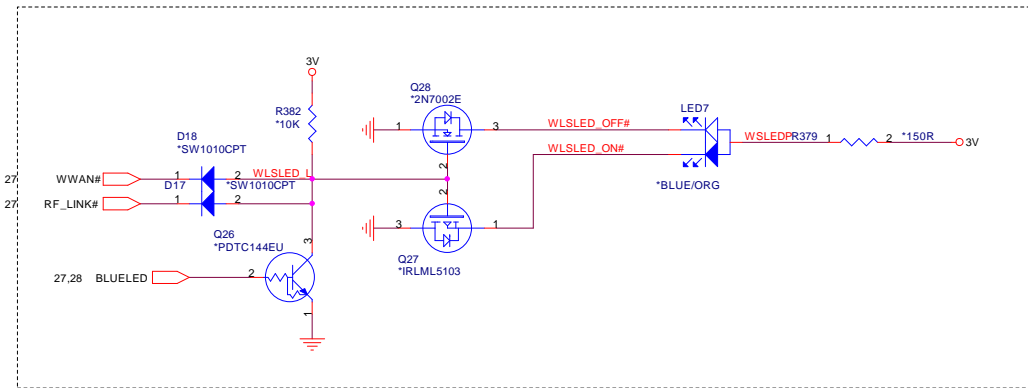
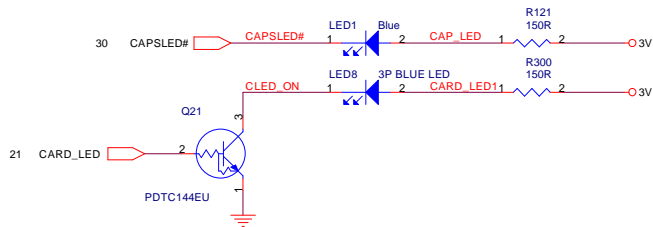
FOR CAP SW BOARD CONN



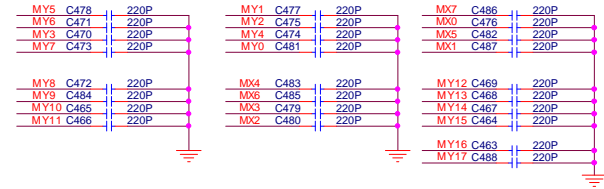
FOR POWER ON SW BOARD



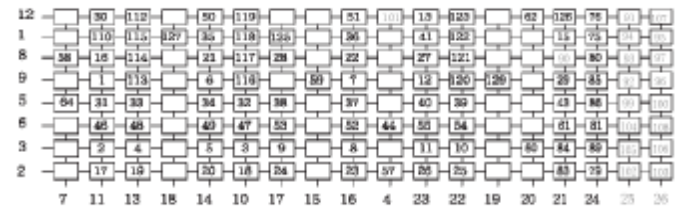
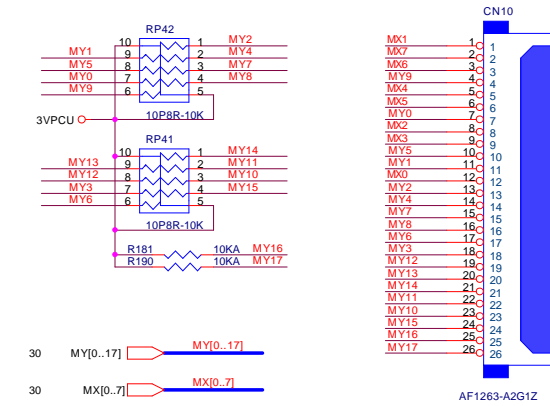
FOR 15.4" LED



FOR WIRELESS LED



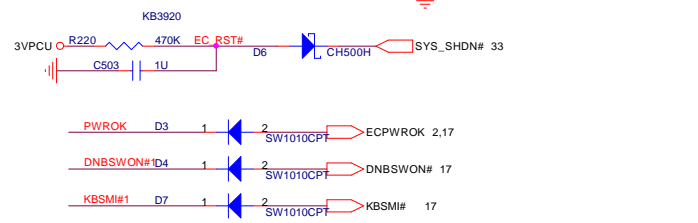
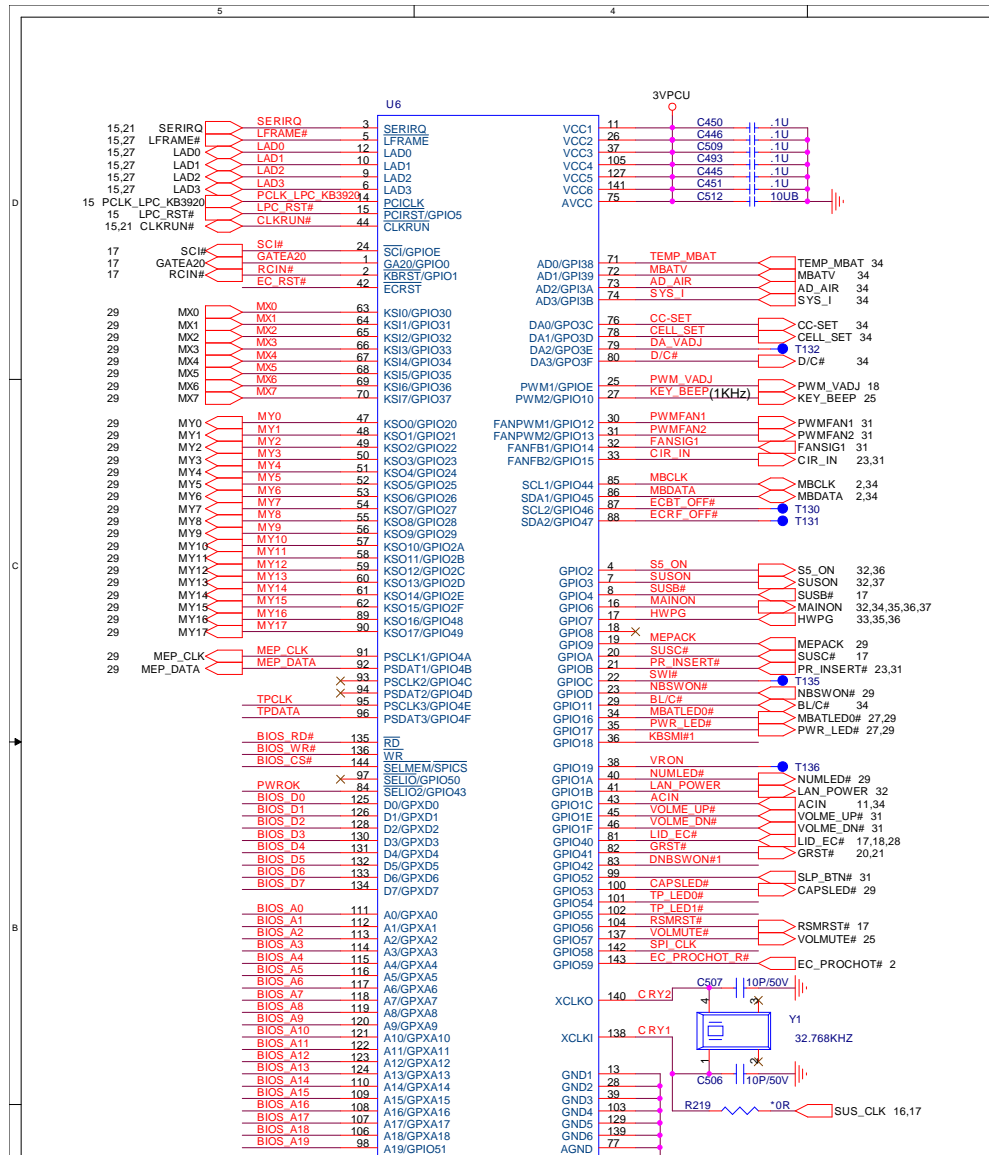
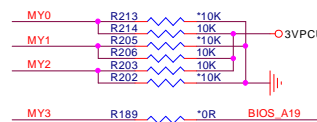
KEYBOARD PULL-UP



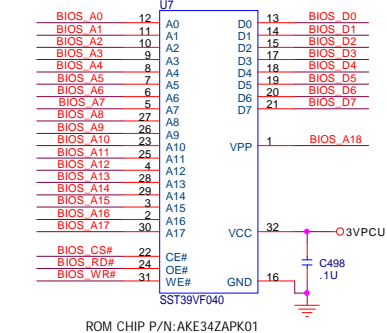
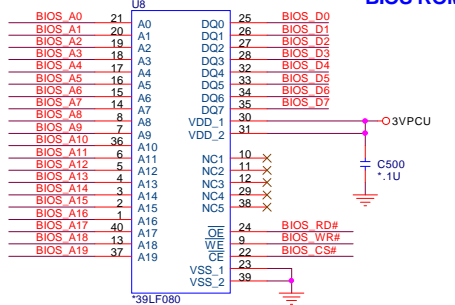
|  |  |        |
|--|--|--------|
|  | PROJECT : AT8<br>Quanta Computer Inc.  |        |
|  | Size Custom<br>Document Number LED/KEYBOARD/TP<br>Date: Thursday, December 29, 2005 Sheet 29 of 38 | Rev 1A |

STRAP PIN

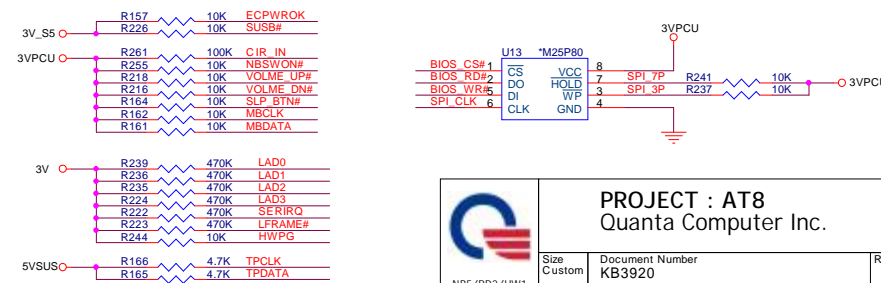
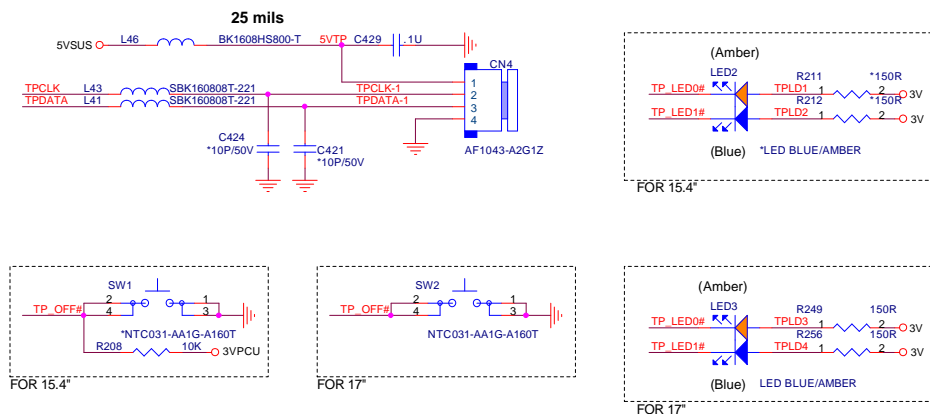
|     |    |   |
|-----|----|---|
| MY0 | 47 | TP_TEST: Clock Test Mode<br>Low: Test Mode<br>HIGH: 320Hz clock in normal running               |
| MY1 | 48 | TP_PLL: DLL Test Mode<br>Low: Test Mode<br>HIGH: Normal operation                               |
| MY2 | 49 | TP_SPI: Default flash access<br>Low: Boot from SPI flash part<br>HIGH: Boot from ISH flash part |
| MY3 | 50 | TP_ISP: In System Programming Mode<br>Low: ISP mode<br>HIGH: Normal Mode                        |



BIOS ROM



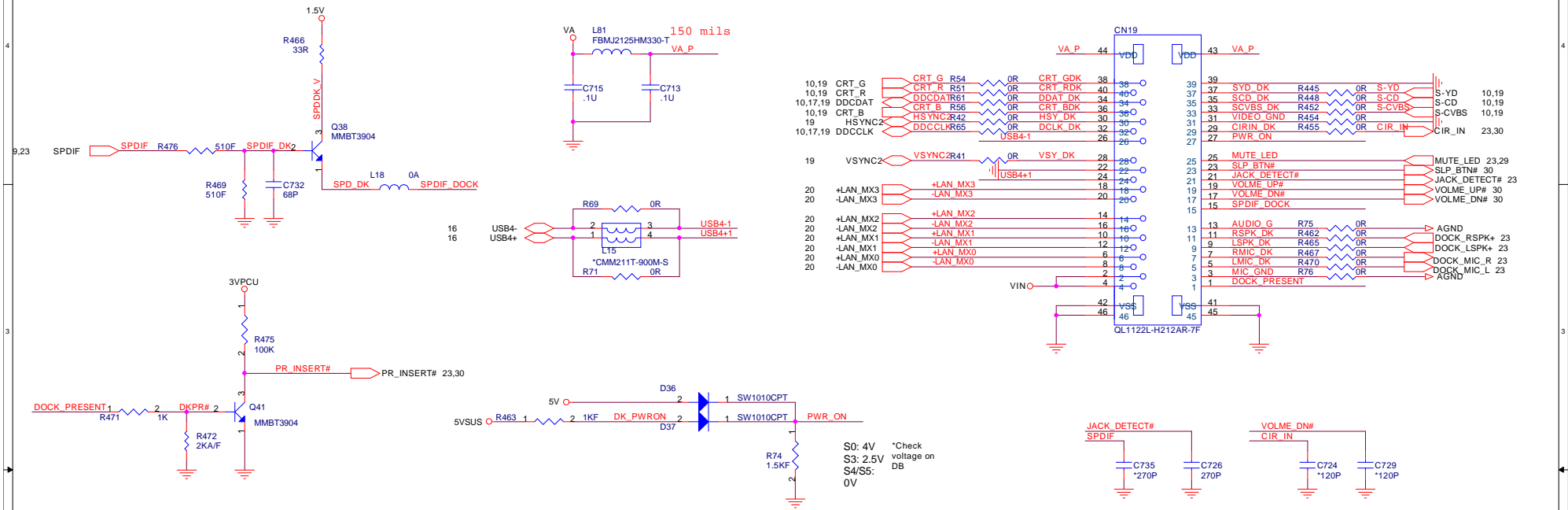
TOUCH PAD CONNECTOR



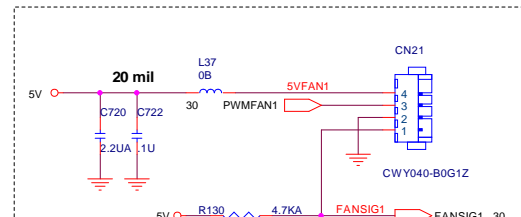
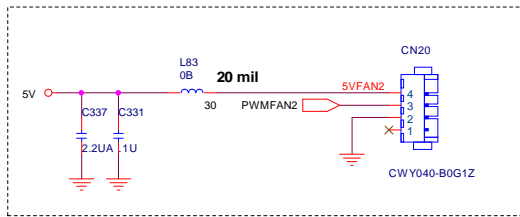
**PROJECT : AT8**  
Quanta Computer Inc.


|  |                           |           |
|--|---------------------------|-----------|
| Size Custom  | Document Number<br>KB3920 | Rev<br>1A |
| Date: Thursday, December 29, 2005   Sheet 30 of 38 |                           |           |

# CABLE DOCK

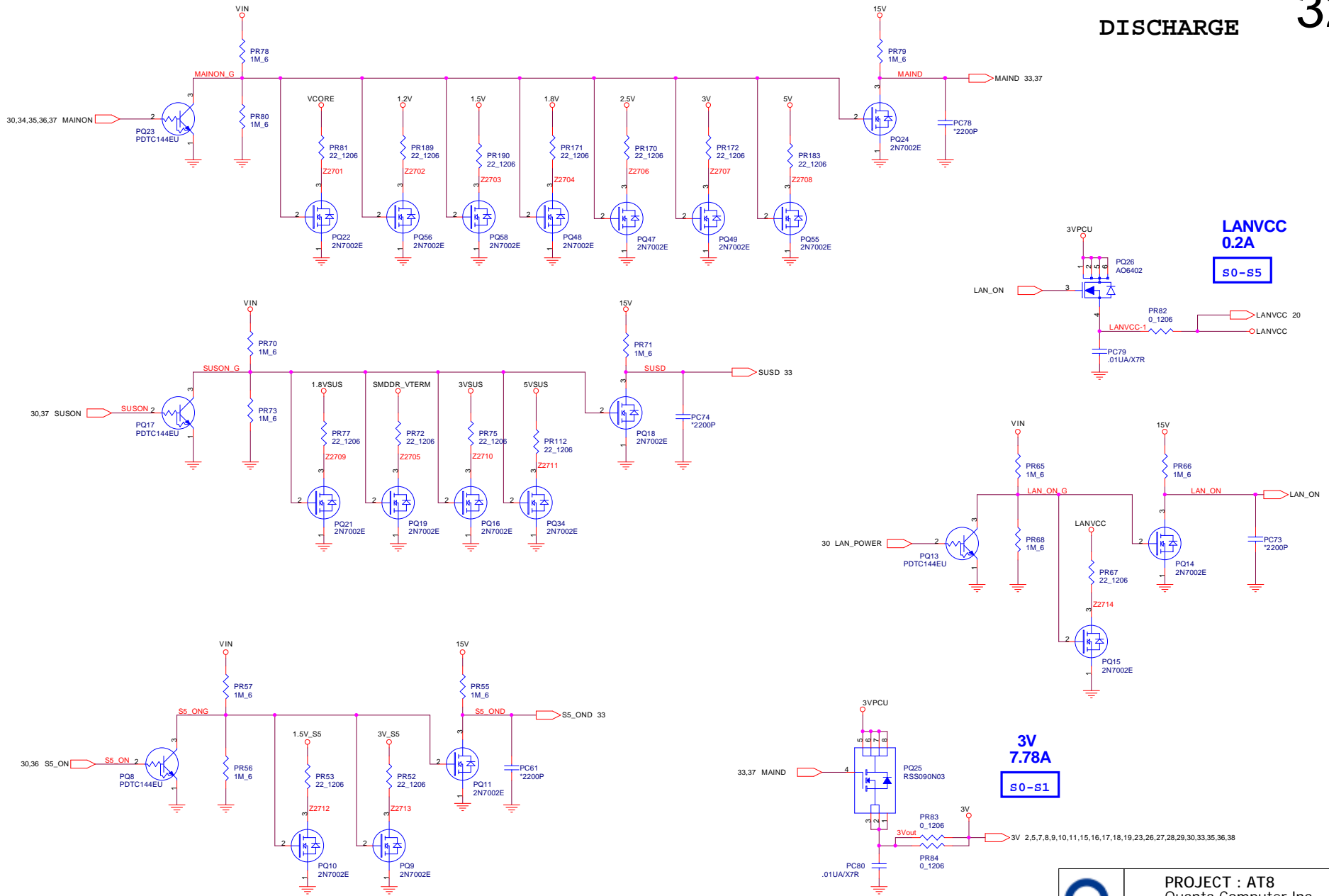


# FAN




|  |  |   |
|--|--|---|
| <br>NB5/RDZ/HW1 | <b>PROJECT : AT8</b><br>Quanta Computer Inc.     |   |
|  | Size Custom<br>Date: Thursday, December 29, 2005 | Document Number<br><b>CABLE DOCKING</b><br>Sheet 31 of 38 |

DISCHARGE



LANVCC  
0.2A  
S0-S5

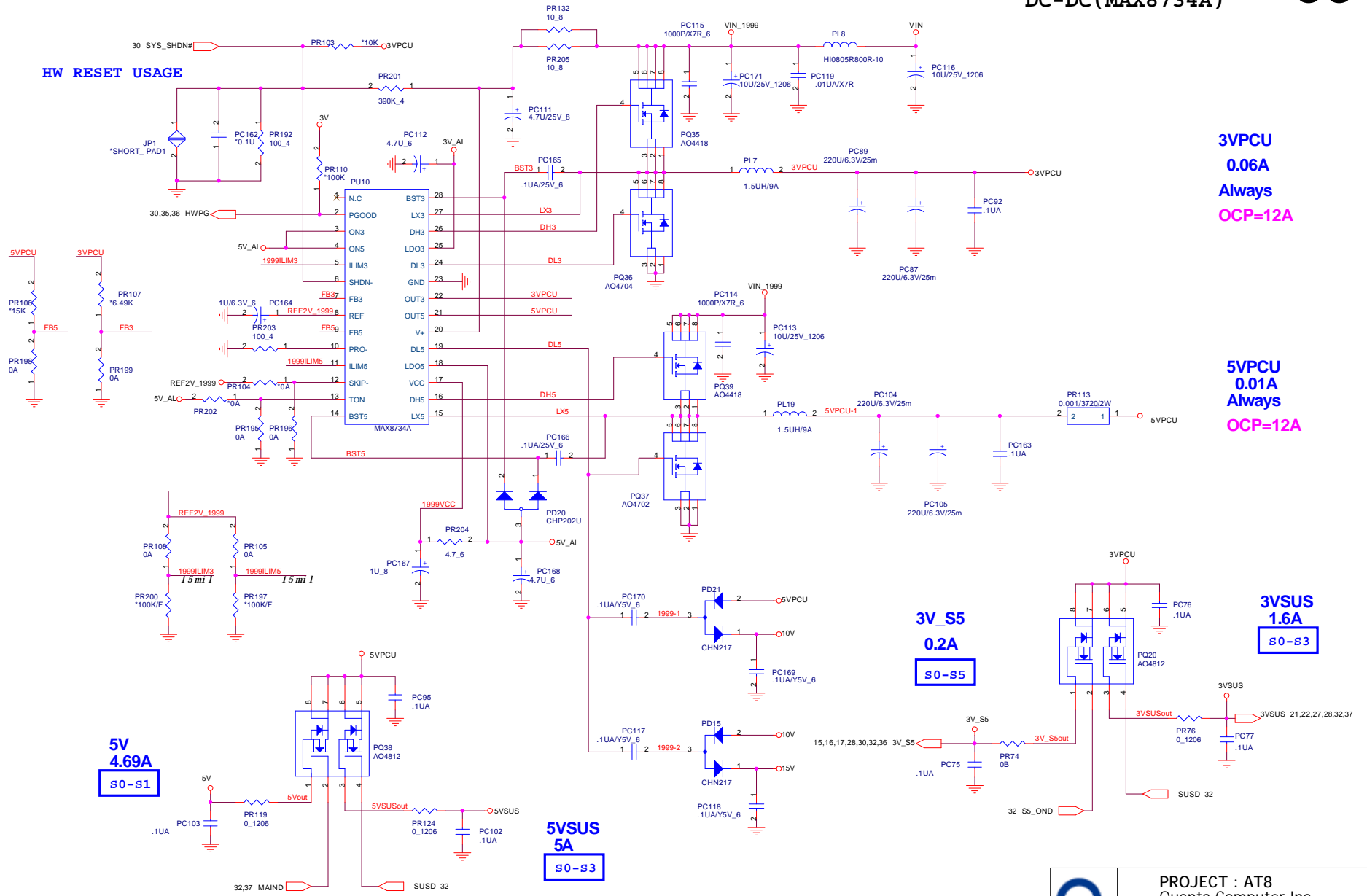
3V  
7.78A  
S0-S1

|   |                              |           |
|---|------------------------------|-----------|
|  |                              |           |
| PROJECT : AT8<br>Quanta Computer Inc.   |                              |           |
| Size<br>Custom  | Document Number<br>DISCHARGE | Rev<br>1A |
| Date: Thursday, December 29, 2005   Sheet 32 of 38                                    |                              |           |



DC-DC (MAX8734A)

HW RESET USAGE



3VPCU  
0.06A  
Always  
OCP=12A


5VPCU  
0.01A  
Always  
OCP=12A

3V\_S5  
0.2A  
S0-S5

3VSUS  
1.6A  
S0-S3

5V  
4.69A  
S0-S1

5VSUS  
5A  
S0-S3

|   |  |                                       |   |
|---|--|---------------------------------------|---|
|  |  | PROJECT : AT8<br>Quanta Computer Inc. |   |
|   |  | Size<br>Custom                        | Document Number<br>MAX8734A (3V/5V/15V) |
| NB5/RD2/HW1   |  | Date: Thursday, December 29, 2005     | Sheet 33 of 38                          |

**Adapter**  
**19V/3.4A/65W**  
**4.75A/90W**

**MAX8724A**

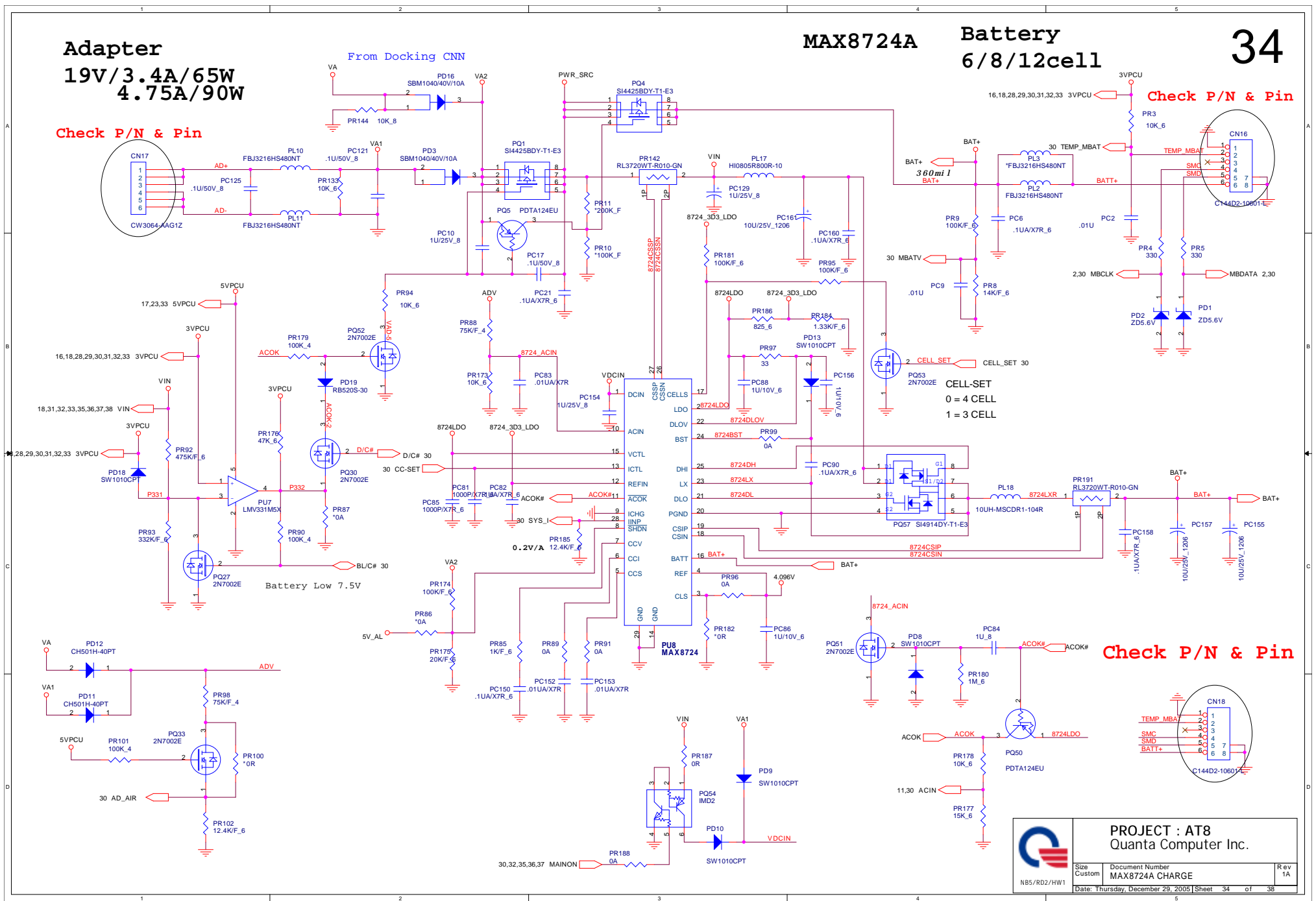
**Battery**  
**6/8/12cell**


**34**

Check P/N & Pin

Check P/N & Pin

Check P/N & Pin

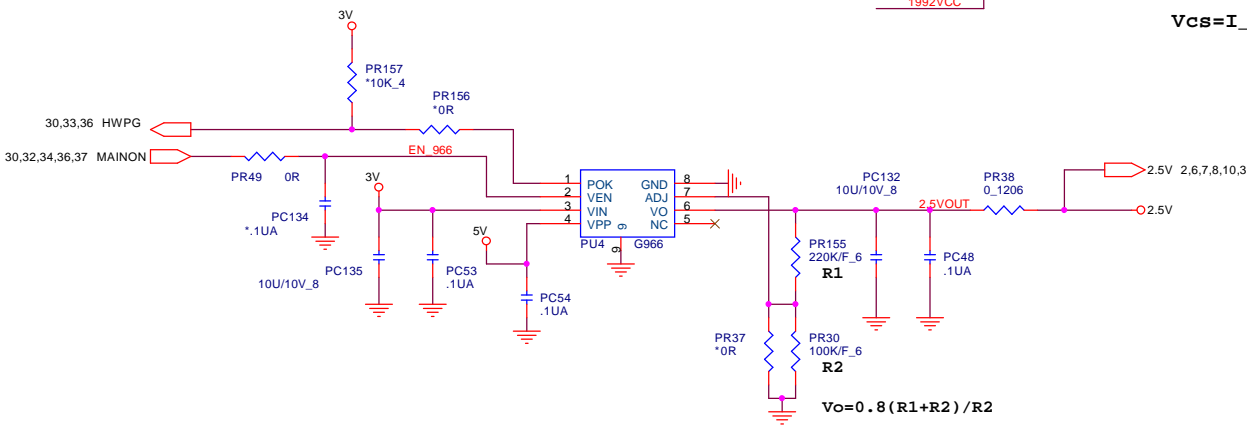
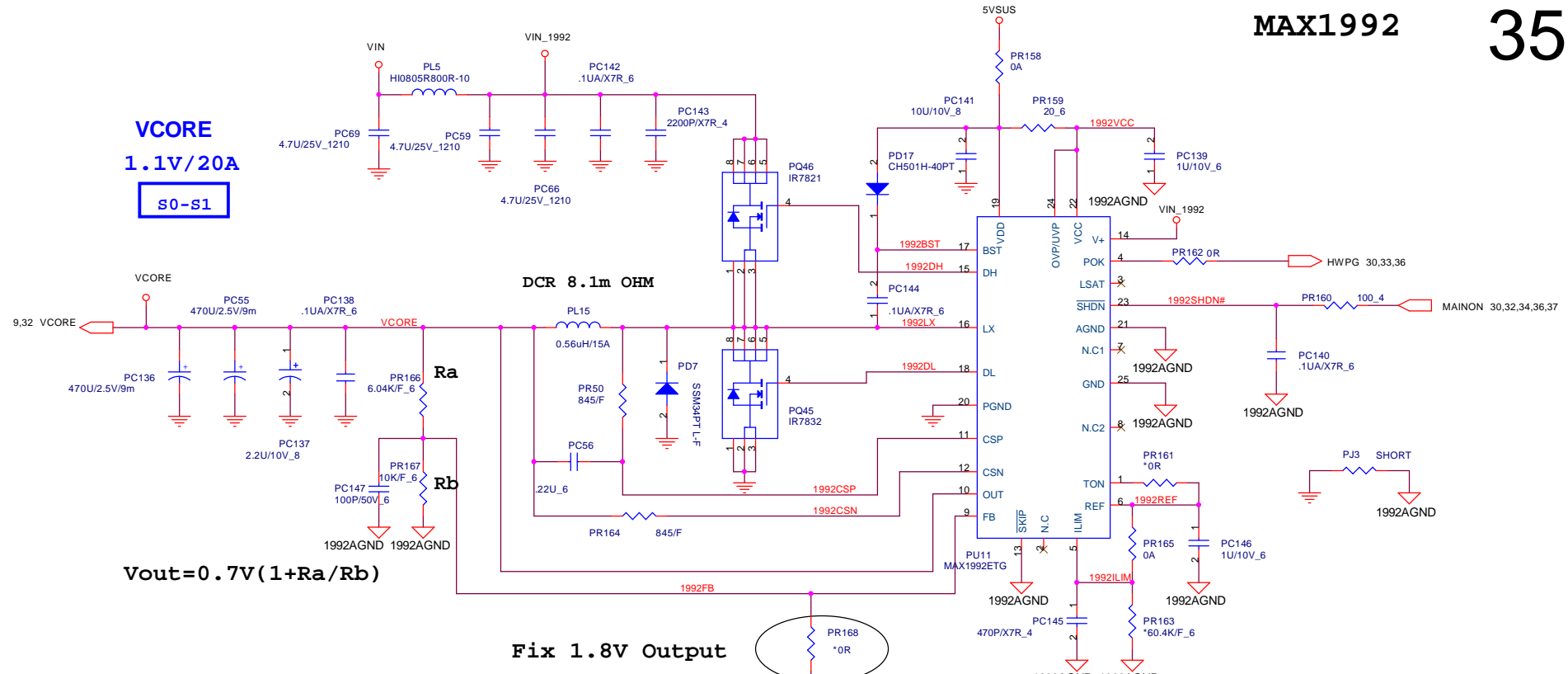



|   |                                 |        |
|---|---------------------------------|--------|
|  | PROJECT : AT8                   |        |
|   | Quanta Computer Inc.            |        |
| Size Custom   | Document Number MAX8724A CHARGE | Rev 1A |
| Date: Thursday, December 29, 2005 Sheet 34 of 38                                      |                                 |        |

V<sub>CORE</sub>

1.1V/20A

S0-S1

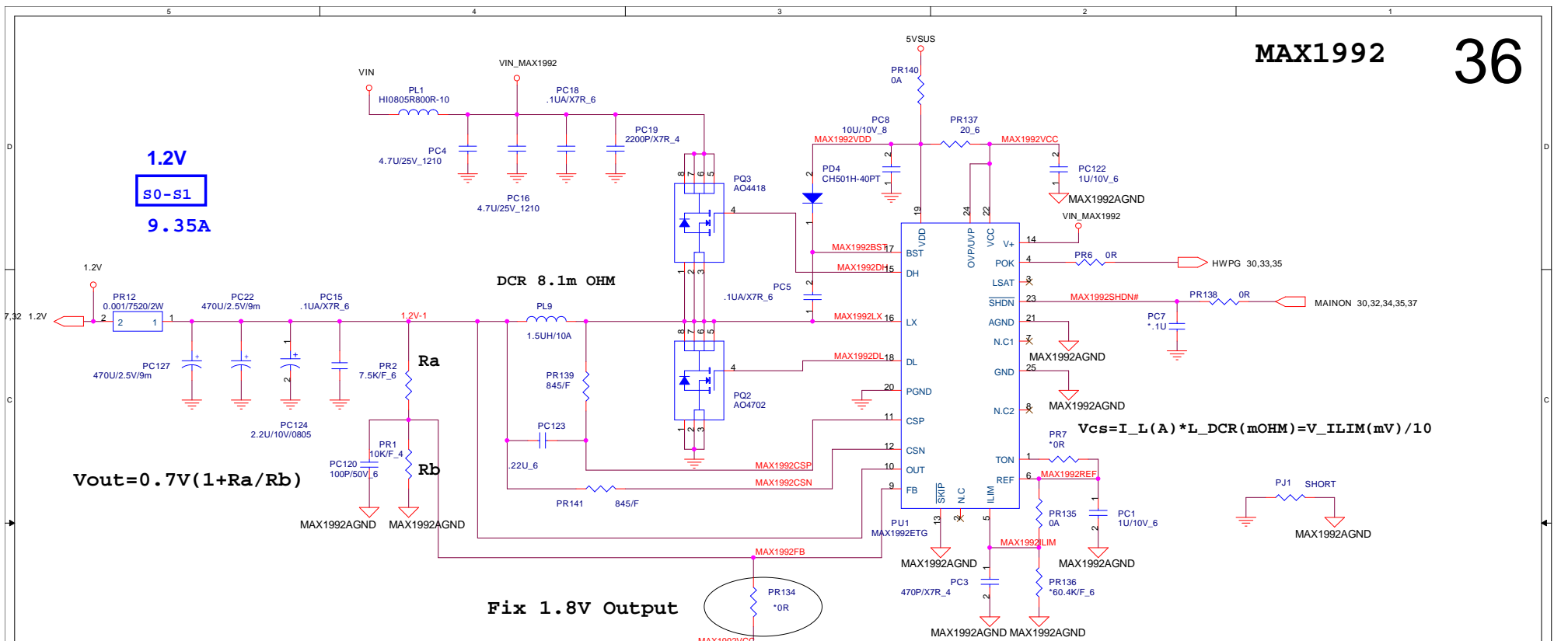


|   |   |                                      |
|---|---|--------------------------------------|
|  | PROJECT : AT8<br>Quanta Computer Inc.           |                                      |
|   | Size Custom<br>Date: Thursday, January 12, 2006 | Document Number<br>MAX1992 1.1V/2.5V |

1.2V

S0-S1

9.35A

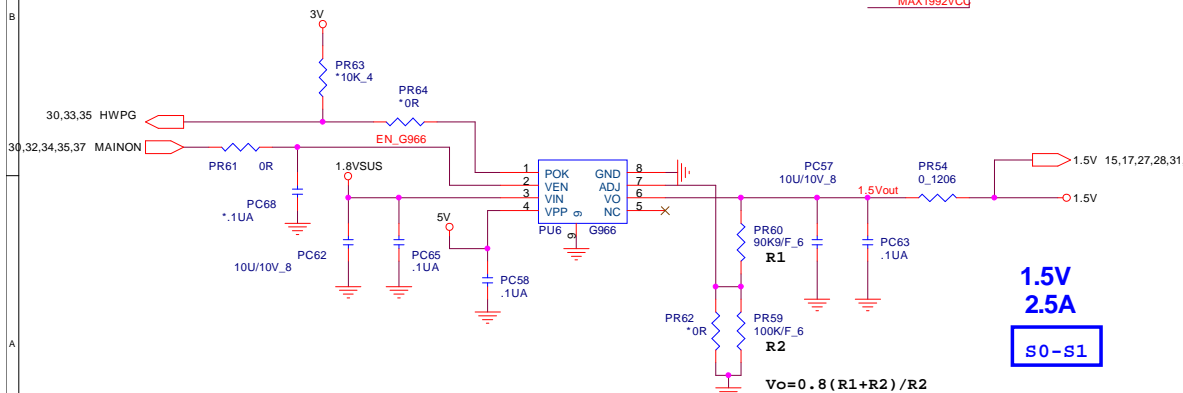


$$V_{out} = 0.7V(1 + R_a/R_b)$$

DCR 8.1m OHM

$$V_{cs} = I_L(A) * L\_DCR(mOHM) = V\_ILIM(mV) / 10$$

Fix 1.8V Output



1.5V  
2.5A

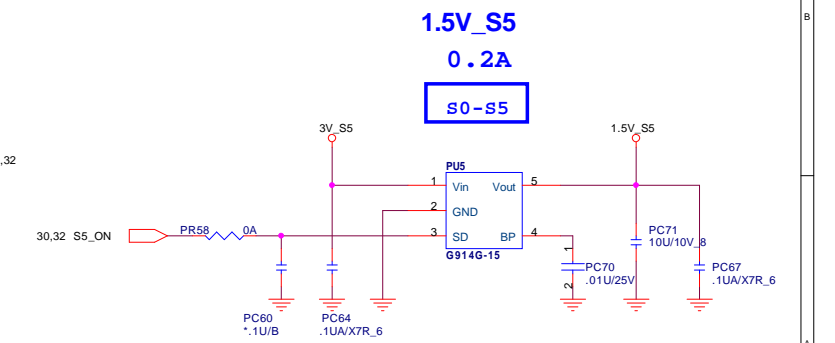
S0-S1

$$V_o = 0.8 (R1 + R2) / R2$$

1.5V\_S5

0.2A

S0-S5



|  |   |                                   |           |
|--|---|-----------------------------------|-----------|
|  | PROJECT : AT8   |                                   | Rev<br>1A |
|  | Quanta Computer Inc.  |                                   |           |
|  | Size Custom<br>Document Number<br>MAX1992 1.5V_S5/1.5V/1.2V | Date: Thursday, December 29, 2005 |           |

**1.8VSUS  
9.1A**  
S0-S3

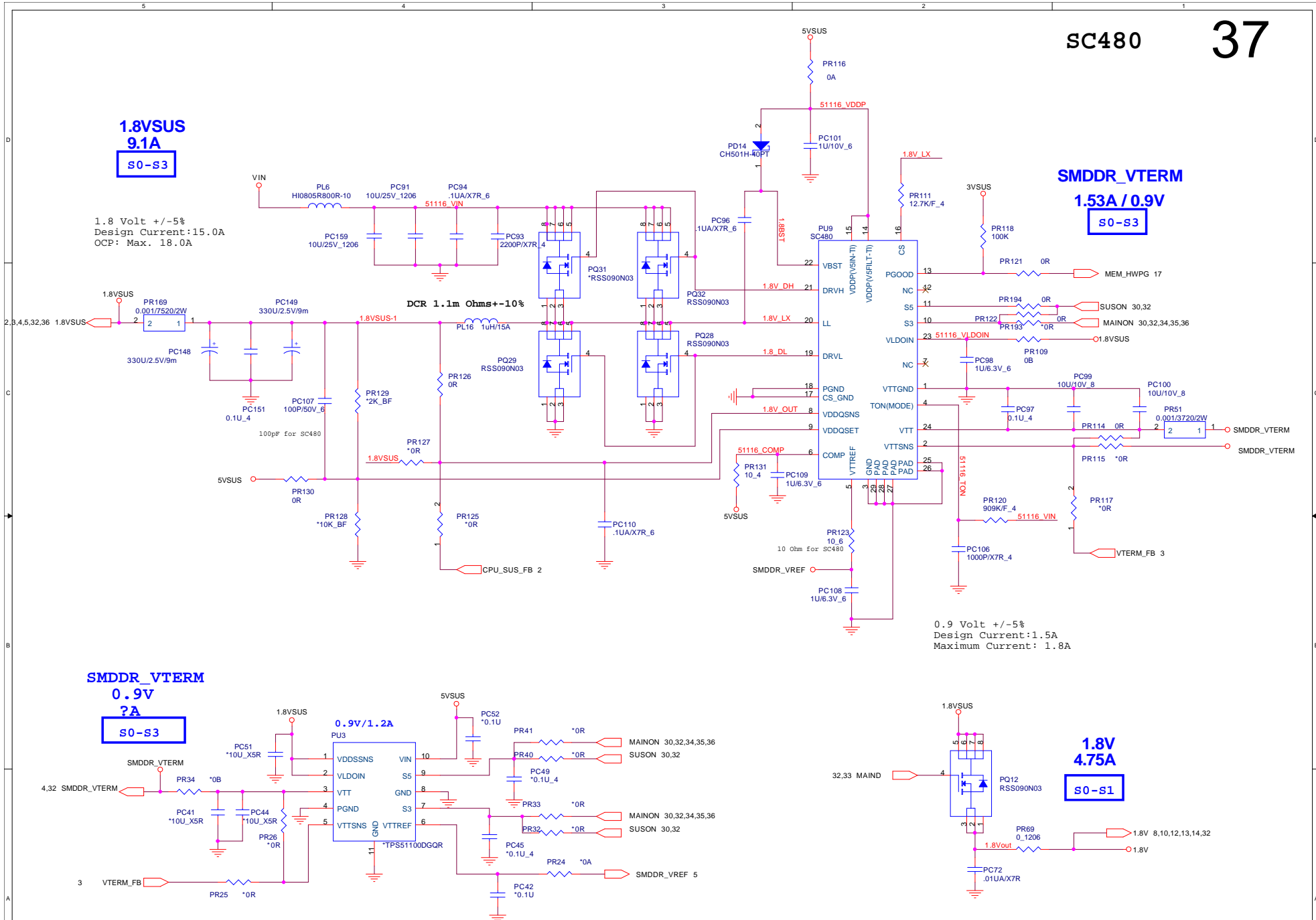
1.8 Volt +/-5%  
Design Current:15.0A  
OCP: Max. 18.0A


**SMDDR\_VTERM  
1.53A / 0.9V**  
S0-S3

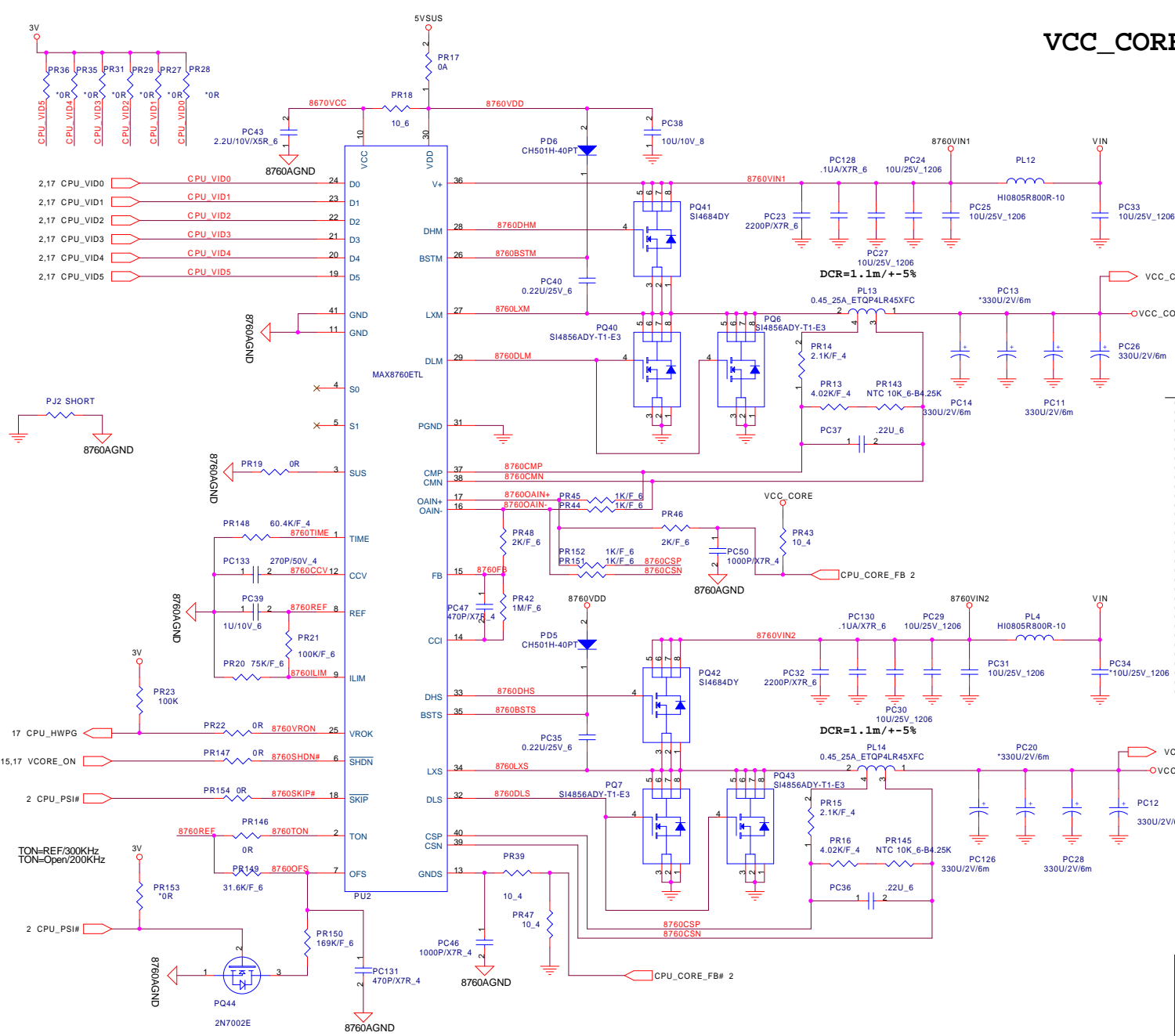
0.9 Volt +/-5%  
Design Current:1.5A  
Maximum Current: 1.8A

**SMDDR\_VTERM  
0.9V  
?A**  
S0-S3

**1.8V  
4.75A**  
S0-S1




|   |  |   |
|---|--|---|
|  | PROJECT : AT8<br>Quanta Computer Inc.            |   |
|   | Size Custom<br>Date: Thursday, December 29, 2005 | Document Number<br>SC480 1.8VSUS/1.8V/SMDDR |



OCP=?A  
VCC\_CORE  
35A / 1.05V

| D5 | D4 | D3 | D2 | D1 | D0 | Output  | D5 | D4 | D3 | D2 | D1 | D0 | Output  |
|----|----|----|----|----|----|---------|----|----|----|----|----|----|---------|
| 0  | 0  | 0  | 0  | 0  | 0  | 1.5500V | 1  | 0  | 0  | 0  | 0  | 0  | 0.7625V |
| 0  | 0  | 0  | 0  | 0  | 1  | 1.5250V | 1  | 0  | 0  | 0  | 0  | 1  | 0.7500V |
| 0  | 0  | 0  | 0  | 1  | 0  | 1.5000V | 1  | 0  | 0  | 0  | 1  | 0  | 0.7375V |
| 0  | 0  | 0  | 0  | 1  | 1  | 1.4750V | 1  | 0  | 0  | 0  | 1  | 1  | 0.7250V |
| 0  | 0  | 0  | 1  | 0  | 0  | 1.4500V | 1  | 0  | 1  | 0  | 0  | 0  | 0.7125V |
| 0  | 0  | 0  | 1  | 0  | 1  | 1.4250V | 1  | 0  | 1  | 0  | 1  | 0  | 0.7000V |
| 0  | 0  | 0  | 1  | 1  | 0  | 1.4000V | 1  | 0  | 1  | 0  | 1  | 0  | 0.6875V |
| 0  | 0  | 0  | 1  | 1  | 1  | 1.3750V | 1  | 0  | 1  | 1  | 1  | 1  | 0.6750V |
| 0  | 0  | 1  | 0  | 0  | 0  | 1.3500V | 1  | 0  | 1  | 0  | 0  | 0  | 0.6625V |
| 0  | 0  | 1  | 0  | 0  | 1  | 1.3250V | 1  | 0  | 1  | 0  | 0  | 1  | 0.6500V |
| 0  | 0  | 1  | 0  | 1  | 0  | 1.3000V | 1  | 0  | 1  | 0  | 1  | 0  | 0.6375V |
| 0  | 0  | 1  | 0  | 1  | 1  | 1.2750V | 1  | 0  | 1  | 0  | 1  | 1  | 0.6250V |
| 0  | 0  | 1  | 1  | 0  | 0  | 1.2500V | 1  | 0  | 1  | 1  | 0  | 0  | 0.6125V |
| 0  | 0  | 1  | 1  | 0  | 1  | 1.2250V | 1  | 0  | 1  | 1  | 0  | 1  | 0.6000V |
| 0  | 0  | 1  | 1  | 1  | 0  | 1.2000V | 1  | 0  | 1  | 1  | 1  | 0  | 0.5875V |
| 0  | 0  | 1  | 1  | 1  | 1  | 1.1750V | 1  | 0  | 1  | 1  | 1  | 1  | 0.5750V |
| 0  | 1  | 0  | 0  | 0  | 0  | 1.1500V | 1  | 1  | 0  | 0  | 0  | 0  | 0.5625V |
| 0  | 1  | 0  | 0  | 0  | 1  | 1.1250V | 1  | 1  | 0  | 0  | 0  | 1  | 0.5500V |
| 0  | 1  | 0  | 0  | 1  | 0  | 1.1000V | 1  | 1  | 0  | 0  | 1  | 0  | 0.5375V |
| 0  | 1  | 0  | 0  | 1  | 1  | 1.0750V | 1  | 1  | 0  | 0  | 1  | 1  | 0.5250V |
| 0  | 1  | 0  | 1  | 0  | 0  | 1.0500V | 1  | 1  | 0  | 1  | 0  | 0  | 0.5125V |
| 0  | 1  | 0  | 1  | 0  | 1  | 1.0250V | 1  | 1  | 0  | 1  | 0  | 1  | 0.5000V |
| 0  | 1  | 0  | 1  | 1  | 0  | 1.0000V | 1  | 1  | 0  | 1  | 1  | 0  | 0.4875V |
| 0  | 1  | 0  | 1  | 1  | 1  | 0.9750V | 1  | 1  | 0  | 1  | 1  | 1  | 0.4750V |
| 0  | 1  | 1  | 0  | 0  | 0  | 0.9500V | 1  | 1  | 1  | 0  | 0  | 0  | 0.4625V |
| 0  | 1  | 1  | 0  | 0  | 1  | 0.9250V | 1  | 1  | 1  | 0  | 0  | 1  | 0.4500V |
| 0  | 1  | 1  | 0  | 1  | 0  | 0.9000V | 1  | 1  | 1  | 0  | 1  | 0  | 0.4375V |
| 0  | 1  | 1  | 0  | 1  | 1  | 0.8750V | 1  | 1  | 1  | 0  | 1  | 1  | 0.4250V |
| 0  | 1  | 1  | 1  | 0  | 0  | 0.8500V | 1  | 1  | 1  | 1  | 0  | 0  | 0.4125V |
| 0  | 1  | 1  | 1  | 0  | 1  | 0.8250V | 1  | 1  | 1  | 1  | 0  | 1  | 0.4000V |
| 0  | 1  | 1  | 1  | 1  | 0  | 0.8000V | 1  | 1  | 1  | 1  | 1  | 0  | 0.3875V |
| 0  | 1  | 1  | 1  | 1  | 1  | 0.7750V | 1  | 1  | 1  | 1  | 1  | 1  | 0.3750V |



**PROJECT : AT8**  
Quanta Computer Inc.

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