

Tianjin

CPU : Intel Penryn-6M (1067/800) MHz
Chip Set : Intel Cantiga & ICH9M
Remarks : Montevina Platform

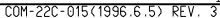
Model Name : TIANJIN_EXT
PBA Name : MAIN
PCB Code : BA41-00897A/898A
Dev. Step : PR
Revision : 1.0
T.R. Date : 2008.06.03

| Design | CHECK | APPROVAL |
|----------------|-------------|----------|
| XIAOHONG ZHANG | RUJIN ZHENG | BC LEE |
| | | |

Owner : SESC Mobile R & D Signature : X

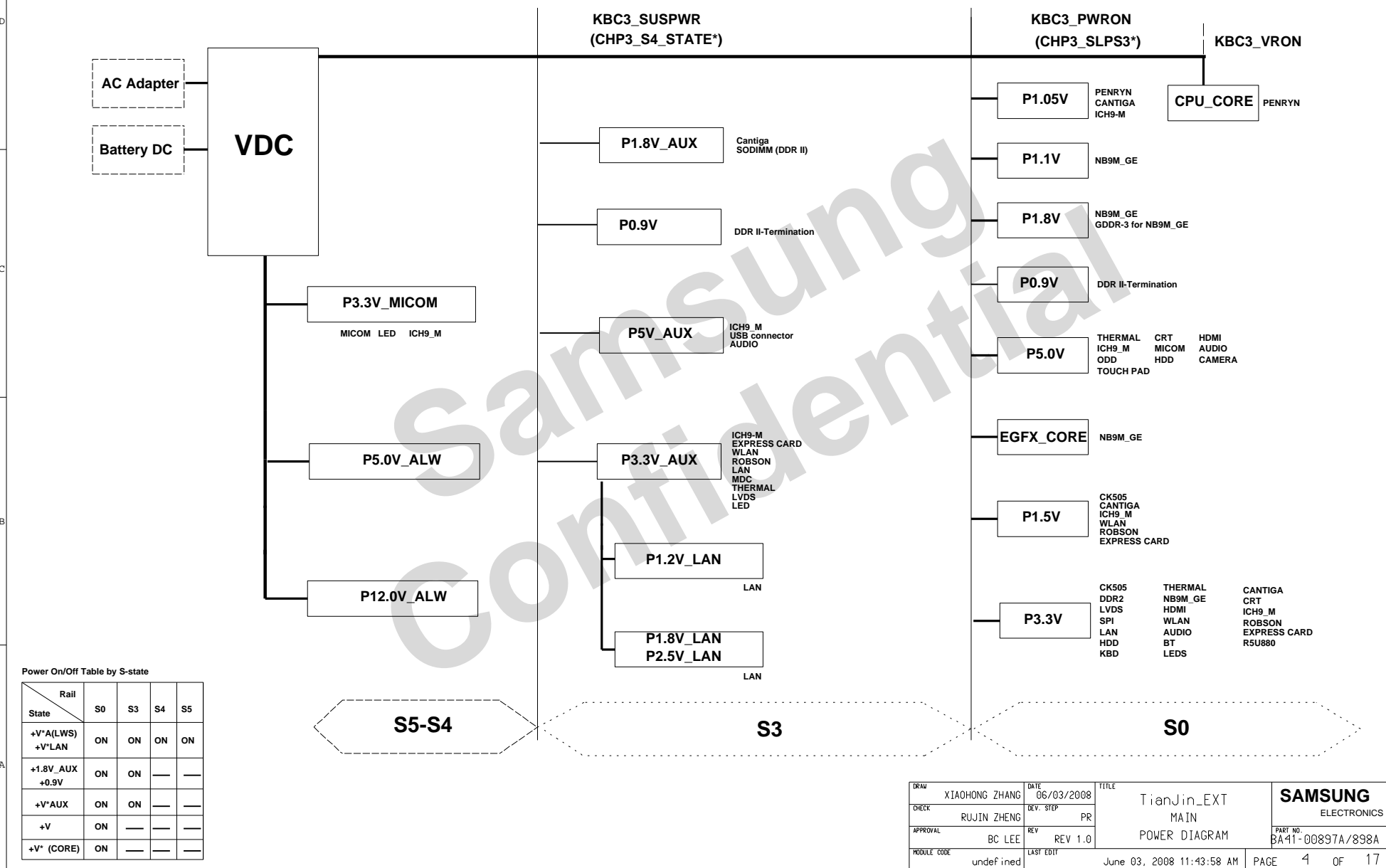
BLOCK DESIGN

| | | | | | | |
|-------------|----------------|-----------|---------------------------|-------|-------------|--|
| DRAW | XIAOHONG ZHANG | DATE | 06/03/2008 | TITLE | TianJin_EXT | SAMSUNG ELECTRONICS PART NO. BA41-00897A/898A |
| CHECK | RUJIN ZHENG | DEV. STEP | PR | MAIN | | |
| APPROVAL | BC LEE | REV | REV 1.0 | COVER | | |
| MODULE CODE | | LAST EDIT | June 03, 2008 11:43:58 AM | PAGE | 1 OF 17 | |



POWER DIAGRAM

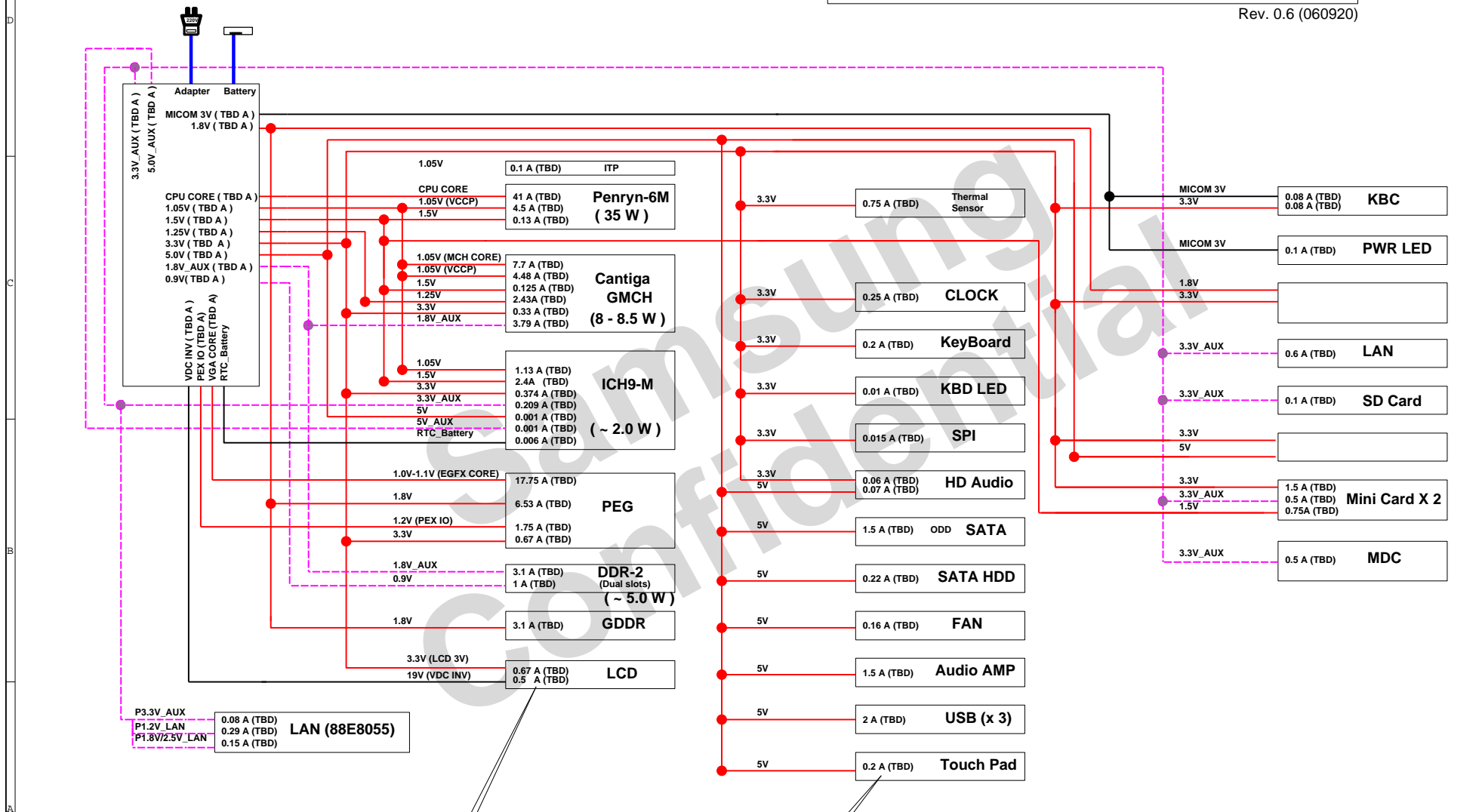
Rev 0.1



| | | | | | | |
|-------------|----------------|-----------|---------------------------|-------|---------------|------------------------|
| DRAW | XIAOHONG ZHANG | DATE | 06/03/2008 | TITLE | TianJin_EXT | SAMSUNG ELECTRONICS |
| CHECK | RUJIN ZHENG | DEV. STEP | PR | | MAIN | |
| APPROVAL | BC LEE | REV | REV 1.0 | | POWER DIAGRAM | |
| MODULE CODE | undefined | LAST EDIT | June 03, 2008 11:43:58 AM | PAGE | 4 OF 17 | |

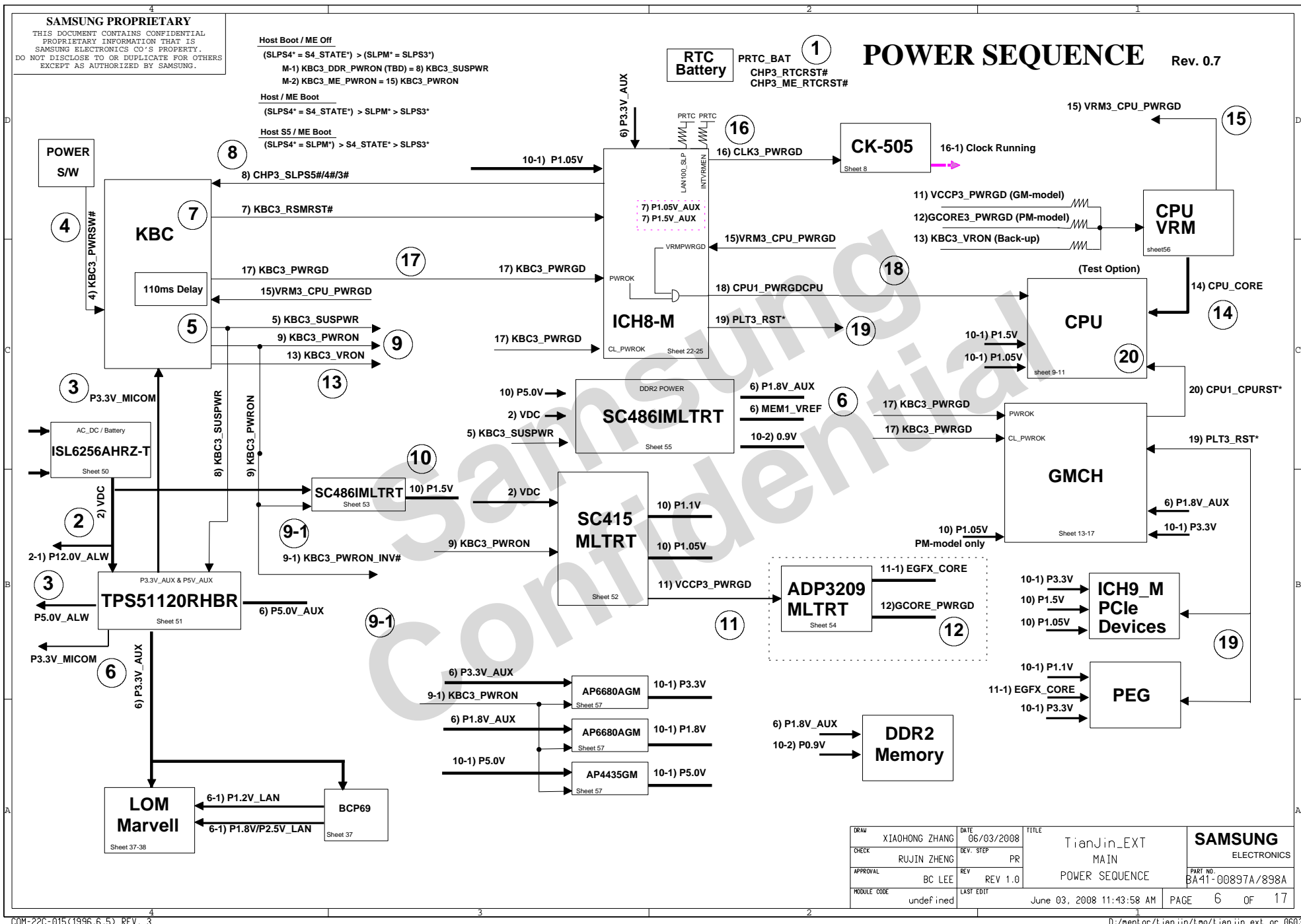
POWER RAILS ANALYSIS

Rev. 0.6 (060920)

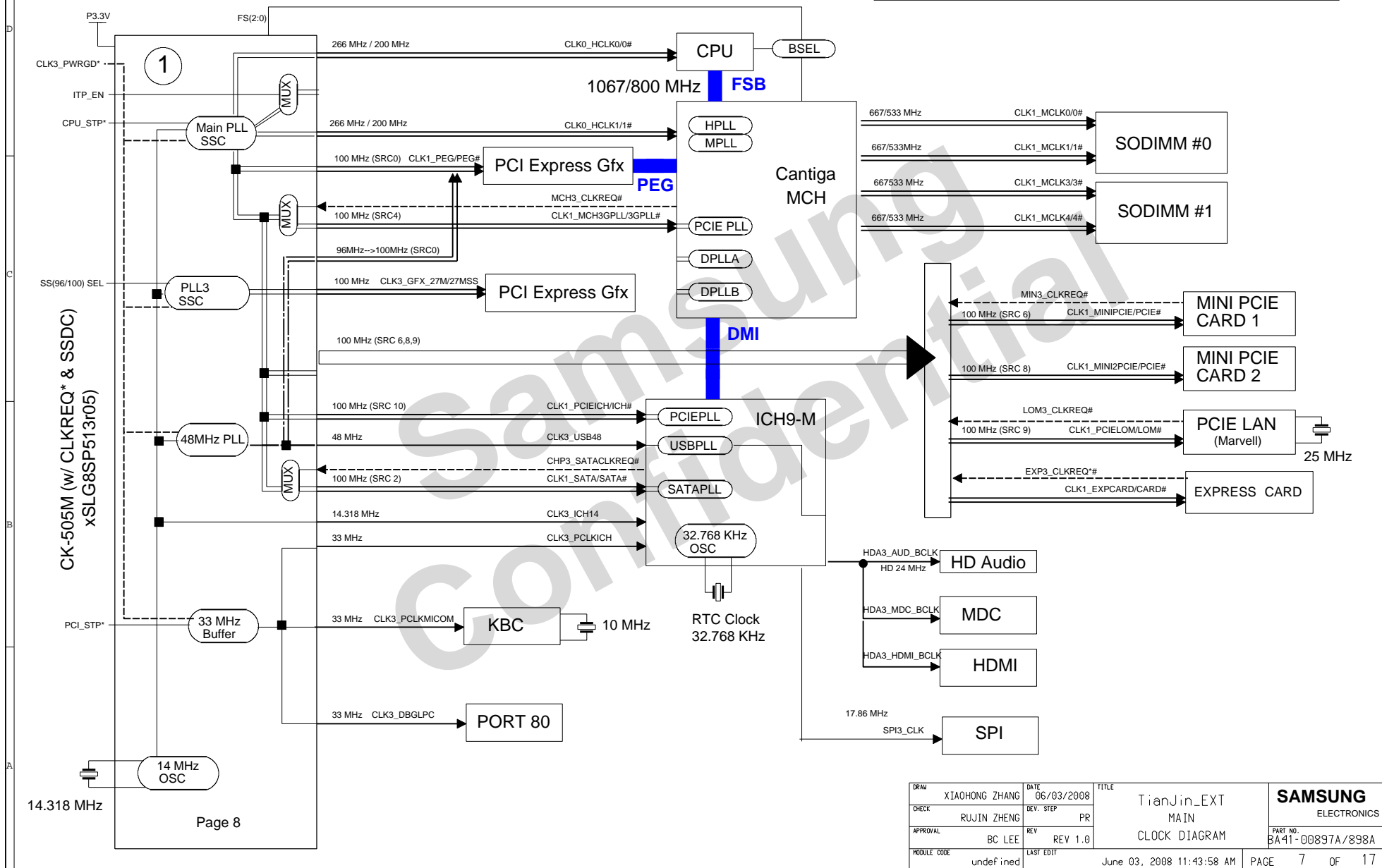


Value by Datasheet/Application notes (Value by measurement)

| | | | | | | |
|-------------|----------------|-----------|---------------------------|-------|-------------|--|
| DRAW | XIAOHONG ZHANG | DATE | 06/03/2008 | TITLE | TianJin_EXT | SAMSUNG ELECTRONICS PART NO. BA41-00897A/898A |
| CHECK | RUJIN ZHENG | DEV. STEP | PR | | MAIN | |
| APPROVAL | BC LEE | REV | REV 1.0 | | POWER RAILS | |
| MODULE CODE | undefined | LAST EDIT | June 03, 2008 11:43:58 AM | PAGE | 5 OF 17 | |



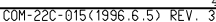
CLOCK DISTRIBUTION Rev. 0.1



14.318 MHz

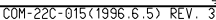
Page 8

| | | | | | | |
|-------------|----------------|-----------|---------------------------|-------|--------------------------------------|------------------------------|
| DRAW | XIAOHONG ZHANG | DATE | 06/03/2008 | TITLE | TianJin_EXT MAIN CLOCK DIAGRAM | SAMSUNG ELECTRONICS |
| CHECK | RUJIN ZHENG | DEV. STEP | PR | | | PART NO. BA41-00897A/898A |
| APPROVAL | BC LEE | REV | REV 1.0 | | | |
| MODULE CODE | undefined | LAST EDIT | June 03, 2008 11:43:58 AM | PAGE | 7 | OF 17 |

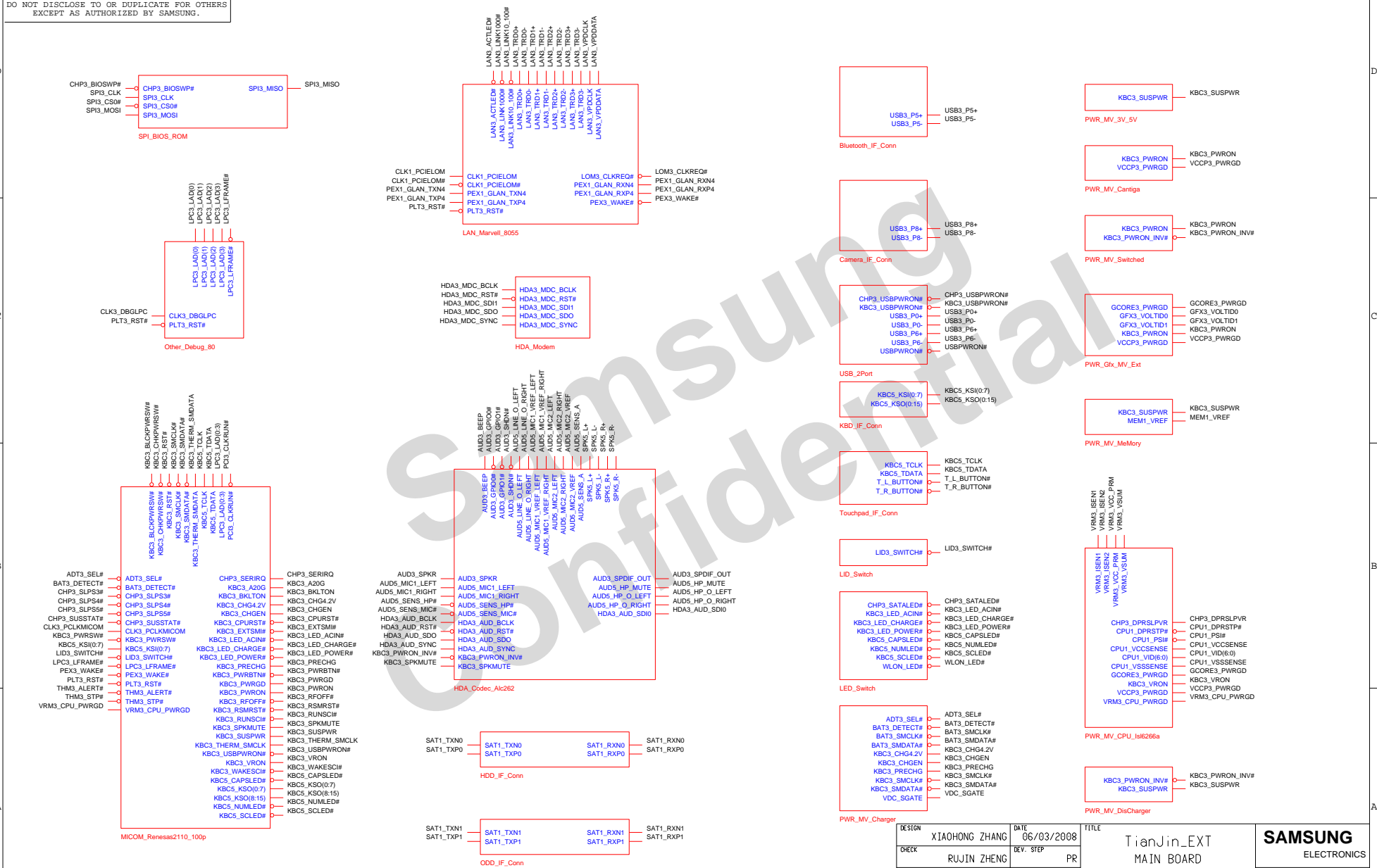


D:/mentor/tianjin/tmp/tianjin_ext_pr_0603

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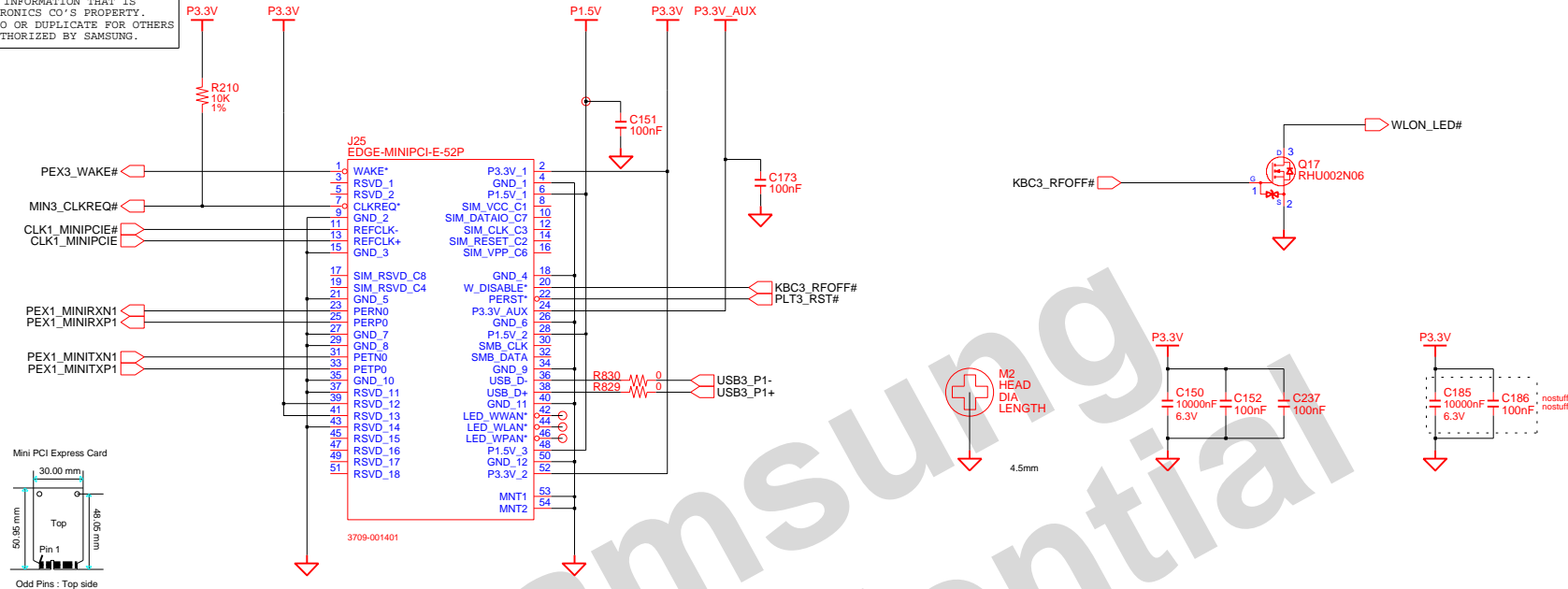


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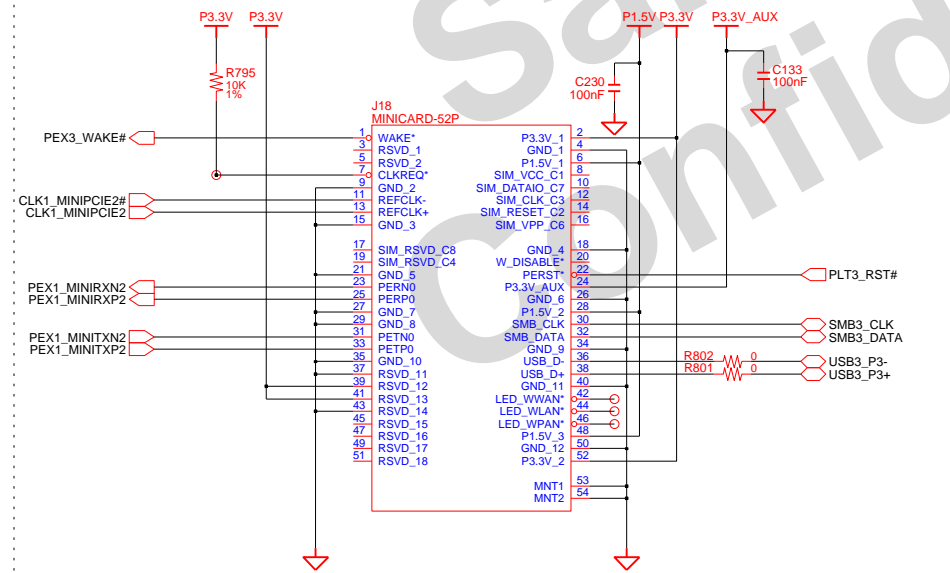


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WLAN, 7mm @ Upper side



ROBSON



ROBSON, 4mm @ lower side

| | | | | | | |
|-------------|----------------|-----------|------------|---------------------------|---------------|---|
| DESIGN | XIAOHONG ZHANG | DATE | 06/03/2008 | TITLE | TianJin_EXT | SAMSUNG ELECTRONICS PART NO. BA41-00897A/898A |
| CHECK | RUJIN ZHENG | DEV. STEP | PR | | MAIN BOARD | |
| APPROVAL | BC LEE | REV | REV 1.0 | | BLOCK | |
| MODULE CODE | | LAST EDIT | | June 03, 2008 11:43:58 AM | PAGE 11 OF 17 | |

| | | | | | | | |
|-------------|----------------|-----------|---------------------------|----------|-----------------------------|-------------------------------|------|
| DRAM | XIAOHONG ZHANG | DATE | 06/03/2008 | TITLE | TianJin_EXT EXPRESS CARD | SAMSUNG ELECTRONICS | |
| CHECK | RUJIN ZHENG | DEV. STEP | PR | | | | |
| APPROVAL | BC LEE | REV | REV 1.0 | | | | |
| MODULE CODE | LAST EDIT | | June 03, 2008 11:43:58 AM | | | | PAGE |
| | | | | PART NO. | | BA41-000897A/898A | |

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USB&RJ11 SUB

[illegible]

SUB_KBC3_PWRSW#

SKQGAB
3404-001052

SW1

LED1
LTST-C193TBKT-AC

R1 150

P3.3V

MT512
RMNT-25-70-1P

POWER SWITCHCH SUB

Put this LED located near PWRSW from ME recommendation
Power LED, Blue color

The schematic diagram illustrates the USB MBD circuit. It features a USB MBD block connected to a B542 ACM2012-900-2P-T inductor. The inductor is connected to a B539 BLM18PG181SN1 inductor, which is in turn connected to a B300 capacitor. The B300 capacitor is connected to a B31 EFCB3225131TS capacitor, which is connected to a C1157 100nF capacitor. The C1157 capacitor is connected to a C280 100nF capacitor, which is connected to a J505 HDR-8P-1R-SMD connector. The connector pins are numbered 1 to 10, with MNT1 and MNT2 labels. The circuit is powered by P5.0V_AUX and connected to USB3_P2+, USB3_P2-, and USBPWWRON# signals.

USB SUB

SUB_USBPWRON#

SUB_USB3_P2+
SUB_USB3_P2-

P5.0V_AUX

J502 HDR-8P-1R-SMD

1
2
3
4
5
6
7
8
9
10

MNT1
MNT2

MT513
RMNT-25-50-1P

PWR_SWITCH_SUB

P3.3V

J4
HDR-6P-1R-SMD

1
2
3
4
5
6

SUB_KBC3_PWRSW#

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

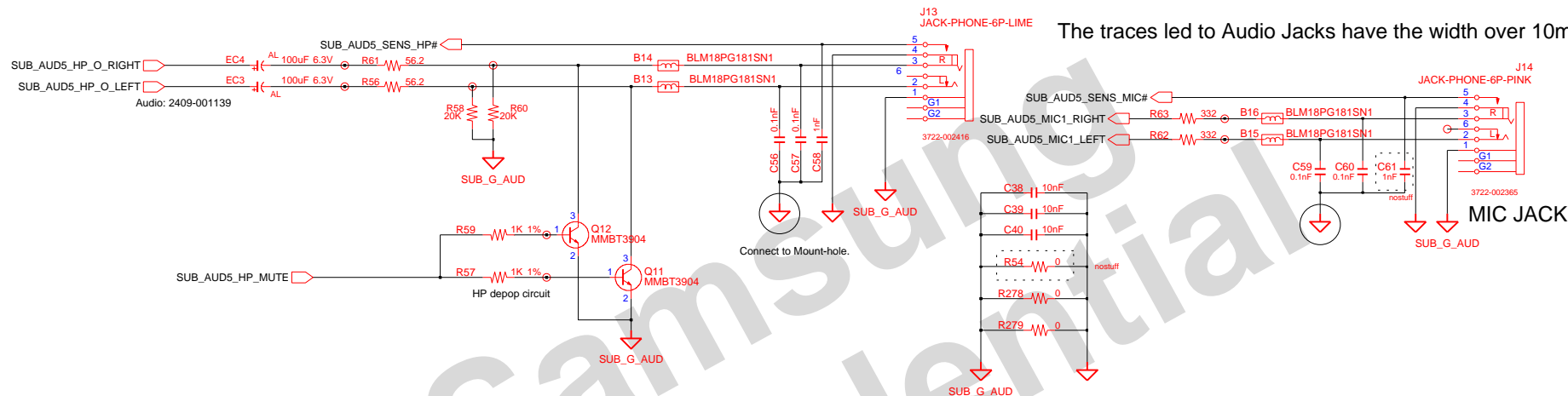
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AUD_SUB

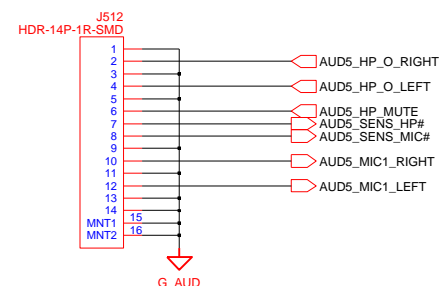
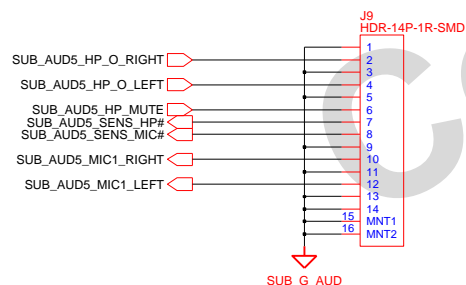
HEADPHONE

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



AUD_SUB

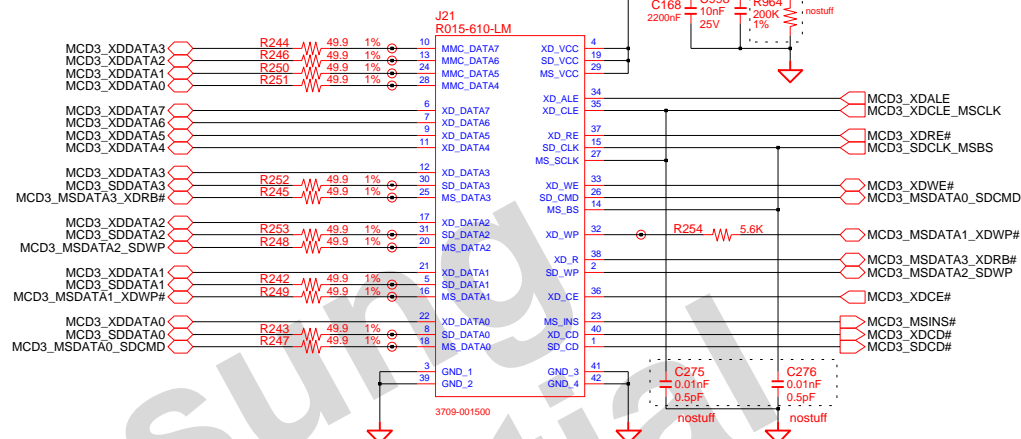
AUD_MBD



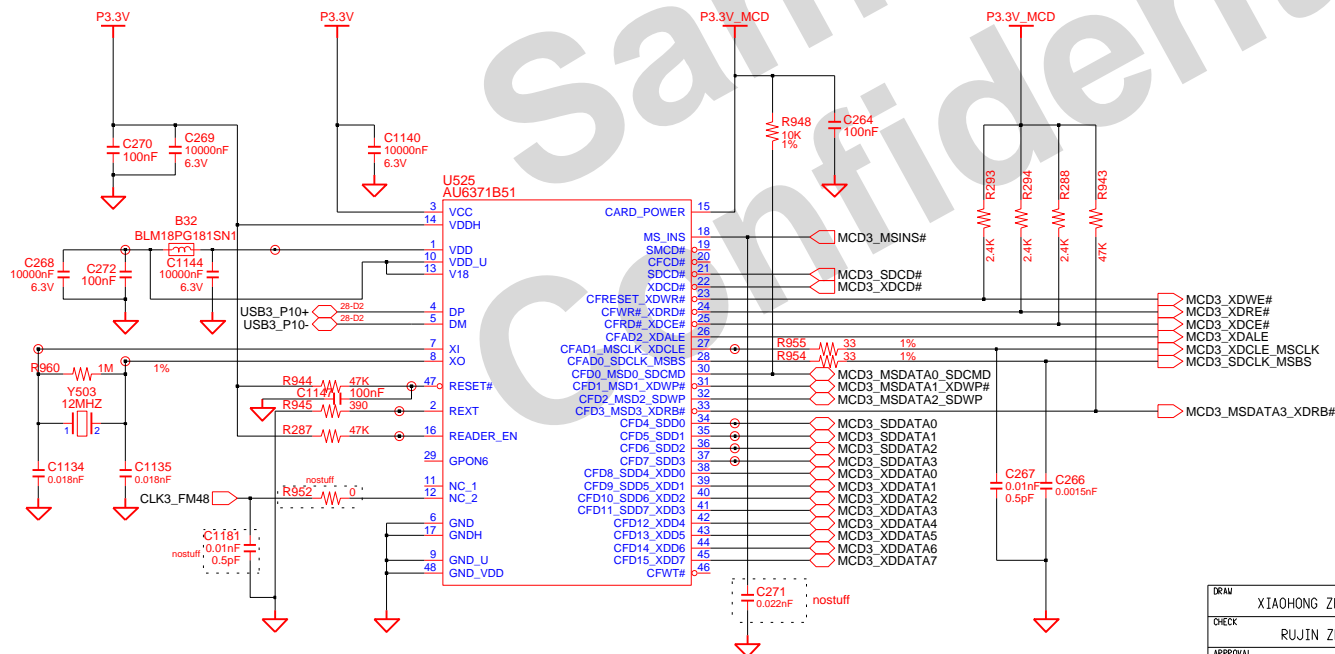
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|---------------------------|----------------|-----------|------------|-------|-------------------|---|
| DRAW | XIAOHONG ZHANG | DATE | 06/03/2008 | TITLE | TianJin_EXT AUDIO | SAMSUNG ELECTRONICS PART NO. BA41-00897A/898A |
| CHECK | RUJIN ZHENG | DEV. STEP | PR | | | |
| APPROVAL | BC LEE | REV | REV 1.0 | | | |
| MODULE CODE | | LAST EDIT | | | | |
| June 03, 2008 11:43:58 AM | | | | | | PAGE 14 OF 17 |

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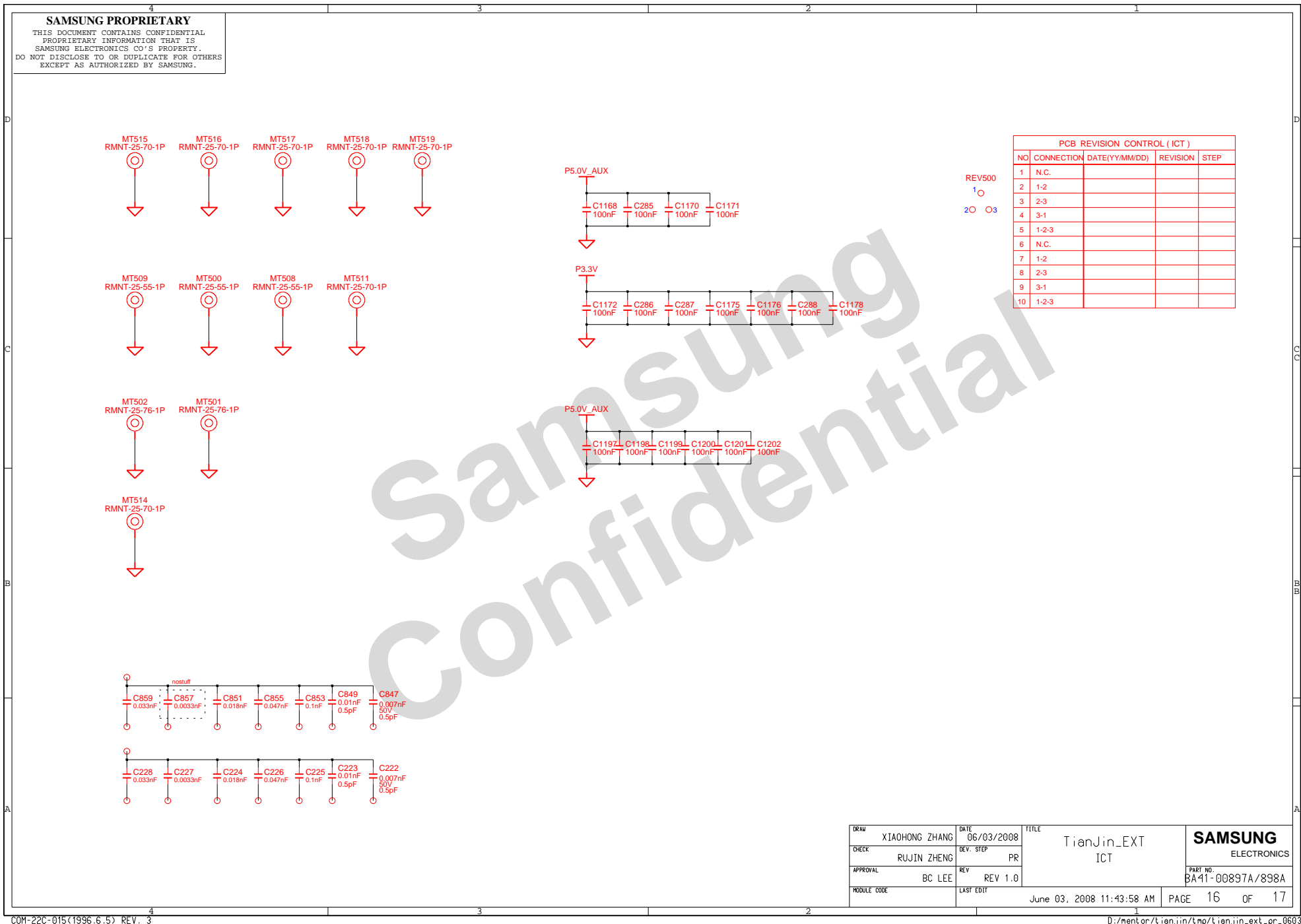
P3.3V_MCD
40mil pattern



| | |
|------------------|---------------------------|
| MSEL5 | SD Write Protec Selection |
| Connected to VCC | High Enable |
| Connected to GND | Low Enable |
| MSEL7 | PLL BASE CLOCK SELECTION |
| Connected to VCC | 12MHz |
| Connected to GND | 48MHz |



| | | | | | | |
|-------------|----------------|-----------|---------------------------|--------|-------------|-------------------------------|
| DRAM | XIAOHONG ZHANG | DATE | 06/03/2008 | TITLE | TianJin_EXT | SAMSUNG ELECTRONICS |
| CHECK | RUJIN ZHENG | DEV. STEP | PR | 7 IN 1 | | |
| APPROVAL | BC LEE | REV | REV 1.0 | | PART NO. | |
| MODULE CODE | | LAST EDIT | June 03, 2008 11:43:58 AM | PAGE | 15 OF 17 | |



| | | | | | | |
|-------------|----------------|-----------|------------|---------------------------|--------------------|---|
| DRAW | XIAOHONG ZHANG | DATE | 06/03/2008 | TITLE | TianJin_EXT ICT | SAMSUNG ELECTRONICS PART NO. BA41-00897A/898A |
| CHECK | RUJIN ZHENG | DEV. STEP | PR | | | |
| APPROVAL | BC LEE | REV | REV 1.0 | | | |
| MODULE CODE | | LAST EDIT | | June 03, 2008 11:43:58 AM | PAGE 16 OF 17 | |

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```

TP197003 CPU1_VCSSENSE
TP197020 CPU1_VID(0)
TP197044 CPU1_VID(1)
TP197056 CPU1_VID(2)
TP197066 CPU1_VID(3)
TP197077 CPU1_VID(4)
TP197088 CPU1_VID(5)
TP197099 CPU1_VID(6)
TP197100 CPU1_VSSENSE
TP197110 CPU2_THERMDA
TP197120 CPU2_THERMDC
TP197130 CPU2_THRMTMPC
TP197730 EXP3_CLKREQ#
TP197740 SUB0_EXP3_CPPE#
TP197750 SUB0_EXP3_CPUB#
TP197760 SUB0_EXP3_PERST#
TP197770 SUB0_EXP3_BACK#
TP197780 FAN0_VID#
TP197790 GCORE3_PWRGD
TP196970 EXP3_CLKREQ#
TP196980 SUB0_EXP3_CPPE#
TP196990 SUB0_EXP3_CPUB#
TP197000 SUB0_EXP3_PERST#

```

TP19631 ○ KBC5_VRON
TP19632 ○ KBC3_WAKESCI#
TP19798 ○ KBC5_KSI(0)
TP19799 ○ KBC5_KSI(1)
TP19800 ○ KBC5_KSI(2)
TP19801 ○ KBC5_KSI(3)
TP19802 ○ KBC5_KSI(4)
TP19803 ○ KBC5_KSI(5)
TP19804 ○ KBC5_KSI(6)
TP19805 ○ KBC5_KSI(7)

```
00039 SUB SUB_PEX3_WAKE#
00040 SUB SUB_PLT3_RST#
00041 SUB SUB_SMB3_CLK
00042 SUB SUB_SMB3_DATA
```

TP20016OG_AUD
TP20017OG_AUD

TP19902_SUBO P1.5V_EXP
TP19903_SUBO P1.5V_EXPTP19850 P5.0V_AUX
TP19851 P5.0V_AUX

TP19826 SUB SUB G AUD

TP19874_SUB P3.3V_AUX
TP19875 P3.3V_AUXTP19878_SUBO P3.3V_AUX_EXP
TP19879_SUBO P3.3V_AUX_EXP

TP19890 P3.3V MCD

TP198930 P3.3V MCD

| | | | | | | | |
|-------------|----------------|-----------|---------------------------|-------|-------------------|-------------------------------|------|
| DRAW | XIAOHONG ZHANG | DATE | 06/03/2008 | TITLE | TianJin_EXT TP | SAMSUNG ELECTRONICS | |
| CHECK | RUJIN ZHENG | DEV. STEP | PR | | | | |
| APPROVAL | BC LEE | REV | REV 1.0 | | | | |
| MODULE CODE | LAST EDIT | | June 03, 2008 11:43:58 AM | | | | PAGE |

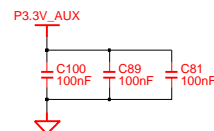
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| FSA BSEL0 | FSB BSEL1 | FSC BSEL2 | HOST CLK |
|--------------|--------------|--------------|----------|
| 0 | 0 | 0 | 266 MHz |
| 0 | 0 | 1 | 333 MHz |
| 0 | 1 | 0 | 200 MHz |
| 0 | 1 | 1 | 400 MHz |
| 1 | 0 | 0 | 133 MHz |
| 1 | 0 | 1 | 100 MHz |
| 1 | 1 | 0 | 166 MHz |
| 1 | 1 | 1 | RSVD |

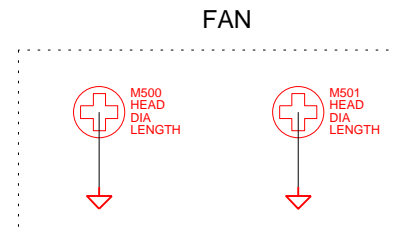
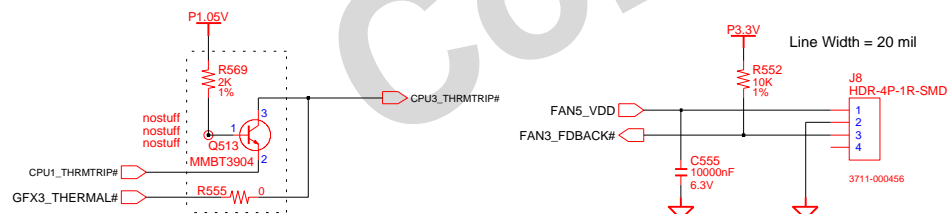
| CLK REQ | DEVICE | SRC PORT |
|-----------|--------------|----------|
| CLK REQ A | SATA | SRC2 |
| CLK REQ B | GMCH | SRC4 |
| CLK REQ E | MINI CARD | SRC6 |
| CLK REQ F | EXP3_CLKREQ# | SRC8 |
| CLK REQ G | LOM3_CLKREQ# | SRC9 |

| | | |
|-------------|----------------|------------------|
| SEL_LCDCLK* | Pin 20/21 | Pin 24/25 |
| LOW | DOT_96/DOT_96# | PEG_CLK/PEG_CLK# |
| HIGH | SRC_0/SRC_0# | 27M & 27M_SS |

This part is 64pin QFN package.

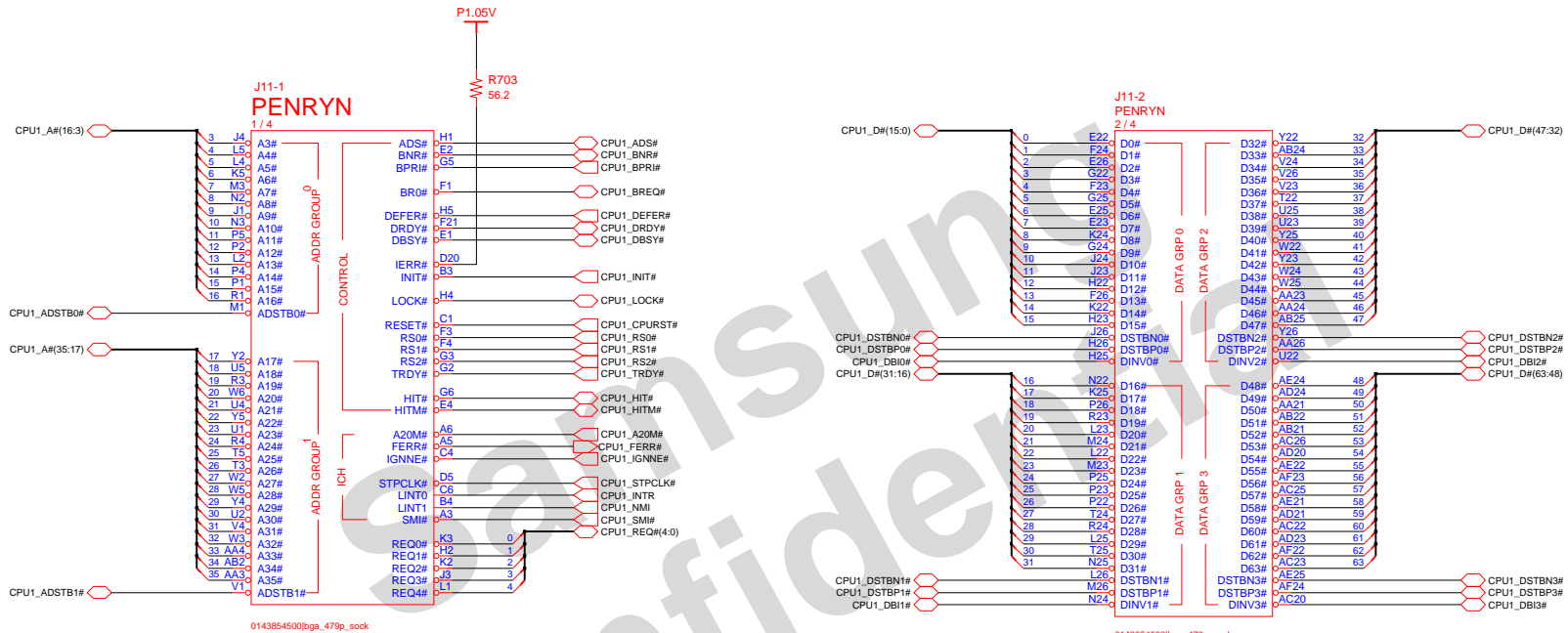


| | | | |
|--------------------------|--|----------------------|-------------------------------|
| DRAW XIAOHONG ZHANG | DATE 06/03/2008 | TITLE TianJin_EXT | SAMSUNG ELECTRONICS |
| CHECK RUJIN ZHENG | DEV. STEP PR | Main_Clock_Circuit | |
| APPROVAL BC LEE | REV REV 1.0 | CK_Clock_505M | |
| MODULE CODE undefined | LAST EDIT June 03, 2008 11:43:58 AM | PAGE 1 OF 1 | |

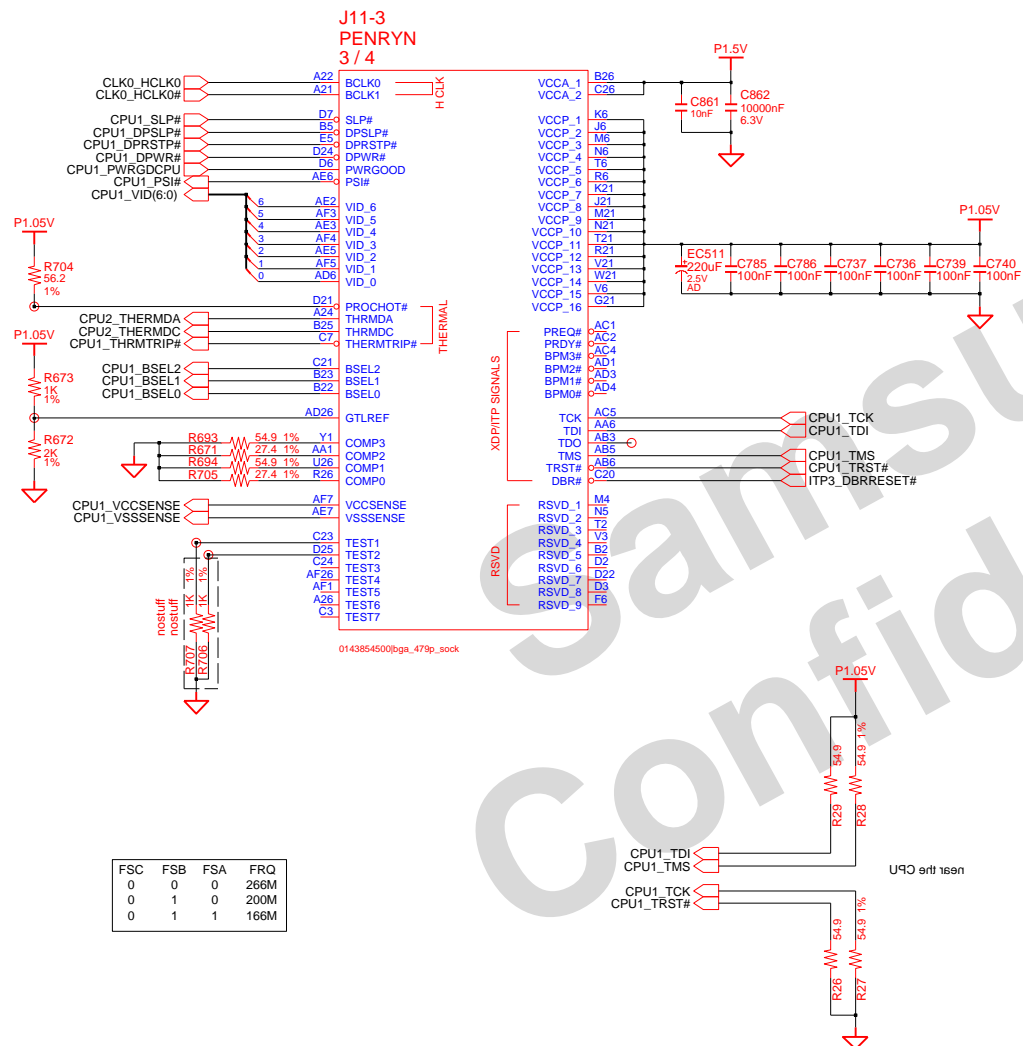


| | | | | | | | |
|-------------|----------------|-----------|------------|-----------------------------|-------------|------------------|------|
| DRAW | XIAOHONG ZHANG | DATE | 06/03/2008 | TITLE | TianJin_EXT | SAMSUNG | |
| CHECK | RUJIN ZHENG | REV. STEP | PR | Thermal_Sensor_SMSC_Emc2102 | ELECTRONICS | | |
| APPROVAL | BC LEE | REV | REV 1.0 | Thermal_Sensor_SMSC_Emc2102 | PART NO. | BA41-00897A/898A | |
| MODULE CODE | LAST EDIT | | | June 03, 2008 11:43:58 AM | PAGE | 1 | OF 1 |

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| | | | | | | |
|-------------|----------------|-----------|---------------------------|-------|------------------------------------|---|
| DRAW | XIAOHONG ZHANG | DATE | 06/03/2008 | TITLE | TianJin_EXT CPU PENRYN (1/3) | SAMSUNG ELECTRONICS PART NO. BA41-00897A/898A |
| CHECK | RUJIN ZHENG | DEV. STEP | PR | | | |
| APPROVAL | BC LEE | REV | REV 1.0 | | | |
| MODULE CODE | undefined | LAST EDIT | June 03, 2008 11:43:58 AM | PAGE | 1 OF 3 | |



| 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 | 1.5000 V | 0 1 0 1 0 0 0 | 1.0000 V | 1 0 1 0 0 0 1 | 0.4975 V |
| 0 0 0 0 0 0 1 | 1.4975 V | 0 1 0 1 0 0 0 | 0.9975 V | 1 0 1 0 0 0 0 | 0.4750 V |
| 0 0 0 0 0 0 1 | 1.4750 V | 0 1 0 1 0 0 1 | 0.9750 V | 1 0 1 0 0 1 1 | 0.4625 V |
| 0 0 0 0 0 1 1 | 1.4625 V | 0 1 0 1 0 1 1 | 0.9625 V | 1 0 1 0 1 0 0 | 0.4500 V |
| 0 0 0 0 1 0 0 | 1.4500 V | 0 1 0 1 0 1 0 | 0.9500 V | 1 0 1 0 1 0 1 | 0.4375 V |
| 0 0 0 0 1 0 1 | 1.4375 V | 0 1 0 1 0 1 1 | 0.9375 V | 1 0 1 0 1 1 0 | 0.4250 V |
| 0 0 0 0 1 1 0 | 1.4250 V | 0 1 1 1 1 1 0 | 0.9250 V | 1 0 1 1 1 1 1 | 0.4125 V |
| 0 0 0 0 1 1 1 | 1.4125 V | 0 1 0 1 1 1 1 | 0.9125 V | 1 0 1 1 1 0 0 | 0.4000 V |
| 0 0 0 1 0 0 0 | 1.4000 V | 0 1 1 0 0 0 0 | 0.9000 V | 1 0 1 1 0 0 1 | 0.3875 V |
| 0 0 0 1 0 0 1 | 1.3875 V | 0 1 1 0 0 0 1 | 0.8875 V | 1 0 1 1 0 1 0 | 0.3750 V |
| 0 0 0 1 0 1 0 | 1.3750 V | 0 1 1 0 0 0 1 | 0.8750 V | 1 0 1 1 0 1 1 | 0.3625 V |
| 0 0 0 1 0 1 1 | 1.3625 V | 0 1 1 0 0 1 1 | 0.8625 V | 1 0 1 1 1 0 0 | 0.3500 V |
| 0 0 0 1 1 0 0 | 1.3500 V | 0 1 1 0 1 0 0 | 0.8500 V | 1 0 1 1 1 0 1 | 0.3375 V |
| 0 0 0 1 1 0 1 | 1.3375 V | 0 1 1 0 1 0 1 | 0.8375 V | 1 0 1 1 1 1 0 | 0.3250 V |
| 0 0 0 1 1 1 0 | 1.3250 V | 0 1 1 0 1 1 0 | 0.8250 V | 0 1 1 1 1 1 1 | 0.3125 V |
| 0 0 0 1 1 1 1 | 1.3125 V | 0 1 1 0 1 1 1 | 0.8125 V | 1 1 0 0 0 0 0 | 0.3000 V |
| 0 0 1 0 0 0 0 | 1.3000 V | 0 1 1 1 0 0 0 | 0.8000 V | 1 1 0 0 0 0 1 | 0.2875 V |
| 0 0 1 0 0 0 1 | 1.2875 V | 0 1 1 1 0 0 1 | 0.7875 V | 1 1 0 0 0 1 0 | 0.2750 V |
| 0 0 1 0 0 1 0 | 1.2750 V | 0 1 1 1 0 1 0 | 0.7750 V | 1 1 0 0 0 1 1 | 0.2625 V |
| 0 0 1 0 0 1 1 | 1.2625 V | 0 1 1 1 0 1 1 | 0.7625 V | 1 1 0 0 1 0 0 | 0.2500 V |
| 0 0 1 0 1 0 0 | 1.2500 V | 0 1 1 1 1 0 0 | 0.7500 V | 1 1 0 0 1 0 1 | 0.2375 V |
| 0 0 1 0 1 0 1 | 1.2375 V | 0 1 1 1 1 0 1 | 0.7375 V | 1 1 0 0 1 1 0 | 0.2250 V |
| 0 0 1 0 1 1 0 | 1.2250 V | 0 1 1 1 1 1 0 | 0.7250 V | 1 1 0 0 1 1 1 | 0.2125 V |
| 0 0 1 0 1 1 1 | 1.2125 V | 0 1 1 1 1 1 1 | 0.7125 V | 1 1 0 1 0 0 0 | 0.2000 V |
| 0 0 1 1 0 0 0 | 1.2000 V | 1 0 0 0 0 0 0 | 0.7000 V | 1 1 0 1 0 0 1 | 0.1875 V |
| 0 0 1 1 0 0 1 | 1.1875 V | 1 0 0 0 0 0 1 | 0.6875 V | 1 1 0 1 0 1 0 | 0.1750 V |
| 0 0 1 1 0 1 0 | 1.1750 V | 1 0 0 0 0 1 0 | 0.6750 V | 1 1 0 1 0 1 1 | 0.1625 V |
| 0 0 1 1 0 1 1 | 1.1625 V | 1 0 0 0 0 1 1 | 0.6625 V | 1 1 0 1 1 0 0 | 0.1500 V |
| 0 0 1 1 1 0 0 | 1.1500 V | 1 0 0 0 0 1 1 | 0.6500 V | 1 1 0 1 1 0 1 | 0.1375 V |
| 0 0 1 1 1 0 1 | 1.1375 V | 1 0 0 0 0 1 1 | 0.6375 V | 1 1 0 1 1 1 0 | 0.1250 V |
| 0 0 1 1 1 1 0 | 1.1250 V | 1 0 0 0 0 1 1 | 0.6250 V | 1 1 0 1 1 1 1 | 0.1125 V |
| 0 0 1 1 1 1 1 | 1.1125 V | 1 0 0 0 1 0 0 | 0.6125 V | 1 1 1 0 0 0 0 | 0.1000 V |
| 0 1 0 0 0 0 0 | 1.1000 V | 1 0 0 0 1 0 0 | 0.6000 V | 1 1 1 0 0 0 1 | 0.0875 V |
| 0 1 0 0 0 0 1 | 1.0875 V | 1 0 0 0 1 0 1 | 0.5875 V | 1 1 1 0 0 1 0 | 0.0750 V |
| 0 1 0 0 0 1 0 | 1.0750 V | 1 0 0 0 1 0 1 | 0.5750 V | 1 1 1 0 0 1 1 | 0.0625 V |
| 0 1 0 0 0 1 1 | 1.0625 V | 1 0 0 0 1 1 0 | 0.5625 V | 1 1 1 0 1 0 0 | 0.0500 V |
| 0 1 0 0 1 0 0 | 1.0500 V | 1 0 0 0 1 1 0 | 0.5500 V | 1 1 1 0 1 0 1 | 0.0375 V |
| 0 1 0 0 1 0 1 | 1.0375 V | 1 0 0 0 1 1 1 | 0.5375 V | 1 1 1 0 1 1 0 | 0.0250 V |
| 0 1 0 0 1 1 0 | 1.0250 V | 1 0 0 0 1 1 1 | 0.5250 V | 1 1 1 0 1 1 1 | 0.0125 V |
| 0 1 0 0 1 1 1 | 1.0125 V | 1 0 0 0 1 1 1 | 0.5125 V | 1 1 1 1 0 0 0 | 0.0000 V |
| | | 1 0 1 0 0 0 0 | 0.5000 V | 1 1 1 1 0 0 1 | 0.0000 V |
| | | | | 1 1 1 1 0 1 0 | 0.0000 V |
| | | | | 1 1 1 1 0 1 1 | |

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

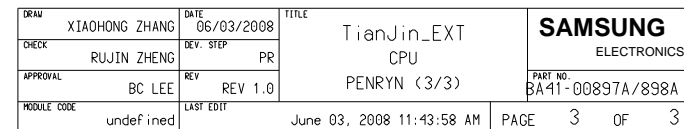
GTLREF : Keep the Voltage divider within 0.5" of the first GTLREF0 pin with Zo=55ohm trace. Minimize coupling of any switching signals to this net.

COMP0,2(COMP1,3) should be connected with $Z_0=27.4\text{ohm}(55\text{ohm})$ trace shorter than $1/2"$ to their respective Banias socket pins.

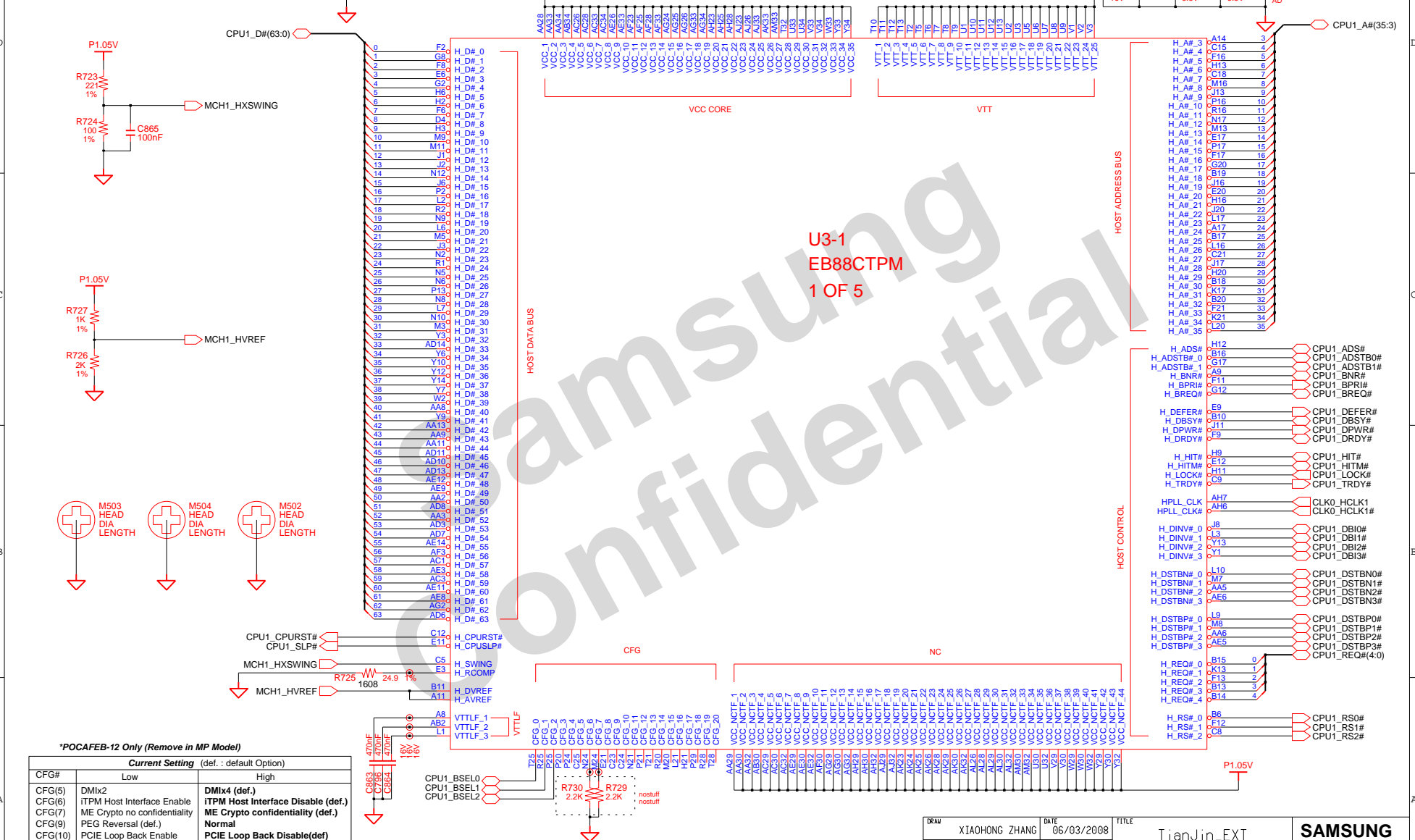
GND test points within 100mil of the VCC/VSSsense at the end of the line. Route the VCC/VSSsense as a $Z_0=55\text{ohm}$ traces with equal length. Observe 3:1 spacing b/w VCC/VSSsense lines and 25mil away (preferred 50mil) from any other signal. And GND via 100mil away from each of the VCC/VSS test point vias.

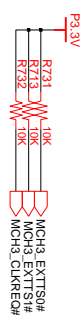
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|-------------|----------------|-----------|---------------------------|-------|------------------------------------|------------------------|------|
| DRAM | XIAOHONG ZHANG | DATE | 06/03/2008 | TITLE | TianJin_EXT CPU PENRYN (2/3) | SAMSUNG ELECTRONICS | |
| CHECK | RUJIN ZHENG | DEV. STEP | PR | | | | |
| APPROVAL | BC LEE | REV | REV 1.0 | | | | |
| MODULE CODE | undefined | LAST EDIT | June 03, 2008 11:43:58 AM | | | | PAGE |

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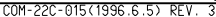
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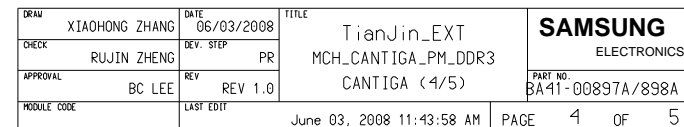




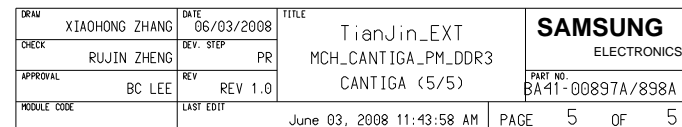
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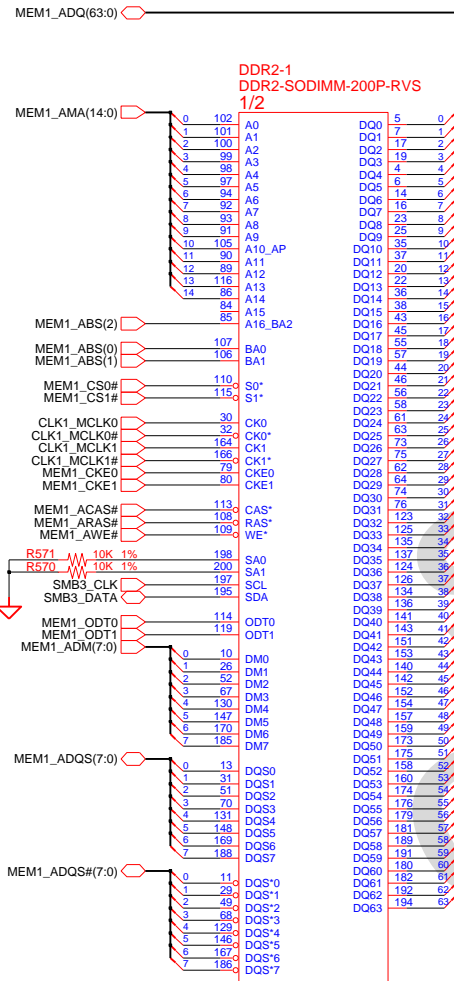
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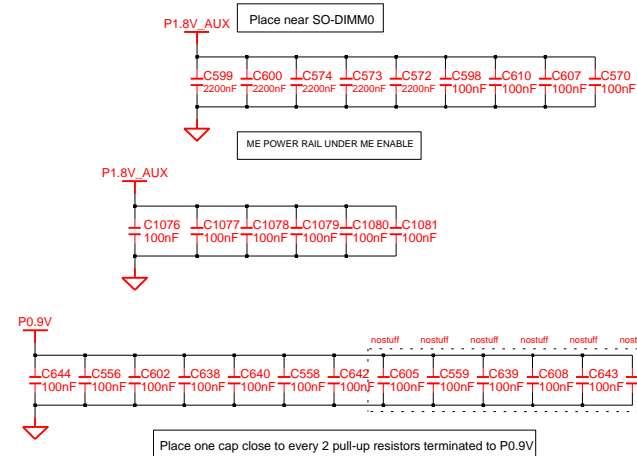
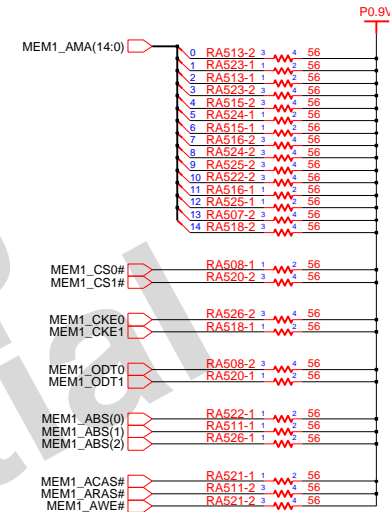
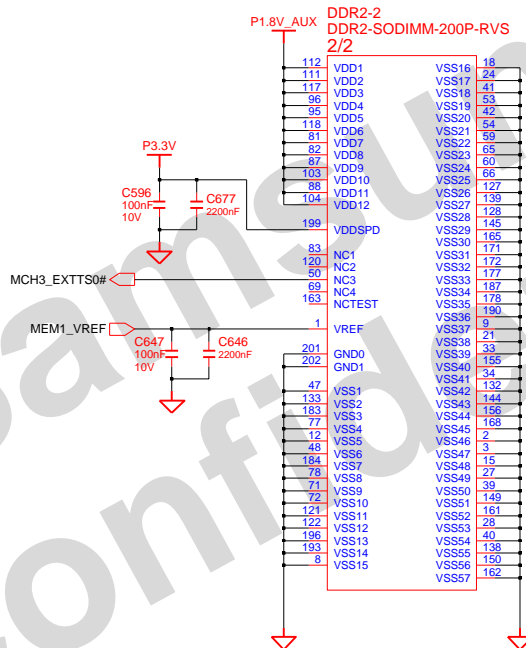
DDR SO-DIMM #0

Height : 5.2mm (Reverse)



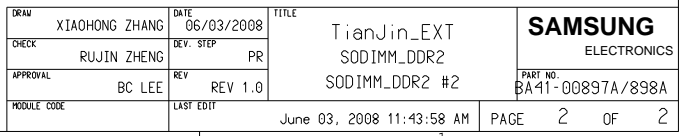
DDR2-1
DDR2-SODIMM-200P-RVS
1/2

P1.8V_AUX
DDR2-2
DDR2-SODIMM-200P-RVS
2/2



| | | | | | | |
|-------------|----------------|-----------|------------|---------------------------|----------------|---|
| DRAW | XIAOHONG ZHANG | DATE | 06/03/2008 | TITLE | TianJin_EXT | SAMSUNG ELECTRONICS PART NO. BA41-00897A/898A |
| CHECK | RUJIN ZHENG | DEV. STEP | PR | | SODIMM_DDR2 | |
| APPROVAL | BC LEE | REV | REV 1.0 | | SODIMM_DDR2 #1 | |
| MODULE CODE | | LAST EDIT | | June 03, 2008 11:43:58 AM | PAGE 1 OF 2 | |

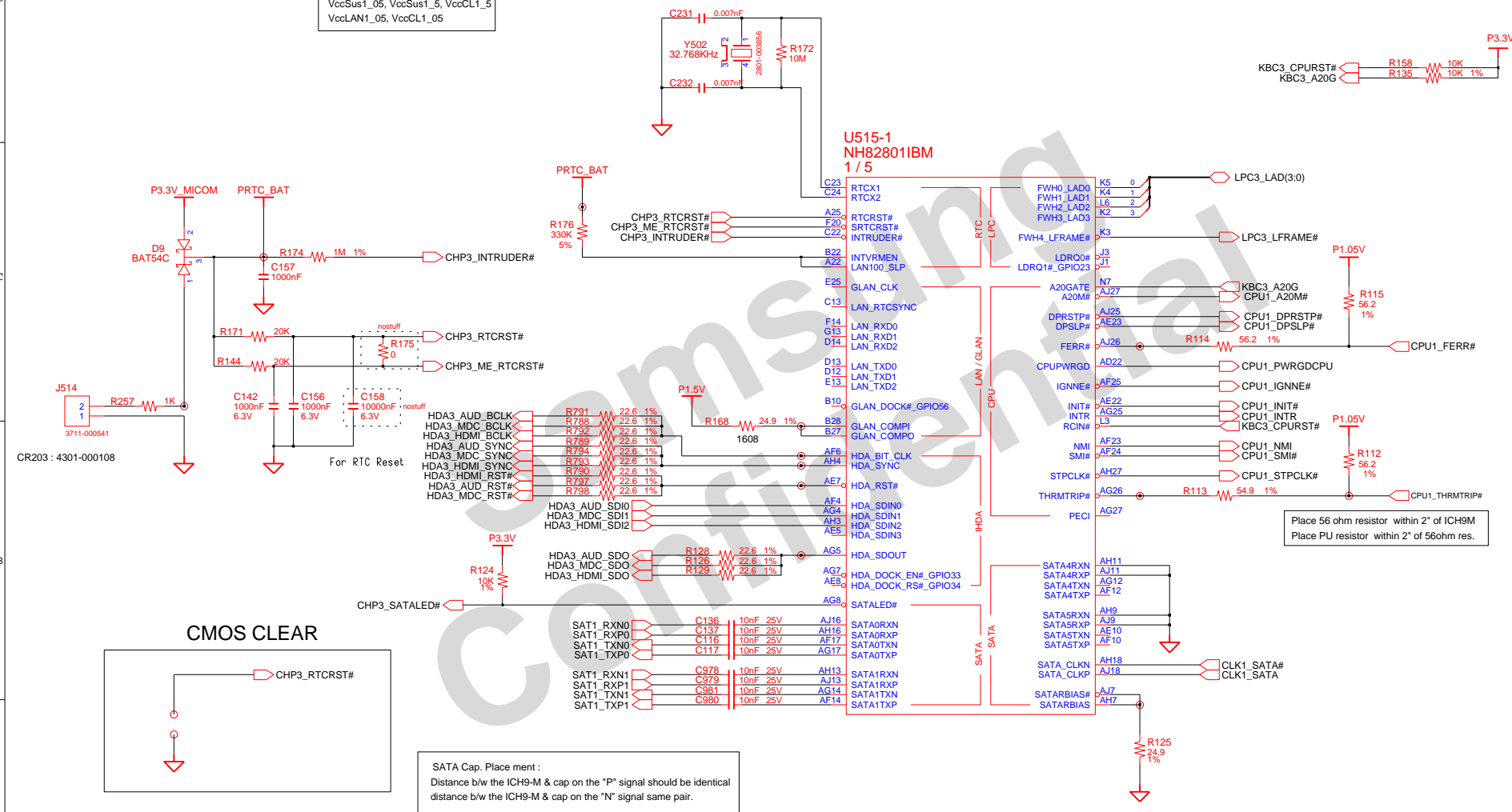
DDR SO-DIMM #1
Height : 9.2mm (Reverse)



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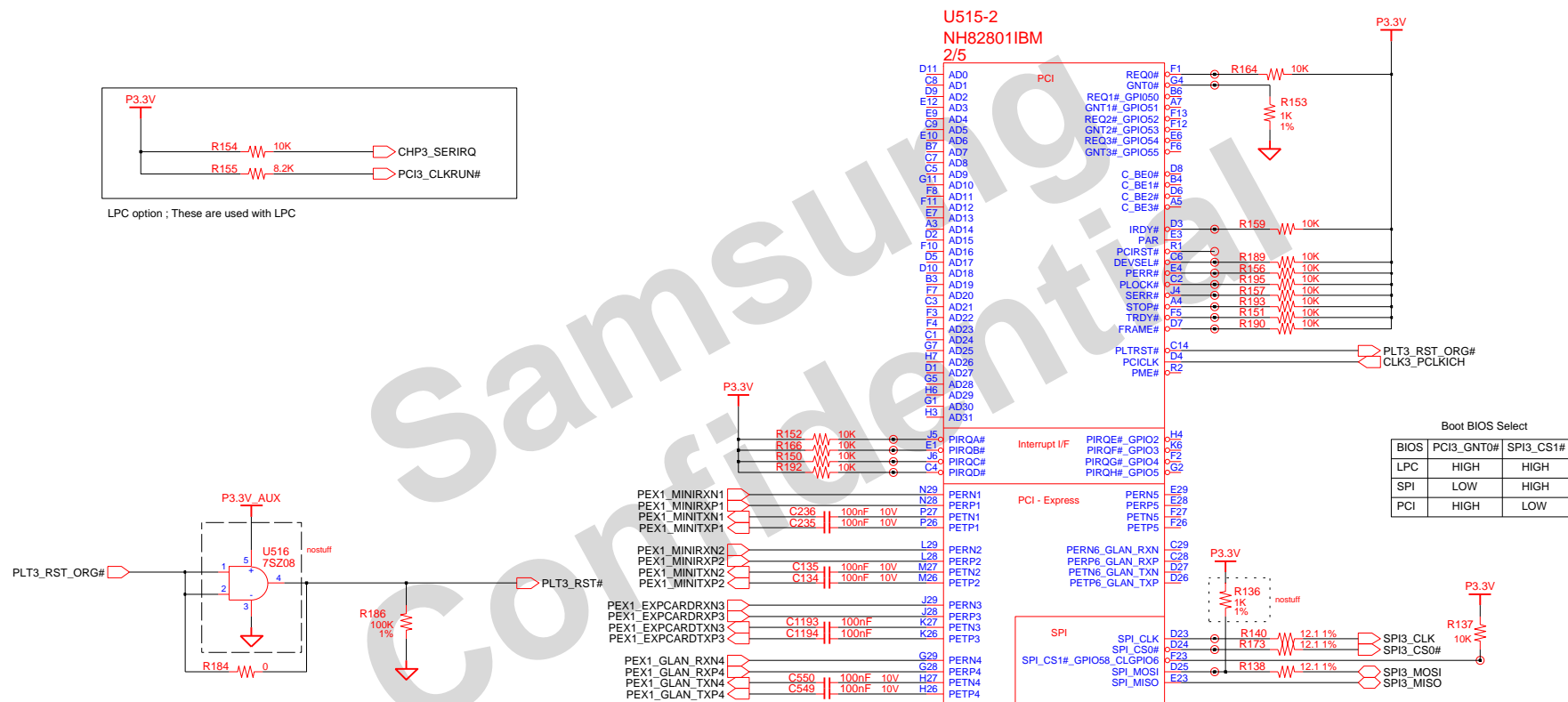
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| Internal VR Strap | |
|---------------------------------|---------|
| INTVRMEN | Pull up |
| VccSus1_05, VccSus1_5, VccCL1_5 | |
| VccLAN1_05, VccCL1_05 | |

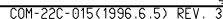


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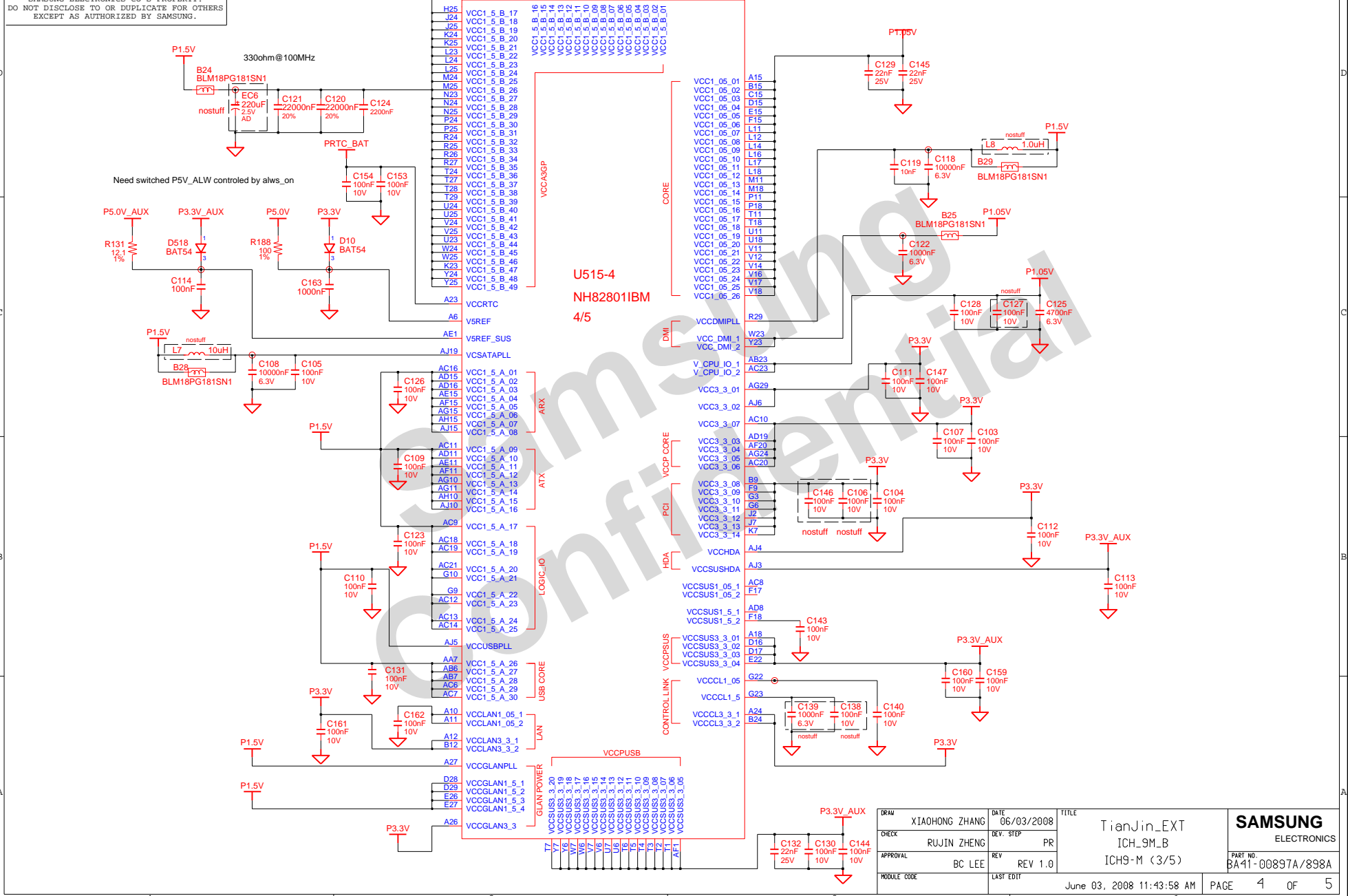
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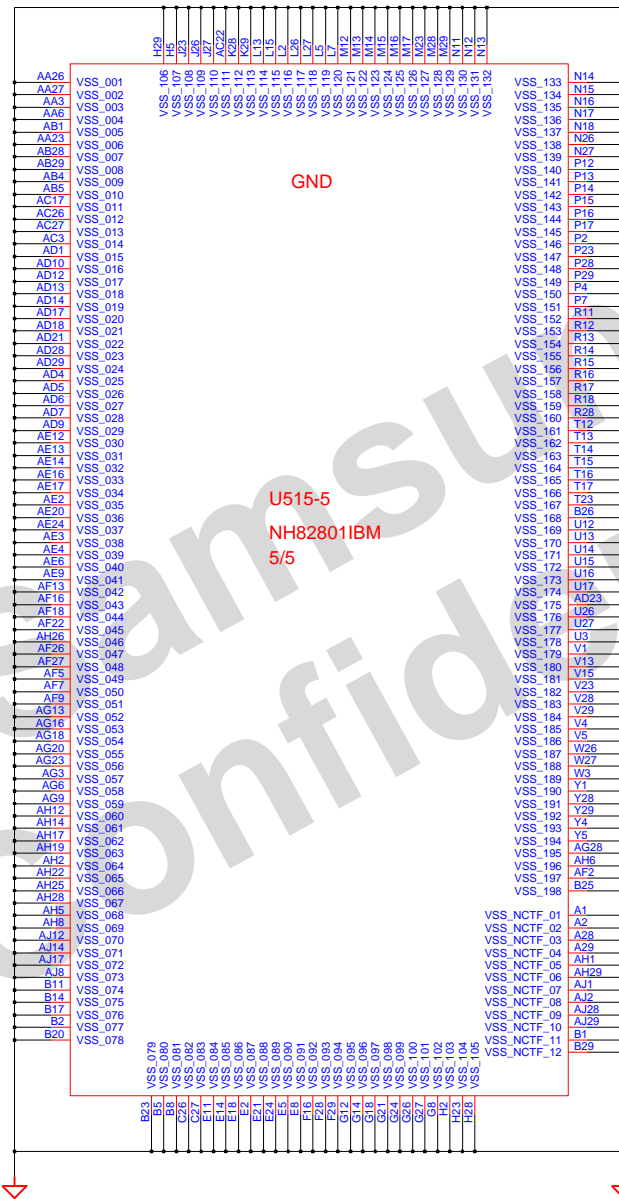
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|-------------|----------------|-----------|---------------------------|-------|---|------------------------------|
| DRAW | XIAOHONG ZHANG | DATE | 06/03/2008 | TITLE | TianJin_EXT ICH_9M_B ICH9-M (2/5) | SAMSUNG ELECTRONICS |
| CHECK | RUJIN ZHENG | DEV. STEP | PR | | | PART NO. BA41-00897A/898A |
| APPROVAL | BC LEE | REV | REV 1.0 | | | |
| MODULE CODE | undefined | LAST EDIT | June 03, 2008 11:43:58 AM | PAGE | 2 OF 5 | |



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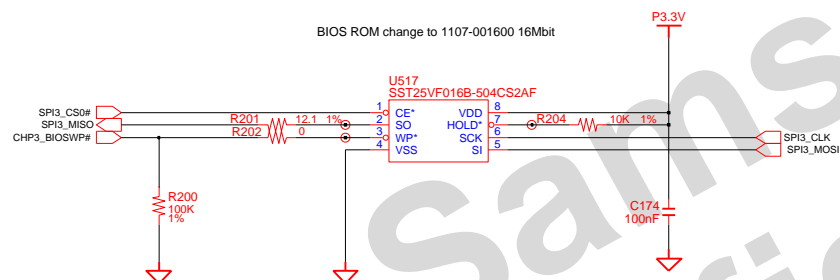
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| | | | | | | |
|-------------|----------------|-----------|---------------------------|-------|--------------|---|
| DRAW | XIAOHONG ZHANG | DATE | 06/03/2008 | TITLE | TianJin_EXT | SAMSUNG ELECTRONICS PART NO. BA41-00897A/898A |
| CHECK | RUJIN ZHENG | DEV. STEP | PR | | ICH_9M_B | |
| APPROVAL | BC LEE | REV | REV 1.0 | | ICH9-M (5/5) | |
| MODULE CODE | | LAST EDIT | June 03, 2008 11:43:58 AM | PAGE | 5 OF 5 | |

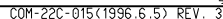
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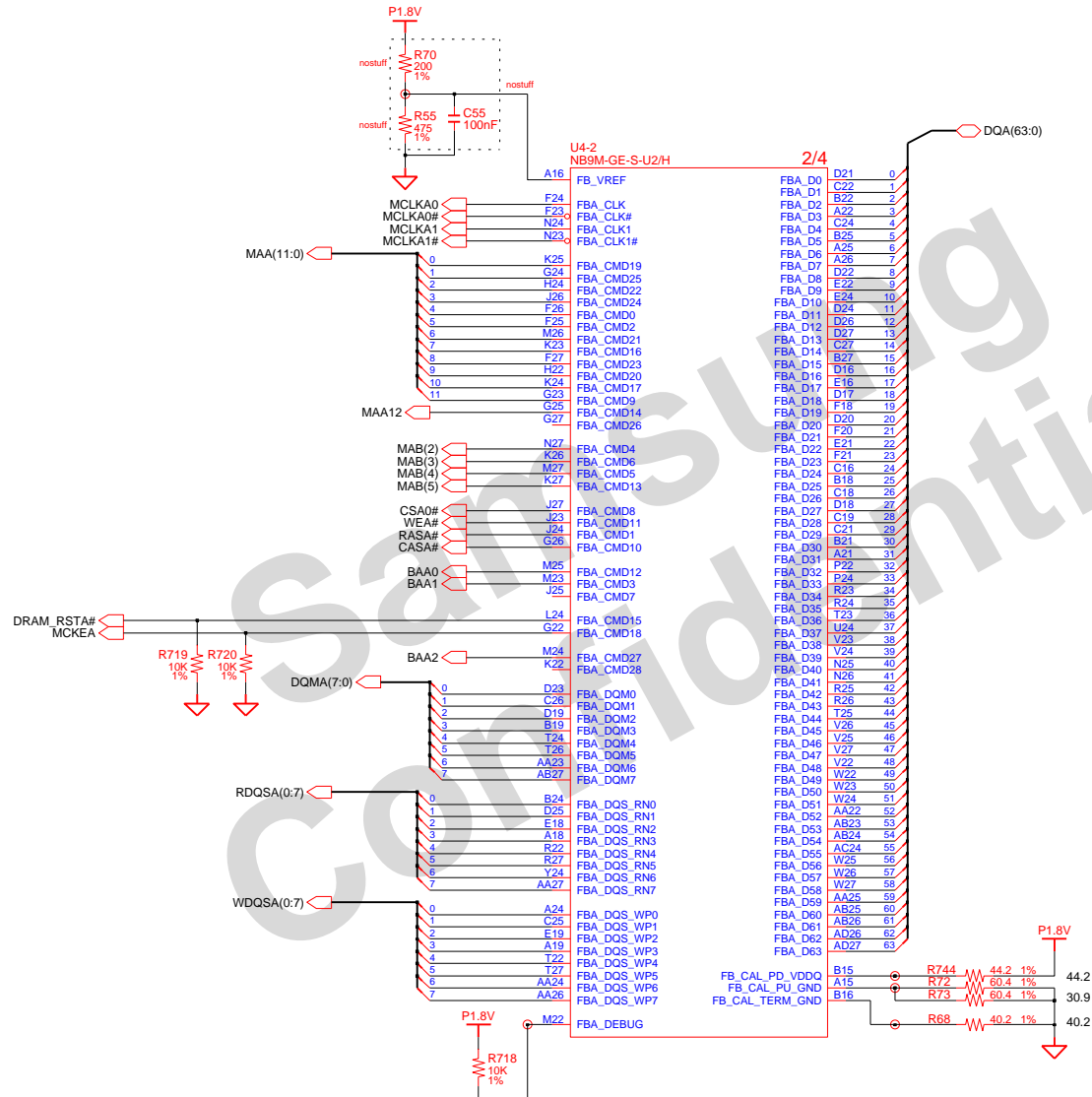


- | | | | |
|----|---|----|---------------------------------|
| 02 | VERIFY REAL MODE | 66 | CONFIGURE ADVANCE CACHE REG. |
| 03 | DISABLE NMI | 6A | DISPLAY EXTERNAL CACHE SIZE |
| 04 | GET CPU TYPE | 6C | DISPLAY SHADOW MESSAGE |
| 06 | INIT. SYSTEM H/W | 6E | DISPLAY NON-DISPOSABLE SEGMENT |
| 08 | 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 COPROCESSOR 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 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 |

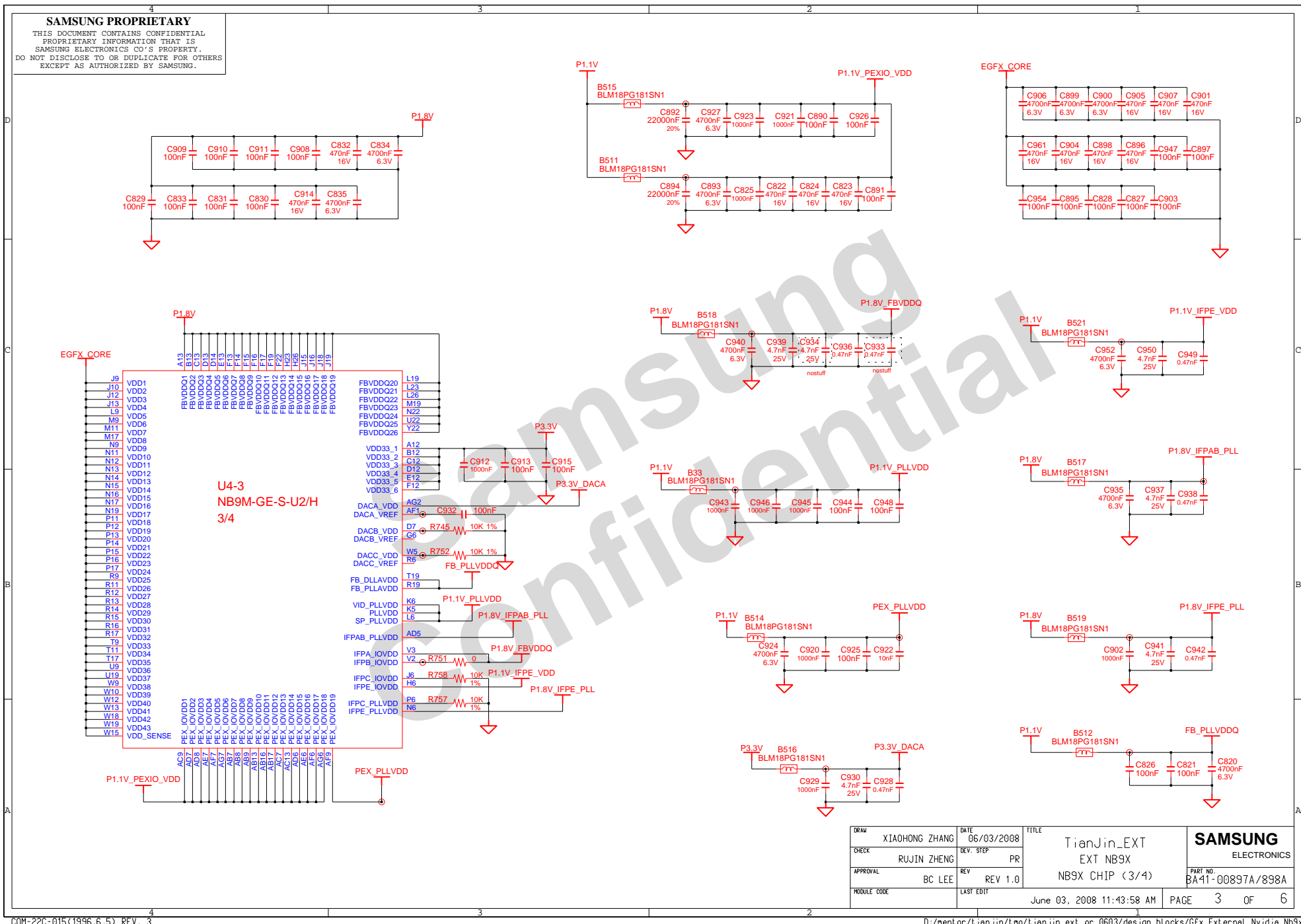
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|---------------------------|----------------|-----------|------------|-------|--------------|------------------------|
| DRAW | XIAOHONG ZHANG | DATE | 06/03/2008 | TITLE | TianJin_EXT | SAMSUNG ELECTRONICS |
| CHECK | RUJIN ZHENG | DEV. STEP | PR | | SPI.BIOS.ROM | |
| APPROVAL | BC LEE | REV | REV 1.0 | | SPI.BIOS.ROM | |
| MODULE CODE | | LAST EDIT | | | | |
| June 03, 2008 11:43:58 AM | | | | | | PAGE 1 OF 1 |



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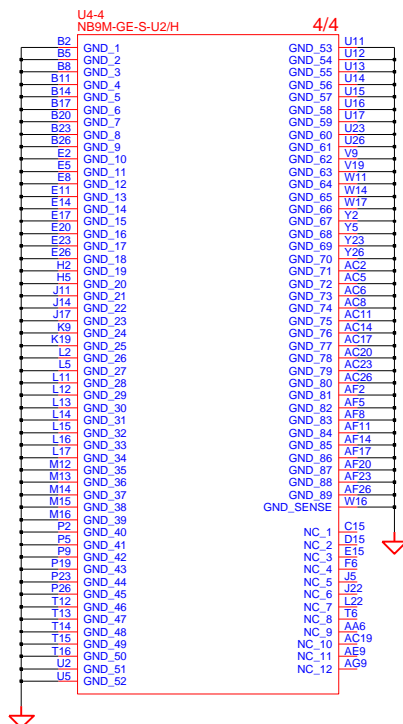
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|-------------|----------------|-----------|---------------------------|-------|--|------------------------------|
| DRAW | XIAOHONG ZHANG | DATE | 06/03/2008 | TITLE | TianJin_EXT EXT NB9X NB9X CHIP (2/4) | SAMSUNG ELECTRONICS |
| CHECK | RUJIN ZHENG | DEV. STEP | PR | | | PART NO. BA41-00897A/898A |
| APPROVAL | BC LEE | REV | REV 1.0 | | | |
| MODULE CODE | | LAST EDIT | June 03, 2008 11:43:58 AM | PAGE | 2 OF 6 | |



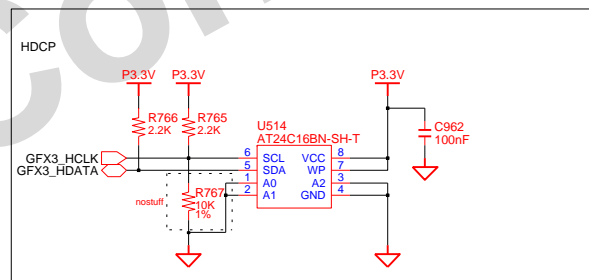
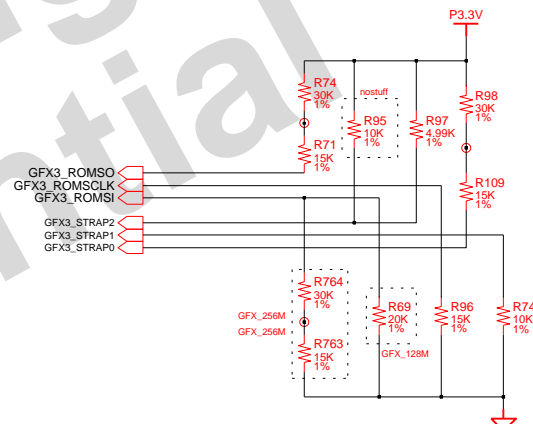
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| Pin | Description | Activate |
|----------|------------------------|-------------------------|
| GPIO(0) | DVI detect | High |
| GPIO(1) | TV detect | Low |
| GPIO(2) | PWM Brightness control | High |
| GPIO(3) | LCD VDD on enable | High |
| GPIO(4) | Backlight on/off | High |
| GPIO(5) | GPU VID0 | High = 1.0V, Low = 1.1V |
| GPIO(6) | GPU VID1 | NC |
| GPIO(7) | GPU VID2 or Mem VID | NC |
| GPIO(8) | Thermal diode Alert | LOW |
| GPIO(9) | Fan control | NC |
| GPIO(10) | Memory VREF switch | NC |
| GPIO(11) | SLI Rater sync | HIGH |
| GPIO(12) | AC Power dection input | NC |
| GPIO(13) | Power supply control | NC |
| GPIO(14) | Power supply control | NC |
| GPIO(15) | HDMI Detect | High |
| GPIO(16) | DP Detect | High |

| Strap option | Bit 3 | Bit 2 | Bit 1 | Bit 0 |
|----------------|-----------|-----------|---------------------------|-----------|
| ROM_SO | XCLK_27 | TVMODE[2] | TVMODE[1] | TVMODE[0] |
| ROM_SCLK | DEVID[4] | VENID | CLK_CFG | PLL_TERM |
| ROM_SI | RAMCFG[3] | RAMCFG[2] | RAMCFG[1] | RAMCFG[0] |
| STRAP2 | DEVID[3] | DEVID[2] | DEVID[1] | DEVID[0] |
| STRAP1 | PADCFG[3] | PADCFG[2] | PADCFG[1] | PADCFG[0] |
| STRAP0 | USER[3] | USER[2] | USER[1] | USER[0] |
| | | | | |
| Resistor value | PU to VDD | PD to GND | XCLK27 = 1 27MHz | |
| 5K ohm | 1000 | 0000 | RAM CFG (SEC) | |
| 10 Kohm | 1001 | 0001 | 0011 512Mbit 0111 256Mbit | |
| 15K ohm | 1010 | 0010 | USER[3:0]=1111 for EDID | |
| 20K ohm | 1011 | 0011 | PADCFG[3:0]=0001 of NP | |
| 25K ohm | 1100 | 0100 | NB9M-GS:0x06E9 (01001) | |
| 30K ohm | 1101 | 0101 | NB9M-GS:0x06E8 (01000) | |
| 35K ohm | 1110 | 0110 | NB9P-GS:0x0649 (01001) | |
| 45K ohm | 1111 | 0111 | NB9P-GS:0x0406 (00110) | |
| | | | NB9P-GE2:0x07?? (0?????) | |



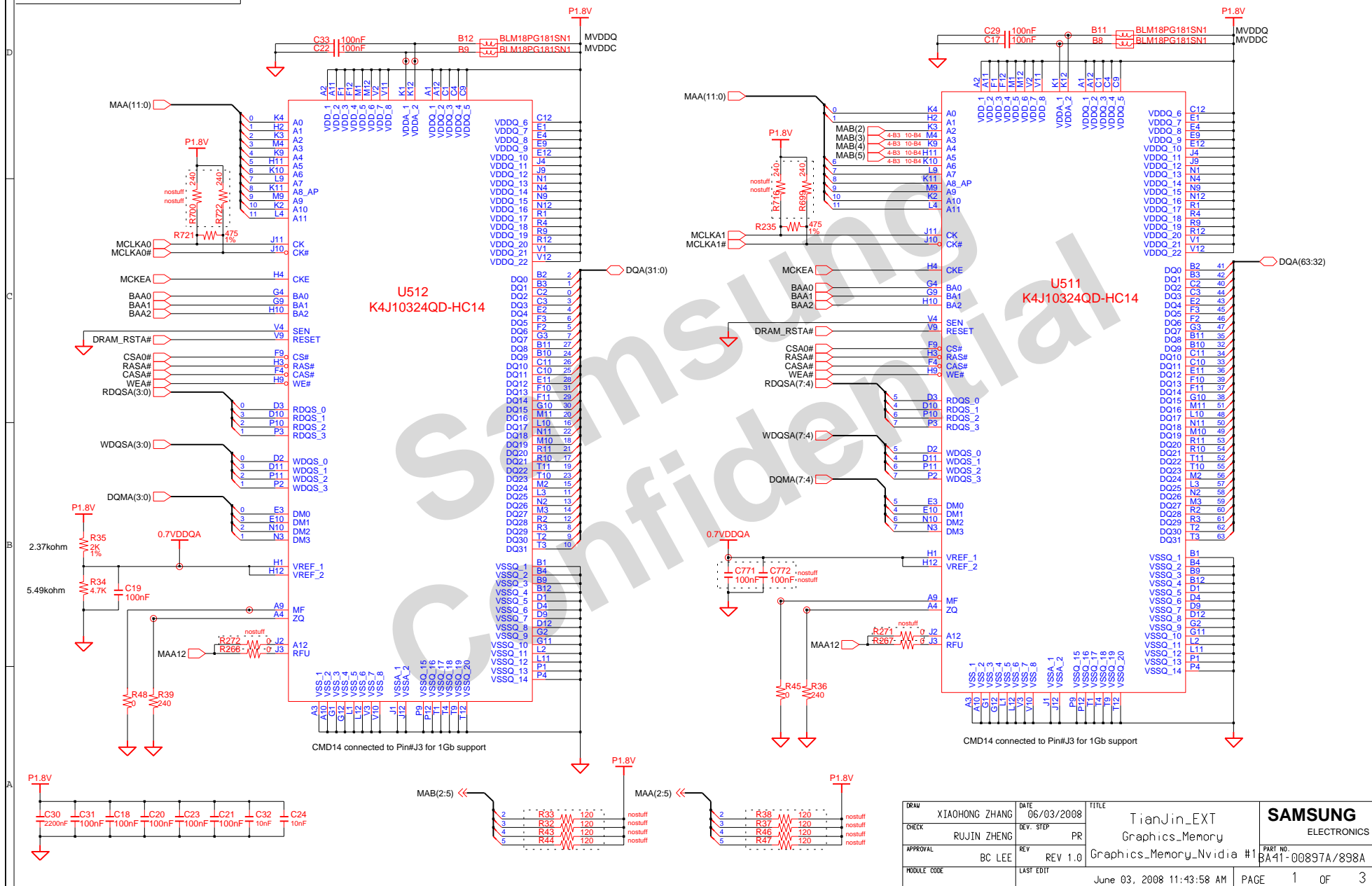
| | Bit3 | Bit2 | Bit1 | Bit0 |
|--------|------|------|------|------|
| ROMSO | 1 | 1 | 1 | 1 |
| SCLK | 0 | 0 | 1 | 0 |
| SI | 0 | 0 | 0 | 1 |
| Strap2 | 1 | 0 | 0 | 1 |
| Strap1 | 0 | 0 | 0 | 1 |
| Strap0 | 1 | 1 | 1 | 1 |



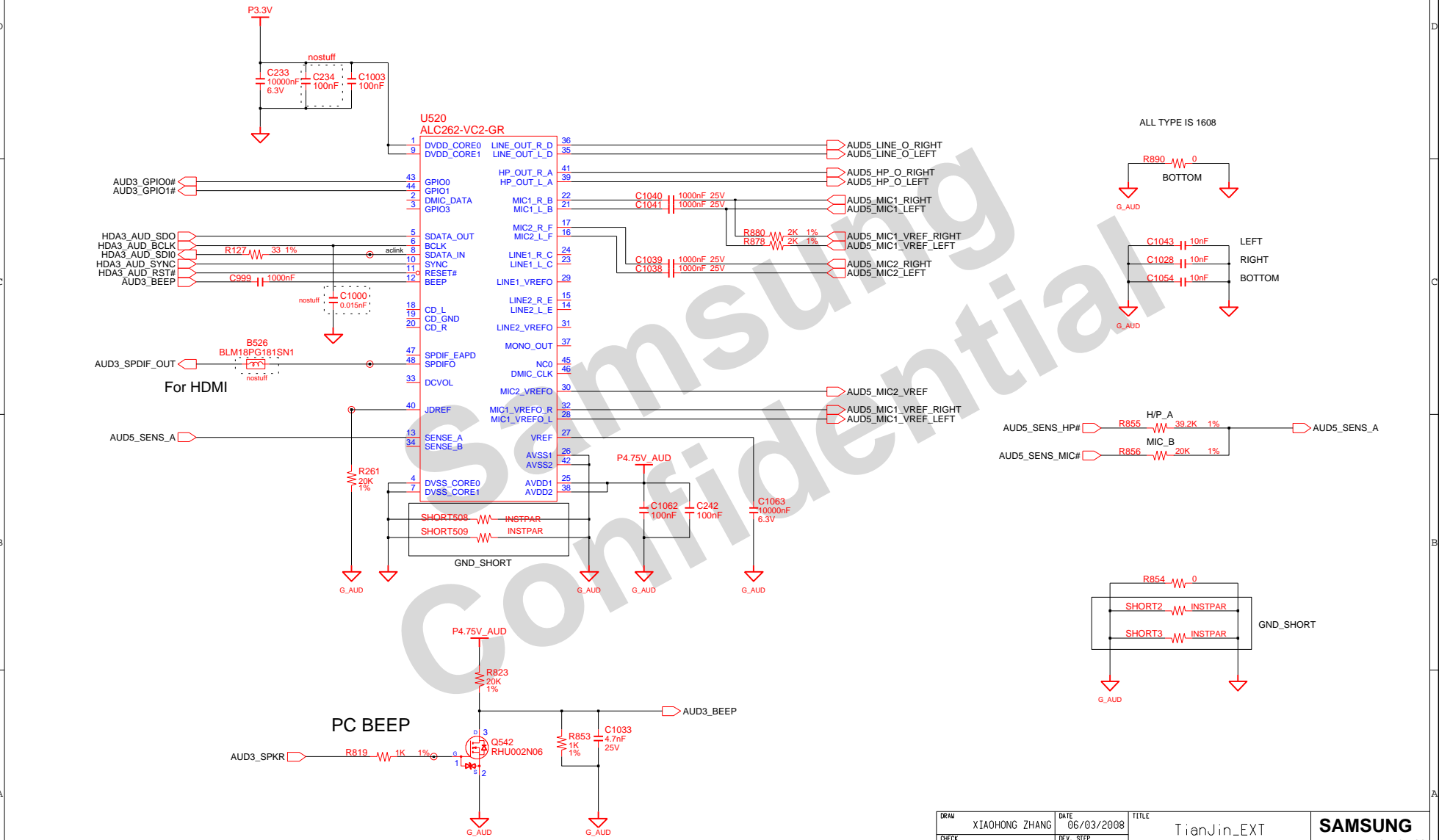
PU is for I2C ROM (AT24C16B, A0-A2 = 000)
PD is for Crypto ROM

| | | | | | | |
|---------------------------|----------------|-----------|------------|-------|-----------------|-------------------------------|
| DRAW | XIAOHONG ZHANG | DATE | 06/03/2008 | TITLE | TianJin_EXT | SAMSUNG ELECTRONICS |
| CHECK | RUJIN ZHENG | DEV. STEP | PR | | EXT NB9X | |
| APPROVAL | BC LEE | REV | REV 1.0 | | NB9X CHIP (4/4) | |
| MODULE CODE | | LAST EDIT | | | | |
| June 03, 2008 11:43:58 AM | | | | | | PART NO. BA41-00897A/898A |
| PAGE 4 OF 6 | | | | | | |

A-channel

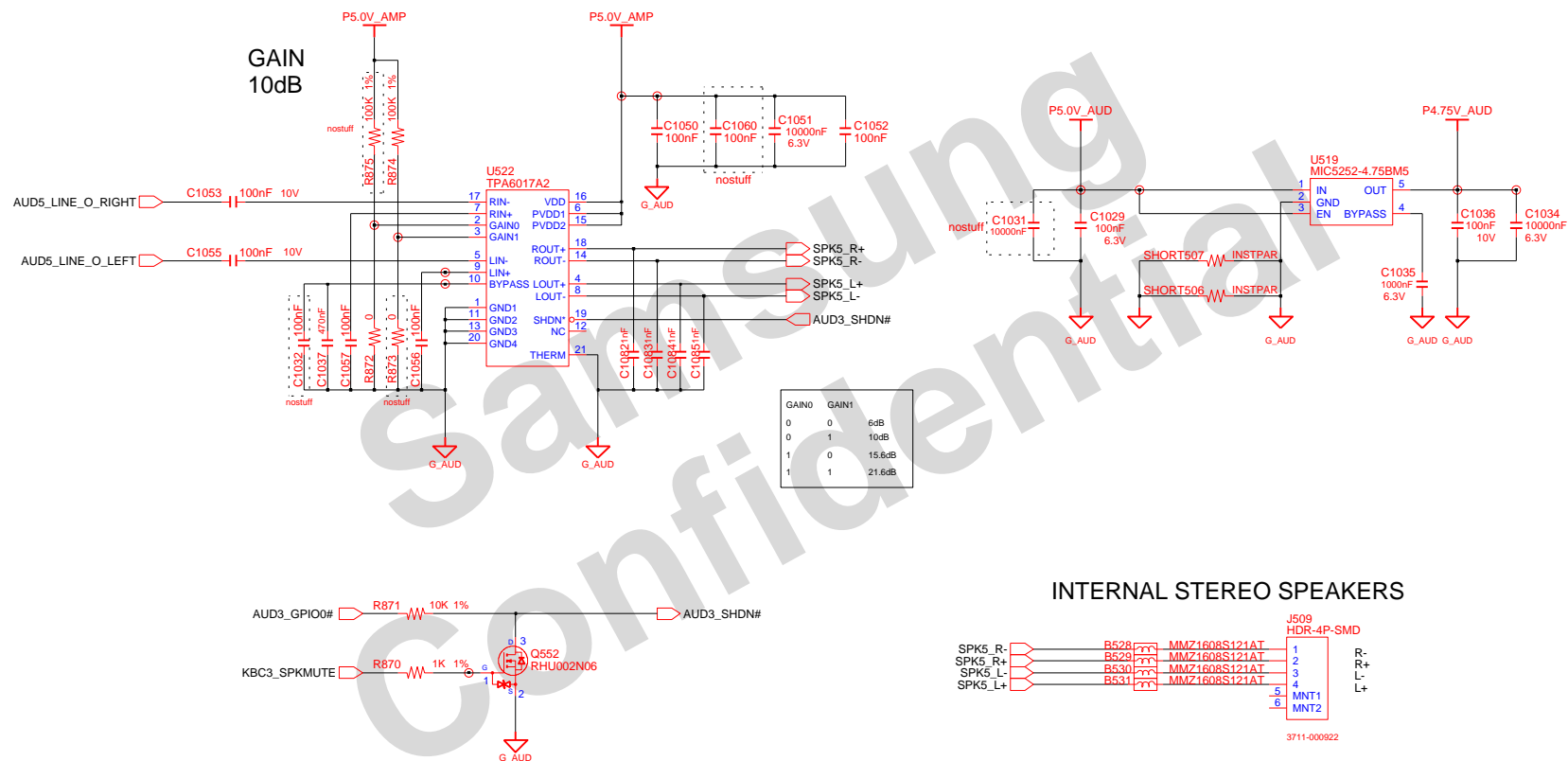


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| | | | | | | |
|-------------|----------------|-----------|---------------------------|-------|---------------------|---|
| DRAW | XIAOHONG ZHANG | DATE | 06/03/2008 | TITLE | TianJin_EXT | SAMSUNG ELECTRONICS PART NO. BA41-00897A/898A |
| CHECK | RUJIN ZHENG | DEV. STEP | PR | | HDA_Codec_Alc262 | |
| APPROVAL | BC LEE | REV | REV 1.0 | | HDA_Codec_Alc262 #1 | |
| MODULE CODE | undefined | LAST EDIT | June 03, 2008 11:43:58 AM | PAGE | 1 OF 5 | |

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SPK5_R- B528 MMZ1608S121AT 1

SPK5_R+ B529 MMZ1608S121AT 2

SPK5_L- B530 MMZ1608S121AT 3

SPK5_L+ B531 MMZ1608S121AT 4

5 MNT1

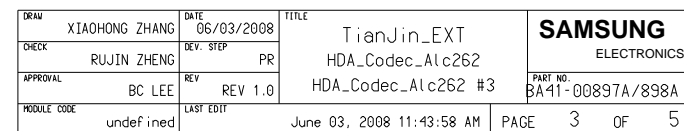
6 MNT2

J509 HDR-4P-SMD

3711-000922

| | | | | | | | |
|-------------|----------------|-----------|------------|---------------------------|---------------------------------|-------------------------------|---------------------|
| DRAM | XIAOHONG ZHANG | DATE | 06/03/2008 | TITLE | TianJin_EXT HDA_Codec_Alc262 | SAMSUNG ELECTRONICS | |
| CHECK | RUJIN ZHENG | DEV. STEP | PR | | | | HDA_Codec_Alc262 |
| APPROVAL | BC LEE | REV | REV 1.0 | | | | HDA_Codec_Alc262 #2 |
| MODULE CODE | | LAST EDIT | | | | | |
| | | | | June 03, 2008 11:43:58 AM | PAGE | 2 OF 5 | |

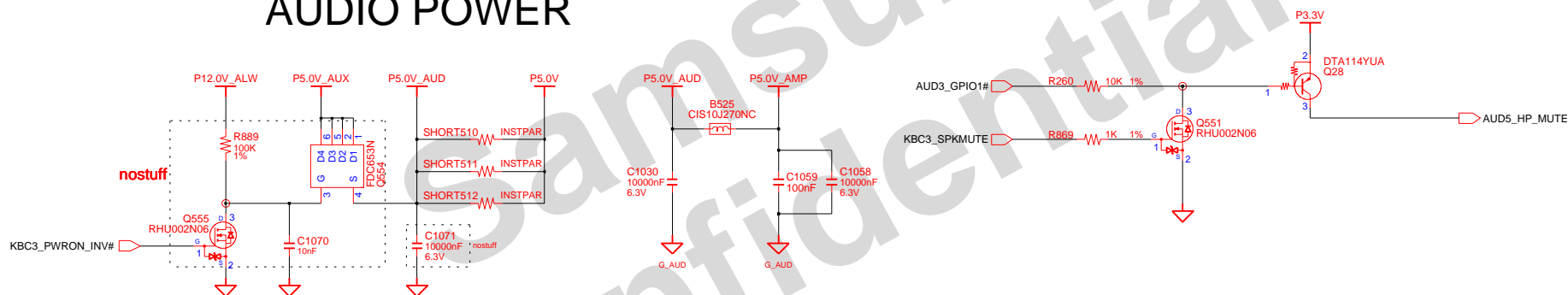
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AUDIO POWER

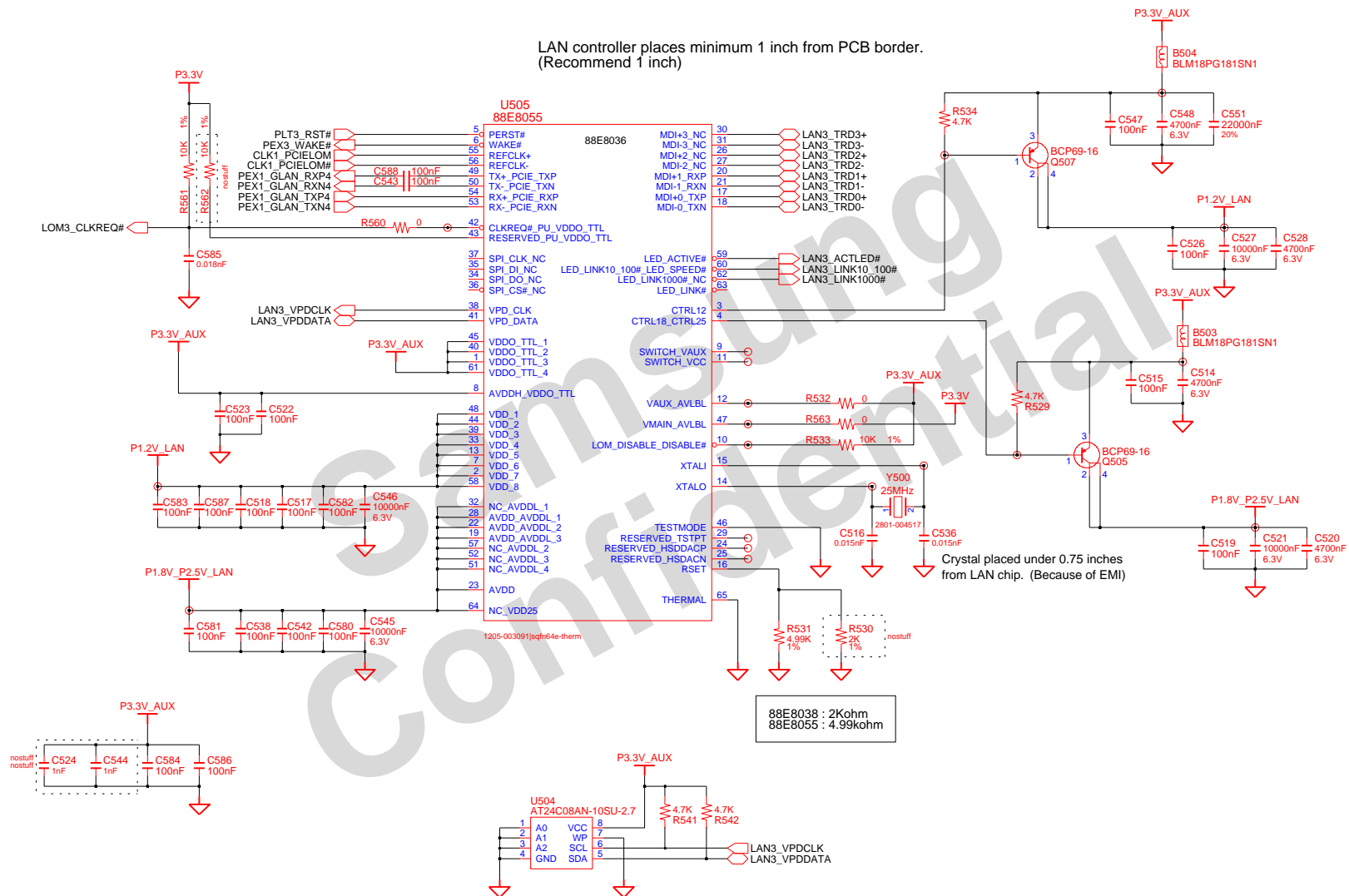


| | | | | | | |
|-------------|----------------|-----------|---------------------------|-------|---------------------|---|
| DRAW | XIAOHONG ZHANG | DATE | 06/03/2008 | TITLE | TianJin_EXT | SAMSUNG ELECTRONICS PART NO. BA41-00897A/898A |
| CHECK | RUJIN ZHENG | DEV. STEP | PR | | HDA_Codec_Alc262 | |
| APPROVAL | BC LEE | REV | REV 1.0 | | HDA_Codec_Alc262 #5 | |
| MODULE CODE | undefined | LAST EDIT | June 03, 2008 11:43:58 AM | PAGE | 5 OF 5 | |

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LAN controller places minimum 1 inch from PCB border.
(Recommend 1 inch)



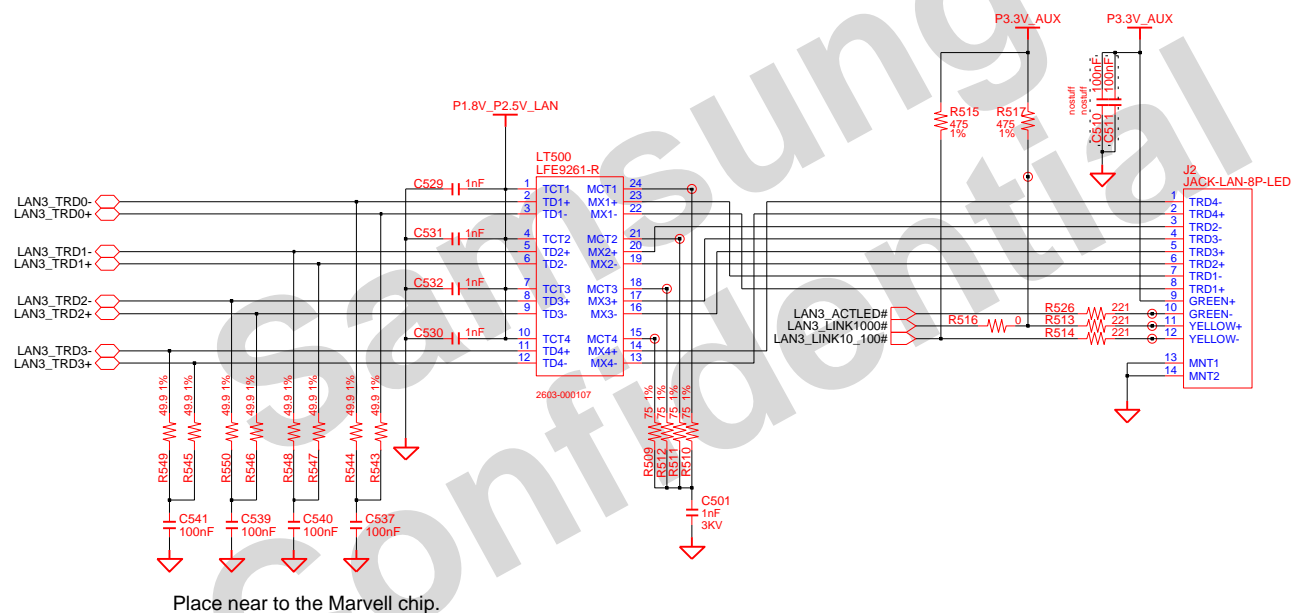
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|-------------|----------------|-----------|---------------------------|-------|------------------|
| DRAW | XIAOHONG ZHANG | DATE | 06/03/2008 | TITLE | TianJin_EXT |
| CHECK | RUJIN ZHENG | DEV. STEP | PR | | LAN_Marvell_8055 |
| APPROVAL | BC LEE | REV | REV 1.0 | | LAN_Marvell_8055 |
| MODULE CODE | | LAST EDIT | June 03, 2008 11:43:58 AM | PAGE | 1 OF 2 |

SAMSUNG
ELECTRONICS
PART NO.
BA41-00897A/898A

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The distance between LAN controller
and transformer is designed to extend less than two inches.



| | | | | | | |
|-------------|----------------|-----------|------------|---------------------------|------------------|---|
| DRAW | XIAOHONG ZHANG | DATE | 06/03/2008 | TITLE | TianJin_EXT | SAMSUNG ELECTRONICS PART NO. BA41-00897A/898A |
| CHECK | RUJIN ZHENG | DEV. STEP | PR | | LAN_Marvell_8055 | |
| APPROVAL | BC LEE | REV | REV 1.0 | | LAN_Marvell_8055 | |
| MODULE CODE | | LAST EDIT | | | | |
| | | | | June 03, 2008 11:43:58 AM | PAGE | 2 OF 2 |

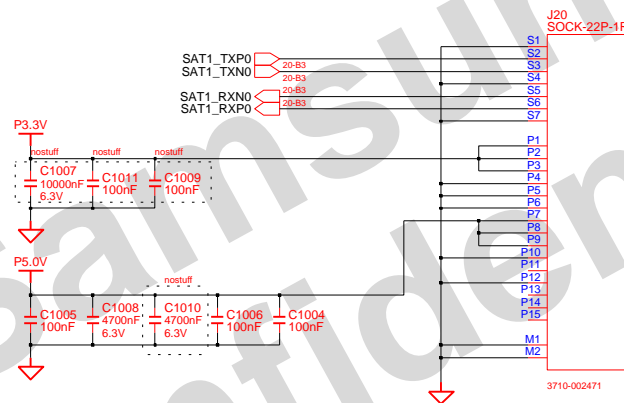
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[illegible]

| | | | | | | | |
|-------------|----------------|-----------|------------|---------------------------|------------------|---|---|
| NAME | XIAOHONG ZHANG | DATE | 06/03/2008 | TITLE | TianJin_EXT |  | |
| CHECK | RUJIN ZHENG | DEV. STEP | PR | MICOM_Renasas2110_100p | | | |
| APPROVAL | BC LEE | REV | REV 1.0 | MICOM_Renasas2110_100p | PART NO. | | |
| MODULE CODE | | LAST EDIT | | June 03, 2008 11:43:58 AM | BA41-00897A/898A | | |
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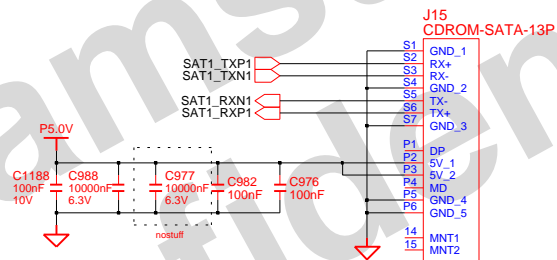
Main to HDD



| | | | | | | |
|-------------|----------------|-----------|------------|---------------------------|-------------|---|
| DRW | XIAOHONG ZHANG | DATE | 06/03/2008 | TITLE | TianJin_EXT | SAMSUNG ELECTRONICS PART NO. BA41-00897A/898A |
| CHECK | RUJIN ZHENG | DEV. STEP | PR | | HDD_IF_Conn | |
| APPROVAL | BC LEE | REV | REV 1.0 | | HDD_IF_Conn | |
| MODULE CODE | | LAST EDIT | | June 03, 2008 11:43:58 AM | PAGE 1 OF 1 | |

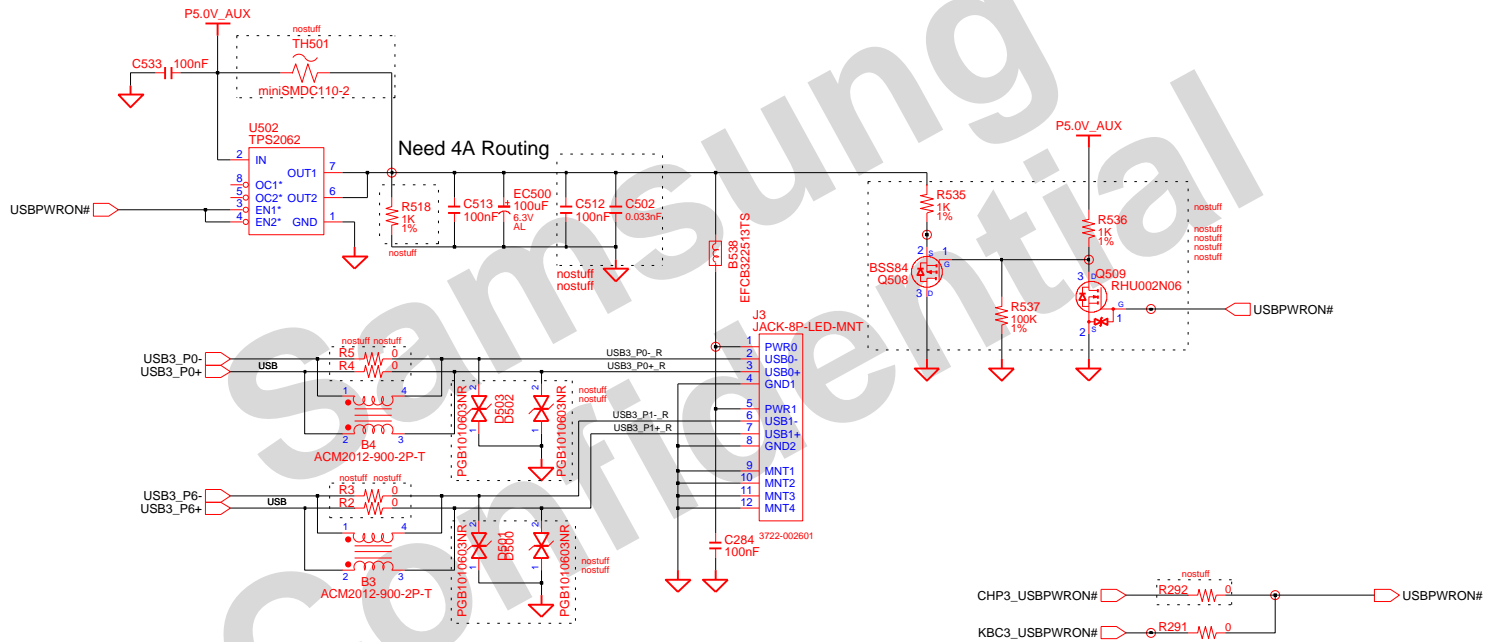
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SATA ODD



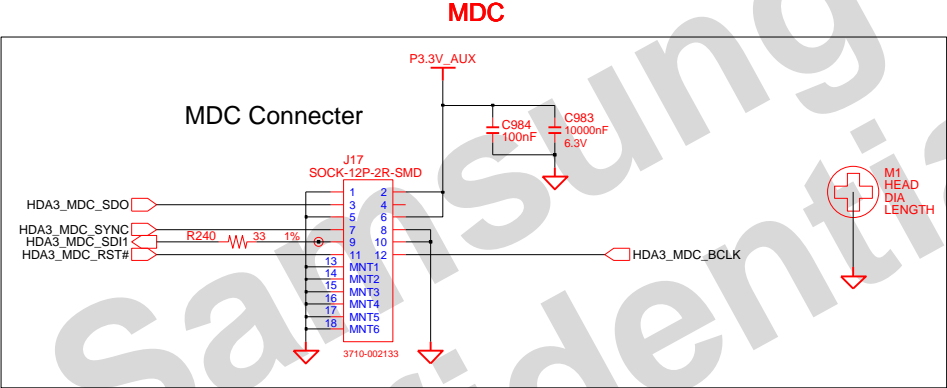
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| DRAW | XIAOHONG ZHANG | DATE | 06/03/2008 | TITLE | TianJin_EXT | SAMSUNG ELECTRONICS PART NO. BA41-00897A/898A |
| CHECK | RUJIN ZHENG | DEV. STEP | PR | | ODD_IF_Conn | |
| APPROVAL | BC LEE | REV | REV 1.0 | | ODD_IF_Conn | |
| MODULE CODE | | LAST EDIT | | | | |
| | | | | June 03, 2008 11:43:58 AM | PAGE | 1 OF 1 |

2 PORT USB CONNECTOR



| | | | | | | | |
|-------------|----------------|-----------|------------|---------------------------|-------------|------------------------|------------------------------|
| DRAW | XIAOHONG ZHANG | DATE | 06/03/2008 | TITLE | TianJin_EXT | SAMSUNG ELECTRONICS | |
| CHECK | RUJIN ZHENG | DESIGN | PR | | | | USB_2Port |
| APPROVAL | BC LEE | REV | REV 1.0 | | | | USB_2Port |
| MODULE CODE | | LAST EDIT | | | | | PART NO. BA41-00897A/898A |
| | | | | June 03, 2008 11:43:58 AM | PAGE | 1 OF 1 | |

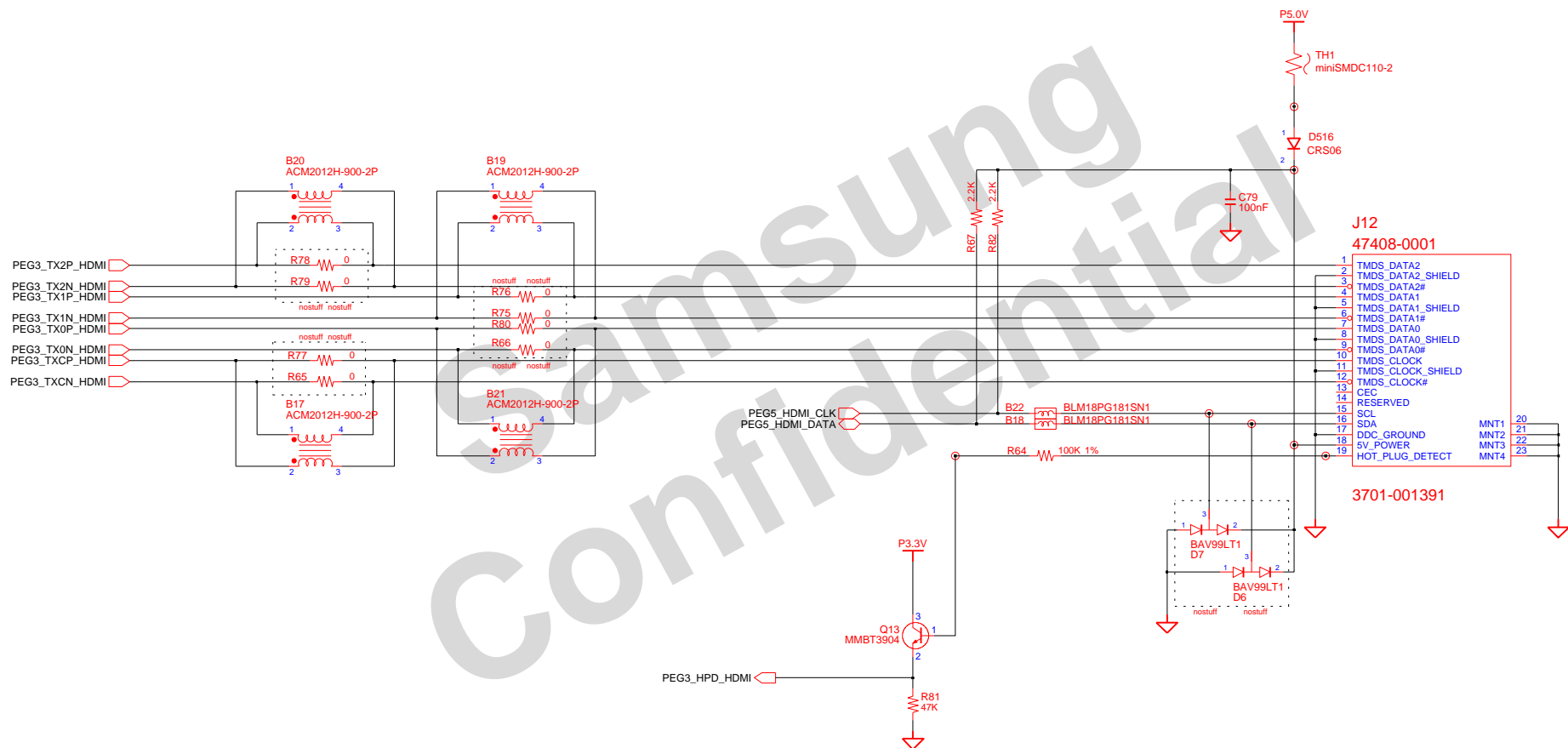
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|---------------------------|----------------|-----------|------------|-------|-------------|-------------------------------|
| DRAW | XIAOHONG ZHANG | DATE | 06/03/2008 | TITLE | TianJin_EXT | SAMSUNG ELECTRONICS |
| CHECK | RUJIN ZHENG | DEV. STEP | PR | | HDA_Modem | |
| APPROVAL | BC LEE | REV | REV 1.0 | | HDA_Modem | |
| MODULE CODE | | LAST EDIT | | | | |
| June 03, 2008 11:43:58 AM | | | | | | PART NO. BA41-00897A/898A |
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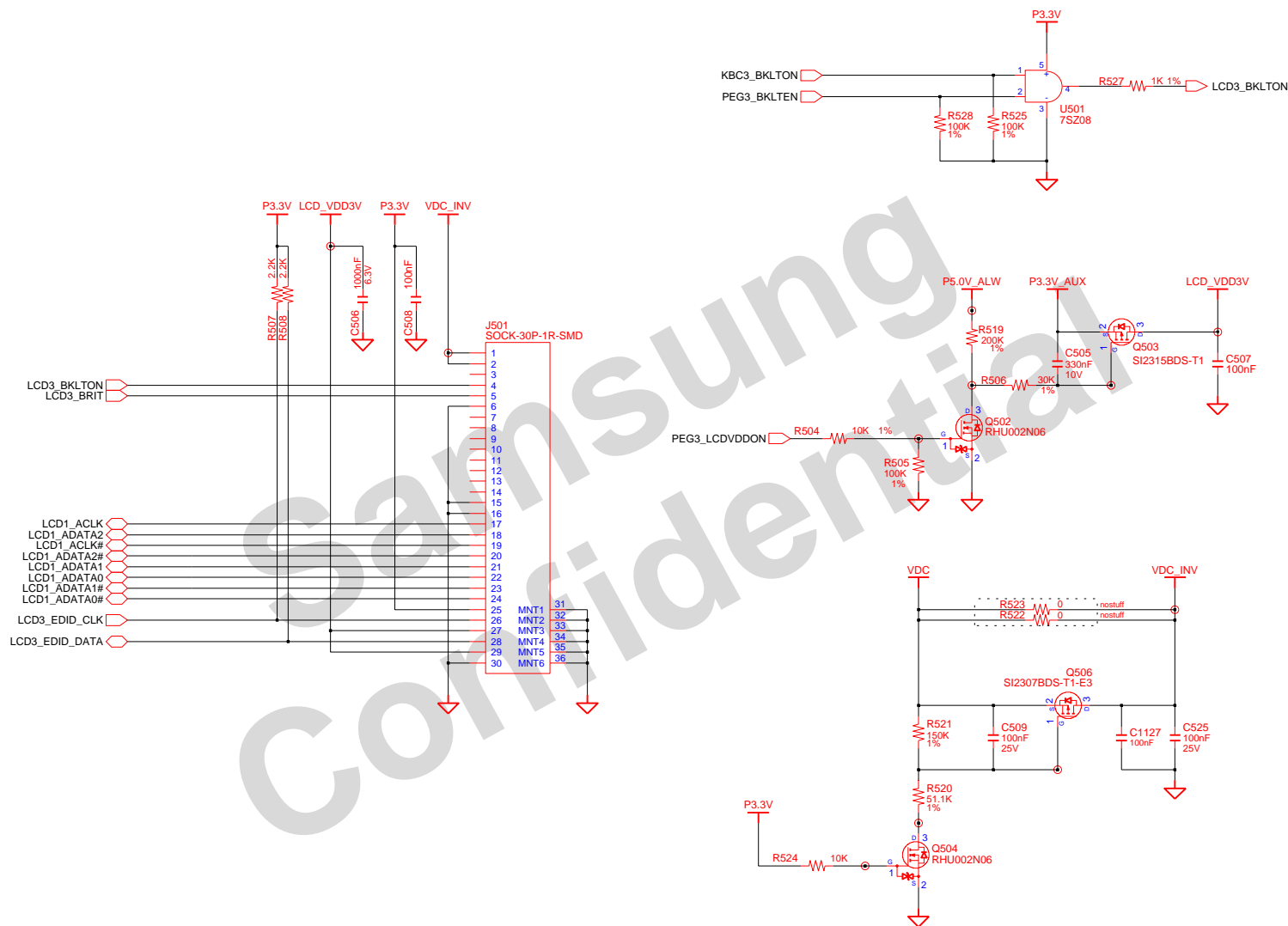
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| DRAW | XIAOHONG ZHANG | DATE | 06/03/2008 | TITLE | TianJin_EXT | SAMSUNG ELECTRONICS PART NO. BA41-00897A/898A |
| CHECK | RUJIN ZHENG | DEV. STEP | PR | | DMB_IF_Conn | |
| APPROVAL | BC LEE | REV | REV 1.0 | | DMB_IF_Conn | |
| MODULE CODE | | LAST EDIT | | June 03, 2008 11:43:58 AM | PAGE 1 OF 1 | |



| | | | | | | |
|-------------|----------------|-----------|------------|---------------------------|----------------|-------------------------------|
| DRAW | XIAOHONG ZHANG | DATE | 06/03/2008 | TITLE | TianJin_EXT | SAMSUNG ELECTRONICS |
| CHECK | RUJIN ZHENG | DEV. STEP | PR | | Other_Debug_80 | |
| APPROVAL | BC LEE | REV | REV 1.0 | | Other_Debug_80 | |
| MODULE CODE | | LAST EDIT | | June 03, 2008 11:43:58 AM | PAGE | 1 OF 1 |

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

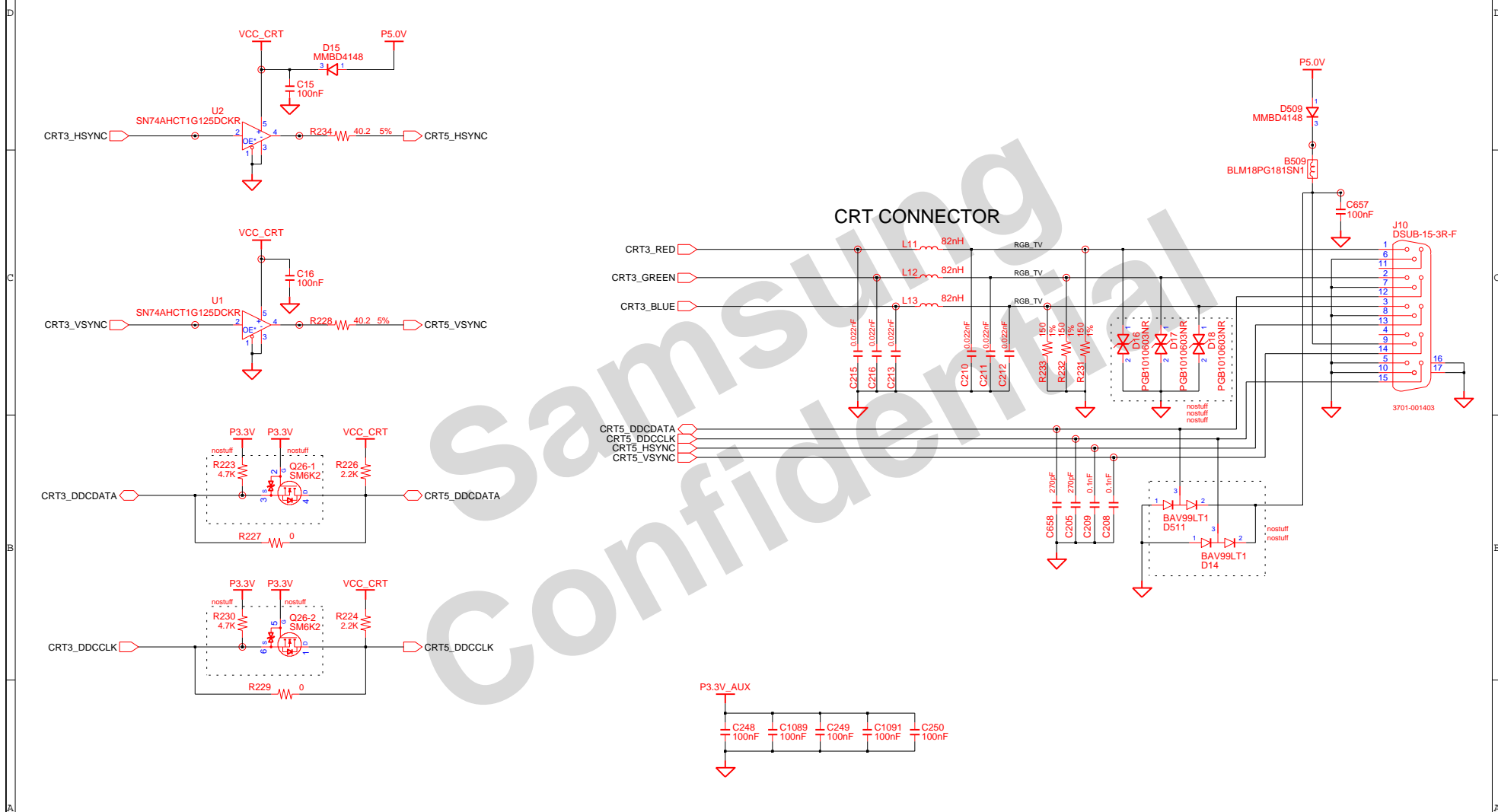
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| DRAW | XIAOHONG ZHANG | DATE | 06/03/2008 | TITLE | TianJin_EXT | SAMSUNG ELECTRONICS PART NO. BA41-00897A/898A |
| CHECK | RUJIN ZHENG | DEV. STEP | PR | | LCD_IF_14p1 | |
| APPROVAL | BC LEE | REV | REV 1.0 | | LCD_IF_14p1 | |
| MODULE CODE | undefined | LAST EDIT | June 03, 2008 11:43:58 AM | PAGE | 1 OF 1 | |

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

D:/mentor/tianjin/tmp/tianjin_ext.pr_0603/design_blocks/LCD_IF_14p1
SRP Sheet Number: 54 of 70

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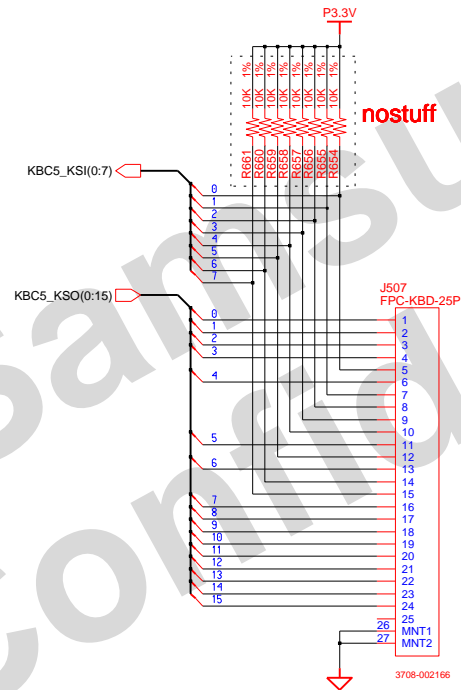
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|---------------------------|----------------|-----------|------------|-------|-------------------|------------------------|
| DRAW | XIAOHONG ZHANG | DATE | 06/03/2008 | TITLE | TianJin_EXT | SAMSUNG ELECTRONICS |
| CHECK | RUJIN ZHENG | DEV. STEP | PR | | Interface_Circuit | |
| APPROVAL | BC LEE | REV | REV 1.0 | | Graphics_IF_CRT | |
| MODULE CODE | | LAST EDIT | | | | |
| June 03, 2008 11:43:58 AM | | | | | | PAGE 1 OF 1 |

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KEYBOARD



| | | | | | | |
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| DRAW | XIAOHONG ZHANG | DATE | 06/03/2008 | TITLE | TianJin_EXT | SAMSUNG ELECTRONICS PART NO. BA41-00897A/898A |
| CHECK | RUJIN ZHENG | DEV. STEP | PR | | KBD_IF_Conn | |
| APPROVAL | BC LEE | REV | REV 1.0 | | KBD_IF_Conn | |
| MODULE CODE | | LAST EDIT | | June 03, 2008 11:43:58 AM | PAGE 1 OF 1 | |

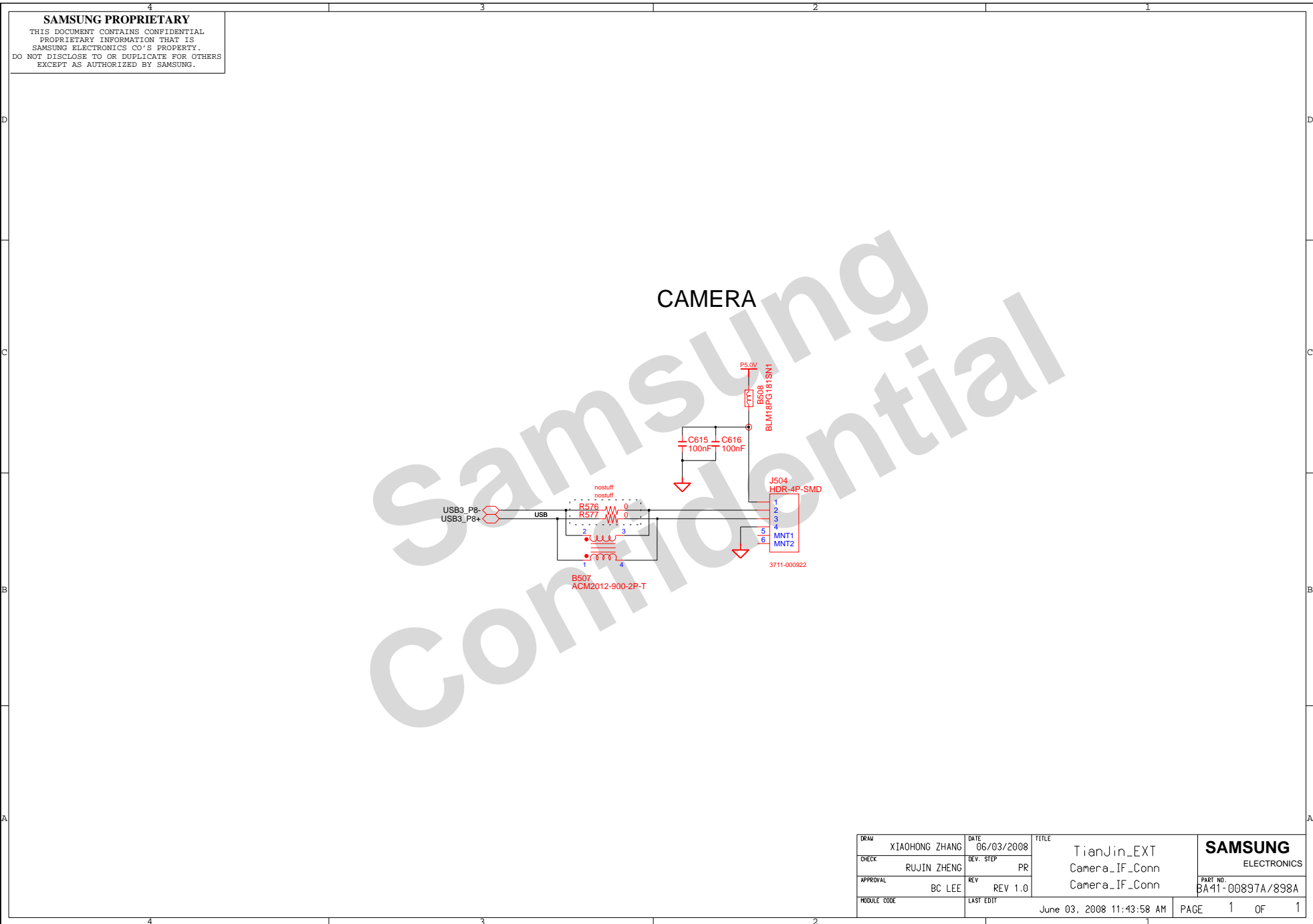
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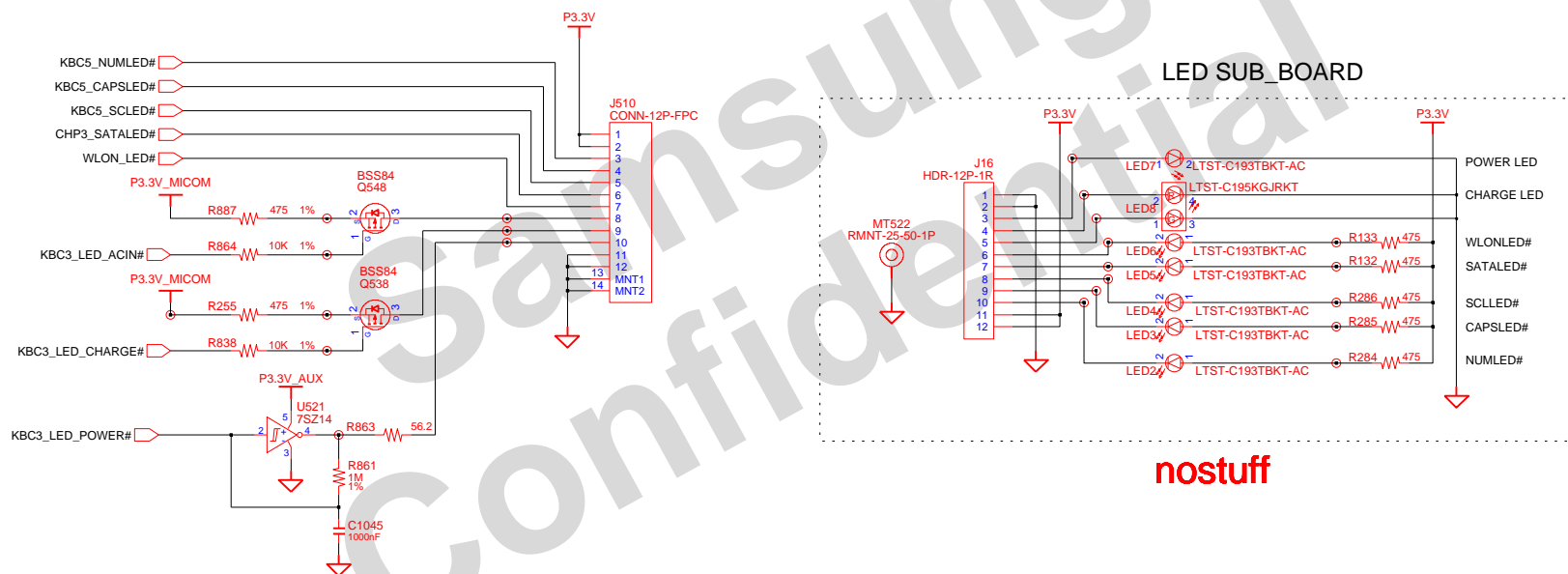
D:/mentor/tianjin/tmp/tianjin_ext_pr_0603/design_blocks/Touchpad_IF_Conn
SRP Sheet Number: 58 of 70



| | | | | | | |
|-------------|----------------|-----------|---------------------------|-------|----------------|-------------------------------|
| DRAW | XIAOHONG ZHANG | DATE | 06/03/2008 | TITLE | TianJin_EXT | SAMSUNG ELECTRONICS |
| CHECK | RUJIN ZHENG | DEV. STEP | PR | | Camera_IF_Conn | |
| APPROVAL | BC LEE | REV | REV 1.0 | | Camera_IF_Conn | |
| MODULE CODE | | LAST EDIT | June 03, 2008 11:43:58 AM | PAGE | 1 OF 1 | PART NO. BA41-00897A/898A |

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| DRAW | XIAOHONG ZHANG | DATE | 06/03/2008 | TITLE | TianJin_EXT | SAMSUNG ELECTRONICS |
| CHECK | RUJIN ZHENG | DEV. STEP | PR | | LED_Switch | |
| APPROVAL | BC LEE | REV | REV 1.0 | | LED_Switch | |
| MODULE CODE | | LAST EDIT | June 03, 2008 11:43:58 AM | PAGE | 1 OF 1 | |

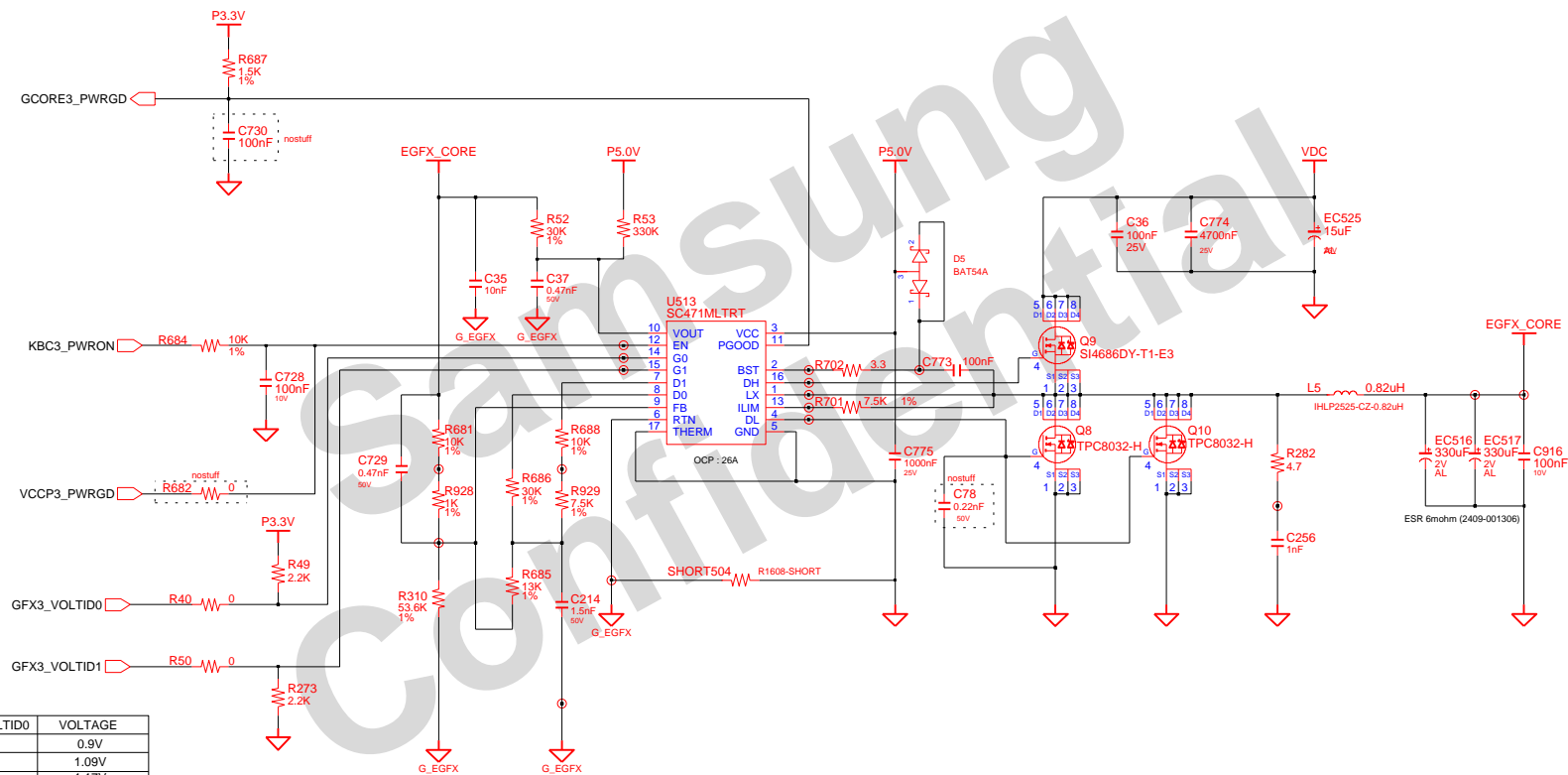
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| | | | | | | | |
|-------------|----------------|-----------|---------------------------|-------|---|-------------------------------|------|
| DRAM | XIAOHONG ZHANG | DATE | 06/03/2008 | TITLE | TianJin_EXT LID_Switch LID_Switch | SAMSUNG ELECTRONICS | |
| CHECK | RUJIN ZHENG | DEV. STEP | PR | | | | |
| APPROVAL | BC LEE | REV | REV 1.0 | | | | |
| MODULE CODE | LAST EDIT | | June 03, 2008 11:43:58 AM | | | | PAGE |

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Graphic Core Power



| GFX3_VOLTID1 | GFX3_VOLTID0 | VOLTAGE |
|--------------|--------------|----------|
| 0 | 0 | 0.9V |
| 1 | 1 | 1.09V |
| 0 | 0 | 1.17V |
| 1 | 1 | RESERVED |

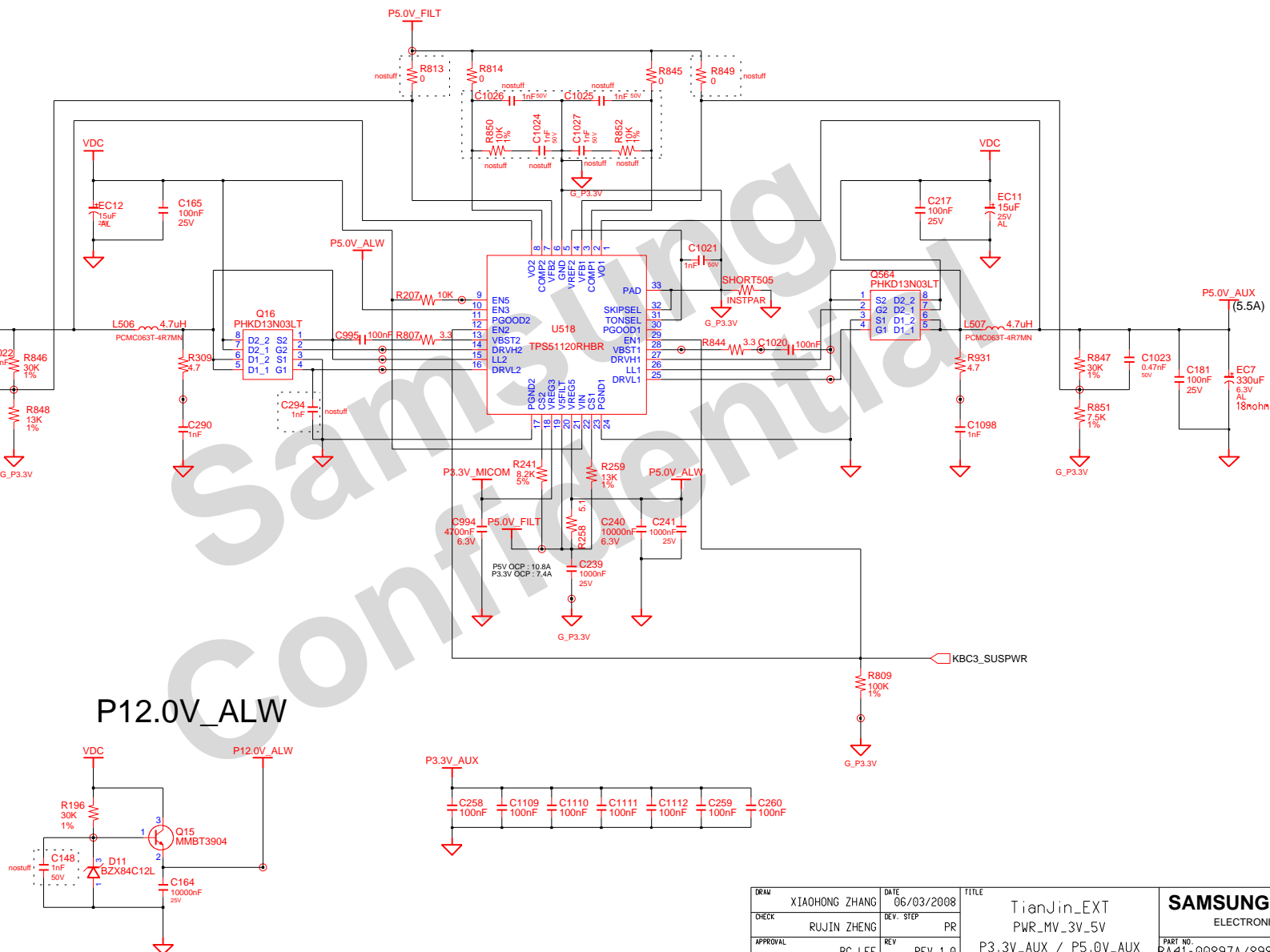
| | | | | | | |
|-------------|----------------|-----------|------------|---------------------------|-----------------------|------------------------|
| DRAW | XIAOHONG ZHANG | DATE | 06/03/2008 | TITLE | TianJin_EXT | SAMSUNG ELECTRONICS |
| CHECK | RUJIN ZHENG | DEV. STEP | PR | | PWR_Gfx_MV_Ext | |
| APPROVAL | BC LEE | REV | REV 1.0 | | Ext Gfx Memory(SC486) | |
| MODULE CODE | | LAST EDIT | | | | |
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P3.3V_AUX & P5.0V_AUX

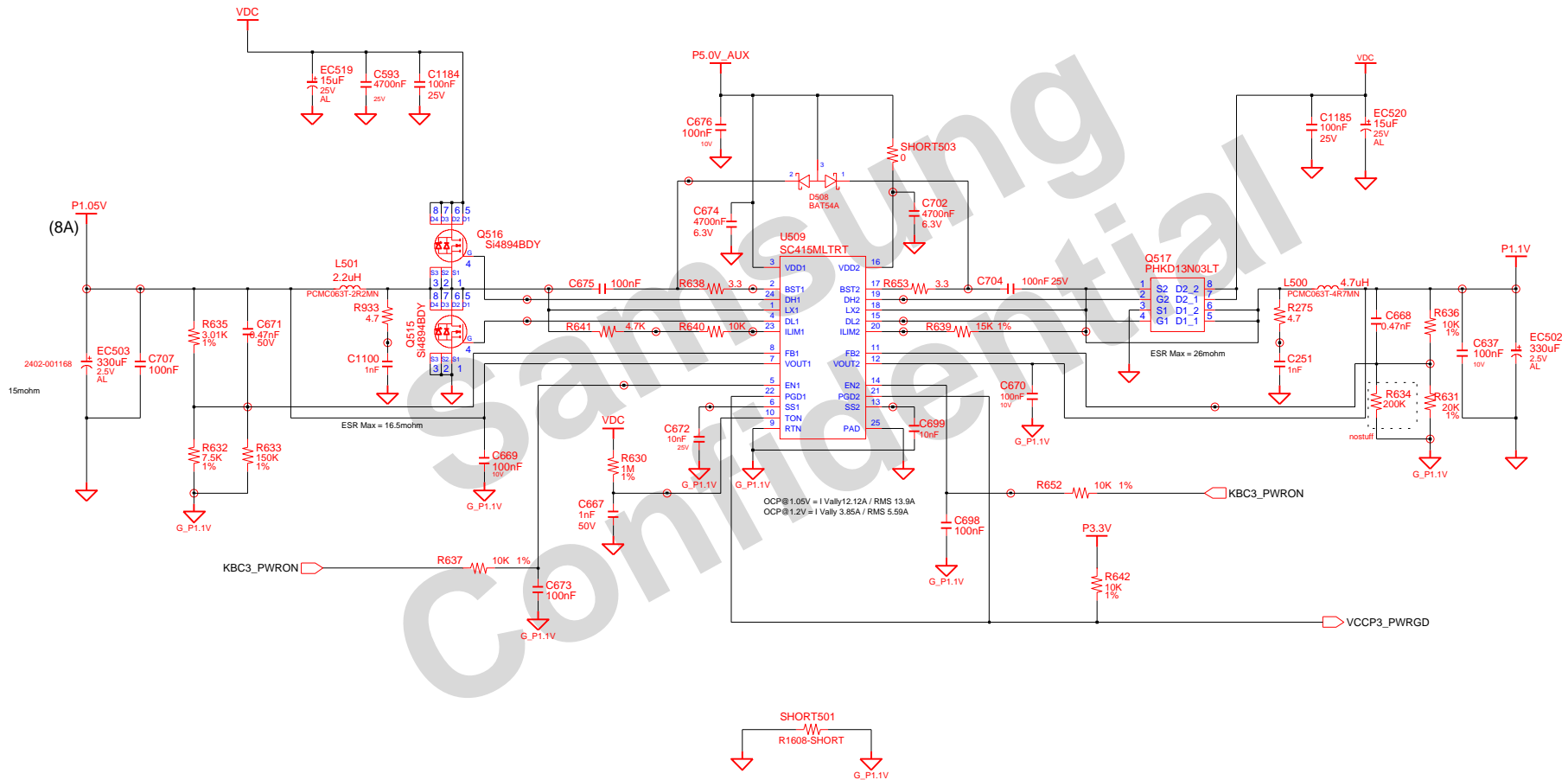
TONSEL VREF2
5V / 3.3V : 280KHz / 430KHz
(4.5A)



| | | | | | | |
|-------------|----------------|-----------|---------------------------|-------|-----------------------|------------------------|
| DRAW | XIAOHONG ZHANG | DATE | 06/03/2008 | TITLE | TianJin_EXT | SAMSUNG ELECTRONICS |
| CHECK | RUJIN ZHENG | DEV. STEP | PR | | PWR_MV_3V_5V | |
| APPROVAL | BC LEE | REV | REV 1.0 | | P3.3V_AUX / P5.0V_AUX | |
| MODULE CODE | undefined | LAST EDIT | June 03, 2008 11:43:58 AM | PAGE | 1 OF 1 | |

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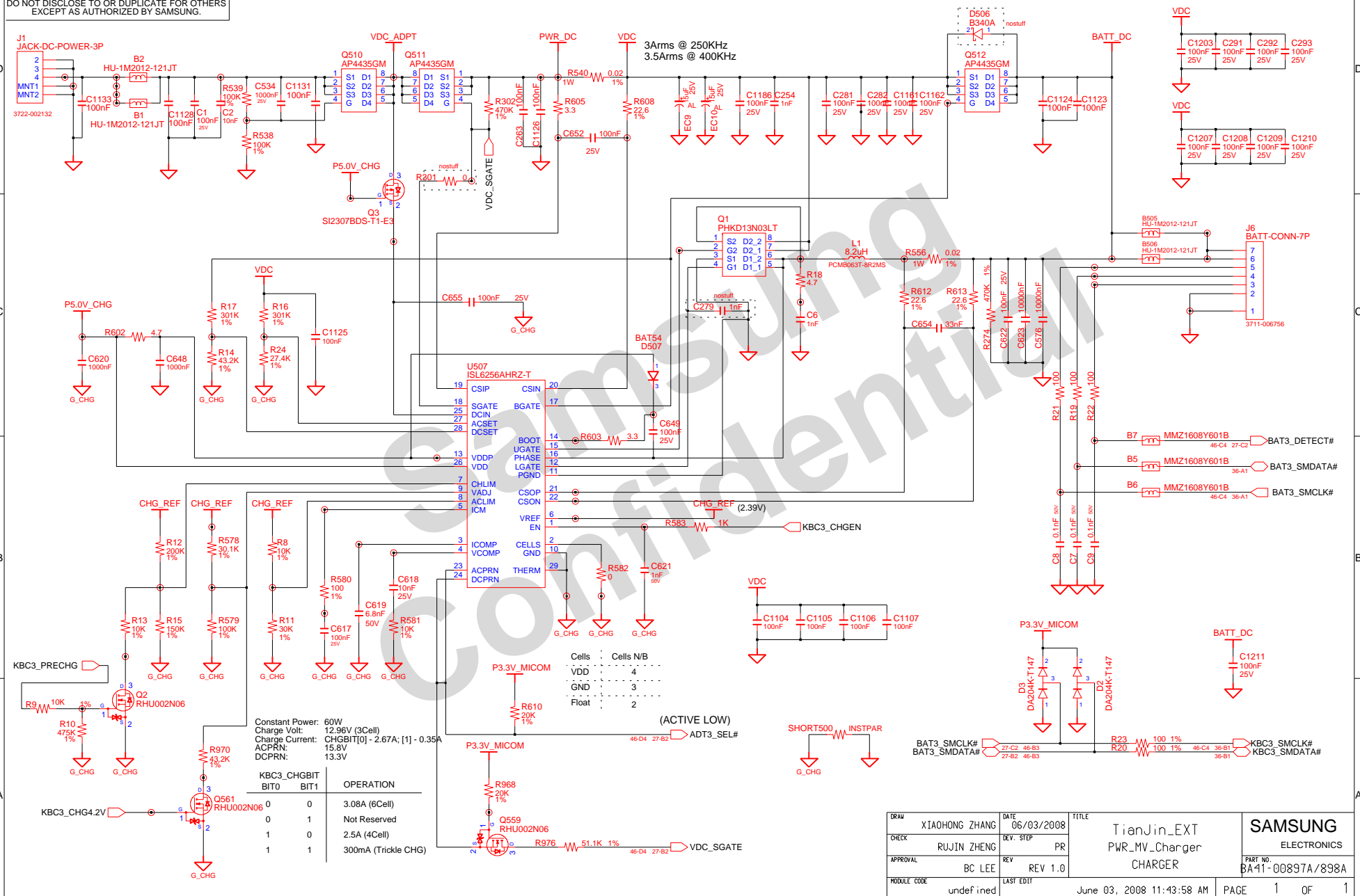
CHIPSET POWER(P1.05V & P1.1V)



| | | | | | | |
|-------------|----------------|-----------|---------------------------|---------------------------------|-------------------------|------------------------|
| DRAW | XIAOHONG ZHANG | DATE | 06/03/2008 | TITLE | TianJin_EXT | SAMSUNG ELECTRONICS |
| CHECK | RUJIN ZHENG | DEV. STEP | PR | | PWR_MV_Cantiga | |
| APPROVAL | BC LEE | REV | REV 1.0 | Chipset Power (P1.05V_M, P1.1V) | PART NO. 41-00897A/898A | |
| MODULE CODE | undefined | LAST EDIT | June 03, 2008 11:43:58 AM | PAGE | 1 OF 1 | |

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CHARGER & POWER MANAGEMENT

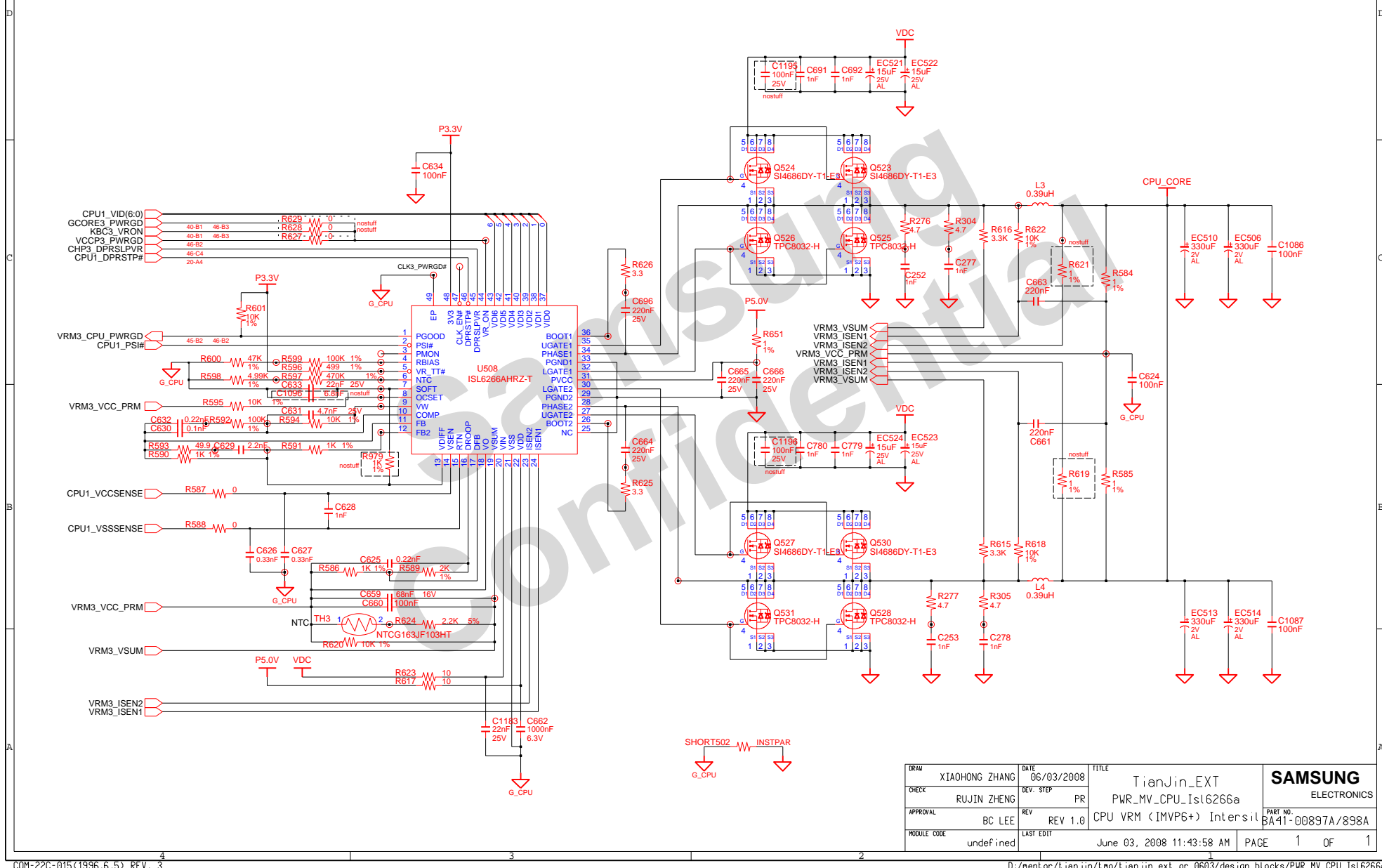


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| DRAW | XIAOHONG ZHANG | DATE | 06/03/2008 | TITLE | TianJin_EXT | SAMSUNG ELECTRONICS PART NO. BA41-00897A/898A |
| CHECK | RUJIN ZHENG | DEV. STEP | PR | PWR_MV_Charger | CHARGER | |
| APPROVAL | BC LEE | REV | REV 1.0 | | | |
| MODULE CODE | undefined | LAST EDIT | June 03, 2008 11:43:58 AM | PAGE | 1 OF 1 | |

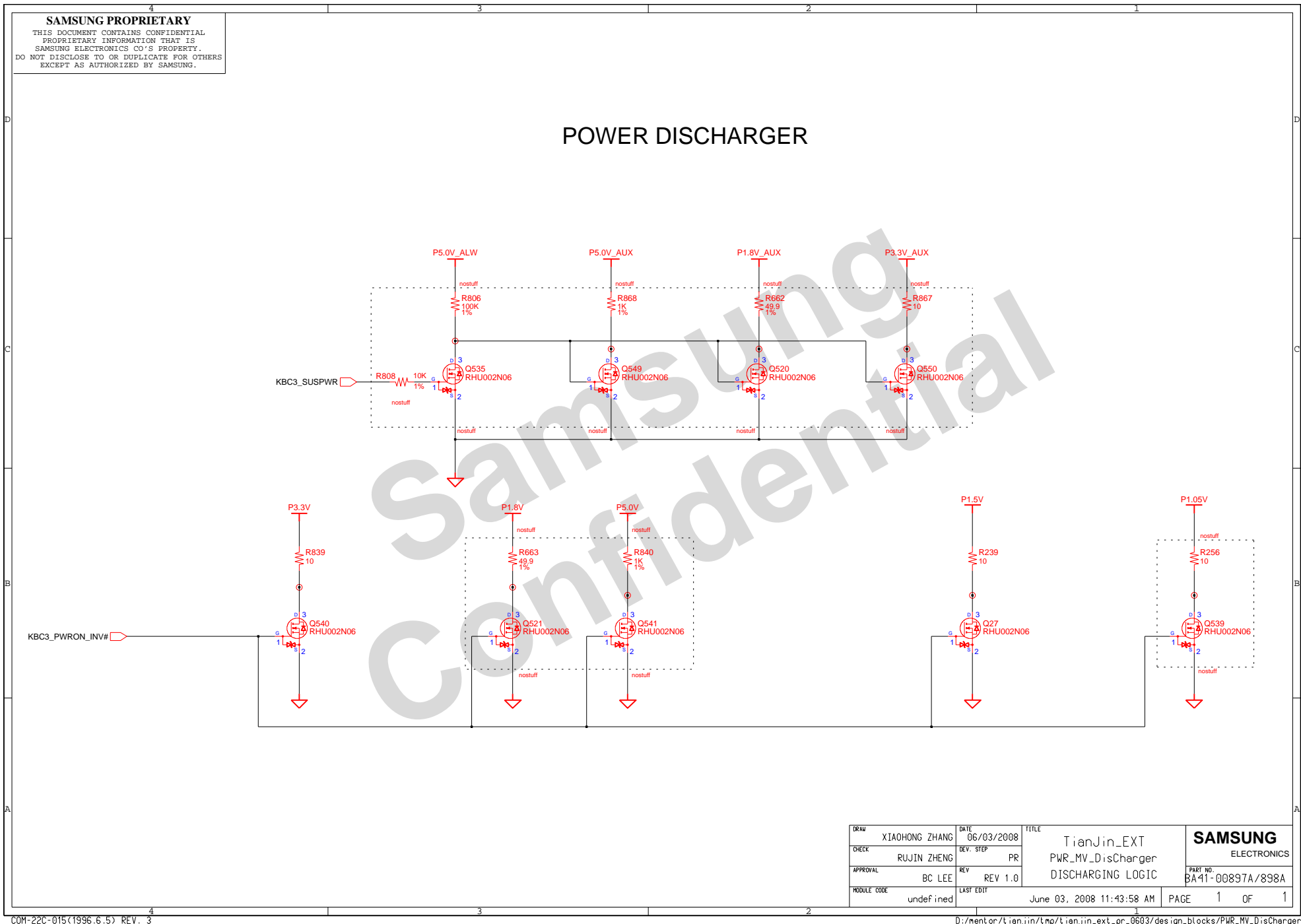
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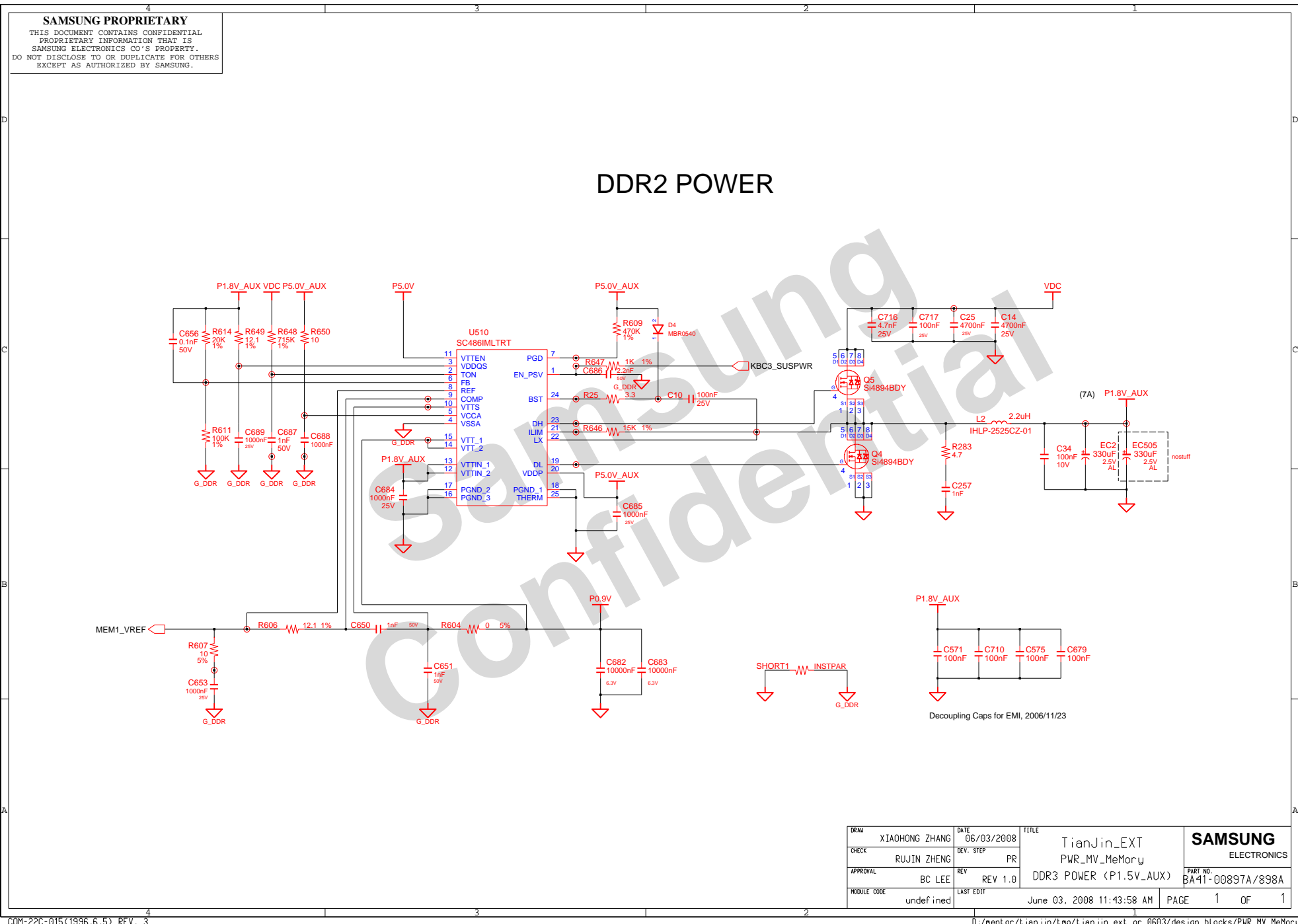
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CPU VRM [INTERSIL]



| | | | | | | |
|-------------|----------------|-----------|------------|-------|---------------------------|---|
| DRAW | XIAOHONG ZHANG | DATE | 06/03/2008 | TITLE | TianJin_EXT | SAMSUNG ELECTRONICS PART NO. BA41-00897A/898A |
| CHECK | RUJIN ZHENG | DEV. STEP | PR | | PWR_MV_CPU_Ist6266a | |
| APPROVAL | BC LEE | REV | REV 1.0 | | CPU VRM (IMVP6+) Intersil | |
| MODULE CODE | undefined | LAST EDIT | | | | |
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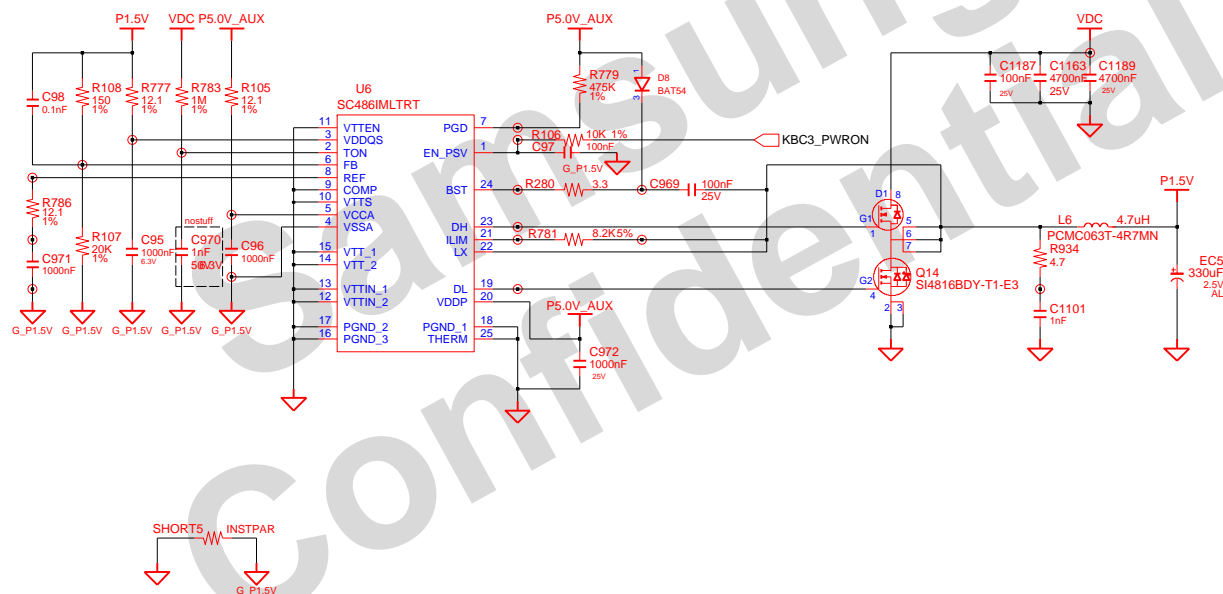




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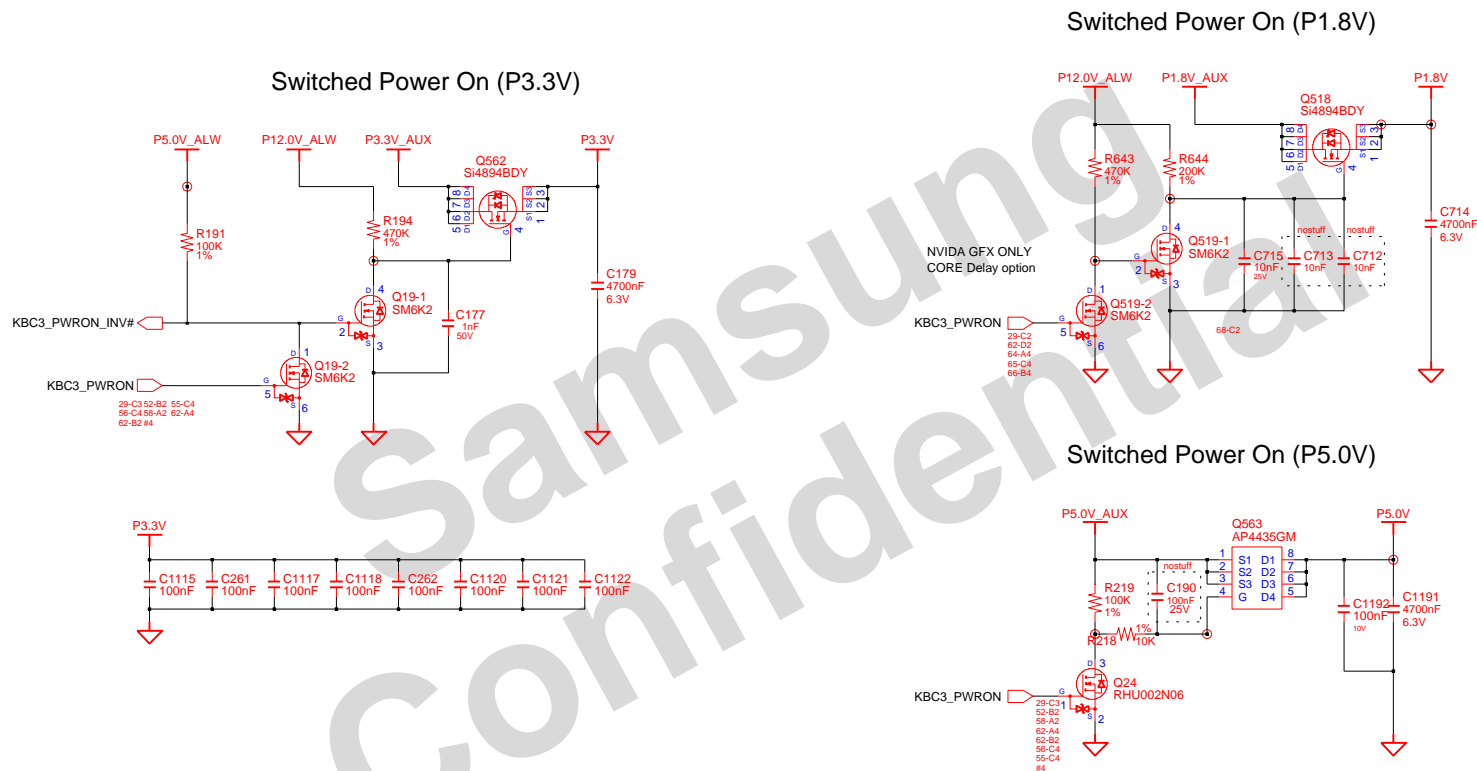
P1.5V



| | | | | | | |
|---------------------------|----------------|-----------|------------|-------|-----------------|------------------------|
| DRAW | XIAOHONG ZHANG | DATE | 06/03/2008 | TITLE | TianJin_EXT | SAMSUNG ELECTRONICS |
| CHECK | RUJIN ZHENG | DEV. STEP | PR | | PWR_MV_Switched | |
| APPROVAL | BC LEE | REV | REV 1.0 | | SWITCHED POWER | |
| MODULE CODE | | LAST EDIT | | | | |
| June 03, 2008 11:43:58 AM | | | | | | PAGE 1 OF 2 |

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|-------------|----------------|-----------|---------------------------|-------|--|---|
| DRAW | XIAOHONG ZHANG | DATE | 06/03/2008 | TITLE | TianJin_EXT PWR_MV_Switched SWITCHED POWER | SAMSUNG ELECTRONICS PART NO. BA41-00897A/898A |
| CHECK | RUJIN ZHENG | DEV. STEP | PR | | | |
| APPROVAL | BC LEE | REV | REV 1.0 | | | |
| MODULE CODE | undefined | LAST EDIT | June 03, 2008 11:43:58 AM | PAGE | 2 OF 2 | |

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