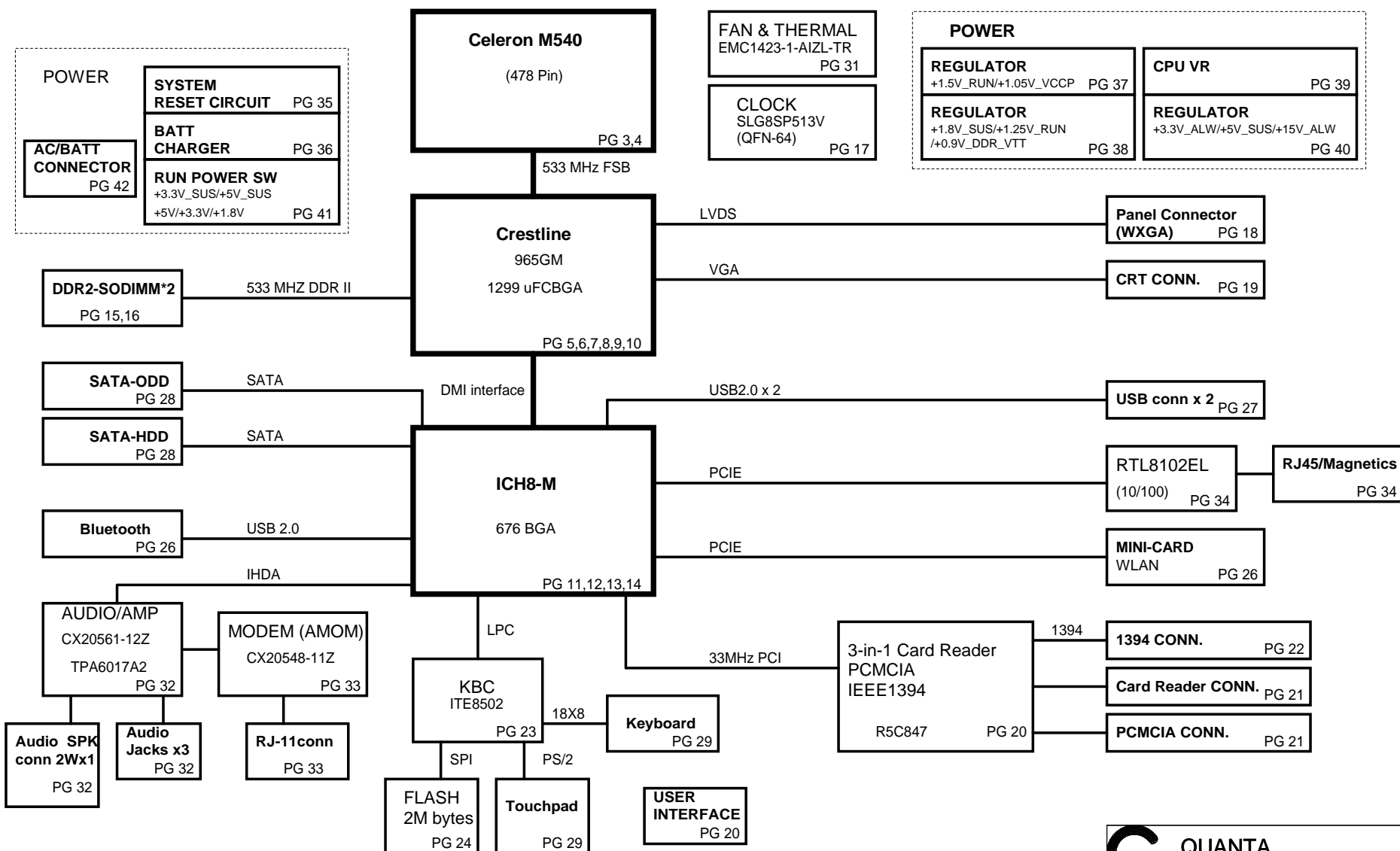


# VM9/VM8 Block Diagram



|                         |                       |               |
|-------------------------|-----------------------|---------------|
| Title                   |                       |               |
| Schematic Block Diagram |                       |               |
| Size                    | Document Number       | Rev           |
| VM9/VM8                 | VM9/VM8               | 1A            |
| Date:                   | Friday, July 18, 2008 | Sheet 1 of 53 |


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| 18    | HDMI                           |
| 23    | LCD Conn. & SSP                |
| 24    | CRT Conn                       |
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| 55    | PAD& SCREW                     |
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| 57    | SMBUS BLOCK                    |
| 58    | Power Block Dianram            |

# Power States

| POWER PLANE   | VOLTAGE      | PAGE                                     | DESCRIPTION              | CONTROL SIGNAL        | ACTIVE IN |
|---------------|--------------|------------------------------------------|--------------------------|-----------------------|-----------|
| +PWR_SRC      | 10V~+19V     | 4,26,32,34,46,48,49,51,52,56             | MAIN POWER               |                       | S0~S5     |
| +RTC_CELL     | +3.0V~+3.3V  | 11,14,31,32                              | RTC                      |                       | S0~S5     |
| +3.3V_ALW     | +3.3V        | 3,31,32,34,36,37,38,44,46,49,52,53,54    | 8051 POWER               | ALWON                 | S0~S5     |
| +5V_ALW       | +5V          | 35,36,46,48,49,52,53,54,56               | LCD/CHARGE POWER         | ALWON                 | S0~S5     |
| +15V_ALW      | +15V         | 26,36,37,52,53                           | LARGE POWER              | +5V_ALW               | S0~S5     |
| +3.3V_LAN     | +3.3V        | 42,43                                    | LAN POWER                | AUX_ON                |           |
| +5V_SUS       | +5V          | 14,38,51,53                              | SLP_S5# CTRLD POWER      | SUS_ON                |           |
| +3.3V_SUS     | +3.3V        | 3,11,12,13,14,26,30,37,38,43,48,49,51,53 | SLP_S5# CTRLD POWER      | 3.3V_SUS_ON           |           |
| +1.8V_SUS     | +1.8V        | 6,8,9,15,48,49,53                        | SODIMM POWER             | DDR_ON                |           |
| +0.9V_DDR_VTT | +0.9V        | 16,49,53                                 | SODIMM POWER             | 0.9V_DDR_VTT_ON       |           |
| +5V_RUN       | +5V          | 14,18,27,36,37,38,39,40,41,53            | SLP_S3# CTRLD POWER      | RUN_ON                |           |
| +3.3V_RUN     | +3.3V        | 14,18,27,36,37,38,39,40,41,53            | SLP_S3# CTRLD POWER      | 3.3V_RUN_ON           |           |
| +1.8V_RUN     | +1.8V        | 18,38,53                                 | SDVO POWER               | RUN_ON                |           |
| +1.5V_RUN     | +1.5V        | 4,9,14,30,33,34,48,53,56                 | CALISTOGA/ICH8 POWER     | 1.5V_RUN_ON           |           |
| +1.25V_RUN    | +1.25V       | 6,9,14,49,53                             | CALISTOGA/ICH8 POWER     | 1.25V_RUN_ON          |           |
| +1.05V_VCCP   | +1.05V       | 3,4,5,6,8,9,11,14,48,56                  | CPU/CALISTOGA/ICH8 POWER | 1.05V_RUN_ON          |           |
| +VCC_CORE     | +0.7V~+1.77V | 4,51,56                                  | CPU CORE POWER           | IMVP_VR_ON            |           |
| +LCDVCC       | +3.3V        | 26                                       | LCD Power                | LCDVCC_TST_EN & ENVDD |           |
| +5V_MOD       | +5V          | 36                                       | Module Power             | MODC_EN#              |           |
| +5V_HDD       | +5V          | 36                                       | HDD Power                | HDCC_EN#              |           |
| +PBATT        | +10V~+17V    |                                          | MAIN BATTERY             | CHG_PBATT             |           |
| +SBATT        | +10V~+17V    |                                          | SECOND BATTERY           | CHG_SBATT             |           |

| GND PLANE    | PAGE | DESCRIPTION |
|--------------|------|-------------|
| 8731AGND     | 46   |             |
| AGND_0.9V    | 49   |             |
| AGND_DC/DC   | 52   |             |
| AGND_DC2     | 48   |             |
| AGND_DDR     | 49   |             |
| AGND_ISL6260 | 51   |             |
| GND          | ALL  |             |


**QUANTA  
COMPUTER**

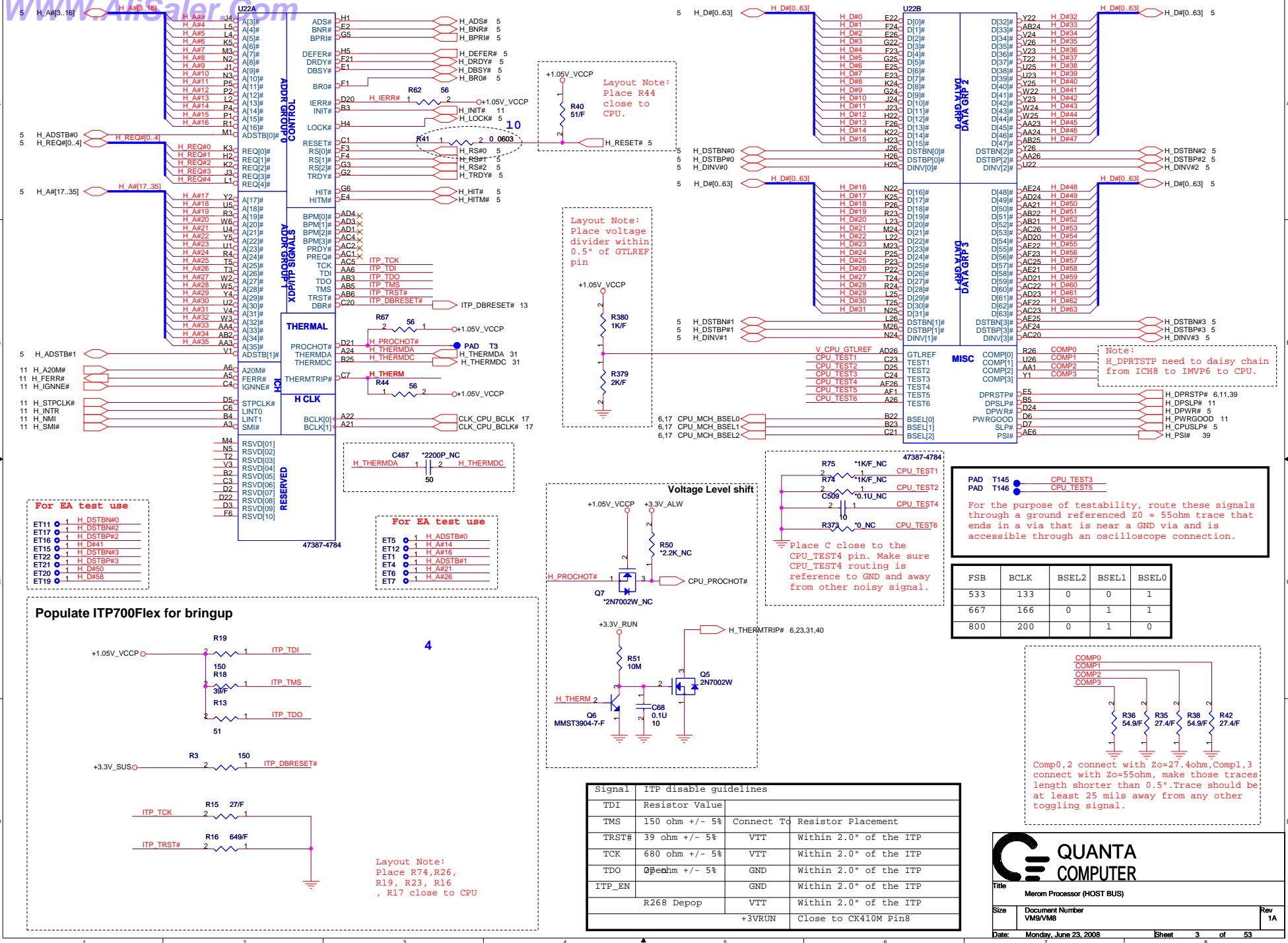
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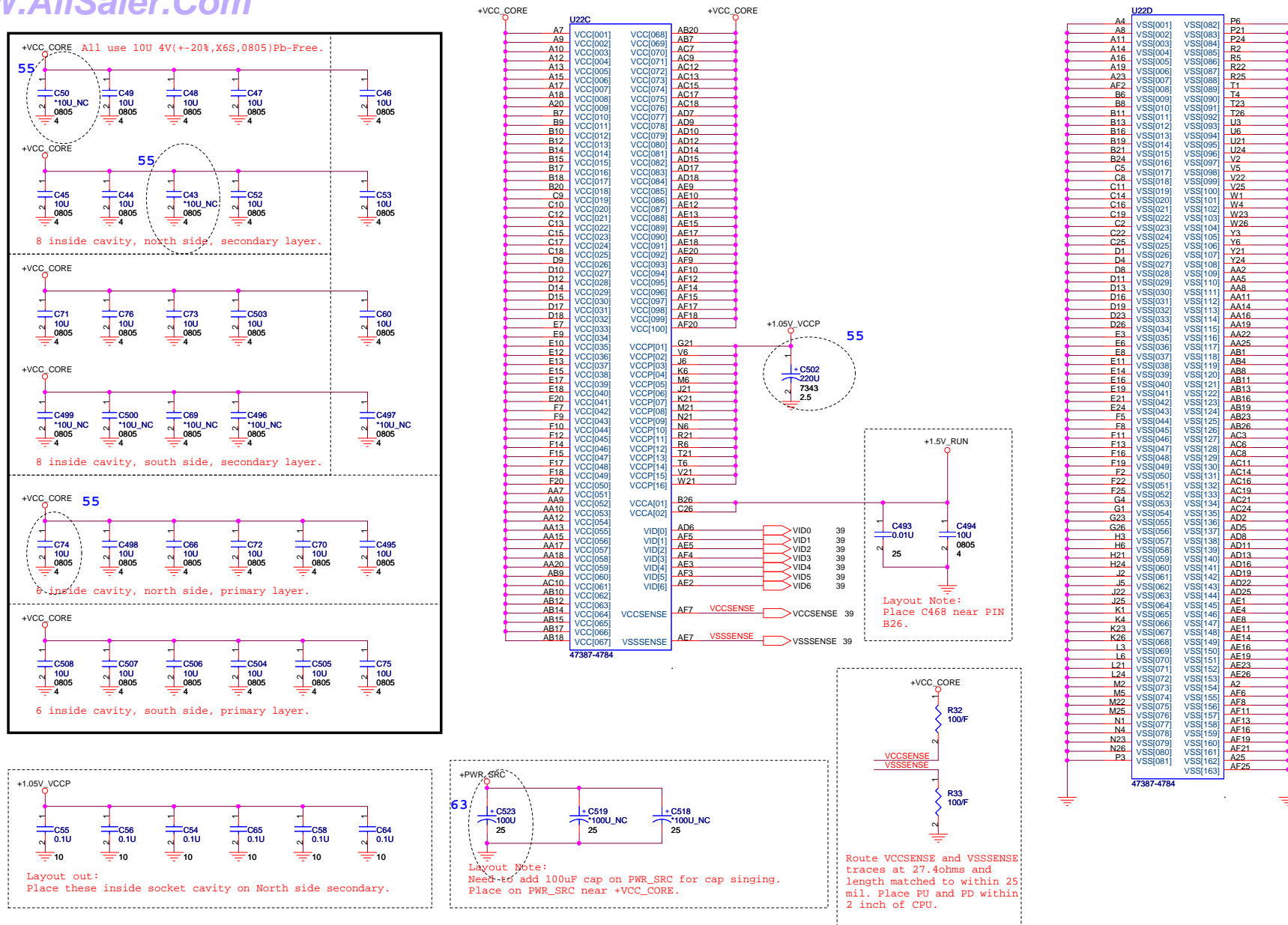
**Size** Document Number VM9/VM8

**Date:** Tuesday, May 27, 2008

**Sheet** 2 of 53

**Rev** 1A





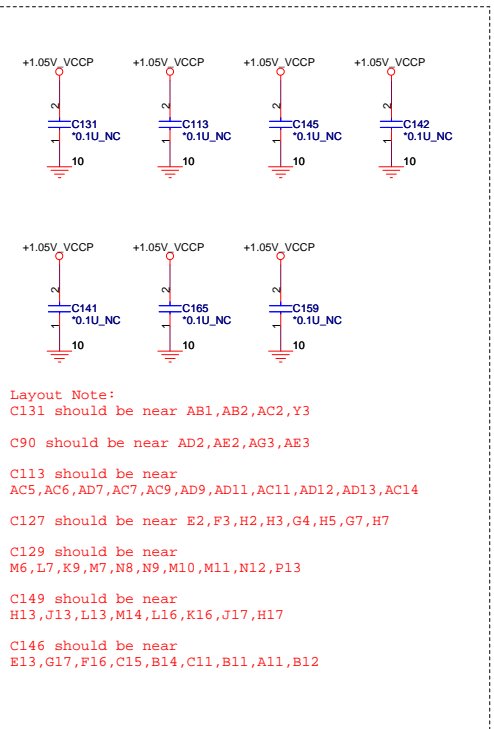
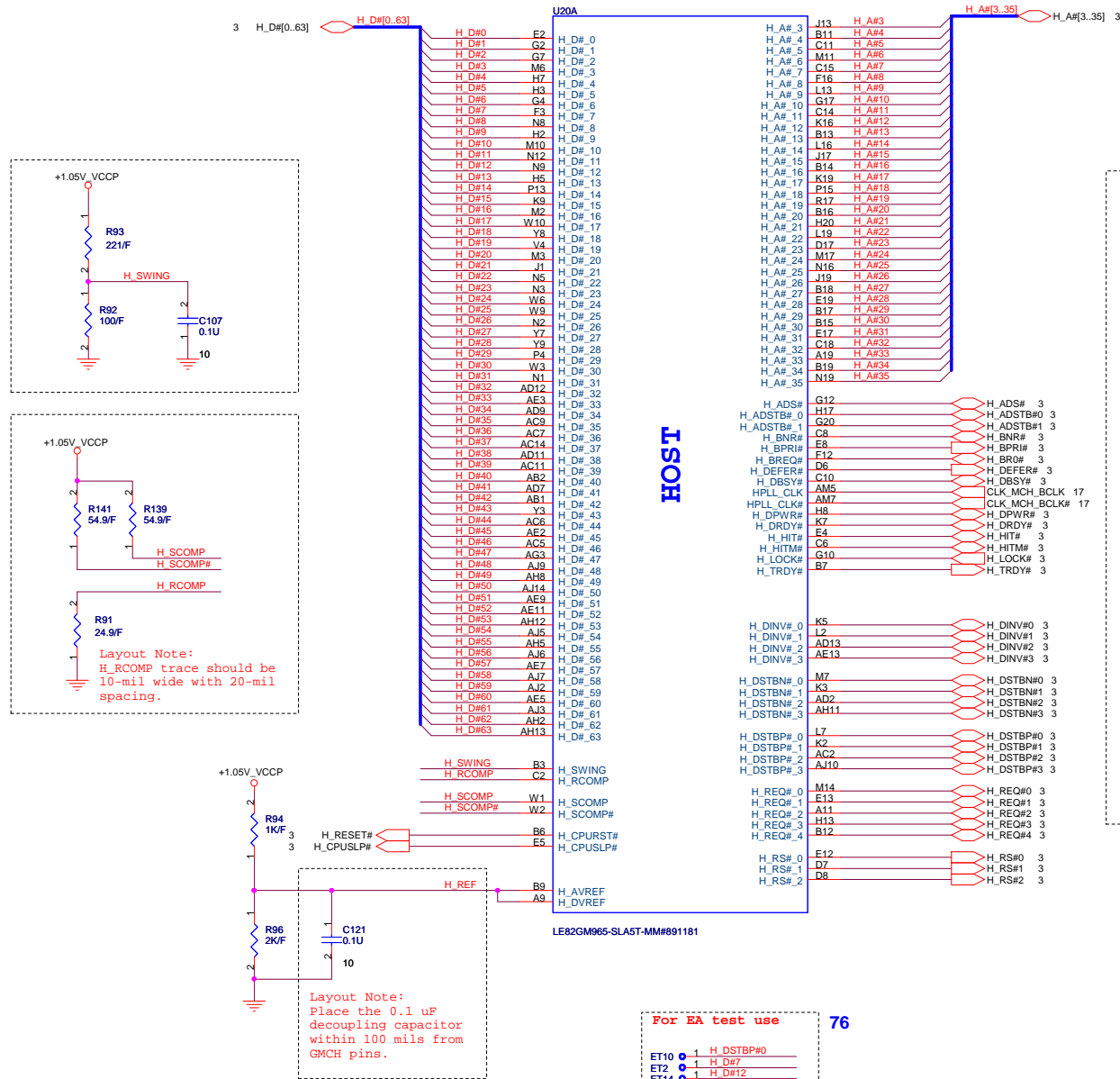
Merom Processor (POWER)

Size Document Number VM9/VM8

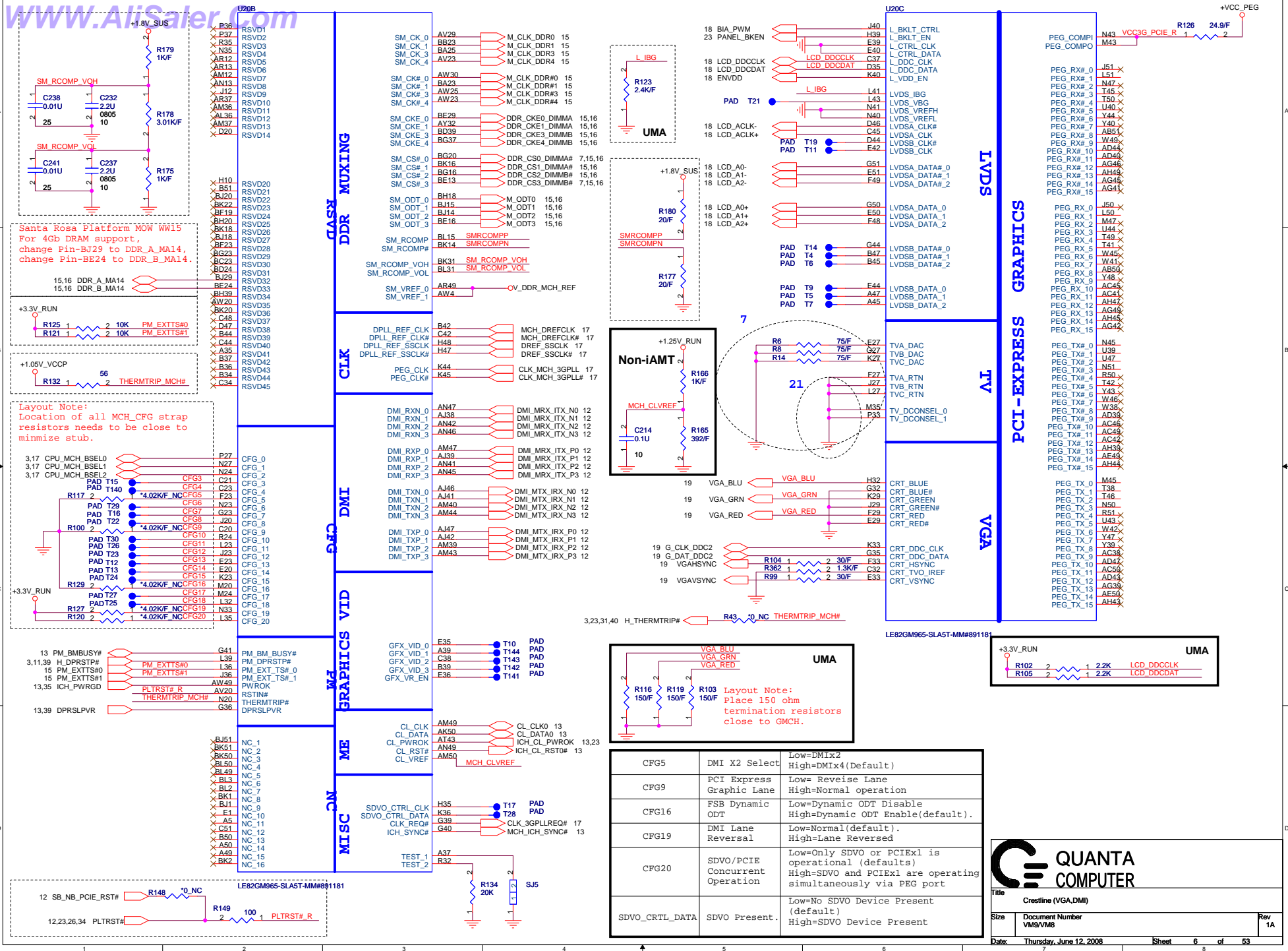
Rev 1A

Date: Friday, May 30, 2008

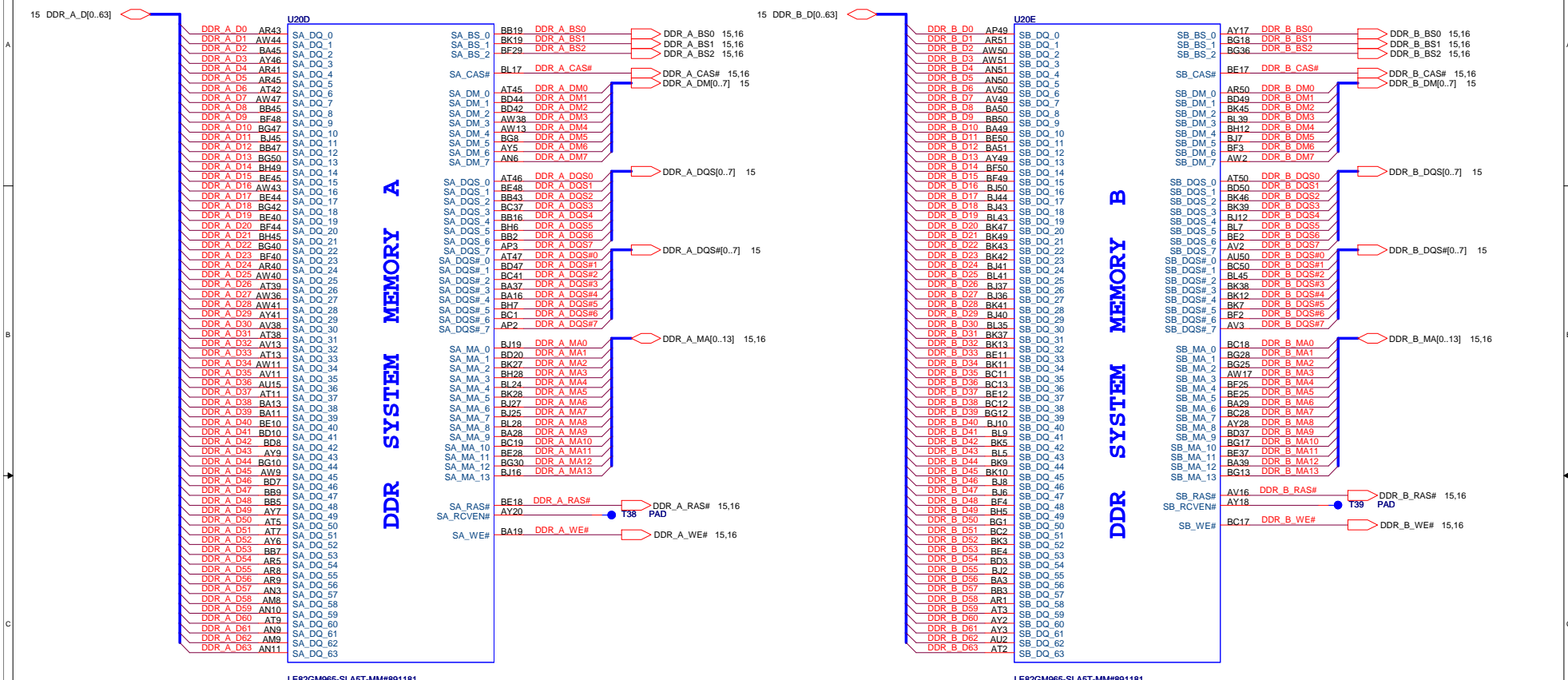
Sheet 4 of 53



|       |                       |                  |         |
|-------|-----------------------|------------------|---------|
| Title |                       | Crestline (HOST) |         |
| Size  | Document Number       | Rev              |         |
|       | VM9/VM8               | 1A               |         |
| Date: | Monday, June 02, 2008 | Sheet            | 5 of 53 |







76 For EA test use

|      |                |
|------|----------------|
| ET42 | DDR A CAS#     |
| ET37 | DDR A RAS#     |
| ET31 | DDR A WE#      |
| ET39 | DDR CS0 DIMMA# |
| ET32 | DDR A MA0      |
| ET44 | DDR A MA13     |
| ET28 | DDR A DQS0     |
| ET27 | DDR A DQS#0    |
| ET23 | DDR A DQS      |
| ET26 | DDR A DSS      |
| ET40 | DDR A D22      |

DDR\_CS0\_DIMMA# 6,15,16

76 For EA test use

|      |                |
|------|----------------|
| ET36 | DDR B CAS#     |
| ET29 | DDR B RAS#     |
| ET33 | DDR B WE#      |
| ET38 | DDR CS3 DIMMB# |
| ET41 | DDR B MA0      |
| ET24 | DDR B DQS0     |
| ET25 | DDR B DQS#0    |
| ET30 | DDR B DQ       |
| ET43 | DDR B D41      |

DDR\_CS3\_DIMMB# 6,15,16

**QUANTA COMPUTER**

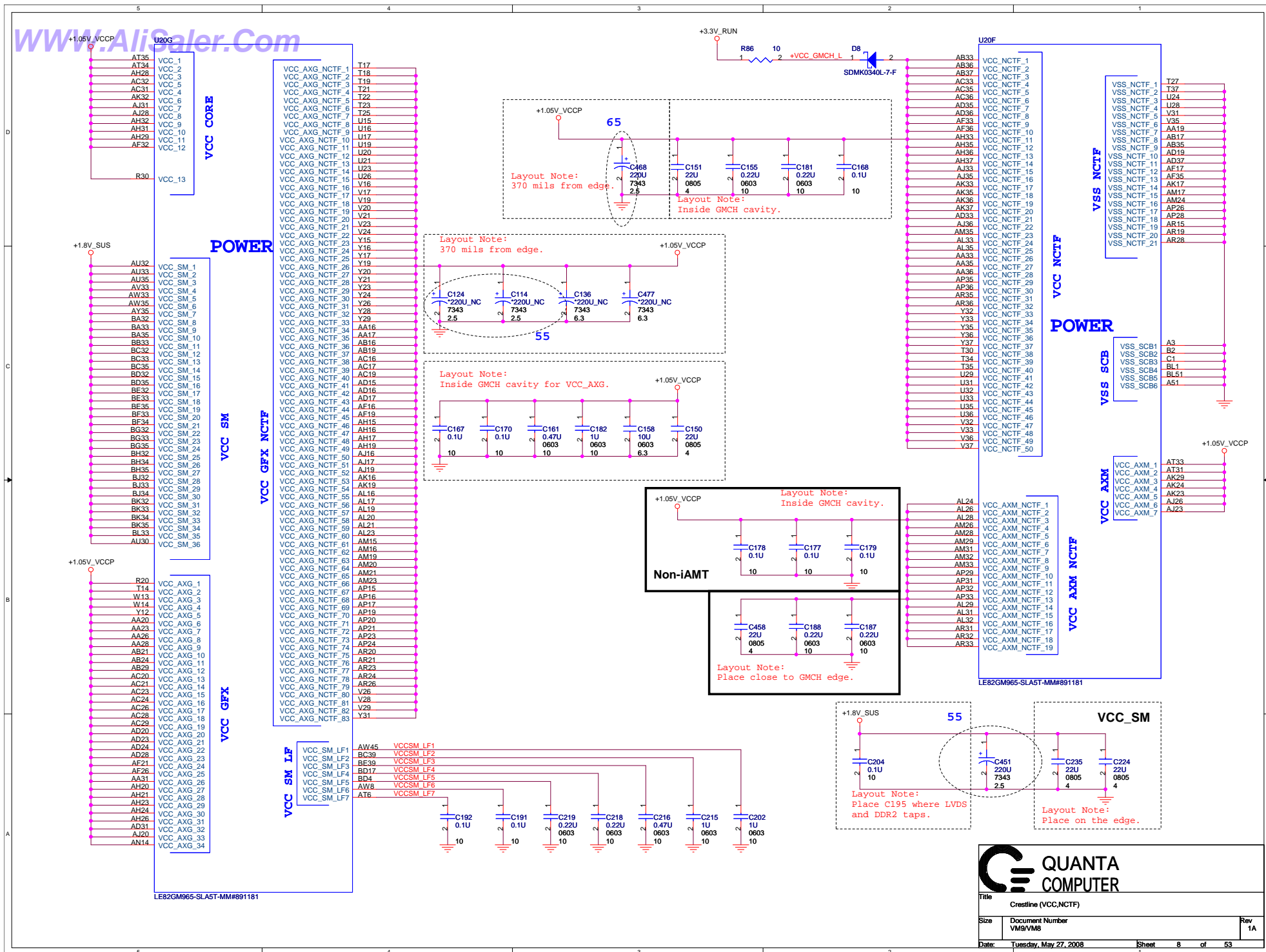
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Size: Document Number VM9/VM8

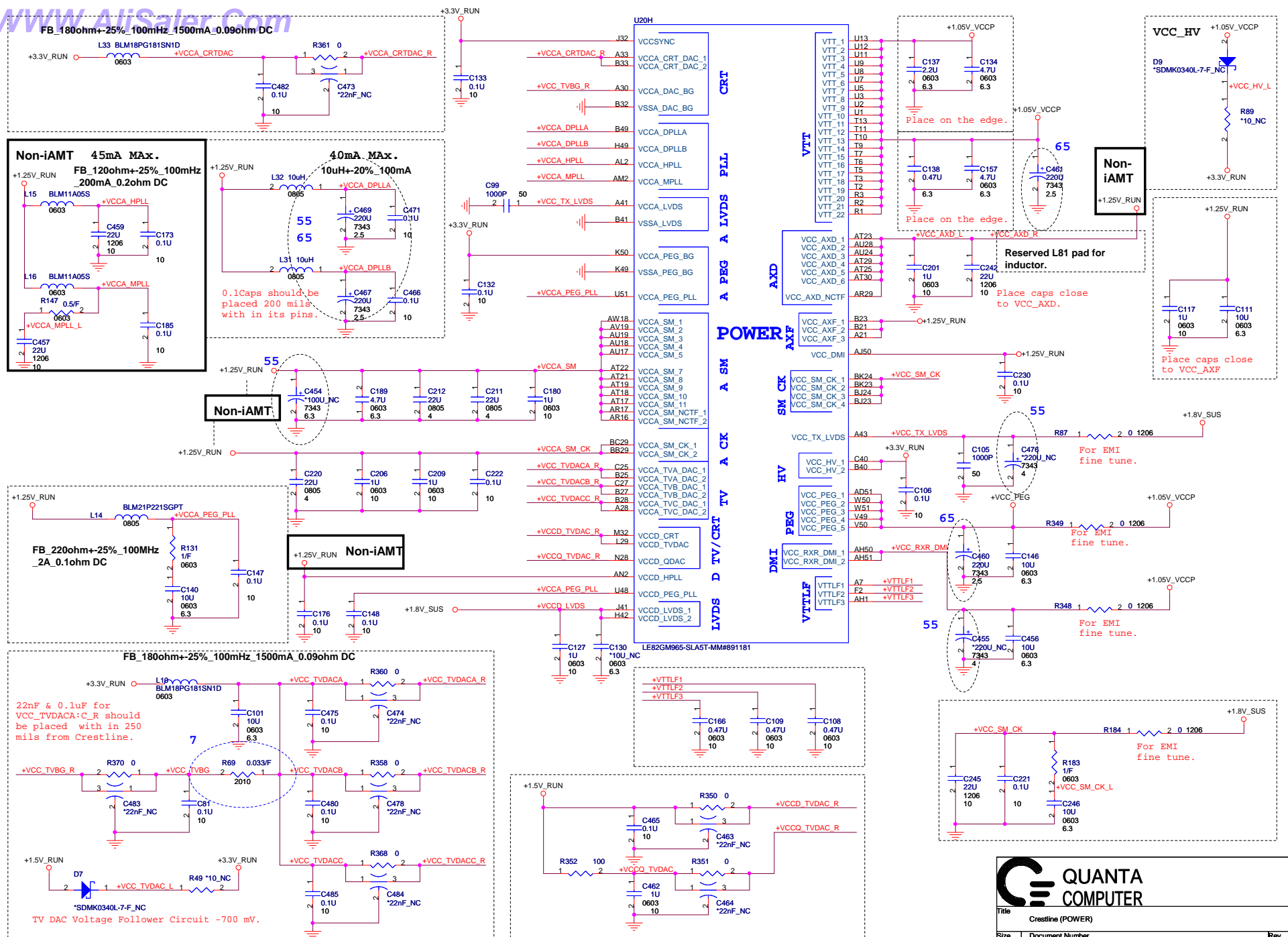
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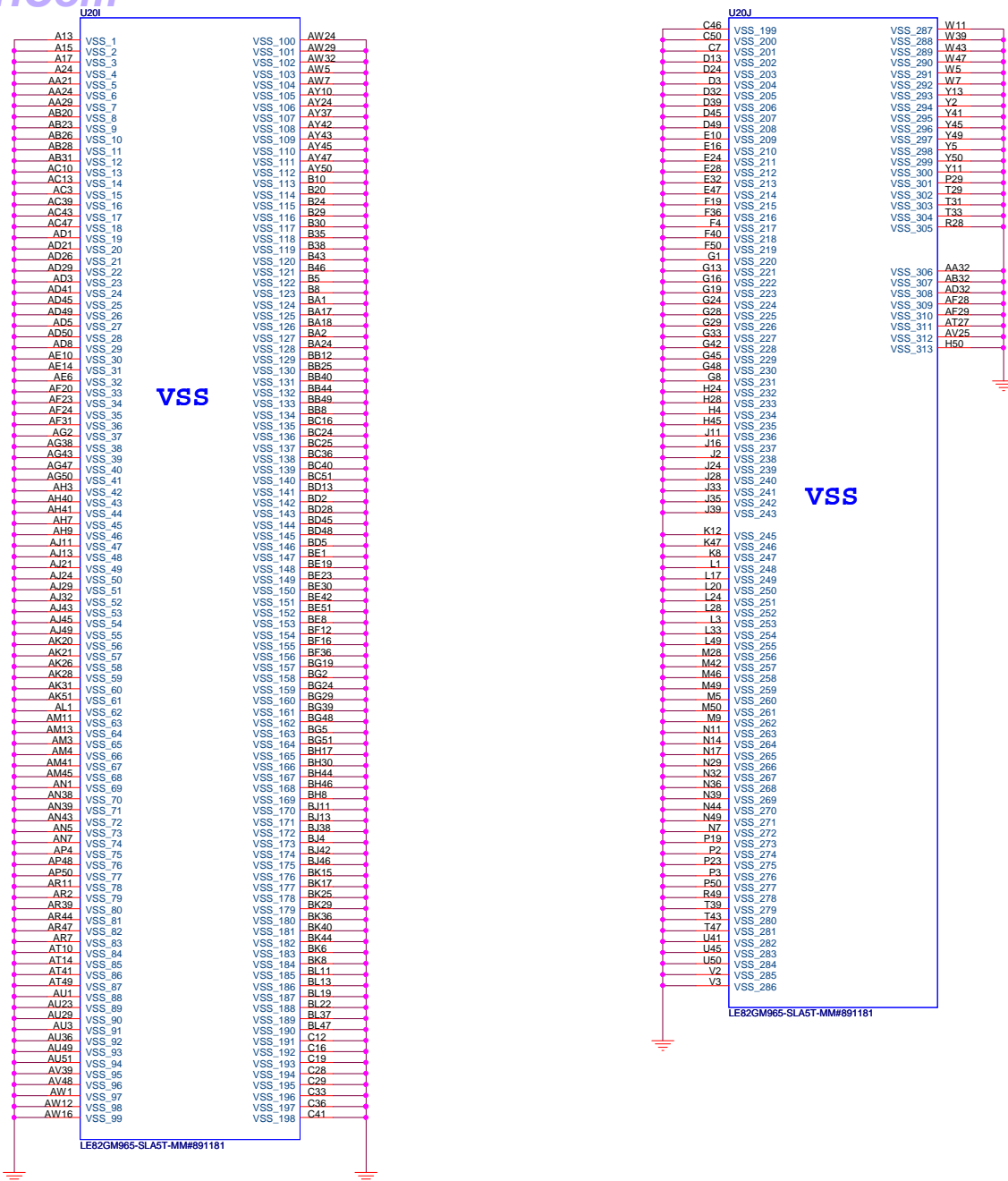
Sheet: 7 of 53

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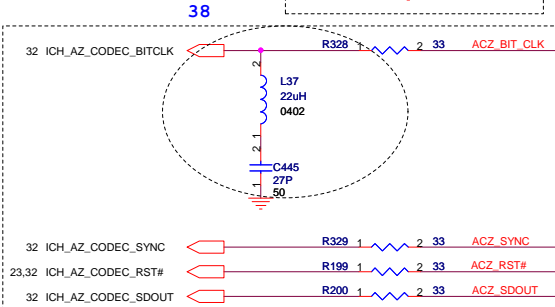
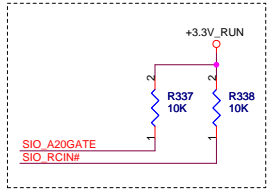
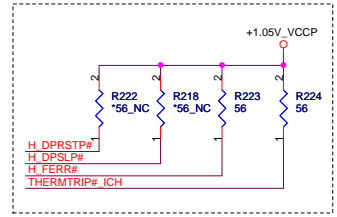
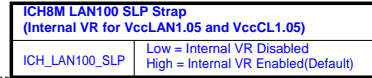
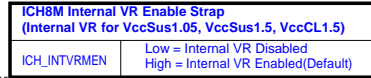
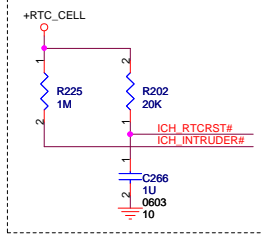
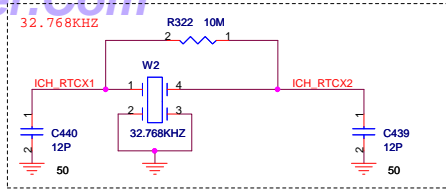
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Size Document Number VM9/VM8

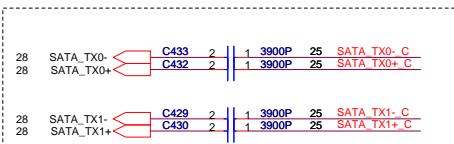
Rev 1A

Date: Tuesday, May 27, 2008

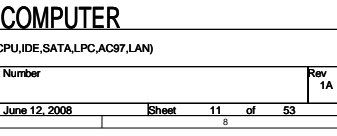
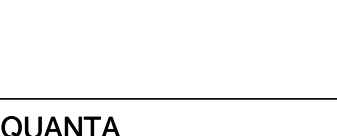
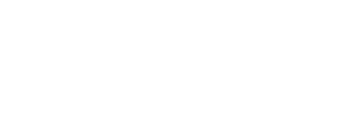
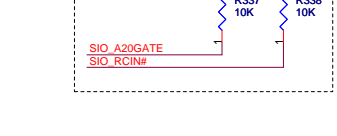
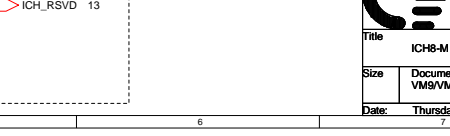
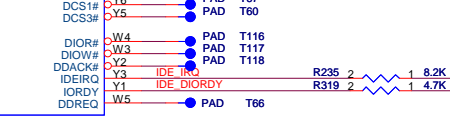
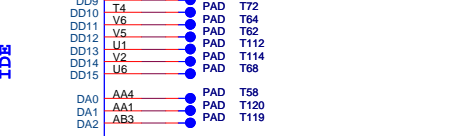
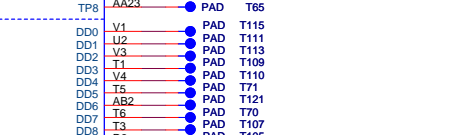
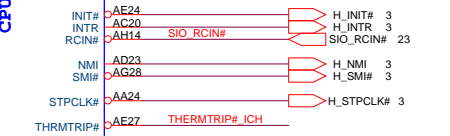
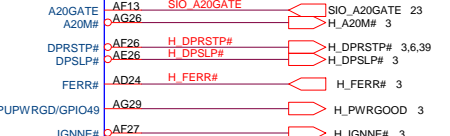
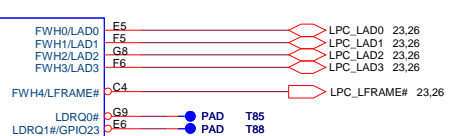
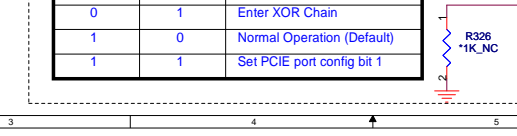
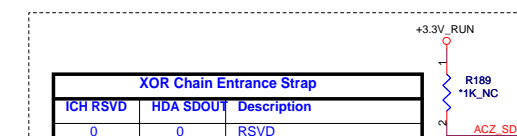
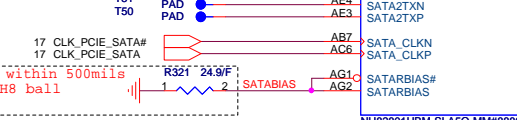
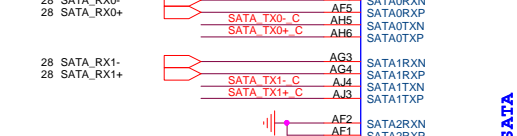
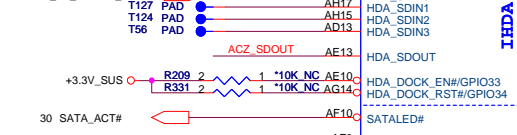
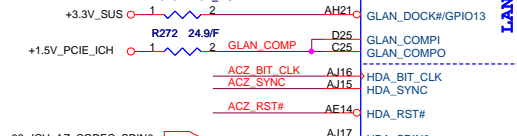
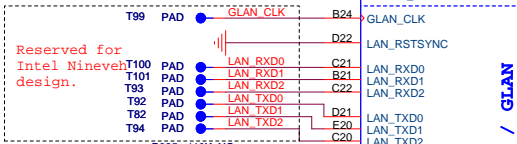
Sheet 10 of 53



Place all series terms close to ICH8 except for SDIN input lines, which should be close to source.



Distance between the ICH-8 M and cap on the "P" signal should be identical distance between the ICH-8 M and cap on the "N" signal for same pair.



| XOR Chain Entrance Strap |           |                            |
|--------------------------|-----------|----------------------------|
| ICH RSVD                 | HDA SDOUT | Description                |
| 0                        | 0         | RSVD                       |
| 0                        | 1         | Enter XOR Chain            |
| 1                        | 0         | Normal Operation (Default) |
| 1                        | 1         | Set PCIe port config bit 1 |

**QUANTA COMPUTER**

Title: ICH8-M (CPU,IDE,SATA,LPC,AC97,LAN)

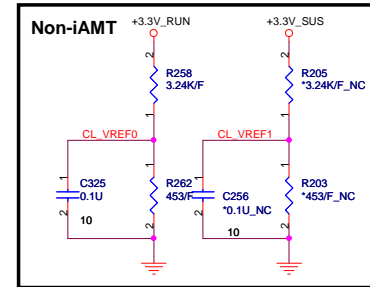
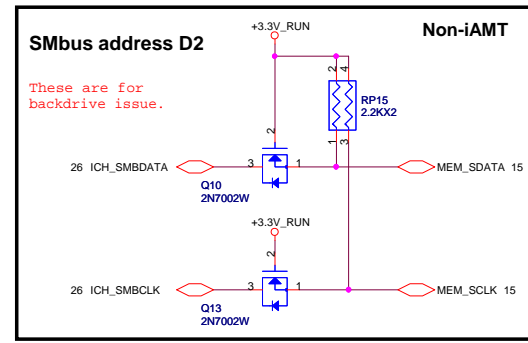
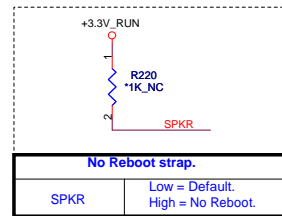
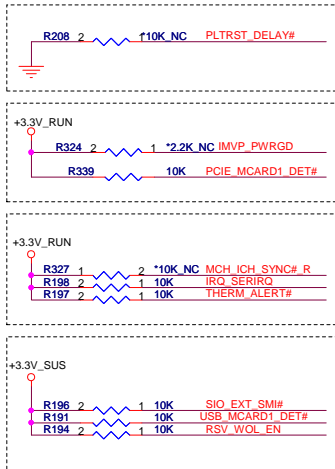
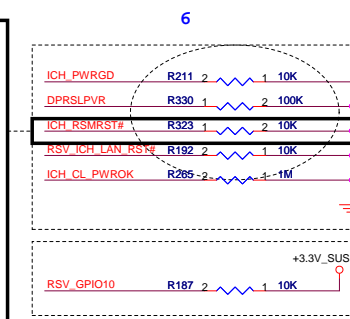
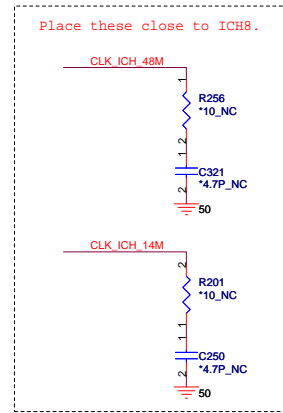
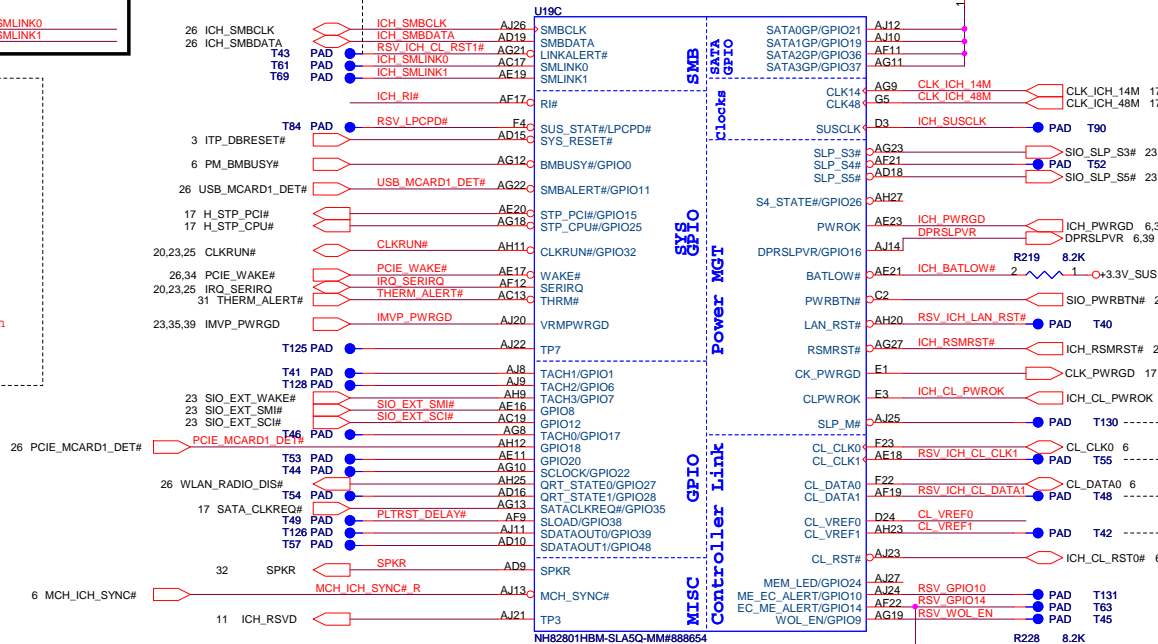
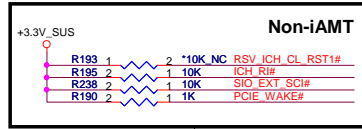
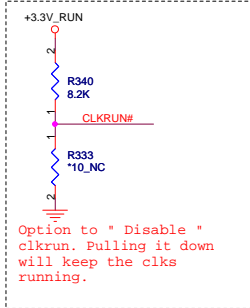
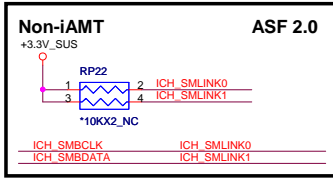
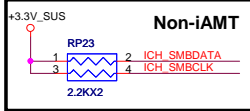
Size: Document Number VM9/VM8

Date: Thursday, June 12, 2008

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Rev 1A





**QUANTA COMPUTER**

Title: ICH8-M (PM,GPIO,SMB,CL)

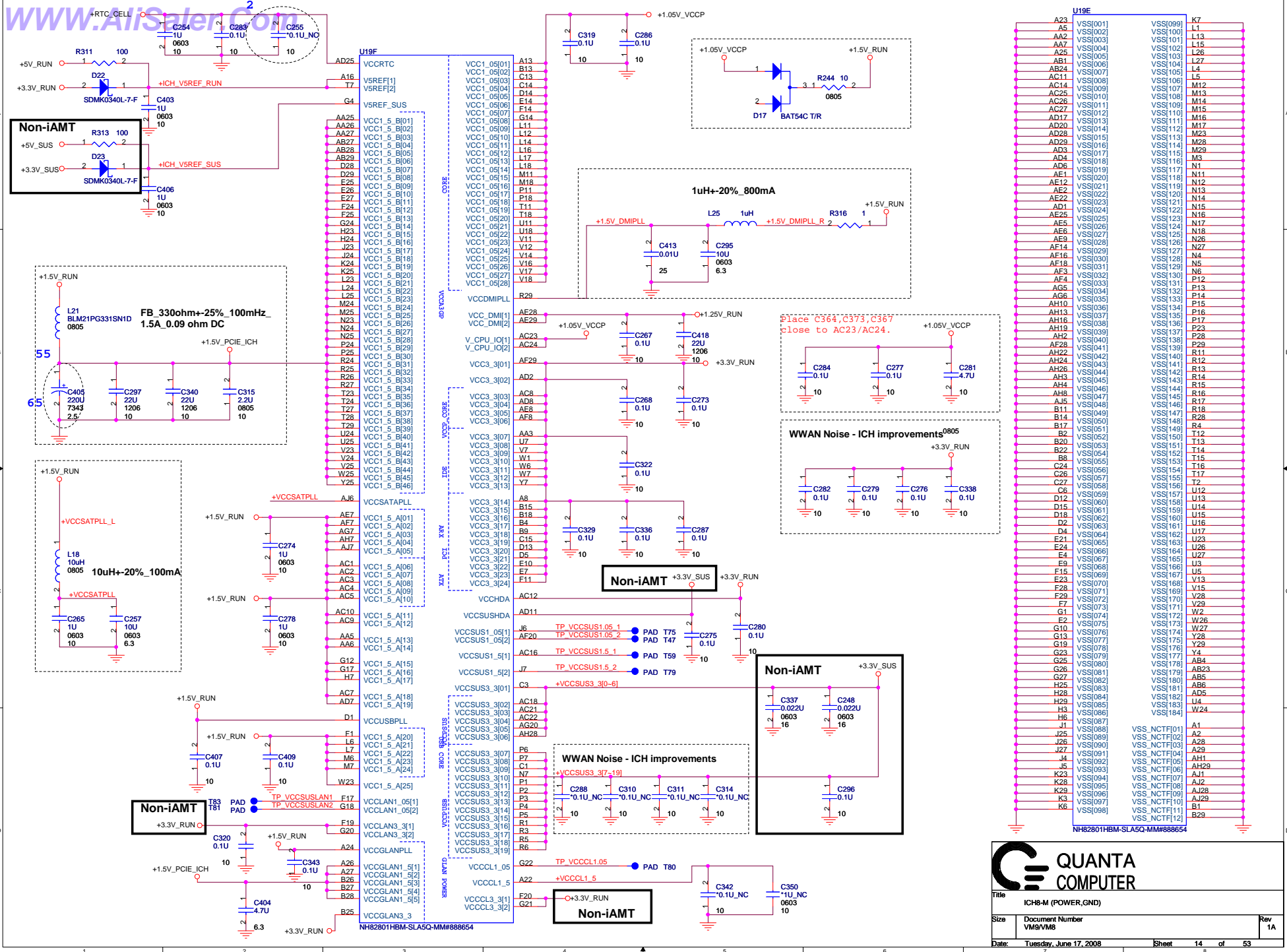
Size: Document Number VM9/VM8

Date: Saturday, June 21, 2008

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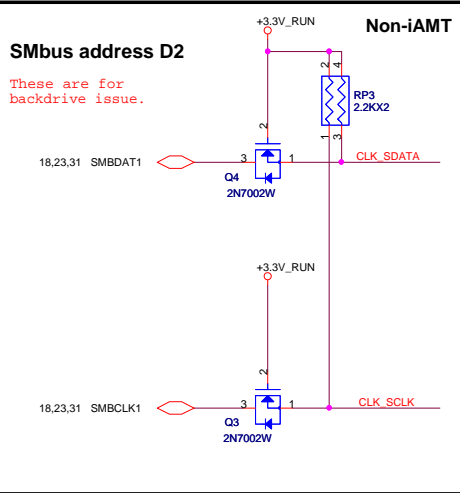
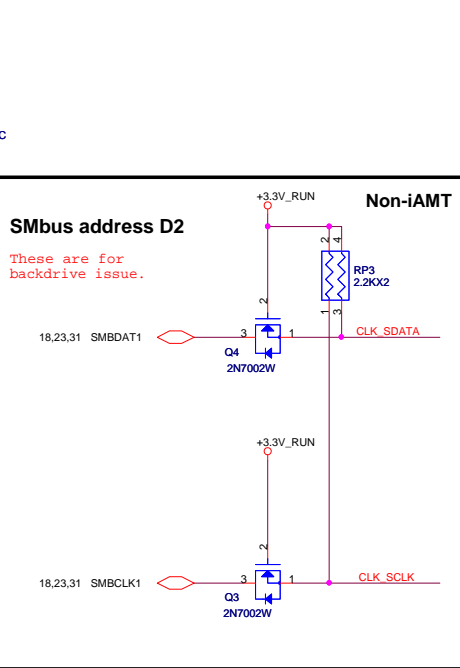
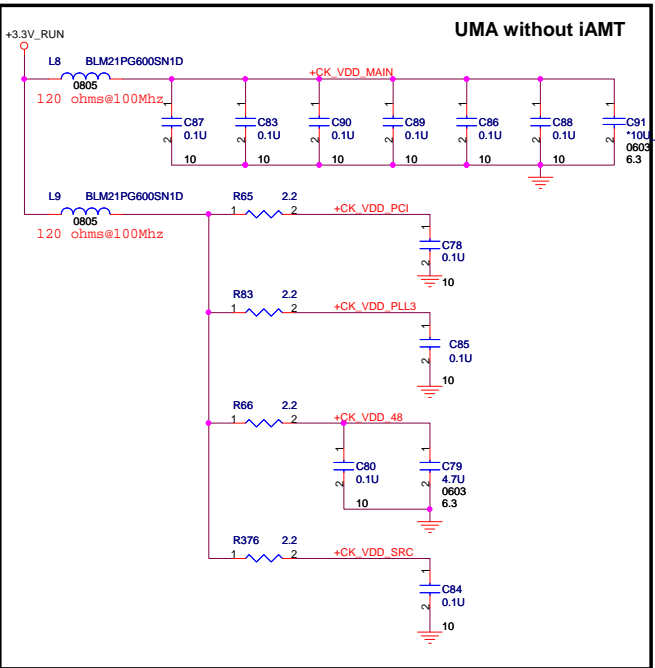
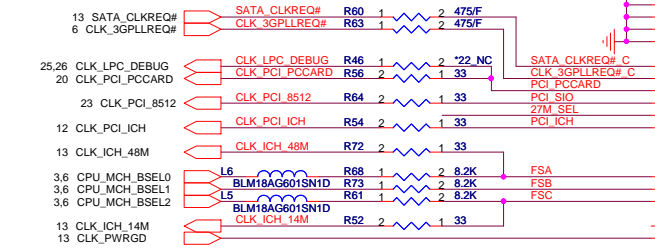
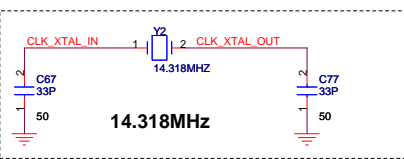
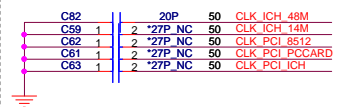




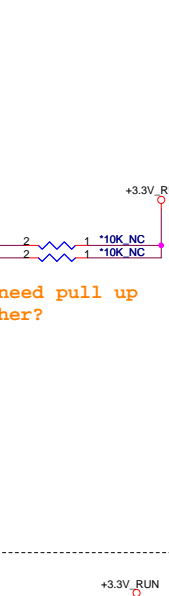
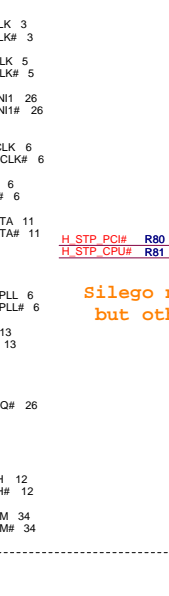
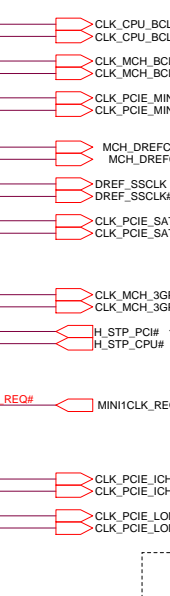
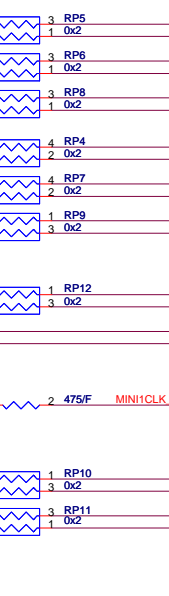
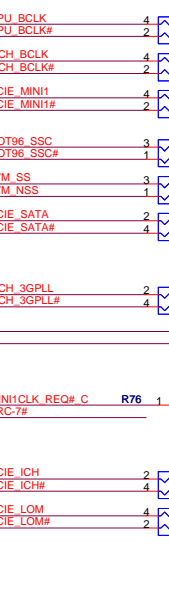
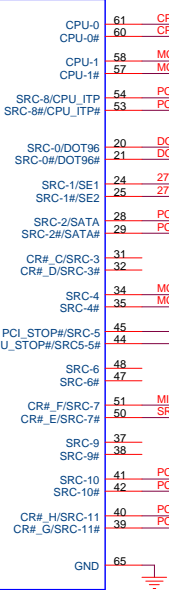




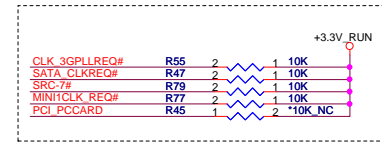
Add capacitor pads for improving WWAN.



CK505  
QFN64



Silego need pull up  
but other?



| 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  |

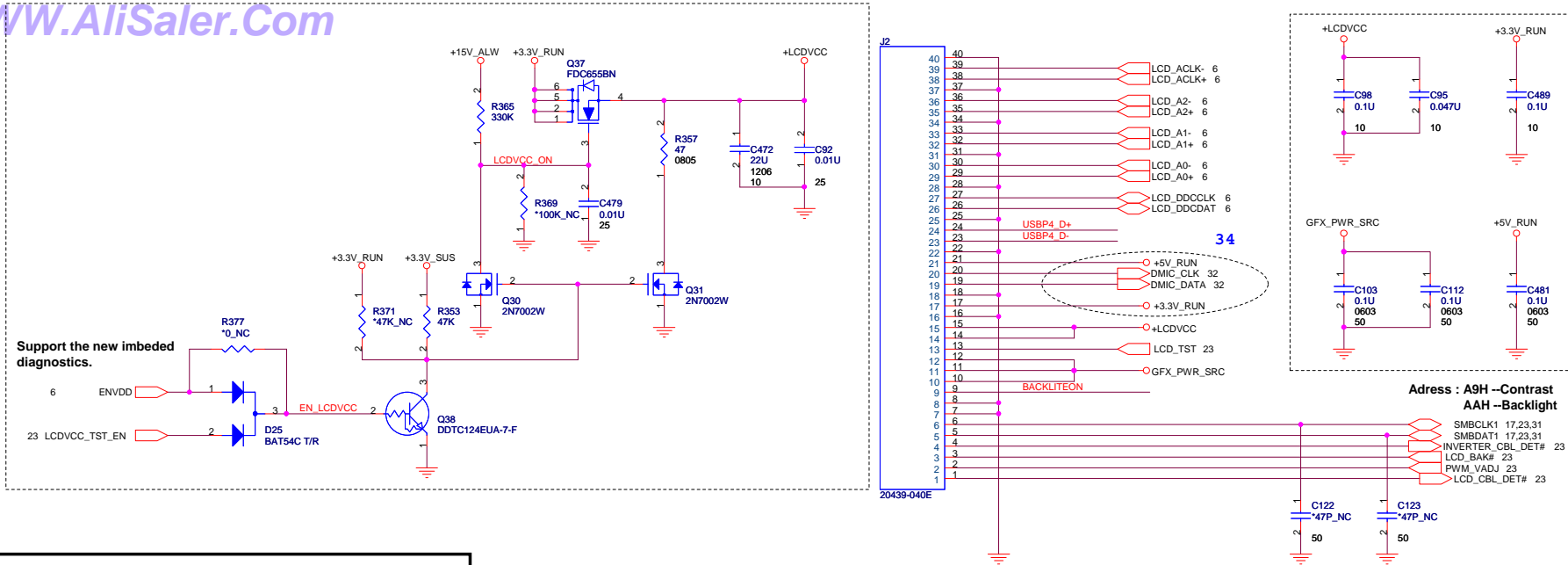
| 27M_SEL<br>(PIN13)     | PIN20  | PIN21  | PIN24         | PIN25         |
|------------------------|--------|--------|---------------|---------------|
| 0=UMA                  | DOT96T | DOT96C | 96/<br>100M_T | 96/<br>100M_C |
| 1 = Disc.<br>GRFX down | SRCT0  | SRCC0  | 27Mout        | 27MSSout      |

**QUANTA COMPUTER**

Title: CLOCK GENERATOR

Size: Document Number VM9/VM8 Rev 1A

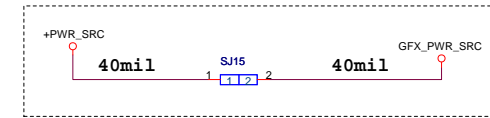
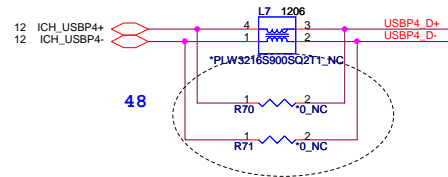
Date: Friday, May 30, 2008 Sheet 17 of 53



#### UMA

Populate R351 for DPST implementation only.

Populate R346 for platform without DPST support. No Stuff for Discrete DSPT support due to back up plan.



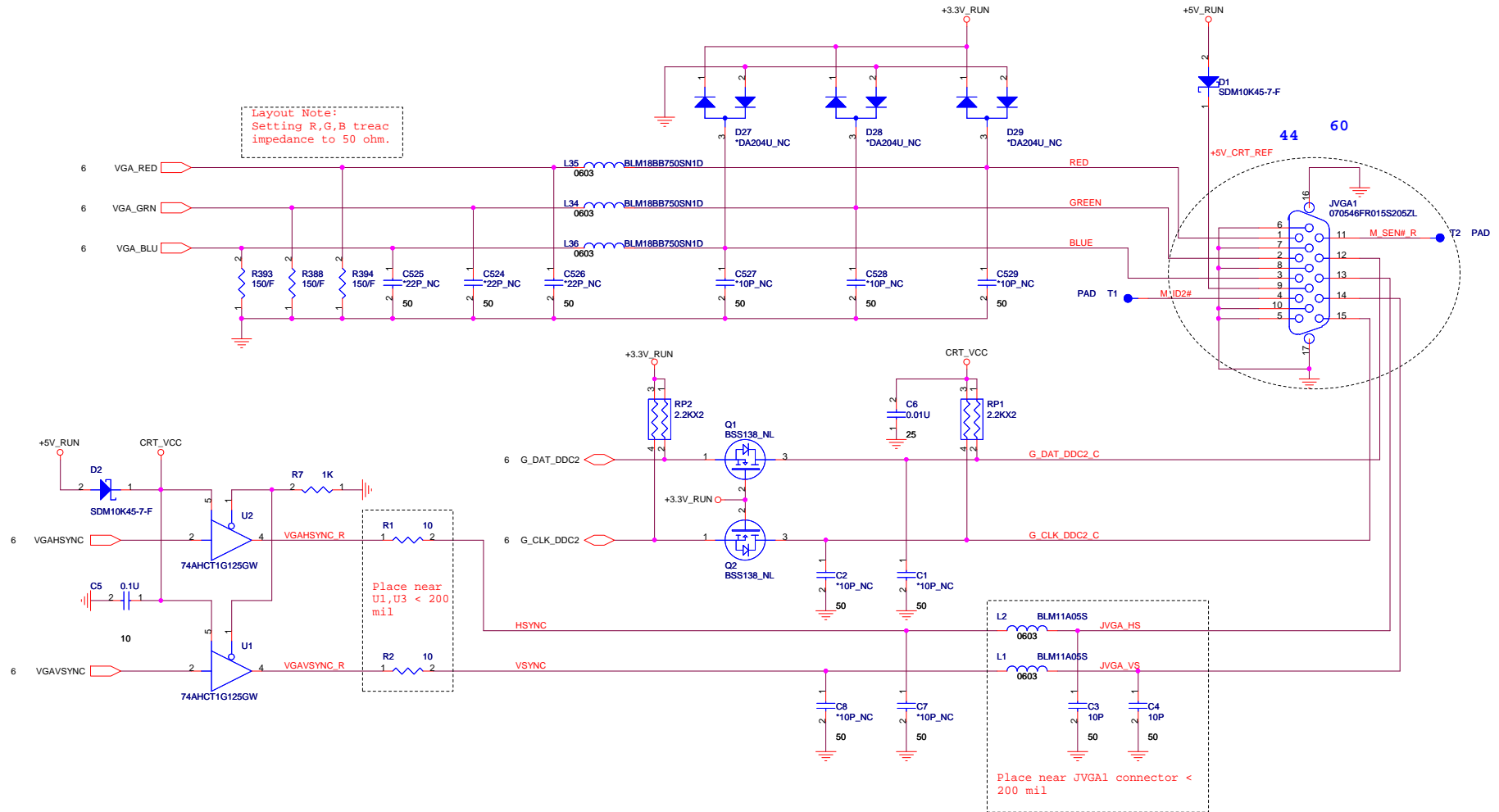
Title LCD CONN & CK-SSCD

Size Document Number VM9/VM8

Date: Thursday, June 12, 2008

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Rev 1A



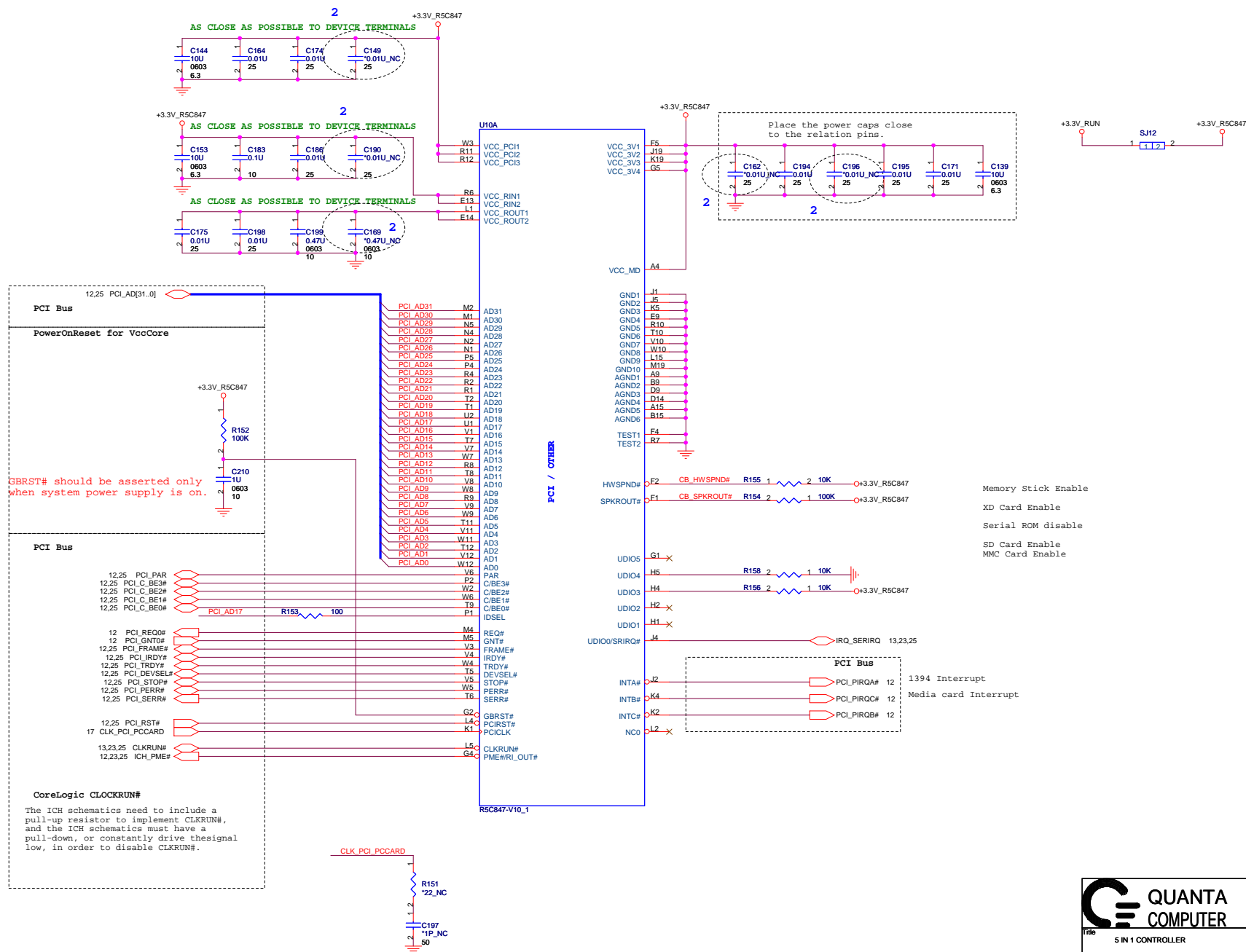
Title CRT&TV CONN

Size Document Number VM9/VM8

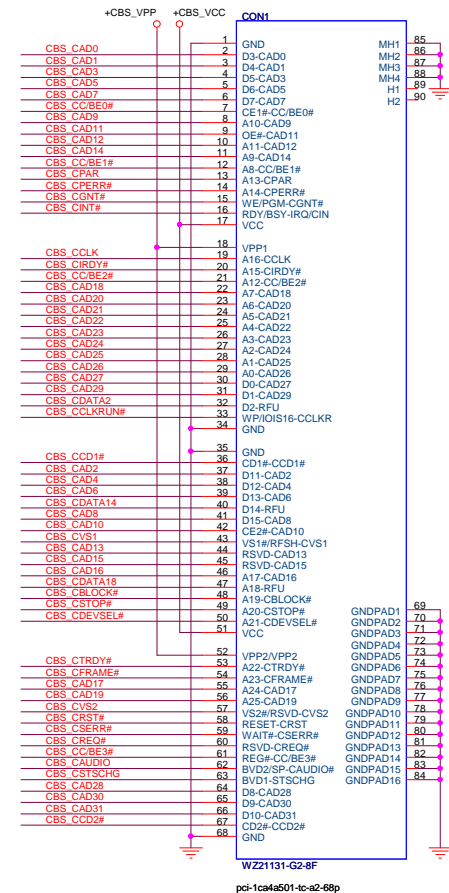
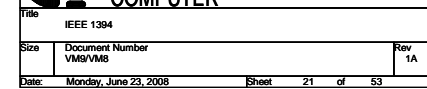
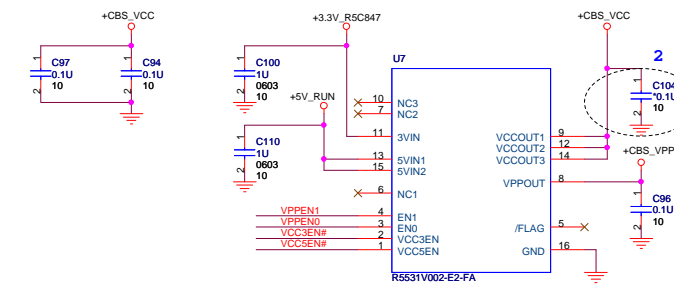
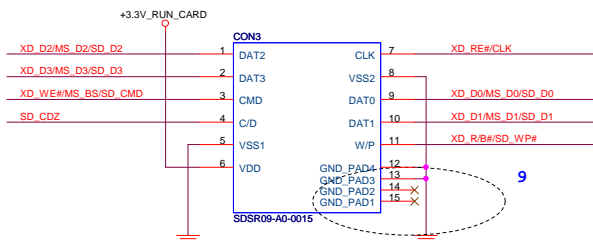
Date: Friday, May 30, 2008

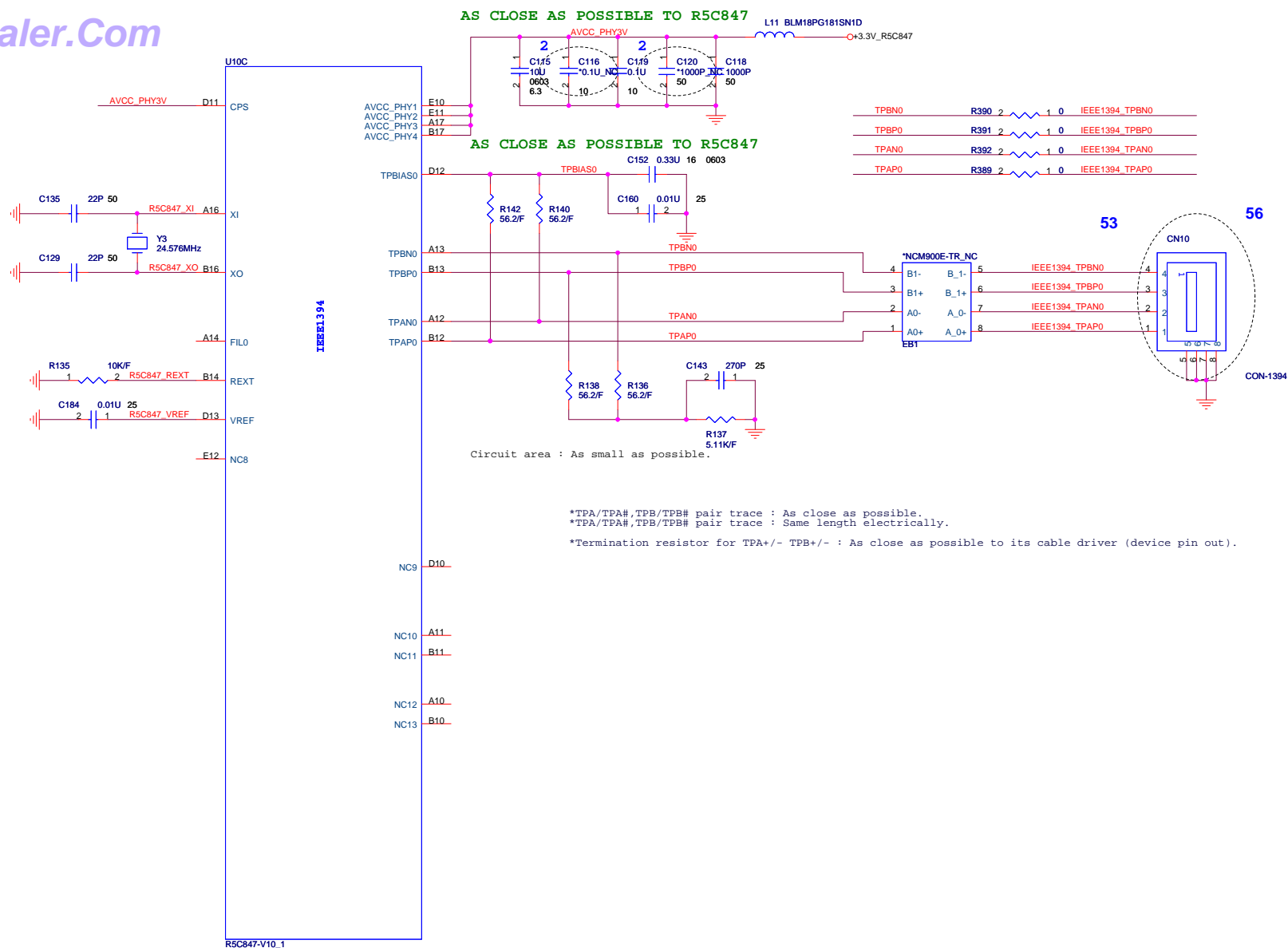
Sheet 19 of 53

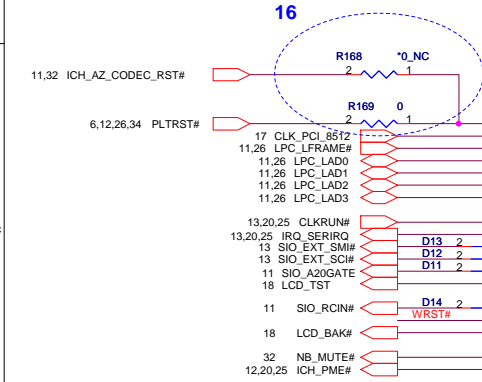
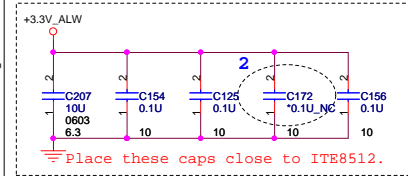
Rev 1A



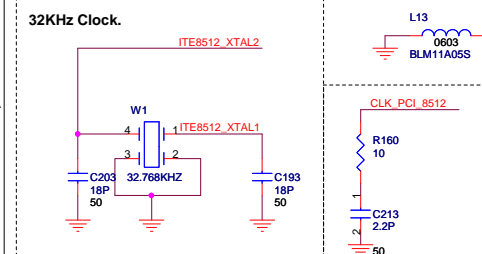
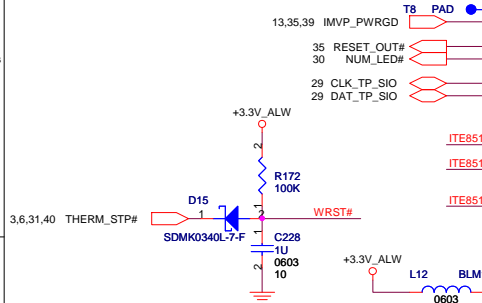


[illegible]

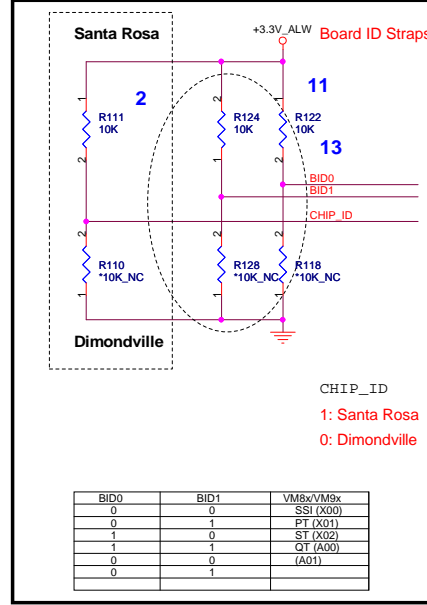
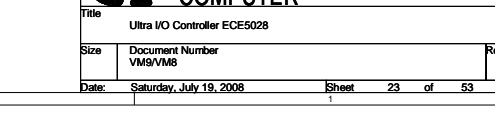
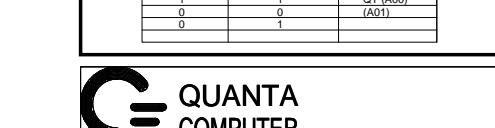
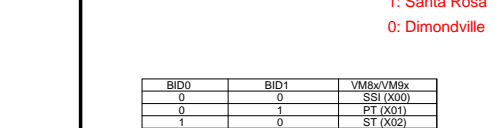
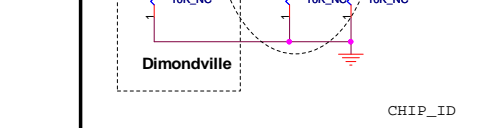
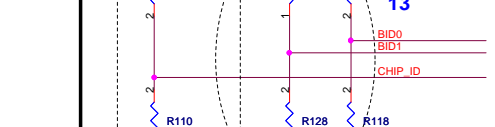
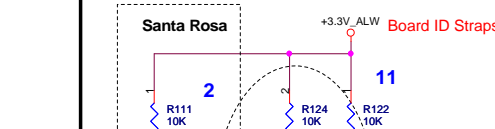
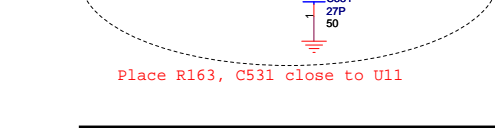
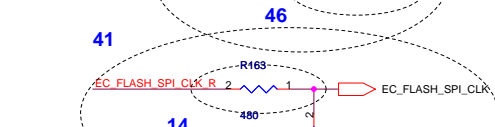
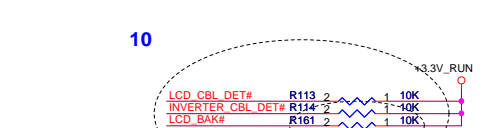
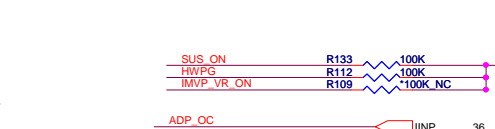
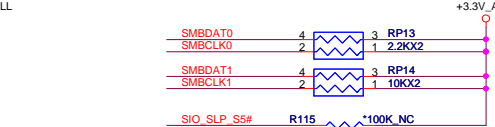
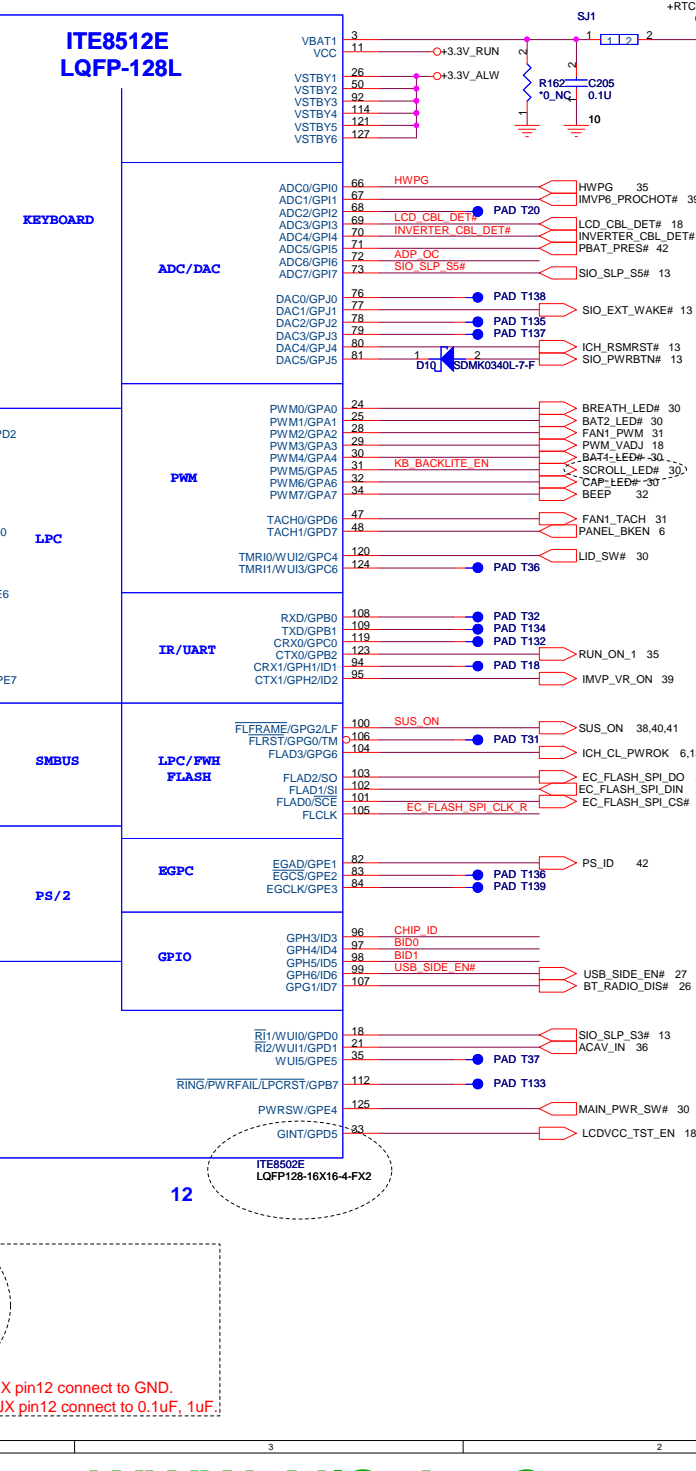
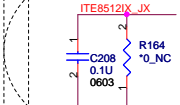
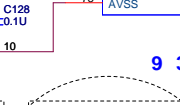
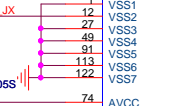
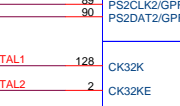
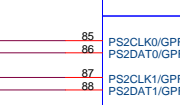
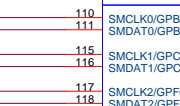
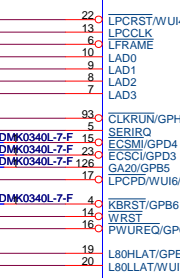
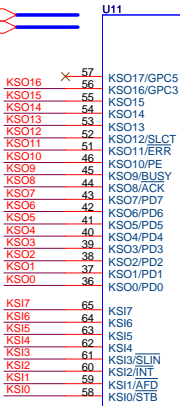




Charge and BAT  
CLK, LCD and Thermal  
G\_Thermal  
and Media button



ITE8512\_XTAL1  
ITE8512\_XTAL2  
ITE8512IX\_JX



| BID0 | BID1 | VM8x/VM9x |
|------|------|-----------|
| 0    | 0    | SSI (X00) |
| 0    | 1    | PT (X01)  |
| 1    | 0    | ST (X02)  |
| 1    | 1    | OT (A00)  |
| 0    | 0    | (A01)     |
| 0    | 1    |           |

**QUANTA COMPUTER**

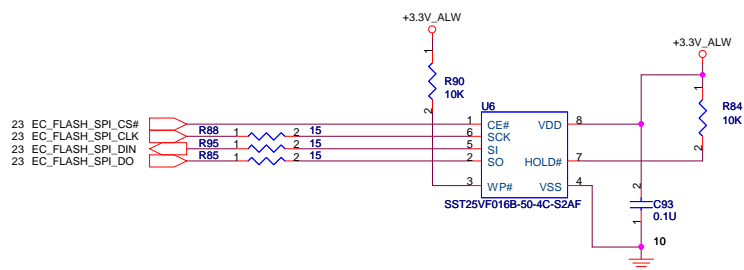
Title: Ultra IO Controller ECE5028

Size: Document Number VM9/VM8

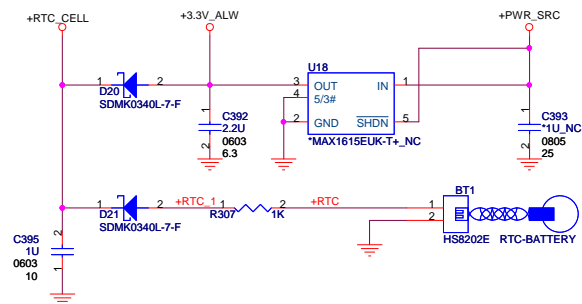
Date: Saturday, July 19, 2008

Sheet: 23 of 53

Rev: 1A



## RTC BATTERY



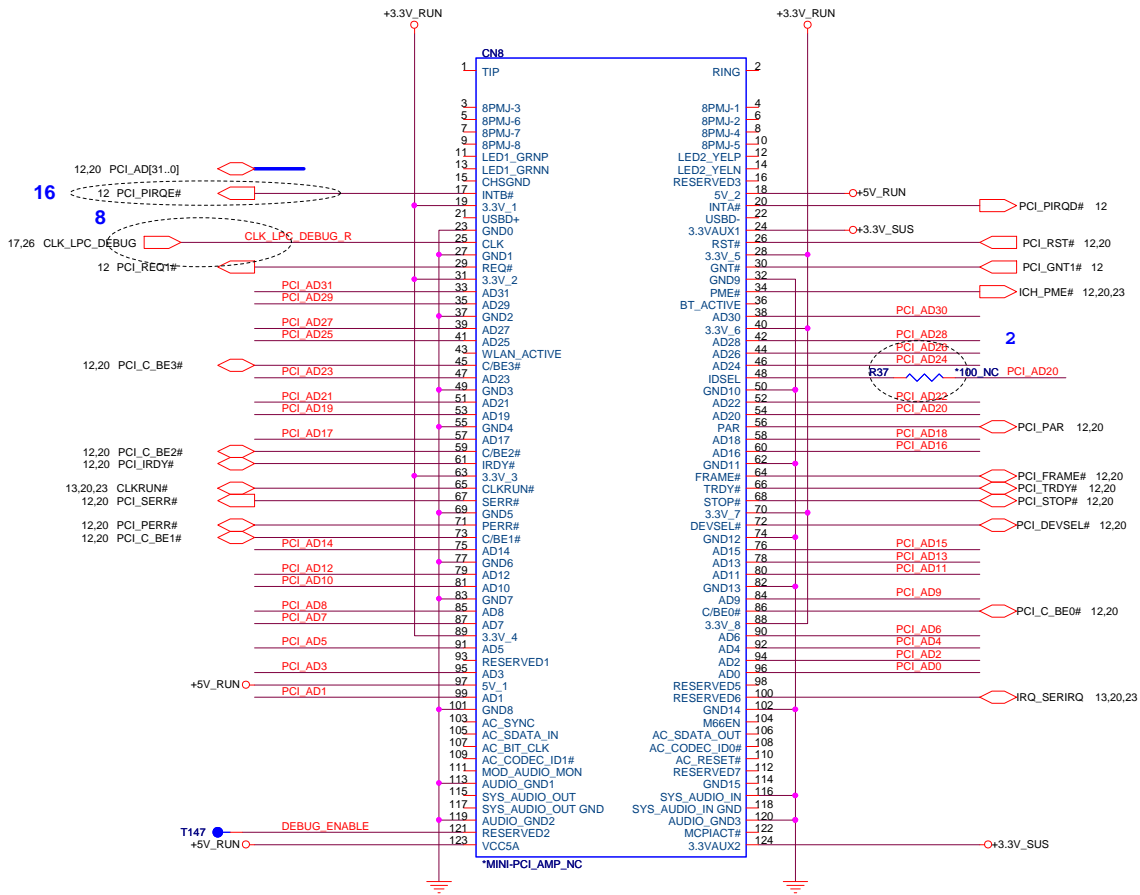
Title Ultra I/O Controller ECE5028

Size Document Number VM9/VM8

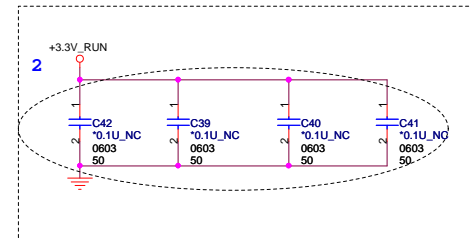
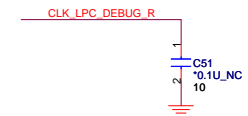
Date: Friday, May 30, 2008

Sheet 24 of 53

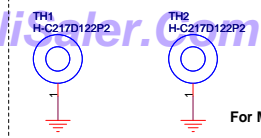
Rev 1A



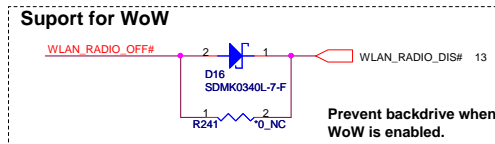
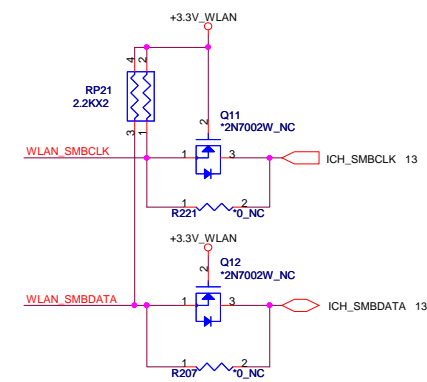
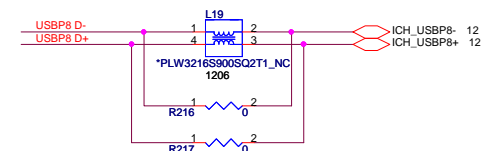
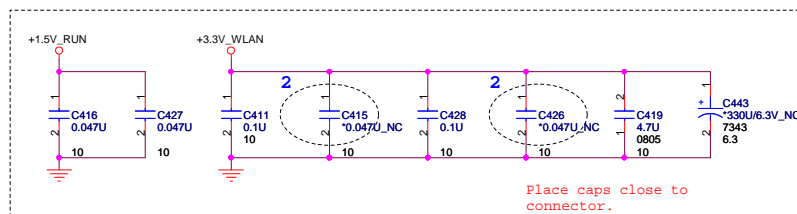
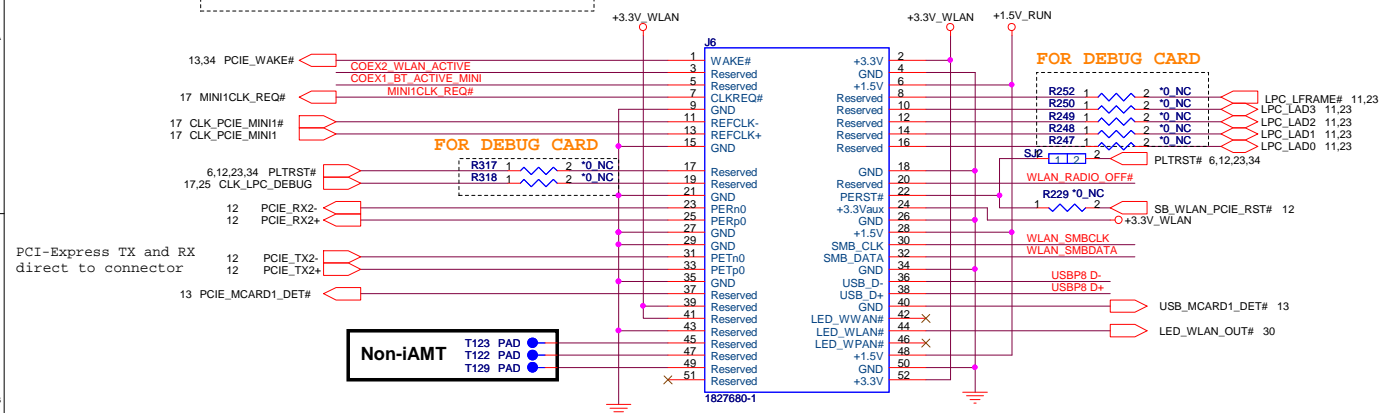
### Place the debug connector on HDD area



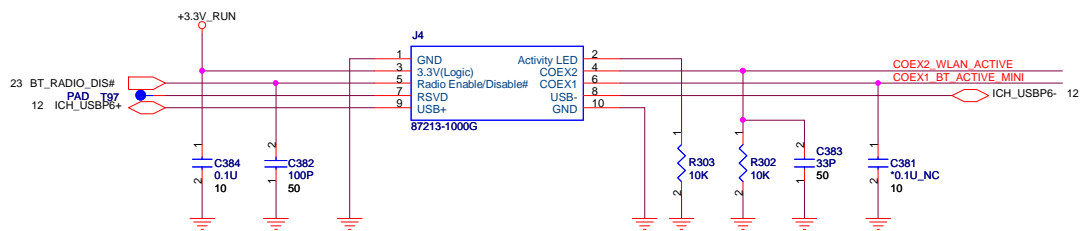
## MiniCard WLAN connector



For MiniCard nut use.



## Bluetooth



QUANTA  
COMPUTER

Title MDC CONN

|      |                            |
|------|----------------------------|
| Size | Document Number<br>VM9/VM8 |
|------|----------------------------|

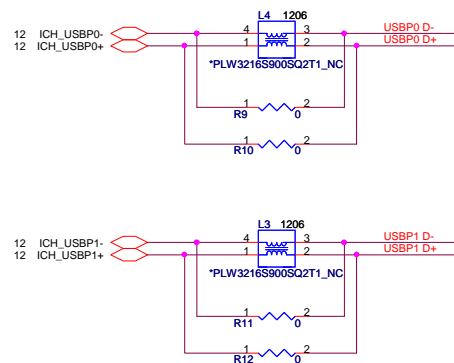
Date: Tuesday, June 17, 2008

|  |           |
|--|-----------|
|  | Rev<br>1A |
|--|-----------|

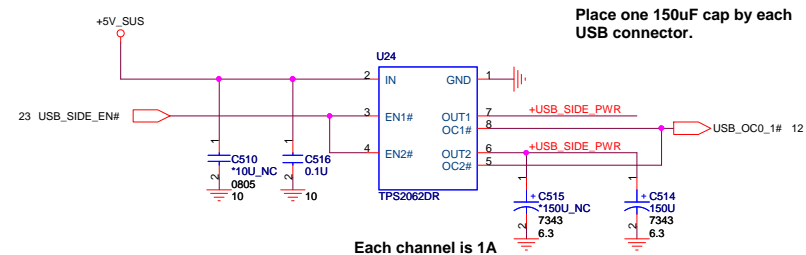
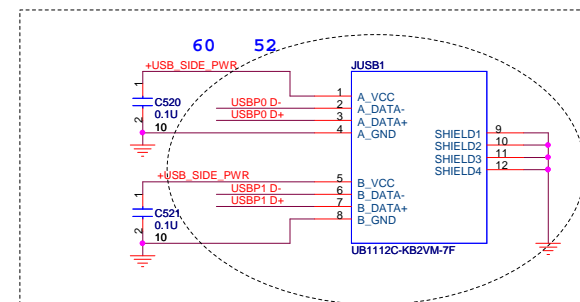
Sheet 26 of 53



External USB PORT hookup reference. Your design may need more or less external ports and may be mapped differently



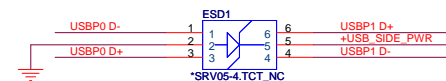
Platforms should put in PADS for the USB chokes if they have the room. Chokes should be NOPOP.



Place one 150uF cap by each USB connector.

Each channel is 1A

Place ESD diodes as close as USB connector.



Serial Port & USB

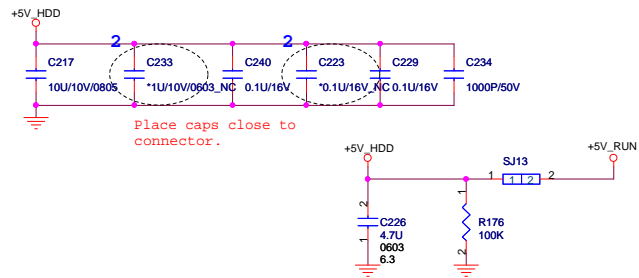
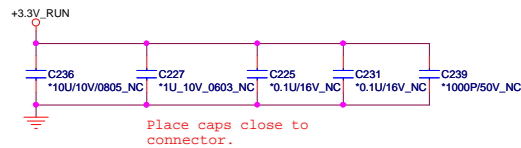
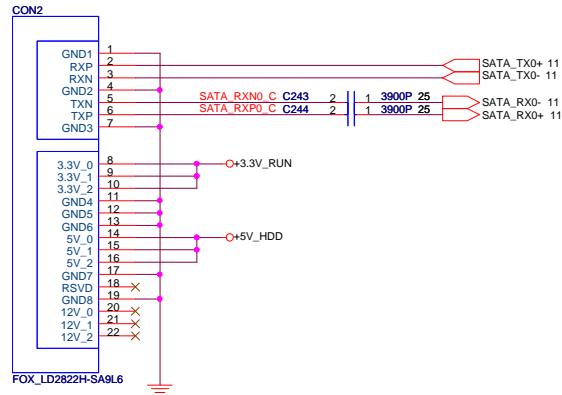
Document Number VM9/VM8

Date: Friday, May 30, 2008

Sheet 27 of 53

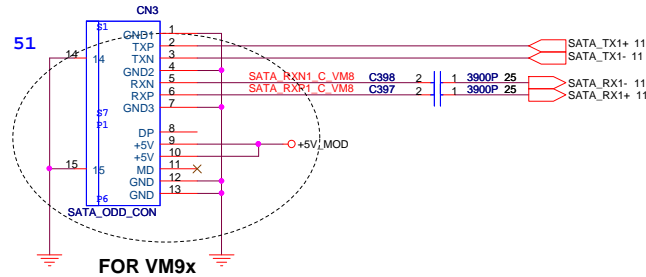
Rev 1A

# SATA HDD Connector.

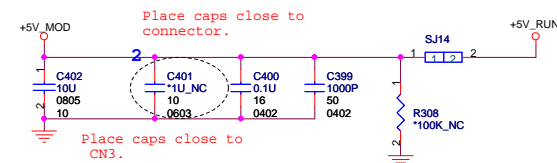
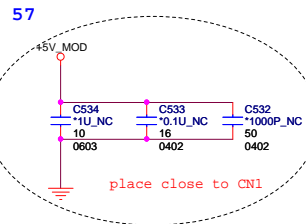


# SATA ODD Connector.

FOR VM8x



FOR VM9x



Title SATA (HDD&CD\_ROM)

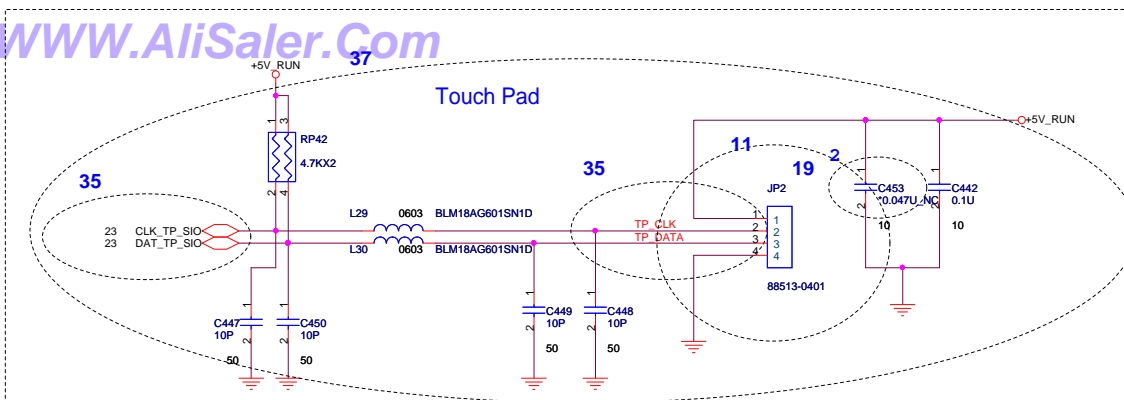
Size Document Number VM9/VM8

Date: Tuesday, June 17, 2008

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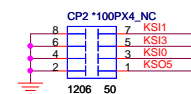
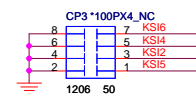
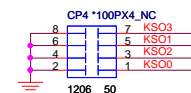
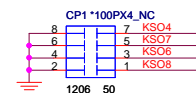
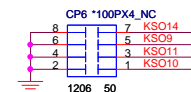
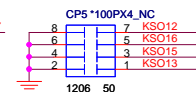
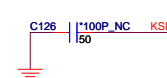
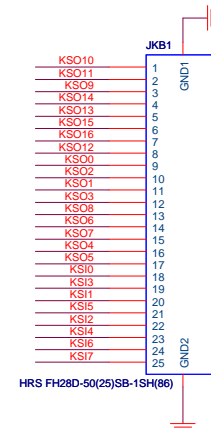
Rev 1A

# Touch Pad



## KEYBOARD CONNECTOR

23 KSO[0..16]  
23 KSI[0..7]



100P CAPS CLOSE TO JKB1



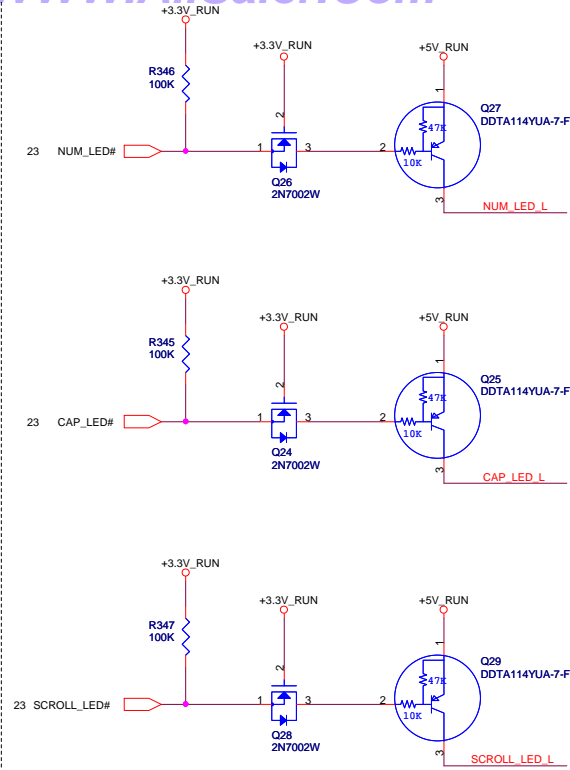
Title TOUCH PAD, BULE TOOTH & FIR

Size Document Number VM9/VM8

Date: Tuesday, June 17, 2008

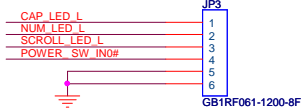
Sheet 29 of 53

Rev 1A

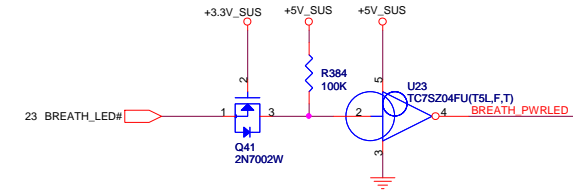


20

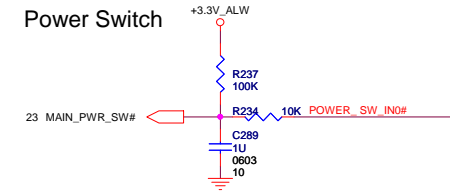
### Dash board connector



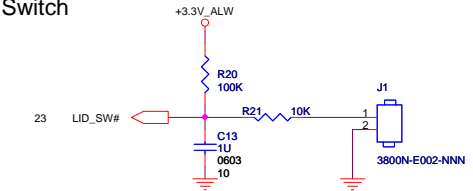
### Power & Suspend.



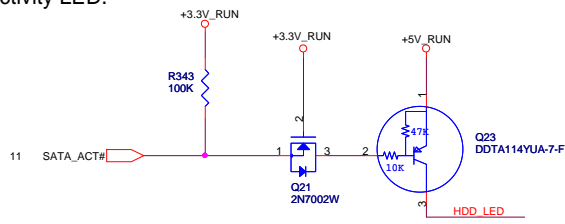
### Power Switch



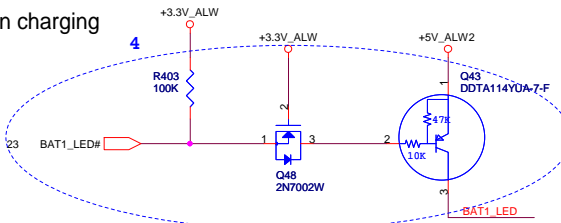
### LID Switch



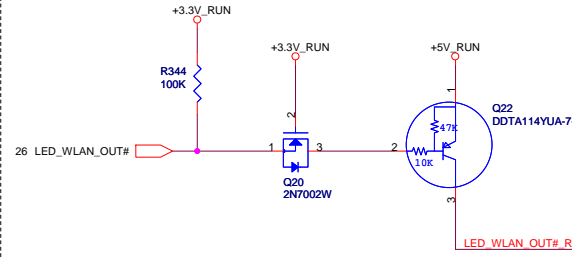
### HDD activity LED.



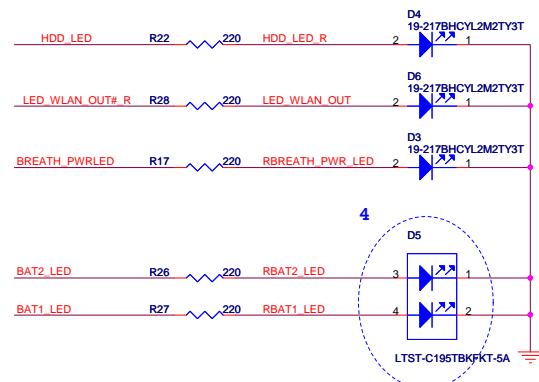
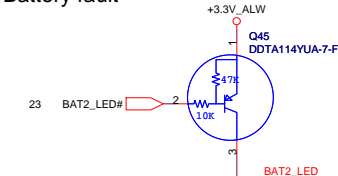
### Battery in charging



### WLAN



### Battery fault



**QUANTA COMPUTER**

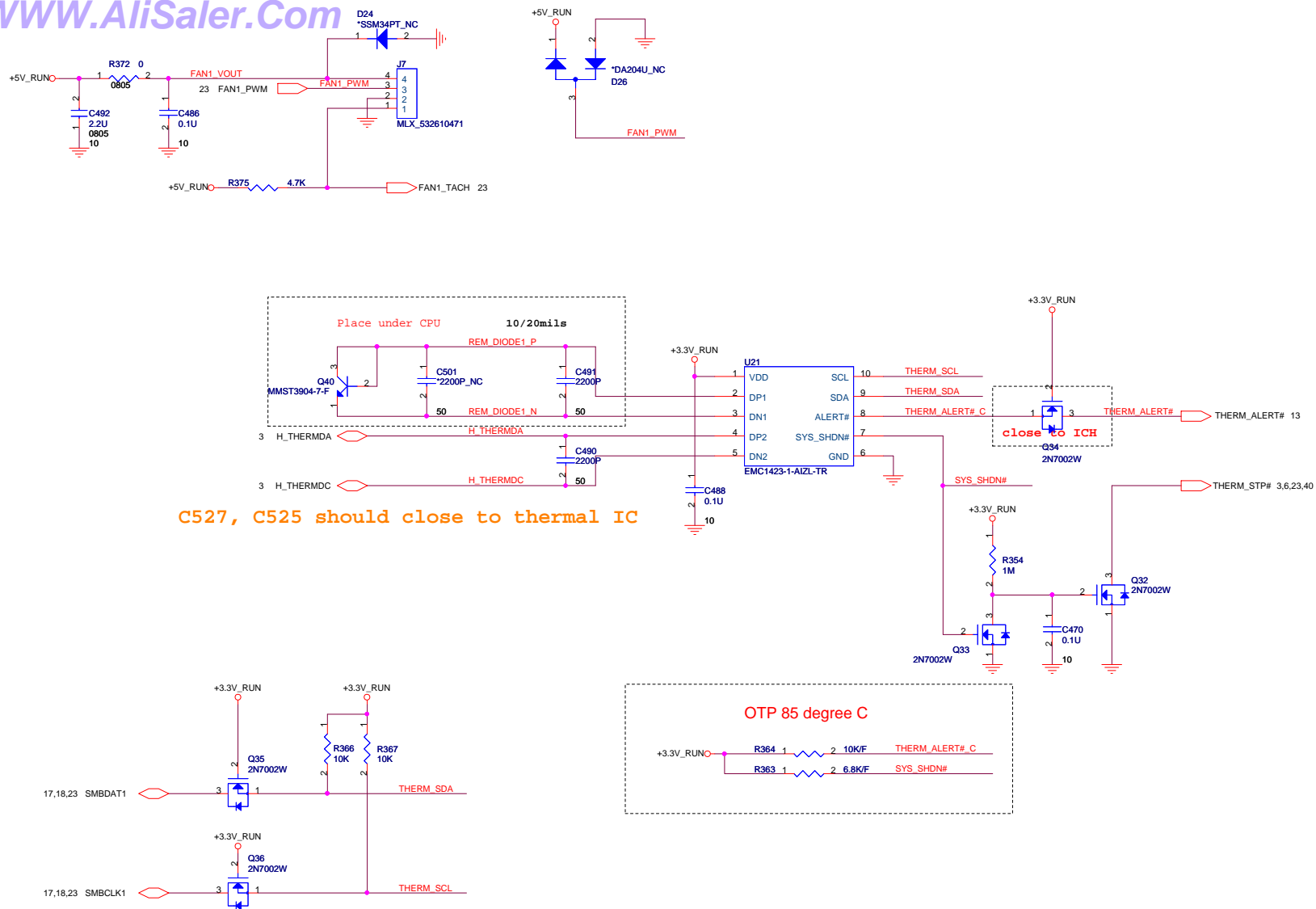
Title: SWITCH, KEYBOARD & LED

Size: Document Number VM9/VM8

Date: Tuesday, June 10, 2008

Sheet: 30 of 53

Rev: 1A



Title FAN & THERMAL

Size Document Number VM9/VM8

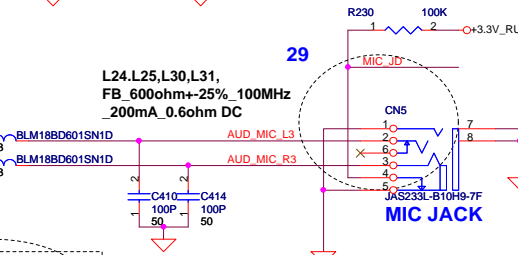
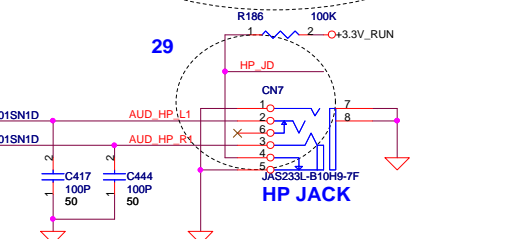
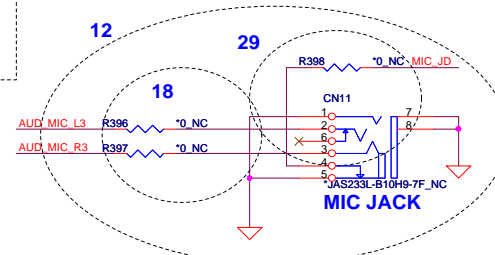
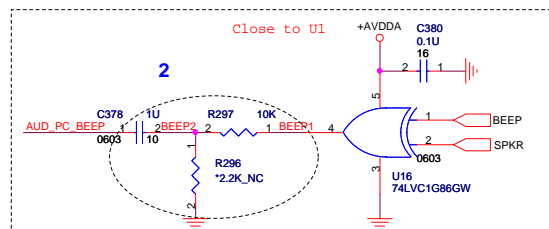
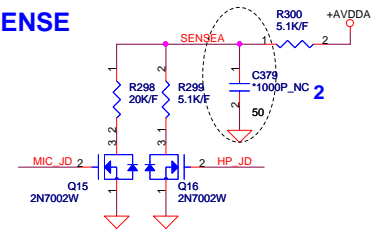
Date: Friday, May 30, 2008

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Rev 1A



**JACK SENSE**



| GAIN  | GPIO1 | GPIO2 |
|-------|-------|-------|
| 0dB   | 10K   | 10K   |
| -6dB  | omit  | omit  |
| -12dB | 10K   | omit  |
| -18dB | omit  | 10K   |

EMI Request

| Request | 2 | 1 | 0 | 06 |
|---------|---|---|---|----|
| R402    | 2 | 1 | 0 | 06 |
| R401    | 2 | 1 | 0 | 06 |
| R304    | 2 | 1 | 0 | 06 |
| R261    | 2 | 1 | 0 | 06 |
| R295    | 2 | 1 | 0 | 06 |
| R334    | 2 | 1 | 0 | 06 |
| R185    | 2 | 1 | 0 | 06 |



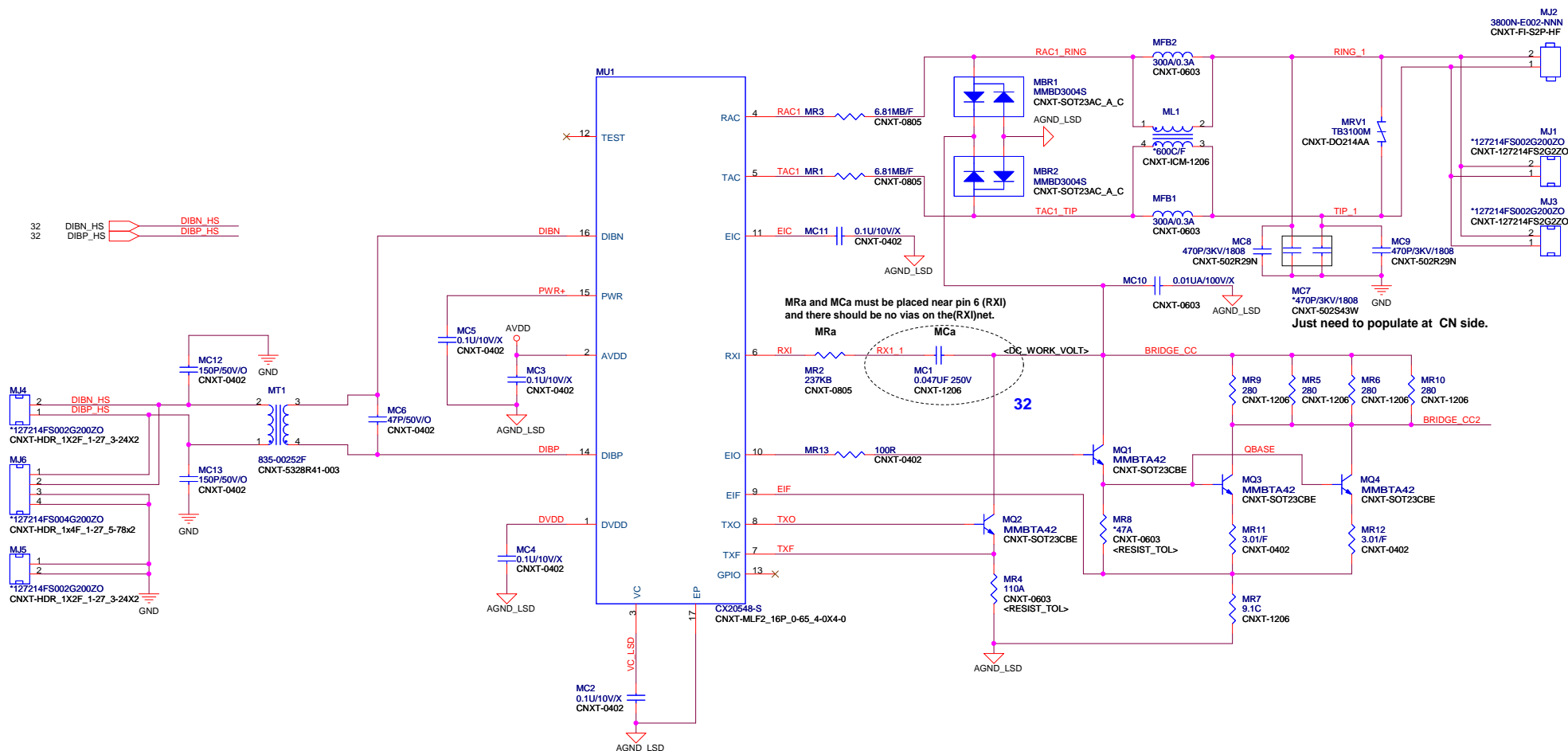
|  |              |
|--|--------------|
|  | <b>Title</b> |
|--|--------------|

|      |                            |
|------|----------------------------|
| Size | Document Number<br>VM9/VM8 |
|------|----------------------------|

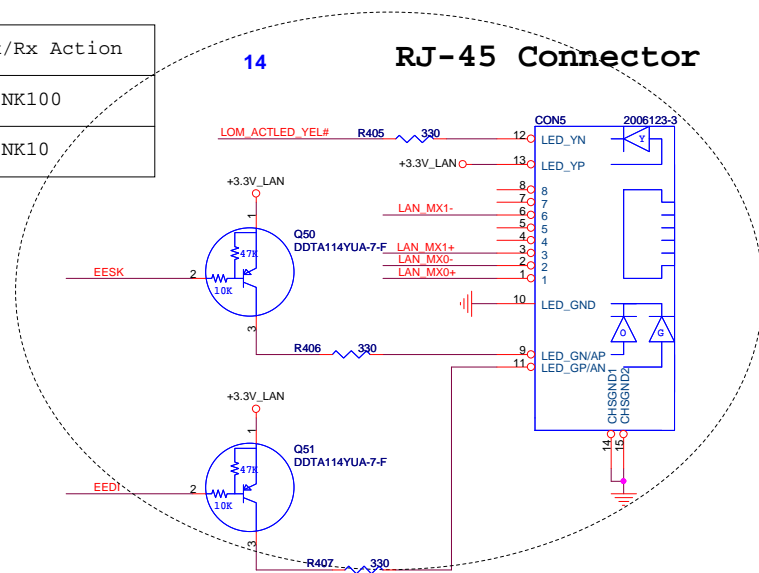
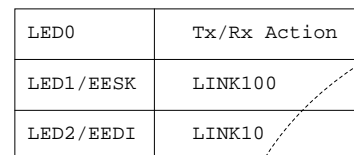
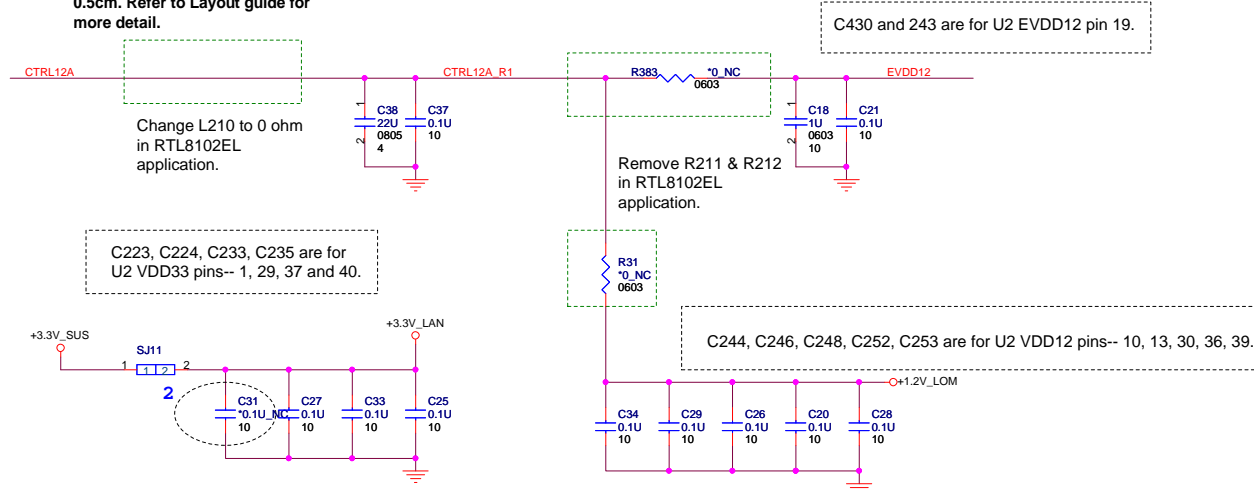
[illegible]Rev  
1.

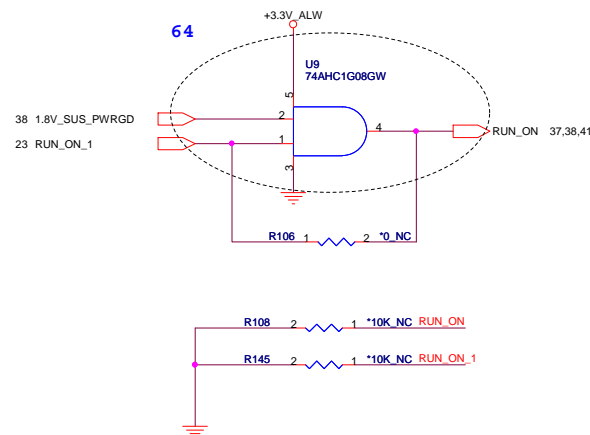
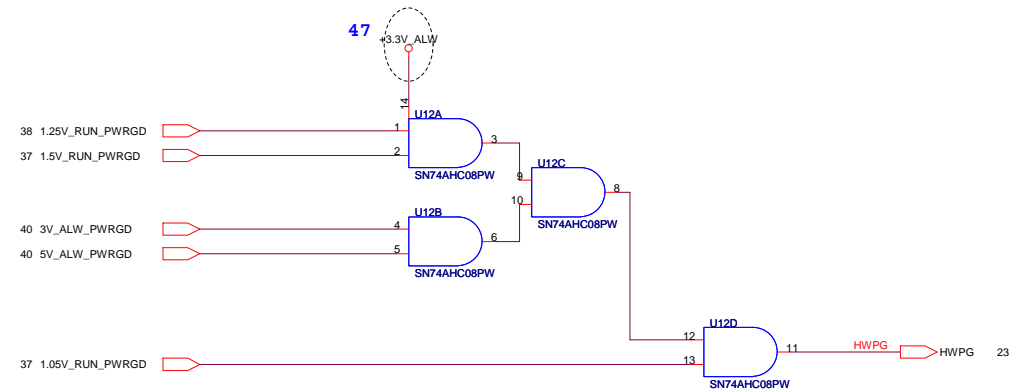
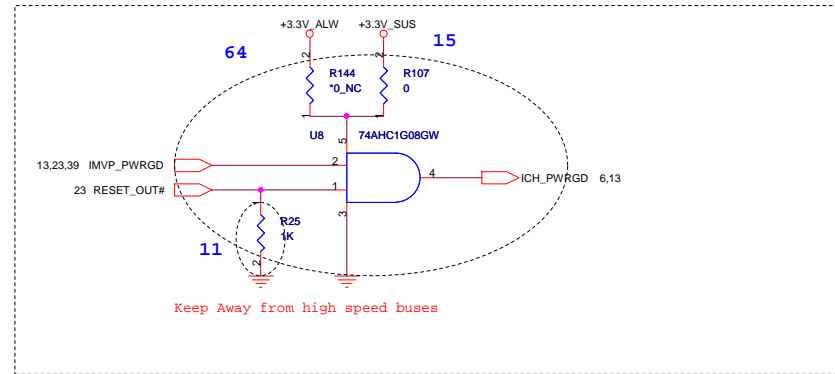
# Revision History

| REV | Description     | Date           |
|-----|-----------------|----------------|
| 0   | Initial Release | April 26, 2005 |
| 4   |                 |                |
|     |                 |                |
|     |                 |                |

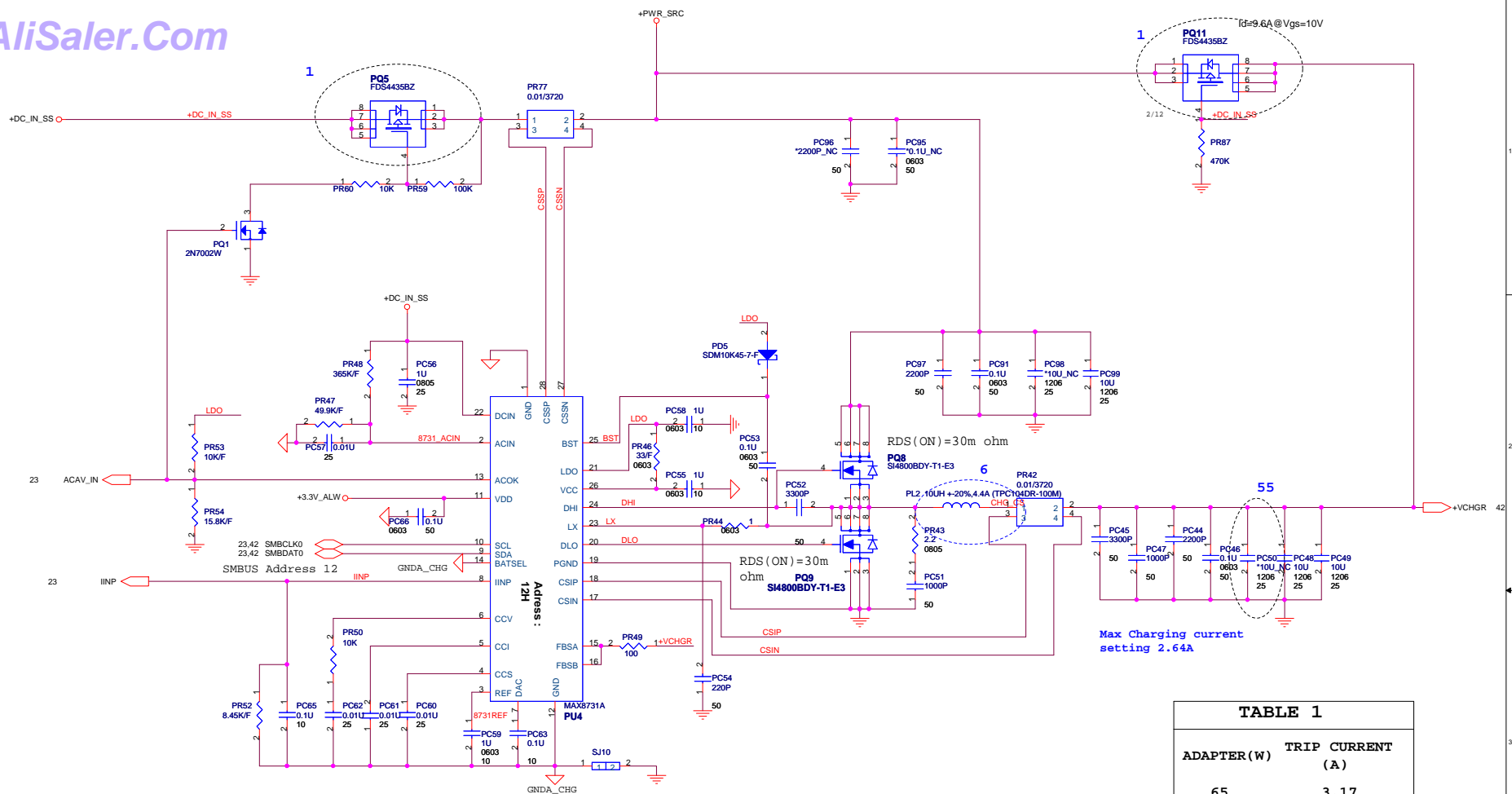








|                             |                         |        |
|-----------------------------|-------------------------|--------|
| Title System Reset Circuit  |                         |        |
| Size                        | Document Number VM9/VM8 | Rev 1A |
| Date: Friday, July 25, 2008 | Sheet 35                | of 53  |



| TABLE 1     |                   |
|-------------|-------------------|
| ADAPTER (W) | TRIP CURRENT (A)  |
| 65          | 3.17              |
| 90          | 4.43              |
| 130         | 6.43              |
| 150         | 7.43              |
| 200         | 9.75              |
| 230         | 11.26 (see note3) |

QUANTA  
COMPUTER

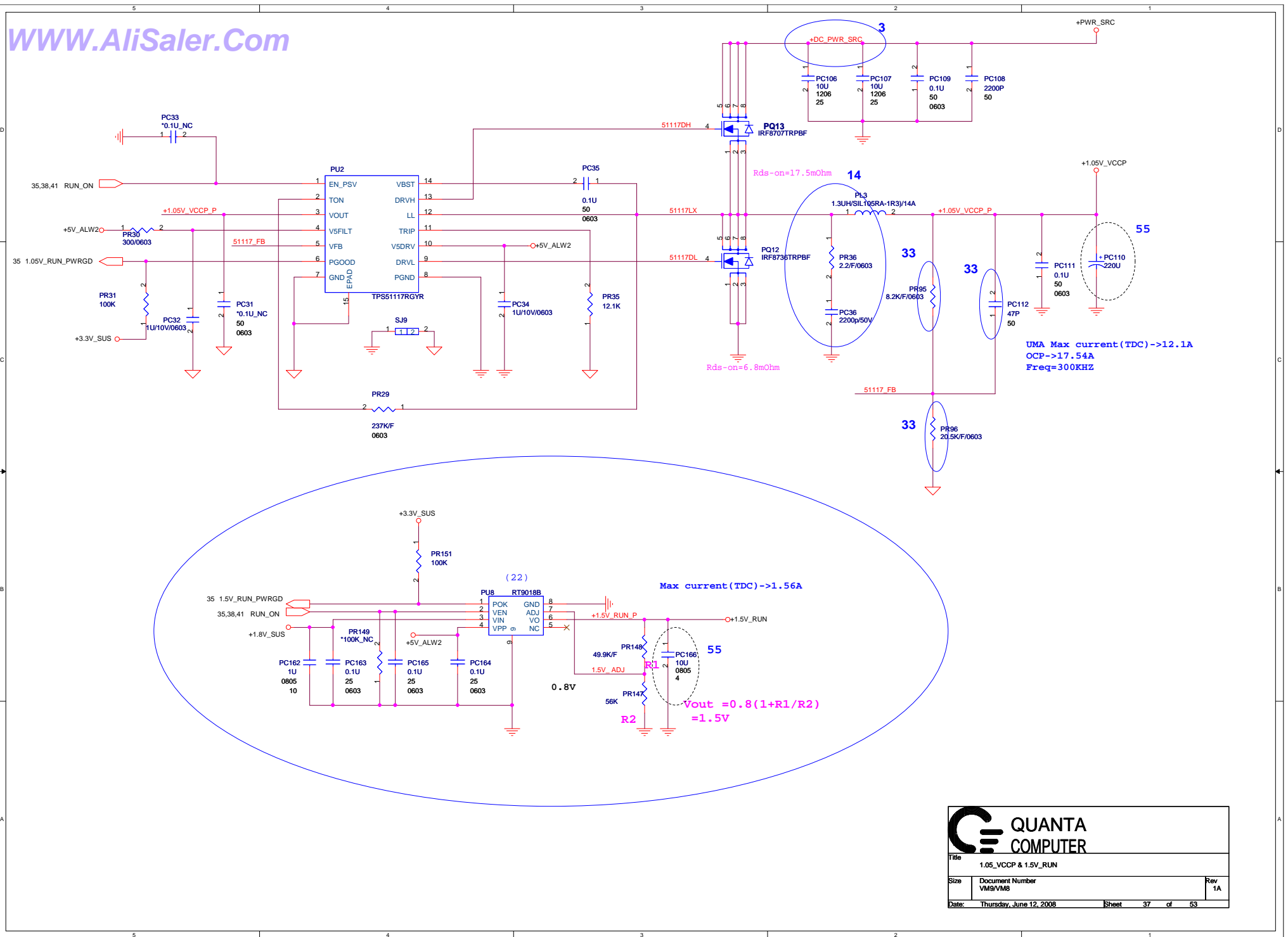
Title: Charger (SL88731)

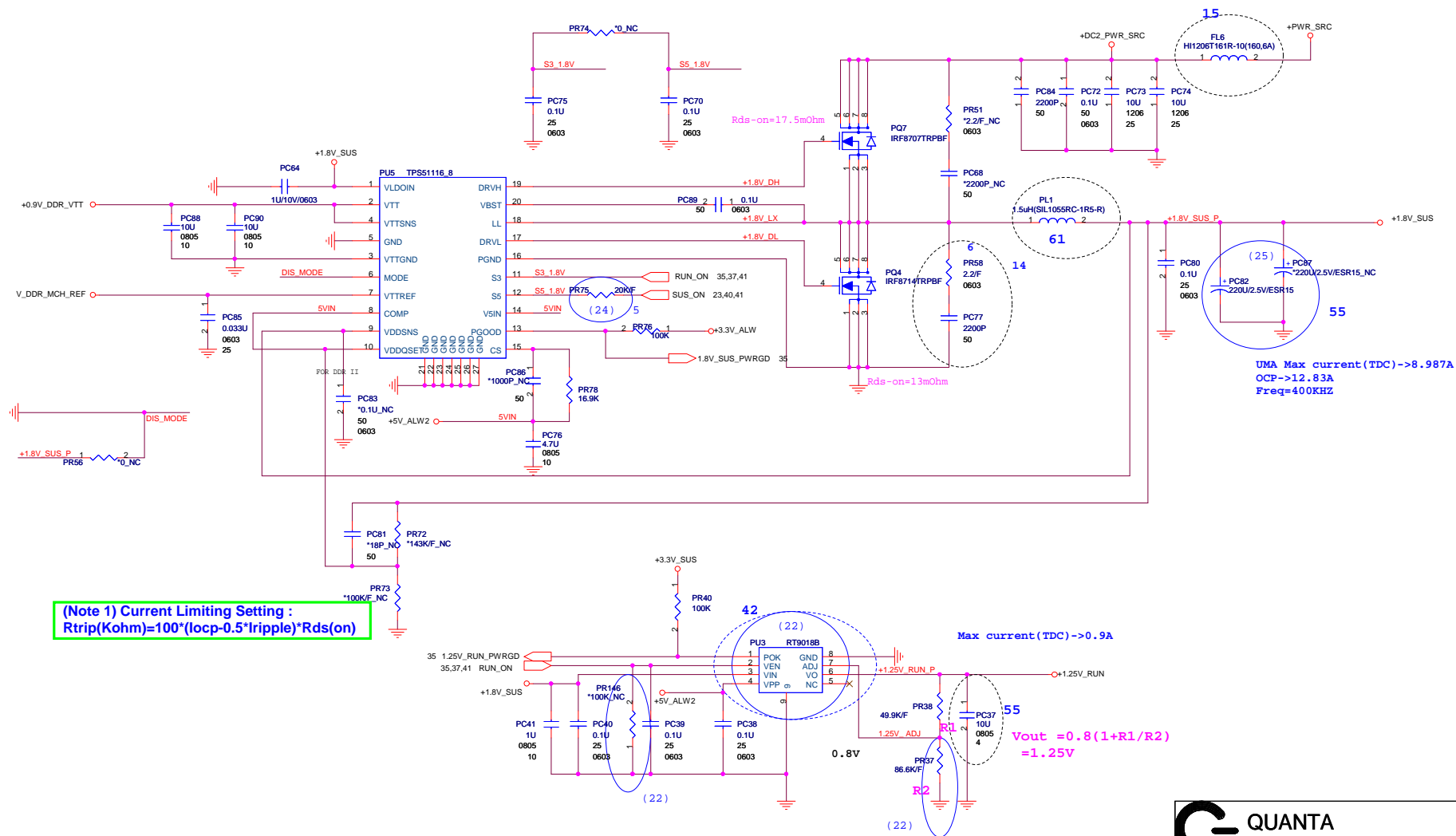
Size: Document Number VMA9/VMB

Date: Tuesday, June 17, 2008

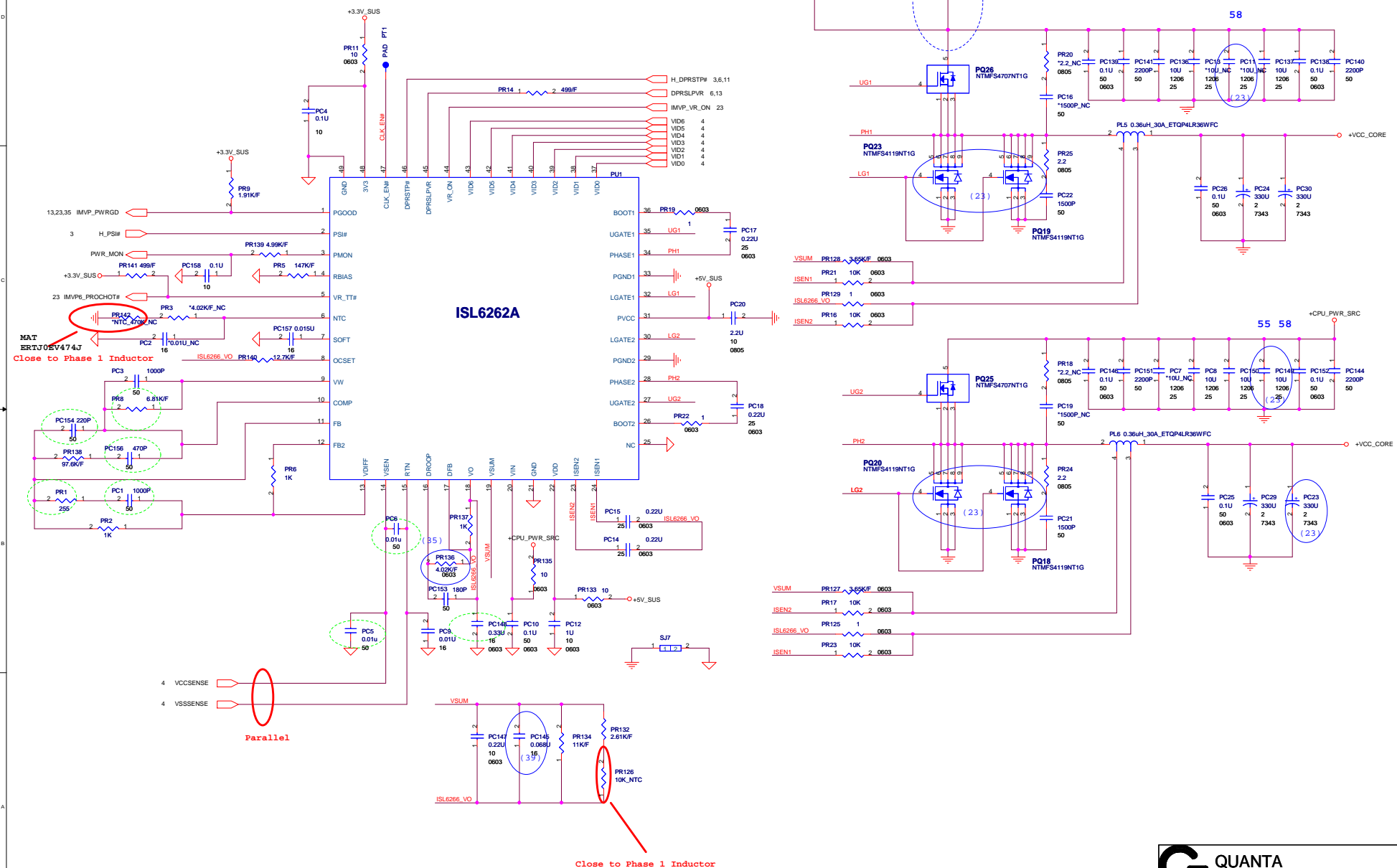
Rev: 1A

Sheet: 36 of 53

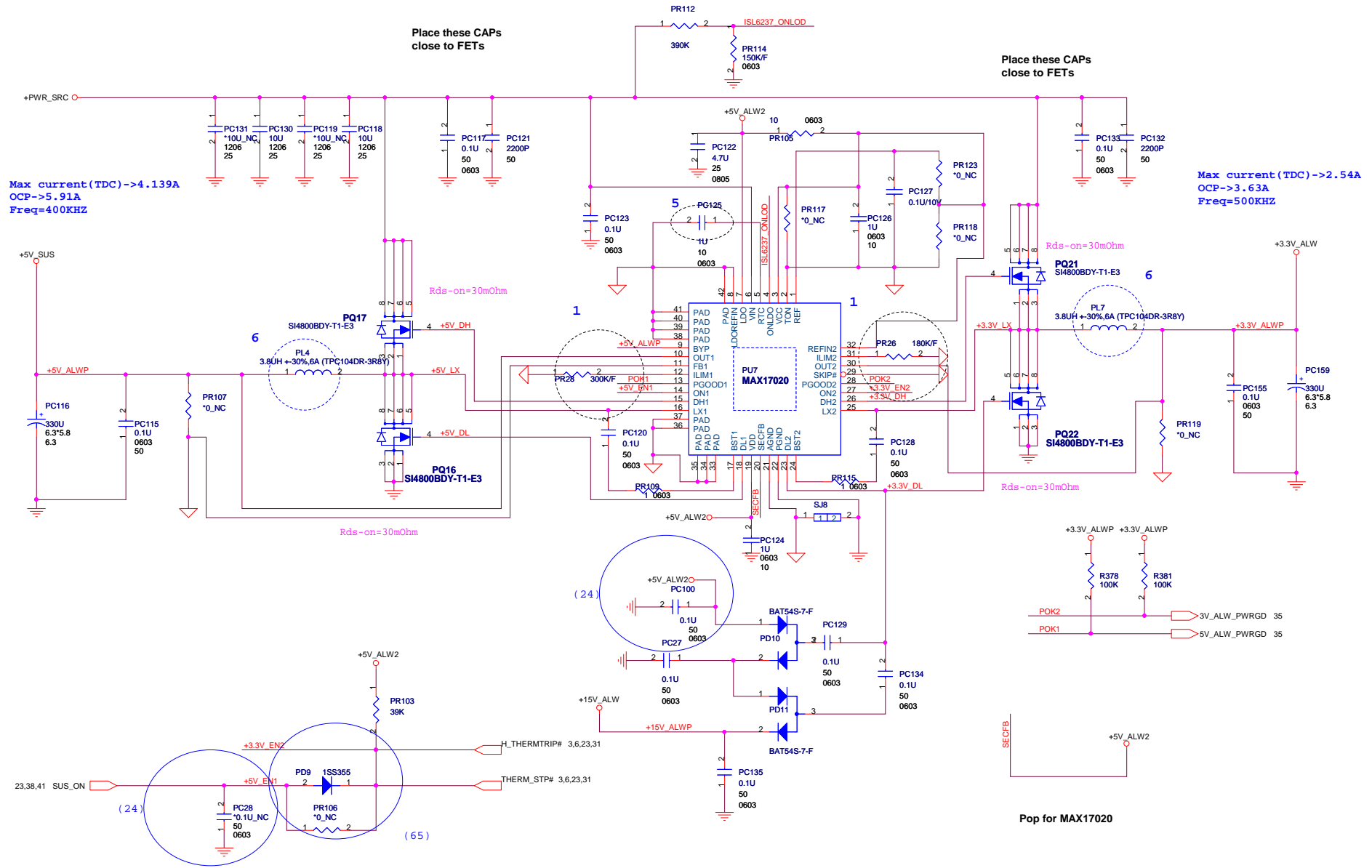




|       |                        |       |                             |
|-------|------------------------|-------|-----------------------------|
| Title |                        |       | 1.8VSUS & 0.9VTT (TPS51116) |
| Size  | Document Number        | Rev   |                             |
|       | VM9/VM8                | 1A    |                             |
| Date: | Tuesday, June 10, 2008 | Sheet | 38 of 53                    |



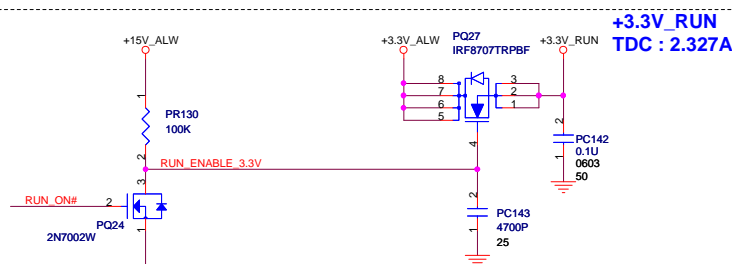
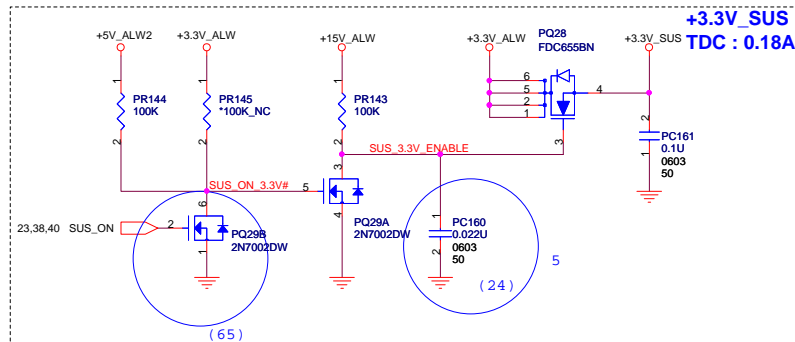
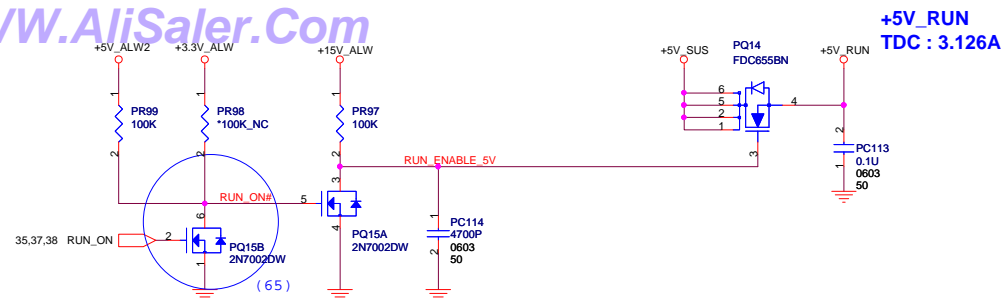
# DC/DC +3V\_ALW/+5V\_SUS/+5V\_ALW /+15V\_ALW



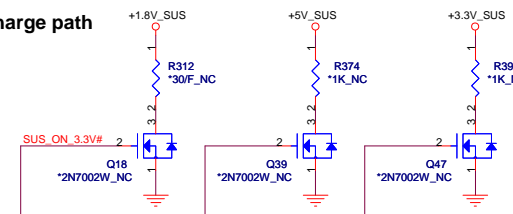
**QUANTA  
COMPUTER**

|                       |                         |                |
|-----------------------|-------------------------|----------------|
| Title                 |                         |                |
| 3VALW,5V,3V, Power On |                         |                |
| Size                  | Document Number         | Rev            |
| VM9/VM8               |                         | 1A             |
| Date:                 | Saturday, June 21, 2008 | Sheet 40 of 53 |

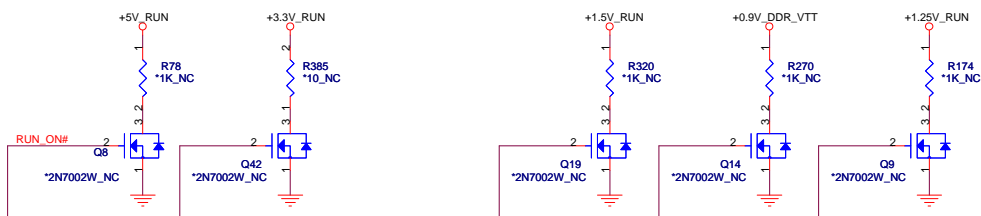




#### Reserve discharge path



#### Reserve discharge path



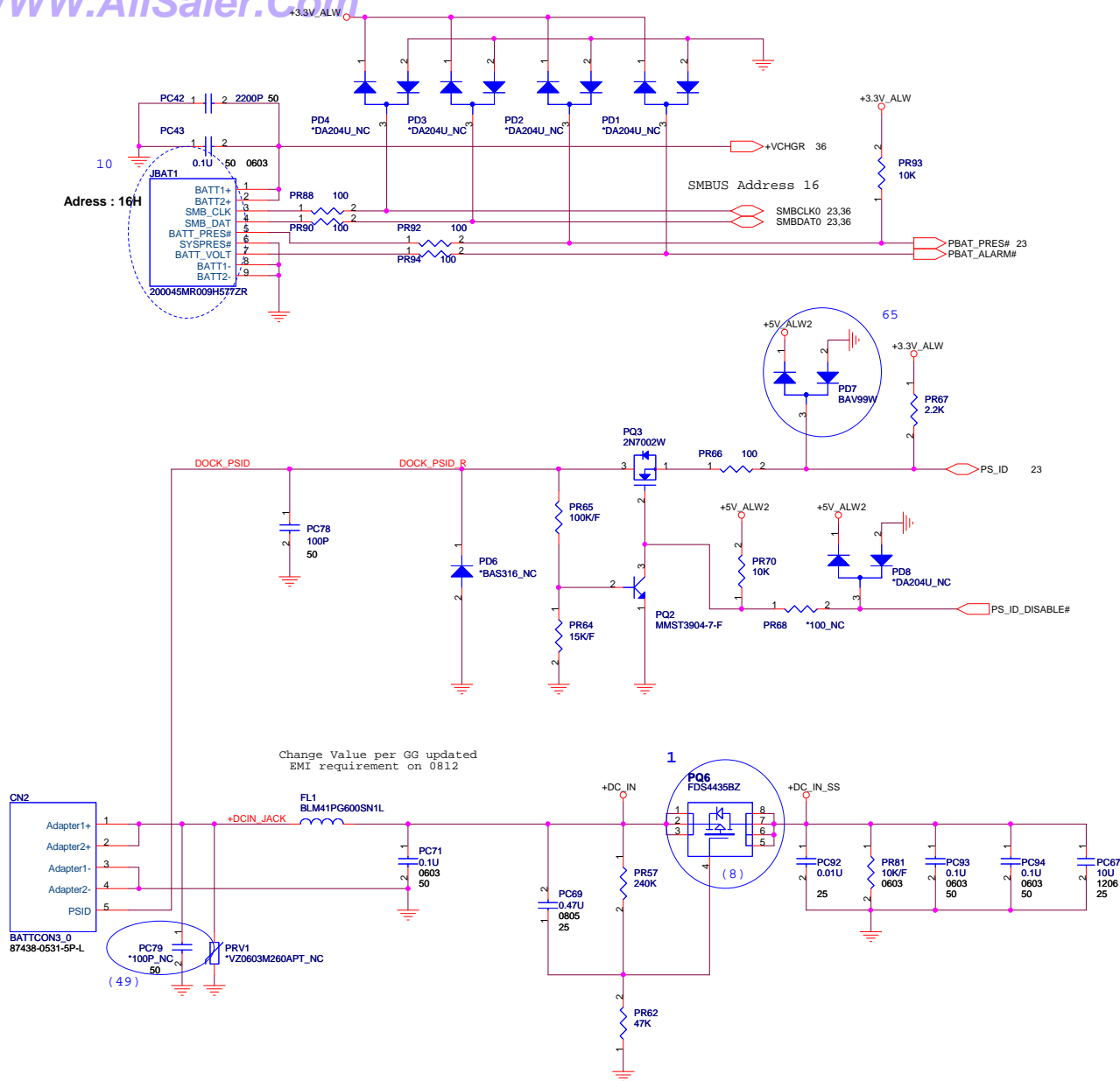
Run POWER SW


Size Document Number VM9/VM8

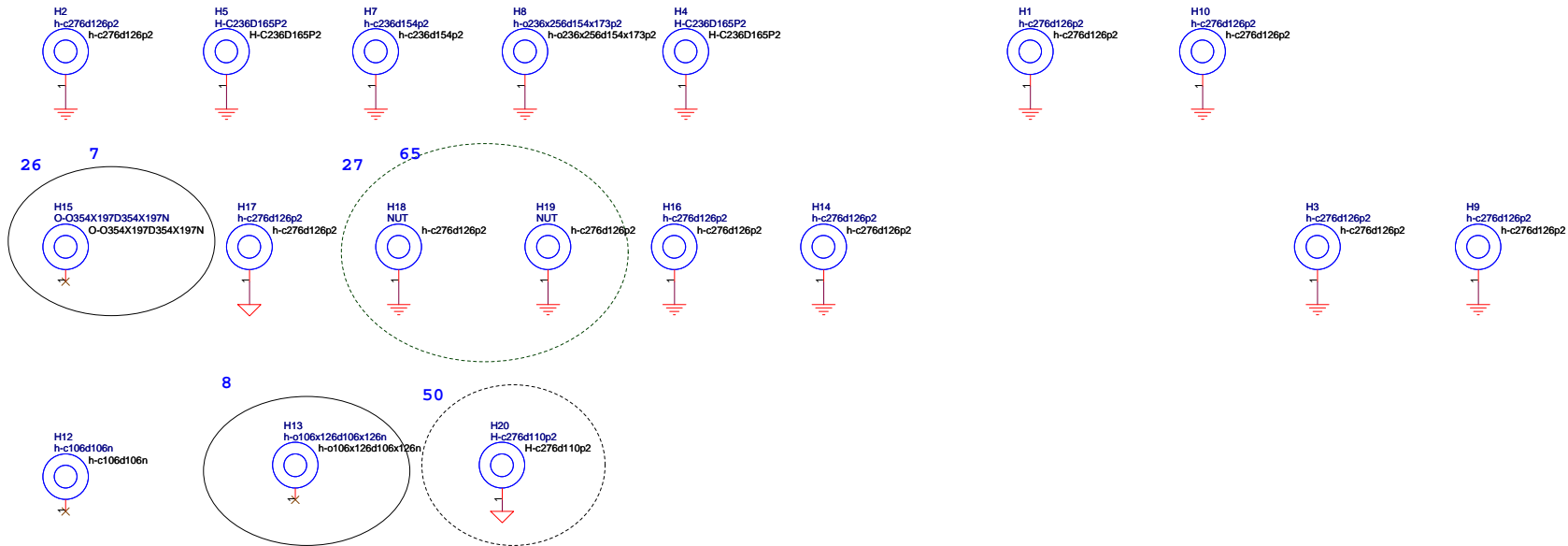
Date: Tuesday, June 10, 2008


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Rev 1A

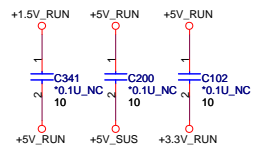


|                                                                                                                  |                         |        |
|------------------------------------------------------------------------------------------------------------------|-------------------------|--------|
|  <b>QUANTA<br/>COMPUTER</b> |                         |        |
| Title DCIN,BATT CONNECTOR                                                                                        |                         |        |
| Size                                                                                                             | Document Number VM9/VM8 | Rev 1A |
| Date: Tuesday, June 17, 2008                                                                                     | Sheet 42 of 53          |        |

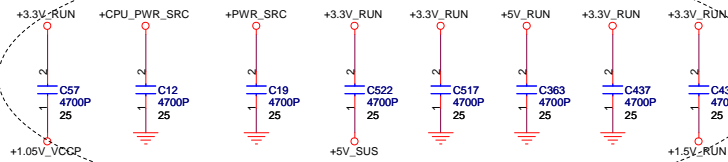


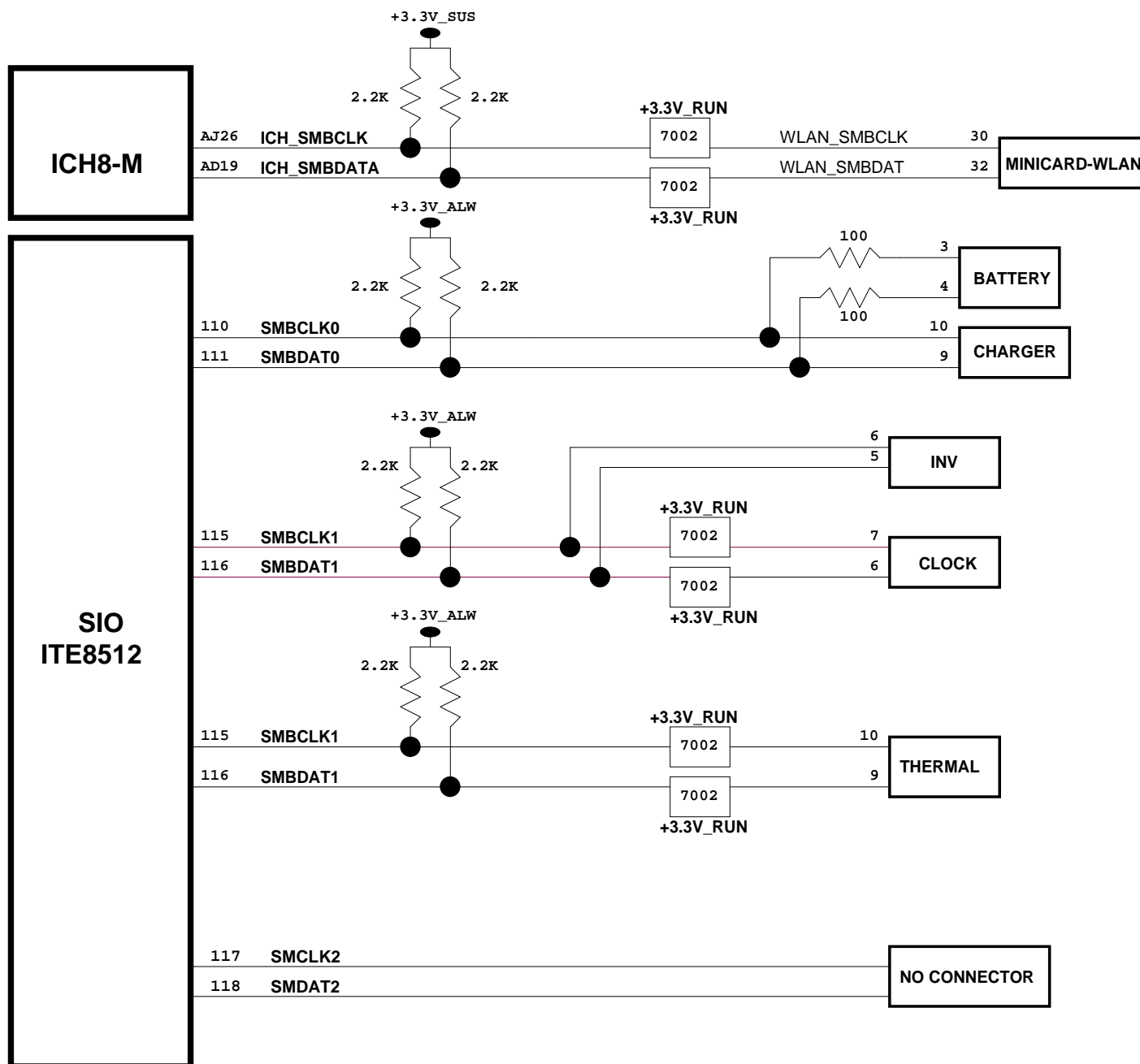
|                                                                                       |                          |                            |                 |
|---------------------------------------------------------------------------------------|--------------------------|----------------------------|-----------------|
|  |                          | <b>QUANTA<br/>COMPUTER</b> |                 |
| Title: SCREW PAD                                                                      |                          |                            |                 |
| Size:                                                                                 | Document Number: VM9/VM8 |                            | Rev: 1A         |
| Date:                                                                                 | Monday, June 23, 2008    |                            | Sheet: 43 of 53 |

### Stitching caps for PCI bus.



### 40 Stitching caps for PCI EMC.





|       |                       |       |             |
|-------|-----------------------|-------|-------------|
| Title |                       |       | SMBUS BLOCK |
| Size  | Document Number       | Rev   |             |
|       | VM9/VM8               | 1A    |             |
| Date: | Tuesday, May 27, 2008 | Sheet | 45 of 53    |

