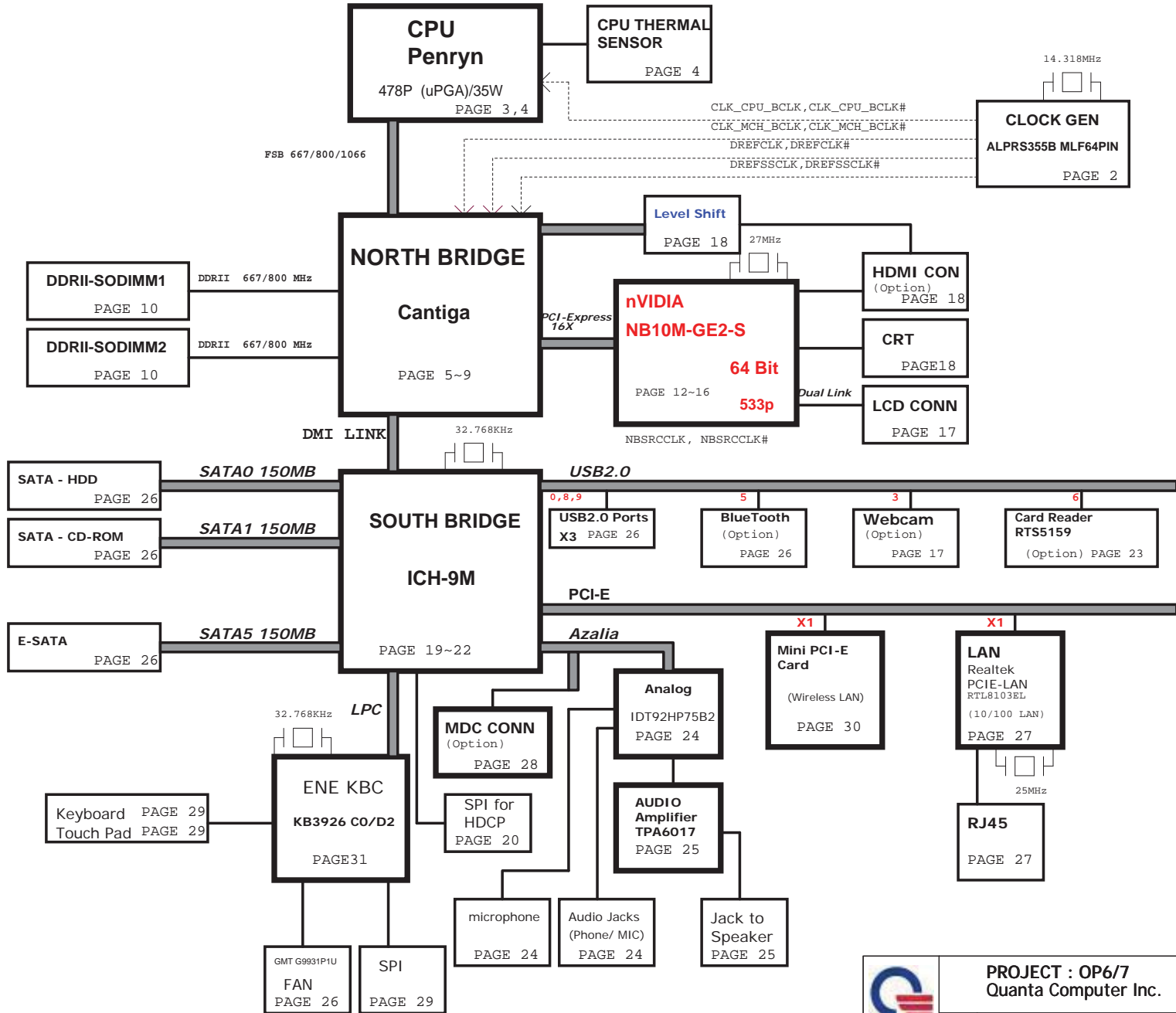
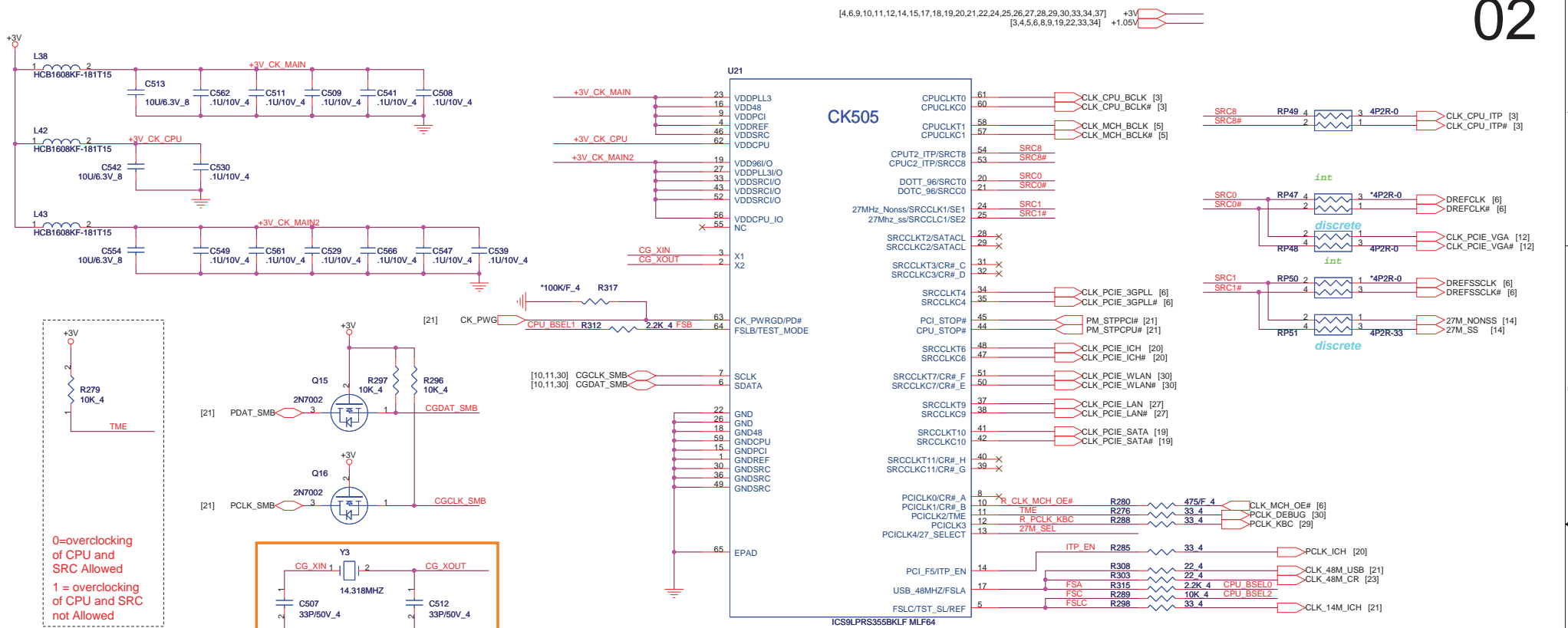


# Tango/Ballet BLOCK DIAGRAM

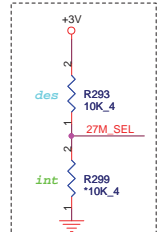
- LAYER 1 : TOP
- LAYER 2 : SGND
- LAYER 3 : IN1
- LAYER 4 : IN2
- LAYER 5 : VCC
- LAYER 6 : BOT

- SYSTEM CHARGER(ISL6251AHAZ-T)  
PAGE 31
- SYSTEM POWER ISL6237IRZ-T  
PAGE 32
- DDR II SMDDR\_VTERM  
1.8V/1.8VSUS(TPS51116REGR)  
PAGE 36
- VCCP +1.5V AND GMCH  
1.05V(RT8204)  
PAGE 33
- CPU CORE ISL6266A  
PAGE 34

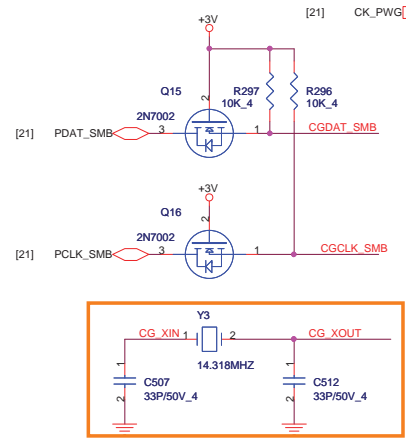
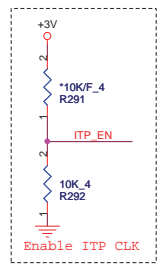




0=overclocking of CPU and SRC Allowed  
 SRC Allowed  
 1 = overclocking of CPU and SRC not Allowed



0=UMA  
 1 = External VGA

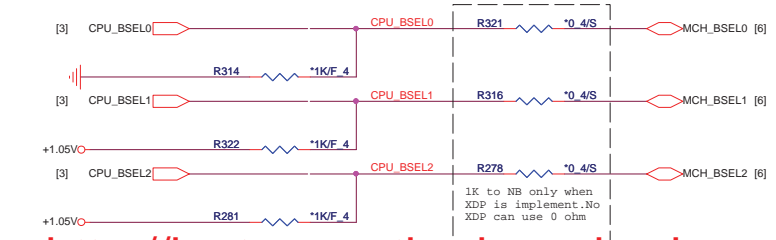


DB:Change from 27P to 33P(TXC suggestion)

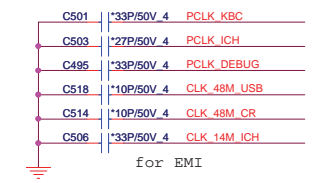
| 27M_SEL PIN13    | PIN20  | PIN21  | PIN24          | PIN25          |
|------------------|--------|--------|----------------|----------------|
| 0=UMA            | DOT96T | DOT96C | SRCT1/LCDT_100 | SRCT1/LCDT_100 |
| 1 = External VGA | SRCT0  | SRCC0  | 27Mout-NSS     | 27Mout-SS      |

**CK505 QFN64**  
 Siligo SLG8SP513VTR AL8SP513000  
 Realtek RTM875N-606-VD-GR AL000875000

**CPU Clock select**

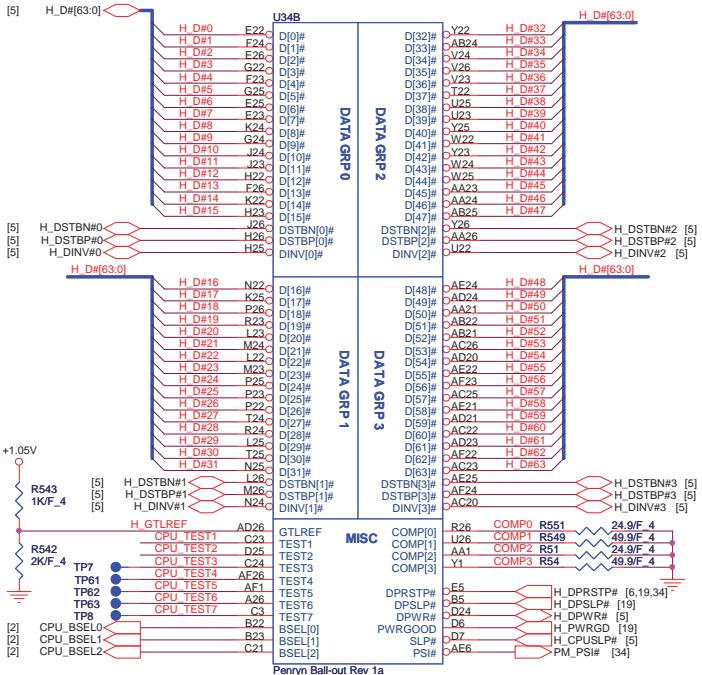
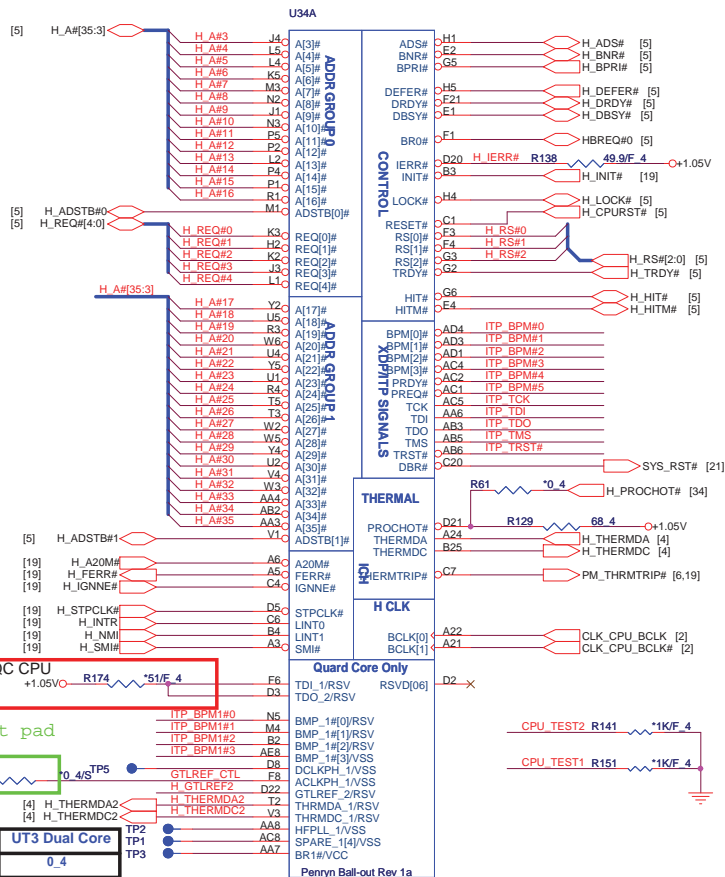


| FSC | FSB | FSA | CPU  | SRC | PCI |
|-----|-----|-----|------|-----|-----|
| 1   | 0   | 1   | 100  | 100 | 33  |
| 0   | 0   | 1   | 133  | 100 | 33  |
| 0   | 1   | 1   | 166  | 100 | 33  |
| 0   | 1   | 0   | 200  | 100 | 33  |
| 0   | 0   | 0   | 266  | 100 | 33  |
| 1   | 0   | 0   | 333  | 100 | 33  |
| 1   | 1   | 0   | 400  | 100 | 33  |
| 1   | 1   | 1   | RSVD | 100 | 33  |

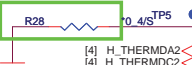


**PROJECT : OP6/7**  
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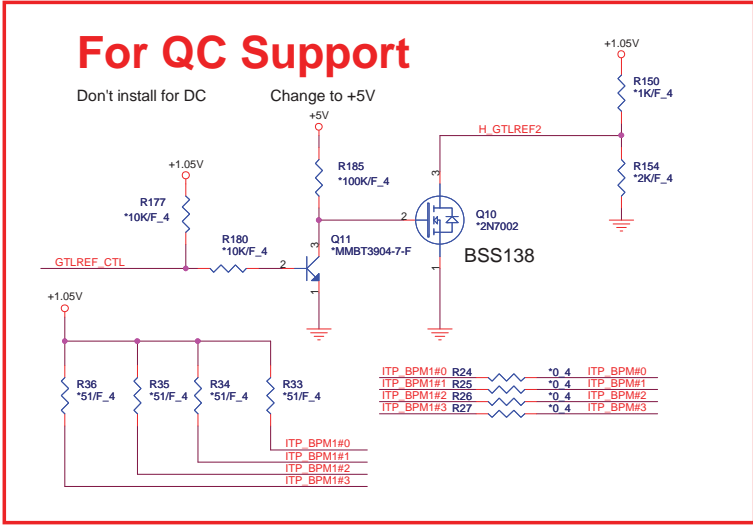
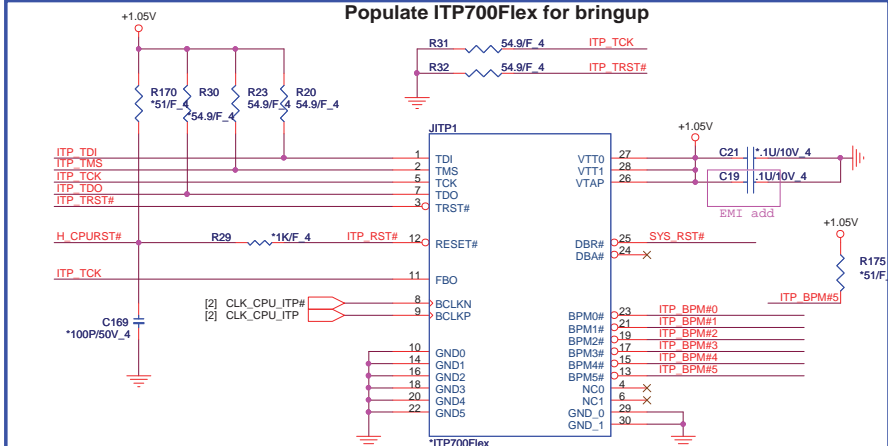
|                                 |                 |               |
|---------------------------------|-----------------|---------------|
| Size Custom                     | Document Number | Rev SI        |
| Date: Tuesday, January 20, 2009 | Clock Generator | Sheet 2 of 37 |



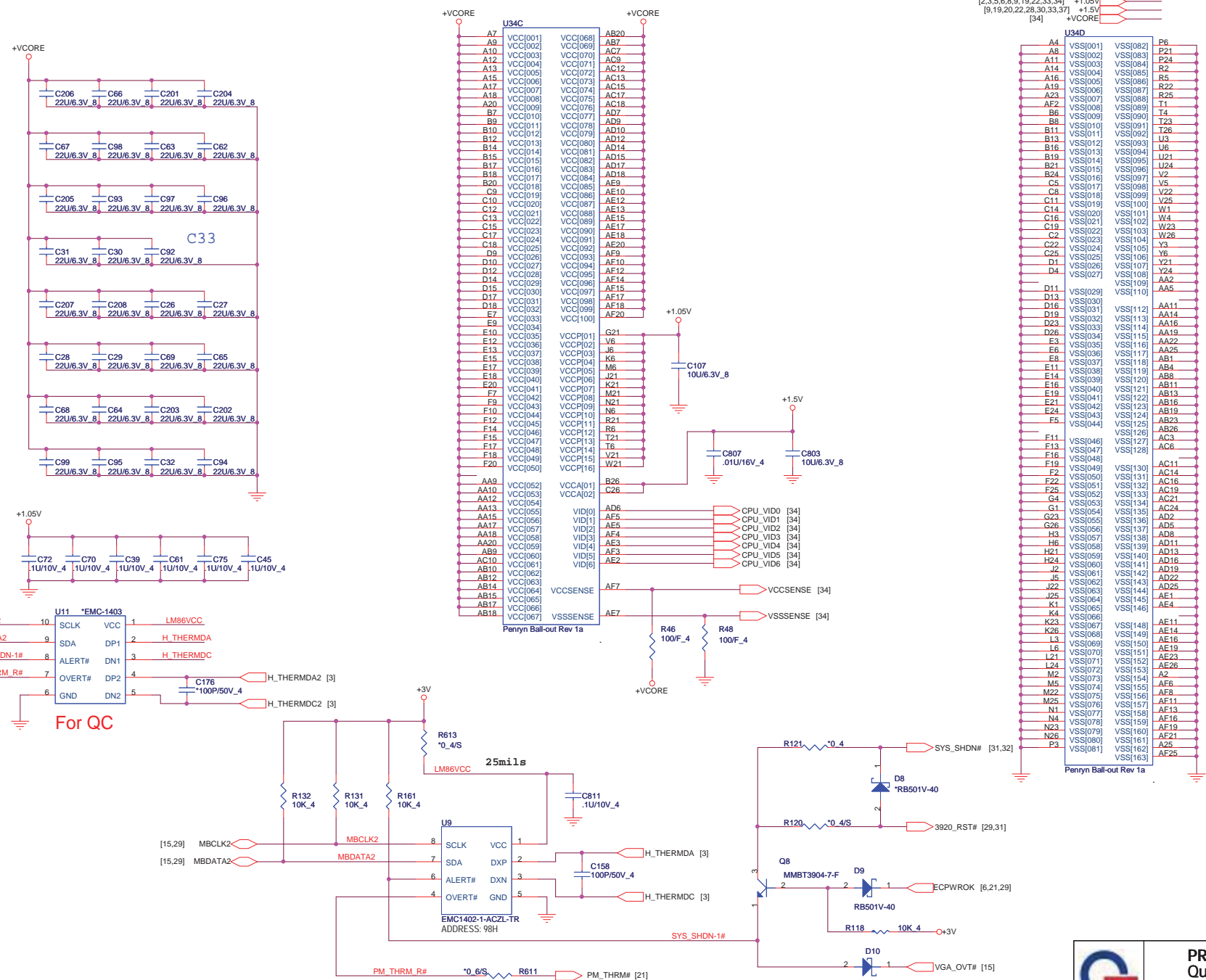
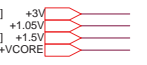
PV Stage: Change to short pad



| MODEL | UT5 Quad Core | UT3 Dual Core |
|-------|---------------|---------------|
| R28   | *0_4          | 0_4           |



[2,6,9,10,11,12,14,15,17,18,19,20,21,22,24,25,26,27,28,29,30,33,34,37]  
[2,3,5,6,8,9,19,22,33,34]  
[9,19,20,22,28,30,33,37]  
[34]

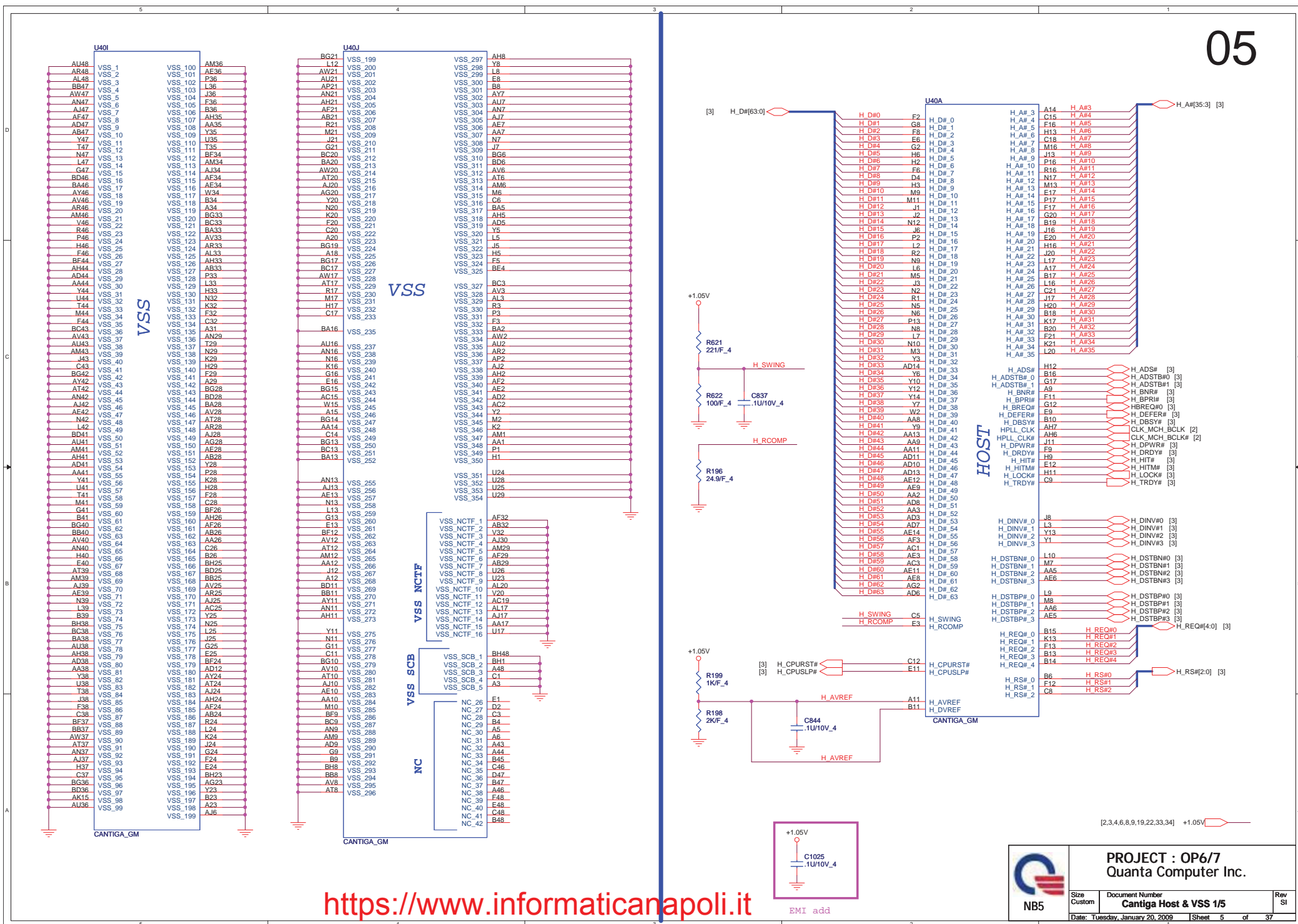


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**PROJECT : OP6/7**  
**Quanta Computer Inc.**

**NB5**

|                                 |   |               |
|---------------------------------|---|---------------|
| Size<br>Custom                  | Document Number<br><b>Penryn &amp; TH Monitor 2/2</b> | Rev<br>S1     |
| Date: Tuesday, January 20, 2009 |   | Sheet 4 of 37 |



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**PROJECT : OP6/7**  
**Quanta Computer Inc.**

**NB5**

|                                 |                                   |               |
|---------------------------------|-----------------------------------|---------------|
| Size Custom                     | Document Number                   | Rev           |
|                                 | <b>Cantiga Host &amp; VSS 1/5</b> | S1            |
| Date: Tuesday, January 20, 2009 |                                   | Sheet 5 of 37 |

MCH\_CFG\_5 DMIx2 selection

- Low: DMIx2
- High: DMIx4 (Default)
- MCH\_CFG\_16 FSB Dynamic ODT

- Low: Dynamic ODT disabled
- High: Dynamic ODT enabled (Default)
- MCH\_CFG\_9 PCI Express Graphics Lane

Low: Reverse Lane

- High: Normal operation(Default)
- MCH\_CFG\_19 DMI Lane Reversal

Low: Normal (Default)

- High: Lane Reserved
- MCH\_CFG\_5 ITPM Host Interface

Low: ITPM Host Interface enabled

- High: ITPM Host Interface disabled (Default)
- MCH\_CFG\_7 Intel (R) Management Engine Crypto

Low: Intel (R) Management Engine Crypto

- High: Intel (R) Management Engine Crypto
- High: Intel (R) Management Engine Crypto
- High: Intel (R) Management Engine Crypto
- High: Intel (R) Management Engine Crypto

MCH\_CFG\_10 PCIe Lookback Enable

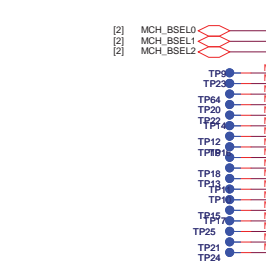
- Low: Enabled
- High: Disabled (Default)
- MCH\_CFG\_12/13 XOR/ALLZ/CLOCK Un-gating

MCH\_CFG\_13 MCH\_CFG\_12 Configuration

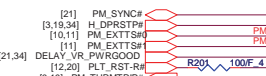
|   |   |                            |
|---|---|----------------------------|
| 0 | 0 | Reserved                   |
| 1 | 0 | XOR Mode enabled           |
| 0 | 1 | All-Z Mode enabled         |
| 1 | 1 | Normal operation (Default) |

MCH\_CFG\_13 MCH\_CFG\_12 Configuration

|   |   |                            |
|---|---|----------------------------|
| 0 | 0 | Reserved                   |
| 1 | 0 | XOR Mode enabled           |
| 0 | 1 | All-Z Mode enabled         |
| 1 | 1 | Normal operation (Default) |



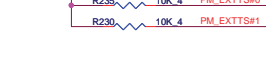
MCH\_CFG\_13 MCH\_CFG\_12 Configuration



MCH\_CFG\_13 MCH\_CFG\_12 Configuration



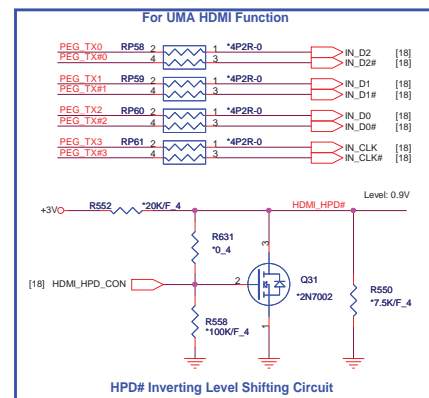
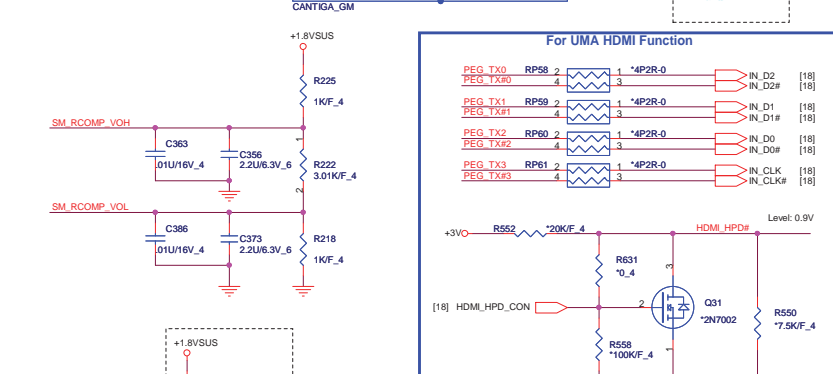
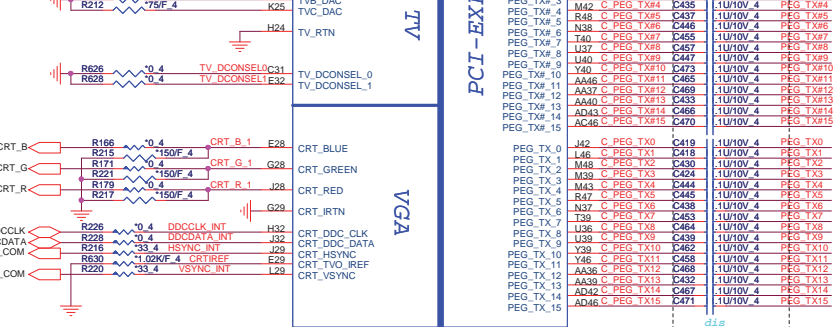
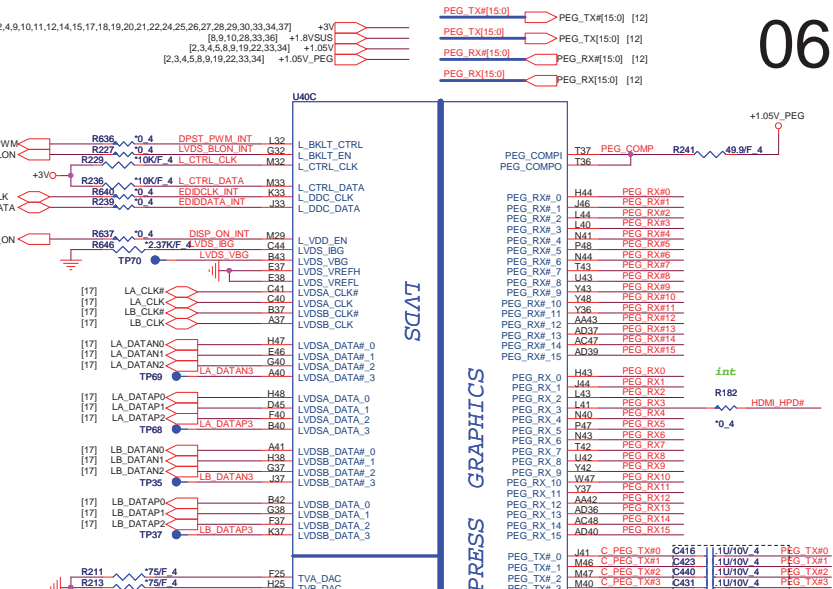
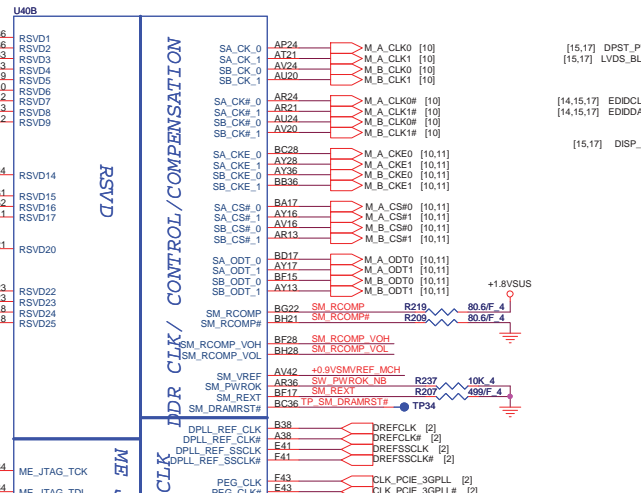
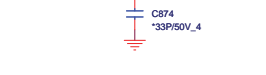
MCH\_CFG\_13 MCH\_CFG\_12 Configuration



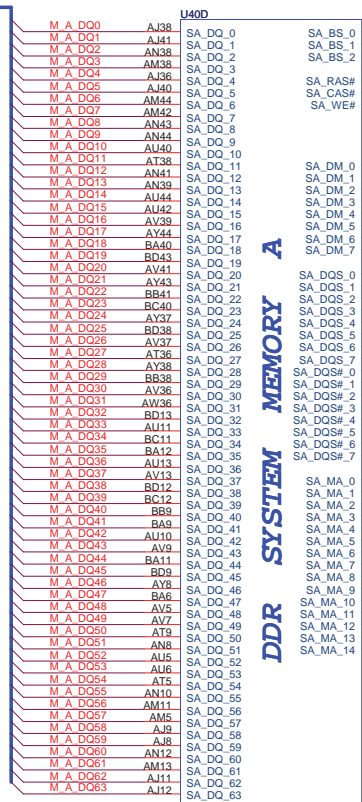
MCH\_CFG\_13 MCH\_CFG\_12 Configuration



MCH\_CFG\_13 MCH\_CFG\_12 Configuration



[10] M\_A\_DQ[63:0]

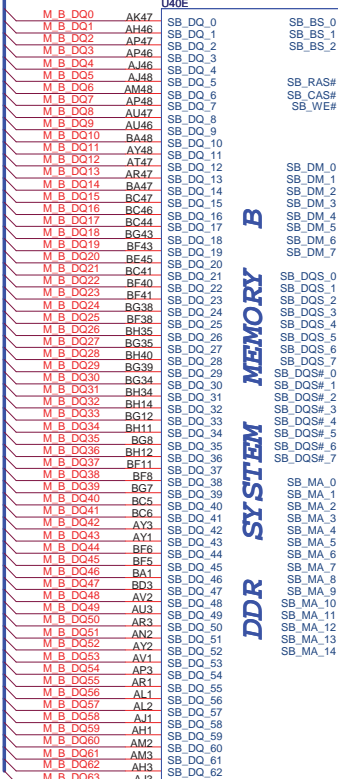


U40D

DDR SYSTEM MEMORY A

CANTIGA\_GM

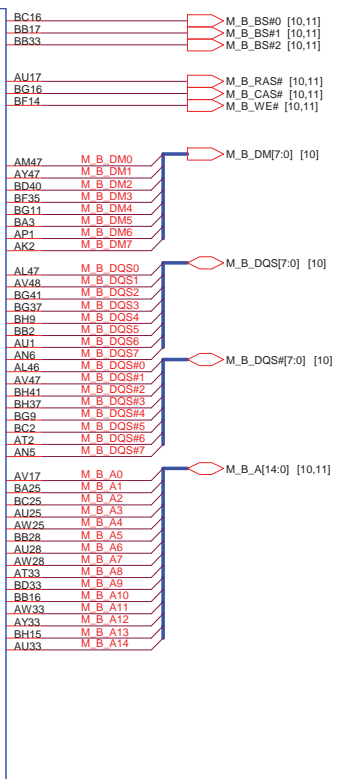
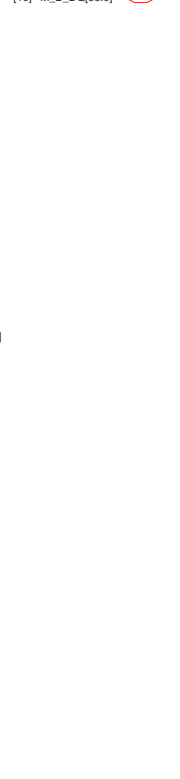
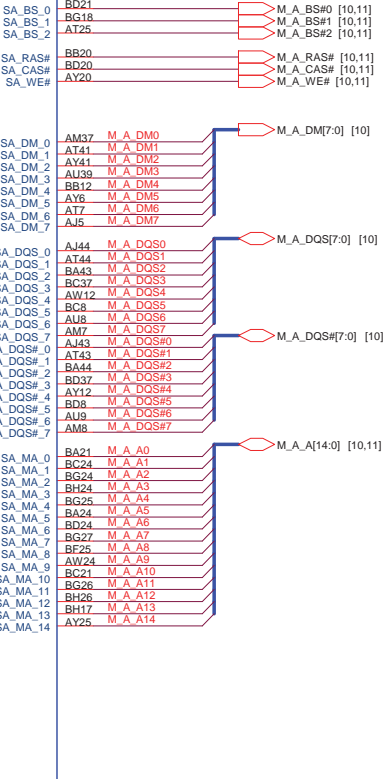
[10] M\_B\_DQ[63:0]

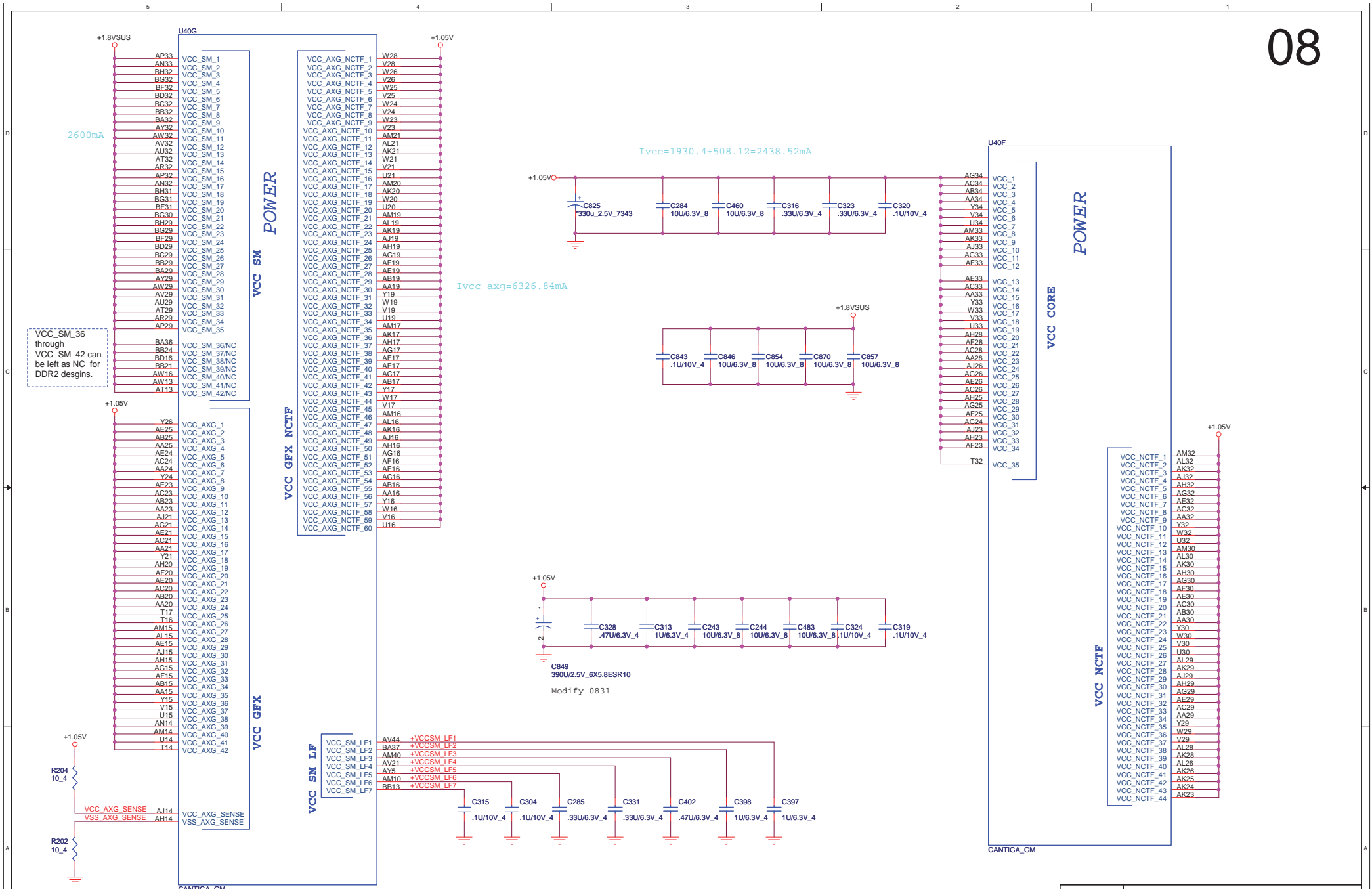


U40E

DDR SYSTEM MEMORY B

CANTIGA\_GM



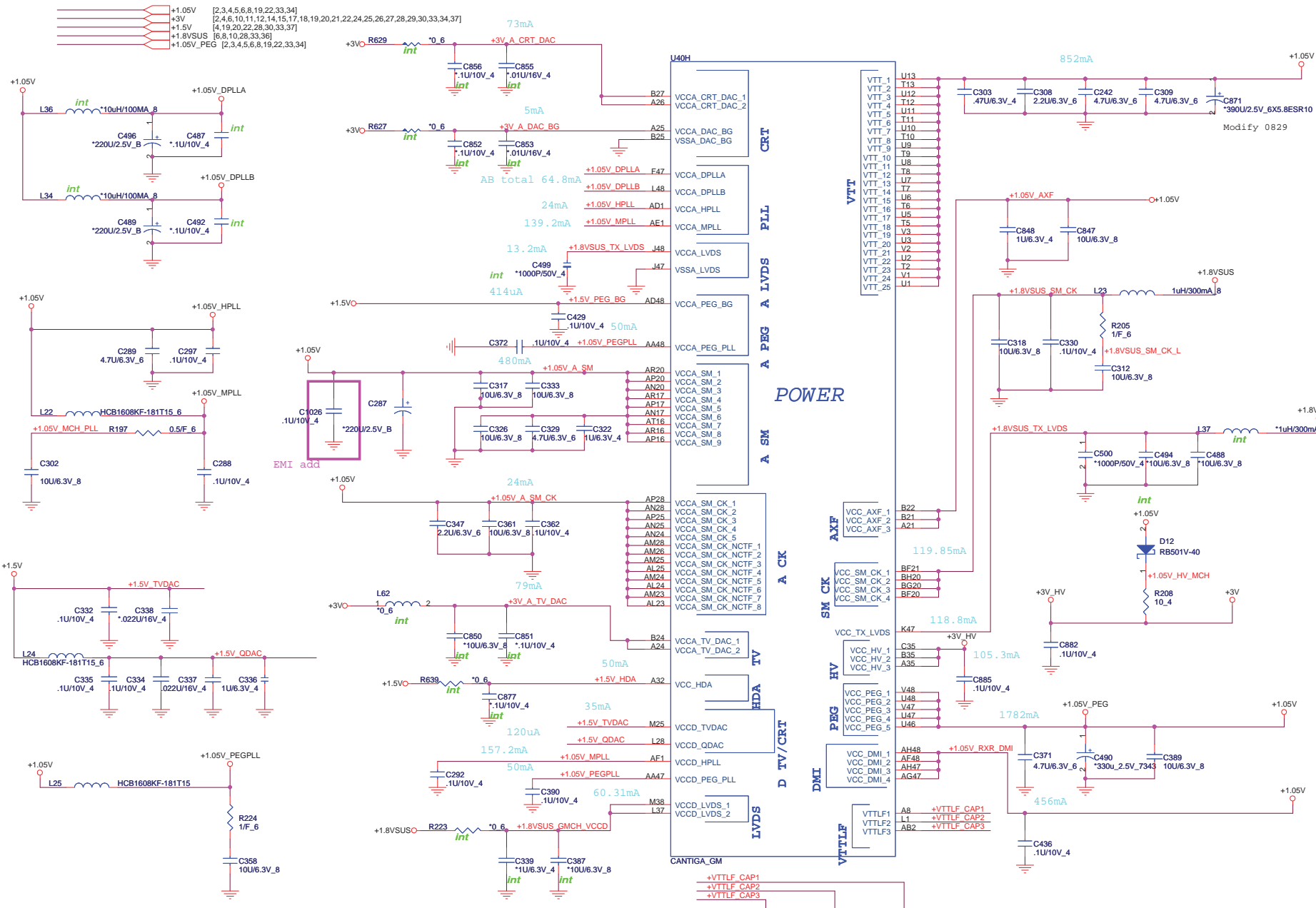


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|  |   |   |               |
|--|---|---|---------------|
|  | PROJECT : OP6/7<br>Quanta Computer Inc. |   |               |
|  | Size Custom                             | Document Number<br><b>Cantiga Vcc 4/5</b> | Rev S1        |
|  | Date: Tuesday, January 20, 2009         |   | Sheet 8 of 37 |




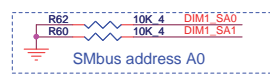
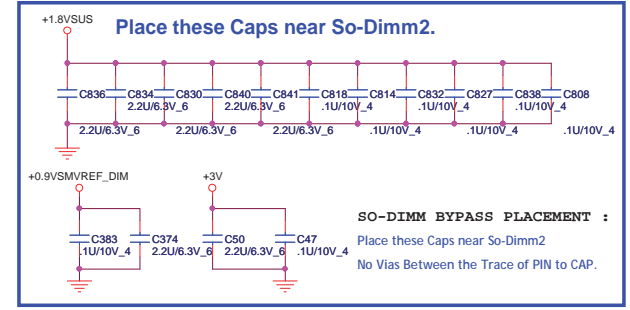
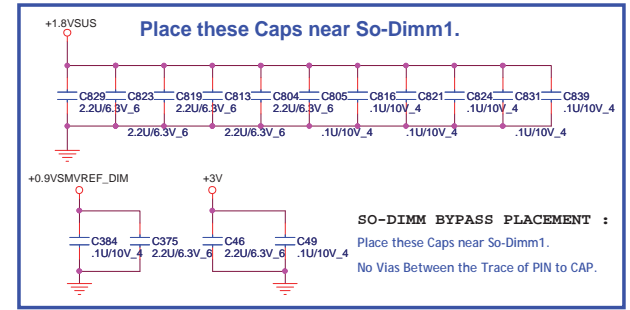
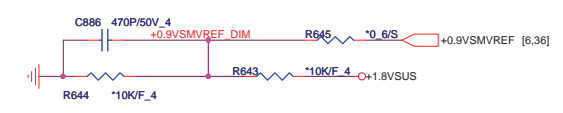
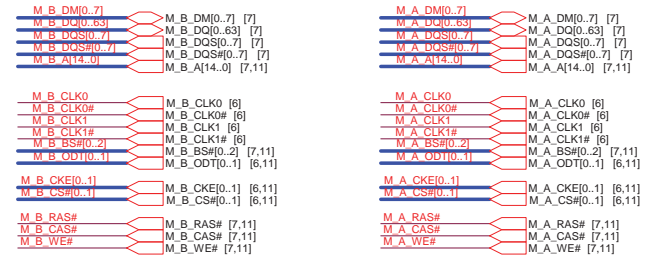
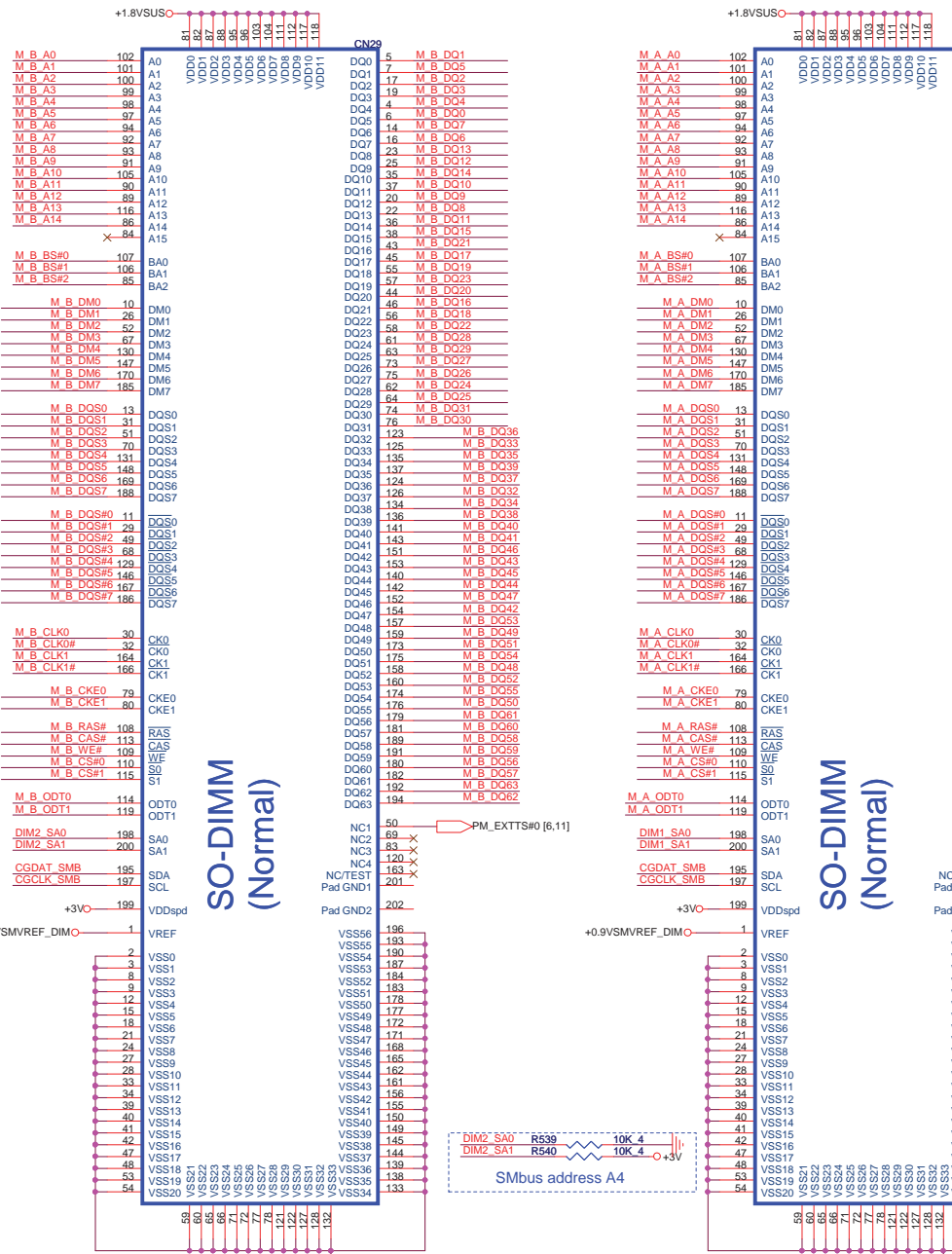




Modify to U40#AF1 power to +1.05V\_MPLL as CRB change

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|   |                        |   |           |
|---|------------------------|---|-----------|
|  | <b>PROJECT : OP6/7</b> |   | Rev<br>SI |
|   | Quanta Computer Inc.   |   |           |
|   | Size Custom            | Document Number<br><b>Cantiga Power 5/5</b> |           |
| Date: Tuesday, January 20, 2009   |                        | Sheet 9 of 37                               |           |



SO-DIMM (Normal)

SO-DIMM (Normal)

H 9.2

H 5.2

[6,8,9,28,33,36] +1.8VSUS [2,4,6,9,11,12,14,15,17,18,19,20,21,22,24,26,27,28,29,30,33,34,37]

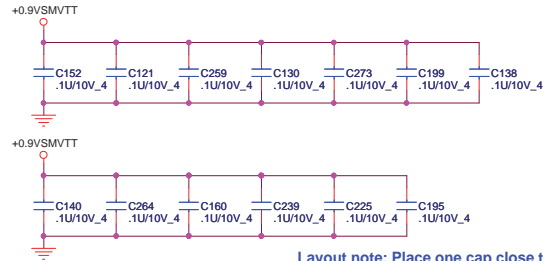
**PROJECT : OP6/7**  
**Quanta Computer Inc.**

Size Custom Document Number **DDR2 DIMM** Rev S1

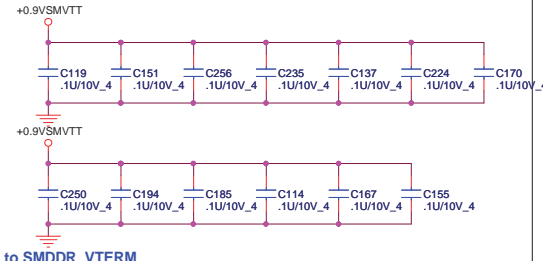
Date: Tuesday, January 20, 2009 Sheet 10 of 37

# DDRII DUAL CHANNEL A,B.

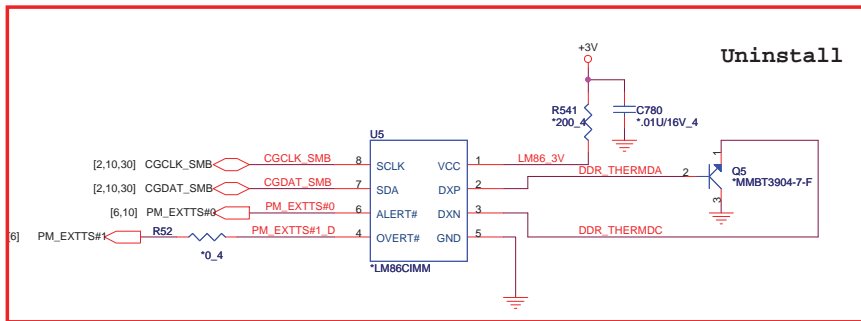
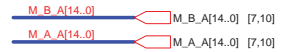
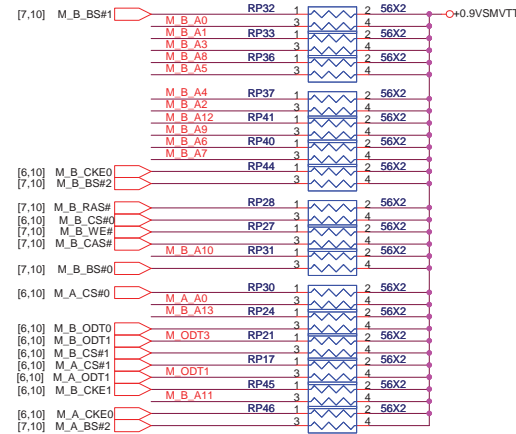
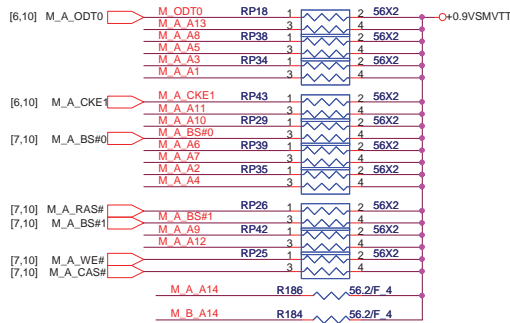
## DDRII A CHANNEL



## DDRII B CHANNEL



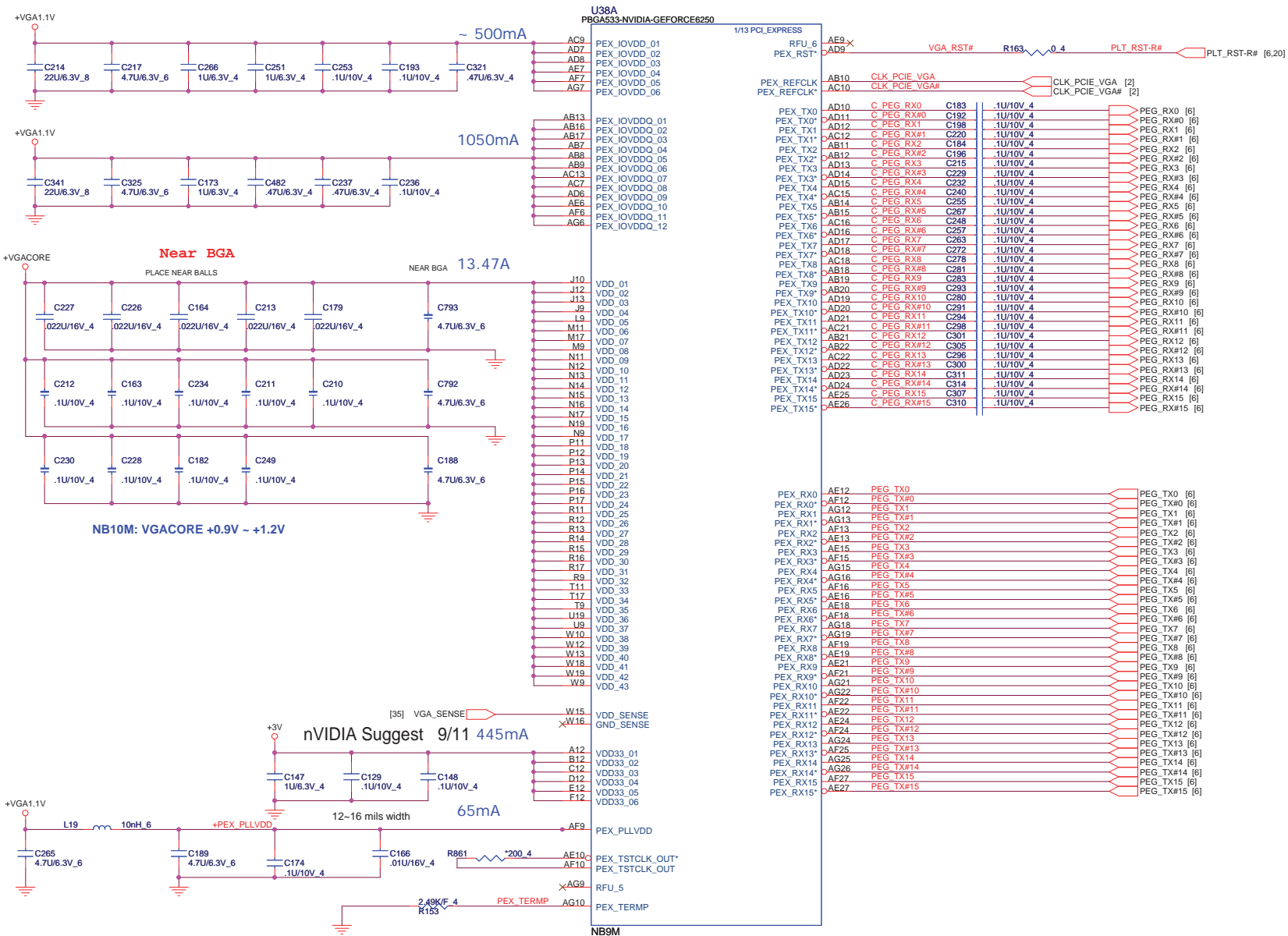
Layout note: Place one cap close to every 2 pullup resistors terminated to SMDR\_VTERM



+0.9VSMVTT [36]  
+3V [2,4,6,9,10,12,14,15,17,18,19,20,21,22,24,25,26,27,28,29,30,33,34,37]

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|  |   |                                     |                |
|--|---|-------------------------------------|----------------|
|  | PROJECT : OP6/7<br>Quanta Computer Inc. |                                     | Rev<br>SI      |
|  | Size<br>Custom                          | Document Number<br>DDR2 termination |                |
|  | Date: Tuesday, January 20, 2009         |                                     | Sheet 11 of 37 |



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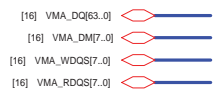
**PROJECT : OP6/7**  
**Quanta Computer Inc.**

**NB5**

|                                 |                             |                |
|---------------------------------|-----------------------------|----------------|
| Size Custom                     | Document Number             | Rev DB         |
|                                 | <b>NV10M (PCIe I/F) 1/5</b> |                |
| Date: Tuesday, January 20, 2009 |                             | Sheet 12 of 37 |

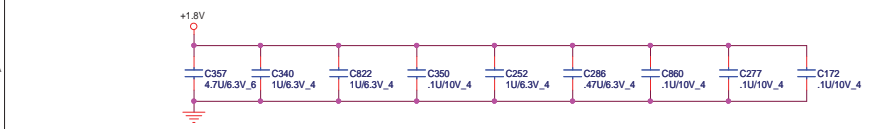
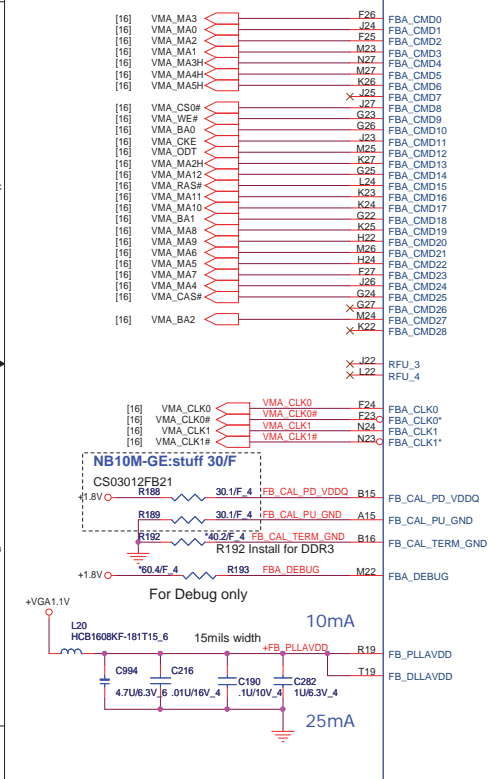
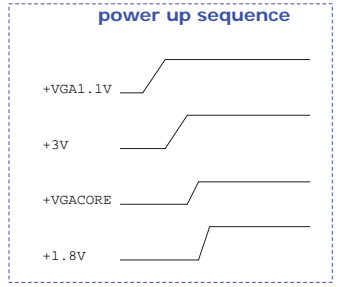
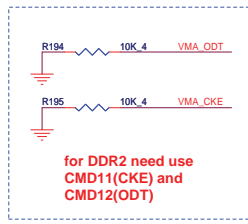
U38B PBGA533-NVIDIA-GEFORCE6250

|      |           |         |          |          |
|------|-----------|---------|----------|----------|
| A13  | FBVDDQ_01 | D21     | VMA_D00  |          |
| B13  | FBVDDQ_02 | C22     | VMA_D01  |          |
| C13  | FBVDDQ_03 | B22     | VMA_D02  |          |
| D13  | FBVDDQ_04 | A22     | VMA_D03  |          |
| E13  | FBVDDQ_05 | C24     | VMA_D04  |          |
| F13  | FBVDDQ_06 | B25     | VMA_D05  |          |
| G13  | FBVDDQ_07 | A25     | VMA_D06  |          |
| H13  | FBVDDQ_08 | A26     | VMA_D07  |          |
| J13  | FBVDDQ_09 | D22     | VMA_D08  |          |
| K13  | FBVDDQ_10 | E22     | VMA_D09  |          |
| L13  | FBVDDQ_11 | E24     | VMA_D010 |          |
| M13  | FBVDDQ_12 | F18     | VMA_D011 |          |
| N13  | FBVDDQ_13 | F22     | VMA_D012 |          |
| P13  | FBVDDQ_14 | FBA_D11 | D24      | VMA_D013 |
| R13  | FBVDDQ_15 | FBA_D12 | D25      | VMA_D014 |
| S13  | FBVDDQ_16 | FBA_D13 | D27      | VMA_D015 |
| T13  | FBVDDQ_17 | FBA_D14 | C27      | VMA_D016 |
| V13  | FBVDDQ_18 | FBA_D15 | B27      | VMA_D017 |
| W13  | FBVDDQ_19 | FBA_D16 | D16      | VMA_D018 |
| X13  | FBVDDQ_20 | FBA_D17 | E16      | VMA_D019 |
| Y13  | FBVDDQ_21 | FBA_D18 | D17      | VMA_D020 |
| Z13  | FBVDDQ_22 | FBA_D19 | D20      | VMA_D021 |
| AA13 | FBVDDQ_23 | FBA_D20 | F20      | VMA_D022 |
| AB13 | FBVDDQ_24 | FBA_D21 | F21      | VMA_D023 |
| AC13 | FBVDDQ_25 | FBA_D22 | F21      | VMA_D024 |
| AD13 | FBVDDQ_26 | FBA_D23 | C16      | VMA_D025 |
| AE13 | FBVDDQ_27 | FBA_D24 | B18      | VMA_D026 |
| AF13 | FBVDDQ_28 | FBA_D25 | C18      | VMA_D027 |
| AG13 | FBVDDQ_29 | FBA_D26 | D18      | VMA_D028 |
| AH13 | FBVDDQ_30 | FBA_D27 | C19      | VMA_D029 |
| AI13 | FBVDDQ_31 | FBA_D28 | B21      | VMA_D030 |
| AJ13 | FBVDDQ_32 | FBA_D29 | A21      | VMA_D031 |
| AK13 | FBVDDQ_33 | FBA_D30 | A22      | VMA_D032 |
| AL13 | FBVDDQ_34 | FBA_D31 | E24      | VMA_D033 |
| AM13 | FBVDDQ_35 | FBA_D32 | R23      | VMA_D034 |
| AN13 | FBVDDQ_36 | FBA_D33 | R24      | VMA_D035 |
| AO13 | FBVDDQ_37 | FBA_D34 | T23      | VMA_D036 |
| AP13 | FBVDDQ_38 | FBA_D35 | U24      | VMA_D037 |
| AQ13 | FBVDDQ_39 | FBA_D36 | V23      | VMA_D038 |
| AR13 | FBVDDQ_40 | FBA_D37 | V24      | VMA_D039 |
| AS13 | FBVDDQ_41 | FBA_D38 | N25      | VMA_D040 |
| AT13 | FBVDDQ_42 | FBA_D39 | N26      | VMA_D041 |
| AU13 | FBVDDQ_43 | FBA_D40 | R25      | VMA_D042 |
| AV13 | FBVDDQ_44 | FBA_D41 | R26      | VMA_D043 |
| AW13 | FBVDDQ_45 | FBA_D42 | T25      | VMA_D044 |
| AX13 | FBVDDQ_46 | FBA_D43 | V26      | VMA_D045 |
| AY13 | FBVDDQ_47 | FBA_D44 | V25      | VMA_D046 |
| AZ13 | FBVDDQ_48 | FBA_D45 | V27      | VMA_D047 |
| BA13 | FBVDDQ_49 | FBA_D46 | V22      | VMA_D048 |
| BB13 | FBVDDQ_50 | FBA_D47 | W22      | VMA_D049 |
| BC13 | FBVDDQ_51 | FBA_D48 | W23      | VMA_D050 |
| BD13 | FBVDDQ_52 | FBA_D49 | W24      | VMA_D051 |
| BE13 | FBVDDQ_53 | FBA_D50 | AA22     | VMA_D052 |
| BF13 | FBVDDQ_54 | FBA_D51 | AB23     | VMA_D053 |
| BG13 | FBVDDQ_55 | FBA_D52 | AB24     | VMA_D054 |
| BH13 | FBVDDQ_56 | FBA_D53 | AC24     | VMA_D055 |
| BI13 | FBVDDQ_57 | FBA_D54 | W25      | VMA_D056 |
| BJ13 | FBVDDQ_58 | FBA_D55 | W26      | VMA_D057 |
| BK13 | FBVDDQ_59 | FBA_D56 | W27      | VMA_D058 |
| BL13 | FBVDDQ_60 | FBA_D57 | AA25     | VMA_D059 |
| BM13 | FBVDDQ_61 | FBA_D58 | AB25     | VMA_D060 |
| BN13 | FBVDDQ_62 | FBA_D59 | AB26     | VMA_D061 |
| BO13 | FBVDDQ_63 | FBA_D60 | AD26     | VMA_D062 |
| BP13 | FBVDDQ_64 | FBA_D61 | AD27     | VMA_D063 |
| BQ13 | FBVDDQ_65 | FBA_D62 |          |          |
| BR13 | FBVDDQ_66 | FBA_D63 |          |          |
| BS13 | FBVDDQ_67 |         |          |          |
| BT13 | FBVDDQ_68 |         |          |          |
| BU13 | FBVDDQ_69 |         |          |          |
| BV13 | FBVDDQ_70 |         |          |          |
| BW13 | FBVDDQ_71 |         |          |          |
| BX13 | FBVDDQ_72 |         |          |          |
| BY13 | FBVDDQ_73 |         |          |          |
| BZ13 | FBVDDQ_74 |         |          |          |
| CA13 | FBVDDQ_75 |         |          |          |
| CB13 | FBVDDQ_76 |         |          |          |
| CC13 | FBVDDQ_77 |         |          |          |
| CD13 | FBVDDQ_78 |         |          |          |
| CE13 | FBVDDQ_79 |         |          |          |
| CF13 | FBVDDQ_80 |         |          |          |



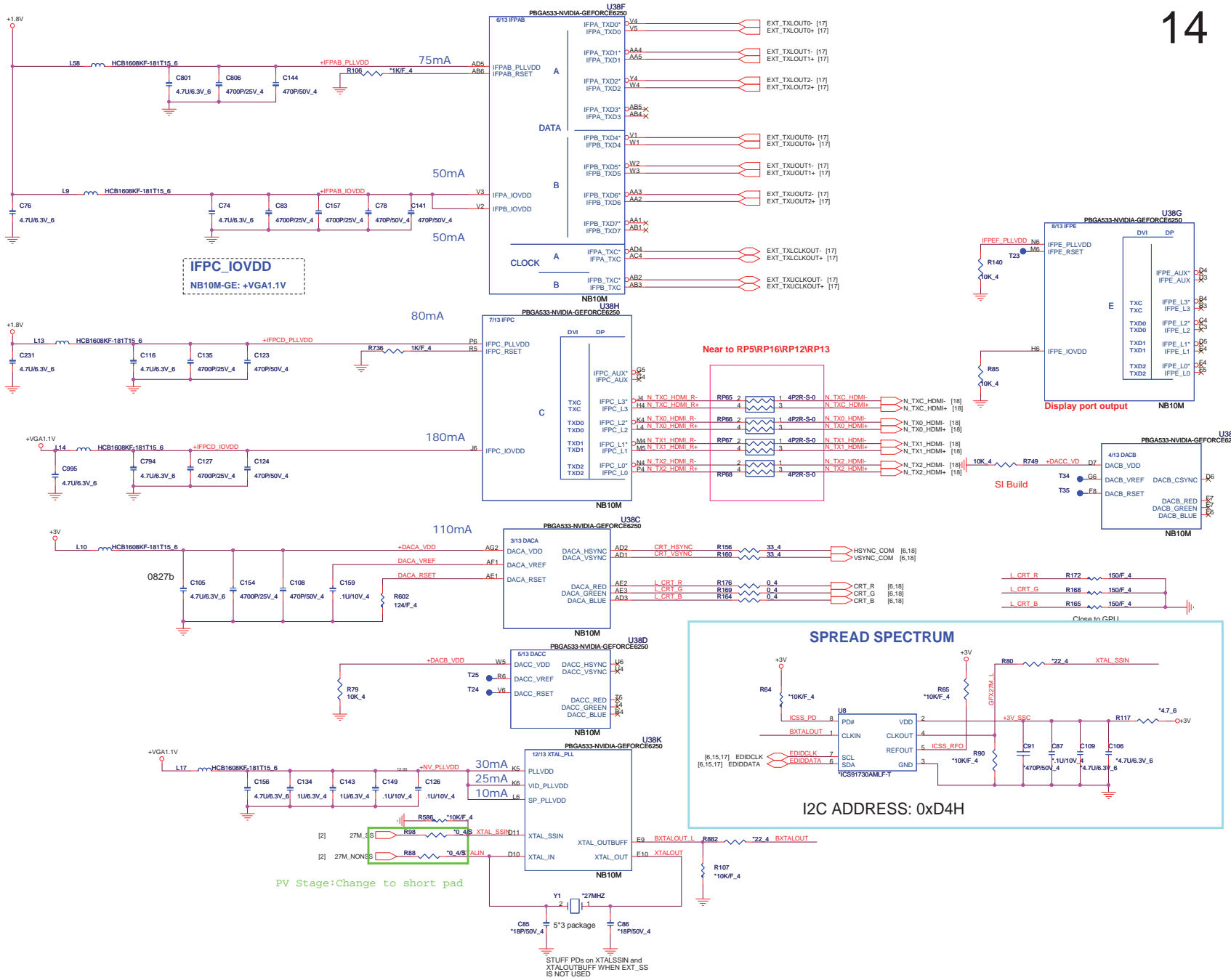
U38J PBGA533-NVIDIA-GEFORCE6250

|       |        |       |      |
|-------|--------|-------|------|
| AC11  | GND_01 | NC_01 | AA6  |
| AC14  | GND_02 | NC_03 | AC19 |
| AC17  | GND_03 | NC_04 | AB   |
| AC20  | GND_04 | NC_05 | C15  |
| AC23  | GND_05 | NC_06 | BB   |
| AC26  | GND_06 | NC_07 | AB   |
| AC29  | GND_07 | NC_08 | BB   |
| AC32  | GND_08 | NC_09 | CC2  |
| AC35  | GND_09 | NC_10 | AE9  |
| AC38  | GND_10 | NC_11 | AA9  |
| AC41  | GND_11 | NC_12 | AA9  |
| AC44  | GND_12 |       |      |
| AC47  | GND_13 |       |      |
| AC50  | GND_14 |       |      |
| AC53  | GND_15 |       |      |
| AC56  | GND_16 |       |      |
| AC59  | GND_17 |       |      |
| AC62  | GND_18 |       |      |
| AC65  | GND_19 |       |      |
| AC68  | GND_20 |       |      |
| AC71  | GND_21 |       |      |
| AC74  | GND_22 |       |      |
| AC77  | GND_23 |       |      |
| AC80  | GND_24 |       |      |
| AC83  | GND_25 |       |      |
| AC86  | GND_26 |       |      |
| AC89  | GND_27 |       |      |
| AC92  | GND_28 |       |      |
| AC95  | GND_29 |       |      |
| AC98  | GND_30 |       |      |
| AC101 | GND_31 |       |      |
| AC104 | GND_32 |       |      |
| AC107 | GND_33 |       |      |
| AC110 | GND_34 |       |      |
| AC113 | GND_35 |       |      |
| AC116 | GND_36 |       |      |
| AC119 | GND_37 |       |      |
| AC122 | GND_38 |       |      |
| AC125 | GND_39 |       |      |
| AC128 | GND_40 |       |      |
| AC131 | GND_41 |       |      |
| AC134 | GND_42 |       |      |
| AC137 | GND_43 |       |      |
| AC140 | GND_44 |       |      |
| AC143 | GND_45 |       |      |
| AC146 | GND_46 |       |      |
| AC149 | GND_47 |       |      |
| AC152 | GND_48 |       |      |
| AC155 | GND_49 |       |      |
| AC158 | GND_50 |       |      |
| AC161 | GND_51 |       |      |
| AC164 | GND_52 |       |      |
| AC167 | GND_53 |       |      |
| AC170 | GND_54 |       |      |
| AC173 | GND_55 |       |      |
| AC176 | GND_56 |       |      |
| AC179 | GND_57 |       |      |
| AC182 | GND_58 |       |      |
| AC185 | GND_59 |       |      |
| AC188 | GND_60 |       |      |
| AC191 | GND_61 |       |      |
| AC194 | GND_62 |       |      |
| AC197 | GND_63 |       |      |
| AC200 | GND_64 |       |      |
| AC203 | GND_65 |       |      |
| AC206 | GND_66 |       |      |
| AC209 | GND_67 |       |      |
| AC212 | GND_68 |       |      |
| AC215 | GND_69 |       |      |
| AC218 | GND_70 |       |      |
| AC221 | GND_71 |       |      |
| AC224 | GND_72 |       |      |
| AC227 | GND_73 |       |      |
| AC230 | GND_74 |       |      |
| AC233 | GND_75 |       |      |
| AC236 | GND_76 |       |      |
| AC239 | GND_77 |       |      |
| AC242 | GND_78 |       |      |
| AC245 | GND_79 |       |      |
| AC248 | GND_80 |       |      |
| AC251 | GND_81 |       |      |
| AC254 | GND_82 |       |      |
| AC257 | GND_83 |       |      |
| AC260 | GND_84 |       |      |
| AC263 | GND_85 |       |      |
| AC266 | GND_86 |       |      |
| AC269 | GND_87 |       |      |
| AC272 | GND_88 |       |      |



PROJECT : OP6/7  
Quanta Computer Inc.

Size: Custom Document Number: NV10M (MEMORY I/F) 2/5  
Date: Tuesday, January 20, 2009 Sheet 13 of 37



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Install it when not connected to Spread spectrum device

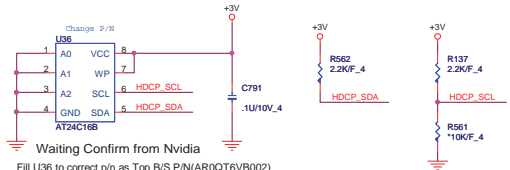
**PROJECT : OP6/7**  
**Quanta Computer Inc.**

|                                 |                     |     |
|---------------------------------|---------------------|-----|
| Size                            | Document Number     | Rev |
| Custom                          | NV10M (DISPLAY) 3/5 | DB  |
| Date: Tuesday, January 20, 2009 | Sheet 14 of 37      |     |



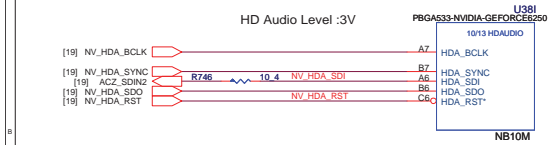
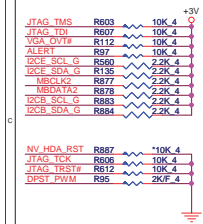
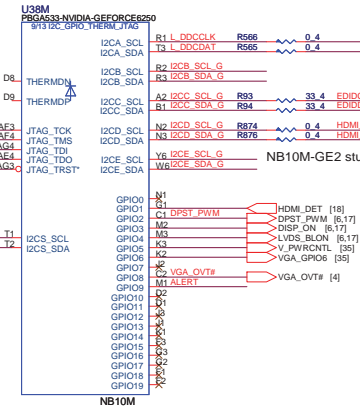
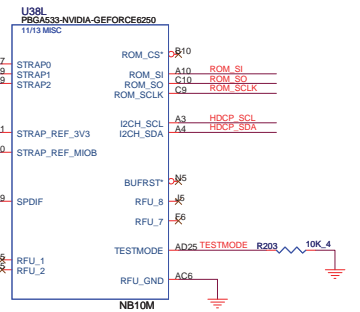
DB:Remove GPU thermal sensor footprint

HDCP ROM



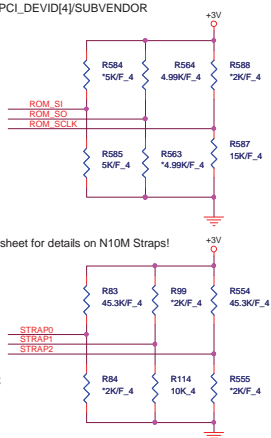
Waiting Confirm from Nvidia  
Fill U36 to correct pin as Top B/S P/N(AR0GT6VB002)

| DHCP ROM |                 |
|----------|-----------------|
| HDCP_SCL | Low: Crypto ROM |
|          | Hi: I2C ROM     |



NB10M Straps  
GPIO ASSIGNMENTS

| GPIO | I/O | ACTIVE | USAGE                  |
|------|-----|--------|------------------------|
| 0    | IN  | N/A    | PRIMARY DVI HOTPLUG    |
| 1    | IN  | N/A    | SECONDARY DVI HOTPLUG  |
| 2    | OUT | HIGH   | PANEL BACKLIGHT PWM    |
| 3    | OUT | HIGH   | PANEL POWER ENABLE     |
| 4    | OUT | HIGH   | PANEL BACKLIGHT ENABLE |
| 5    | OUT | N/A    | NVVDD VID0             |
| 6    | OUT | N/A    | NVVDD VID1             |
| 7    | OUT | N/A    | FBVDD VID0             |
| 8    | IN  | LOW    | THERMAL ALERT          |
| 9    | OUT | LOW    | FAN PWM                |
| 10   | OUT | N/A    | FBVREF SELECT          |
| 11   | OUT | N/A    | SLI SYNC0              |
| 12   | IN  | N/A    | AC DETECT              |
| 13   | OUT | LOW    | PS CONTROL OR HDMI_CEC |
| 14   | OUT | HIGH   | PS CONTROL             |



RAM ID: ROM\_SI R585  
64M\*16 HYN 0000 PD 5K  
SAM 0001 PD 10K  
QIM 0010 PD 15K

PCI\_DEVID: STRAP2 R554  
NB10M-GE2 0x6EF 8 1111 PU 45K

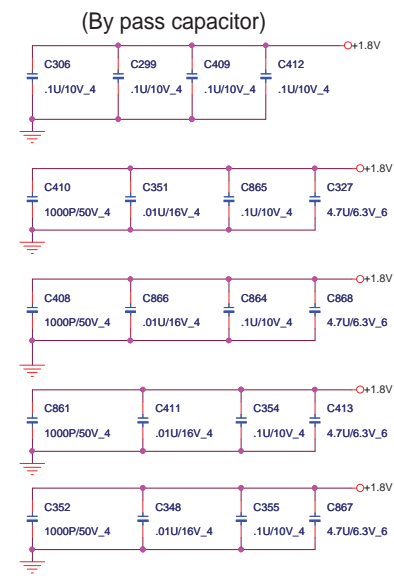
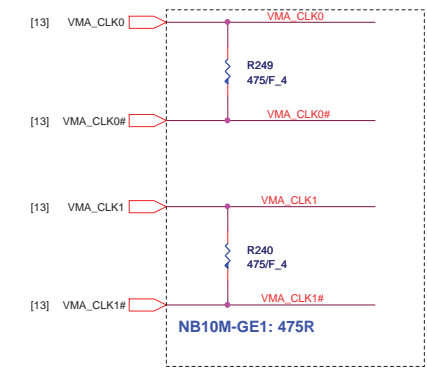
NB10M VRAM Configuration Table

| RAM_CFG[3:0] | DESCRIPTION                 | Vendor                    |
|--------------|-----------------------------|---------------------------|
| 0000         | DDR2 64Mx16x4, 64bit, 512MB | Hynix H5PS1G63EFR-20L     |
| 0001         | DDR2 64Mx16x4, 64bit, 512MB | Samsung K4NT1G164QQ-HC20  |
| 0010         | DDR2 64Mx16x4, 64bit, 512MB | Qimonda HY618T1G161C2P-20 |

1000  
0010  
XXXX  
XXXX  
0001  
1111

| Logical Strap Bit Mapping |        |      |
|---------------------------|--------|------|
|                           | PU-VDD | PD   |
| 5K                        | 1000   | 0000 |
| 10K                       | 1001   | 0001 |
| 15K                       | 1010   | 0010 |
| 20K                       | 1011   | 0011 |
| 25K                       | 1100   | 0100 |
| 30K                       | 1101   | 0101 |
| 35K                       | 1110   | 0110 |
| 45K                       | 1111   | 0111 |

|          | Logical        | Logical Strapping Bit2 | Logical Strapping Bit1 | Logical Strapping Bit0 |
|----------|----------------|------------------------|------------------------|------------------------|
| ROM_SO   | XCLK_277       | TVMODE[2]              | TVMODE[1]              | TVMODE[0]              |
| ROM_SCLK | PCI_DEVID[4]   | SUB_VENDOR             | SLOT_CLK_CFG           | PEX_PLL_EN_TERM100     |
| ROM_SI   | RAMCFG[3]      | RAMCFG[2]              | RAMCFG[1]              | RAMCFG[0]              |
| STRAP2   | PCI_DEVID[3]   | PCI_DEVID[2]           | PCI_DEVID[1]           | PCI_DEVID[0]           |
| STRAP1   | 3GIO_PADCFG[3] | 3GIO_PADCFG[2]         | 3GIO_PADCFG[1]         | 3GIO_PADCFG[0]         |
| STRAP0   | USER[3]        | USER[2]                | USER[1]                | USER[0]                |

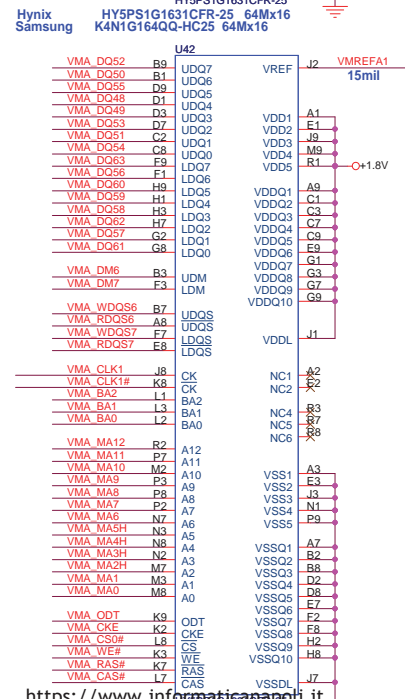
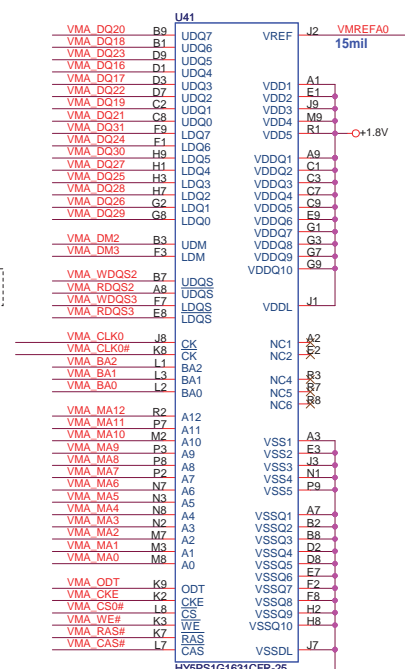


- [13] VMA\_DQ[63..0]
  - [13] VMA\_DM[7..0]
  - [13] VMA\_WDQS[7..0]
- 256Mb : AKD5JGAT\*05  
512Mb : AKD59G-T\*01

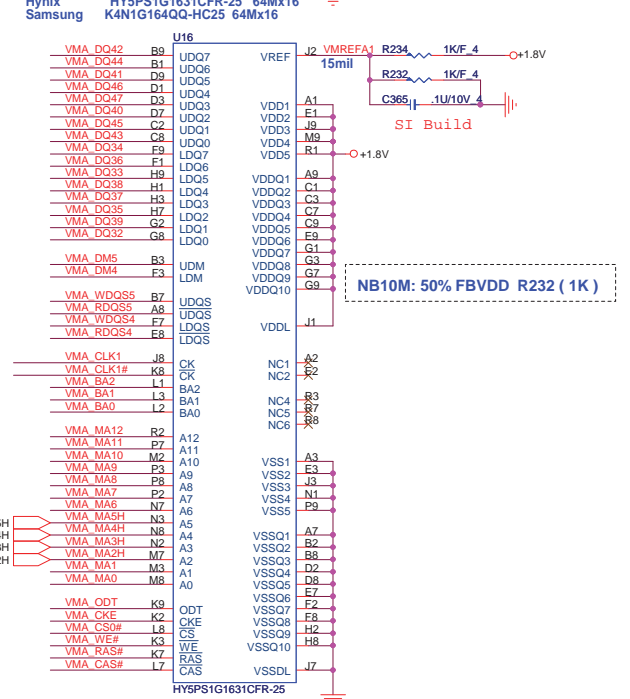
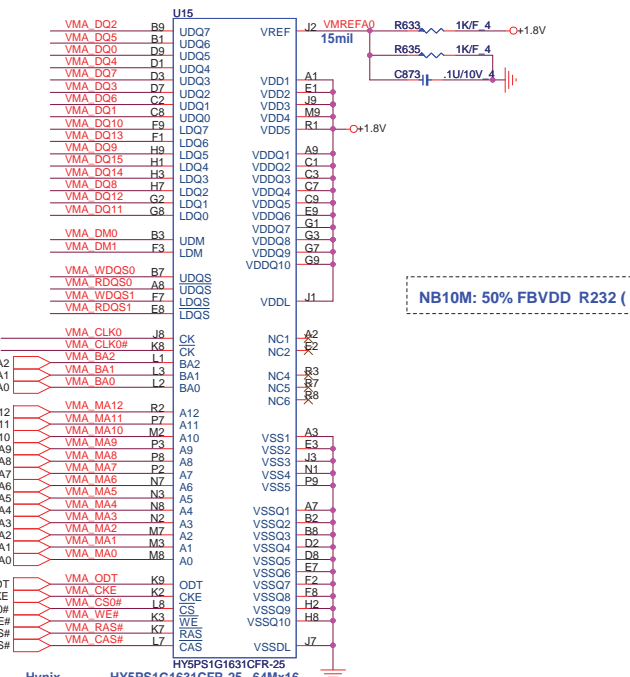


PROJECT : OP6/7  
Quanta Computer Inc.

|                                 |   |        |
|---------------------------------|---|--------|
| Size Custom                     | Document Number<br><b>NV10M VRAM-1(GDDR2 BGA84)</b> | Rev SI |
| Date: Tuesday, January 20, 2009 | Sheet 16  | of 37  |



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Hynix HY5PS1G1631CFR-25 64Mx16  
Samsung K4N1G164QQ-HC25 64Mx16

Hynix HY5PS1G1631CFR-25 64Mx16  
Samsung K4N1G164QQ-HC25 64Mx16

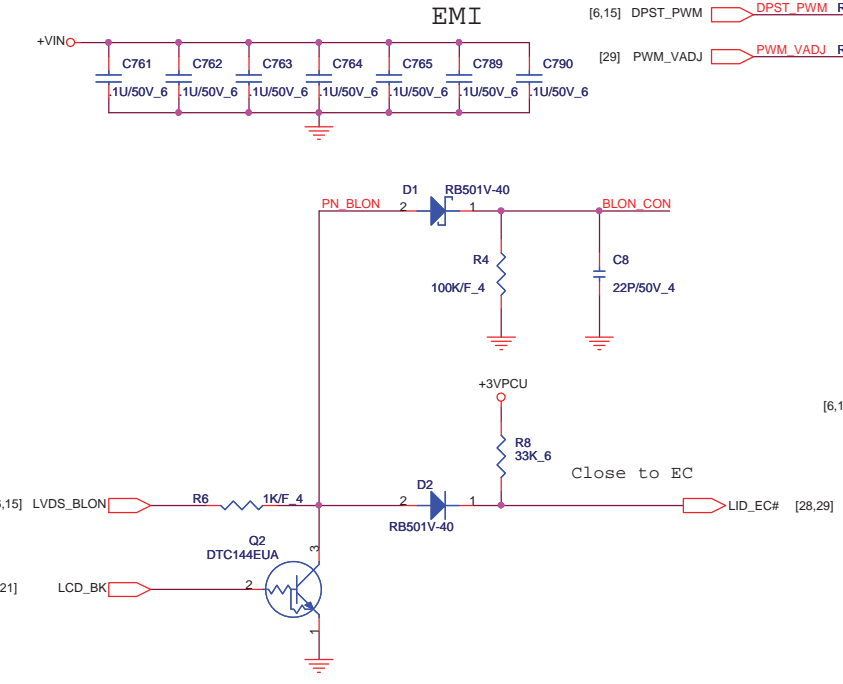
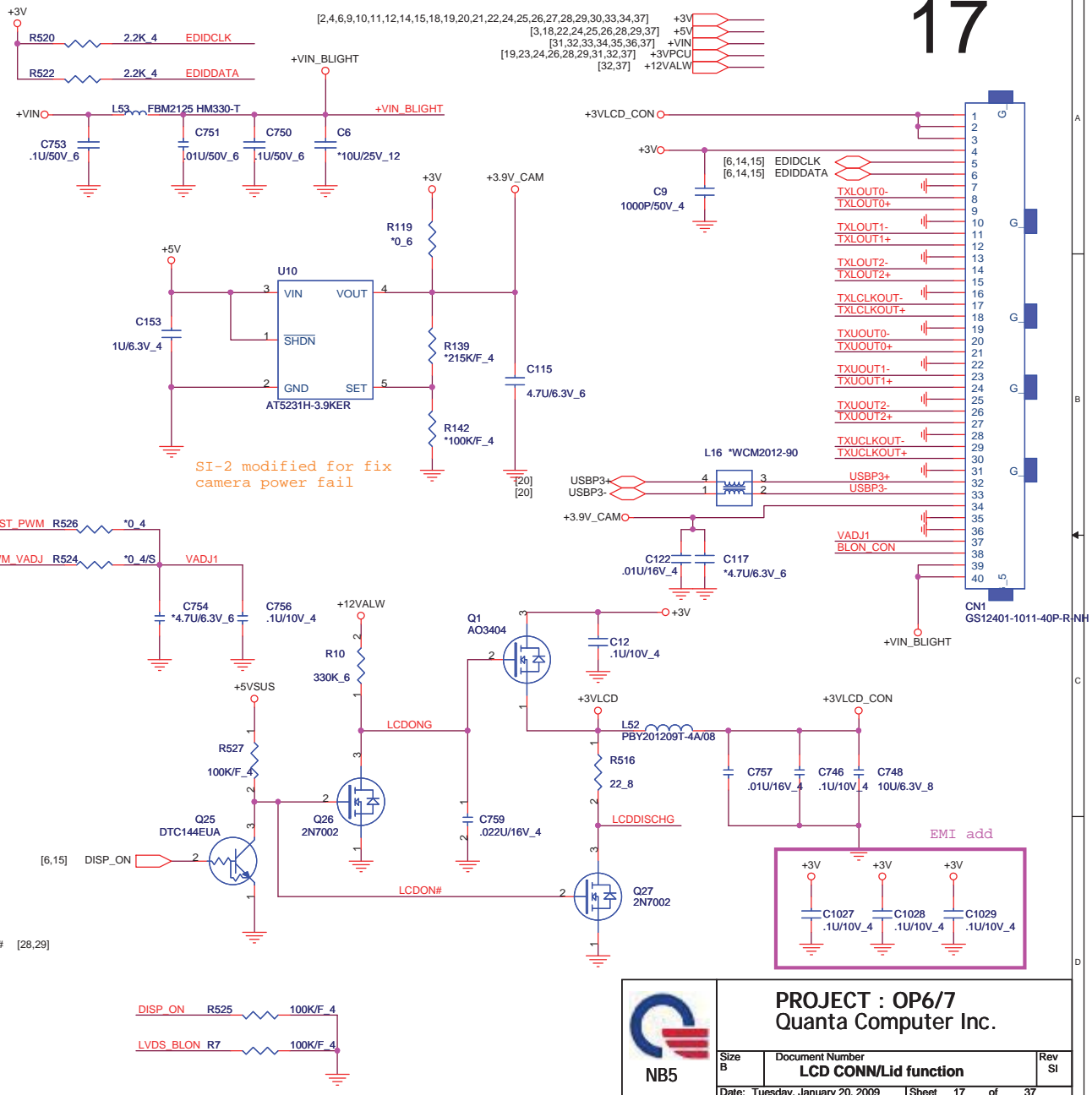
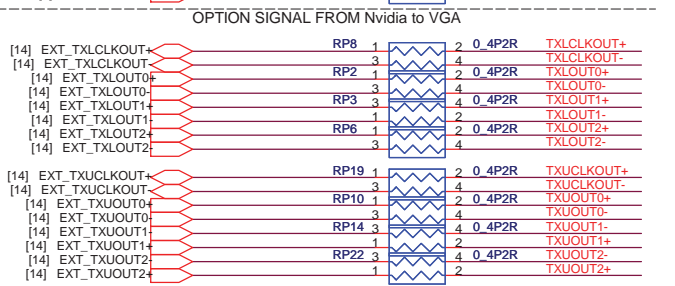
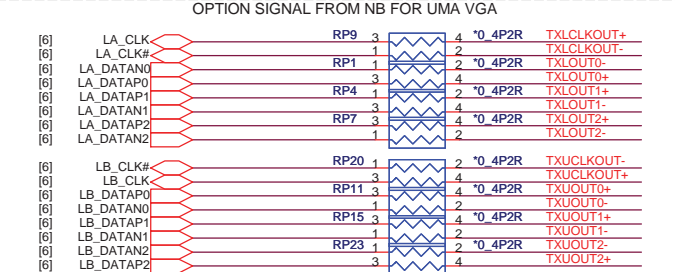
NB10M: 50% FBVDD R232 (1K)

NB10M: 50% FBVDD R232 (1K)

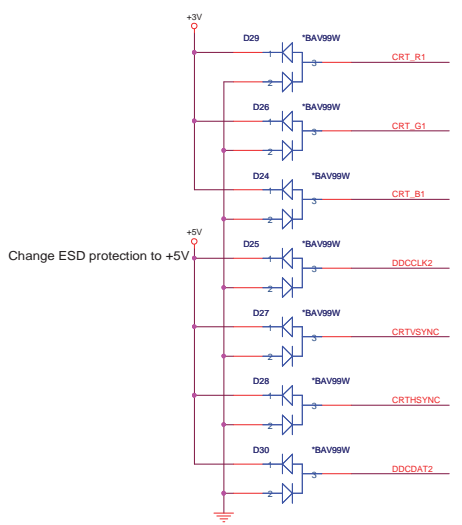
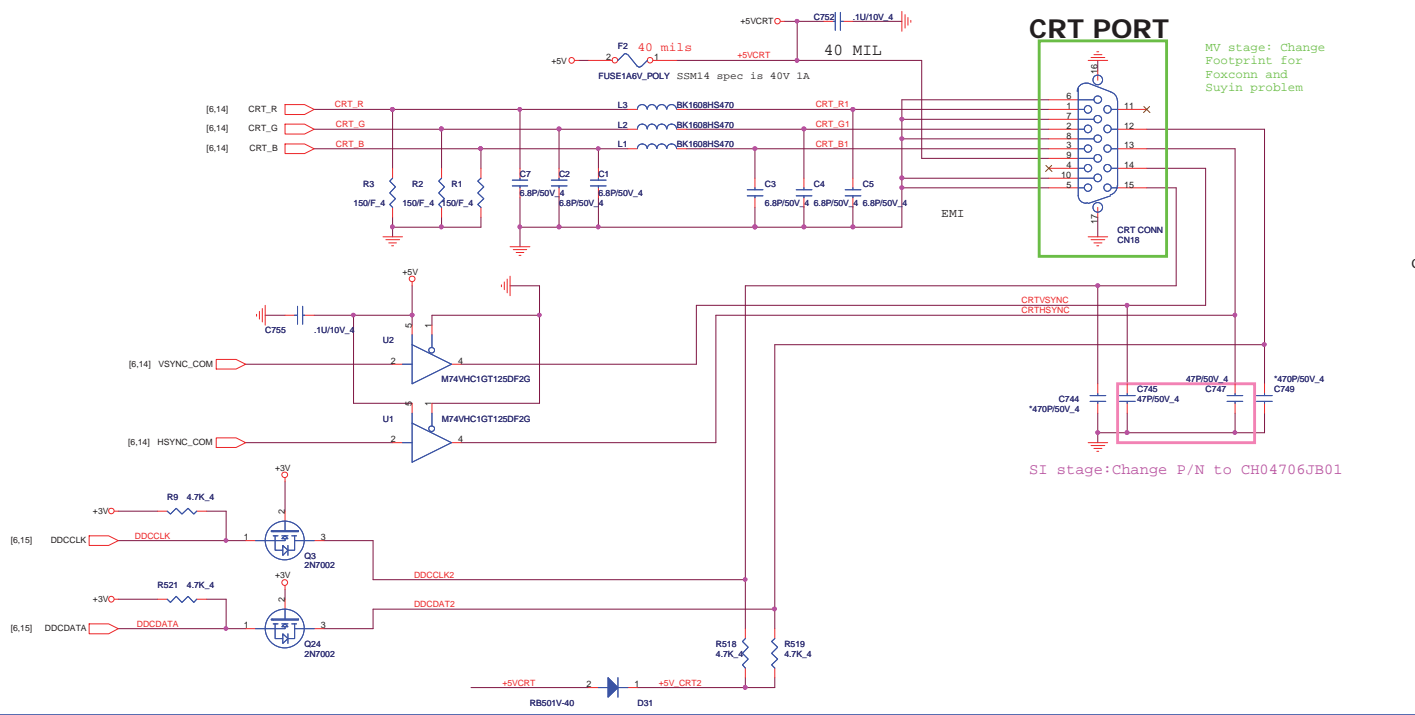
SI Build



1. If LCD connector near GPU, then place these series Resistors near GPU  
 2. If LCD connector near N/B, then place these series Resistors near N/B

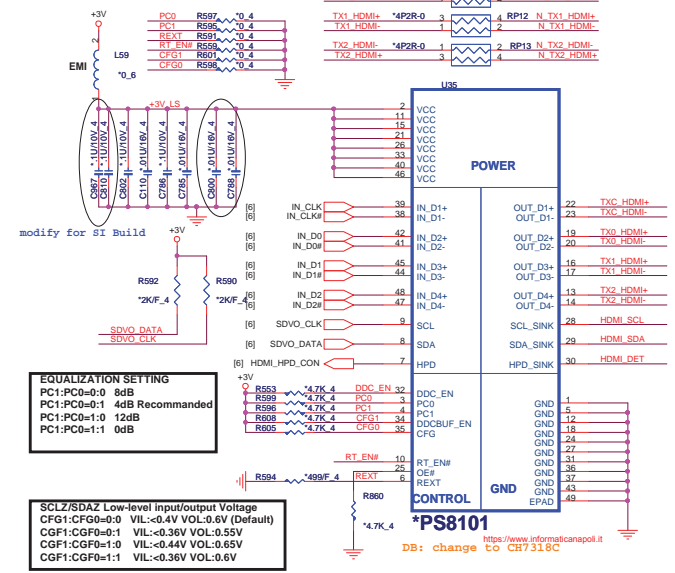


|                                 |                        |  |           |
|---------------------------------|------------------------|--|-----------|
|                                 | <b>PROJECT : OP6/7</b> |  | Rev<br>SI |
|                                 | Quanta Computer Inc.   |  |           |
|                                 | Size<br>B              | Document Number<br>LCD CONN/Lid function |           |
| Date: Tuesday, January 20, 2009 |                        | Sheet 17 of 37                           |           |

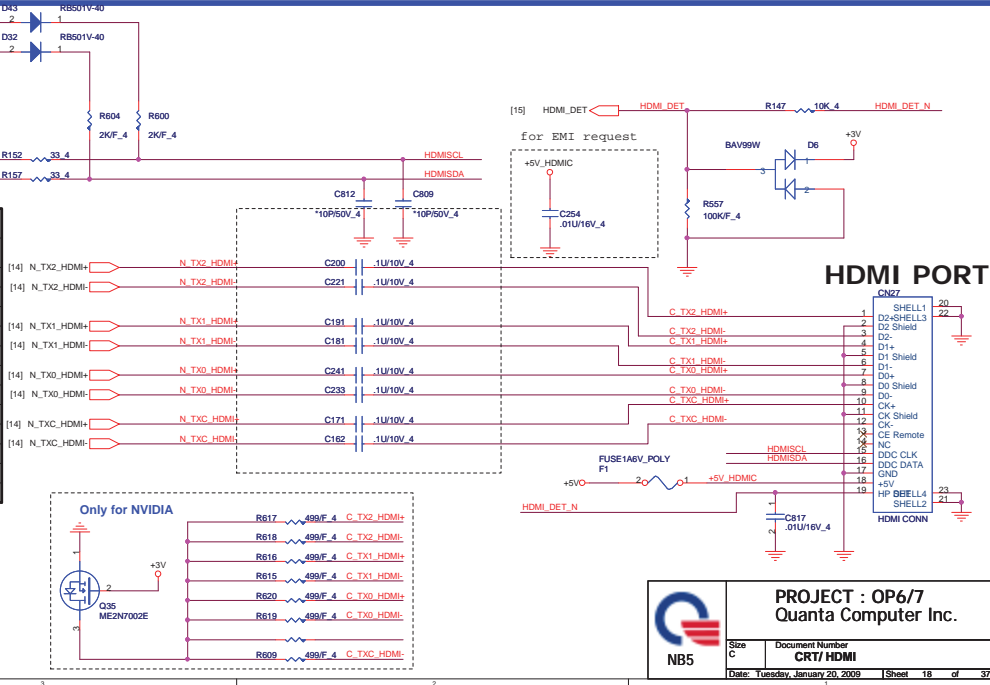


| inputs | function   |
|--------|------------|
| /E SET |            |
| L L    | Y - port 0 |
| L H    | Y - port 1 |
| H X    | Disconnect |

**For UMA HDMI function**

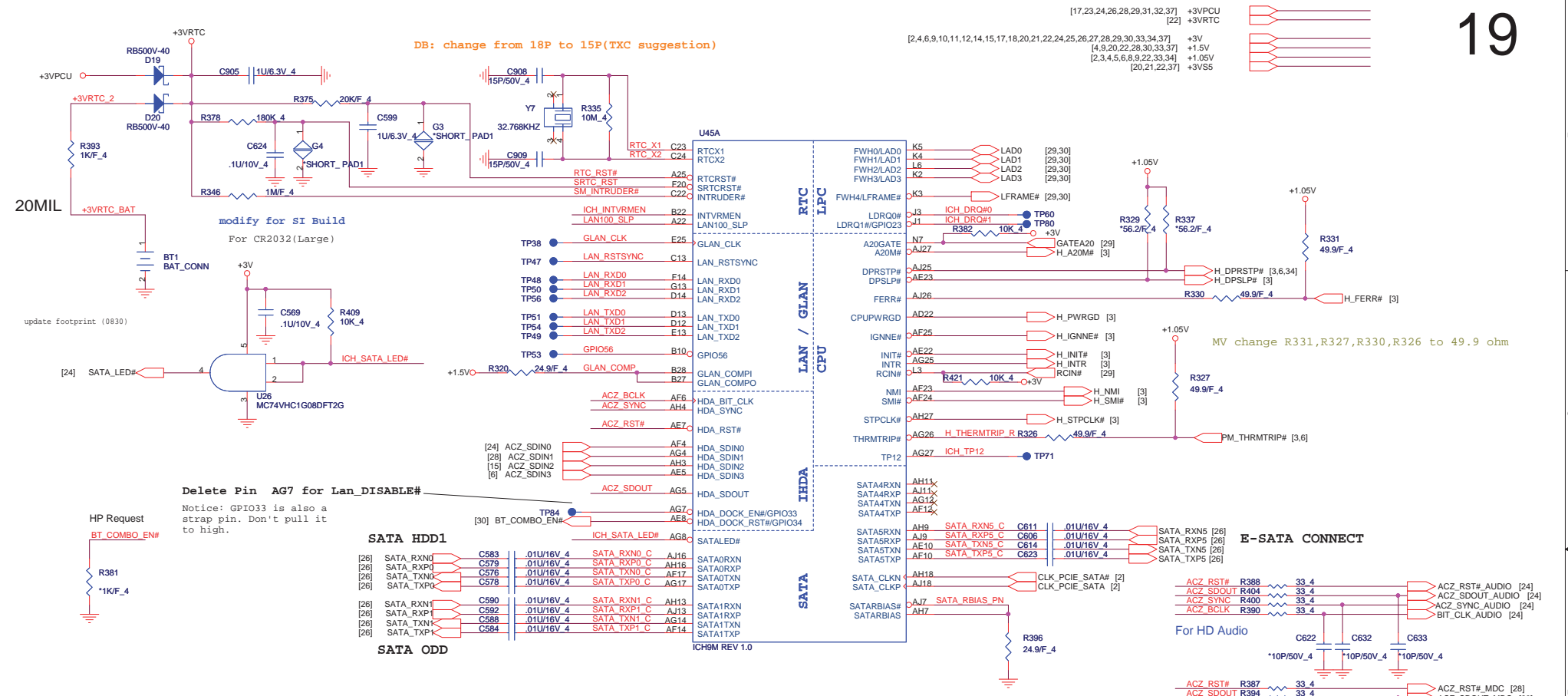


|      | PDT    | CHR  | NXP    |
|------|--------|------|--------|
| R631 | NC     | 0    | 0      |
| R596 | NC     | 4.7K | NC     |
| R605 | NC     | 4.7K | NC     |
| R608 | 4.7K   | 4.7K | NC     |
| R558 | 100K   | NC   | NC     |
| R594 | 499    | 1.2K | 10K    |
| R550 | 7.5K   | 7.5K | 7.5K   |
| R552 | 20K    | 20K  | 20K    |
| R595 | NC     | NC   | NC     |
| Q31  | 2N7002 | NC   | NC     |
| R860 | NC     | 4.7K | 4.7K   |
| R557 | NC     | 100K | 100K   |
| D6   | NC     | NC   | BAV99W |



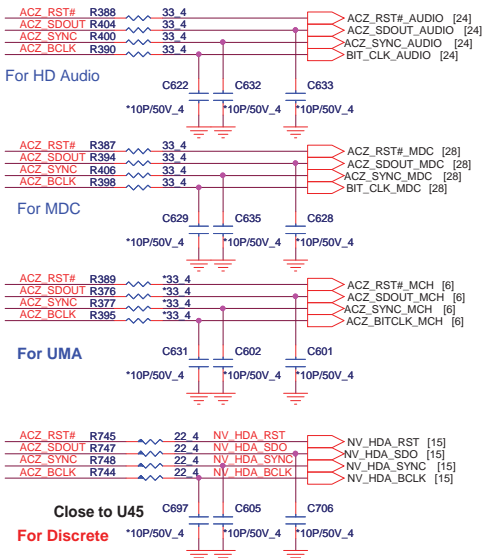
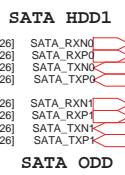
**PROJECT : OP/7**  
**Quanta Computer Inc.**

Site: NB5  
Document Number: CR7/HDMI  
Date: Tuesday, January 20, 2009 | Sheet 18 of 37



Delete Pin AG7 for Lan\_DISABLE#

Notice: GPIO33 is also a strap pin. Don't pull it to high.

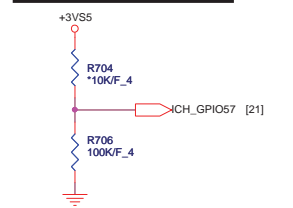
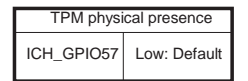
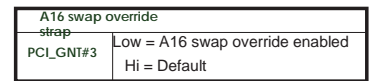
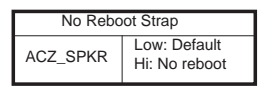
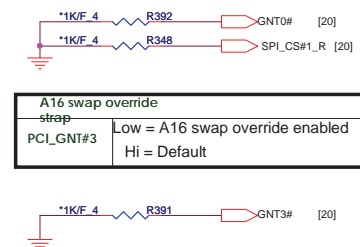
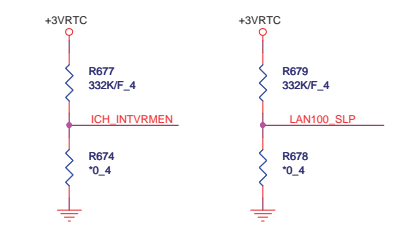


## SB Strap

|  |   |
|--|---|
| ICH9-M Internal VR Enable strap<br>(Internal VR for Vccsus1_05, Vccsus1_5 and VccCLL1_5) | ICH9-M LAN100_SLP Strap<br>(Internal VR for VccLAN1_05 and VccCLL1_05)        |
| INTVRMEN<br>Low = Internal VR disable<br>High = Internal VR enable(Default)              | LAN100_SLP<br>Low = Internal VR disable<br>High = Internal VR enable(Default) |

| ICH_TP3 | HDA_SDOUIT | Description                |
|---------|------------|----------------------------|
| 0       | 0          | RSVD                       |
| 0       | 1          | Enter XOR Chain            |
| 1       | 0          | Normal operation(Default)  |
| 1       | 1          | Set PCIe port config bit 1 |

| Strap | PCI_GNT0# | SPI_CS#1 |
|-------|-----------|----------|
| SPI   | 0         | 1        |
| PCI   | 1         | 0        |
| LPC   | 1         | 1        |



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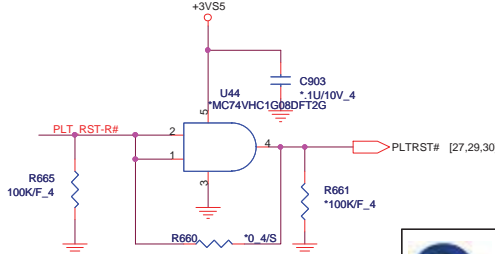
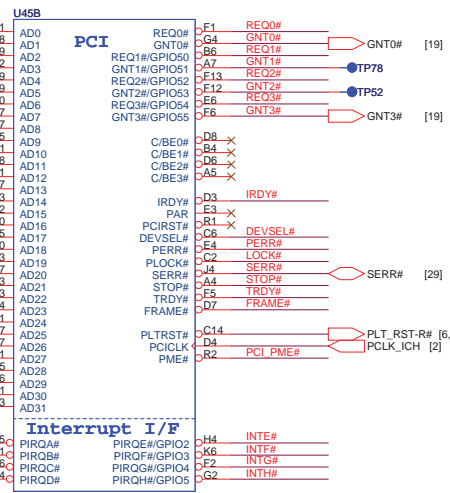
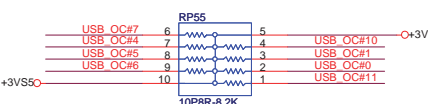
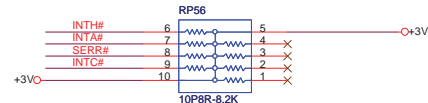
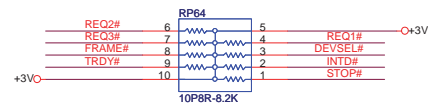
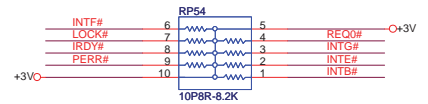
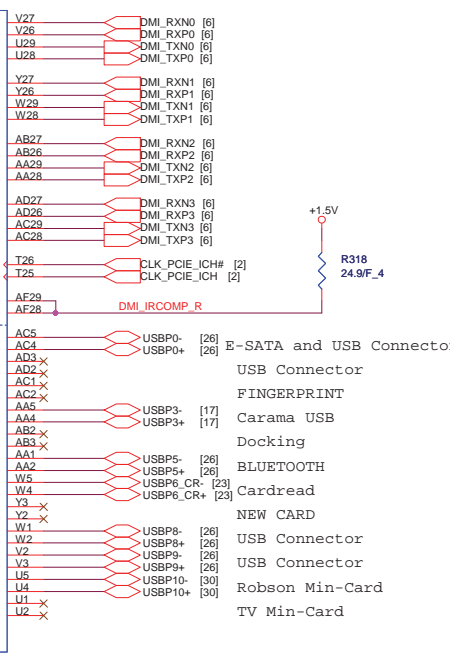
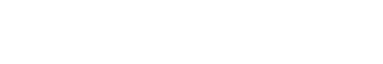
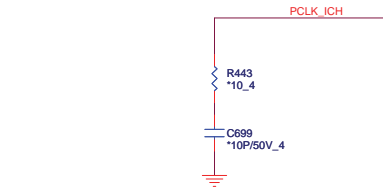
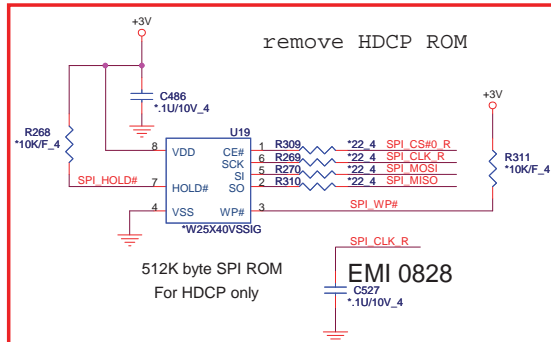
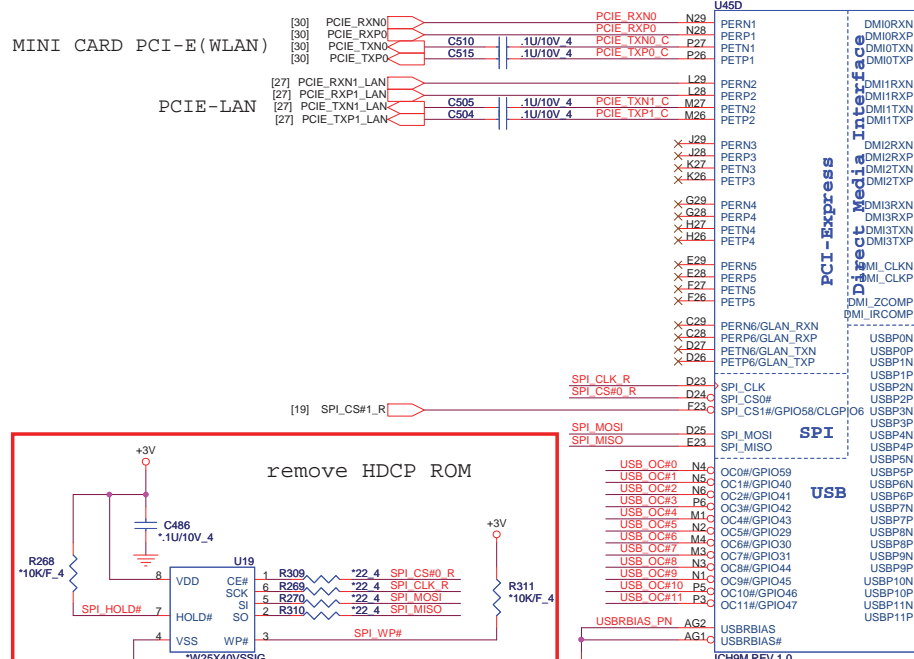
**PROJECT : OP6/7**  
**Quanta Computer Inc.**

|                                 |   |                |
|---------------------------------|---|----------------|
| Size Custom                     | Document Number<br><b>ICH9-M Host 1/4</b> | Rev SI         |
| Date: Tuesday, January 20, 2009 |   | Sheet 19 of 37 |

[4,9,19,22,28,30,33,37] +1.5V  
[2,4,6,9,10,11,12,14,15,17,18,19,21,22,24,25,26,27,28,29,30,33,34,37] +3V  
[21,23,26,30,33,34,35,37] +3VSUS

MINI CARD PCI-E(WLAN)

PCI-E-LAN



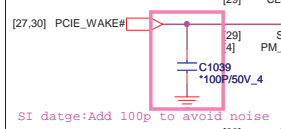
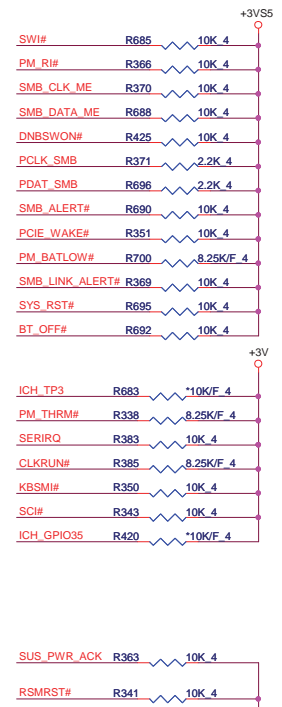
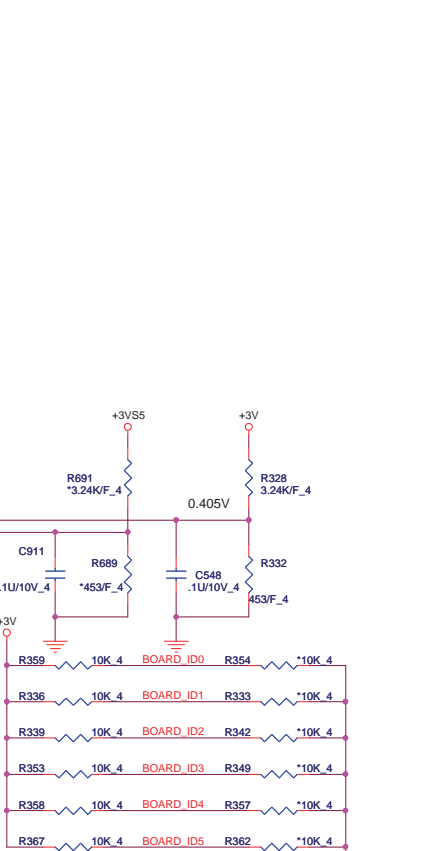
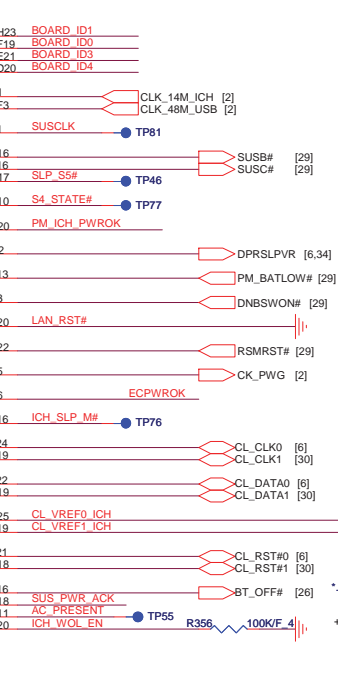
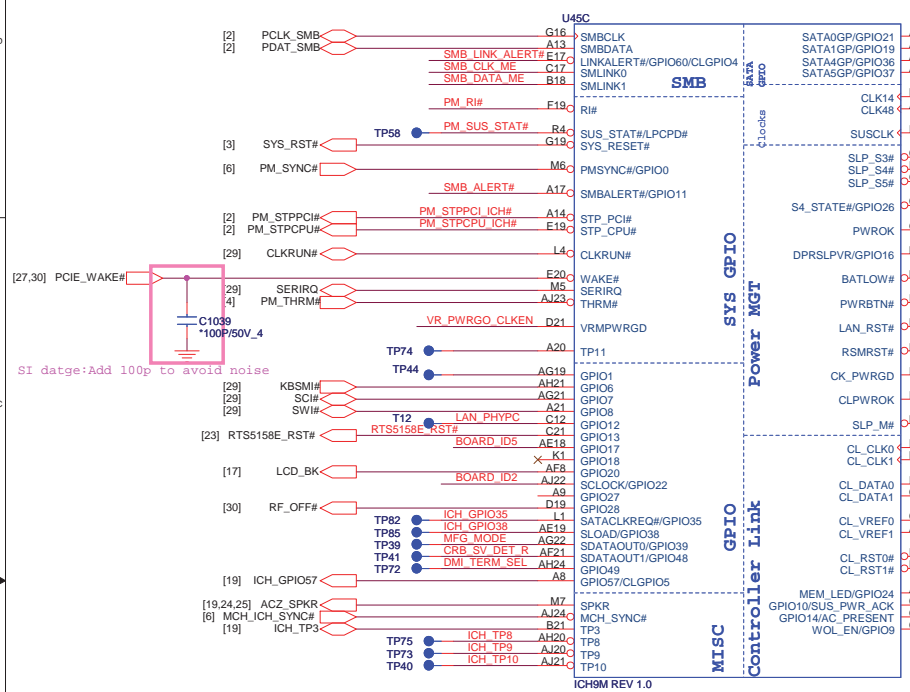
<https://www.informaticanapoli.it>

**PROJECT : OP6/7**  
**Quanta Computer Inc.**

**NB5**

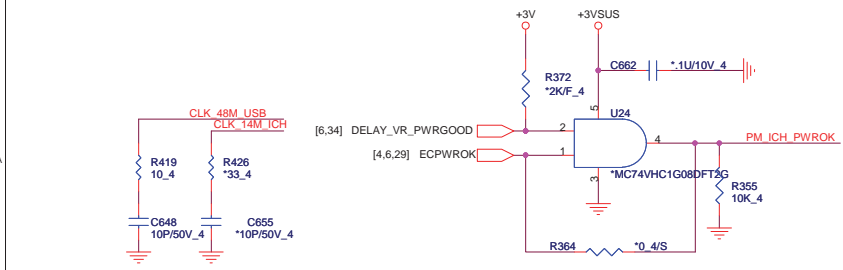
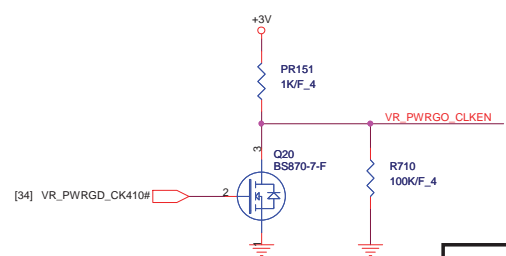
|                                 |  |                |
|---------------------------------|--|----------------|
| Size Custom                     | Document Number<br><b>ICH9-M PCI-E 2/4</b> | Rev S1         |
| Date: Tuesday, January 20, 2009 |  | Sheet 20 of 37 |

[4,9,19,20,22,28,30,33,37] +1.5V  
 [2,4,6,9,10,11,12,14,15,17,18,19,20,22,24,25,26,27,28,29,30,33,34,37] +3V  
 [19,20,22,37] +3VSUS  
 [23,26,30,33,34,35,37] +3VSUS




SI datge:Add 100p to avoid noise

Delete R361,G2 as Bios\_Rec can be cover by Bios

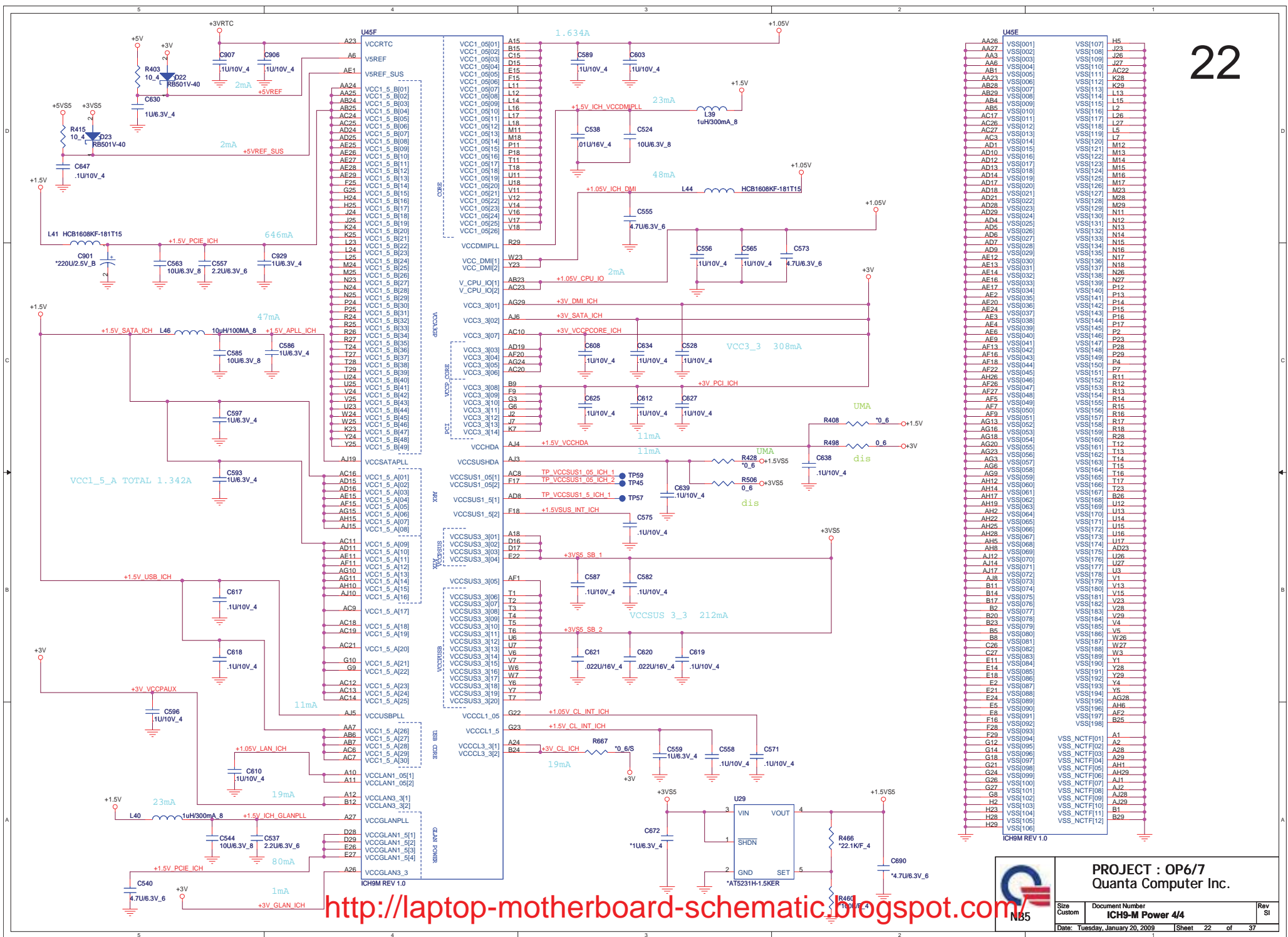


| Board ID   | ID0<br>GPIO19   | ID1<br>GPIO21         | ID2<br>GPIO22         | ID3<br>GPIO36 | ID4<br>GPIO37 | ID5<br>GPIO17 |
|------------|-----------------|-----------------------|-----------------------|---------------|---------------|---------------|
| UMA/DIS    | 0=UMA<br>1=Dis. |                       |                       |               |               |               |
| CardReader |                 | 0=No Sup<br>1=Support |                       |               |               |               |
| HDMI       |                 |                       | 0=No Sup<br>1=Support |               |               |               |
| Bluetooth  |                 |                       |                       |               |               |               |
| Camera     |                 |                       |                       |               |               |               |
| Modem      |                 |                       |                       |               |               |               |



**PROJECT : OP6/7**  
 Quanta Computer Inc.

|                                 |   |                |
|---------------------------------|---|----------------|
| Size Custom                     | Document Number<br><b>ICH9-M GPIO 3/4</b> | Rev SI         |
| Date: Tuesday, January 20, 2009 |   | Sheet 21 of 37 |

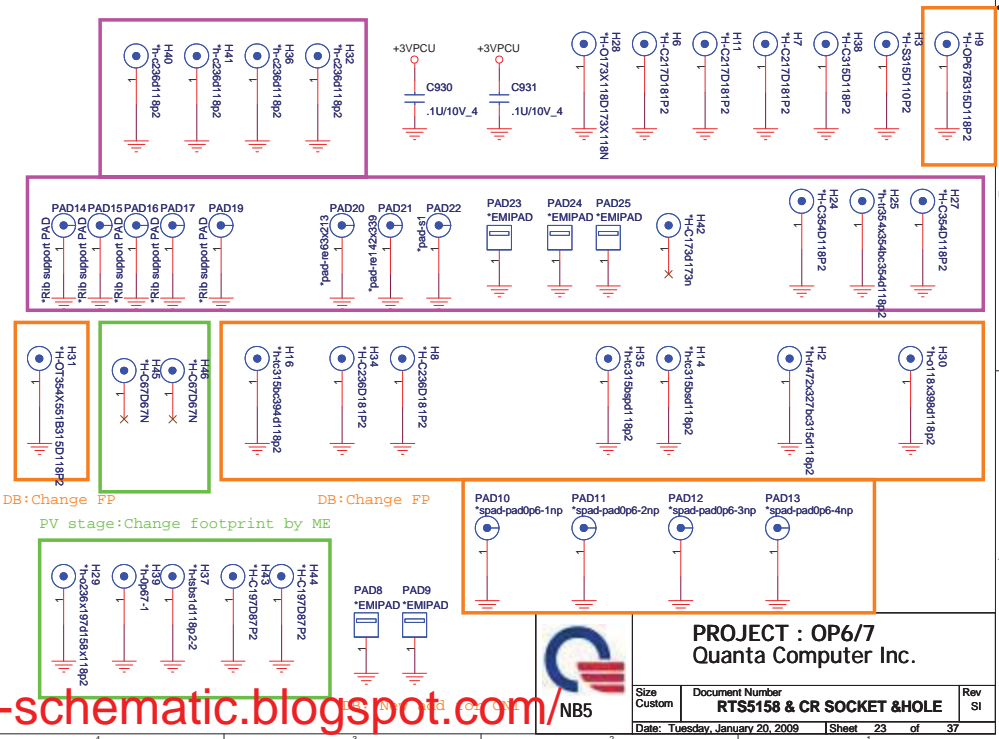
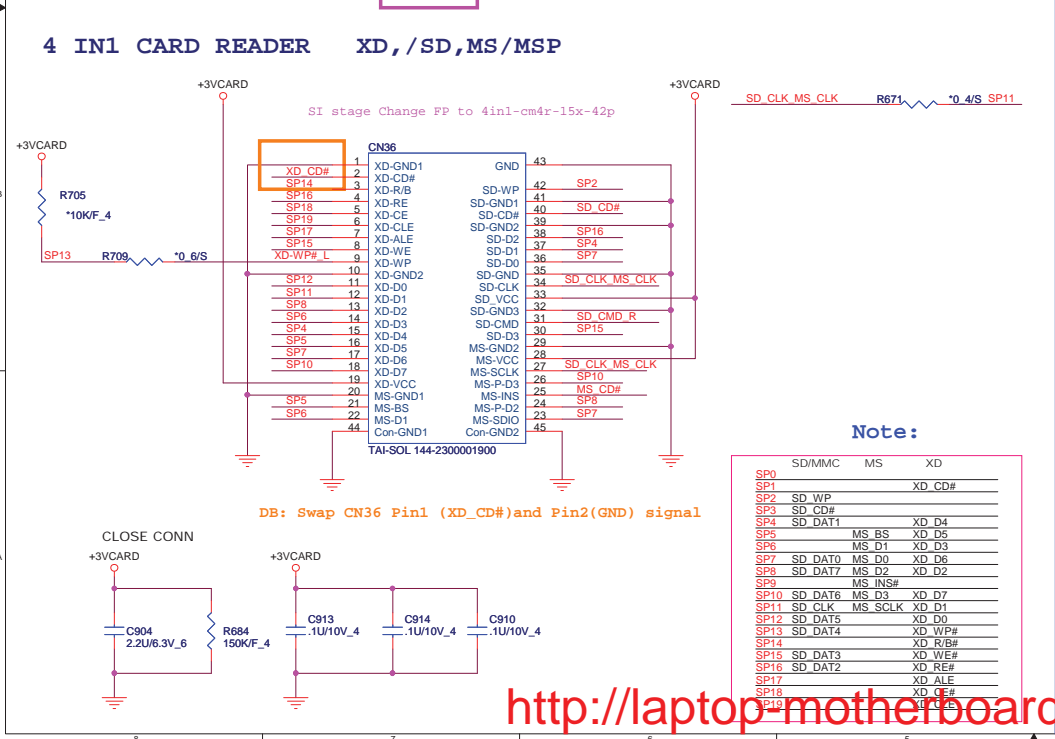
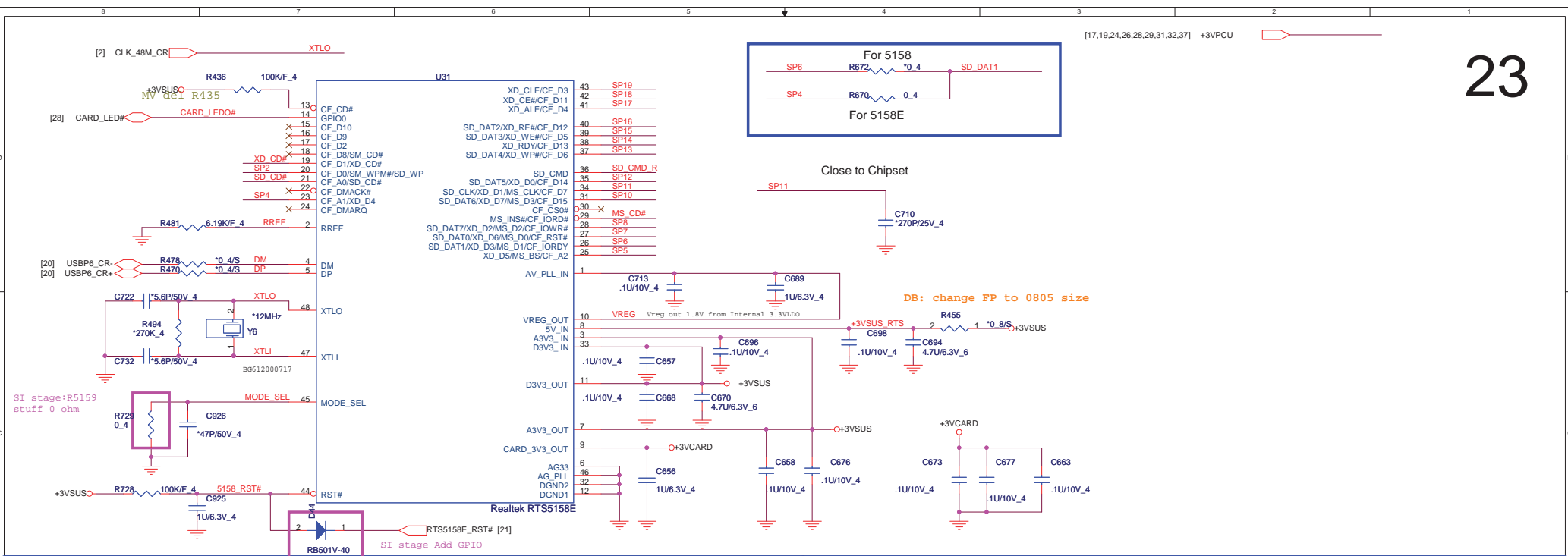


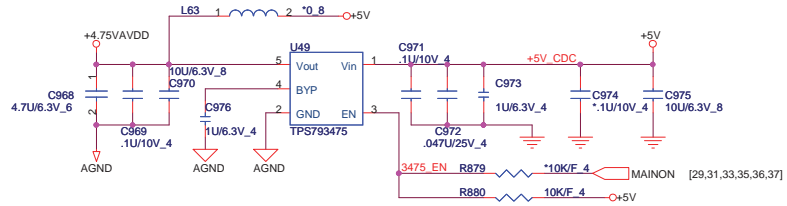
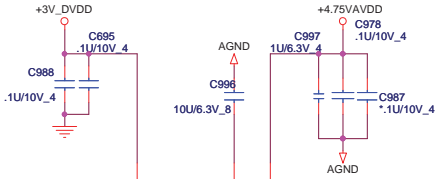
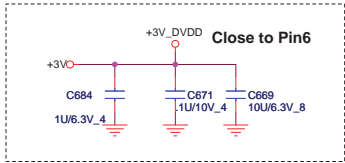
http://laptop-motherboard-schematic.blogspot.com/

PROJECT : OP6/7  
Quanta Computer Inc.

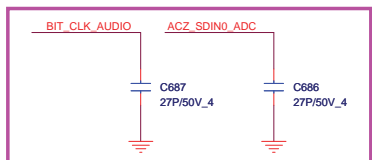
Size Custom Document Number ICH9-M Power 4/4 Rev SI

Date: Tuesday, January 20, 2009 Sheet 22 of 37

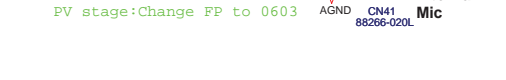
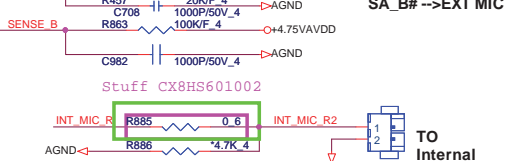
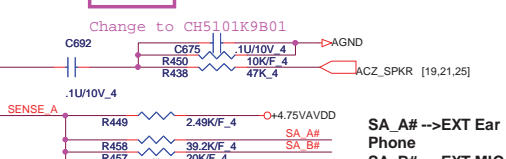
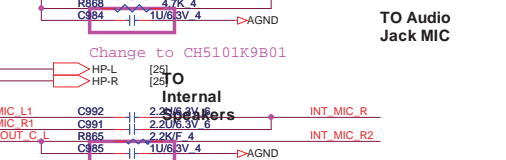
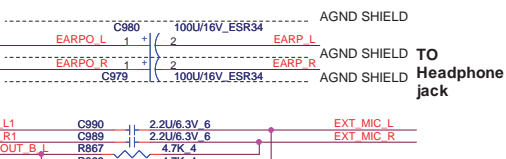
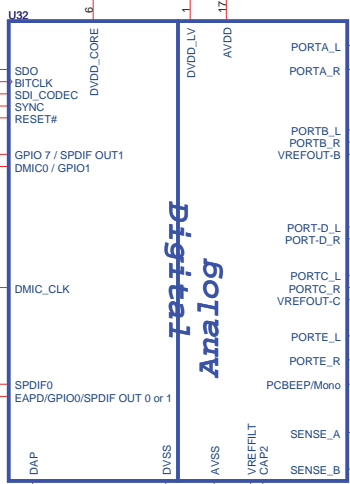
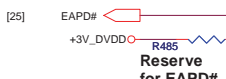




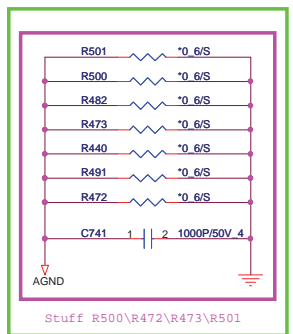
- [19] ACZ\_SDOUD\_AUDIO
- [19] BIT\_CLK\_AUDIO
- [19] ACZ\_SDINO
- [19] ACZ\_SYNC\_AUDIO
- [19] ACZ\_RST#\_AUDIO



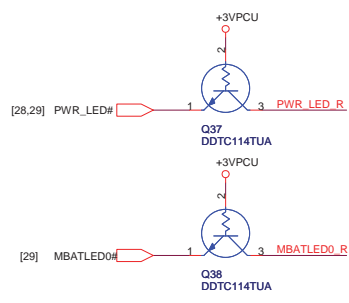
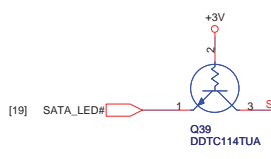
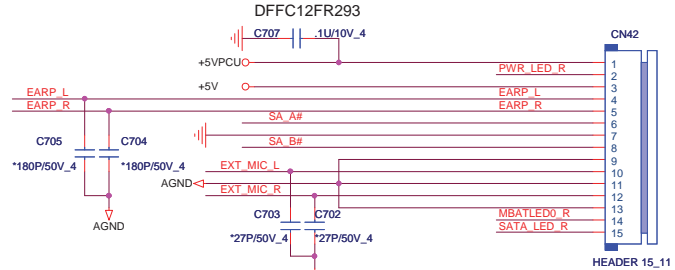
Stuff for EMI



PV Stage: Change to short pad



AUDIO/B CON.



PROJECT : OP6/7  
Quanta Computer Inc.

Document Number  
Azalia IDT92HD75B3

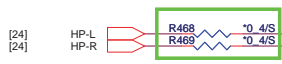
Date: Tuesday, January 20, 2009 | Sheet 24 of 37



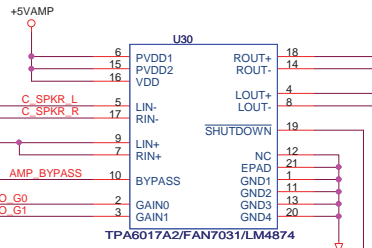
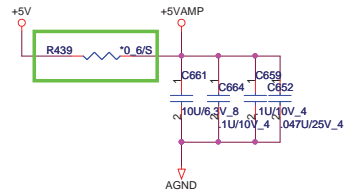
# AUDIO AMPLIFIER

Swap Audio input source as Speaker Bo noise issue

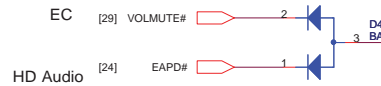
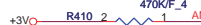
Change R468,R469 from 20K to 0 ohm as HP request



PV Stage: Change to short pad

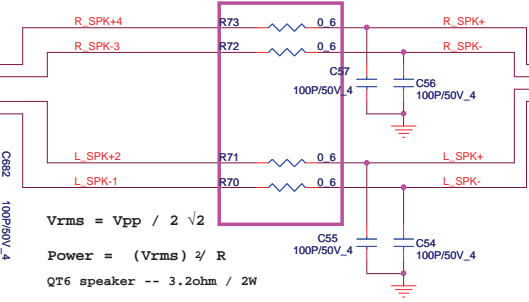


Change R410 from 100K to 470K(CS44702FB13)



AL001431K04  
AL6017A2K12  
APA2031 ,AL002031K00

Change P/N to CX8HS601002 for EMI



$$V_{rms} = V_{pp} / 2 \sqrt{2}$$

$$Power = (V_{rms})^2 / R$$

QT6 speaker -- 3.2ohm / 2W

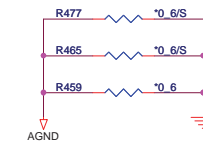
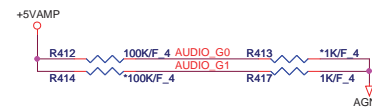
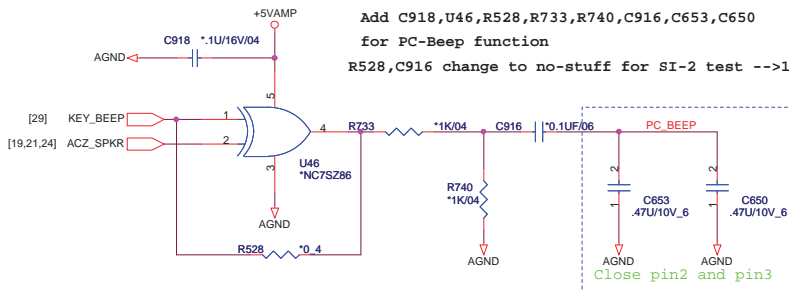
INT. SPEAKER

6017A2 Gain Table

| GAIN0 | GAIN1 | AV     | RIN |
|-------|-------|--------|-----|
| 0     | 0     | 6dB    | 90K |
| 0     | 1     | 10dB   | 70K |
| 1     | 0     | 15.6dB | 45K |
| 1     | 1     | 21.6dB | 25K |

Add C918,U46,R528,R733,R740,C916,C653,C650 for PC-BEEP function

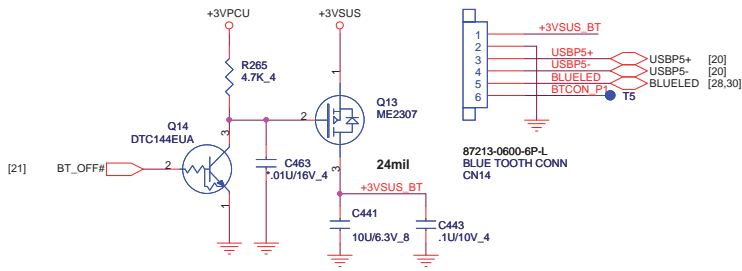
R528,C916 change to no-stuff for SI-2 test -->12/6



PROJECT : OP6/7  
Quanta Computer Inc.

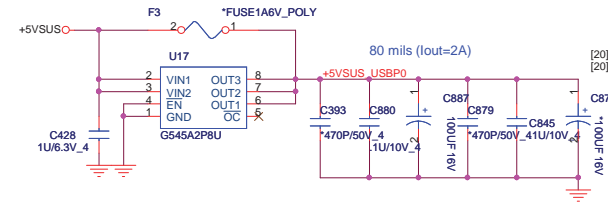
|                                 |  |         |
|---------------------------------|--|---------|
| Size: Custom                    | Document Number: AMP_TPA6047A4/Accelerometer | Rev: SI |
| Date: Tuesday, January 20, 2009 | Sheet: 25 of 37                              |         |

# BLUETOOTH

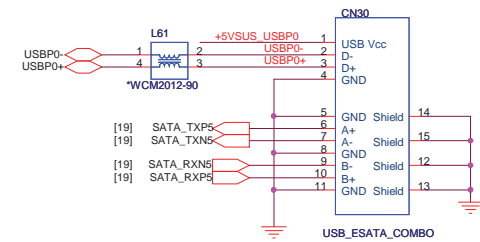


# LEFT SIDE USBX1 and E-SATA/USB COMBO

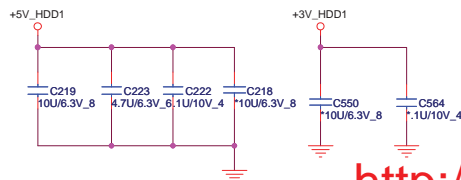
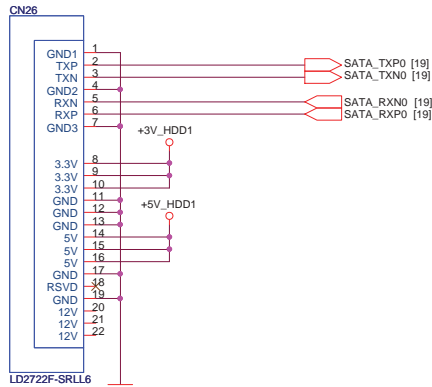
26



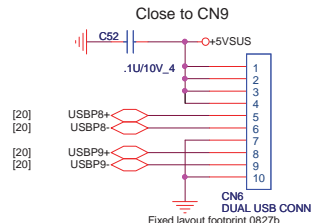
## USB & ESATA



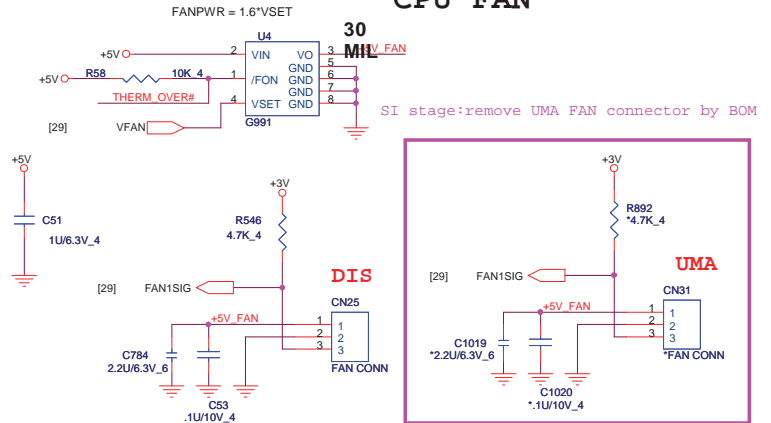
# SATA\_1 CONNECTOR



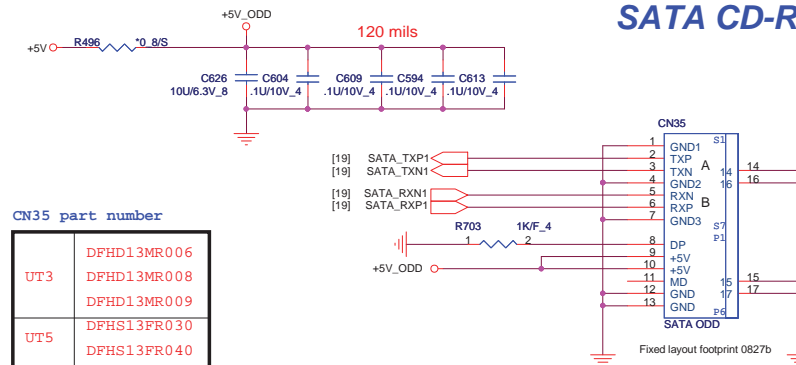
# RIGHT SIDE USBX2



# CPU FAN

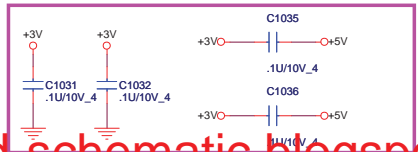
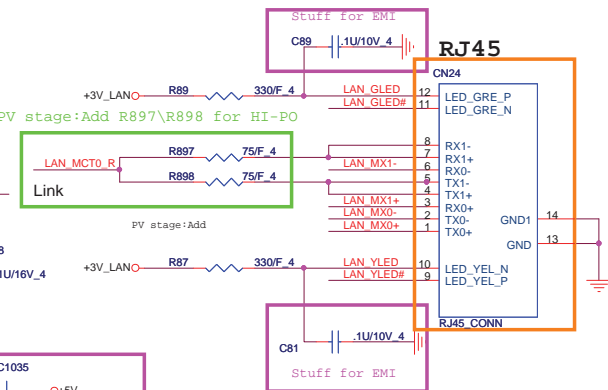
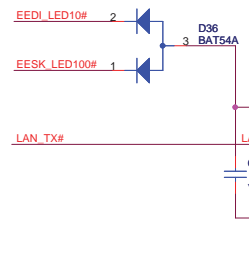
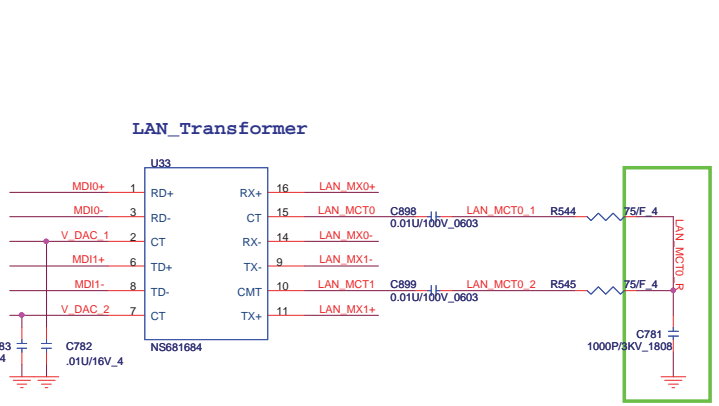
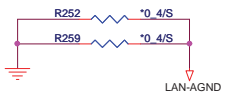
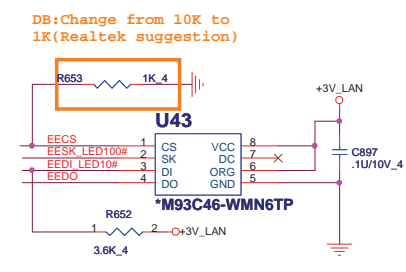
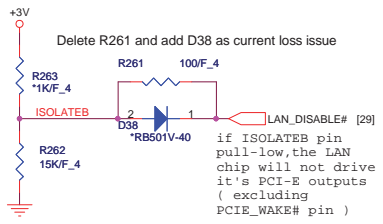
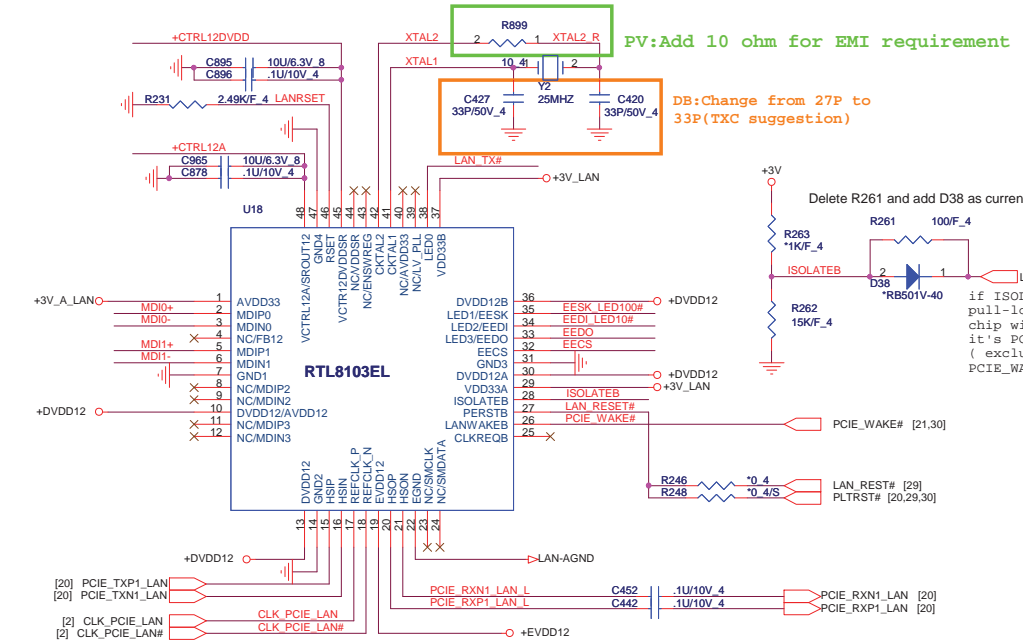
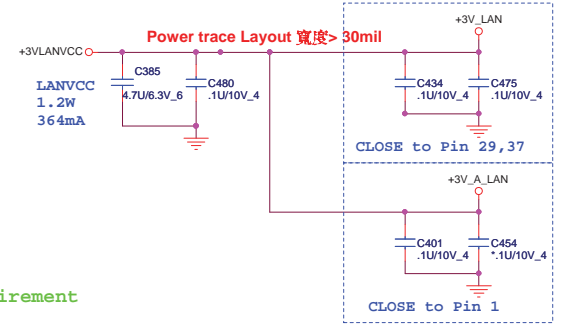
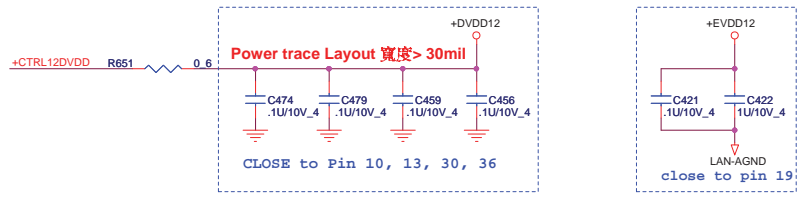


# SATA CD-ROM



CN35 part number

|     |             |
|-----|-------------|
| UT3 | DFHD13MR006 |
|     | DFHD13MR008 |
|     | DFHD13MR009 |
| UT5 | DFHS13FR030 |
|     | DFHS13FR040 |



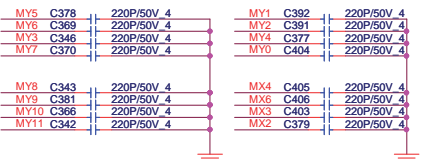
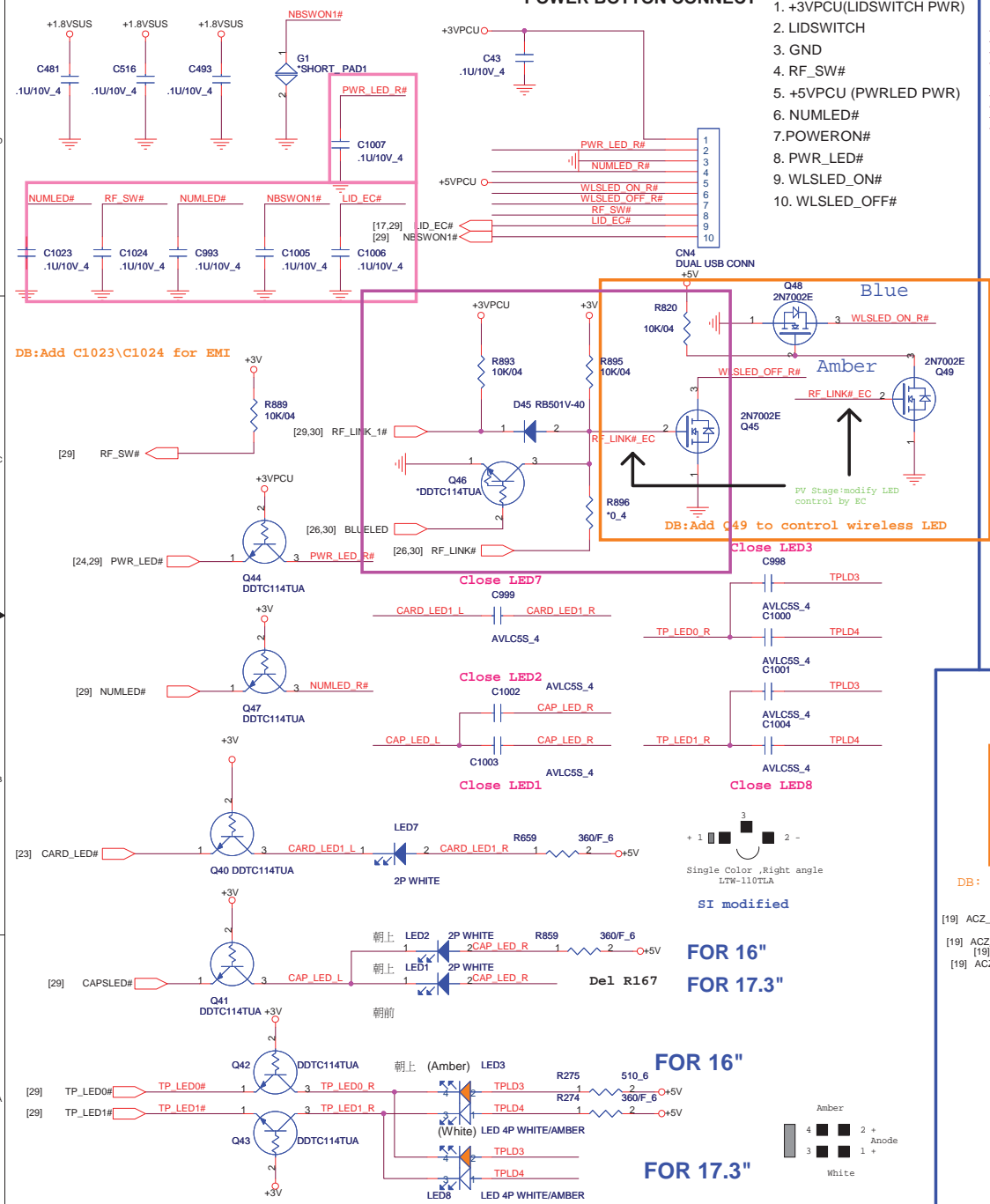
**PROJECT : OP6/7**  
**Quanta Computer Inc.**

Size: Custom Document Number: **RTL8102EL/RJ45** Rev: SI

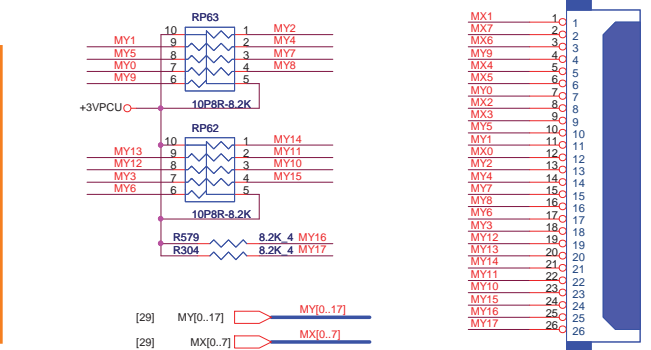
Date: Wednesday, February 04, 2009 Sheet 27 of 37

**POWER BOTTON CONNECT**

1. +3VPCU(LIDSWITCH PWR)
2. LIDSWITCH
3. GND
4. RF\_SW#
5. +5VPCU (PWRLD PWR)
6. NUMLED#
7. POWERON#
8. PWR\_LED#
9. WLSLED\_ON#
10. WLSLED\_OFF#

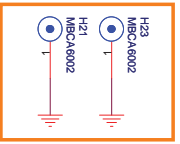


**KEYBOARD PULL-UP**



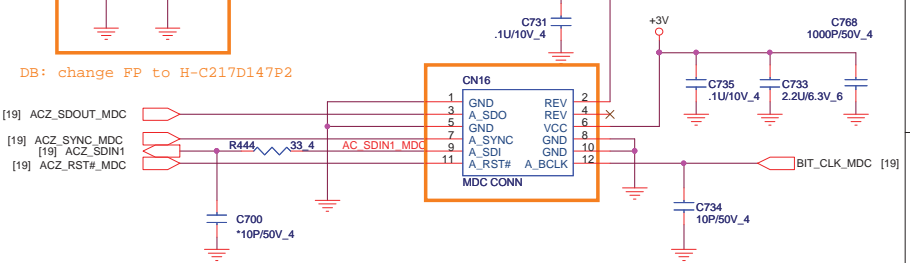
GB1RF260-1253-8F  
Footprint: "gblrf260-1253-7f-26p-1"

R430 Change to 100k ohm ,pull low



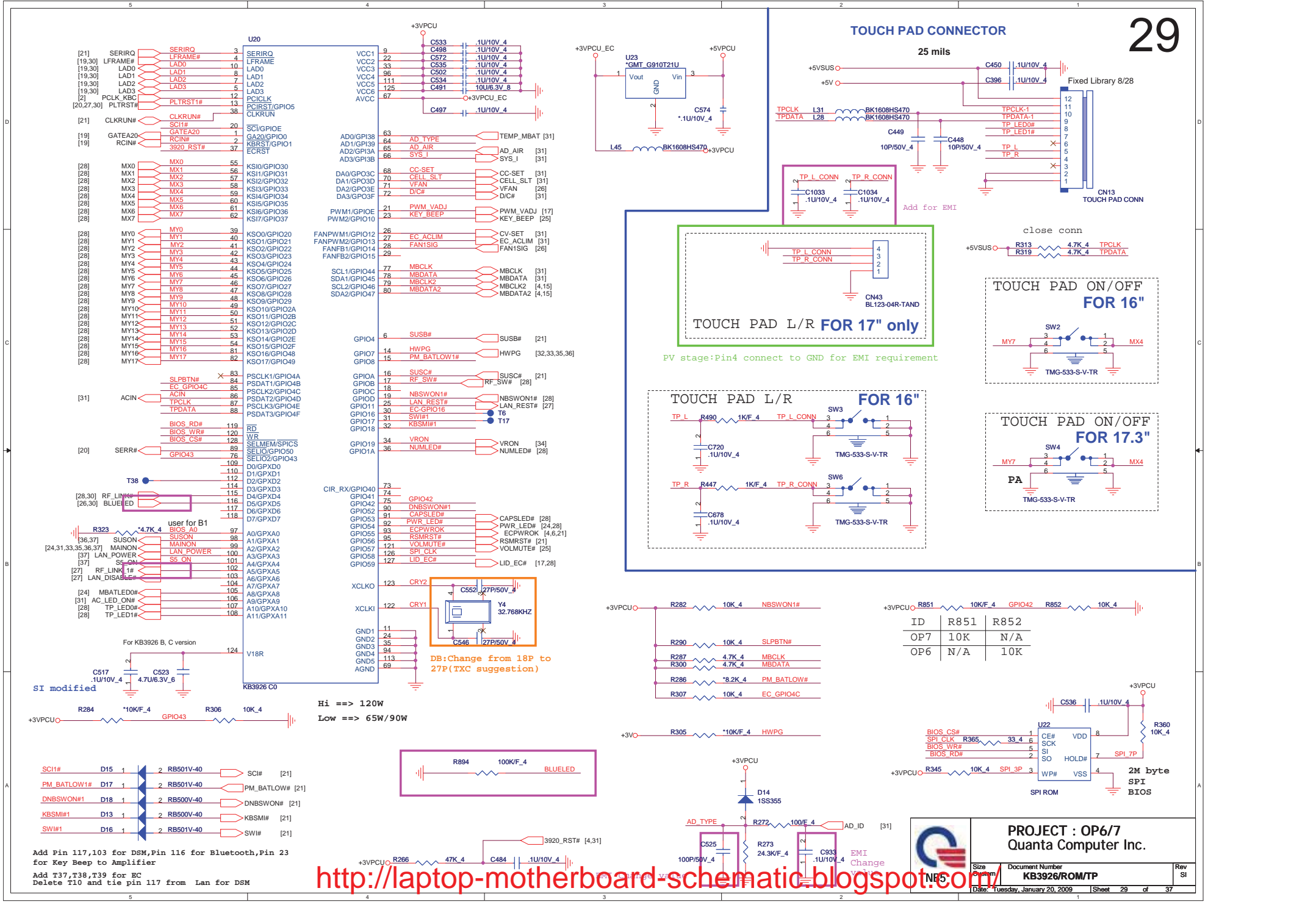
DB: change FP to H-C217D147P2

**MDC**



DB: change FP to MDC-1-179373-2-12P-RUV

|  |  |  |
|--|--|--|
|  | <p><b>PROJECT : OP6/7</b><br/>Quanta Computer Inc.</p> |  |
|  | <p>Size: Custom</p>                                    | <p>Document Number: <b>KB/LED/POWER CONN/MDC</b></p> |
| <p>Date: Tuesday, January 20, 2009</p> |  | <p>Sheet 28 of 37</p>                                |



TOUCH PAD CONNECTOR

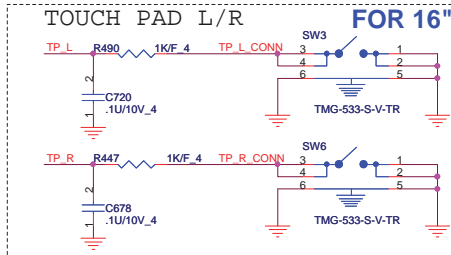
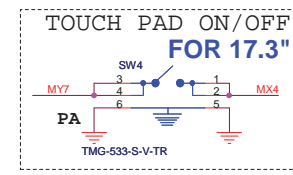
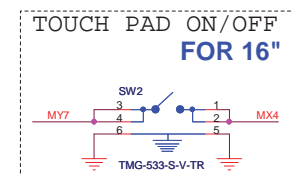
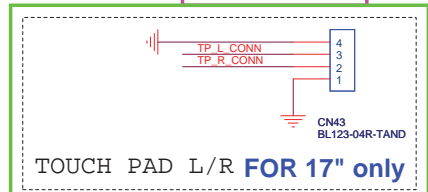
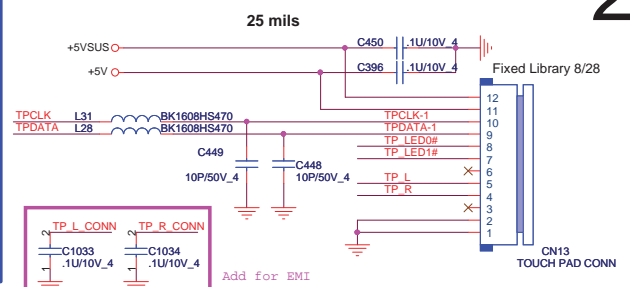
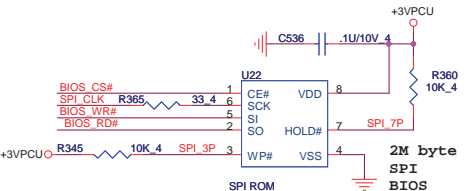


Table with 3 columns: ID, R851, R852. Rows include OP7 (10K, N/A), OP6 (N/A, 10K).



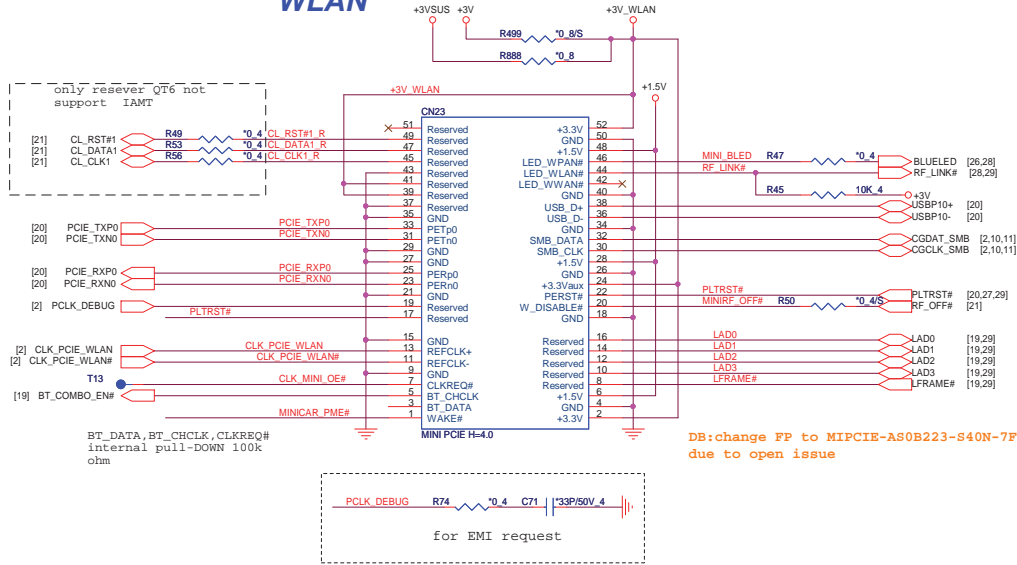
PROJECT : OP6/7  
Quanta Computer Inc.

Hi ==> 120W  
Low ==> 65W/90W

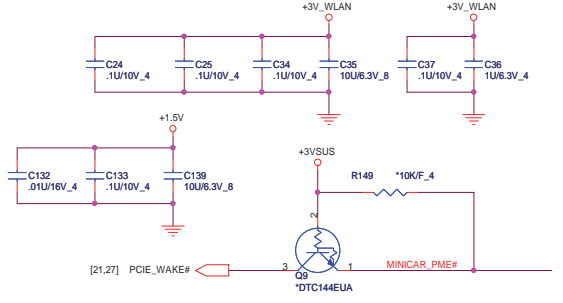


http://laptop-motherboard-schematic.blogspot.com/

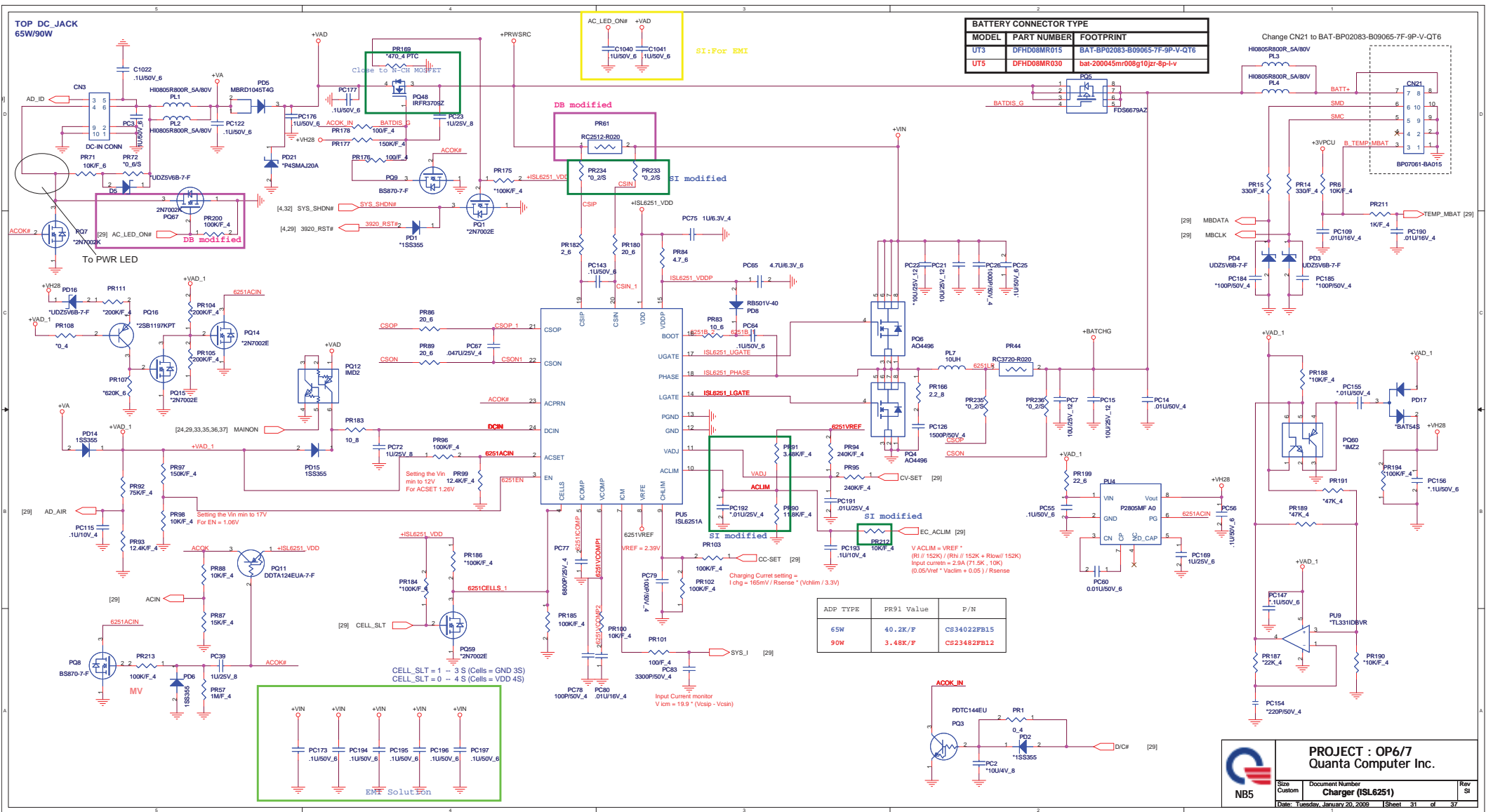
# Mini PCI-E Card 1 WLAN



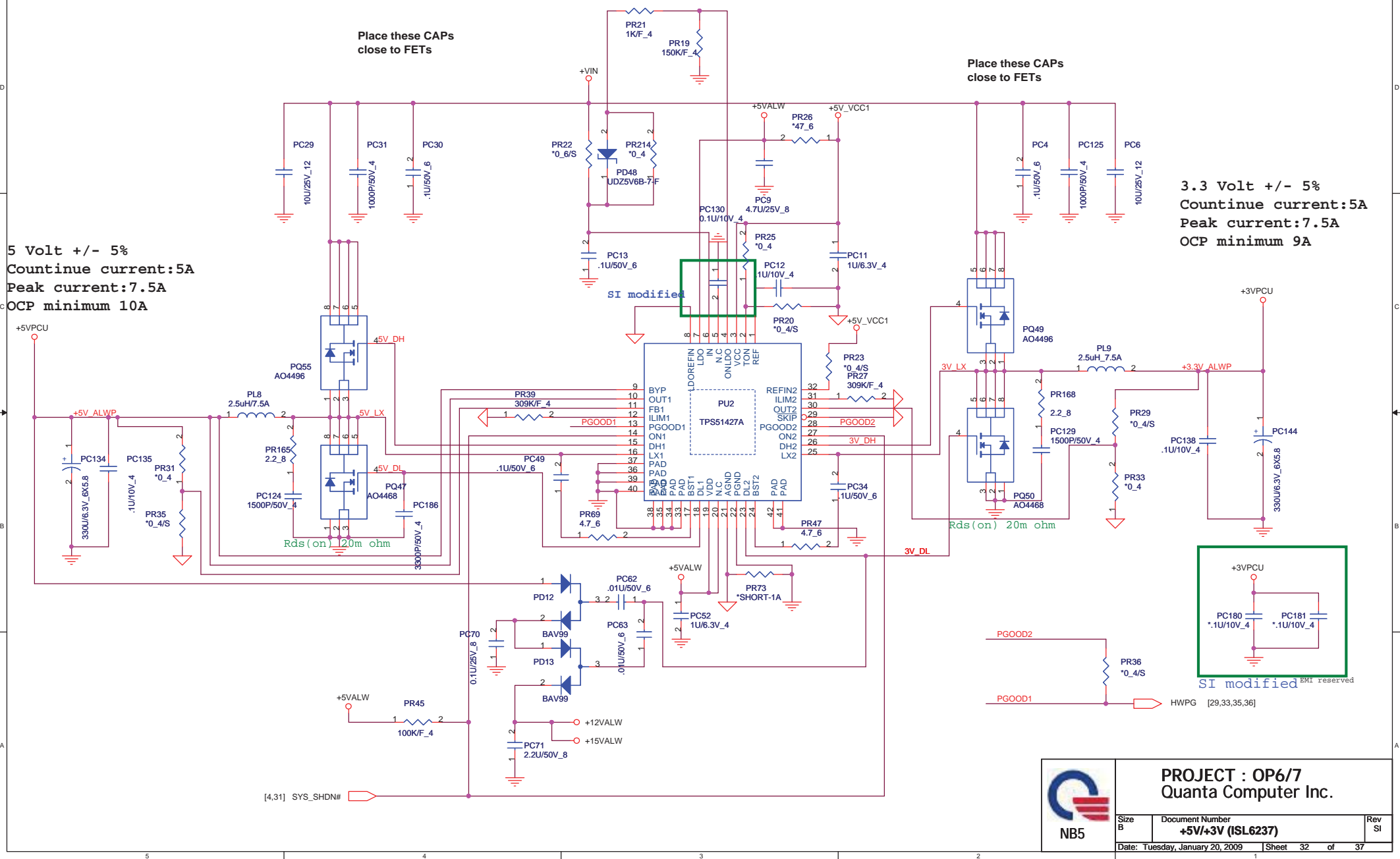
INTEL WLAN CARD PIN 20 W\_DISABLE# have internal pull-up 110k ohm



|  |  |  |           |
|--|--|--|-----------|
|  | <b>PROJECT : OP6/7</b><br>Quanta Computer Inc. |  | Rev<br>SI |
|  | Size<br>Custom                                 | Document Number<br><b>MINI PCI_E CONN X3</b> |           |



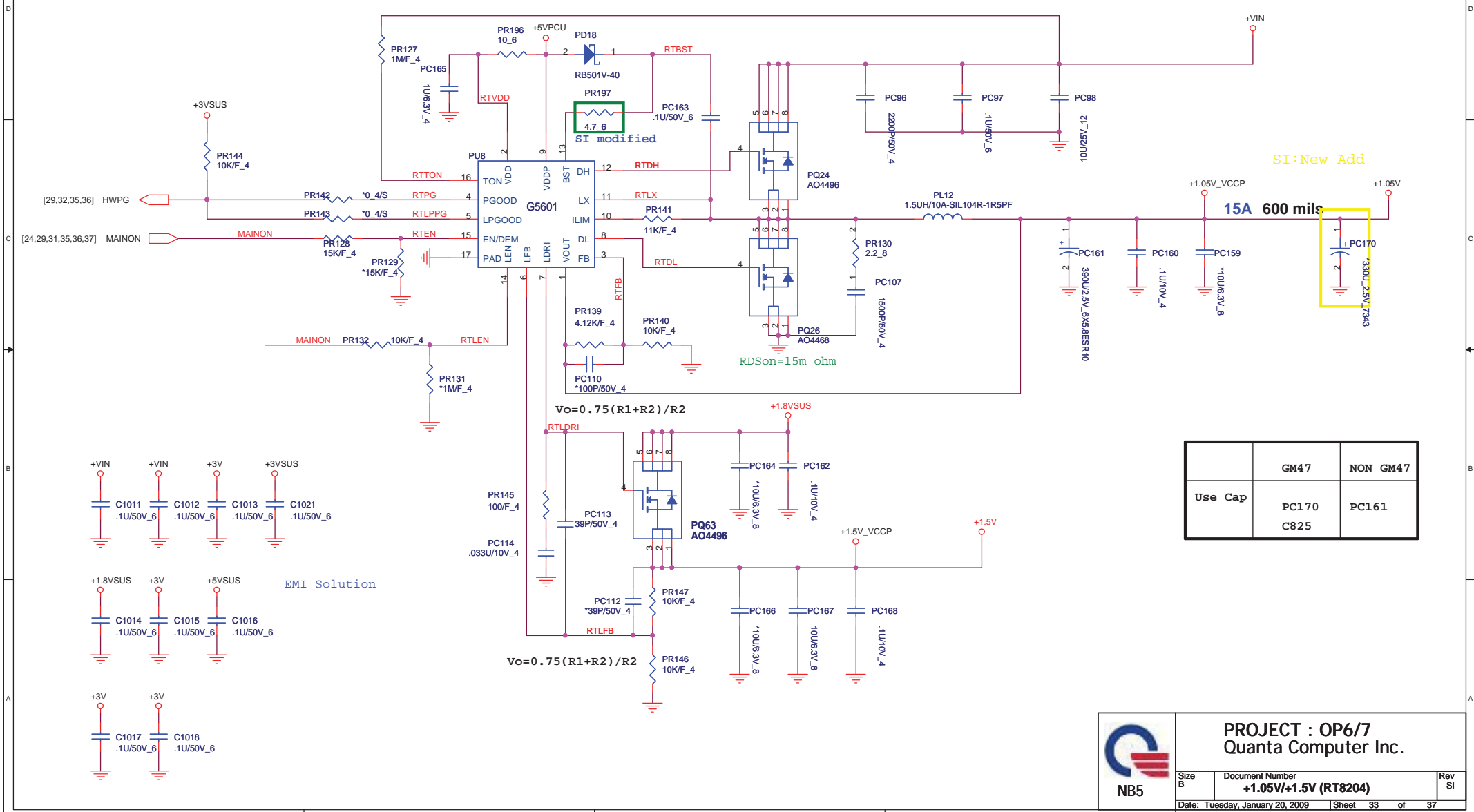
# DC/DC +3V\_ALW/+5V\_ALW/+5V\_ALW2 /+12V\_ALW





# VCCP1.05V & +1.5V

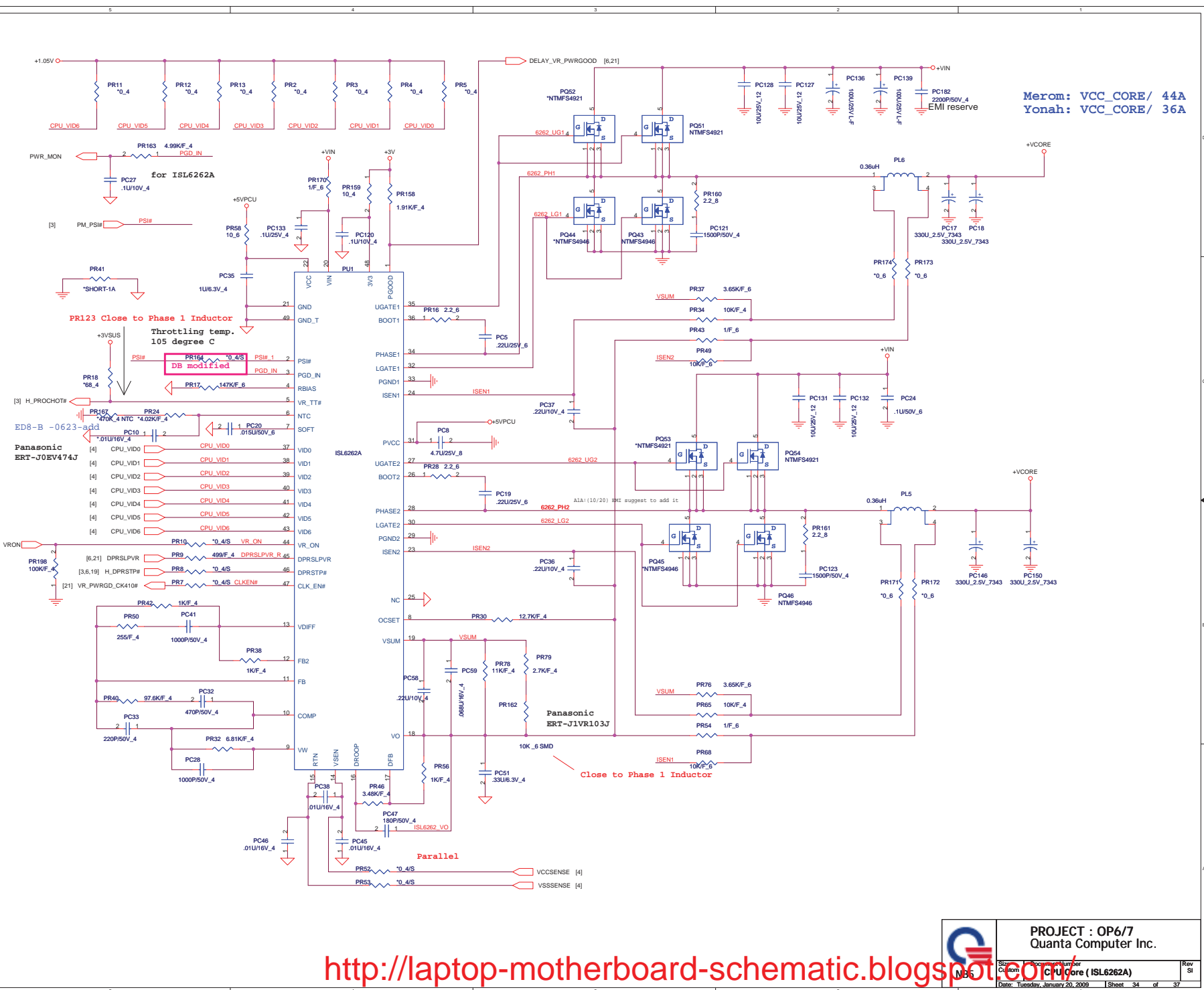
+1.05Volt +/- 5%  
 Countinue current:7.5A  
 Peak current:10A  
 OCP minimum 15A



|         |               |          |
|---------|---------------|----------|
|         | GM47          | NON GM47 |
| Use Cap | PC170<br>C825 | PC161    |

**PROJECT : OP6/7**  
**Quanta Computer Inc.**

|                                 |   |        |
|---------------------------------|---|--------|
| Size B                          | Document Number<br><b>+1.05V/+1.5V (RT8204)</b> | Rev SI |
| Date: Tuesday, January 20, 2009 | Sheet 33 of 37                                  |        |



Merom: VCC\_CORE/ 44A  
 Yonah: VCC\_CORE/ 36A

for ISL6262A  
 PWR\_MON  
 PSIF

PR123 Close to Phase 1 Inductor  
 Throttling temp.  
 105 degree C

- Panasonic ERT-J0EV474J
- [4] CPU\_VID0 CPU\_VID0 37
  - [4] CPU\_VID1 CPU\_VID1 38
  - [4] CPU\_VID2 CPU\_VID2 39
  - [4] CPU\_VID3 CPU\_VID3 40
  - [4] CPU\_VID4 CPU\_VID4 41
  - [4] CPU\_VID5 CPU\_VID5 42
  - [4] CPU\_VID6 CPU\_VID6 43

- [6.21] DPRSLPVR PR9 499F\_4 DPRSLPVR\_R\_45
- [3.8.19] H\_DPRSTP# PR8 0.4S
- [21] VR\_PWRGD\_CK410# PR7 0.4S CLKEN#

- VR\_ON PR10 0.4S VR\_ON
- [6.21] DPRSLPVR PR9 499F\_4 DPRSLPVR\_R\_45
- [3.8.19] H\_DPRSTP# PR8 0.4S
- [21] VR\_PWRGD\_CK410# PR7 0.4S CLKEN#
- VDIFF PR50 1K/F\_4 PC41 1000P/50V\_4
- FB2 PR38 1K/F\_4
- FB PR40 97.6K/F\_4 PC32 470P/50V\_4
- COMP PC33 220P/50V\_4 PR32 6.81K/F\_4
- VW PC28 1000P/50V\_4

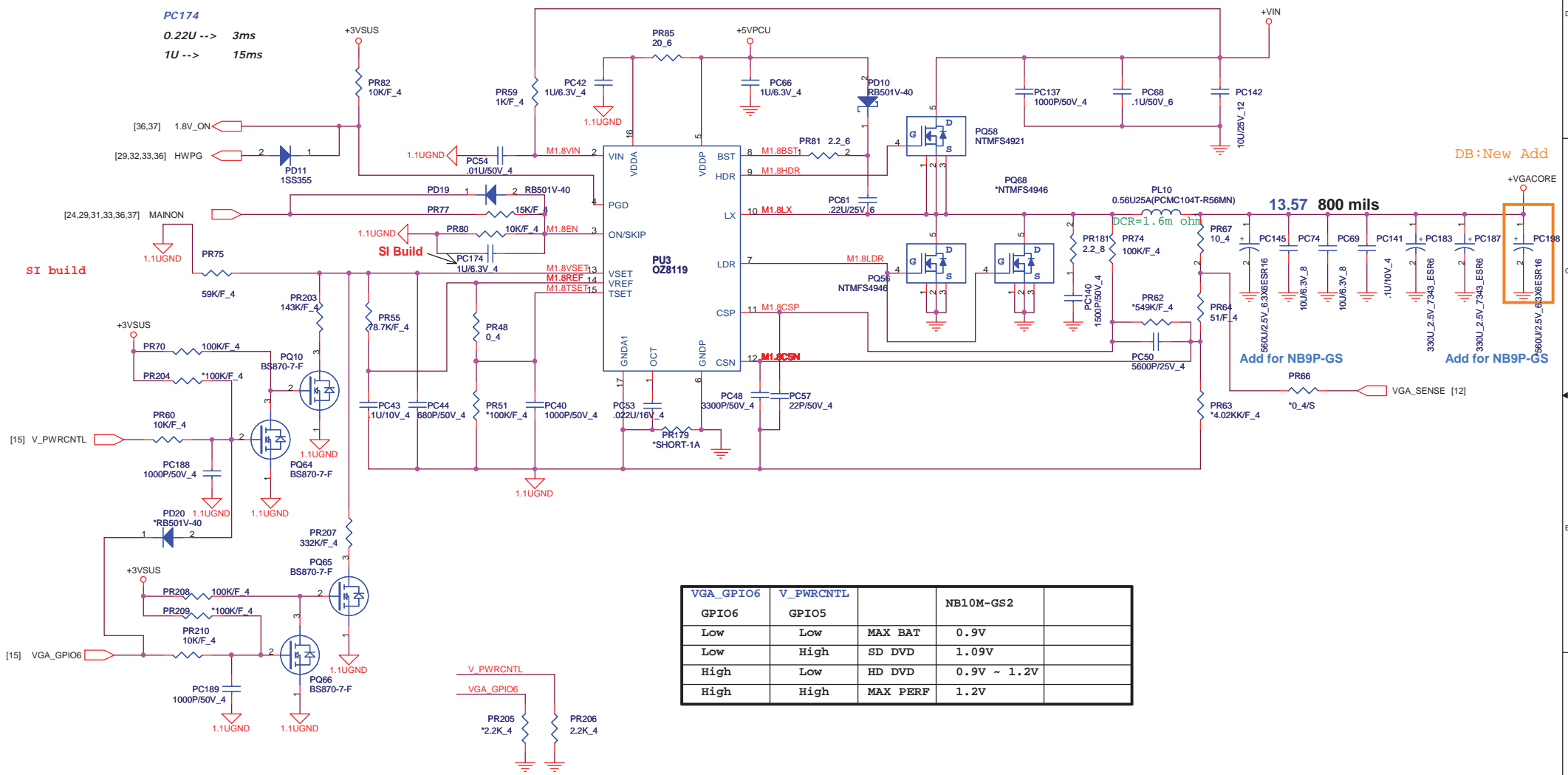
- RTN PC38 0.01u/16V\_4
- VSEN PR46 3.48K/F\_4
- DRCOP PC47 180P/50V\_4
- DIFB PR56 1K/F\_4
- VO PC45 0.01u/16V\_4
- Parallel PR52 0.4S VCCSENSE [4]
- PR53 0.4S VSSSENSE [4]

|   |                                    |           |
|---|------------------------------------|-----------|
| PROJECT : OP6/7<br>Quanta Computer Inc. |                                    | Rev<br>SI |
| Signature                               | Doc Number<br>CPU Core ( ISL6262A) |           |
| Date: Tuesday, January 20, 2009         | Sheet 34                           | of 37     |

# VGA Core & VCC1.1

+1.1Volt +/- 5%  
 Countinue current:17.54A  
 Peak current:22.8A  
 OCP minimum 23A

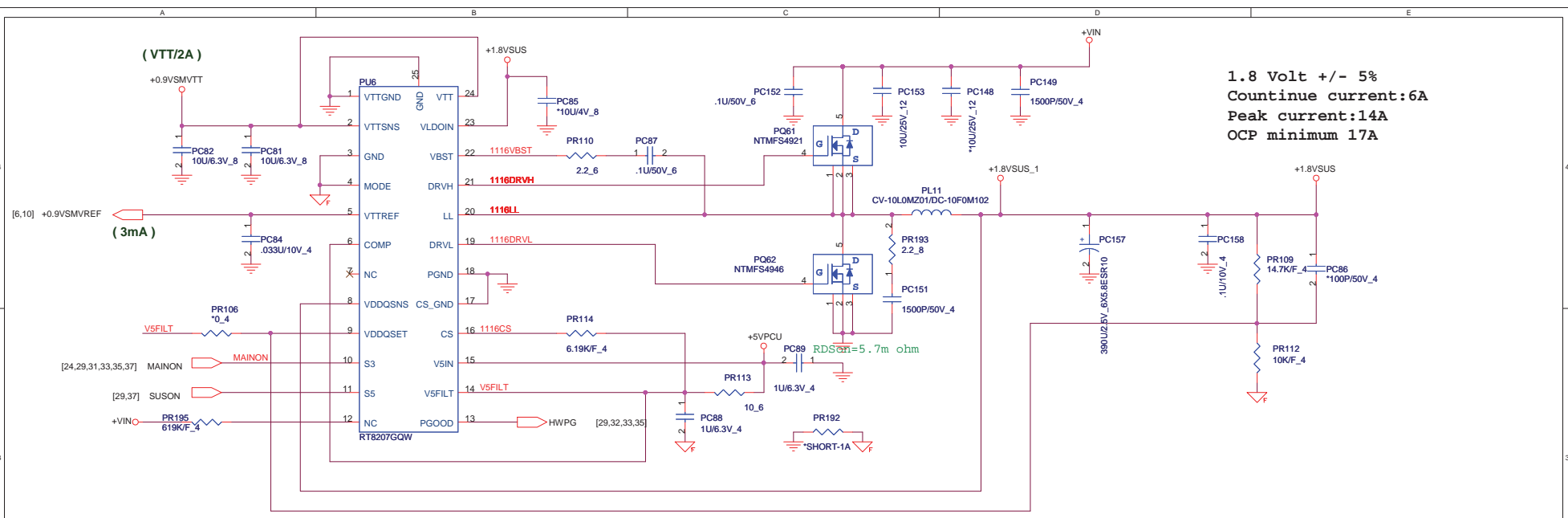
PC174  
 0.22U --> 3ms  
 1U --> 15ms



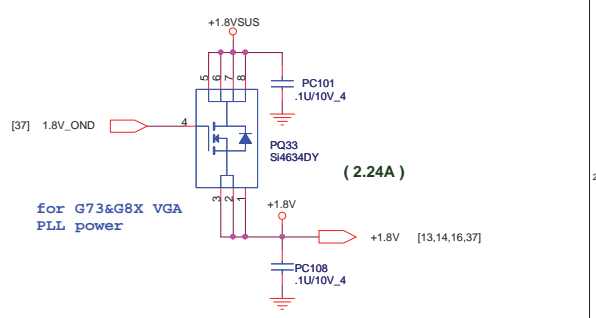
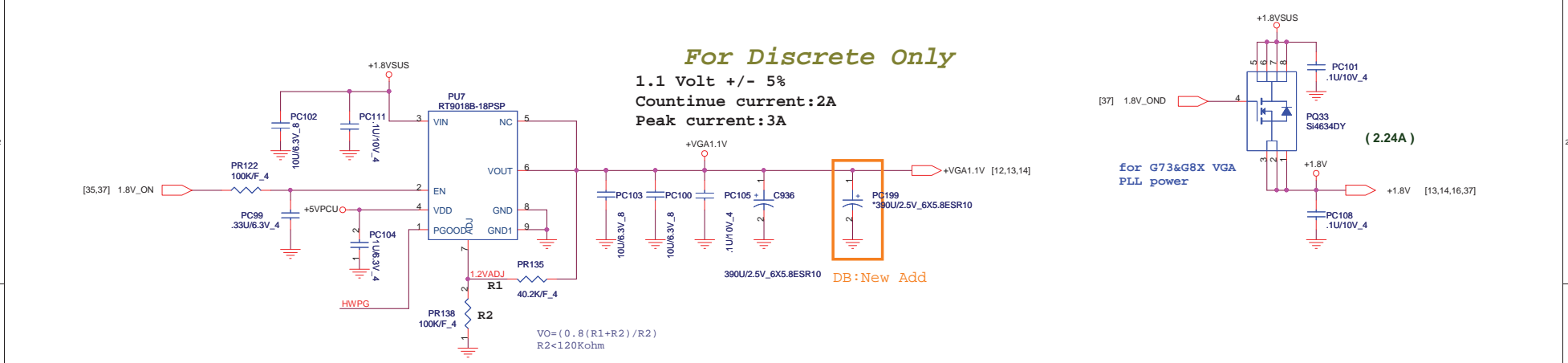
| VGA_GPIO6 | V_PWRCNTL |          | NB10M-GS2   |  |
|-----------|-----------|----------|-------------|--|
| Low       | Low       | MAX BAT  | 0.9V        |  |
| Low       | High      | SD DVD   | 1.09V       |  |
| High      | Low       | HD DVD   | 0.9V ~ 1.2V |  |
| High      | High      | MAX PERF | 1.2V        |  |

**PROJECT : OP6/7**  
**Quanta Computer Inc.**

|  |   |        |
|--|---|--------|
| Size Custom                                      | Document Number<br><b>VGA Core OZ8119</b> | Rev SI |
| Date: Tuesday, January 20, 2009   Sheet 35 of 37 |   |        |



Change PR122 tied to 1.8V\_ON as power sequence request



<http://laptop-motherboard-schematic.blogspot.com/>

|                                 |                      |                           |                |
|---------------------------------|----------------------|---------------------------|----------------|
|                                 | PROJECT : OP6/7      |                           |                |
|                                 | Quanta Computer Inc. |                           |                |
|                                 | Size                 | Document Number           | Rev            |
|                                 | Quantity             | 1.8V/DDR_VTER/+1.8V/+1.1V | SI             |
| Date: Tuesday, January 20, 2009 |                      |                           | Sheet 36 of 37 |

