

# HAINAN2

CPU : Intel Merom  
Chip Set : RS600M & SB600  
Remarks : Mobility Platform

Model Name : HAINAN2  
PBA Name : MAIN  
PCB Code : BA41-XXXXXA  
Dev. Step : PR  
Revision : 1.0  
T.R. Date : 2006.11.16

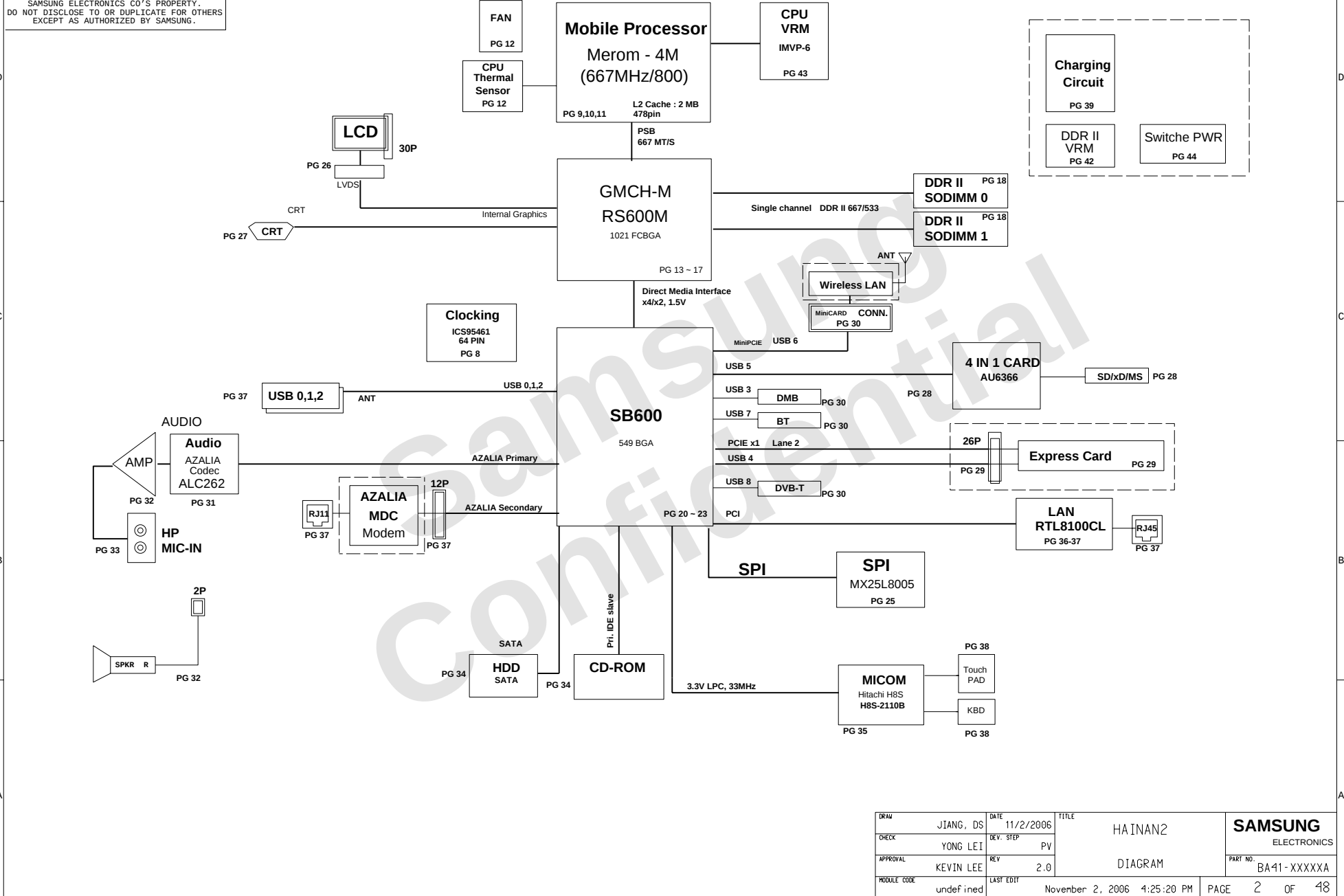
| DRAW | CHECK | APPROVAL |
|------|-------|----------|
|      |       |          |
|      |       |          |

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|             |           |           |                             |       |         |                         |
|-------------|-----------|-----------|-----------------------------|-------|---------|-------------------------|
| DRAW        | JIANG, DS | DATE      | 11/2/2006                   | TITLE | HAINAN2 | SAMSUNG<br>ELECTRONICS  |
| CHECK       | YONG LEI  | DEV. STEP | PV                          |       |         | PART NO.<br>BA41-XXXXXA |
| APPROVAL    | KEVIN LEE | REV       | 2.0                         | COVER |         |                         |
| MODULE CODE | undefined | LAST EDIT | November 2, 2006 4:25:20 PM | PAGE  | 1       | OF 48                   |

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|             |           |           |                             |         |         |                                                       |
|-------------|-----------|-----------|-----------------------------|---------|---------|-------------------------------------------------------|
| DRAW        | JIANG, DS | DATE      | 11/2/2006                   | TITLE   | HAINAN2 | <b>SAMSUNG</b><br>ELECTRONICS<br>PART NO. BA41-XXXXXA |
| CHECK       | YONG LEI  | DEV. STEP | PV                          |         |         |                                                       |
| APPROVAL    | KEVIN LEE | REV       | 2.0                         | DIAGRAM |         |                                                       |
| MODULE CODE | undefined | LAST EDIT | November 2, 2006 4:25:20 PM | PAGE    | 2 OF 48 |                                                       |

# Power Diagram

KBC3\_SUSPWRON

KBC3\_PWRON

KBC3\_VRON

VCCP3\_PWRGD

AC Adapter

Battery DC

VDC

P12.0V\_ALWS

P5.0V\_ALWS

P1.2V\_ALWS

P3.3V\_MICOM

P1.8V\_AUX

P1.5V

P1.8V

P1.2V

P0.9V

P5.0V\_AUX

P5.0V

P3.3V\_AUX

P3.3V

P2.5V\_LAN

P1.05V  
MEROM  
NB  
SB  
(VCCP\_CORE)

CPU\_CORE  
MEROM

| Rail<br>State | +V*Always | +V*AUX | +V  | SUSPWR | PWRON | VRON |
|---------------|-----------|--------|-----|--------|-------|------|
| Full On       | ON        | ON     | ON  | H      | H     | H    |
| S3            | ON        | ON     | OFF | H      | L     | L    |
| S4            | ON        | ON     | OFF | H      | L     | L    |
| S5            | ON        | OFF    | OFF | L      | L     | L    |

S5 / S4

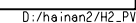
S3

S0

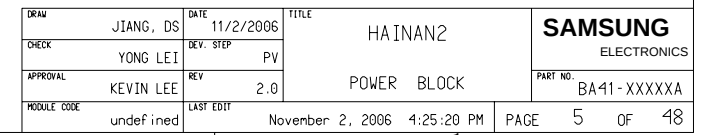
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|-------------|-----------|-----------|-----------------------------|---------------|----------|-------------|
| DRAW        | JIANG, DS | DATE      | 11/2/2006                   | TITLE         | HAINAN2  | SAMSUNG     |
| CHECK       | YONG LEI  | DEV. STEP | PV                          |               |          | ELECTRONICS |
| APPROVAL    | KEVIN LEE | REV       | 2.0                         | POWER DIAGRAM | PART NO. | BA41-XXXXXA |
| MODULE CODE | undefined | LAST EDIT | November 2, 2006 4:25:20 PM | PAGE          | 3        | OF 48       |

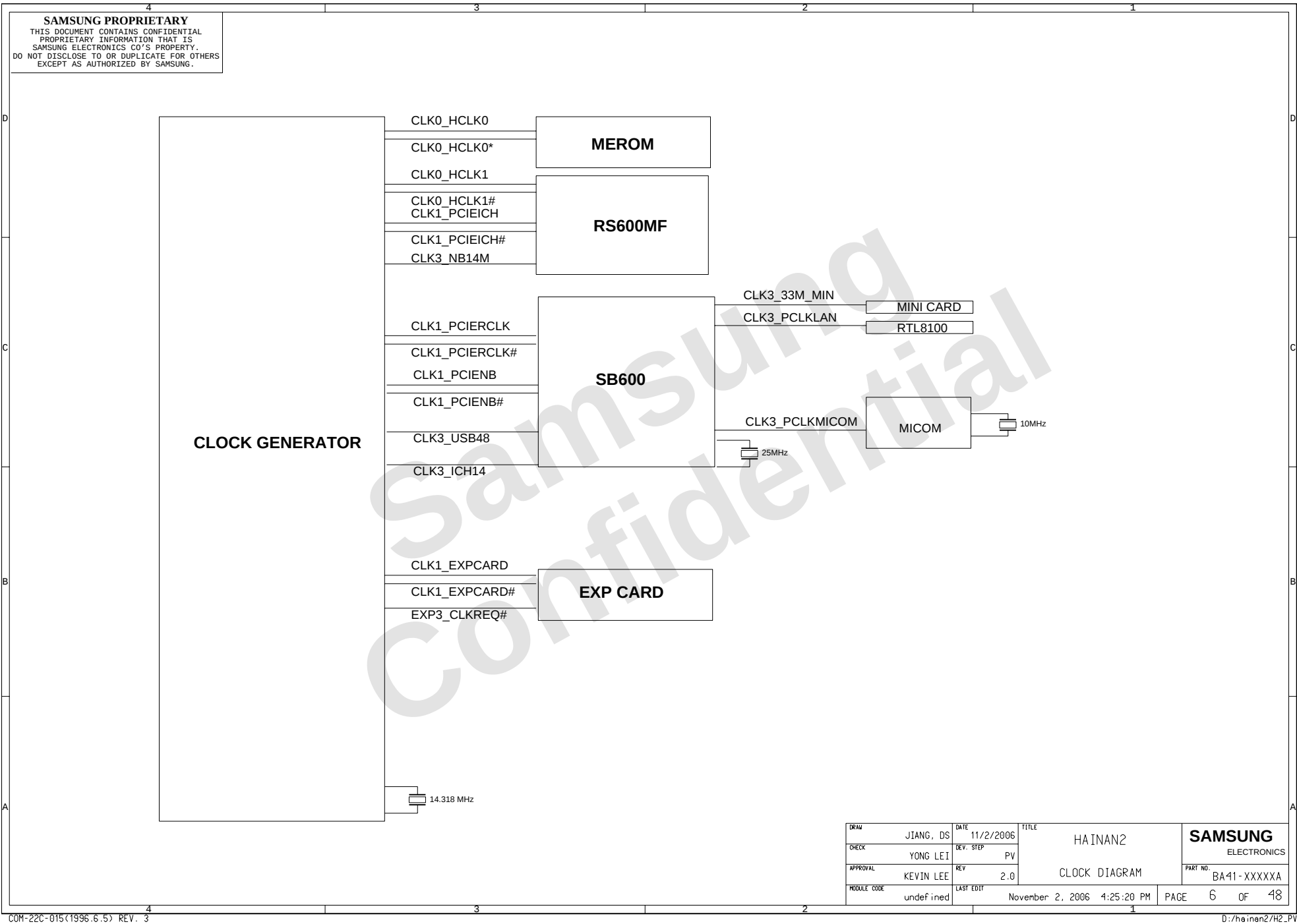
## POWER SEQUENCE

CPU1\_CPURST\*



## POWER RAILS ANALYSIS





## SCHEMATIC ANNOTATIONS AND BOARD INFORMATION

### PCI Devices

| Devices                   | IDSEL#         | REQ/GNT# | Interrupts |
|---------------------------|----------------|----------|------------|
| LAN                       | AD21           | 1        | G          |
| USB                       | AD30(internal) | -        | -          |
| Hub to PCI                | AD31(internal) | -        | -          |
| LPC bridge/IDE/AC97/SMBUS | AD31(internal) | -        | -          |
| Internal MAC              | AD31(internal) | -        | -          |
| AC Link                   | -              | -        | -          |

### Crystal / Oscillator

| TYPE    | FREQUENCY | DEVICE          | USAGE           |
|---------|-----------|-----------------|-----------------|
| Crystal | 32.768KHz | SB600           | Real Time Clock |
| Crystal | 10MHz     | MICOM           | HD64F2110B      |
| Crystal | 14.318MHz | CLOCK-Generator | ICS95461        |
| Crystal | 12MHz     | AU6366          | 4 IN 1 CARD     |
| Crystal | 25MHz     | LAN             | LOM             |

### Voltage Rails

|             |                                                                                  |
|-------------|----------------------------------------------------------------------------------|
| CPU_CORE    | CPU                                                                              |
| VCCP_CORE   | RS600 SB600                                                                      |
| P1.2V       | RS600 SB600                                                                      |
| P1.5V       | CPU EXPCARD                                                                      |
| P1.8V       | RS600                                                                            |
| P0.9V       | DDR2                                                                             |
| P5.0V       | FAN THERMAL CRT SB600 AU6366 MINIPCI ALC262 HDD ODD MICOM USB TOUCH-PAD CPU_CORE |
| P3.3V       | SYSTEM POWER                                                                     |
| P2.5V_LAN   | RTL8100                                                                          |
| P1.8V_AUX   | DDR2 P1.8V RS600                                                                 |
| P5.0V_AUX   | THERMAL LCD P1.2V P5.0V                                                          |
| P3.3V_AUX   | MDC MICOM MINIPCI EXP-CARD SB600 THERMAL                                         |
| P12.0V_ALWS | P1.5V P3.3V P1.8V                                                                |
| P5.0V_ALWS  | P3.3V DDR2-PWR                                                                   |
| P3.3V_MICOM | THERMAL SB600 MICOM LED P1.8V_ALWS                                               |
| P1.2V_ALWS  | SB600,P1.2V                                                                      |
| VDC         | Primary DC system power supply (7 to 21V)                                        |

### I C / SMB Address

| Devices                     | Address   | Hex | Bus                                |
|-----------------------------|-----------|-----|------------------------------------|
| SB600                       | Master    | -   | SMBUS Master                       |
| EMCN300(CPU Thermal Sensor) | 1001 110X | 9Ch | Thermal Sensor                     |
| SODIMM0                     | 1010 0000 | A0h | -                                  |
| SODIMM1                     | 1010 001X | A2h | -                                  |
| ICS95411 (Clock Generator)  | 1101 001x | D2h | Clock, Unused Clock Output Disable |

### USB PORT Assign

| PORT NUMBER | ASSIGNED TO   |
|-------------|---------------|
| 0           | SYSTEM PORT A |
| 1,2         | SYSTEM PORT B |
| 3           | DMB           |
| 4           | EXPRESS CARD  |
| 5           | 4 IN 1 CARD   |
| 6,8         | MINI PCIE     |
| 7           | BT            |

### System Power States

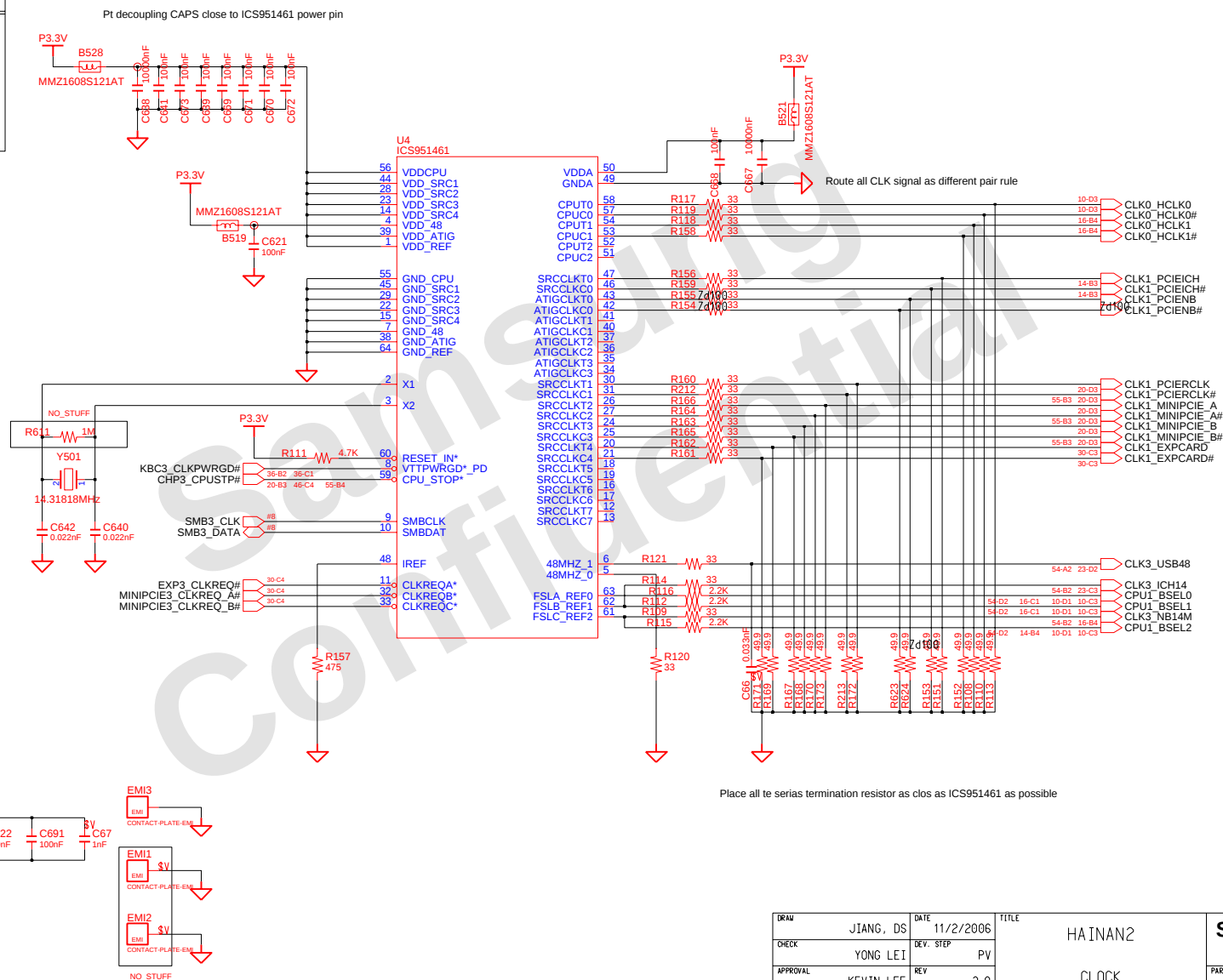
- CHP3\_SLPS1\* S1, Powered-On-Suspend(POS) : In this state, all clocks(except the 32.768KHz clock) are stopped.  
The system context is maintained in system DRAM. Power is maintained to PCI, the CPU, memory controller, memory, and all other critical subsystems.  
Note that this state does not preclude power being removed from non-essential devices, such as disk drives. During this state, CPU can be selected for either Deep Sleep or Deeper Sleep.
- CHP3\_SLPS3\* S3, Suspend-To-RAM(STR) : The system context is maintained in system DRAM, but power is shut off to non-critical circuits.  
Memory is retained, and refreshes continue. All clocks stop except RTC clock.
- CHP3\_SLPS4\* S4, Suspend-To-Disk(STD) : The Context of the system is maintained on the disk. All power is then shut off to the system except for the logic required to resume.  
Externally appears same as S5, but may have different wake events.
- CHP3\_SLPS5\* S5, Soft Off(SOFF) : System context is not maintained. All power is shut off except for the logic required to restart. A full boot is required when waking.

### CPU Core Voltage Table IMVP-6

| Active Mode     |          | Active/Deeper Sleep Dual Mode Region |          | Deeper Sleep/Extended Deeper Sleep Dual Mode Region |          |
|-----------------|----------|--------------------------------------|----------|-----------------------------------------------------|----------|
| VID(6:0)        | Voltage  | VID(6:0)                             | Voltage  | VID(6:0)                                            | Voltage  |
| 0 0 0 0 0 0 0 0 | 1.5000 V | 0 1 0 1 0 0 0 0                      | 1.0000 V | 1 0 1 0 0 0 0 1                                     | 0.4875 V |
| 0 0 0 0 0 0 0 1 | 1.4875 V | 0 1 0 1 0 0 0 1                      | 0.9875 V | 1 0 1 0 0 0 1 0                                     | 0.4750 V |
| 0 0 0 0 0 0 1 0 | 1.4750 V | 0 1 0 1 0 0 1 0                      | 0.9750 V | 1 0 1 0 0 0 1 1                                     | 0.4625 V |
| 0 0 0 0 0 0 1 1 | 1.4625 V | 0 1 0 1 0 1 0 0                      | 0.9625 V | 1 0 1 0 0 1 0 0                                     | 0.4500 V |
| 0 0 0 0 0 1 0 0 | 1.4500 V | 0 1 0 1 0 1 0 1                      | 0.9500 V | 1 0 1 0 0 1 0 1                                     | 0.4375 V |
| 0 0 0 0 0 1 0 1 | 1.4375 V | 0 1 0 1 0 1 0 1                      | 0.9375 V | 1 0 1 0 0 1 1 0                                     | 0.4250 V |
| 0 0 0 0 0 1 1 0 | 1.4250 V | 0 1 0 1 0 1 1 0                      | 0.9250 V | 1 0 1 0 0 1 1 1                                     | 0.4125 V |
| 0 0 0 0 0 1 1 1 | 1.4125 V | 0 1 0 1 0 1 1 1                      | 0.9125 V | 1 0 1 0 1 0 0 0                                     | 0.4000 V |
| 0 0 0 0 1 0 0 0 | 1.4000 V | 0 1 0 1 0 0 0 0                      | 0.9000 V | 1 0 1 0 1 0 0 1                                     | 0.3875 V |
| 0 0 0 0 1 0 0 1 | 1.3875 V | 0 1 0 1 0 0 0 1                      | 0.8875 V | 1 0 1 0 1 0 0 1                                     | 0.3750 V |
| 0 0 0 0 1 0 1 0 | 1.3750 V | 0 1 0 1 0 0 1 0                      | 0.8750 V | 1 0 1 0 1 0 1 1                                     | 0.3625 V |
| 0 0 0 0 1 0 1 1 | 1.3625 V | 0 1 0 1 0 0 1 1                      | 0.8625 V | 1 0 1 0 1 1 0 0                                     | 0.3500 V |
| 0 0 0 0 1 1 0 0 | 1.3500 V | 0 1 0 1 0 1 0 0                      | 0.8500 V | 1 0 1 0 1 1 0 1                                     | 0.3375 V |
| 0 0 0 0 1 1 0 1 | 1.3375 V | 0 1 0 1 0 1 0 1                      | 0.8375 V | 1 0 1 0 1 1 1 0                                     | 0.3250 V |
| 0 0 0 0 1 1 1 0 | 1.3250 V | 0 1 0 1 0 1 1 0                      | 0.8250 V | 1 0 1 0 1 1 1 1                                     | 0.3125 V |
| 0 0 0 0 1 1 1 1 | 1.3125 V | 0 1 0 1 0 1 1 1                      | 0.8125 V | 1 1 0 0 0 0 0 0                                     | 0.3000 V |
| 0 0 0 1 0 0 0 0 | 1.3000 V | 0 1 0 1 1 0 0 0                      | 0.8000 V | 1 1 0 0 0 0 0 1                                     | 0.2875 V |
| 0 0 0 1 0 0 0 1 | 1.2875 V | 0 1 0 1 1 0 0 1                      | 0.7875 V | 1 1 0 0 0 0 1 0                                     | 0.2750 V |
| 0 0 0 1 0 0 1 0 | 1.2750 V | 0 1 0 1 1 0 1 0                      | 0.7750 V | 1 1 0 0 0 0 1 1                                     | 0.2625 V |
| 0 0 0 1 0 0 1 1 | 1.2625 V | 0 1 0 1 1 0 1 1                      | 0.7625 V | 1 1 0 0 0 1 0 0                                     | 0.2500 V |
| 0 0 0 1 0 1 0 0 | 1.2500 V | 0 1 0 1 1 1 0 0                      | 0.7500 V | 1 1 0 0 0 1 0 1                                     | 0.2375 V |
| 0 0 0 1 0 1 0 1 | 1.2375 V | 0 1 0 1 1 1 0 1                      | 0.7375 V | 1 1 0 0 0 1 1 0                                     | 0.2250 V |
| 0 0 0 1 0 1 1 0 | 1.2250 V | 0 1 0 1 1 1 1 0                      | 0.7250 V | 1 1 0 0 0 1 1 1                                     | 0.2125 V |
| 0 0 0 1 0 1 1 1 | 1.2125 V | 0 1 0 1 1 1 1 1                      | 0.7125 V | 1 1 0 0 1 0 0 0                                     | 0.2000 V |
| 0 0 0 1 1 0 0 0 | 1.2000 V | 1 0 0 0 0 0 0 0                      | 0.7000 V | 1 1 0 0 1 0 0 1                                     | 0.1875 V |
| 0 0 0 1 1 0 0 1 | 1.1875 V | 1 0 0 0 0 0 0 1                      | 0.6875 V | 1 1 0 0 1 0 1 0                                     | 0.1750 V |
| 0 0 0 1 1 0 1 0 | 1.1750 V | 1 0 0 0 0 0 1 0                      | 0.6750 V | 1 1 0 0 1 0 1 1                                     | 0.1625 V |
| 0 0 0 1 1 0 1 1 | 1.1625 V | 1 0 0 0 0 0 1 1                      | 0.6625 V | 1 1 0 0 1 1 0 0                                     | 0.1500 V |
| 0 0 0 1 1 1 0 0 | 1.1500 V | 1 0 0 0 0 1 0 0                      | 0.6500 V | 1 1 0 0 1 1 0 1                                     | 0.1375 V |
| 0 0 0 1 1 1 0 1 | 1.1375 V | 1 0 0 0 0 1 0 1                      | 0.6375 V | 1 1 0 0 1 1 1 0                                     | 0.1250 V |
| 0 0 0 1 1 1 1 0 | 1.1250 V | 1 0 0 0 0 1 1 0                      | 0.6250 V | 1 1 0 0 1 1 1 1                                     | 0.1125 V |
| 0 0 0 1 1 1 1 1 | 1.1125 V | 1 0 0 0 1 0 0 0                      | 0.6125 V | 1 1 0 0 1 0 0 0                                     | 0.1000 V |
| 0 0 1 0 0 0 0 0 | 1.1000 V | 1 0 0 0 1 0 0 0                      | 0.6000 V | 1 1 0 0 1 0 0 1                                     | 0.0875 V |
| 0 0 1 0 0 0 0 1 | 1.0875 V | 1 0 0 0 1 0 0 1                      | 0.5875 V | 1 1 0 0 1 0 1 0                                     | 0.0750 V |
| 0 0 1 0 0 0 1 0 | 1.0750 V | 1 0 0 0 1 0 1 0                      | 0.5750 V | 1 1 0 0 1 0 1 1                                     | 0.0625 V |
| 0 0 1 0 0 0 1 1 | 1.0625 V | 1 0 0 0 1 0 1 1                      | 0.5625 V | 1 1 0 0 1 1 0 0                                     | 0.0500 V |
| 0 0 1 0 0 1 0 0 | 1.0500 V | 1 0 0 0 1 1 0 0                      | 0.5500 V | 1 1 0 0 1 1 0 1                                     | 0.0375 V |
| 0 0 1 0 0 1 0 1 | 1.0375 V | 1 0 0 0 1 1 0 1                      | 0.5375 V | 1 1 0 0 1 1 1 0                                     | 0.0250 V |
| 0 0 1 0 0 1 1 0 | 1.0250 V | 1 0 0 0 1 1 1 0                      | 0.5250 V | 1 1 0 0 1 1 1 1                                     | 0.0125 V |
| 0 0 1 0 0 1 1 1 | 1.0125 V | 1 0 0 0 1 1 1 1                      | 0.5125 V | 1 1 0 0 1 1 0 0                                     | 0.0000 V |
|                 |          | 1 0 0 0 1 0 0 0                      | 0.5000 V | 1 1 0 0 1 1 0 1                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 1 0                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 1 1                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 0 0                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 0 1                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 1 0                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 1 1                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 0 0                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 0 1                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 1 0                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 1 1                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 0 0                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 0 1                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 1 0                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 1 1                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 0 0                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 0 1                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 1 0                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 1 1                                     | 0.0000 V |
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|                 |          |                                      |          | 1 1 0 0 1 1 1 0                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 1 1                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 0 0                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 0 1                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 1 0                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 1 1                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 0 0                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 0 1                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 1 0                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 1 1                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 0 0                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 0 1                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 1 0                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 1 1                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 0 0                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 0 1                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 1 0                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 1 1                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 0 0                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 0 1                                     | 0.0000 V |
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|                 |          |                                      |          | 1 1 0 0 1 1 1 1                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 0 0                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 0 1                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 1 0                                     | 0.0000 V |
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|                 |          |                                      |          | 1 1 0 0 1 1 0 0                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 0 1                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 1 0                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 1 1                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 0 0                                     | 0.0000 V |
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|                 |          |                                      |          | 1 1 0 0 1 1 1 0                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 1 1                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 0 0                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 0 1                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 1 0                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 1 1                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 0 0                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 0 1                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 1 0                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 1 1                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 0 0                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 0 1                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 1 0                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 1 1                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 0 0                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 0 1                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 1 0                                     | 0.0000 V |
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|                 |          |                                      |          | 1 1 0 0 1 1 0 0                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 0 1                                     | 0.0000 V |
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|                 |          |                                      |          | 1 1 0 0 1 1 0 0                                     | 0.0000 V |
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|                 |          |                                      |          | 1 1 0 0 1 1 1 1                                     | 0.0000 V |
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|                 |          |                                      |          | 1 1 0 0 1 1 1 0                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 1 1                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 0 0                                     | 0.0000 V |
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|                 |          |                                      |          | 1 1 0 0 1 1 1 1                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 0 0                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 0 1                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 1 0                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 1 1                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 0 0                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 0 1                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 1 0                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 1 1                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 0 0                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 0 1                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 1 0                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 1 1                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 0 0                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 0 1                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 1 0                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 1 1                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 0 0                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 0 1                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 1 0                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 1 1                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 0 0                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 0 1                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 1 0                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 1 1                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 0 0                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 0 1                                     | 0.0000 V |
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|                 |          |                                      |          | 1 1 0 0 1 1 1 1                                     | 0.0000 V |
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|                 |          |                                      |          | 1 1 0 0 1 1 0 1                                     | 0.0000 V |
|                 |          |                                      |          | 1 1 0 0 1 1 1 0                                     | 0.0000 V |
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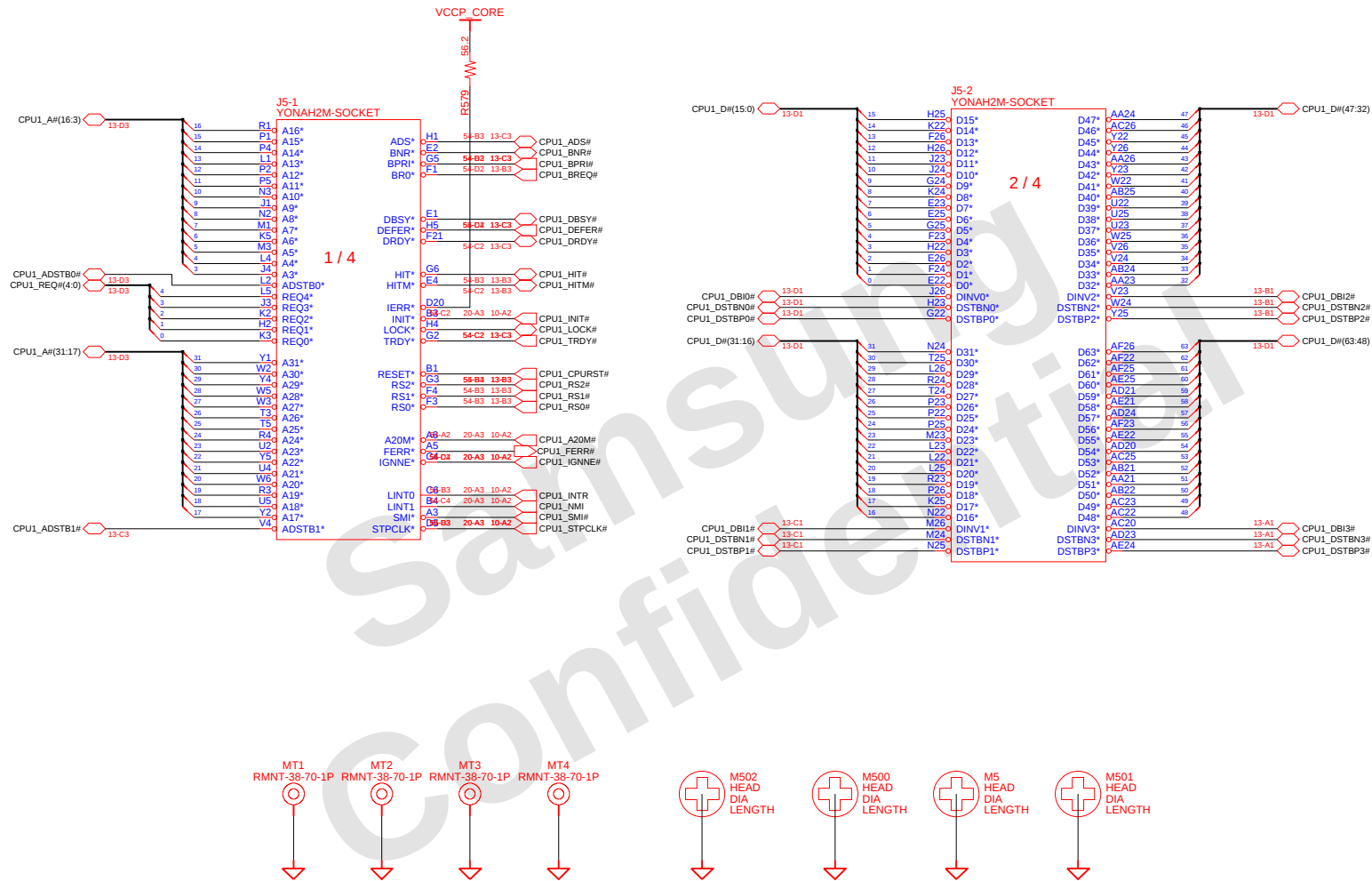
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| CPU | FSA   | FSB   | FSC   | HOST CLK |
|-----|-------|-------|-------|----------|
|     | BSEL0 | BSEL1 | BSEL2 |          |
|     | 0     | 0     | 0     | 266 MHz  |
|     | 0     | 0     | 1     | 333 MHz  |
|     | 0     | 1     | 0     | 200 MHz  |
|     | 0     | 1     | 1     | 400 MHz  |
|     | 1     | 0     | 0     | 133 MHz  |
|     | 1     | 0     | 1     | 100 MHz  |
|     | 1     | 1     | 0     | 166 MHz  |
|     | 1     | 1     | 1     | RSVD     |



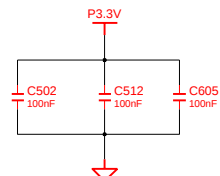
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|-------------|-----------|-----------|-----------|-------|--|--|----------|--|--|-------------------------------|--|--|
| DRAW        | JIANG, DS | DATE      | 11/2/2006 | TITLE |  |  | HAINAN2  |  |  | <b>SAMSUNG</b><br>ELECTRONICS |  |  |
| CHECK       | YONG LEI  | DEV. STEP | PV        |       |  |  |          |  |  |                               |  |  |
| APPROVAL    | KEVIN LEE | REV       | 2.0       | CLOCK |  |  | PART NO. |  |  | BA41-XXXXXA                   |  |  |
| MODULE CODE | undefined | LAST EDIT |           |       |  |  |          |  |  |                               |  |  |

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|             |           |           |                             |            |         |                                                   |
|-------------|-----------|-----------|-----------------------------|------------|---------|---------------------------------------------------|
| DRAW        | JIANG, DS | DATE      | 11/2/2006                   | TITLE      | HAINAN2 | SAMSUNG<br>ELECTRONICS<br>PART NO.<br>BA41-XXXXXA |
| CHECK       | YONG LEI  | DEV. STEP | PV                          |            |         |                                                   |
| APPROVAL    | KEVIN LEE | REV       | 2.0                         | MEROM(1/3) |         |                                                   |
| MODULE CODE | undefined | LAST EDIT | November 2, 2006 4:25:20 PM | PAGE       | 9 OF 48 |                                                   |

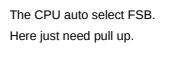
3 / 4



NO\_STUFF

IMVP-6

\*Yonah Processor (2.33 GHz / 800 MHz : TBD)



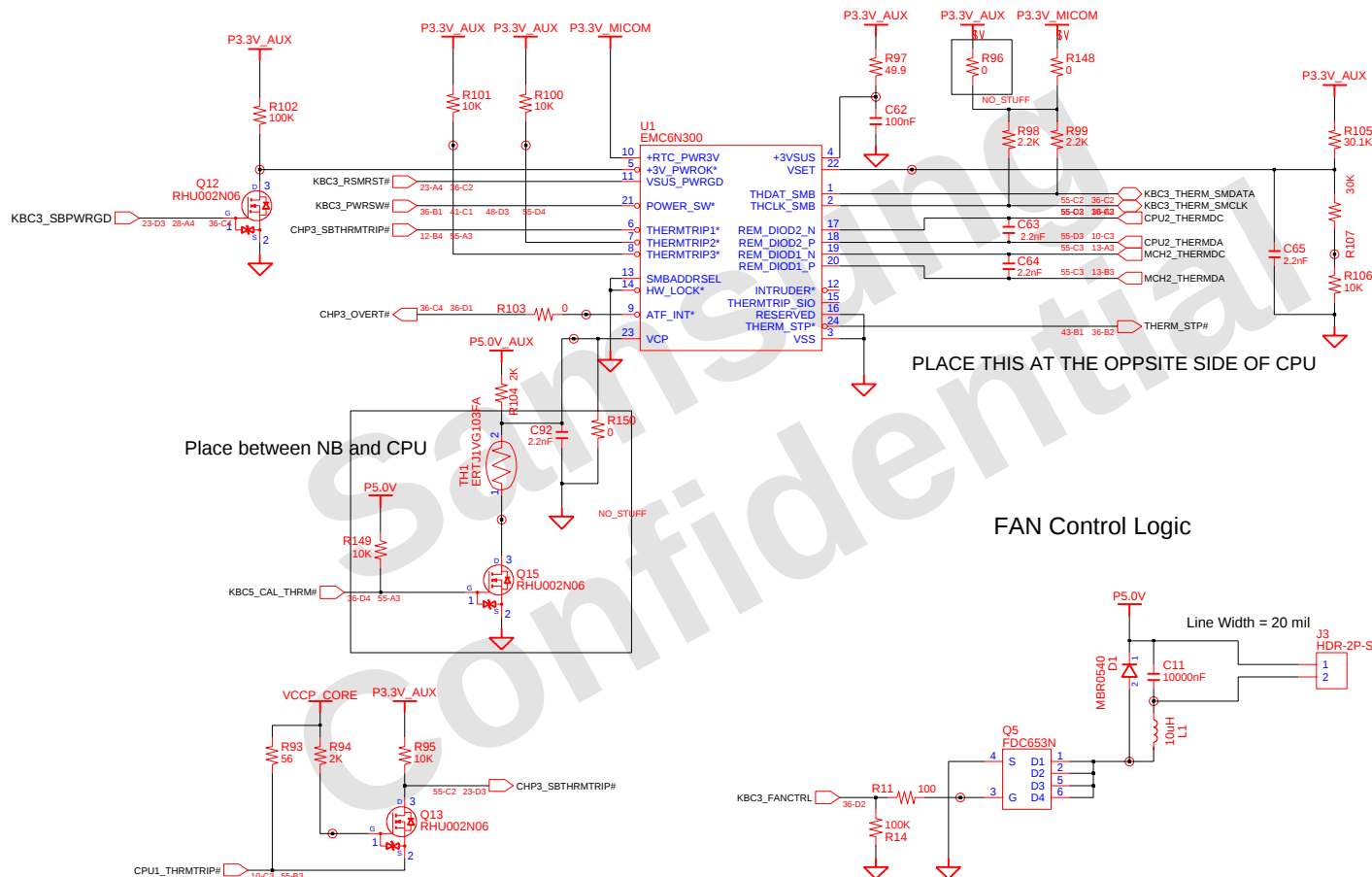
**SAMSUNG**  
ELECTRONICS  
PART NO. BA41-XXXXXA



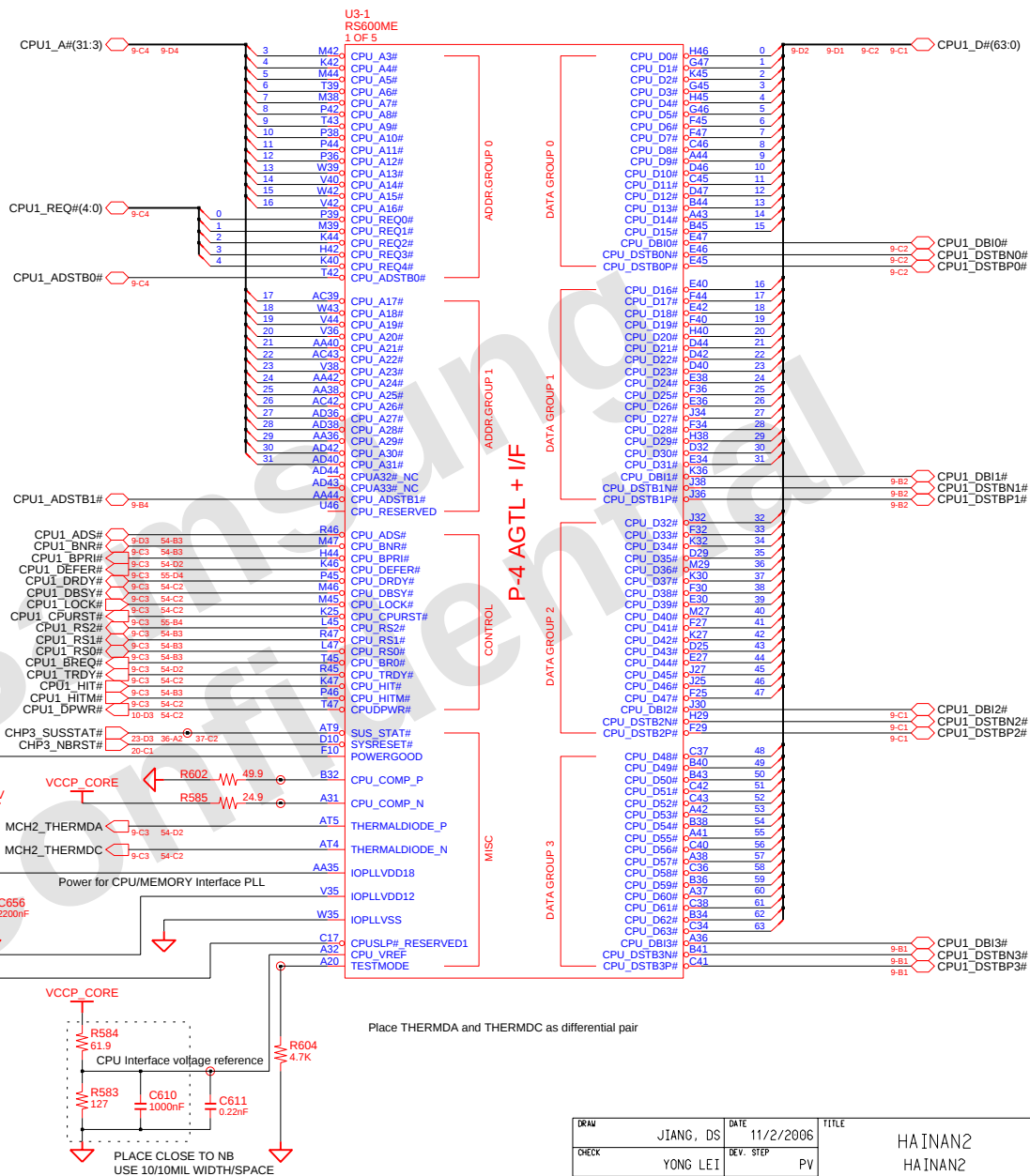
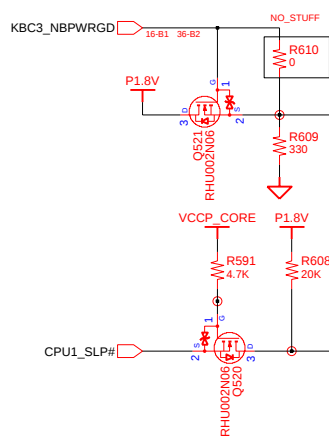
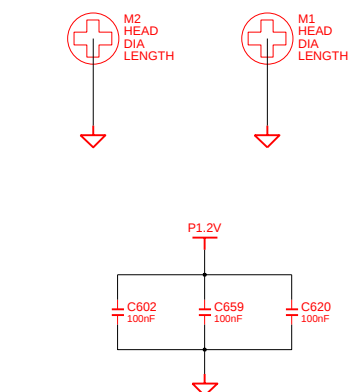
## CPU / RS600 Thermal Sensor

Refer To Thermal Sensor Layout Guidelines.

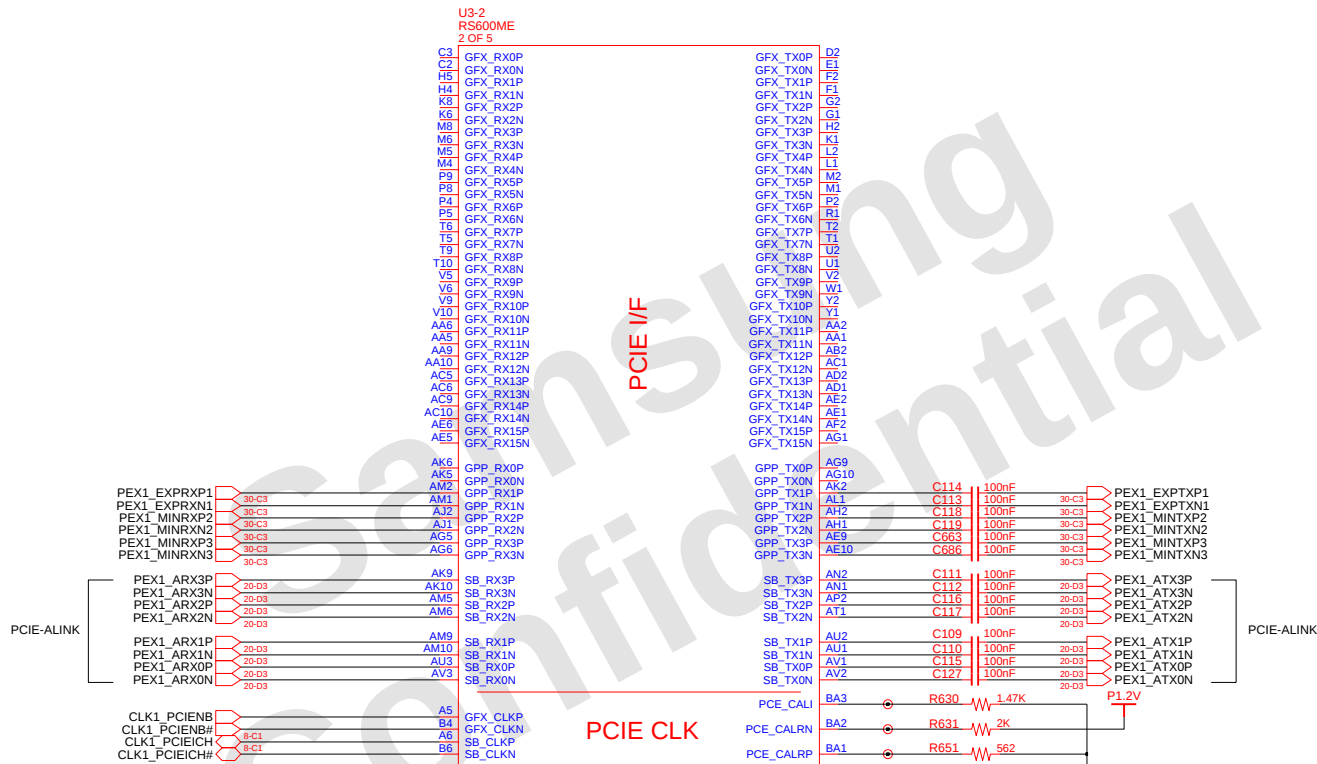
- Place the Thermal Sensor close to a remote diode.
- Keep traces away from high voltage (+12V bus)
- Keep traces away from fast data buses and CRT signal.
- Use recommended trace widths and spacings (10mil)
- Place a ground plane under the traces.
- Use guard traces flanking DXP and DXN and connecting to GND



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|             |           |           |                             |       |                                   |                                                       |
|-------------|-----------|-----------|-----------------------------|-------|-----------------------------------|-------------------------------------------------------|
| DRAM        | JIANG, DS | DATE      | 11/2/2006                   | TITLE | HAINAN2<br>HAINAN2<br>RS600 (1/5) | <b>SAMSUNG</b><br>ELECTRONICS<br>PART NO. BA41-XXXXXA |
| CHECK       | YONG LEI  | DEV. STEP | PV                          |       |                                   |                                                       |
| APPROVAL    | KEVIN LEE | REV       | 2.0                         |       |                                   |                                                       |
| MODULE CODE | LAST EDIT |           | November 2, 2006 4:25:20 PM |       | PAGE                              | 13 OF 48                                              |



|             |           |           |                             |             |          |             |
|-------------|-----------|-----------|-----------------------------|-------------|----------|-------------|
| DRAW        | JIANG, DS | DATE      | 11/2/2006                   | TITLE       | HAINAN2  | SAMSUNG     |
| CHECK       | YONG LEI  | DEV. STEP | PV                          | HAINAN2     |          | ELECTRONICS |
| APPROVAL    | KEVIN LEE | REV       | 2.0                         | RS600 (2/5) | PART NO. | BA41-XXXXXA |
| MODULE CODE |           | LAST EDIT | November 2, 2006 4:25:20 PM | PAGE        | 14       | OF 48       |

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MEM1\_ADQ(63:0) 18-02 18-04

MEM1\_AMA(14:0) 18-02 18-04 19-03

MEM1\_ABS0 18-C2 18-C4 19-C4  
MEM1\_ABS1 18-C2 18-C4 19-C4  
MEM1\_ABS2 18-C2 19-C4

MEM1\_ADM(7:0) 18-B2 18-B4

MEM1\_ADQS(7:0) 18-B2 18-B4

MEM1\_ADQS#(7:0) 18-A2 18-A4

CLK1\_MACLK1# 18-C4  
CLK1\_MACLK1 18-C4  
CLK1\_MACLK2# 18-C4  
CLK1\_MACLK2 18-C4

MEM1\_ACKE0 18-C4 19-D4  
MEM1\_ACKE1 18-C4 19-D4

MEM1\_ACS0# 18-C4 19-D4  
MEM1\_ACS1# 18-C4 19-D4

MEM1\_AODT0 18-C4 19-D4  
MEM1\_AODT1 18-C4 19-D4

P1.8V\_AUX  
R649 1K C702 100nF  
R650 1K C701 100nF

MEM1\_WEB# BA45  
MEM1\_CASB# AY46  
MEM1\_RASB# BG47  
MEM1\_ARAS# 18-B2 18-B4 19-C4 54-B2  
18-B2 18-B4 19-C4 54-B2 BG44

MEM1\_BDQ(63:0) 18-02 18-04

A CHANNEL

U3-3  
3 OF 5  
RS600ME

B CHANNEL

MEM1\_BMA(14:0) 18-03 18-04 18-02

MEM1\_BBS0 MEM1\_BBS1 MEM1\_BBS2 18-C4 18-C4 18-C2

MEM1\_BDM(7:0) 18-B4 18-B2

MEM1\_BDQS(7:0) 18-B4 18-B2

MEM1\_BDQS#(7:0) 18-A4 18-A2

CLK1\_MBCLK1# 18-C4  
CLK1\_MBCLK1 18-C4  
CLK1\_MBCLK2# 18-C4  
CLK1\_MBCLK2 18-C4

MEM1\_BCKE0 MEM1\_BCKE1 MEM1\_BCKE2 MEM1\_BCKE3 19-D4 18-C4 19-D4 18-C4

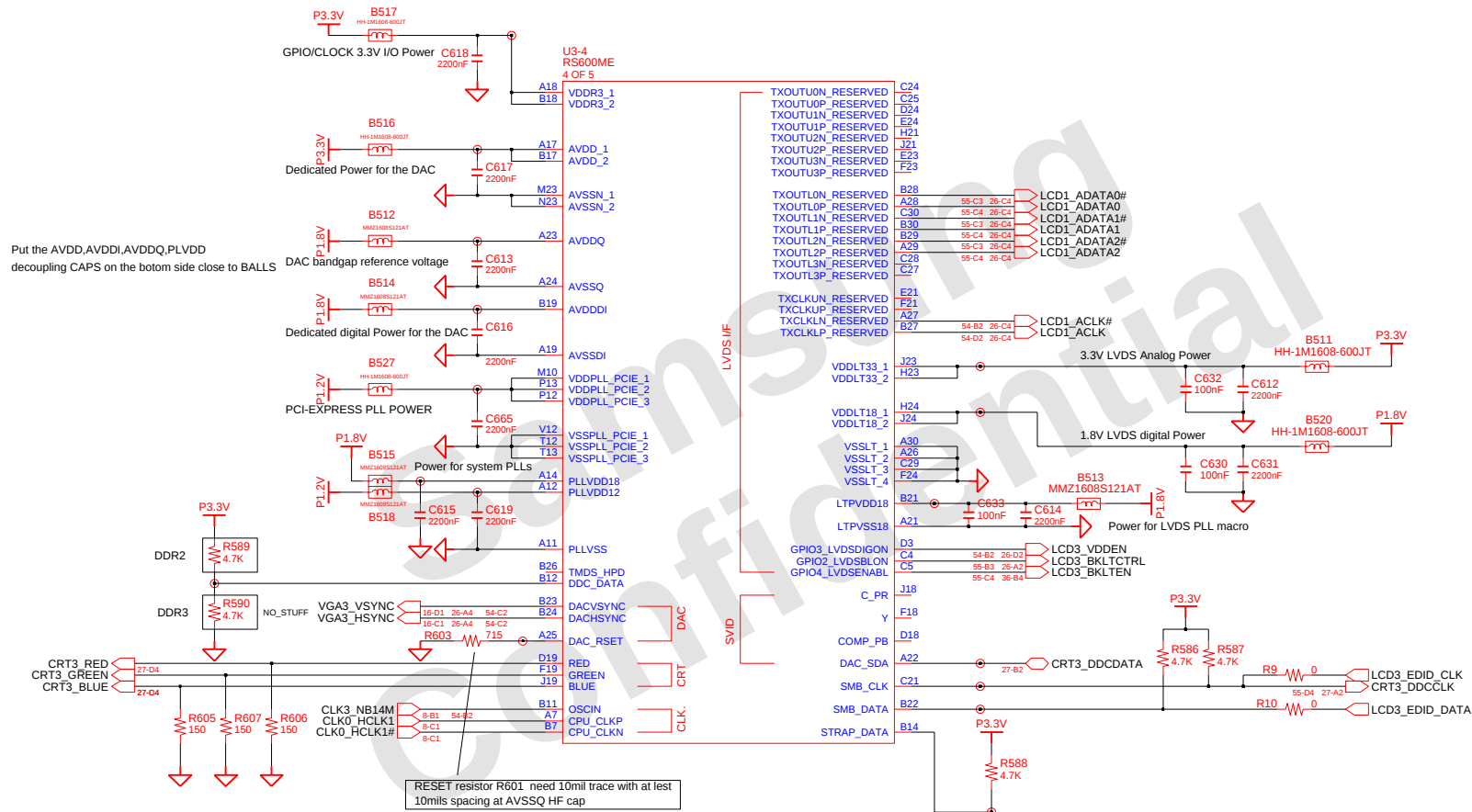
MEM1\_BCS0# MEM1\_BCS1# MEM1\_BCS2# MEM1\_BCS3# 19-D4 18-C4 19-D4 18-C4

MEM1\_BODT0 MEM1\_BODT1 MEM1\_BODT2 MEM1\_BODT3 19-D4 18-C4 19-D4 18-C4

MEM1\_BWE# MEM1\_BCAES# MEM1\_BRAS# 18-C4 18-B4 18-B2 18-C4 18-C4 18-C2 54-B2 18-B4 18-B2

R628 40.2 P1.8V\_AUX

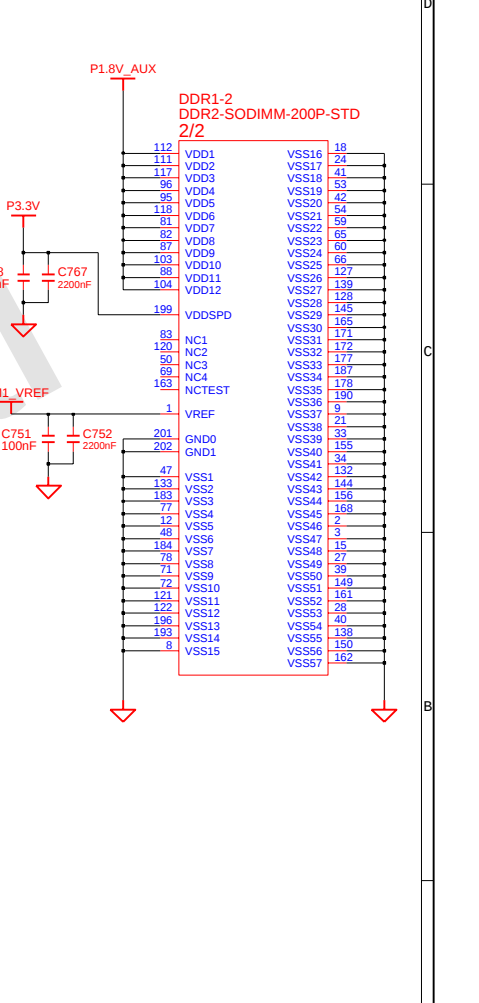
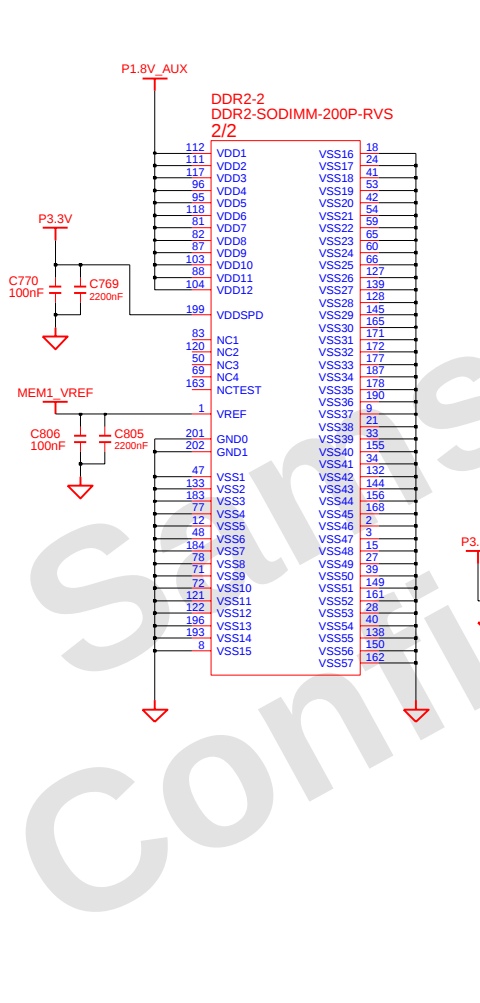
COM-22C-015(1996.6.5) REV. 3



|             |           |           |                             |       |             |                        |
|-------------|-----------|-----------|-----------------------------|-------|-------------|------------------------|
| DRAW        | JIANG, DS | DATE      | 11/2/2006                   | TITLE | HAINAN2     | SAMSUNG<br>ELECTRONICS |
| CHECK       | YONG LEI  | DEV. STEP | PV                          |       | HAINAN2     |                        |
| APPROVAL    | KEVIN LEE | REV       | 2.0                         |       | RS600 (4/5) |                        |
| MODULE CODE |           | LAST EDIT | November 2, 2006 4:25:20 PM |       |             |                        |
| PAGE        | 16        | OF        | 48                          |       |             | PART NO. BA41-XXXXXA   |



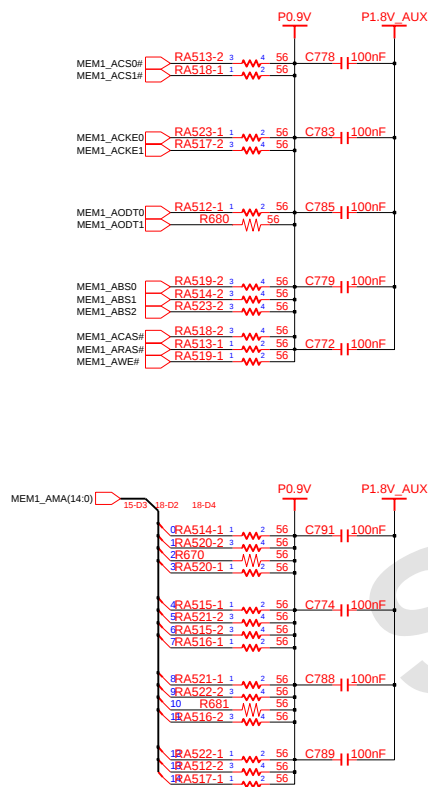
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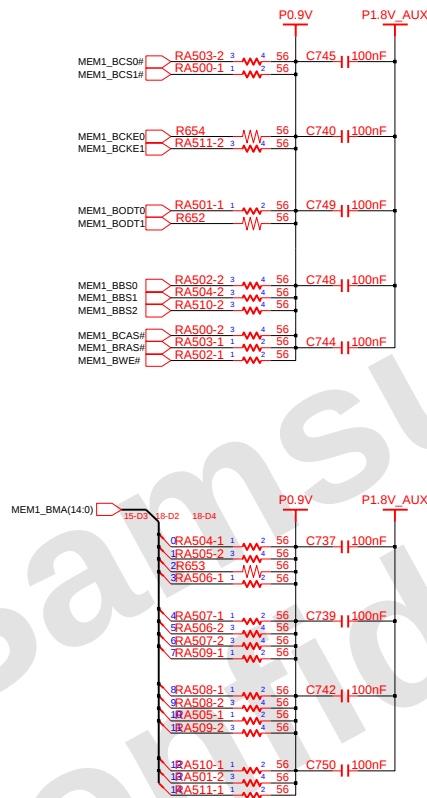
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|-------------|-----------|-----------|-----------|---------------|-----------------------------|-------------------------------|
| DRAM        | JIANG, DS | DATE      | 11/2/2006 | TITLE         | HAINAN2                     | <b>SAMSUNG</b><br>ELECTRONICS |
| CHECK       | YONG LEI  | DEV. STEP | PV        |               |                             |                               |
| APPROVAL    | KEVIN LEE | REV       | 2.0       |               |                             |                               |
|             |           |           |           | MEMORY SODIMM | PART NO.                    | BA41-XXXXXA                   |
| MODULE CODE | undefined |           | LAST EDIT |               | November 2, 2006 4:25:20 PM | PAGE 18 OF 48                 |

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## Channel 1

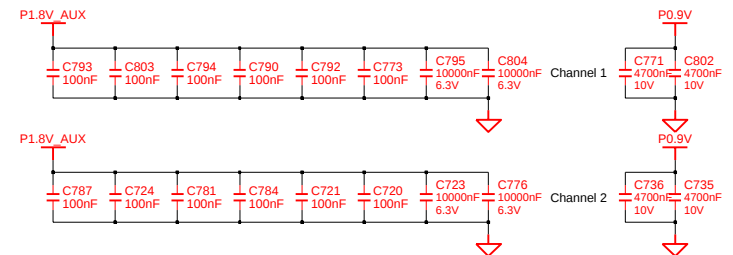
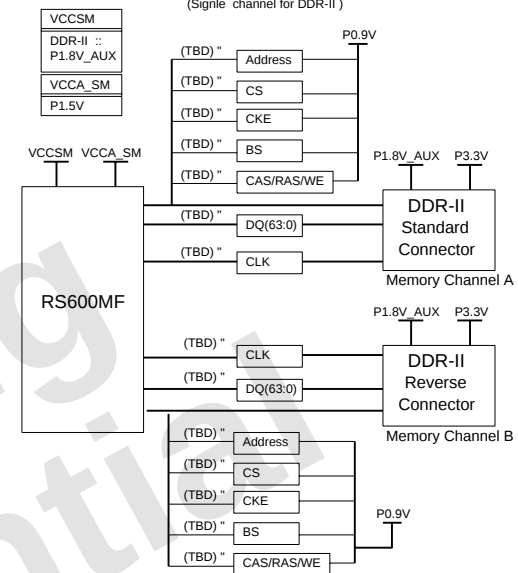


## Channel 2



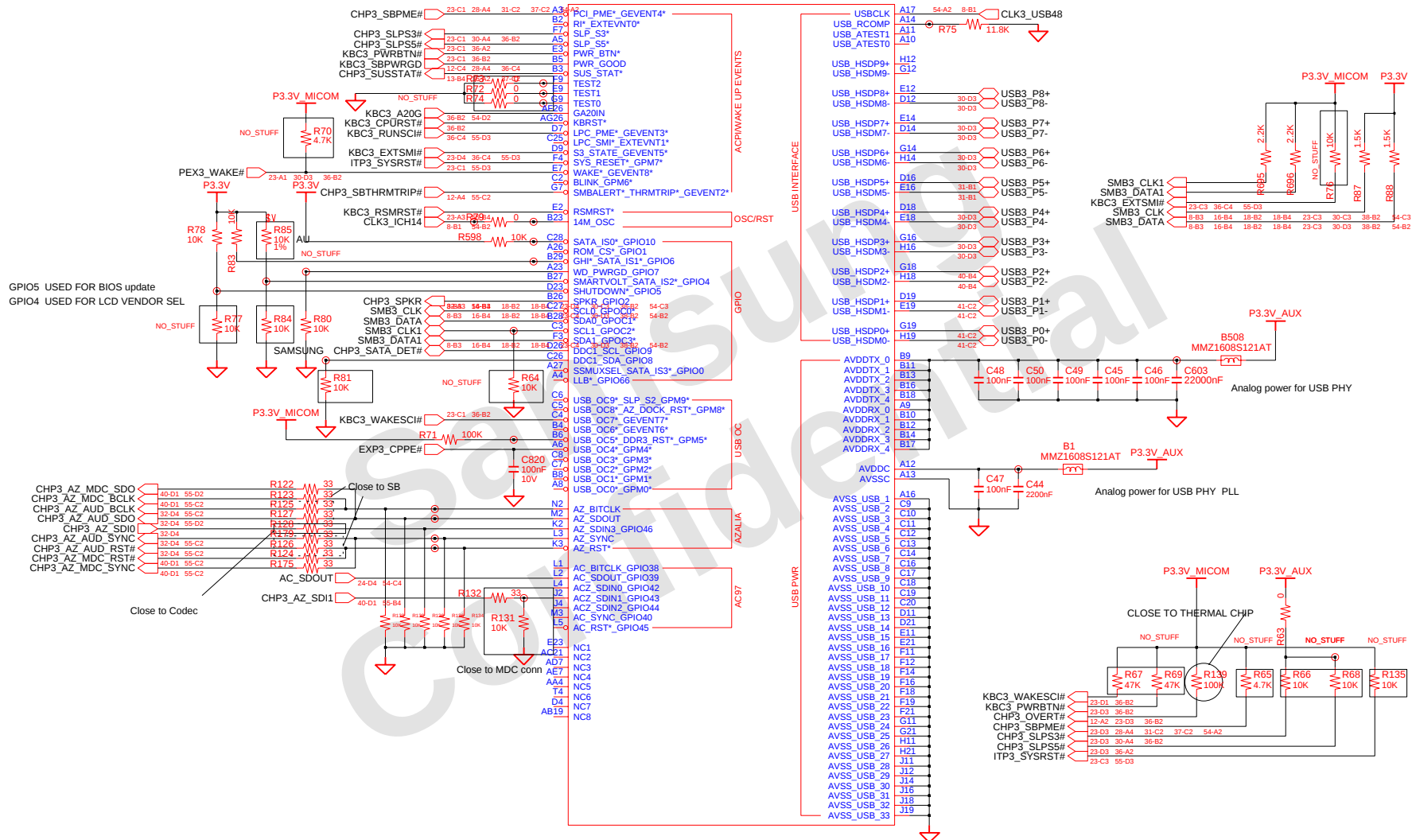
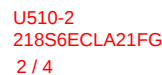
## Memory Topology

(Single channel for DDR-II)



|             |           |           |                             |                  |          |                                                   |
|-------------|-----------|-----------|-----------------------------|------------------|----------|---------------------------------------------------|
| DRAW        | JIANG, DS | DATE      | 11/2/2006                   | TITLE            | HAINAN2  | SAMSUNG<br>ELECTRONICS<br>PART NO.<br>BA41-XXXXXA |
| CHECK       | YONG LEI  | DEV. STEP | PV                          |                  |          |                                                   |
| APPROVAL    | KEVIN LEE | REV       | 2.0                         | DDR2 TERMINATION |          |                                                   |
| MODULE CODE | undefined | LAST EDIT | November 2, 2006 4:25:20 PM | PAGE             | 19 OF 48 |                                                   |

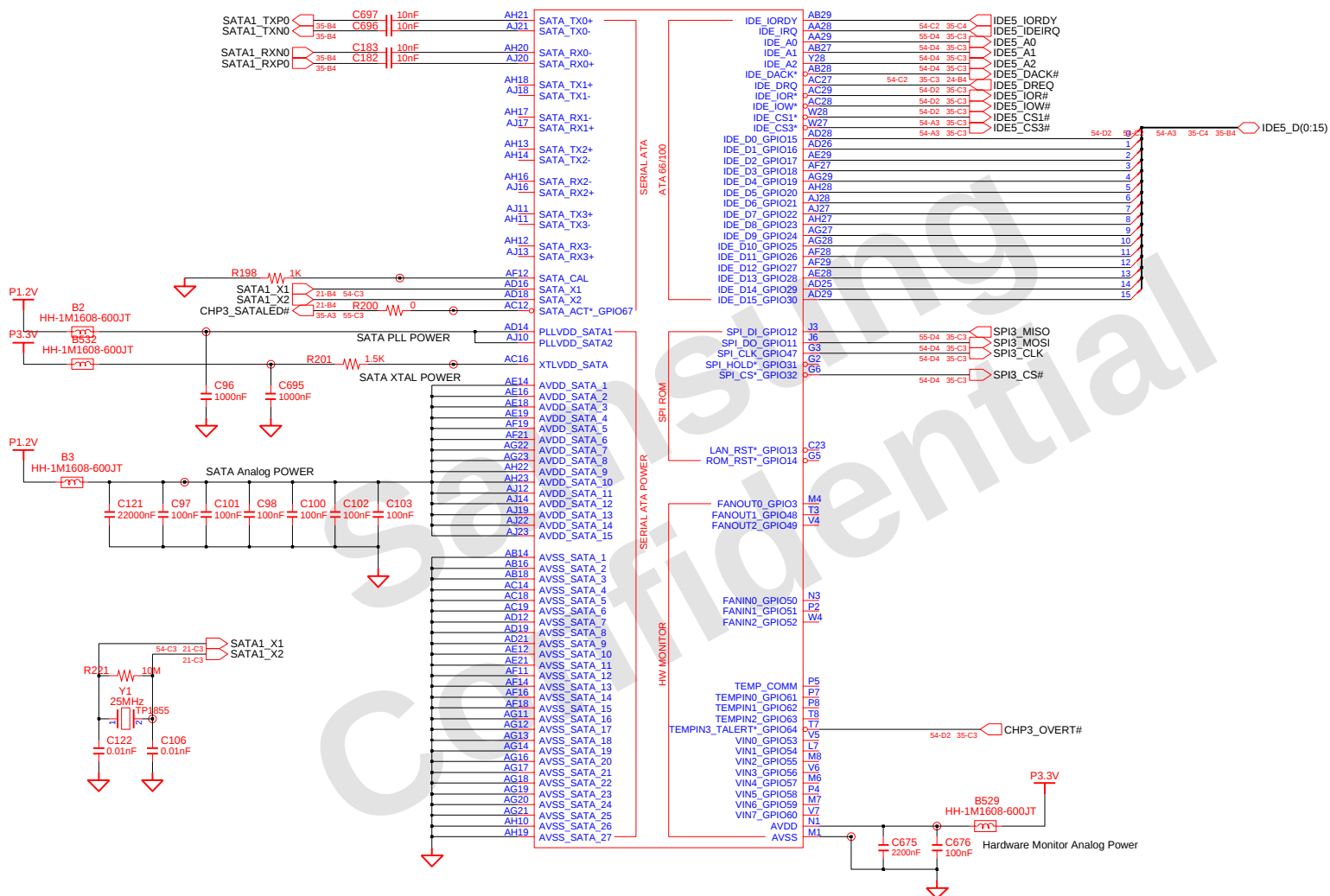




|             |           |           |                             |            |          |                               |
|-------------|-----------|-----------|-----------------------------|------------|----------|-------------------------------|
| DRAW        | JIANG, DS | DATE      | 11/2/2006                   | TITLE      | HAINAN2  | <b>SAMSUNG</b><br>ELECTRONICS |
| CHECK       | YONG LEI  | DEV. STEP | PV                          |            |          |                               |
| APPROVAL    | KEVIN LEE | REV       | 2.0                         | SB600(2/4) |          |                               |
| MODULE CODE | undefined | LAST EDIT | November 2, 2006 4:25:20 PM | PAGE       |          |                               |
|             |           |           |                             |            | PART NO. | BA41-XXXXXA                   |

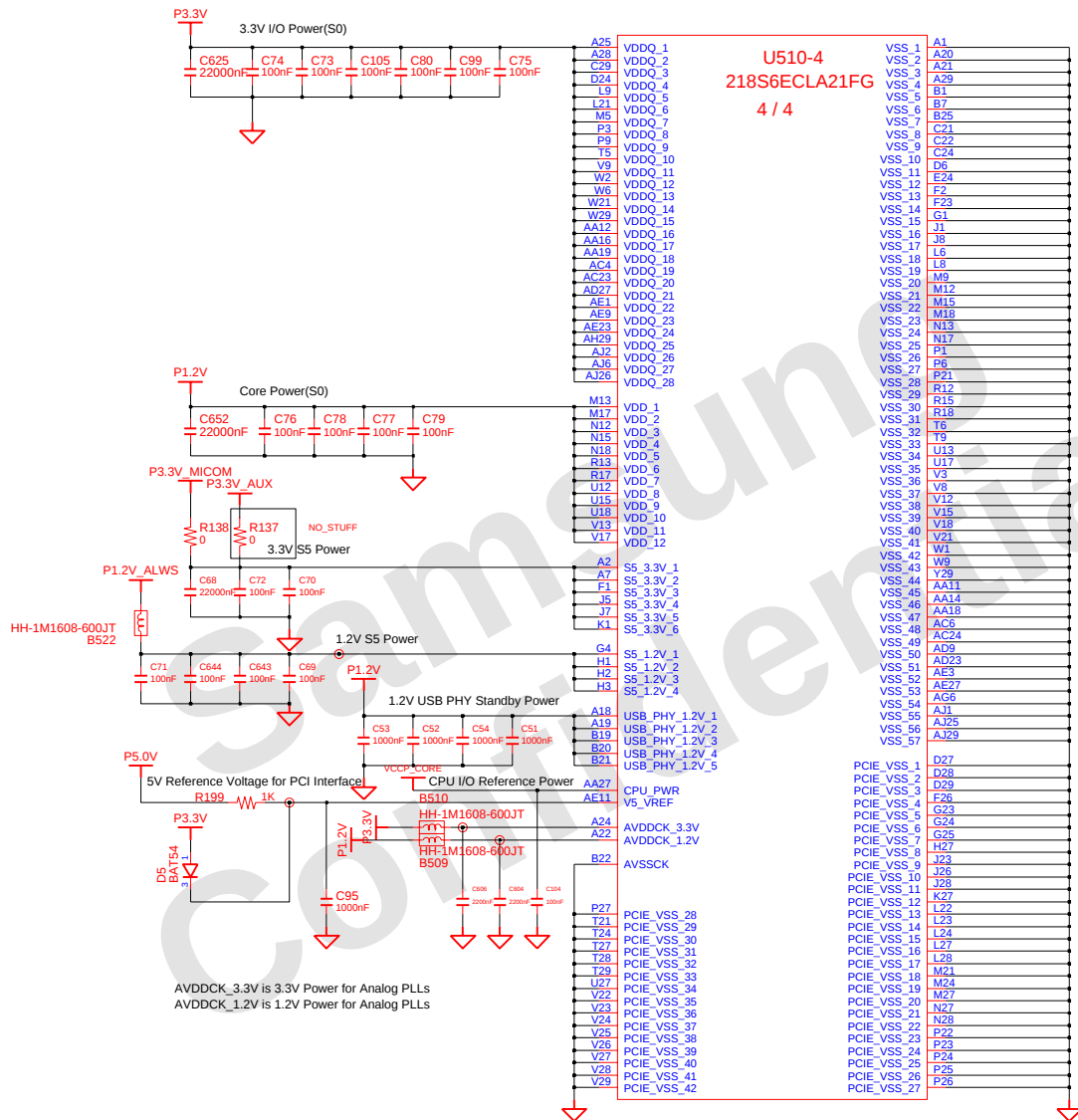
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U510-3  
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3 / 4



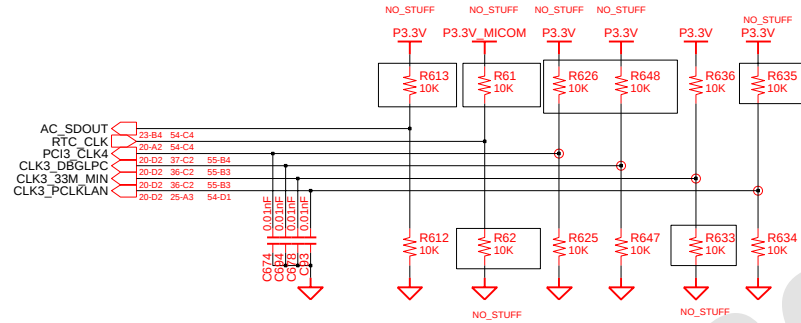
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| DATE        | 11/2/2006 | TITLE     |     | HAINAN2                     | SAMSUNG<br>ELECTRONICS  |
| DRAW        | JIANG, DS |           |     |                             |                         |
| CHECK       | YONG LEI  | DEV. STEP | PV  | SB600(3/4)                  | PART NO.<br>BA41-XXXXXA |
| APPROVAL    | KEVIN LEE | REV       | 2.0 |                             |                         |
| MODULE CODE | undefined | LAST EDIT |     | November 2, 2006 4:25:20 PM | PAGE 22 OF 48           |

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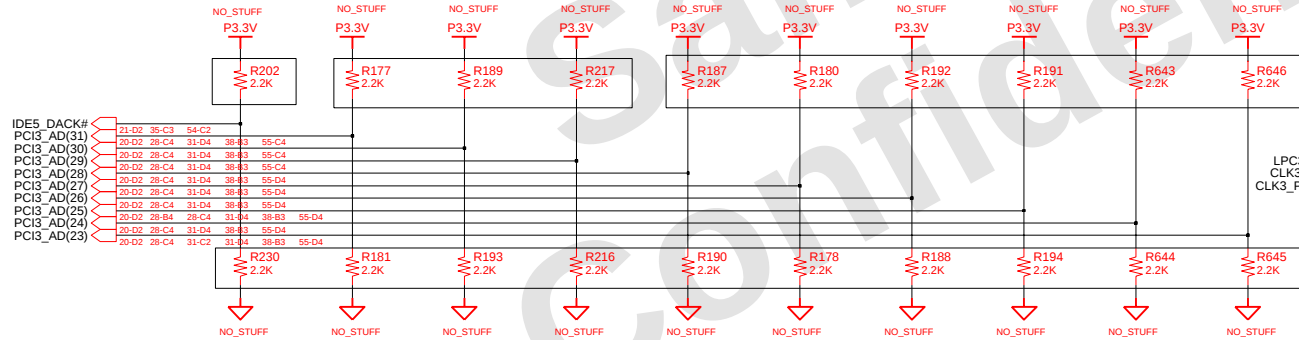
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|-------------|-----------|-----------|-----------------------------|------------|----------|-------------|
| DRAW        | JIANG, DS | DATE      | 11/2/2006                   | TITLE      | HAINAN2  | SAMSUNG     |
| CHECK       | YONG LEI  | DEV. STEP | PV                          |            |          | ELECTRONICS |
| APPROVAL    | KEVIN LEE | REV       | 2.0                         | SB600(4/4) | PART NO. | BA41-XXXXXA |
| MODULE CODE | undefined | LAST EDIT | November 2, 2006 4:25:20 PM | PAGE       | 23       | OF 48       |

## REQUIRED SYSTEM STRAPS



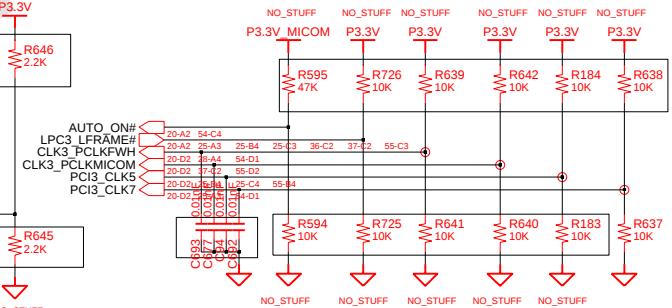
|            | AC_SDOUT                       | RTC_CLK                 | PCI3_CLK4                | CLK3_DBG LPC            | CLK3_33M_MIN, CLK3_PCLKLAN                                                   |
|------------|--------------------------------|-------------------------|--------------------------|-------------------------|------------------------------------------------------------------------------|
| STRAP HIGH | USE DEBUG STRAPS               | INTERNAL RTC<br>DEFAULT | USE INT PLL 48           | CPU I/F = K8            | ROM TYPE<br>H.H = PCI ROM<br>H.L = SPI ROM<br>L.H = LPC ROM<br>L.L = FWH ROM |
| STRAP LOW  | IGNORE DEBUG STRAPS<br>DEFAULT | EXRERNAL RTC            | USE EXT 48MHZ<br>DEFAULT | CPU I/F = P4<br>DEFAULT |                                                                              |

## DEBUG STRAPS

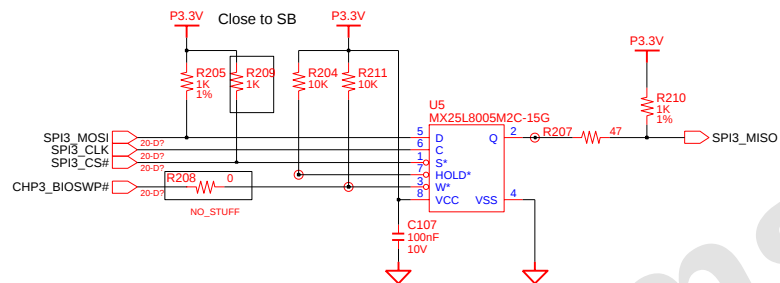


|            | IDE5_DACK* | PCI3_AD(31) | PCI3_AD(30) | PCI3_AD(29) | PCI3_AD(28)               | PCI3_AD(27)            | PCI3_AD(26)              | PCI3_AD(25)            | PCI3_AD(24)                        | PCI3_AD(23)                         |
|------------|------------|-------------|-------------|-------------|---------------------------|------------------------|--------------------------|------------------------|------------------------------------|-------------------------------------|
| STRAP HIGH | RESERVED   | RESERVED    | RESERVED    | RESERVED    | USE LONG RESET<br>DEFAULT | USE PCI PLL<br>DEFAULT | USE ACPI BCLK<br>DEFAULT | USE IDE PLL<br>DEFAULT | USE DEFAULT PCIE STRAPS<br>DEFAULT | BOOTF ALL TIMER DISABLED<br>DEFAULT |
| STRAP LOW  |            |             |             |             | USE SHORT RESET           | BYPASS PCI PLL         | BYPASS ACPI BCLK         | BYPASS IDE PLL         | BYPASS EEPROM PCIE STRAPS          | BOOTF ALL TIMER ENABLED             |

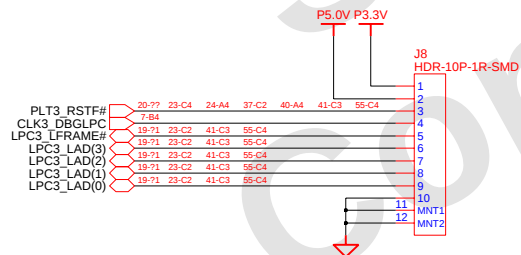
## RESERVED PORT DEBUG



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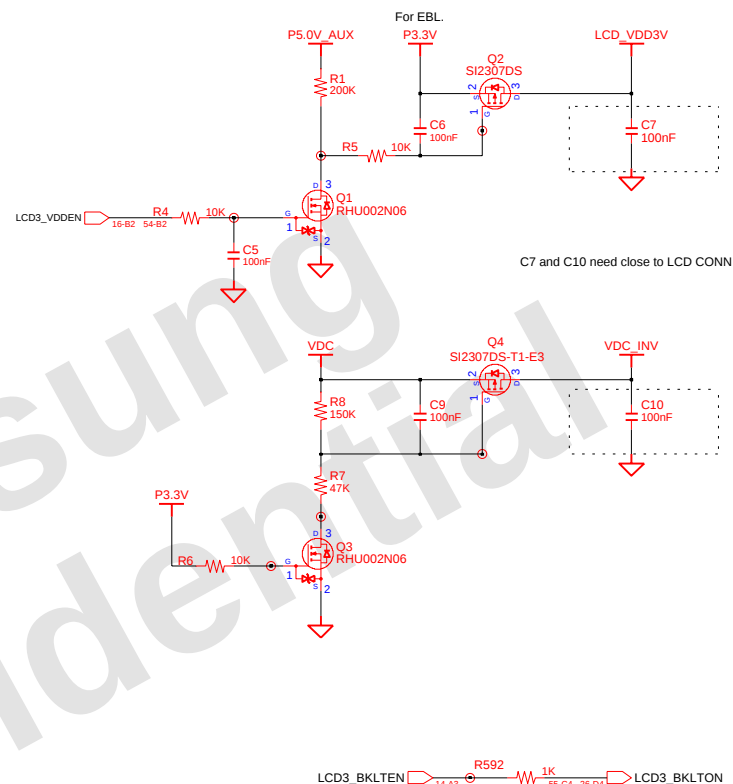
### DEBUG CARD CONN



- |    |                                                 |    |                                 |
|----|-------------------------------------------------|----|---------------------------------|
| 02 | VERIFY REAL MODE                                | 66 | CONFIGURE ADVANCE CACHE REG.    |
| 03 | DISABLE NMI                                     | 6A | DISPLAY EXTERNAL CACHE SIZE     |
| 04 | GET CPU TYPE                                    | 6C | DISPLAY SHADOW MESSAGE          |
| 06 | INIT. SYSTEM H/W                                | 6E | DISPLAY NON-DISPOSABLE SEGMENT  |
| 08 | INIT. CHIPSET REG.                              | 70 | DISPLAY ERROR MESSAGE           |
| 09 | SET IN POST FLAG                                | 72 | CHECK FOR CONFIGURATION ERROR   |
| 0A | INIT CPU.REG                                    | 74 | TEST REAL-TIME CLOCK            |
| 0B | CPU CACHE ON                                    | 76 | CHECK FOR KEYBOARD ERROR        |
| 0C | INIT.CACHE TO POST                              | 7C | SETUP HARDWARE INTERRUPT VECTOR |
| 0E | INIT. I/O VALUE                                 | 7E | TEST COPROCESSER IF PRESENT     |
| 0F | ENABLE THE L-BUS IDE                            | 80 | DISABLE ON-BOARD I/O PORT       |
| 10 | INIT. POWER MANAGER                             | 82 | DETECT AND INSTALL EXT.RS232C   |
| 11 | LOAD ALTERNATE REG.                             | 84 | DETECT AND INSTALL EXT.PARALLEL |
| 13 | PCI BUS MASTER RESET<br>WITH INITIAL POST VALUE | 86 | RE-INIT. ON-BOARD I/O PORT      |
| 14 | INIT. KEYBOARD CONTROLLER                       | 88 | INIT. BIOS DATA ROM             |
| 16 | CHECK CHECKSUM                                  | 8A | INIT.EXTENDED BIOS DATA AREA    |
| 18 | 8254 TIMER INIT.                                | 8C | INIT. FDD CONTROLLER            |
| 1A | 8237 DMA CONTROLLER INIT.                       | 9A | SHADOW OPTION ROMS              |
| 1C | RESET INTERRUPT CONTROLLER                      | 9C | SETUP POWER MANAGEMENT          |
| 20 | TEST DRAM REFRESH                               | 9E | ENABLE H/W INTERRUPT            |
| 22 | TEST 8742 KEYBOARD CONTROLLER                   | A0 | SET TIME OF DAY                 |
| 24 | SET ES SEGMENT REG. TO 4GB                      | A4 | INIT. TYPEMATIC RATE            |
| 26 | ENABLE A20                                      | A8 | ERASE F2 PROMPT                 |
| 28 | AUTO SIZING DRAM                                | AA | SCAN FOR F2 KEY STROKE          |
| 32 | COMPUTE THE CPU SPEED                           | AC | ENTER SETUP                     |
| 34 | TESET CMOS RAM                                  | AE | CLEAR IN POST FLAG              |
| 38 | SHADOW SYSTEM BIOS ROM                          | B0 | CHECK FOR ERRORS                |
| 3A | AUTO SIZING CACHE                               | B2 | POST DONE-PREPARE TO BOOT O/S   |
| 3C | CONFIGURE ADVANCED CHIPSET REG.                 | B4 | ONE BEEP                        |
| 3D | LOAD ALTER REG. WITH CMOS VALUE                 | B6 | CHECK PASSWORD (OPTION)         |
| 42 | INIT. INTERRUPT VECTOR                          | B7 | ACPI INIT                       |
| 44 | INIT. BIOS INTERRUPT                            | BA | DMI INIT                        |
| 46 | CHECK ROM COPYRIGHT NOTICE                      | BE | CLEAR SCREEN                    |
| 47 | INIT. I20 SUPPORT IF INSTALLED                  | C0 | TRY BOOT WITH INT19             |
| 48 | CHECK VIDEO CONFIGURE AGAINST CMOS              | D0 | INTERRUPT HANDLER ERROR         |
| 49 | INIT. PCI BUS AND DEVICE                        | D2 | UNKNOWN INTERRUPT ERROR         |
| 4A | INIT. ALL VIDEO BIOS ROM                        | D4 | PENDING INTERRUPT ERROR         |
| 4C | SHADOW VIDEO BIOS ROM                           | D6 | SHUTDOWN 5                      |
| 50 | DISPLAY CPU TYPE AND SPEED                      | D8 | SHUTDOWN ERROR                  |
| 52 | TEST KEYBOARD                                   | DA | EXTENDED BLOCK MOVE             |
| 54 | SET KEYCLICK IF ENABLED                         | DC | SHUTDOWN 10                     |
| 56 | ENABLE KEYBOARD                                 | 89 | ENABLE NMI                      |
| 58 | TEST FOR UNEXPECTED INTERRUPTS                  | 90 | INIT. HDD CONTROLLER            |
| 5A | DISPLAY "PRESS ..... SETUP"                     | 91 | INIT. LOCAL BUS HDD CONTROLLER  |
| 5C | TEST RAM BETWEEN 512K AND 640K                  | 92 | JUMP TO USER PATCH 2            |
| 60 | TEST EXTENDED MEMORY                            | 94 | DISABLE A20 ADDRESS LINE        |
| 62 | TEST EXTENDED MEMORY ADDRESS LINE               | 96 | CLEAR HUGE ES SEGMENT REG.      |
| 64 | JUMP TO USER PATCH 1                            | 98 | SEARCH FOR OPTION ROMS          |

|             |           |           |                             |       |         |             |
|-------------|-----------|-----------|-----------------------------|-------|---------|-------------|
| DRAW        | JIANG, DS | DATE      | 11/2/2006                   | TITLE | HAINAN2 | SAMSUNG     |
| CHECK       | YONG LEI  | DEV. STEP | PV                          |       |         | ELECTRONICS |
| APPROVAL    | KEVIN LEE | REV       | 2.0                         | FWH   |         | PART NO.    |
| MODULE CODE | undefined | LAST EDIT | November 2, 2006 4:25:20 PM |       |         | BA41-XXXXXA |
|             |           |           |                             | PAGE  | 25      | OF 48       |

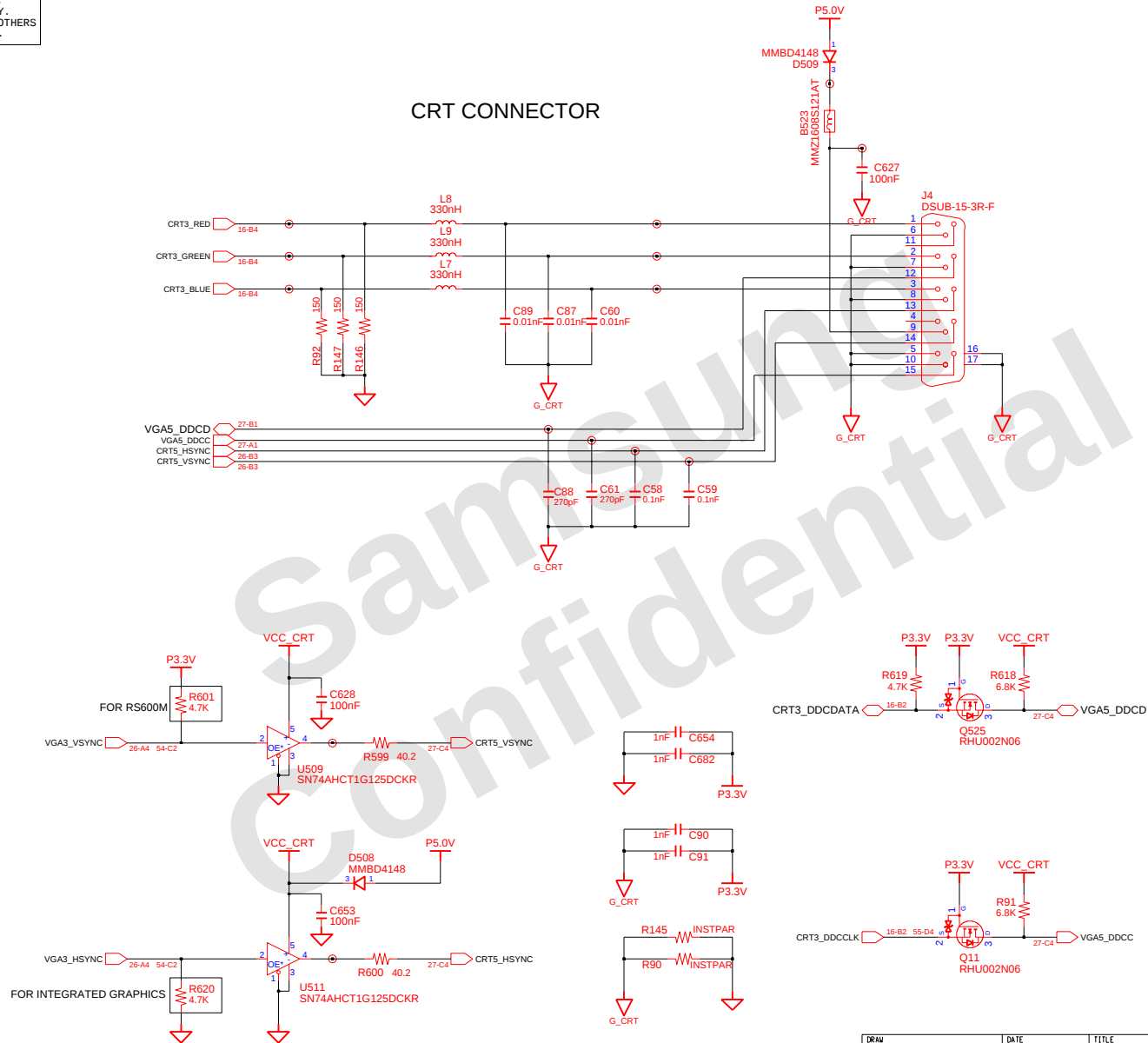
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|-------------|-----------|-----------|-----------|------------------|------------|-------------|-------------|-------|
| DRAW        | JIANG, DS | DATE      | 11/2/2006 | TITLE            | HAINAN2    |             | SAMSUNG     |       |
| CHECK       | YONG LEI  | DEV. STEP | PV        |                  |            | ELECTRONICS |             |       |
| APPROVAL    | KEVIN LEE | REV       | 2.0       | LCD              |            | PART NO.    | BA41-XXXXXA |       |
| MODULE CODE | undefined | LAST EDIT |           | November 2, 2006 | 4:25:20 PM | PAGE        | 26          | OF 48 |

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## CRT CONNECTOR

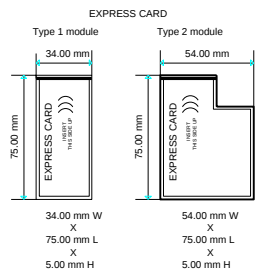
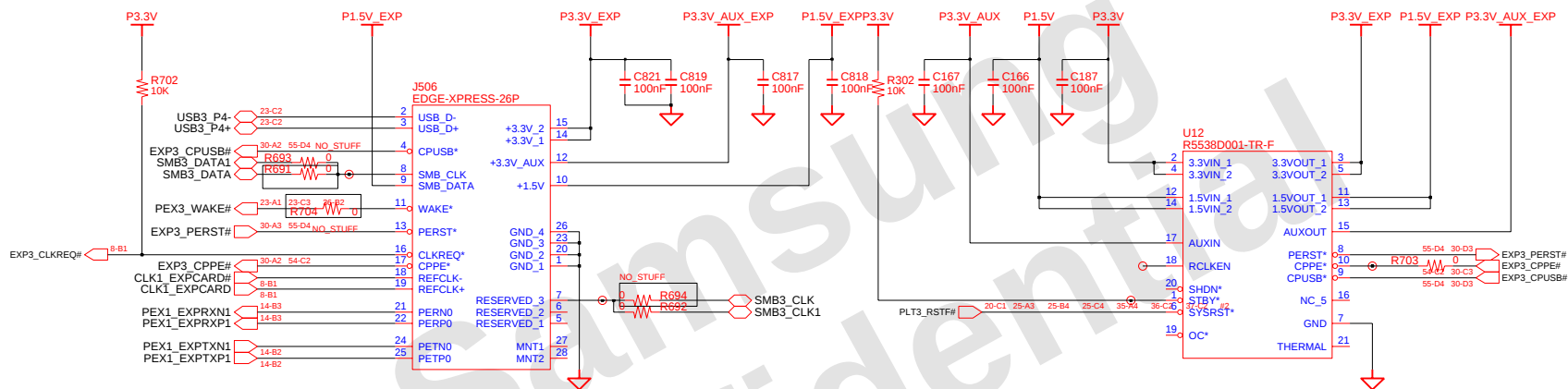


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|-------------|-----------|-----------|-----------------------------|-------|---------|-------------------------|
| DRAW        | JIANG, DS | DATE      | 11/2/2006                   | TITLE | HAINAN2 | SAMSUNG<br>ELECTRONICS  |
| CHECK       | YONG LEI  | DEV. STEP | PV                          |       |         |                         |
| APPROVAL    | KEVIN LEE | REV       | 2.0                         |       | CRT     | PART NO.<br>BA41-XXXXXA |
| MODULE CODE | undefined | LAST EDIT | November 2, 2006 4:25:20 PM | PAGE  | 27      | OF 48                   |



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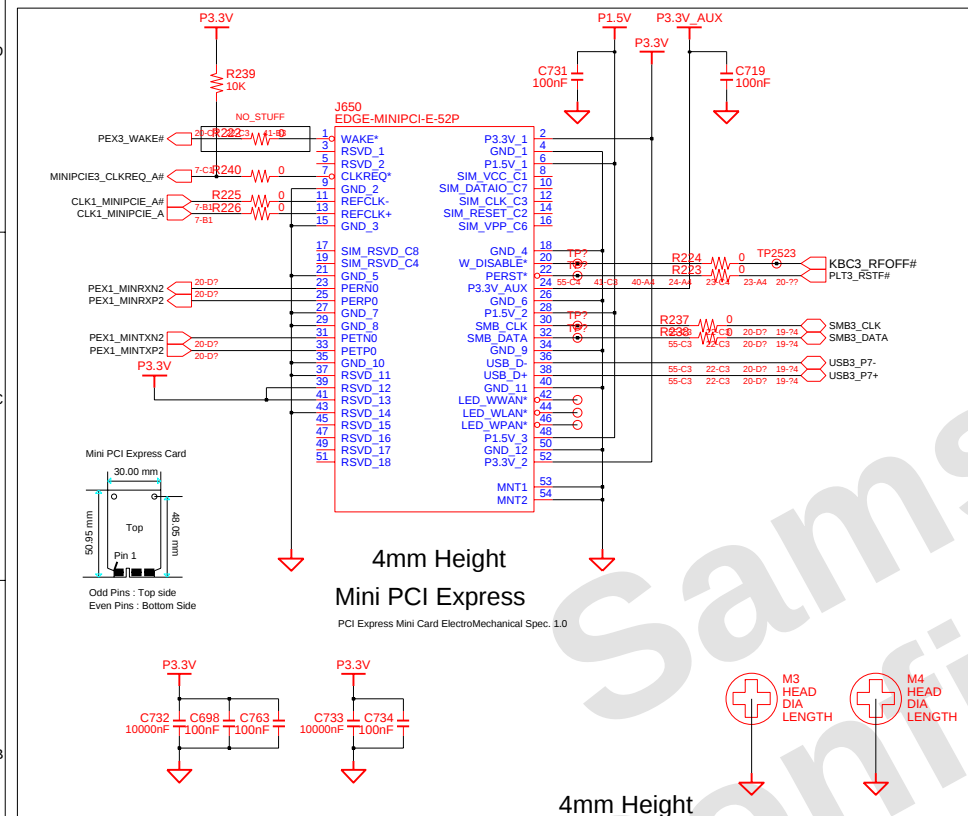
## EXPCARD



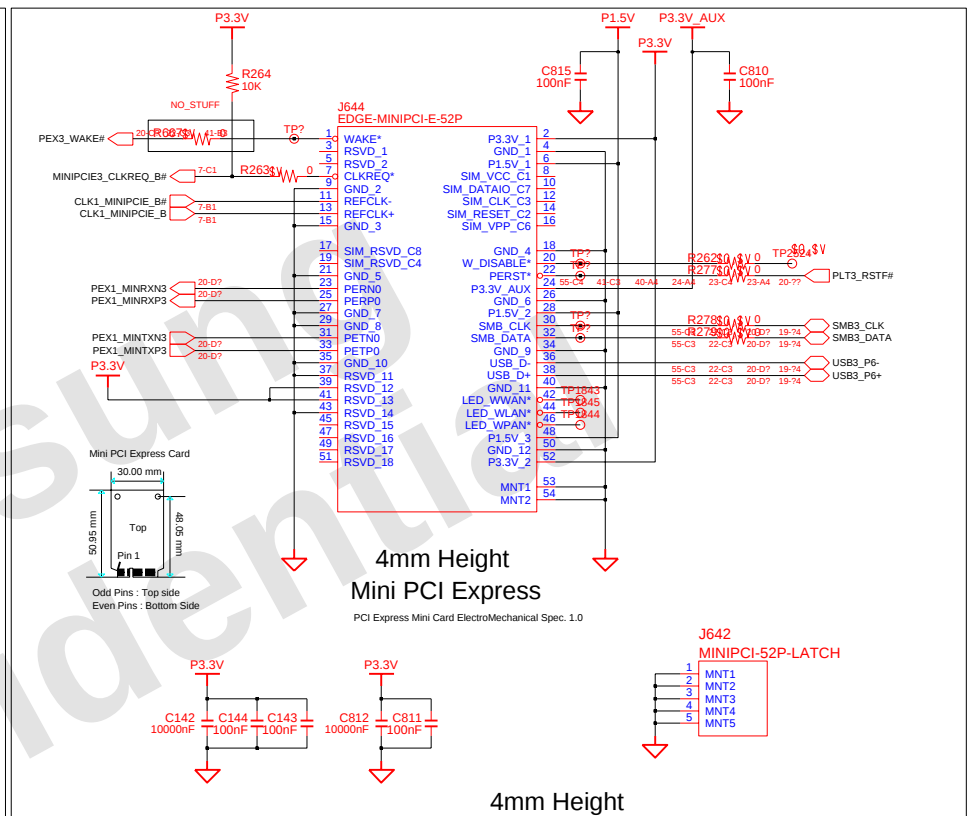
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| DRAW        | JIANG, DS | DATE      | 11/2/2006                   | TITLE        | HAINAN2  | <b>SAMSUNG</b><br>ELECTRONICS<br>PART NO. BA41-XXXXXA |
| CHECK       | YONG LEI  | DEV. STEP | PV                          |              |          |                                                       |
| APPROVAL    | KEVIN LEE | REV       | 2.0                         | EXPRESS CARD |          |                                                       |
| MODULE CODE | undefined | LAST EDIT | November 2, 2006 4:25:20 PM | PAGE         | 29 OF 48 |                                                       |

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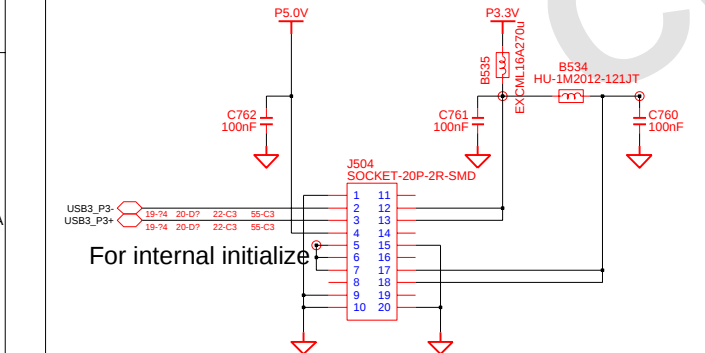
## MINICARD



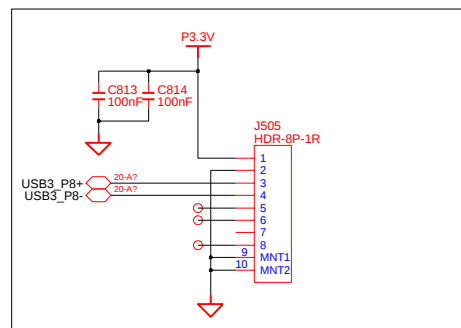
## DVB-T



## DMB



## Bluetooth Interface



|             |           |           |           |                             |  |                                                                                                   |    |                                                                                            |    |
|-------------|-----------|-----------|-----------|-----------------------------|--|---------------------------------------------------------------------------------------------------|----|--------------------------------------------------------------------------------------------|----|
| DRAW        | JIANG, DS | DATE      | 11/2/2006 | TITLE                       |  | <div style="text-align: center;"> <b>HAINAN2</b><br/> <b>HAINAN2</b><br/> <b>MINI CARD</b> </div> |    | <div style="text-align: center;"> <b>SAMSUNG</b><br/>           ELECTRONICS         </div> |    |
| CHECK       | YONG LEI  | DEV. STEP | PV        |                             |  |                                                                                                   |    |                                                                                            |    |
| APPROVAL    | KEVIN LEE | REV       | 2.0       |                             |  | PART NO.                                                                                          |    | BA41-XXXXXA                                                                                |    |
| MODULE CODE | undefined | LAST EDIT |           | November 2, 2006 4:25:20 PM |  | PAGE                                                                                              | 30 | OF                                                                                         | 48 |

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**U9 ALC262-GR**

**U10 MIC5252-4.75BM5 LDO**

**PC BEEP**

**ALL TYPE IS 1608**

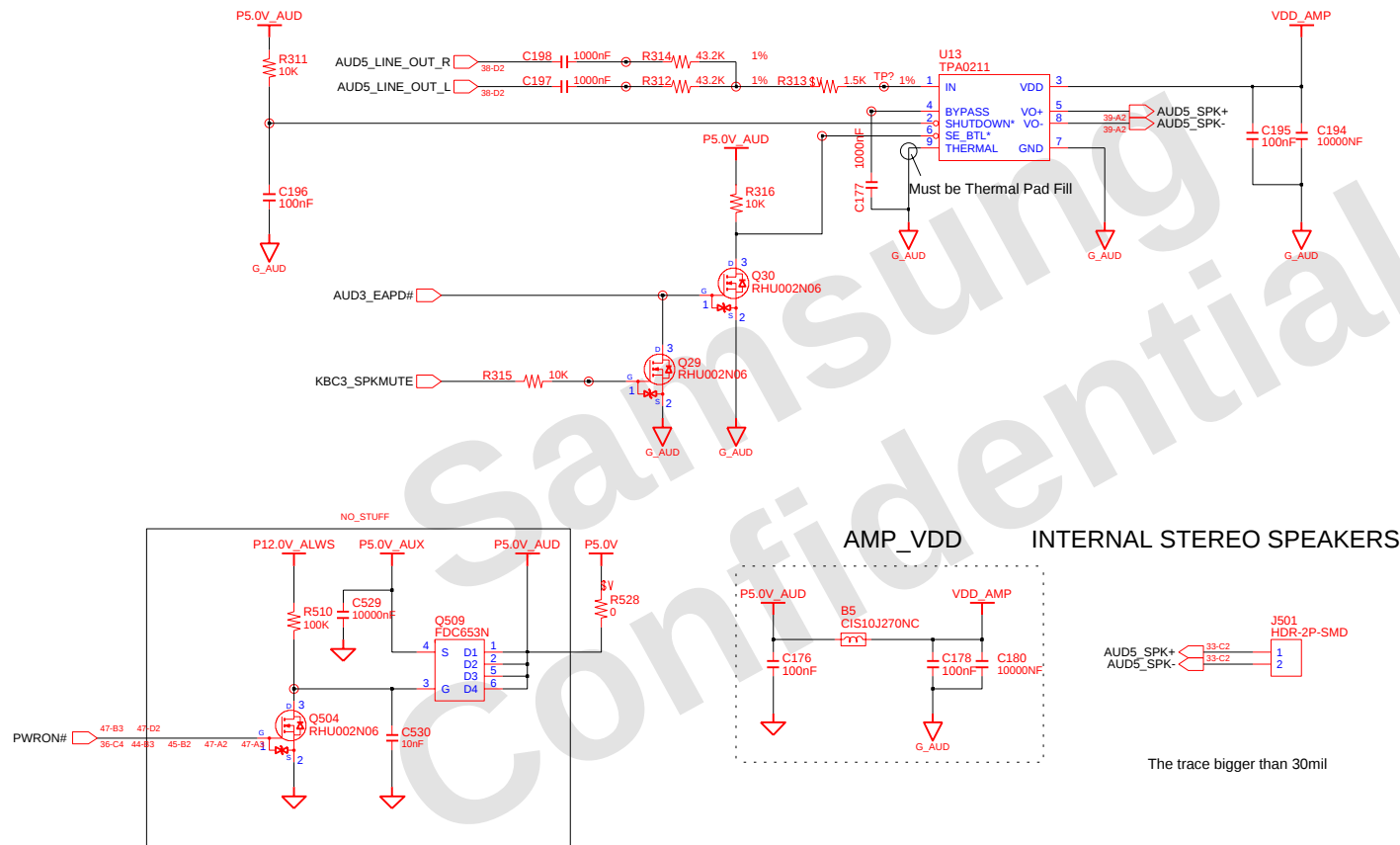
1. AGND\_AUD IS AUDIO GROUND  
2. GND IS DIGITAL GROUND  
3. AGND\_MIC IS MIC GROUND  
4. AGND\_CHS IS CHASS GROUND

| DRW         | DATE      | TITLE                       | <b>SAMSUNG</b><br>ELECTRONICS |
|-------------|-----------|-----------------------------|-------------------------------|
| JIANG, DS   | 11/2/2006 | HAINAN2                     |                               |
| CHECK       | DEV. STEP | PV                          |                               |
| YONG LEI    | REV       | 2.0                         |                               |
| KEVIN LEE   | LAST EDIT | AUDIO(1/3)                  |                               |
| MODULE CODE | undefined | November 2, 2006 4:25:20 PM | PAGE 31 OF 48                 |

COM-22C-015(1996.6.5) REV. 3

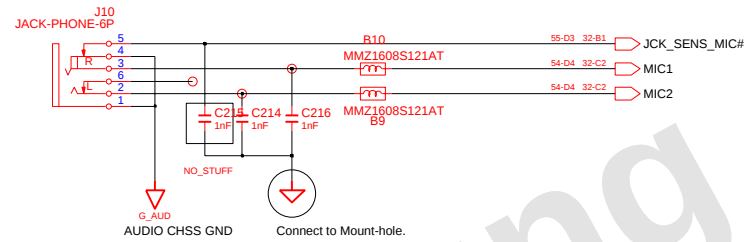
D:/heinen2/H2\_PV

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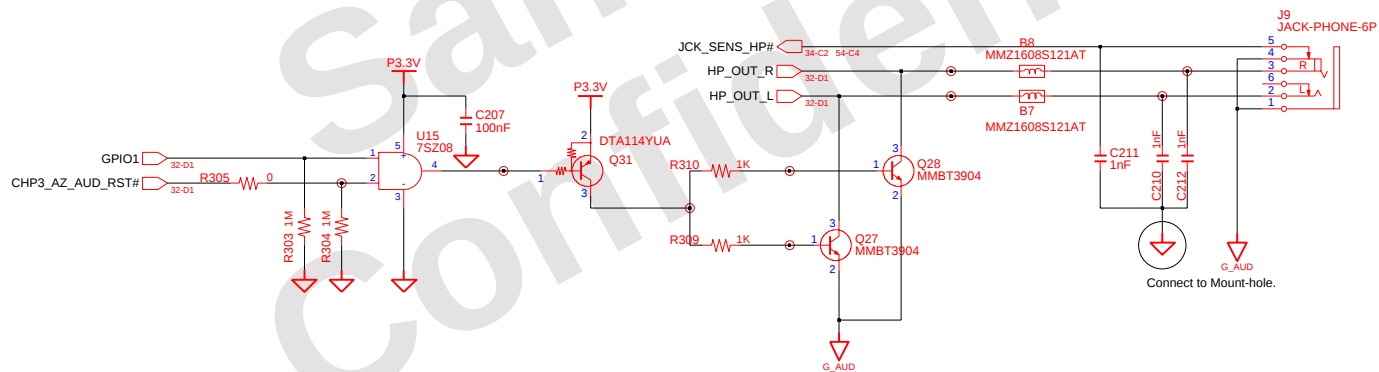


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| DRAW        | JIANG, DS | DATE      | 11/2/2006                   | TITLE | HAINAN2    | SAMSUNG<br>ELECTRONICS  |
| CHECK       | YONG LEI  | DEV. STEP | PV                          |       |            |                         |
| APPROVAL    | KEVIN LEE | REV       | 2.0                         |       | AUDIO<2/3> | PART NO.<br>BA41-XXXXXA |
| MODULE CODE | undefined | LAST EDIT | November 2, 2006 4:25:20 PM | PAGE  | 32         | OF 48                   |

## MIC JACK



## HEADPHONE



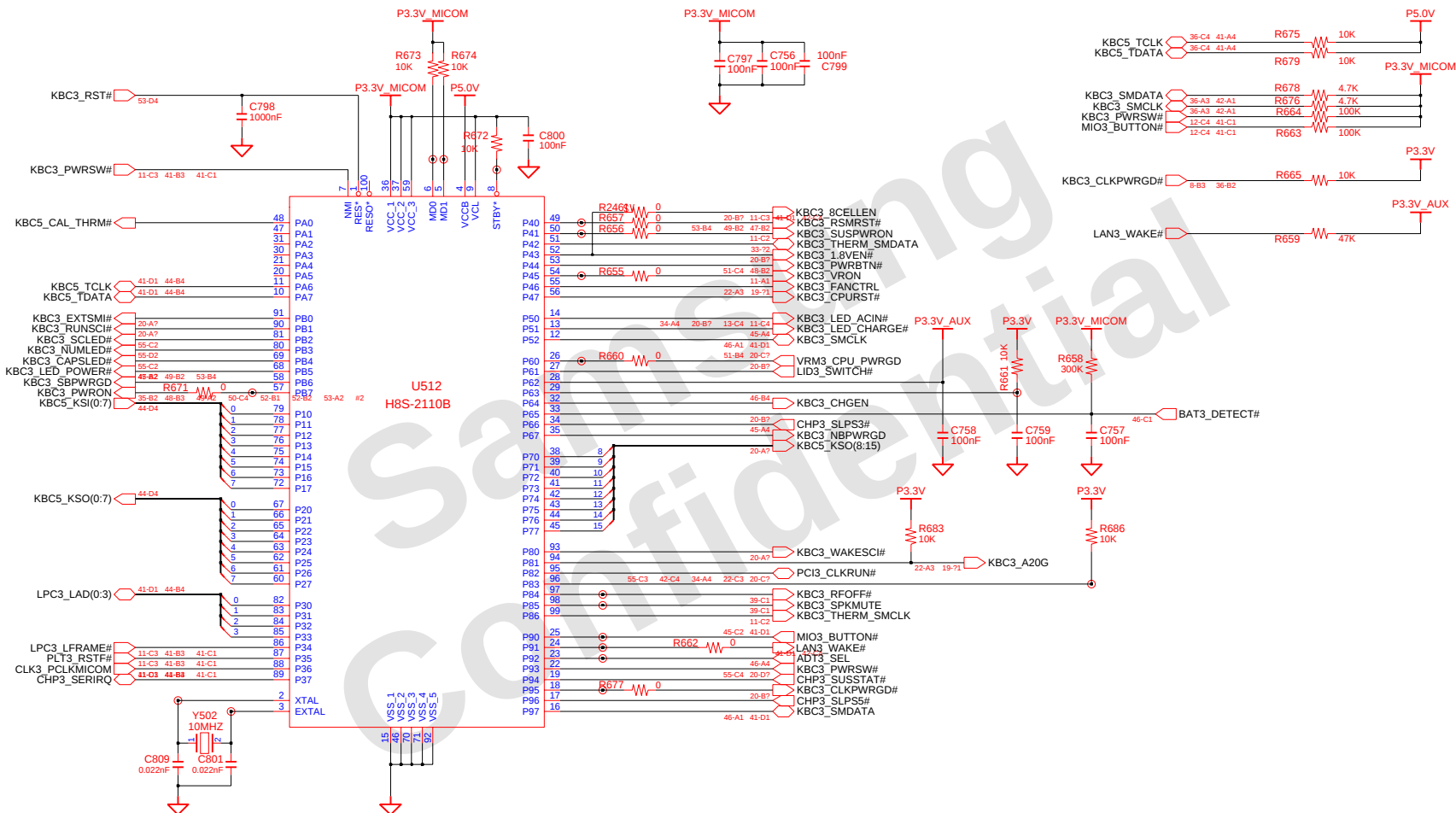
The traces led to Audio Jacks have the width over 10mil

|             |           |           |                             |       |            |                         |
|-------------|-----------|-----------|-----------------------------|-------|------------|-------------------------|
| DRAW        | JIANG, DS | DATE      | 11/2/2006                   | TITLE | HAINAN2    | SAMSUNG<br>ELECTRONICS  |
| CHECK       | YONG LEI  | DEV. STEP | PV                          |       |            |                         |
| APPROVAL    | KEVIN LEE | REV       | 2.0                         |       | AUDIO<3/3> | PART NO.<br>BA41-XXXXXA |
| MODULE CODE | undefined | LAST EDIT | November 2, 2006 4:25:20 PM | PAGE  | 33         | OF 48                   |

A

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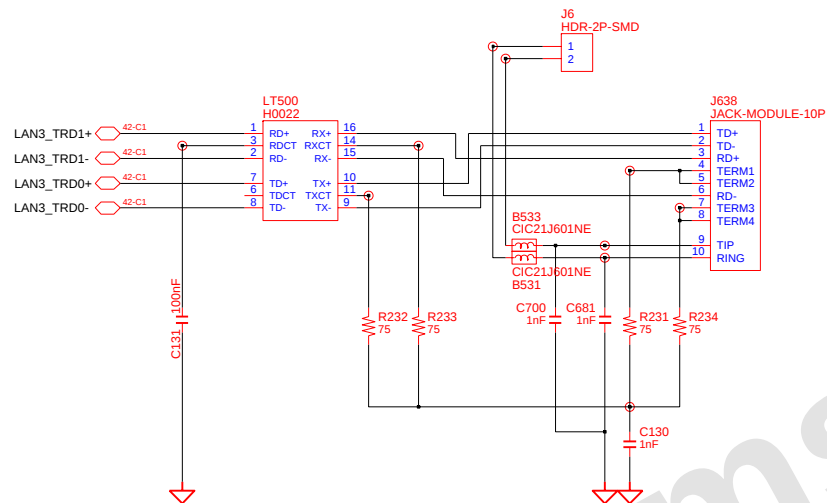
TP FOR UPDATE MICOM:  
P84=>TXD;P85=>RXD  
MD0 and MD1 =>GND  
P90,P91,P92=>VCC

|             |           |           |                             |       |         |                         |
|-------------|-----------|-----------|-----------------------------|-------|---------|-------------------------|
| DRAW        | JIANG, DS | DATE      | 11/2/2006                   | TITLE | HAINAN2 | SAMSUNG<br>ELECTRONICS  |
| CHECK       | YONG LEI  | DEV. STEP | PV                          |       |         |                         |
| APPROVAL    | KEVIN LEE | REV       | 2.0                         |       | MICOM   | PART NO.<br>BA41-XXXXXA |
| MODULE CODE | undefined | LAST EDIT | November 2, 2006 4:25:20 PM | PAGE  | 35      | OF 48                   |

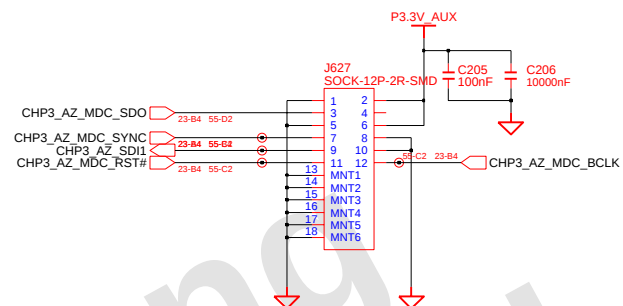
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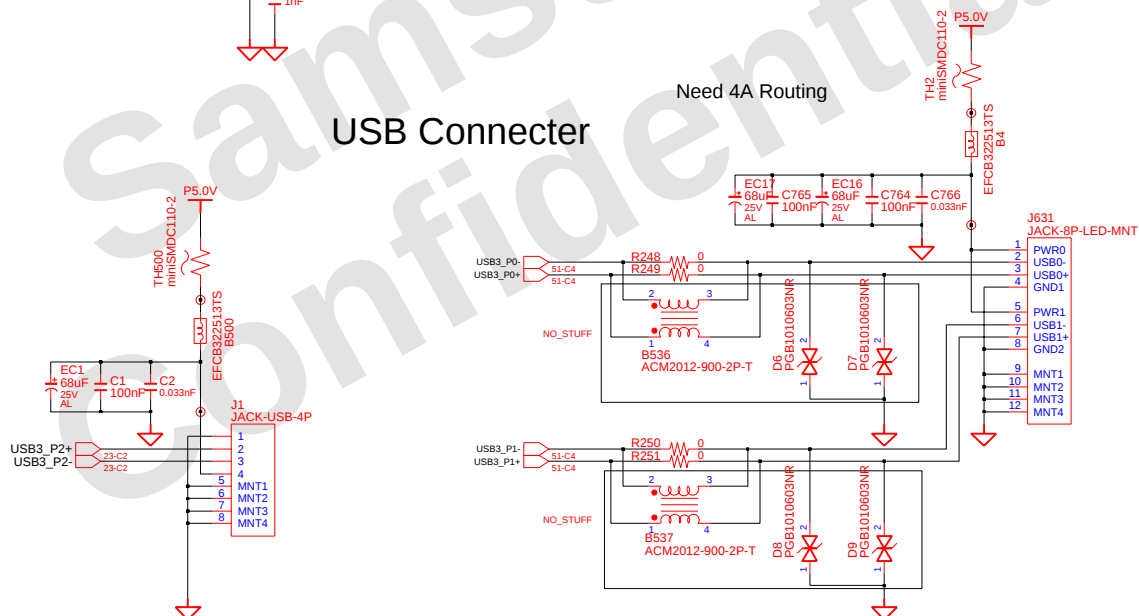
## LAN Connector



## MDC Connector



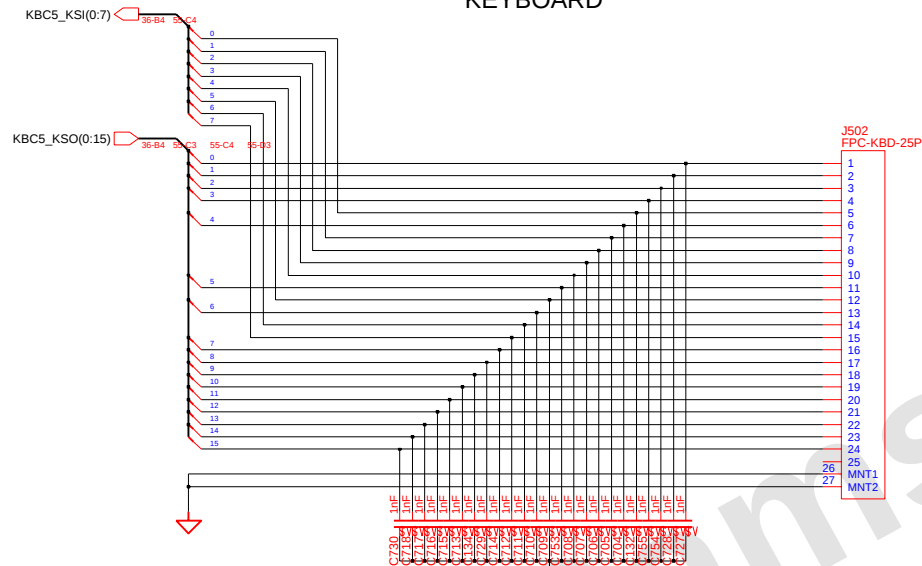
## USB Connector



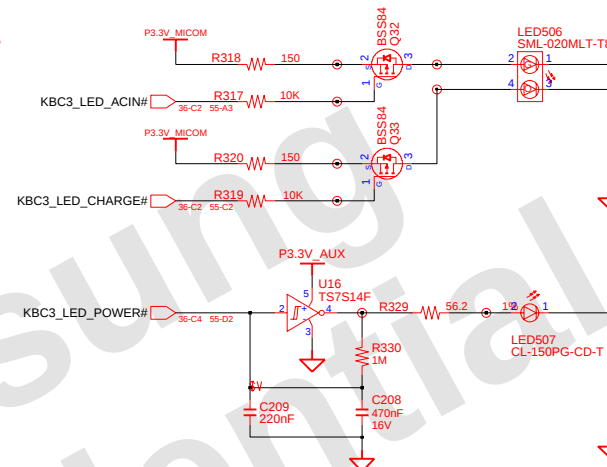
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| DRAW        | JIANG, DS | DATE      | 11/2/2006                   | TITLE | HAINAN2        | SAMSUNG<br>ELECTRONICS  |
| CHECK       | YONG LEI  | DEV. STEP | PV                          |       |                |                         |
| APPROVAL    | KEVIN LEE | REV       | 2.0                         |       | LAN & MDC CONN | PART NO.<br>BA41-XXXXXA |
| MODULE CODE | undefined | LAST EDIT | November 2, 2006 4:25:20 PM | PAGE  | 37             | OF 48                   |

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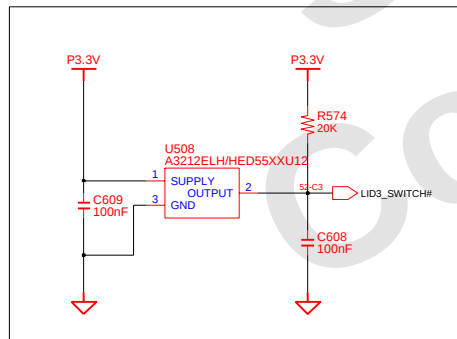
## KEYBOARD



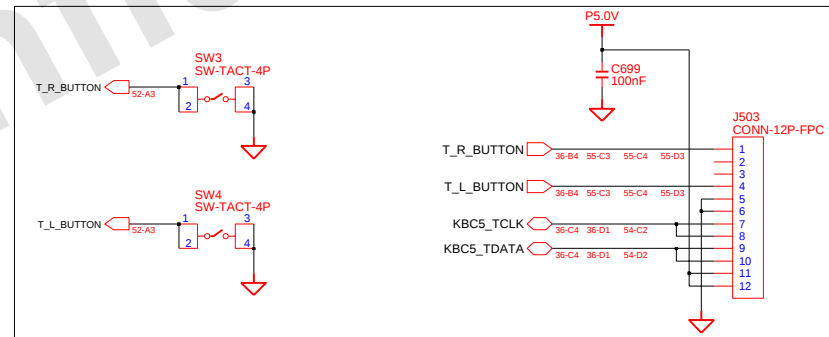
## ADAPTERIN/CHARGING LED



## LID SWITCH



## TOUCHPAD



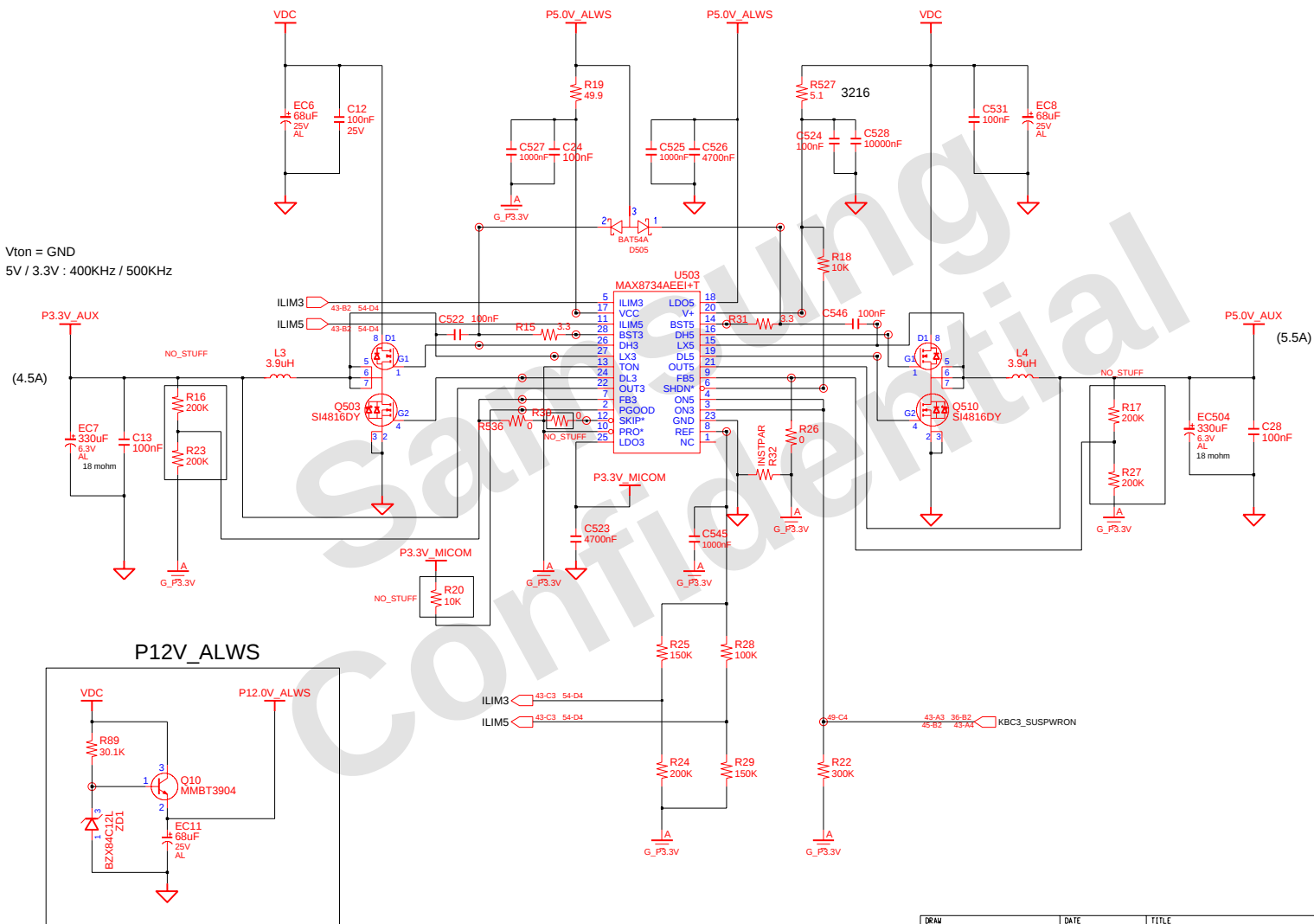
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|-------------|-----------|-----------|-----------------------------|------------|----------|------------------------|
| DRAW        | JIANG, DS | DATE      | 11/2/2006                   | TITLE      | HAINAN2  | SAMSUNG<br>ELECTRONICS |
| CHECK       | YONG LEI  | DEV. STEP | PV                          |            |          |                        |
| APPROVAL    | KEVIN LEE | REV       | 2.0                         | BOARD CONN |          |                        |
| MODULE CODE | undefined | LAST EDIT | November 2, 2006 4:25:20 PM | PAGE       | 38 OF 48 |                        |



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## P3.3V\_AUX & P5V\_AUX

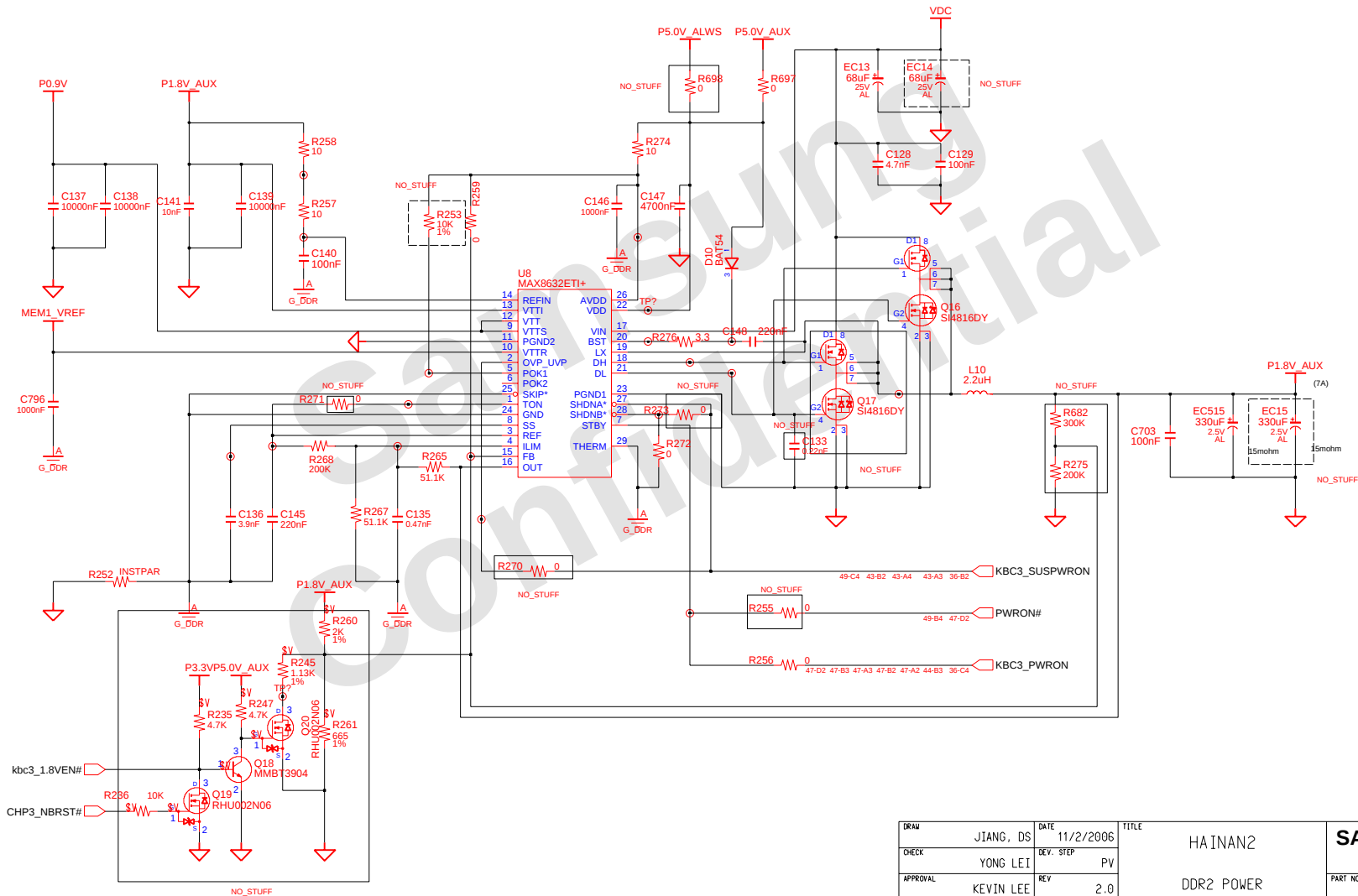
V<sub>ton</sub> = GND  
5V / 3.3V : 400KHz / 500KHz



|             |           |           |                             |       |                     |                        |
|-------------|-----------|-----------|-----------------------------|-------|---------------------|------------------------|
| DRAW        | JIANG, DS | DATE      | 11/2/2006                   | TITLE | HAINAN2             | SAMSUNG<br>ELECTRONICS |
| CHECK       | YONG LEI  | DEV. STEP | PV                          |       |                     |                        |
| APPROVAL    | KEVIN LEE | REV       | 2.0                         |       | P3.3V_AUX & P5V_AUX | PART NO.               |
| MODULE CODE | undefined | LAST EDIT | November 2, 2006 4:25:20 PM | PAGE  | 40                  | OF 48                  |

COM-22C-015(1996.6.5) REV. 3

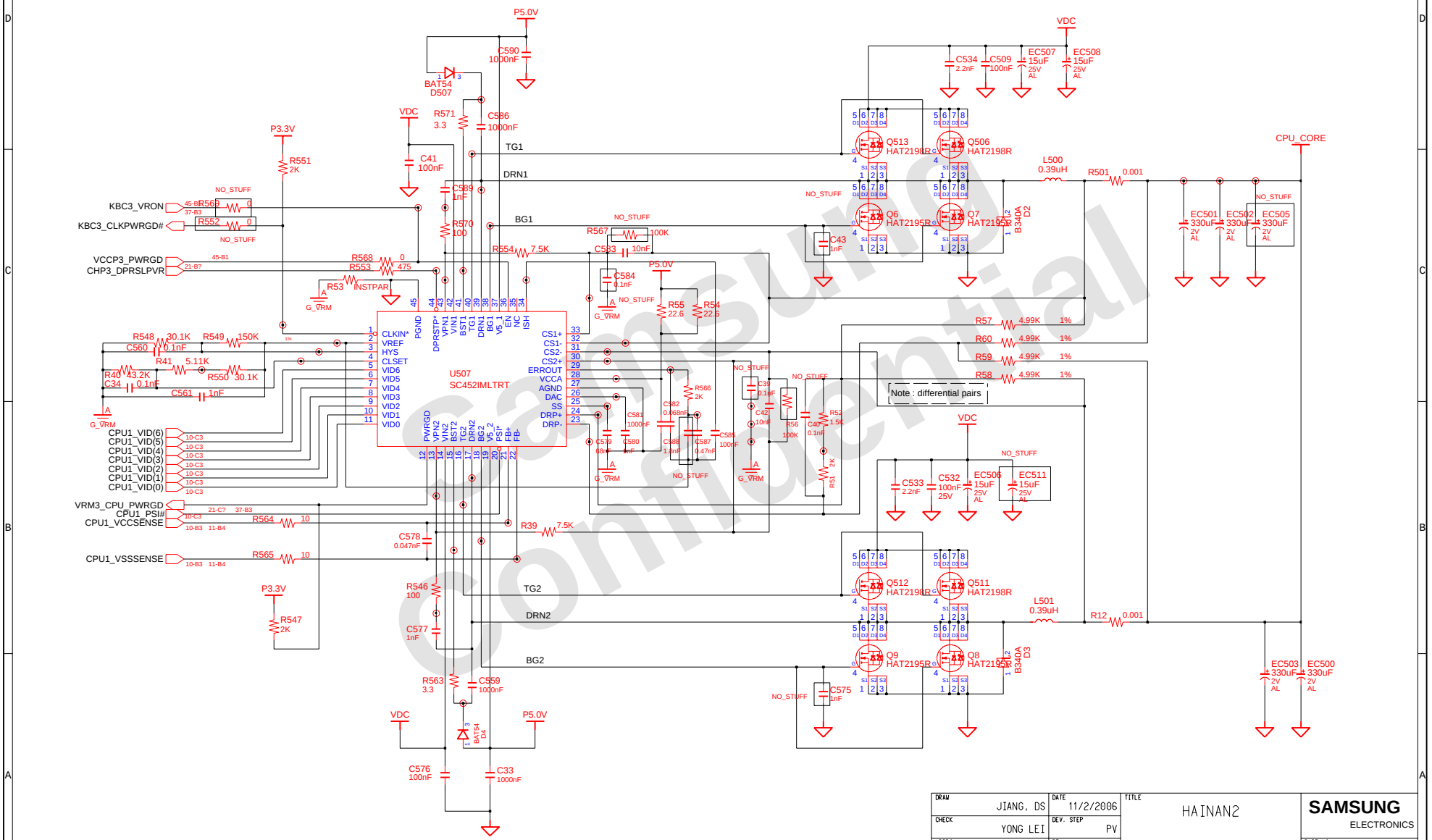
## DDR2 Power



|             |           |           |                             |            |          |                                                |
|-------------|-----------|-----------|-----------------------------|------------|----------|------------------------------------------------|
| DRAW        | JIANG, DS | DATE      | 11/2/2006                   | TITLE      | HAINAN2  | SAMSUNG<br>ELECTRONICS<br>PART NO. BA41-XXXXXA |
| CHECK       | YONG LEI  | DEV. STEP | PV                          |            |          |                                                |
| APPROVAL    | KEVIN LEE | REV       | 2.0                         | DDR2 POWER |          |                                                |
| MODULE CODE | undefined | LAST EDIT | November 2, 2006 4:25:20 PM | PAGE       | 42 OF 48 |                                                |

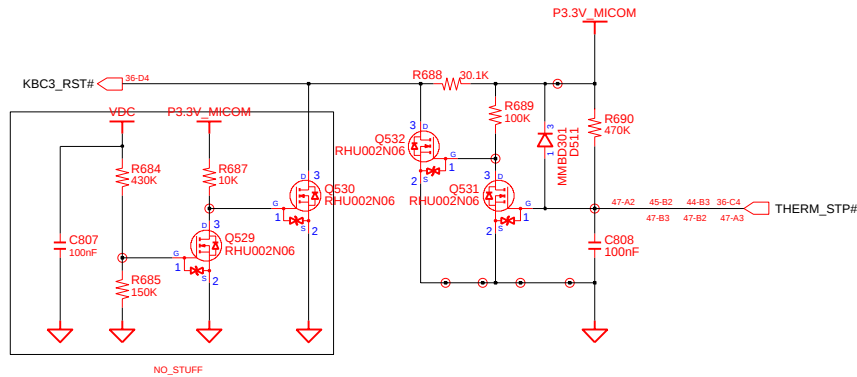
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# CPU VRM [SEMTECH]

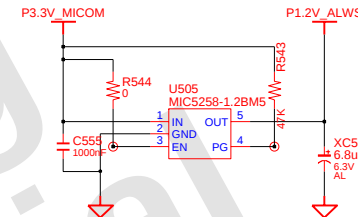


|             |           |           |                             |       |         |                        |
|-------------|-----------|-----------|-----------------------------|-------|---------|------------------------|
| DRW         | JIANG, DS | DATE      | 11/2/2006                   | TITLE | HAINAN2 | SAMSUNG<br>ELECTRONICS |
| CHECK       | YONG LEI  | DEV. STEP | PV                          |       |         |                        |
| APPROVAL    | KEVIN LEE | REV       | 2.0                         |       | CPU VRM | PART NO.               |
| MODULE CODE | undefined | LAST EDIT | November 2, 2006 4:25:20 PM |       |         | BA41-XXXXXA            |
|             |           |           |                             |       | PAGE    | 43 OF 48               |

## MICOM RESET

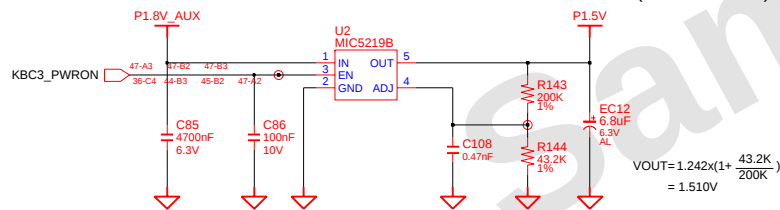


## Switched Power On (P3.3V & 1.8V&1.2V\_ALWS)

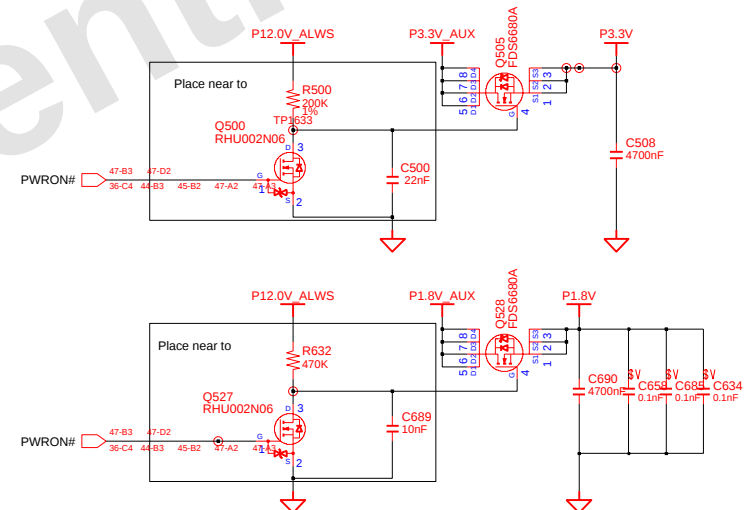
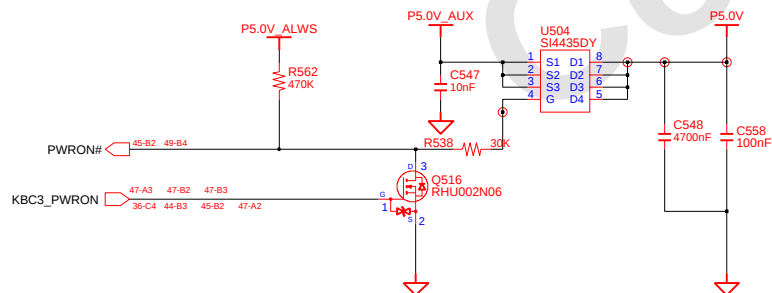


## P1.5V POWER

(EBL)  
(AVE MAX : 2A)



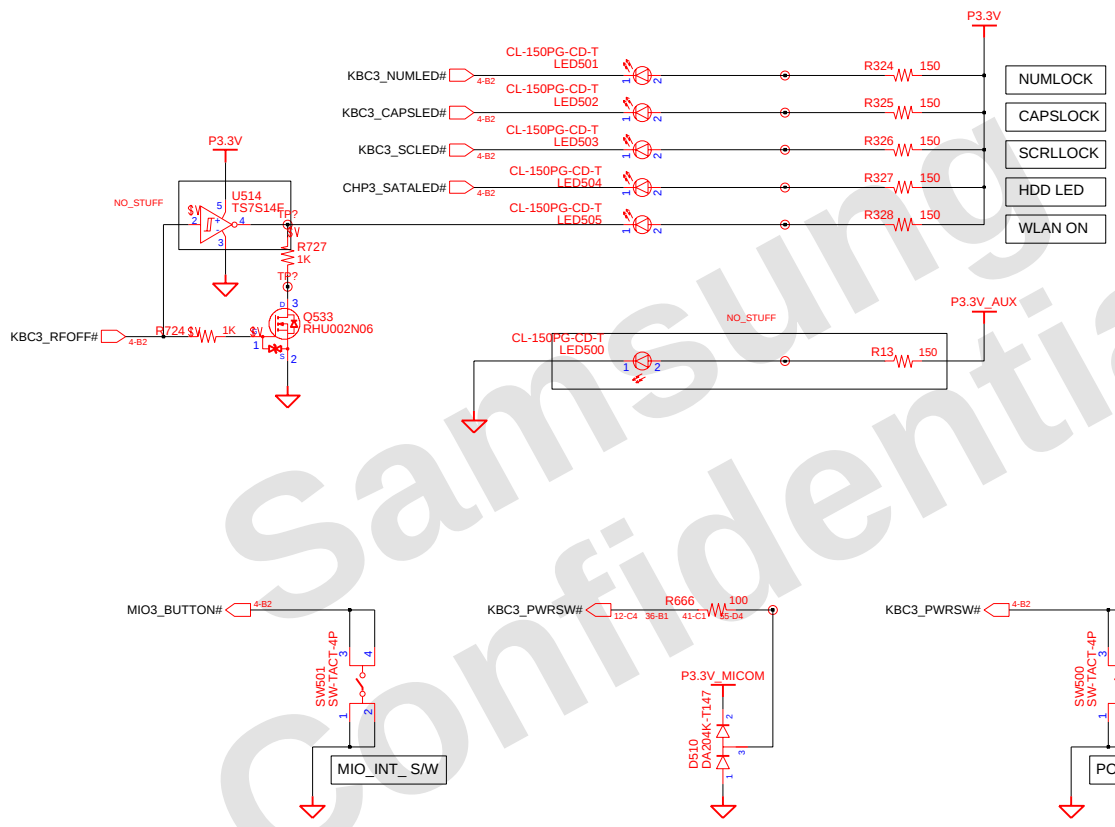
## Switched Power On (P5V)



|             |           |           |                             |              |          |                                                   |
|-------------|-----------|-----------|-----------------------------|--------------|----------|---------------------------------------------------|
| DRAW        | JIANG, DS | DATE      | 11/2/2006                   | TITLE        | HAINAN2  | SAMSUNG<br>ELECTRONICS<br>PART NO.<br>BA41-XXXXXA |
| CHECK       | YONG LEI  | DEV. STEP | PV                          |              |          |                                                   |
| APPROVAL    | KEVIN LEE | REV       | 2.0                         | SWITCH POWER |          |                                                   |
| MODULE CODE | undefined | LAST EDIT | November 2, 2006 4:25:20 PM | PAGE         | 44 OF 48 |                                                   |

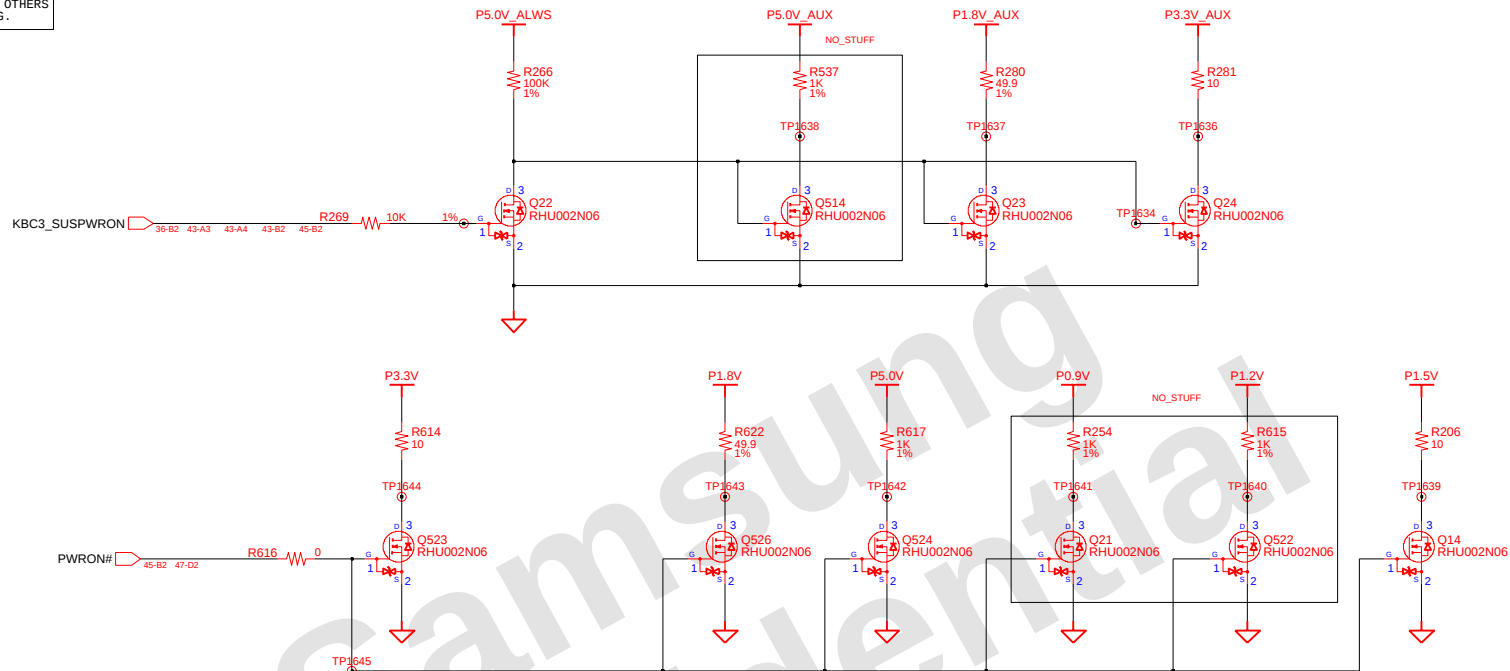
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LED  
0801-002195



|             |           |           |                             |              |          |                                                       |
|-------------|-----------|-----------|-----------------------------|--------------|----------|-------------------------------------------------------|
| DRAW        | JIANG, DS | DATE      | 11/2/2006                   | TITLE        | HAINAN2  | <b>SAMSUNG</b><br>ELECTRONICS<br>PART NO. BA41-XXXXXA |
| CHECK       | YONG LEI  | DEV. STEP | PV                          |              |          |                                                       |
| APPROVAL    | KEVIN LEE | REV       | 2.0                         | POWER SWITCH |          |                                                       |
| MODULE CODE | undefined | LAST EDIT | November 2, 2006 4:25:20 PM | PAGE         | 45 OF 48 |                                                       |

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BT

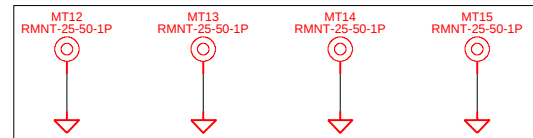
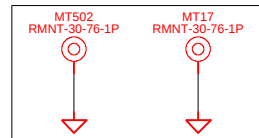
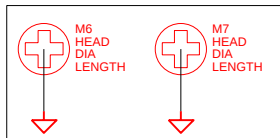
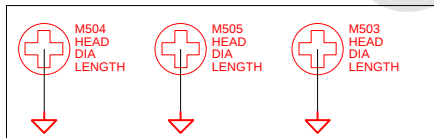
System

DMB

MDC

KBD

Bott with Mainboard



|             |           |           |                             |              |          |                                                       |
|-------------|-----------|-----------|-----------------------------|--------------|----------|-------------------------------------------------------|
| DRAW        | JIANG, DS | DATE      | 11/2/2006                   | TITLE        | HAINAN2  | <b>SAMSUNG</b><br>ELECTRONICS<br>PART NO. BA41-XXXXXA |
| CHECK       | YONG LEI  | DEV. STEP | PV                          |              |          |                                                       |
| APPROVAL    | KEVIN LEE | REV       | 2.0                         | POWER STRAPS |          |                                                       |
| MODULE CODE | undefined | LAST EDIT | November 2, 2006 4:25:20 PM | PAGE         | 46 OF 48 |                                                       |

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TP2027 ○ MIC1  
TP2028 ○ MIC2  
TP2029 ○ GPIO1  
TP2030 ○ ILIM3  
TP2031 ○ ILIM5

TP2020 ○ CPU1\_TDI  
TP2021 ○ CPU1\_TMS  
TP2022 ○ PCI3\_PAR  
TP2023 ○ SATA1\_X1  
TP2024 ○ SMB3\_CLK  
TP2025 ○ SPI3\_CLK  
TP2026 ○ SPI3\_CS#

TP1968 CPU1\_A20M#

TP1971 ○ CPU1\_BSEL0  
TP1972 ○ CPU1\_BSEL1  
TP1973 ○ CPU1\_BSEL2

TP1939 ○ PCI3\_CBE0#  
TP1940 ○ PCI3\_CBE1#  
TP1941 ○ PCI3\_CBE2#  
TP1942 ○ PCI3\_CBE3#  
TP1943 ○ PCI3\_GNT1#

TP1945 PCI3\_IRDY#  
TP1946 PCI3\_PERR#  
TP1947 PCI3\_REQ1#  
TP1914 PCI3\_RSTF#  
TP1915 PCI3\_SERR#  
TP1916 PCI3\_STOP#  
TP1917 PCI3\_TRDY#

TP1888○KBC5\_KSO(0)  
TP1889○KBC5\_KSO(1)  
TP1890○KBC5\_KSO(2)  
TP1891○KBC5\_KSO(3)  
TP1892○KBC5\_KSO(4)  
TP1893○KBC5\_KSO(5)  
TP1894○KBC5\_KSO(6)  
TP1895○KBC5\_KSO(7)  
TP1896○KBC5\_KSO(8)  
TP1897○KBC5\_KSO(9)

TP1898○LCD3\_BKLTON  
TP1899○LPC3\_LAD(0)  
TP1900○LPC3\_LAD(1)  
TP1869○LPC3\_LAD(2)  
TP1870○LPC3\_LAD(3)  
TP1871○MCD3\_MSINS#

TP2002 ○ CHP3 SPKR

TP2006 ○ CPU1\_INTR  
TP2007 ○ CPU1\_PSI#

TP2011 CPU1\_SLP#  
TP2012 CPU1\_SMI#  
TP2013 IDE5\_CS1#  
TP2014 IDE5\_CS3#

TP19770 CPU1 FERR#

TP1979 CPU1 INIT#

TP1950 CPU1\_TRST#  
TP1951 EXP3\_CPPE#

TP1918 ○ PEX3\_WAKE#  
TP1919 ○ PLT3\_RSTF#

TP1952 IDE5\_DACK#  
TP1953 IDE5\_IORDY  
TP1954 JCK\_SENS\_A  
TP1955 KBC3\_CHGEN  
TP1956 KBC3\_SMCLK  
TP1957 KBC5\_TDATA

TP1920 ○ T\_L\_BUTTON  
TP1921 ○ T\_R\_BUTTON  
TP1922 ○ VGA3\_HSYNC  
TP1923 ○ VGA3\_VSYNC  
TP1924 ○ BAT3\_SMCLK  
TP1925 ○ CHP3\_OVERT  
TP1910 ○ CHP3\_SBPME  
TP1911 ○ CHP3\_SERIRQ  
TP1912 ○ CHP3\_SLP53F  
TP1913 ○ CHP3\_SLP55F

TP1980 ○ IDE5\_DREQ  
TP1981 ○ IDE5\_IOR#  
TP1982 ○ IDE5\_IOW#  
TP1983 ○ KBC3\_A20G  
TP1984 ○ KBC3\_RST#  
TP1985 ○ KBC3\_VRON  
TP1986 ○ KBC5\_TCLK

TP1958 LCD3\_VDDEN  
TP1959 MCD3\_SDCD#  
TP1960 MCD3\_XDALE  
TP1961 MCD3\_XDCD#  
TP1962 MCD3\_XDCE#  
TP1963 MCD3\_XDRE#  
TP1964 MCD3\_XDWE#

TP1996 ○ ODD5\_RST#

TP1997 ○ SMB3\_DATA  
TP1998 ○ SPI3\_MISO  
TP1999 ○ SPI3\_MOSI  
TP2000 ○ AUD3\_EAPD#

TP2015 ○ RTC\_CLK  
TP2016 ○ AC\_SDOUT  
TP2017 ○ AUTO\_ON#  
TP2018 ○ CPU1\_NMI  
TP2019 ○ CPU1\_TCK

TP2001 ○ CLK3\_NB14M

TP1902 CPU1\_DPSLP#  
TP1903 CPU1\_IGNNE#  
TP1904 CPU1\_VID(0)  
TP1905 CPU1\_VID(1)  
TP1906 CPU1\_VID(2)  
TP1907 CPU1\_VID(3)  
TP1908 CPU1\_VID(4)  
TP1909 CPU1\_VID(5)  
TP1872 CPU1\_VID(6)  
TP1873 EXP3\_CPUBS#  
TP1874 EXP3\_PERST#  
TP1875 IDE5\_1DRQ#  
TP1876 KBC3\_IEN#  
TP1877 KBC3\_PWRSW#  
TP1878 KBC3\_SCLED#  
TP1879 KBC3\_SMDATA  
TP1880 KBC5\_KS(0)  
TP1881 KBC5\_KS(1)  
TP1882 KBC5\_KS(2)  
TP1883 KBC5\_KS(3)  
TP1884 KBC5\_KS(4)  
TP1885 KBC5\_KS(5)  
TP1886 KBC5\_KS(6)  
TP1887 KBC5\_KS(7)

|             |           |           |           |                             |          |                                                                                       |
|-------------|-----------|-----------|-----------|-----------------------------|----------|---------------------------------------------------------------------------------------|
| DRAW        | JIANG, DS | DATE      | 11/2/2006 | TITLE                       | HAINAN2  |  |
| CHECK       | YONG LEI  | DEV. STEP | PV        |                             |          |                                                                                       |
| APPROVAL    | KEVIN LEE | REV       | 2.0       |                             |          |                                                                                       |
| MODULE CODE |           |           |           | TP                          | PART NO. | BA41-XXXXXA                                                                           |
| LAST EDIT   |           |           |           | November 2, 2006 4:25:20 PM | PAGE     | 47 OF 48                                                                              |

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D

C

B

A

3

TP2195○CHP3\_DPRSPLVR  
TP2196○CHP3\_SATALED#

TP2197○CPU1\_PROCHOT#  
TP2198○CPU1\_PWRGDCPU  
TP2199○CPU1\_VCCSENSE  
TP2200○CPU1\_VSSSENSE  
TP2201○JCK\_SENS\_MCHP  
TP2202○KBC3\_CAPSED#  
TP2203○KBC3\_WAKES#  
TP2204○LCD3\_BKLCTRL  
TP2205○LCD3\_EDID\_CLK

TP2233○PCI3\_FRAME#

TP2235○VCCP3\_PWRGD  
TP2236○AUD3\_PCBEEP#  
TP2237○BAT3\_DETECT#  
TP2238○BAT3\_SMDATA#  
TP2239○CHP3\_AZ\_SD0  
TP2240○CHP3\_BIOSW#  
TP2241○CHP3\_CPUSTP#

TP2223○CPU1\_STPCLK#

TP2224○EXP3\_CLKREQ#  
TP2225○ITP3\_SYSTR#  
TP2226○JCK\_SENS\_HP#  
TP2227○KBC3\_CPURST#  
TP2228○KBC3\_EXTSM#  
TP2229○KBC3\_FANCTL#  
TP2230○KBC3\_NBPWRGD  
TP2231○KBC3\_NUMLED#  
TP2232○KBC3\_PWRBTN#  
TP2207○KBC3\_RSMRST#  
TP2208○KBC3\_RUNS#  
TP2209○KBC3\_SBPWRGD  
TP2210○KBC5\_KSO(10)  
TP2211○KBC5\_KSO(11)  
TP2212○KBC5\_KSO(12)  
TP2213○KBC5\_KSO(13)  
TP2214○KBC5\_KSO(14)  
TP2215○KBC5\_KSO(15)

TP2216○LID3\_SWITCH#  
TP2217○LPC3\_LFRAME#

TP2193○PCI3\_CLKRUN#  
TP2194○PCI3\_DEVSEL#

TP2142○LDO\_P5.4V  
TP2143○LDO\_P5.4V

TP2180○CHP3\_SATA\_DET#

TP2181○CPU1\_THRMTRIP#  
TP2182○KBC3\_CLKPWRGD#  
TP2183○KBC3\_LED\_ACIN#  
TP2184○KBC5\_CAL\_THRM#  
TP2185○LCD3\_EDID\_DATA  
TP2186○VRM3\_CPU\_PWRGD

TP2187○CHP3\_ALINK\_RST#  
TP2188○CHP3\_AZ\_AUD\_SD0  
TP2189○CHP3\_AZ\_MDC\_SD0

TP2192○KBC3\_LED\_POWER#

TP2158○CHP3\_AZ\_AUD\_RST#

TP2159○CHP3\_SBTHRMTRIP#

TP2162○KBC3\_LED\_CHARGE#  
TP2163○KBC3\_THERM\_SMCLK

TP2164○KBC3\_THERM\_SMDATA

TP2165○MINIPIC3\_CLKREQ\_B#

TP2169○CHG\_REF  
TP2170○G\_AUD  
TP2171○G\_AUD  
TP2172○G\_AUD  
TP2173○G\_AUD  
TP2174○G\_CHG  
TP2175○G\_CHG  
TP2176○G\_CHG  
TP2177○G\_CHG  
TP2178○G\_CRT  
TP2179○G\_CRT

TP2126○G\_CRT  
TP2127○G\_CRT  
TP2128○G\_DDR  
TP2129○G\_DDR  
TP2130○G\_DDR  
TP2131○G\_DDR  
TP2132○G\_P3.3V  
TP2133○G\_P3.3V  
TP2134○G\_P3.3V  
TP2135○G\_P3.3V  
TP2136○LCD\_VDD3V  
TP2137○LCD\_VDD3V

TP2142○LDO\_P5.4V  
TP2143○LDO\_P5.4V

TP2146○MEM1\_VREF  
TP2147○MEM1\_VREF

TP2148○P0.9V  
TP2149○P0.9V  
TP2150○P0.9V  
TP2151○P0.9V  
TP2152○P1.2V  
TP2153○P1.2V  
TP2154○P1.2V  
TP2155○P1.2V  
TP2156○P1.5V  
TP2157○P1.5V  
TP2084○P1.5V  
TP2095○P1.5V  
TP2096○P1.8V  
TP2097○P1.8V  
TP2098○P1.8V  
TP2099○P1.8V

TP2103○PRTC\_BAT

TP2109○P1.5V\_EXP  
TP2110○P1.5V\_EXP  
TP2111○P1.5V\_EXP  
TP2112○P1.8V\_AUX  
TP2113○P1.8V\_AUX  
TP2114○P1.8V\_AUX  
TP2115○P1.8V\_AUX  
TP2116○P2.5V\_LAN  
TP2117○P2.5V\_LAN  
TP2118○P2.5V\_LAN  
TP2119○P2.5V\_LAN

TP2123○P2.5V\_MCD  
TP2124○P3.3V\_AUX  
TP2125○P3.3V\_AUX  
TP2062○P3.3V\_AUX  
TP2063○P3.3V\_AUX

TP2065○P3.3V\_EXP  
TP2066○P3.3V\_EXP

TP2068○P3.3V\_MCD  
TP2069○P3.3V\_MCD  
TP2070○P3.3V\_MCD  
TP2071○P3.3V\_MCD  
TP2072○P5.0V\_AUD  
TP2073○P5.0V\_AUD  
TP2074○P5.0V\_AUD  
TP2075○P5.0V\_AUD  
TP2076○P5.0V\_AUD  
TP2077○P5.0V\_AUX

TP2078○P5.0V\_AUX  
TP2079○P5.0V\_AUX  
TP2080○PCIE\_VDDR

TP2085○P1.2V\_ALWS  
TP2086○P1.2V\_ALWS

TP2088○P5.0V\_ALWS  
TP2089○P5.0V\_ALWS  
TP2090○P5.0V\_ALWS  
TP2091○P5.0V\_ALWS  
TP2092○P12.0V\_ALWS  
TP2093○P12.0V\_ALWS  
TP2032○P12.0V\_ALWS  
TP2033○P12.0V\_ALWS

TP2035○P3.3V\_AUX\_EXP

TP2037○P3.3V\_AUX\_EXP  
TP2038○VDC  
TP2039○VDC  
TP2040○VDC  
TP2041○VDC

TP2045○VCC\_CRT  
TP2046○VDC\_INV  
TP2047○VDC\_INV

TP2050○VDD\_AMP  
TP2051○VDD\_AMP  
TP2052○VDD\_AMP  
TP2053○VDD\_AMP  
TP2054○VDD\_AUD  
TP2055○VDD\_AUD  
TP2056○VDD\_AUD  
TP2057○VDD\_AUD  
TP2058○VCCP\_CORE  
TP2059○VCCP\_CORE  
TP2060○VCCP\_CORE  
TP2061○VCCP\_CORE

REV500  
1○  
2○ ○3

| PCB REVISION CONTROL ( ICT ) |            |               |          |      |
|------------------------------|------------|---------------|----------|------|
| NO                           | CONNECTION | DATE(Y/M/M/D) | REVISION | STEP |
| 1                            | N.C.       |               |          |      |
| 2                            | 1-2        |               |          |      |
| 3                            | 2-3        |               |          |      |
| 4                            | 3-1        |               |          |      |
| 5                            | 1-2-3      |               |          |      |
| 6                            | N.C.       |               |          |      |
| 7                            | 1-2        |               |          |      |
| 8                            | 2-3        |               |          |      |
| 9                            | 3-1        |               |          |      |
| 10                           | 1-2-3      |               |          |      |

|             |           |           |                             |       |          |                                                          |
|-------------|-----------|-----------|-----------------------------|-------|----------|----------------------------------------------------------|
| DRAW        | JIANG, DS | DATE      | 11/2/2006                   | TITLE | HAINAN2  | <b>SAMSUNG</b><br>ELECTRONICS<br>PART NO.<br>BA41-XXXXXA |
| CHECK       | YONG LEI  | DEV. STEP | PV                          |       |          |                                                          |
| APPROVAL    | KEVIN LEE | REV       | 2.0                         | TP    |          |                                                          |
| MODULE CODE |           | LAST EDIT | November 2, 2006 4:25:20 PM | PAGE  | 48 OF 48 |                                                          |