Compal Confidential
ECQ60 Schematics Document
Desktop LGA-775 Package with Grantsdale + ICH6 + ATI M24-P

2004-08-09-C
REV: 1.0
### Voltage Rails

<table>
<thead>
<tr>
<th>Power Plane</th>
<th>Description</th>
<th>SD-S1</th>
<th>S3</th>
<th>S5</th>
</tr>
</thead>
<tbody>
<tr>
<td>VIN</td>
<td>Adapter power supply (19V)</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>+3.3V_CORE</td>
<td>Core voltage for CPU</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>+1.2V питания</td>
<td>1.2V rail for Processor I/O &amp; GTL Termination</td>
<td>ON</td>
<td>OFF</td>
<td>OFF</td>
</tr>
<tr>
<td>+PCIE_1.2V</td>
<td>+PCIE_1.2V power rail for VGA PCIExpress</td>
<td>ON</td>
<td>OFF</td>
<td>OFF</td>
</tr>
<tr>
<td>+1.8V</td>
<td>1.8V switched power rail</td>
<td>ON</td>
<td>OFF</td>
<td>OFF</td>
</tr>
<tr>
<td>+2.5V</td>
<td>2.5V power rail for DDR1</td>
<td>ON</td>
<td>ON</td>
<td>OFF</td>
</tr>
<tr>
<td>+2.0V</td>
<td>2.0V switched power rail</td>
<td>ON</td>
<td>ON</td>
<td>OFF</td>
</tr>
<tr>
<td>+3.3V</td>
<td>3.3V always on power rail</td>
<td>ON</td>
<td>OFF</td>
<td>OFF</td>
</tr>
<tr>
<td>+3V</td>
<td>3.3V power rail</td>
<td>ON</td>
<td>OFF</td>
<td>OFF</td>
</tr>
<tr>
<td>+5V</td>
<td>5V switched power rail</td>
<td>ON</td>
<td>OFF</td>
<td>OFF</td>
</tr>
<tr>
<td>+5VALW</td>
<td>5V always on power rail</td>
<td>ON</td>
<td>OFF</td>
<td>OFF</td>
</tr>
<tr>
<td>+12VALW</td>
<td>12V always on power rail</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
</tr>
<tr>
<td>+RTCVCC</td>
<td>RTC power</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
</tr>
</tbody>
</table>

Note: ON* means that this power plane is ON only with AC power available, otherwise it is OFF.

### External PCI Devices

<table>
<thead>
<tr>
<th>Device</th>
<th>Device IDSEL#</th>
<th>REG/INT#</th>
<th>Interrupts</th>
</tr>
</thead>
<tbody>
<tr>
<td>VGA</td>
<td>AD20</td>
<td>2</td>
<td>PIQG</td>
</tr>
<tr>
<td>CardBus</td>
<td>AD17</td>
<td>3</td>
<td>PIRO</td>
</tr>
<tr>
<td>LAN</td>
<td>AD18,AD22</td>
<td>1</td>
<td>PIRO,PIRH</td>
</tr>
<tr>
<td>Mini-PCI</td>
<td>AD16</td>
<td>0</td>
<td>PIROE</td>
</tr>
</tbody>
</table>

### EC SM Bus1 address

<table>
<thead>
<tr>
<th>Device</th>
<th>Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>SmartBattery</td>
<td>0001 011Xb</td>
</tr>
<tr>
<td>EEPROM(24C16)</td>
<td>1010 000Xb</td>
</tr>
<tr>
<td>DDR DIMM0</td>
<td>1010 003Xb</td>
</tr>
<tr>
<td>DDR DIMM1</td>
<td>1010 010Xb</td>
</tr>
</tbody>
</table>

### EC SM Bus2 address

<table>
<thead>
<tr>
<th>Device</th>
<th>Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>AD1032</td>
<td>1001 103Xb</td>
</tr>
</tbody>
</table>

### Board ID Table for AD channel

<table>
<thead>
<tr>
<th>Board ID</th>
<th>PCB Revision</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0.1</td>
</tr>
<tr>
<td>1</td>
<td>0.2</td>
</tr>
<tr>
<td>* 2</td>
<td>0.3</td>
</tr>
<tr>
<td>3</td>
<td>0.4</td>
</tr>
<tr>
<td>4</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>

### Board ID

- **Vcc**: 3.3V +/- 5%
- **Rd**: 100K +/- 5%
- **VAd_bid min**: 0V
- **VAd_bid typ**: 0V
- **VAd_bid max**: 0V

<table>
<thead>
<tr>
<th>Board ID</th>
<th>RA</th>
<th>VAd_bid min</th>
<th>VAd_bid typ</th>
<th>VAd_bid max</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0.216 V</td>
<td>0.250 V</td>
<td>0.289 V</td>
</tr>
<tr>
<td>1</td>
<td>18K</td>
<td>0.436 V</td>
<td>0.503 V</td>
<td>0.538 V</td>
</tr>
<tr>
<td>2</td>
<td>33K</td>
<td>0.712 V</td>
<td>0.819 V</td>
<td>0.875 V</td>
</tr>
<tr>
<td>3</td>
<td>56K</td>
<td>1.036 V</td>
<td>1.185 V</td>
<td>1.264 V</td>
</tr>
<tr>
<td>4</td>
<td>100K</td>
<td>1.453 V</td>
<td>1.650 V</td>
<td>1.759 V</td>
</tr>
<tr>
<td>5</td>
<td>200K</td>
<td>1.935 V</td>
<td>2.200 V</td>
<td>2.341 V</td>
</tr>
<tr>
<td>6</td>
<td>NC</td>
<td>2.500 V</td>
<td>3.300 V</td>
<td>3.300 V</td>
</tr>
</tbody>
</table>

---

**Notes**: 
- ECQ60 LA-2271
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As close as possible to related pin

Closed to VRAM

Closed to VRAM
Internal Pull-up. Sample high destination is LPC.

Place closely pin G6

Compal Electronics, Inc.
ICH6(1/4)

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When Pin 28 CSEL grounded, the device recognizes itself as a master.

When Pin 47 CSEL grounded, the device recognizes itself as a master. When CSEL open, the device recognizes itself as a slaver.
PCMCIA controller ENE CB1410

IDSEL:PCI_AD20

PQFP 144
22.2 X 22.2 X 1.60

23,30,31,33 PCI_AD[3:0] 311

PCMCIA controller ENE CB1410

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System can wake on LAN (keep Low when Power On)

+3V_LAN for BCM4401

+3V_LAN for BCM5788

IDmax = 2.3A

+3V_LAN

+2.5V_LAN

+1.2V_LAN

+1.2V_LAN_PLLVDD

Compal Electronics, Inc.
**LAN BCM5788M/BCM4401KFB**

**H1238 for BCM4401(10/100)**  
H5015(SP050002400) for BCM5788(GbE)

- **unpop when use BCM4401(10/100)**  
- **pop when use BCM5788**

**Poped for BCM4401(10/100)**  
**Un-poped for BCM5788**

**Termination pins should be copled to chassis ground and also depends on safety concern**

---

**Compal Electronics, Inc.**

**LAN Magnetic & RJ45 / RJ11**

**Title**

**Size Document Number RevDate: Sheet**

**EC000 LA-2271**

**Monday, August 09, 2004**

**Compal Electronics, Inc.**

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For LPC Debug Card

1MB Flash ROM

512KB Flash ROM
**Title**: Vin Detector  


**BATT detector**: 15.265 15.906 16.564 11.495 8.247 8.555 5.382 5.752 5.926

**Vin Detector**

17.841 18.234 17.449 17.210 17.597 16.813
I_d=0~7A

IREF=1.1*Icharge
IREF=0.55~3.0V

OVP voltage : LI
42SP : 18V--> BATT_OVP= 2.0V
(BAT_OVP=0.1111 *VMB)

4.2V

CC=0.5~2.7A
CV=16.8V(12 CELLS LI-ION)
Frequency Select

Panasonic EFT20J0V334J (0402)
Locate this NTC resistor on PCB between phase 2 and 3 for thermal compensation.

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REMOTE SENSE

CPU_CORE

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HW PIR

B Test
Page 5 Add R518, R519, C658, Q48, Q47, R517 for VTT_POWERGD timing
Page 7 Add C664
Page 8 Change Material R149, R151 to 80.6_0402_1%
Page 9 Add C659, C660, C661 for EMI request
Page 14 Change R347, R348 from 10K_0402_5% to 4.7K_0402_5%
Page 15 Add C665, R210, R411, R189
   Change R414 to 71.5_0402_1%
   R198, R177 to 1K_0402_1%
Delete R218, R219, R216, R209, R200
Page 17 Delete D6
   Change R45 from 16K_0402_1% to 10.7K_0603_1% for 1.2V +PCIE1_1.2VS
   Change L15, L16 from 0_0603_5% to CHB1608U301
Page 23 Add R526 & C666
Page 26 Delete D22, D8
   Change R481, R299 from 1K_0402_5% to 10_0402_5%
Page 31 Delete R81
Page 38 Modify scroll hole pad size and add H27
Page 41 Add C662, C663, R408, R383 for EMI request
Page 42 Add R382, R380 for mix left & right channel
   Change R370 from 100K_0402_5% to 47K_0402_5%
   Reserved C667, C668, C669, C670 for EMI request

B3 Test
Page 9 Delete R395, C435, C38, R26, C29, R25, C9, U8, C34, R34, R43
   Add R533
   Change L34, R396, R48, R398, R53, R397 from SM010014500 to SD0020000T8
Page 17 Change R45 to 16.9K_0603_1%
Page 19 Add R40, R41, C30, R37, C31 For VRAM Clock Termination
Page 20 Add R114, R117, C95, R161, R158, C190 For VRAM Clock Termination
Page 21 Change C320, C322 from 18P_0402_50V7K to 12P_0402_50V8J
   Add R528, D26
Page 22 Add D25 for EC_LID_OUT# to prevent power leakage
   Add U47 to and SLP_S4# & SLP_S5#
   Delete R63, R64 / Add R354, R355, R356, R357 for USB_OC# pull high
Page 23 Change R299 from 10_0402_5% to 1K_0402_5%
   Add D22, D8
Page 29 Change C310 to 1U_0805_25V4Z
Page 34 Change USB Power Switch to G528, (U31, U37)
   Add C691, C692, C693, C694, C695, C696, C697, C698, C699, C700, C672, C673
Page 37 Delete R438 R474, R475, R509,
Page 40 Change R33, R60, R404 to 120K_0402_5%
   Change R32, R62 to 100K_0402_5%
   Change Q40 to AO6400 for 5V FAN
   Add R543, R544 for Card Reader Power
   Add C674, C675, C676, C677, C678_C679, C680, C682, C683, C684, C685, C686
   C687, C688, C689, C690, C701, C702, C703, C704, C705
Page 41 Add U48 SN74LV1G14DKCR_SC70-5
Page 43 Add R532, Q50 for +1.8VS Power Down discharge

C Test
Page 41 Change C389 from 1U_0603_10V4Z to 1000P_0603_16V7K
   Add C612 10P_0402_50V8K for EMI.
   Add R546 1M_0402_5% for AL250 issue.
Page 42 Change R363 from 10K_0402_5% to 15K_0402_5% to reduce woofer volume.
Page 34 Add C709, C710 for EMI.

Pre-MP
Page 21 Delete R384 & add U30 to prevent ENVDD output high pulse before reset
   Change C4 from 100P_0402_50V7K to 0.1U_0402_16V4Z to delay +LCDVDD turn on timing.
Page 42 Change C411 from 0.047U_0402_16V7K to 0.01U_0402_16V7K for AL250 issue.
<table>
<thead>
<tr>
<th>Item</th>
<th>Reason for change</th>
<th>PG#</th>
<th>Modify List</th>
<th>Date</th>
<th>B.Ver#</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Power section</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Power section</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>For common parts design</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>delete unnecessary Oohm resister</td>
<td></td>
<td>delete PR247, PR19, PR115, PR113, PR117, PR118, PR112, PR127, PR132, PR135, PR254, PR79, PR119</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>adjust Vin detector</td>
<td>34</td>
<td>change PR170 from 73.2K_0603_1% to 22K_0603_1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>change PR172 from 40.2K_0603_1% to 36K_0603_1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>change PR167 from 84.5K_0603_1% to 82.5K_0603_1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>adjust PACIN voltage from 3.3V to 3.2V</td>
<td>34</td>
<td>change PR168 from 8.2K_0805_5% to 10K_0805_1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>EMI test failure</td>
<td>40</td>
<td>change PR105 and PR140 from 0_0603_5% to 2.2_0603_5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>PC60 rate voltage not enough</td>
<td>36</td>
<td>change PC60 from 0.047_0603_16V to 0.047_0603_25V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Vin detector issue</td>
<td>34</td>
<td>change PR172 form 36K to 34.8K</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>