### EEE PC 701 PCB version

<table>
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<th>GPi37</th>
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<th>GPi39</th>
<th>PCB version</th>
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</tbody>
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### USB

- **USB 0**: USB Conn
- **USB 1**: USB Conn
- **USB 2**: NA
- **USB 3**: NA
- **USB 4**: Card Reader
- **USB 5**: Minicard
- **USB 6**: Bluetooth
- **USB 7**: Camera

### PCIe

- **PCIe 1**: NC
- **PCIe 2**: LAN
- **PCIe 3**: Minicard
- **PCIe 4**: SSD

### Azalia

- **ACZ_SDIN0**: CODEC
- **ACZ_SDIN1**: NC
- **ACZ_SDIN2**: NC

---

**Title**: System Setting

**Engineer**: Aaron Tsao

**Date**: Friday, March 27, 2009

**ASUSTeK Computer INC.**
Power: +VCCP

RCOMP
For Calibrating the FSB I/O Buffer
- H_VREF1
- H_A#[31:3]
- H_ADSTB#0
- H_VREF0
- H_BNR#
- H_BPRI#
- H_BREQ0#
- H_CPURST#
- HCLKINN
- HCLKINP
- H_DBSY#
- H_DINV#0
- H_DSTBN#0
- H_DSTBP#0
- H_HITM#
- H_LOCK#
- H_REQ#0
- H_SLPCPU#
- H_TRDY#

SCOMP
For Slew Rate Compensation on the FSB
- H_A#[13]
- H_A#[14]
- H_A#[15]
- H_A#[16]
- H_A#[17]
- H_A#[18]
- H_A#[19]
- H_A#[20]
- H_A#[21]
- H_A#[22]
- H_A#[23]
- H_A#[24]
- H_A# [5]

Voltage Swing
For Providing a Reference Voltage to The FSB RCOMP circuits
- H_D#[5]
- H_D#[6]
- H_D#[7]
- H_D#[8]
- H_D# [5]

Signal voltage level = 0.3125*VCCP
Trace should be 10 mil wide with 20 mil spacing

(Layout Note: 0.1uF should be placed 100mils or less from GMCH pin.)
Checklist notes: Can be left as NC
IF USE NB READ EDID.
MUST CONNECT L_DDCLK&DATA

Close to GMCH
R103,R114,R115

Close to GMCH

+3VS

VGA

SDVO

MISC

945GMS

+1.5VS_PCIE

1008HA

ASUSTeK COMPUTER INC.

Title : NB-945GMS(GRAPHIC)

Engineer: Aaron Tsao

Size Project Name Rev
A4 1008HA

Date: Friday, March 27, 2009 Sheet 9 of 49
At Package Edge

In Cavity

At Edge Pin Location

1.0V-1.1V
Max: 4.6A

CFG_19(K28) Strapping:
DMI LANE Reversal:
0:Normal Operation (Default)
1.:Reversal Lanes, 3->0,2->1..etc

Note: 945GMS doesn't support DMI Lane Reversal
Change to 06G051007011 for cost issue
Naming Rule:
IC: IU?
R: IR?
C: IC?
L: IL?
1.1G change USB con. to 12G131030042

1.1G change CE2 CE3 CE4 to POSCAP, 100uF/6.3V
1.1G add PWR LED and Charge LED

DMIC Cable length should be less 30cm

Change R291 R292 R293 to 510 Ohm
1.1G For Hotkey debounce

HOTKEY_SW# - HOTKEY_SW3# internal PU
Title: EC

Engineer: Aaron Tsao

Date: Friday, March 27, 2009

Sheet 33 of 42
For Debug

Debug Card cable use 296 Touch Pad cable, P/N:
14G124110126, 14G124110120, 14G124110121
14G124110124, 14G124110125

prevent system power on when LCD close
UI9 use 06G023044020, second source 06G023055010

Change to 12G171010049 (The same as other EPC)
For Keyboard Connector

For Touch-Pad

P900 R1.0G

For assembly direction, KB pin1 to KB conn. pin24
1.1G change to EVERLIGHT
Height: 0.55mm

for CHARGE LED
White

for POWER LED
White

for FLASH LED
White

Change LED resistor to 510 Ohm, about 4mA
1.3G For ESD
### S3 And S5 Truth Table

<table>
<thead>
<tr>
<th>State</th>
<th>S3</th>
<th>S5</th>
<th>VDDQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>S0</td>
<td>Hi</td>
<td>Hi</td>
<td>On</td>
</tr>
<tr>
<td>S3</td>
<td>Low</td>
<td>Hi</td>
<td>On</td>
</tr>
<tr>
<td>S4/S5</td>
<td>Low</td>
<td>Low</td>
<td>(Discharge)</td>
</tr>
</tbody>
</table>

### State S3/S5

<table>
<thead>
<tr>
<th>Voltage &amp; Current:</th>
<th>+1.8V@3A</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Voltage &amp; Current:</td>
<td>+1.8V@3A</td>
</tr>
<tr>
<td>2. Frequency:</td>
<td>Fosc=250KHz</td>
</tr>
<tr>
<td>3. OCP:</td>
<td>PR181=22Kohm -&gt;10A</td>
</tr>
<tr>
<td>4. POR:</td>
<td>POR Hysteresis =20mV</td>
</tr>
<tr>
<td>5. UVP:</td>
<td>Vout*70%</td>
</tr>
<tr>
<td>6. OVP:</td>
<td>Vout*115%</td>
</tr>
<tr>
<td>7. Enable Voltage:</td>
<td>V rising = 2 V</td>
</tr>
<tr>
<td>8. Soft start time:</td>
<td>Tss=512us</td>
</tr>
</tbody>
</table>

### Power stage

1. **IP Current:**
   
   \[ I_{in} = \frac{V_{out} \cdot I_{in}}{0.8 \cdot V_{in}} = 0.94A \]

2. **Ripple Current:**
   
   \[ I_{in} = 0.1UF/25V \]

3. **Dynamic:**
   
   \[ I_{peak} = 5 A \]

4. **Inductor Spec:**
   
   \[ R_{ds(ON)} = 21 mohm \]

5. **MOSFET Spec:**
   
   H-side MOSFET: AP4800AGM
   
   \[ R_{ds(ON)} = 21 mohm \]
   \[ (V_{gs}=4.5 V) \]
   \[ I_{peak} = 40 A \]

6. **L-side MOSFET:**
   
   RAP4800AGM
   
   \[ R_{ds(ON)} = 21 mohm \]
   \[ (V_{gs}=4.5 V) \]
   \[ I_{peak} = 40 A \]

---

**Title:** 1.8V & VTTDDR

**Engineer:** Aaron Tsao

**ASUSTeK Computer INC.**

**Date:** Sheet 1006EA

**Size:** 1.3G
1.1G change Enable signal from CPU_VRON

+VCCP / 5.5A

## PM_LEVELDOWN, CPU_LEVELDOWN, CPU_LEVELDOWN#

<table>
<thead>
<tr>
<th>PM_LEVELDOWN#</th>
<th>CPU_LEVELDOWN</th>
<th>CPU_LEVELDOWN#</th>
<th>Voltage</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>L</td>
<td>L</td>
<td>H</td>
<td>0.9V</td>
<td>Power Saving</td>
</tr>
<tr>
<td>H</td>
<td>L</td>
<td>H</td>
<td>1.05V</td>
<td>Normal</td>
</tr>
</tbody>
</table>

ADP: 1.05V or 1.00V

---

**PM_LEVELDOWN**

- Voltage: 0.9V
- Status: Power Saving

**CPU_LEVELDOWN**

- Voltage: 1.05V
- Status: Normal
Use +1.5V_PLL, change +1.5VS to 1.30V at BAT mode.
Battery Cell Selection:
- BAT_ID = 1, 2 Cells: Vadj2 = 0.998V
- BAT_ID = 0, 4/6 Cells: Vadj2 = 1.648V

Pre-Charging Mode:
- Precharging current = 150mA
- Vadj1 = 168.75mV

Adaptor Max. Current:
limit = 1.9A; 36.1W (19V/40W)

ACIN Threshold = 1.25V
- Adaptor > 16V, System Powered by Adaptor
- Adaptor < 16V, System Powered by Battery

Battery Charging Voltage:
- Vadj3 = 4.1V → Vbat = 4.2V/cell
- 2.2V→Vadj2=1.1V → Vbat = 2×Vadj3/cell

Battery Charging Current:
- 4.4V > Vadj2 = 0V →
  Ichg = \( \frac{Vadj2-0.075}{25\times R_s} \)

Input Adaptor Max. Current Limit:
limit_current = \( \frac{Vadj1-0.075}{(25\times R_s)} \)
Power Latch table:

<table>
<thead>
<tr>
<th>Mode</th>
<th>BAT</th>
<th>A/D_DOCK_IN</th>
<th>ADP, BAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Latch</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Out</td>
<td>1</td>
<td>0</td>
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</tr>
<tr>
<td>Latch</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

For ADP power latch

V1.2

For ADP power latch

V1.2

58ms (min)

40ms (max)
<table>
<thead>
<tr>
<th>3GA_PWR_SEL</th>
<th>PM_LEVELDOWN#</th>
<th>Voltage</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td></td>
<td>3.71V</td>
<td>S0, S3</td>
</tr>
<tr>
<td>L</td>
<td></td>
<td>3.145V</td>
<td>S0, S3</td>
</tr>
</tbody>
</table>
Rev0.7 Initial release 2008/10/22
Remove hotkey switch(R2, C427, SW6, OR25)
Remove White LED (LED4, R86, Q17, SB_GPIO7)
Add 40 pin FPC connector
Change netname from BT_LED to Wireless_LED
Change NMOS from 2N7002 to UM6K1N(Q25, 23, Q18, Q15, Q58, Q19, Q16, Q19)
Change 3G power name to +3V3_3GA
Add dual-core support (not ready)

Rev0.71 2008/10/22
Remove hotkey switch(R2, C427, SW6, OR25)
Remove White LED (LED4, R86, Q17, SB_GPIO7)
Add 40 pin FPC connector
Change netname from BT_LED to Wireless_LED
Change NMOS from 2N7002 to UM6K1N(Q25, 23, Q18, Q15, Q58, Q19, Q16, Q19)
Change 3G power name to +3V3_3GA
Add dual-core support (not ready)

Rev0.72 Change the part for LAN connector 2008/10/23
Change the SPEAKER connector (same as FAN)

Rev0.73 Remove CC36-40, CC45, CC24-25, CC16-17 for layout space 2008/10/27
Remove HC32, 33 for Layout space
Remove HC14-16, HC125 (stuff HC126) for Layout space
Remove C422, 212, 232 (stuff C223) for Layout space
Remove C436, 292, 305 for Layout space
Change U47 to /X and stuff R265
Remove MC5, 6, 7, 9, 15, 17, 22, 24, 26, 27, 33 for Layout space
Remove WIFI & 3G RSV component

Rev0.73 Change the part for LAN connector 2008/10/23
Change the SPEAKER connector (same as FAN)

Rev0.73 Remove CC36-40, CC45, CC24-25, CC16-17 for layout space 2008/10/27
Remove HC32, 33 for Layout space
Remove HC14-16, HC125 (stuff HC126) for Layout space
Remove C422, 212, 232 (stuff C223) for Layout space
Remove C436, 292, 305 for Layout space
Change U47 to /X and stuff R265
Remove MC5, 6, 7, 9, 15, 17, 22, 24, 26, 27, 33 for Layout space
Remove WIFI & 3G RSV component