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# XI'AN

PCB Thickness:1.1mm

CPU :INTEL MEROM/PENRYN  
 Chip Set :AMD RS600ME & SB600  
 Remarks :Internal GFX / 2 SODIMMs

Model Name : XIAN-ATI  
 PBA Name : MAIN  
 PCB Code : BA41-00859A (HS)  
                   BA41-00860A (GCE)  
                   BA41-00861A (NY)  
 Dev. Step : PR  
 Revision : 1.0  
 T.R. Date : 2008.02.14

DRAW	CHECK	APPROVAL
-	-	-

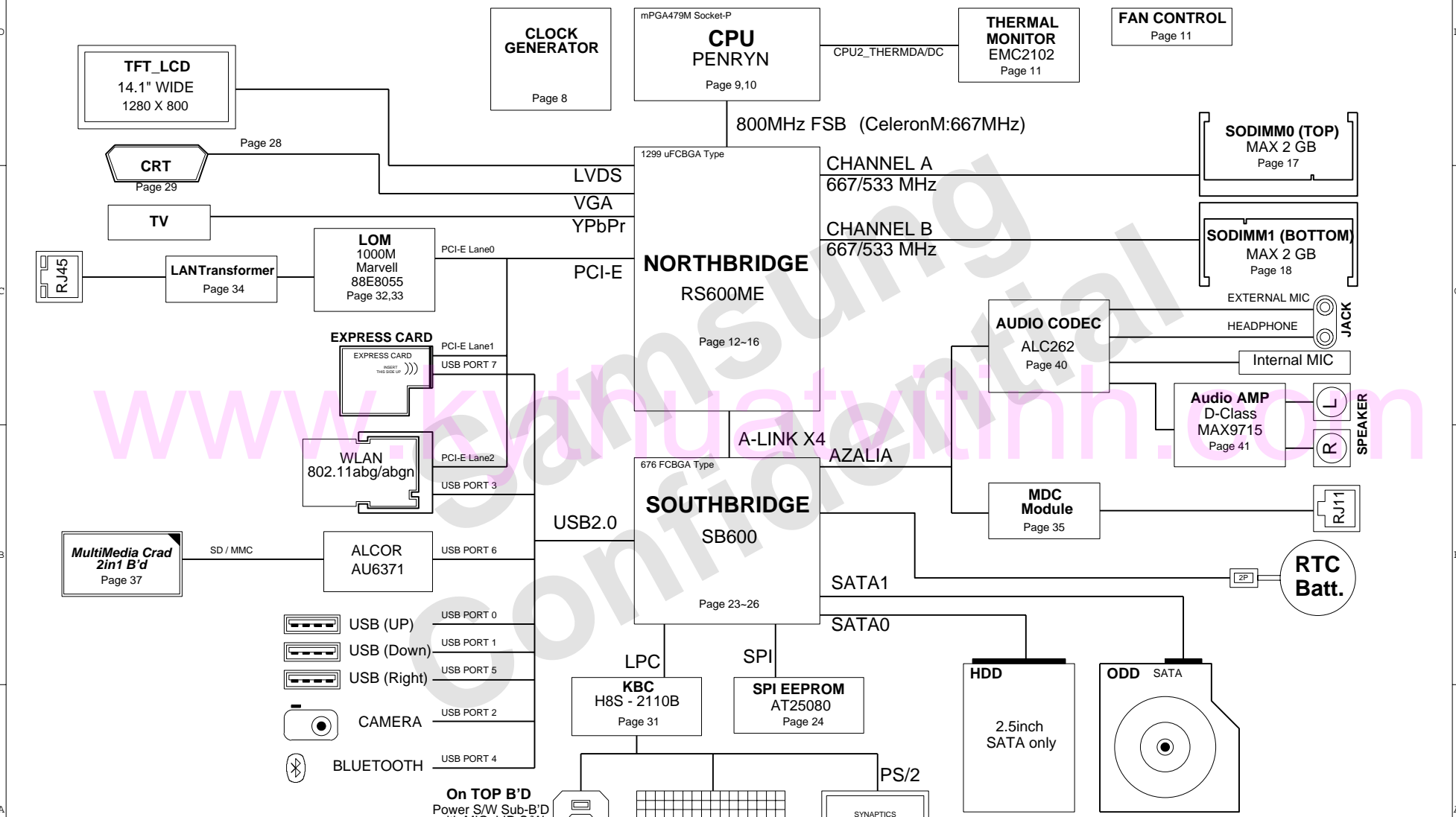
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DRAW	ZHOU JUN	DATE	1/23/2008	TITLE	XI'AN	SAMSUNG ELECTRONICS
CHECK	GUO LEI	DEV. STEP	PV	COVER		
APPROVAL	KEVIN LEE	REV	1.0	CONTENTS	PART NO.	BA41-00859/60/61A
MODULE CODE		LAST ENT	November 26, 2007 11:01:51 AM	PAGE	1	OF 48

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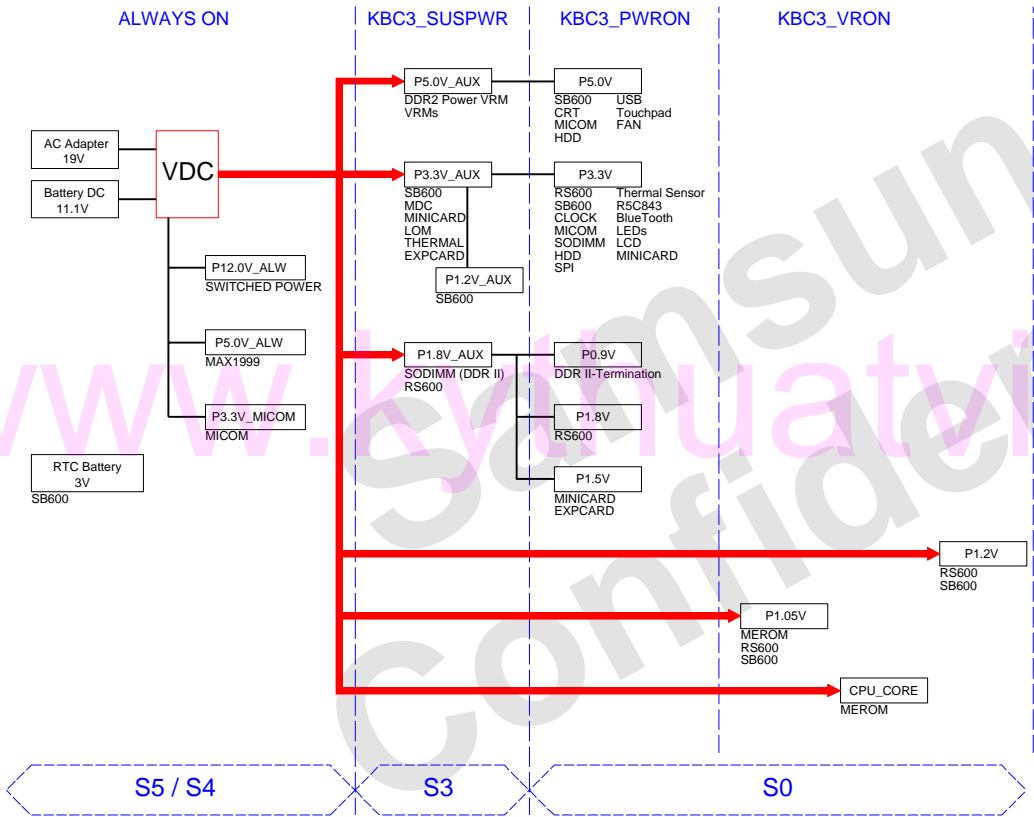
# OPERATION BLOCK DIAGRAM



DRAW	ZHOU JUN	DATE	1/23/2008	TITLE	XI'AN MAIN	SAMSUNG ELECTRONICS
CHECK	GUO LEI	DEV. STEP	PV			
APPROVAL	KEVIN LEE	REV	1.0	BLOCK DIAGRAM		PART NO. BA41-00859/60/61A
MODULE CODE		LAST ENT				
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# POWER DIAGRAM

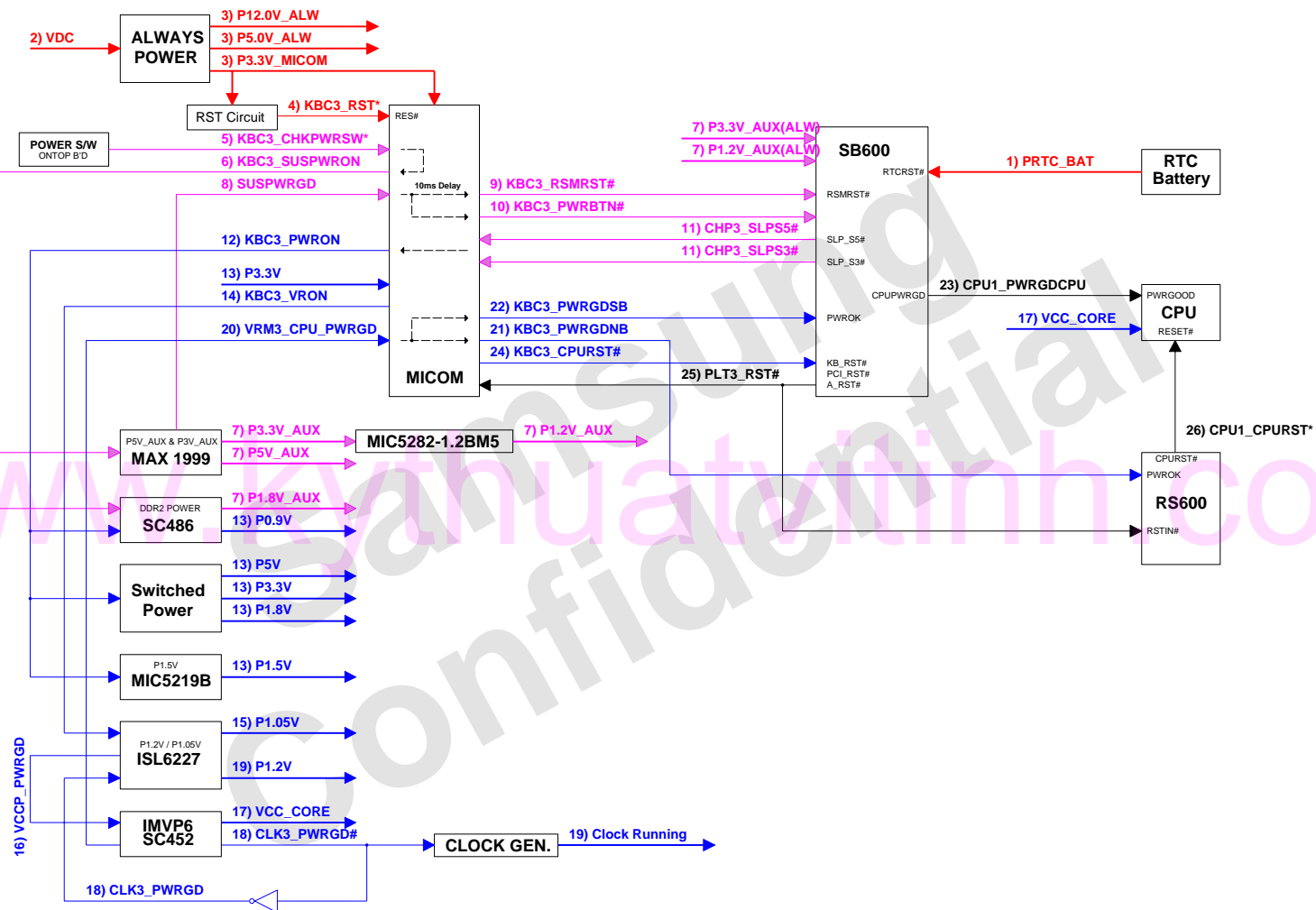


Rail State	+V*Always	+V*AUX	+V	SUSPWR	PWRON	VRON
Full On	ON	ON	ON	H	H	H
S3	ON	ON	OFF	H	L	L
S4	ON	OFF	OFF	H	L	L
S5	ON	OFF	OFF	L	L	L

DRAW	ZHOU JUN	DATE	1/23/2008	TITLE	XI'AN MAIN POWER DIAGRAM	SAMSUNG ELECTRONICS
CHECK	GUO LEI	DEV. STEP	PV			
APPROVAL	KEVIN LEE	REV	1.0			PART NO. BA41-00859/60/61A
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# POWER SEQUENCE Rev. 0.1

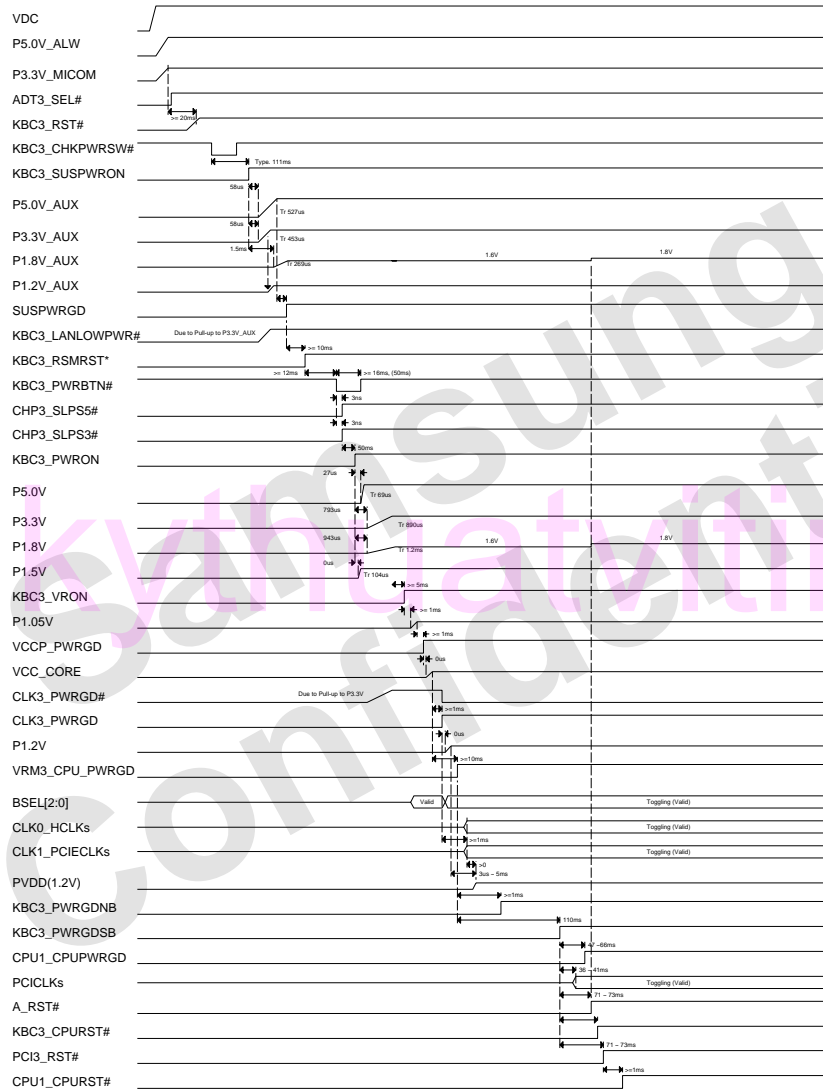


DRAW	ZHOU JUN	DATE	1/23/2008	TITLE	XI'AN MAIN	SAMSUNG ELECTRONICS
CHECK	GUO LEI	DEV. STEP	PV	POWER SEQUENCE	PART NO.	
APPROVAL	KEVIN LEE	REV	1.0		BA41-00859/60/61A	
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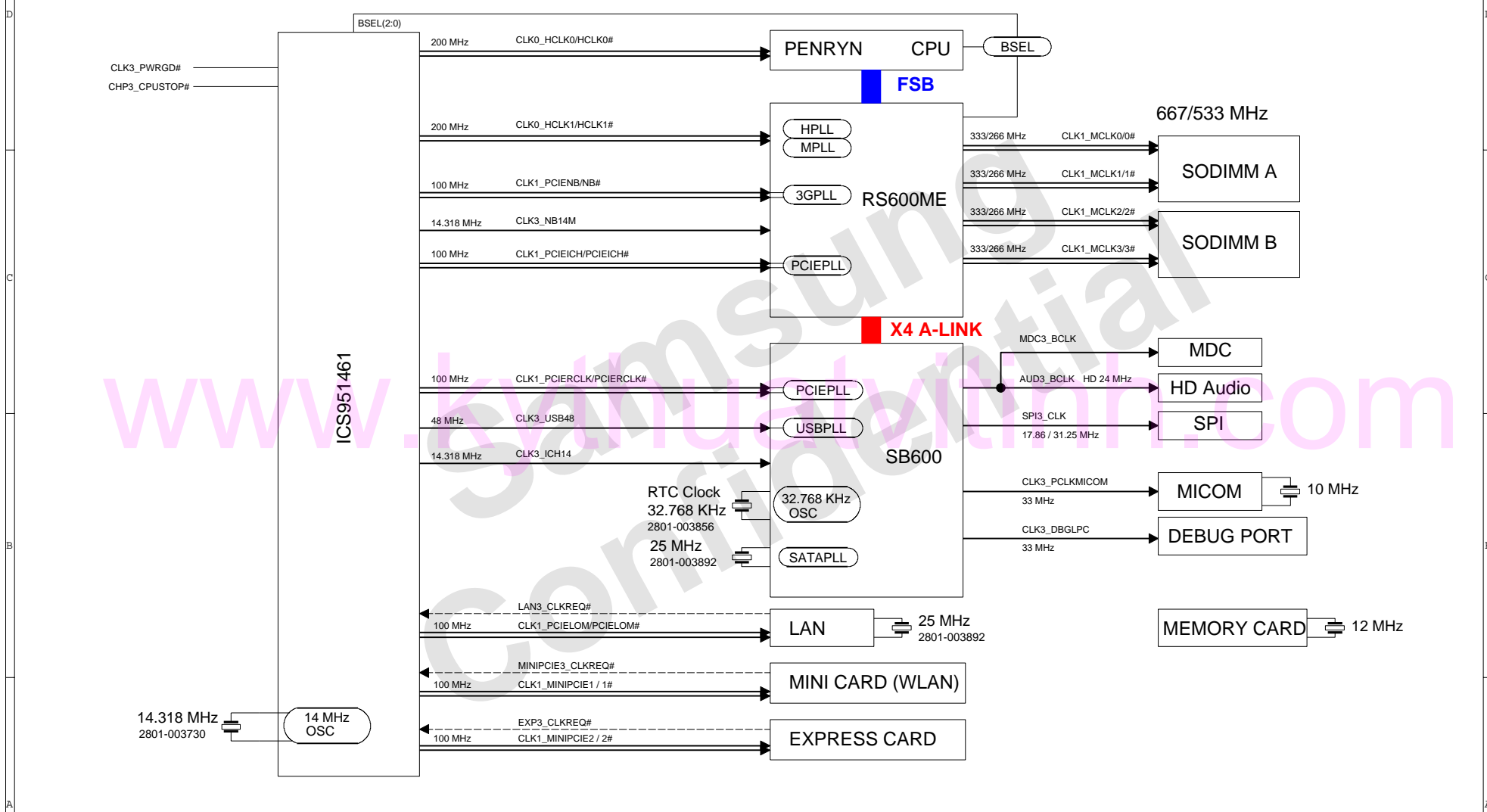
**Timing Diagram, Power ON** Rev. 0.1 Phil 2007-06-11



DRAW	ZHOU JUN	DATE	1/23/2008	TITLE	XI'AN	SAMSUNG ELECTRONICS
CHECK	GUO LEI	DEV. STEP	PV		MAIN	
APPROVAL	KEVIN LEE	REV	1.0	TIMING DIAGRAM		PART NO. BA41-00859/60/61A
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# CLOCK DISTRIBUTION Rev. 0.1



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CHECK	GUO LEI	DEV. STEP	PV	CLOCK DISTRIBUTION		PART NO. BA41-00859/60/61A	
APPROVAL	KEVIN LEE	REV	1.0	November 26, 2007 11:01:51 AM		PAGE 6 OF 48	
MODULE CODE	LAST EDIT						

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# BOARD INFORMATION

## SCHEMATIC ANNOTATIONS AND BOARD INFORMATION

### PCI Devices

Devices	IDSEL#	REQ/GNT#	Interrupts

### Crystal / Oscillator

TYPE	FREQUENCY	DEVICE	USAGE
Crystal	32.768KHz	SB600	Real Time Clock
Crystal	25MHz	SB600	SATA
Crystal	10MHz	MICOM	H8S/2110BV
Crystal	14.318MHz	CLOCK-GENERATOR	ICS951461
Crystal	12MHz	MEMORY CARD	MEMORY CARD
Crystal	25MHz	LAN	LAN

### Voltage Rails

VDC	Primary DC system power supply (7 to 21V)
VCC_CORE	Core voltage for Processor (1.308-1.068V)
P1.05V	Processor System Bus(PSB) Termination (1.05V) GMCH & ICH8 Core Voltage
P1.8V_AUX	1.8V power rail for DDR2 (off in S4-S5)
P0.9V	0.9V switched power rail (off in S3-S5)
P1.8V	1.8V power rail for GDDR3 (off in S3-S5)
P1.2V	1.2V switched power rail (off in S3-S5)
P1.5V	1.5V switched power rail (off in S3-S5)
P3.3V	3.3V switched power rail (off in S3-S5)
P5.0V	5.0V switched power rail (off in S3-S5)
P3.3V_AUX	3.3V power rail (off in S4-S5)
P5V_AUX	5.0V power rail (off in S4-S5)
PRTC_BAT	3.0V power rail (ALWAYS ON)
P3.3V_MICOM	3.3V always on power rail for MICOM
P5.0V_ALW	5V power rail (Always On)
P12.0V_ALW	12V power rail (Always On)

### 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	1.5000 V	0 1 0 1 0 0 0	1.0000 V	1 0 1 0 0 0 0	0.4875 V
0 0 0 0 0 0 1	1.4875 V	0 1 0 1 0 0 1	0.9875 V	1 0 1 0 0 1 0	0.4750 V
0 0 0 0 0 1 0	1.4750 V	0 1 0 1 0 1 0	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 1 0 0	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 1 0 1	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 1 1 0	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 0 1 1 1 1	0.9250 V	1 0 1 1 0 0 0	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 0 0 1	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 1 0	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 1 0 0	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 1	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 1 0	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 1 0 1 0	0.8250 V	1 0 1 1 1 1 1	0.3125 V
0 0 0 1 1 1 1	1.3125 V	0 1 1 1 1 0 0	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 1 0 1	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 1 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 1 1 0	0.7750 V	1 1 0 0 0 1 1	0.2625 V
0 0 1 0 1 0 0	1.2625 V	0 1 1 1 1 1 1	0.7625 V	1 1 0 0 1 0 0	0.2500 V
0 0 1 0 1 0 1	1.2500 V	0 1 1 1 1 1 1	0.7500 V	1 1 0 0 1 0 1	0.2375 V
0 0 1 0 1 1 0	1.2375 V	0 1 1 1 1 1 1	0.7375 V	1 1 0 0 1 1 0	0.2250 V
0 0 1 0 1 1 1	1.2250 V	0 1 1 1 1 1 1	0.7250 V	1 1 0 0 1 1 1	0.2125 V
0 0 1 1 0 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 1 0 0	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 1 0 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 1 0 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 1 1	0.6125 V	1 1 1 1 0 0 0	0.1000 V
0 1 0 0 0 0 0	1.1000 V	1 0 0 1 0 0 0	0.6000 V	1 1 1 1 0 0 1	0.0875 V
0 1 0 0 0 0 1	1.0875 V	1 0 0 1 0 0 1	0.5875 V	1 1 1 1 0 1 0	0.0750 V
0 1 0 0 0 1 0	1.0750 V	1 0 0 1 0 1 0	0.5750 V	1 1 1 1 0 1 1	0.0625 V
0 1 0 0 0 1 1	1.0625 V	1 0 0 1 1 0 0	0.5625 V	1 1 1 1 1 0 0	0.0500 V
0 1 0 0 1 0 0	1.0500 V	1 0 0 1 1 0 1	0.5500 V	1 1 1 1 1 0 1	0.0375 V
0 1 0 0 1 0 1	1.0375 V	1 0 0 1 1 0 1	0.5375 V	1 1 1 1 1 1 0	0.0250 V
0 1 0 0 1 1 0	1.0250 V	1 0 0 1 1 1 0	0.5250 V	1 1 1 1 1 1 1	0.0125 V
0 1 0 0 1 1 1	1.0125 V	1 0 0 1 1 1 1	0.5125 V	1 1 1 1 1 1 1	0.0000 V
		1 0 0 1 0 0 0	0.5000 V	1 1 1 1 1 0 0	0.0000 V
				1 1 1 1 1 0 1	0.0000 V
				1 1 1 1 1 1 0	0.0000 V
				1 1 1 1 1 1 1	0.0000 V
				1 1 1 1 1 1 1	0.0000 V
				1 1 1 1 1 1 1	0.0000 V
				1 1 1 1 1 1 1	0.0000 V

### I<sup>2</sup>C / SMB Address

Devices	Address	Hex	Bus
SB600	Master	-	SMBUS Master
SODIMM0	1010 000X	A0h	-
SODIMM1	1010 010X	A4h	-
CK-505 (Clock Generator)	1101 001x	D2h	Clock, Unused Clock Output Disable
MICOM	Master	-	SMBUS Master
BATTERY	0001 011X	16h	-
EMC2102(Thermal Sensor)	0111 101X	7Ah	Thermal Sensor

### USB PORT Assign

PORT NUMBER	ASSIGNED TO
0	SYSTEM PORT A
1	SYSTEM PORT B
2	CAMERA
3	MINIPCI-E (WLAN)
4	BLUETOOTH
5	SYSTEM PORT C
6	MEMORY CARD
7	EXPRESS CARD

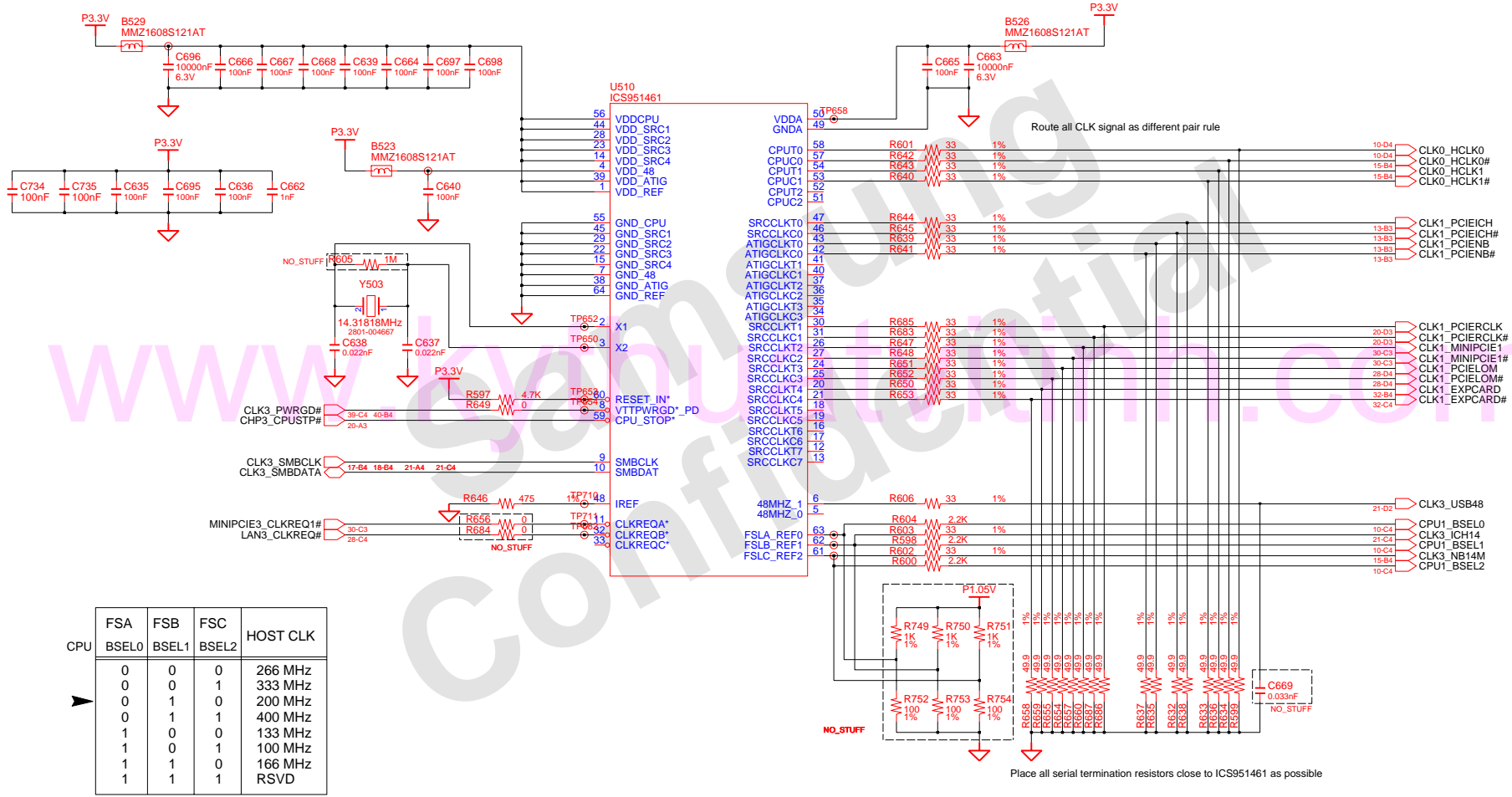
### System Power States

- 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.
- In Deeper Sleep, CPU voltage reduced in this state to reduce the leakage power.
- 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.

DRAW	ZHOU JUN	DATE	1/23/2008	TITLE	XI'AN MAIN	SAMSUNG ELECTRONICS
CHECK	GUO LEI	DEV. STEP	PV	BOARD INFORMATION		
APPROVAL	KEVIN LEE	REV	1.0	PART NO. BA41-00859/60/61A		
MODULE CODE	LAST EDIT	November 26, 2007 11:01:51 AM		PAGE	7	OF 48

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### CLOCK GENERATOR

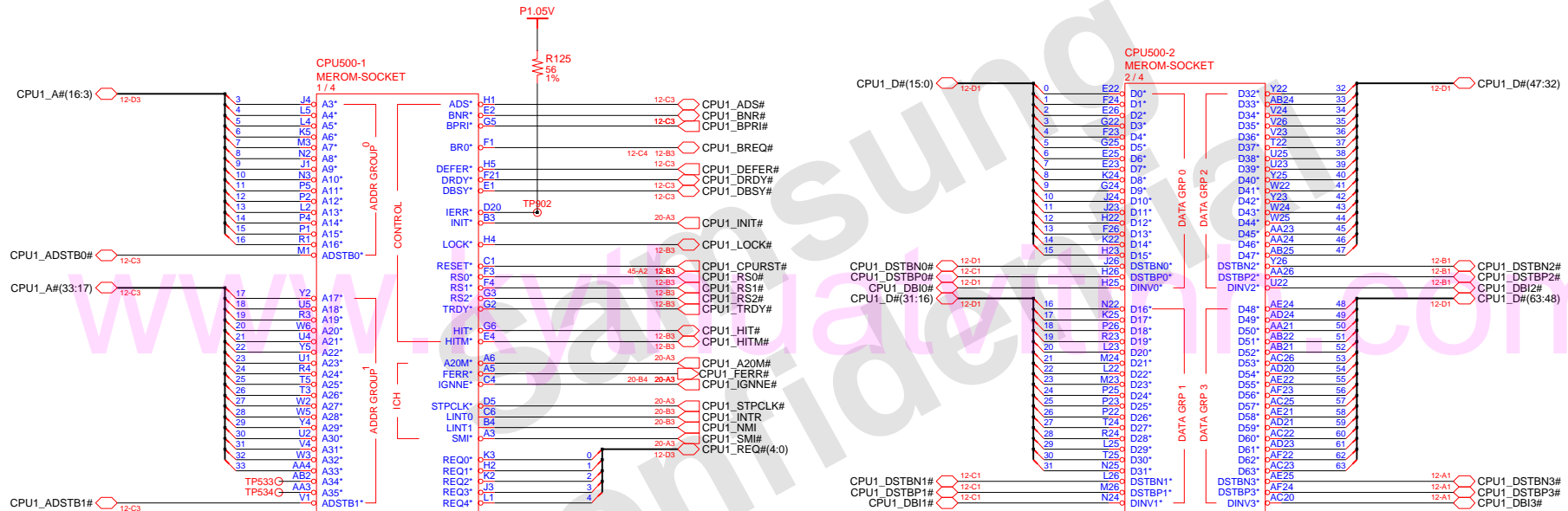


CPU	FSA	FSB	FSC	HOST CLK
	BSEL0	BSEL1	BSEL2	
0	0	0	0	266 MHz
0	0	0	1	333 MHz
0	1	0	0	200 MHz
0	1	1	0	400 MHz
1	0	0	0	133 MHz
1	0	1	0	100 MHz
1	1	0	0	166 MHz
1	1	1	1	RSVD

DRAW	ZHOU JUN	DATE	1/23/2008	TITLE	XI'AN MAIN	<b>SAMSUNG</b> ELECTRONICS
CHECK	GUO LEI	DEV. STEP	PV	CLOCK GENERATOR		
APPROVAL	KEVIN LEE	REV	1.0	November 26, 2007 11:01:51 AM		PART NO. BA41-00859/60/61A
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# CPU SOCKET-P : MEROM / PENTYN

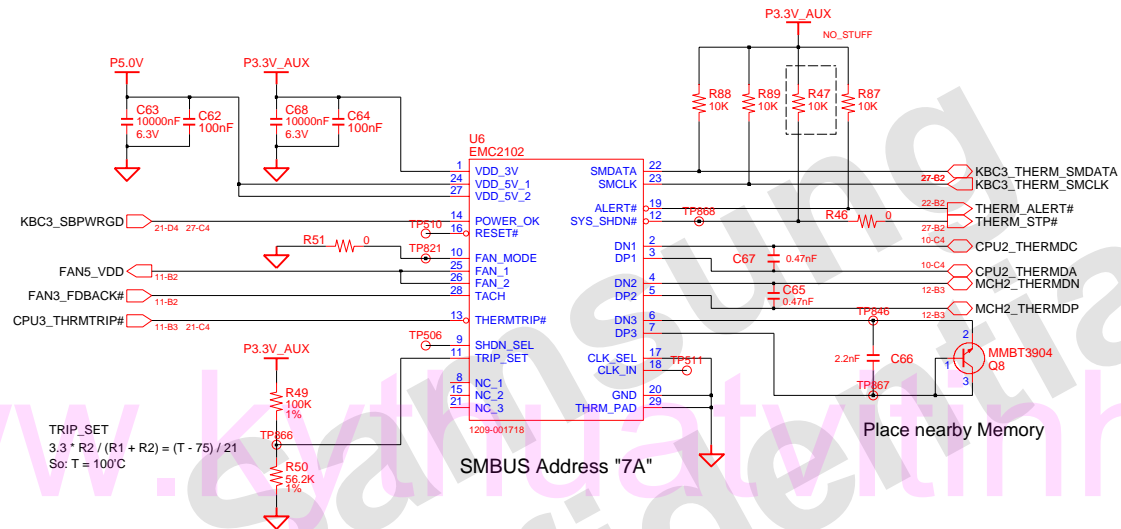


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MODULE CODE		LAST EDIT	November 26, 2007 11:01:51 AM	PAGE	9	OF	48

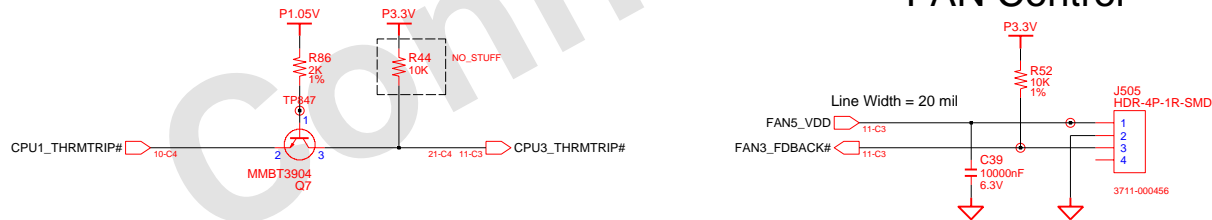


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## Thermal Monitor

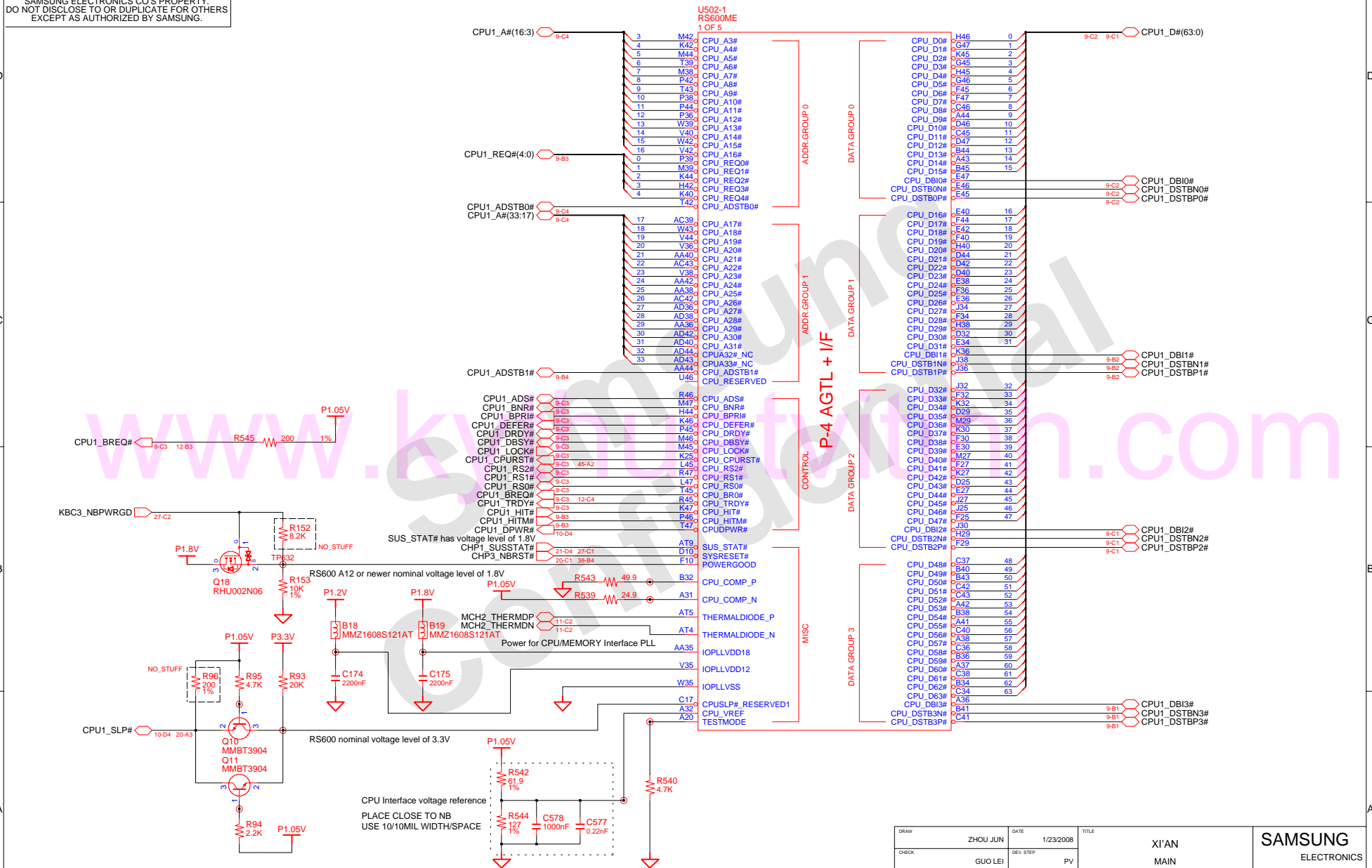


## FAN Control



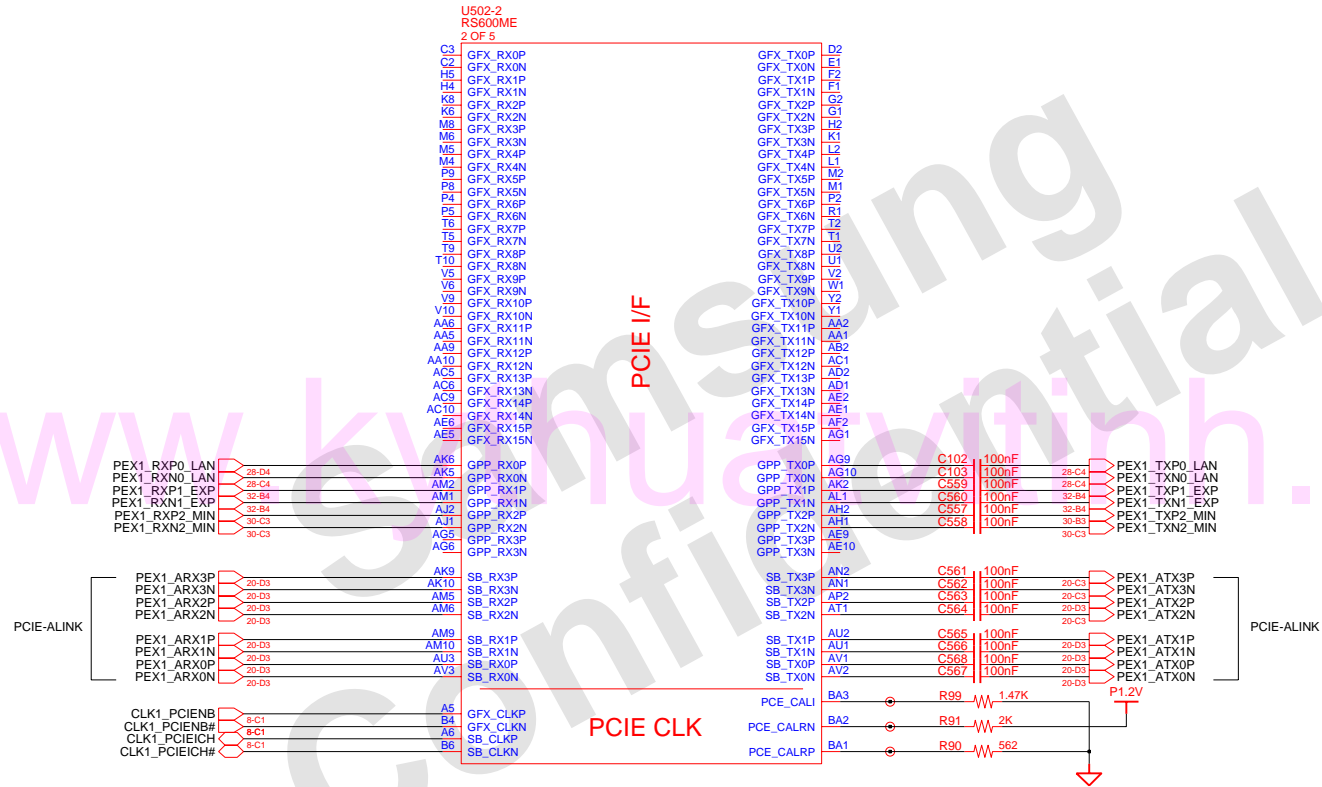
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CHECK	GUO LEI	DEV. STEP	PV	THERMAL MONITOR		
APPROVAL	KEVIN LEE	REV	1.0			PART NO. BA41-00859/60/61A
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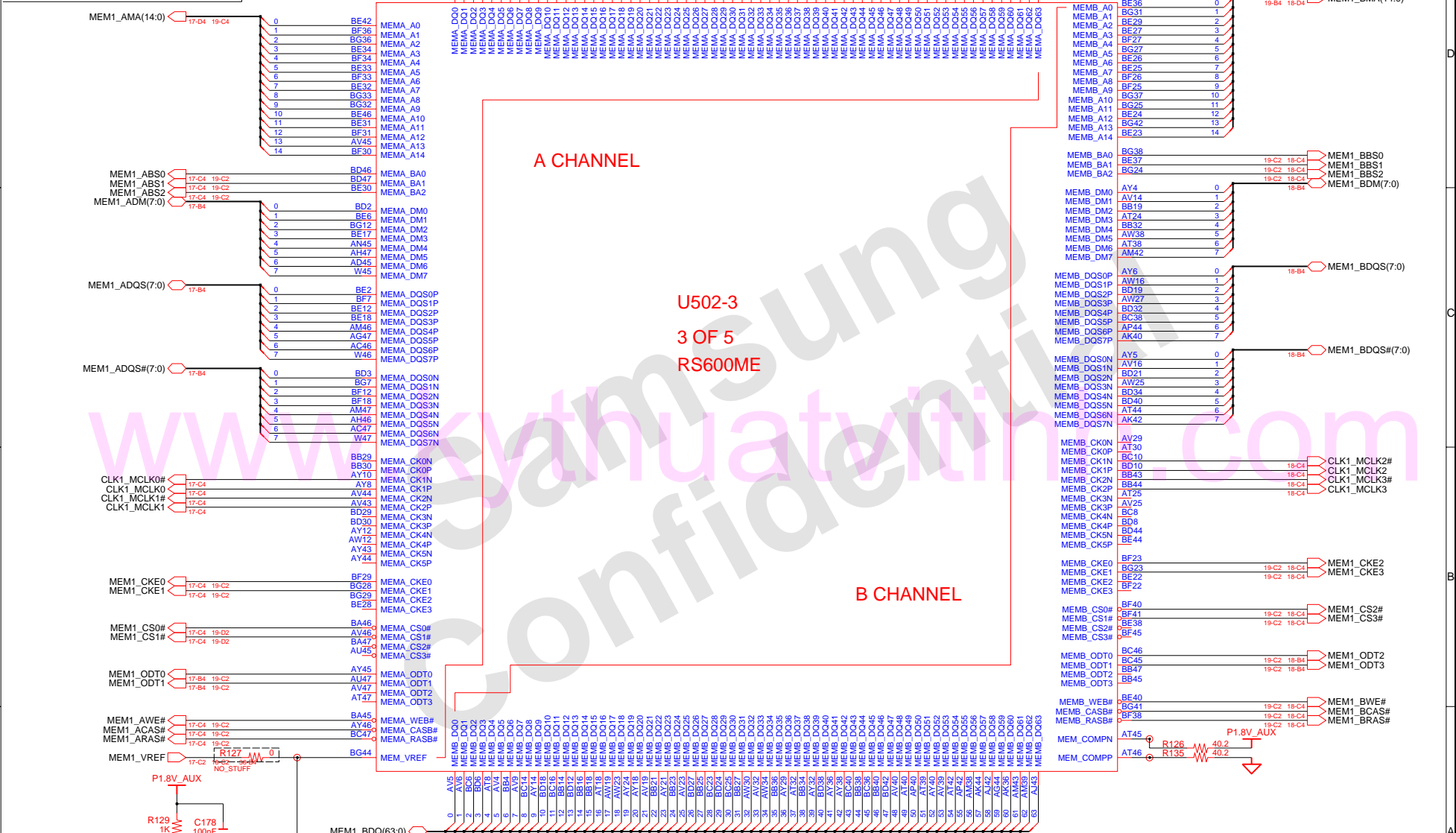
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APPROVAL	KEVIN LEE	REV	1.0		RS600ME (1)	PART NO. BA41-00859/60/61A
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CHECK	GUO LEI	DEV STEP	PV			
APPROVAL	KEVIN LEE	REV	1.0		RS600ME (2)	PART NO. BA41-00859/60/61A
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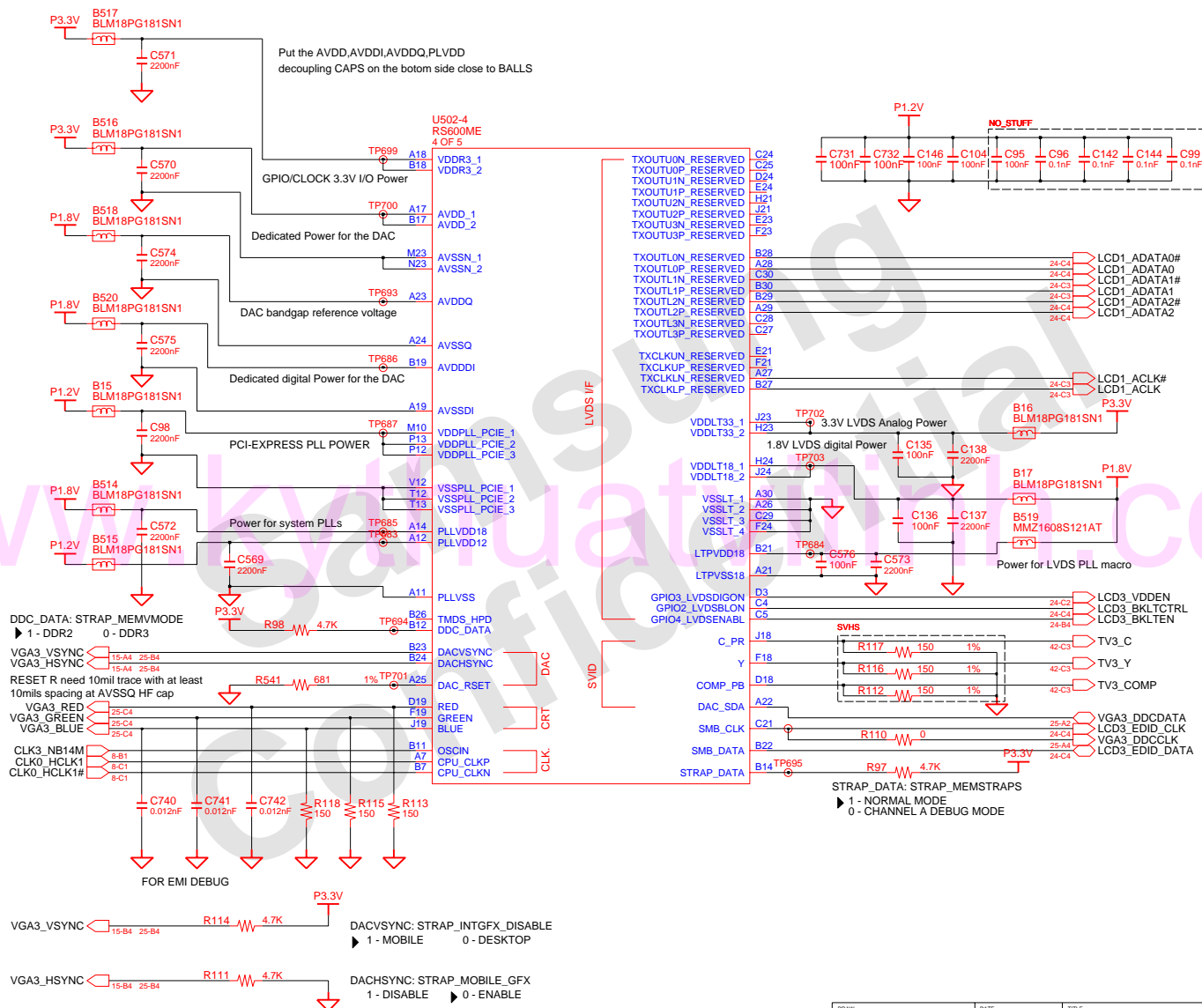
A CHANNEL

U502-3  
 3 OF 5  
 RS600ME

B CHANNEL

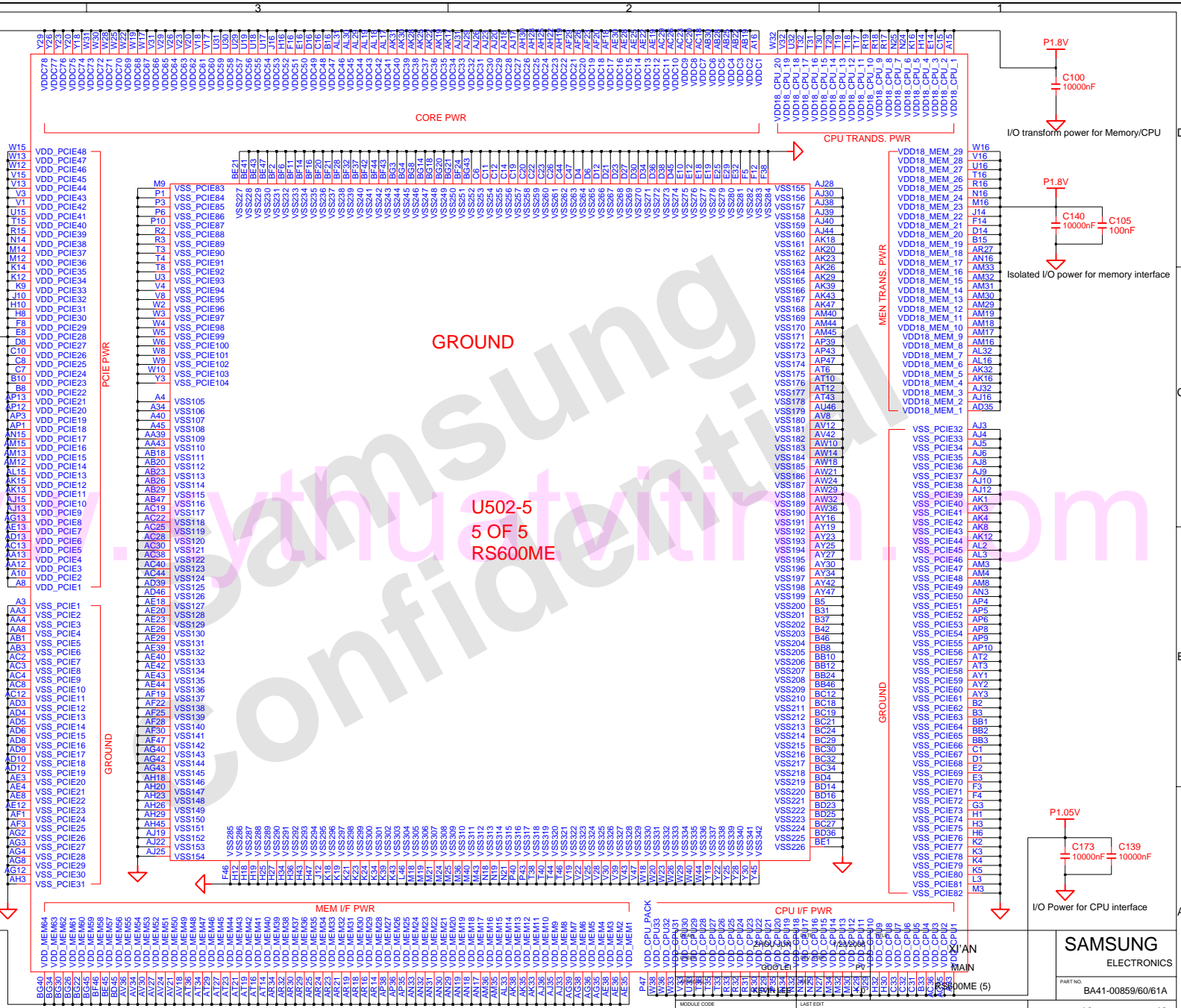
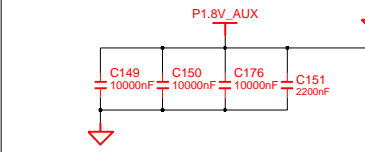
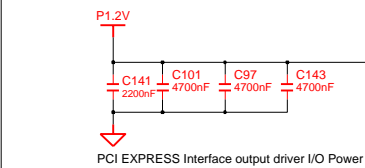
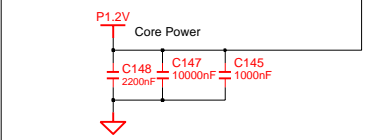
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APPROVAL	KEVIN LEE	REV	1.0		RS600ME (3)	PART NO. BA41-00859/60/61A
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DRAW	ZHOU JUN	DATE	1/23/2008	TITLE	XI'AN MAIN	SAMSUNG ELECTRONICS
CHECK	GUO LEI	DEV. STEP	PV			
APPROVAL	KEVIN LEE	REV	1.0		RS600ME (4)	PART NO. BA41-00859/60/61A
MODULE CODE		LAST EDIT		November 26, 2007 11:01:51 AM	PAGE	15 OF 48

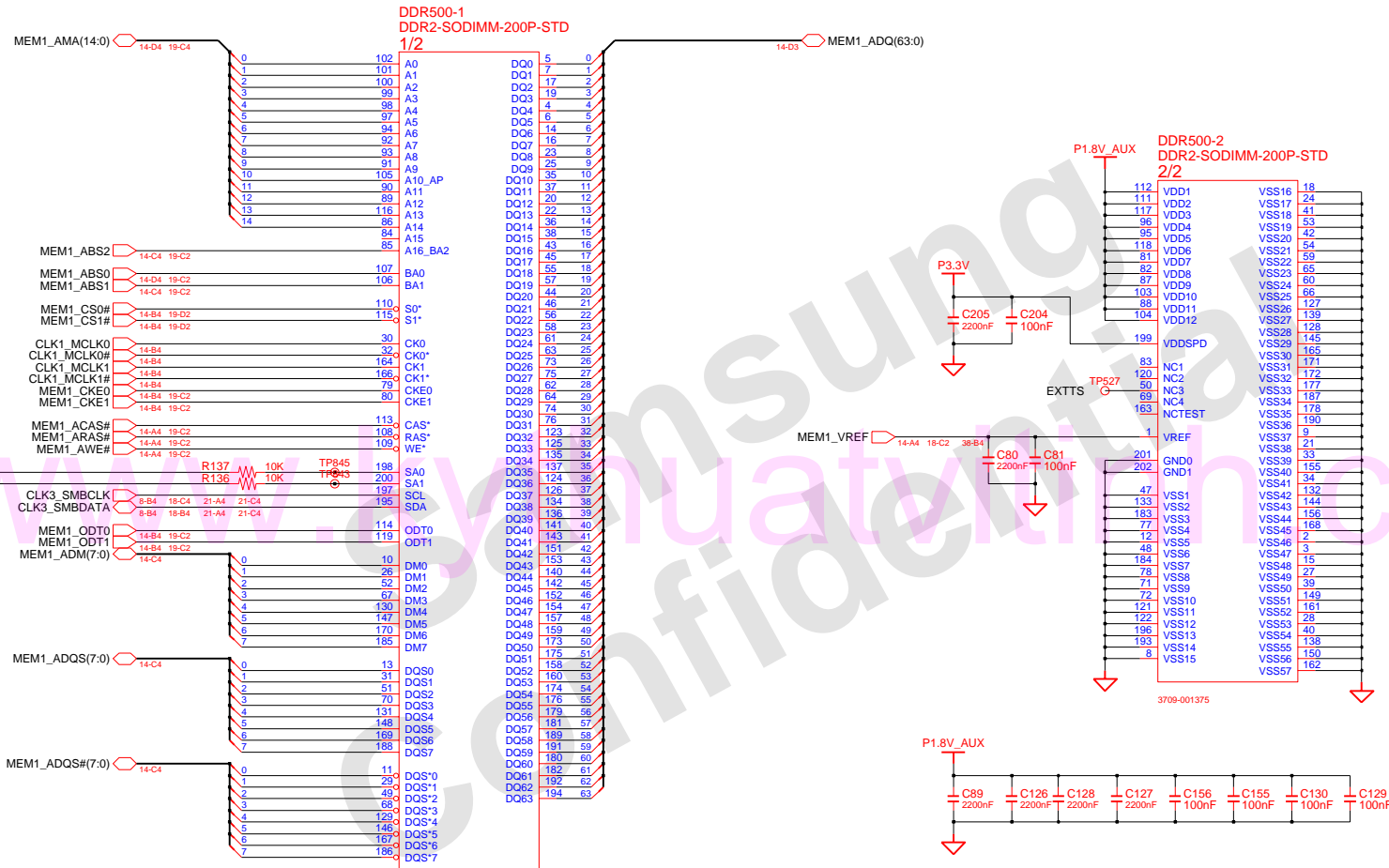
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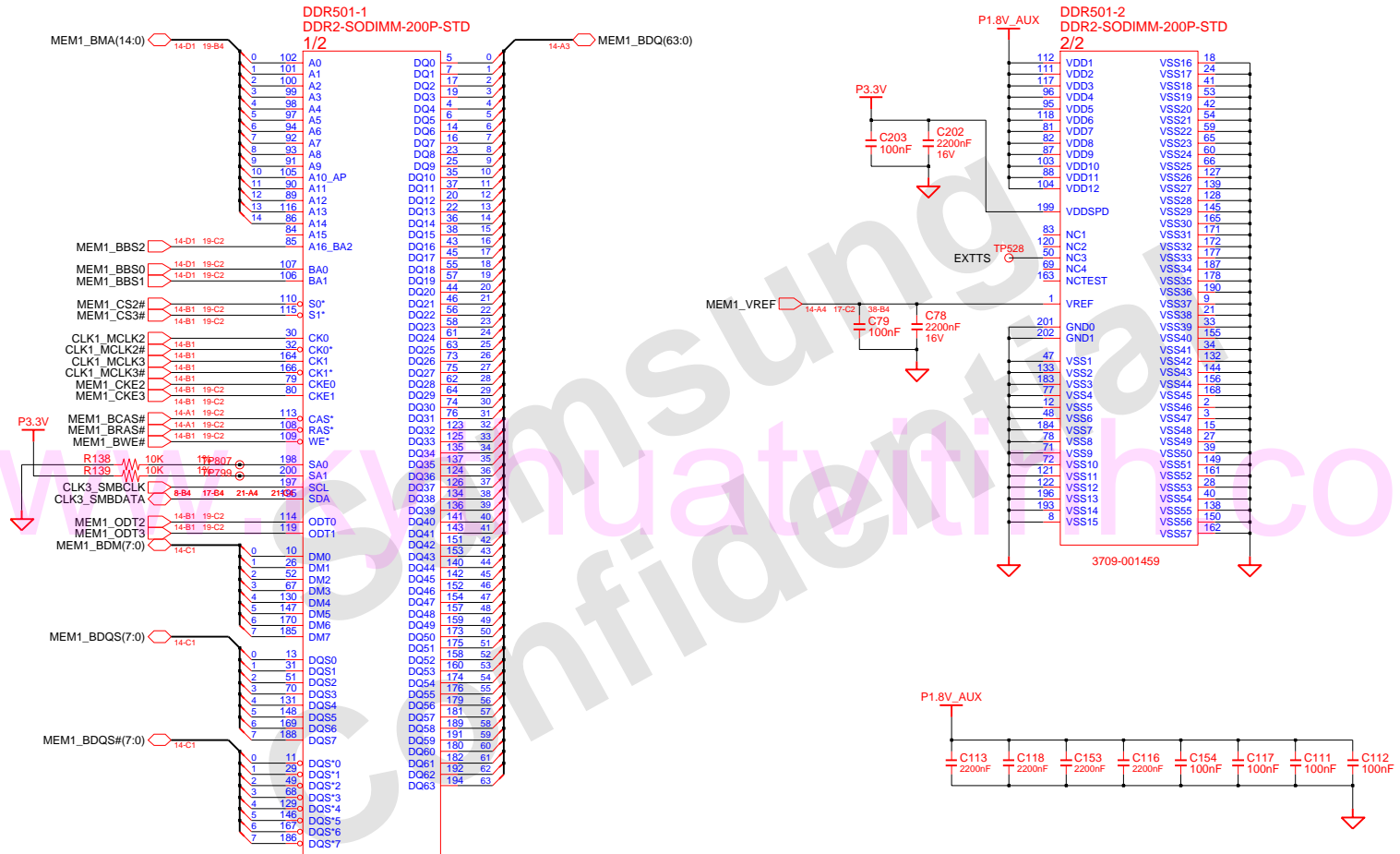
### SODIMM0 (CHANNEL A)



DRAW	ZHOU JUN	DATE	1/23/2008	TITLE	XI'AN MAIN		SAMSUNG ELECTRONICS
CHECK	GUO LEI	DEV. STEP	PV	DDR2 SODIMM 0 (BOTTOM)		PART NO. BA41-00859/60/61A	
APPROVAL	KEVIN LEE	REV	1.0	November 26, 2007 11:01:51 AM		PAGE	17 OF 48
MODULE CODE	LAST ENT						

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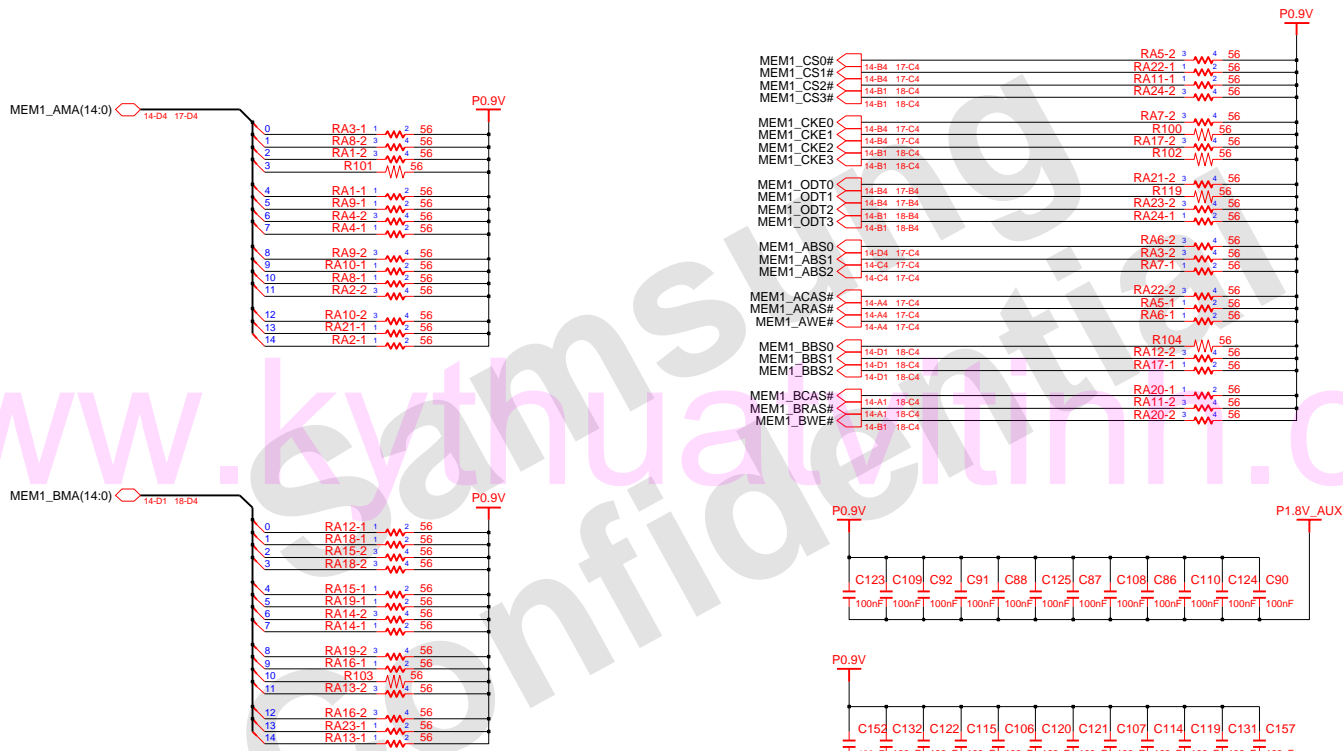
SODIMM1 (CHANNEL B)



3709-001459  
 Height: 9.2mm  
 SMBUS ADDR "A4h"

DRAW	ZHOU JUN	DATE	1/23/2008	TITLE	XI'AN MAIN	SAMSUNG ELECTRONICS
CHECK	GUO LEI	DEV. STEP	PV	DDR2 SODIMM 1 (TOP)		
APPROVAL	KEVIN LEE	REV	1.0	PART NO. BA41-00859/60/61A		PAGE 18 OF 48
MODULE CODE		LAST EDIT		November 26, 2007 11:01:51 AM		

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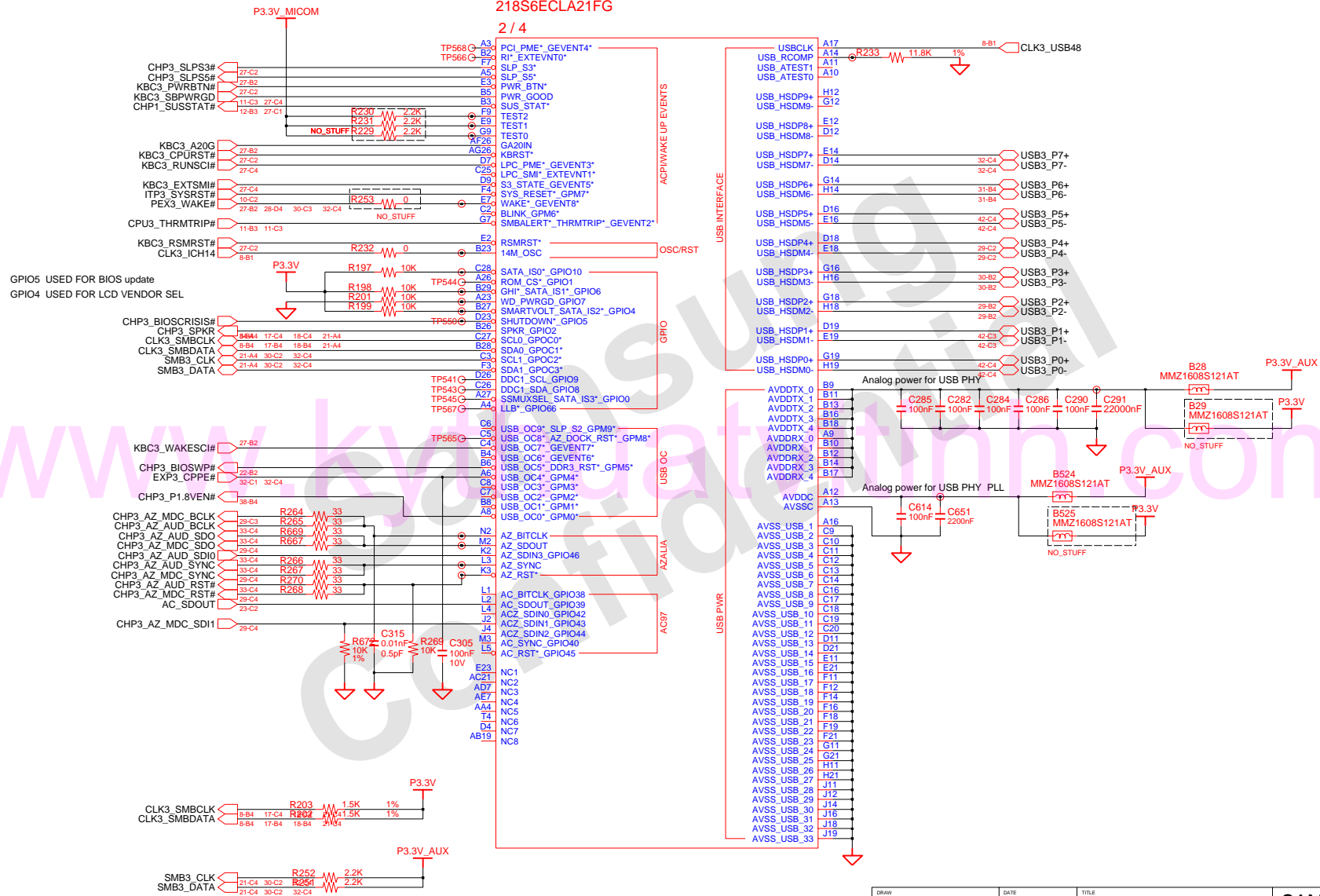
Place one cap close to every 2 pull-up resistors terminated to P0.9V

DRAW	ZHOU JUN	DATE	1/23/2008	TITLE	XI'AN MAIN DDR2 TERMINATION	<b>SAMSUNG</b> ELECTRONICS PART NO. BA41-00859/60/61A
CHECK	GUO LEI	DEV. STEP	PV			
APPROVAL	KEVIN LEE	REV	1.0			
MODULE CODE		LAST EDIT		November 26, 2007 11:01:51 AM	PAGE	19 OF 48



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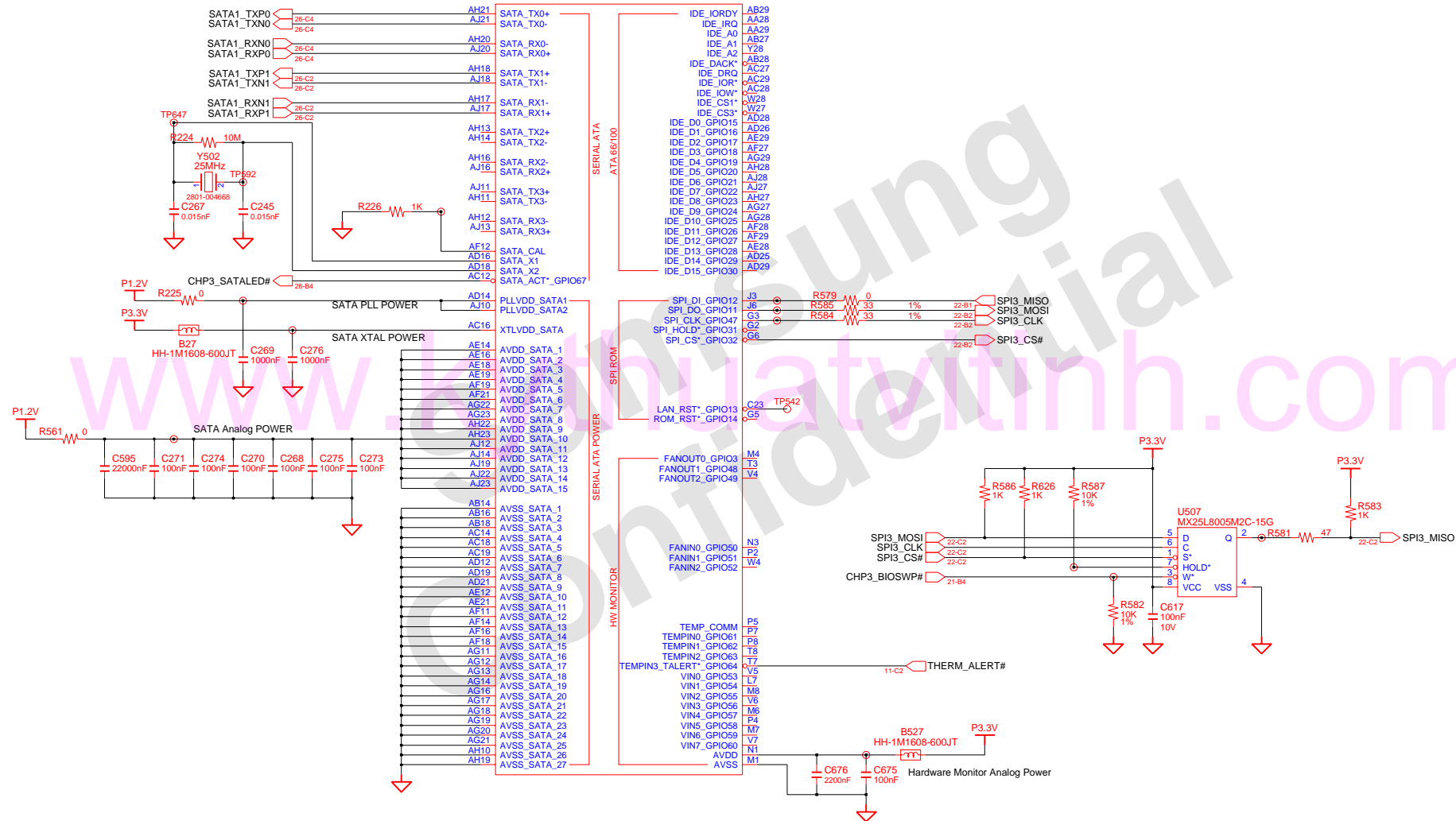
**U504-2**  
**218S6ECLA21FG**  
**2 / 4**



DRAW	ZHOU JUN	DATE	1/23/2008	TITLE	XI'AN MAIN SB600 (2)	<b>SAMSUNG</b> ELECTRONICS
CHECK	GUO LEI	DEV. STEP	PV			
APPROVAL	KEVIN LEE	REV	1.0			PART NO. BA41-00859/60/61A
MODULE CODE		LAST ENT				
				November 26, 2007 11:01:51 AM	PAGE	21 OF 48

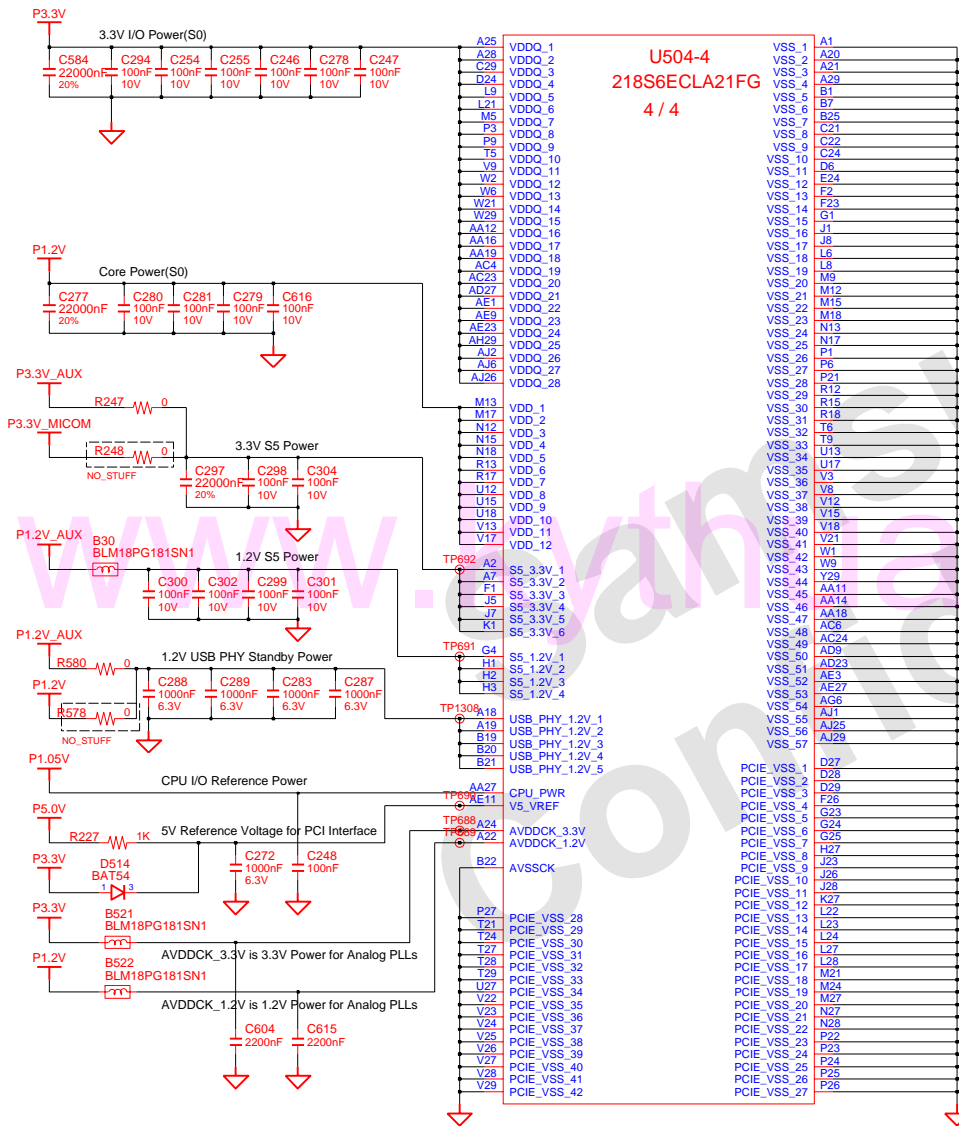
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**U504-3**  
**218S6ECLA21FG**  
 3 / 4

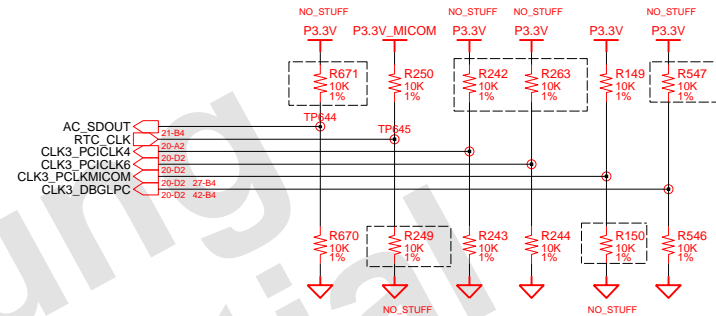


DRAW	ZHOU JUN	DATE	1/23/2008	TITLE	XI'AN	SAMSUNG ELECTRONICS
CHECK	GUO LEI	DEV. STEP	PV	MAIN	MAIN	
APPROVAL	KEVIN LEE	REV	1.0	SB600 (3)	PART NO.	BA41-00859/60/61A
MODULE CODE		LAST EDIT			November 26, 2007 11:01:51 AM	PAGE 22 OF 48

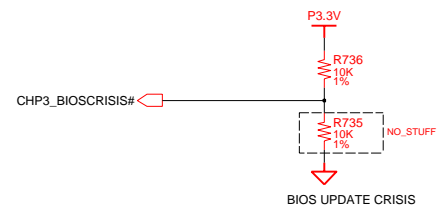
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**REQUIRED SYSTEM STRAPS**



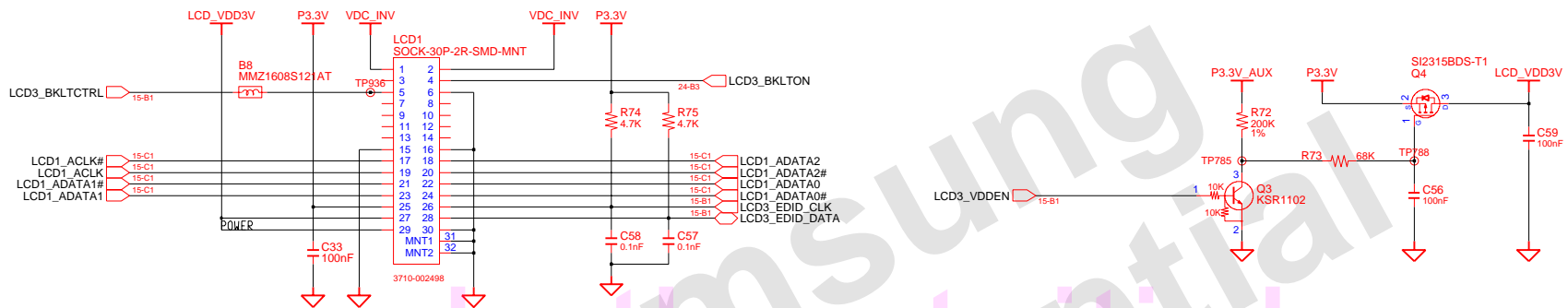
	AC_SDOUT	RTC_CLK	CLK3_PCICLK4	CLK3_PCICLK6	CLK3_PCLKMICOM,CLK3_DBG LPC
STRAP HIGH	USE DEBUG STRAPS	INTERNAL RTC DEFAULT	USE INT PLL 48	CPU I/F = K8	ROM TYPE H,H = PCI ROM H,L = LPC ROM L,L = FWH ROM
STRAP LOW	IGNORE DEBUG STRAPS DEFAULT	EXRERNAL RTC	USE EXT 48MHZ DEFAULT	CPU I/F = P4	



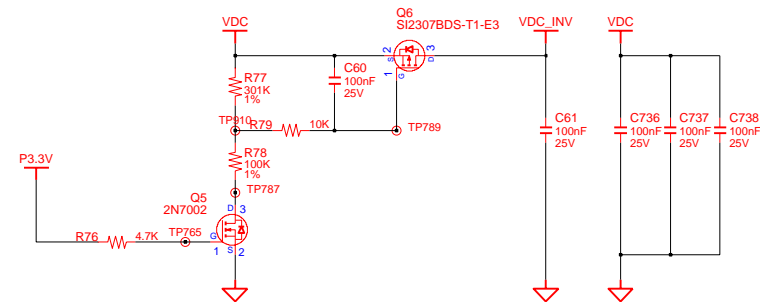
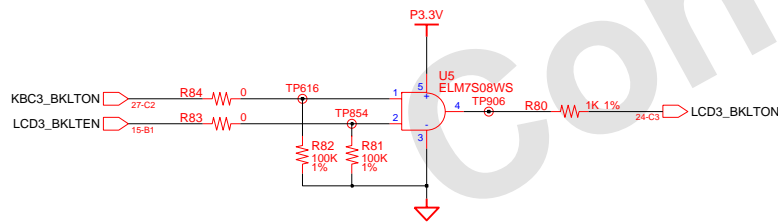
DRAW	ZHOU JUN	DATE	1/23/2008	TITLE	XI'AN MAIN SB600 (4)	<b>SAMSUNG</b> ELECTRONICS PART NO. BA41-00859/60/61A
CHECK	GUO LEI	DEV_STEP	PV			
APPROVAL	KEVIN LEE	REV	1.0			
MODULE CODE		LAST EDIT				
			November 26, 2007 11:01:51 AM	PAGE	23 OF 48	

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## WXGA LCD CONNECTOR



Signalis : #40AWG  
 LCD Vdd : #36AWG  
 Inverter Vdd : #36AWG  
 GND : #36AWG

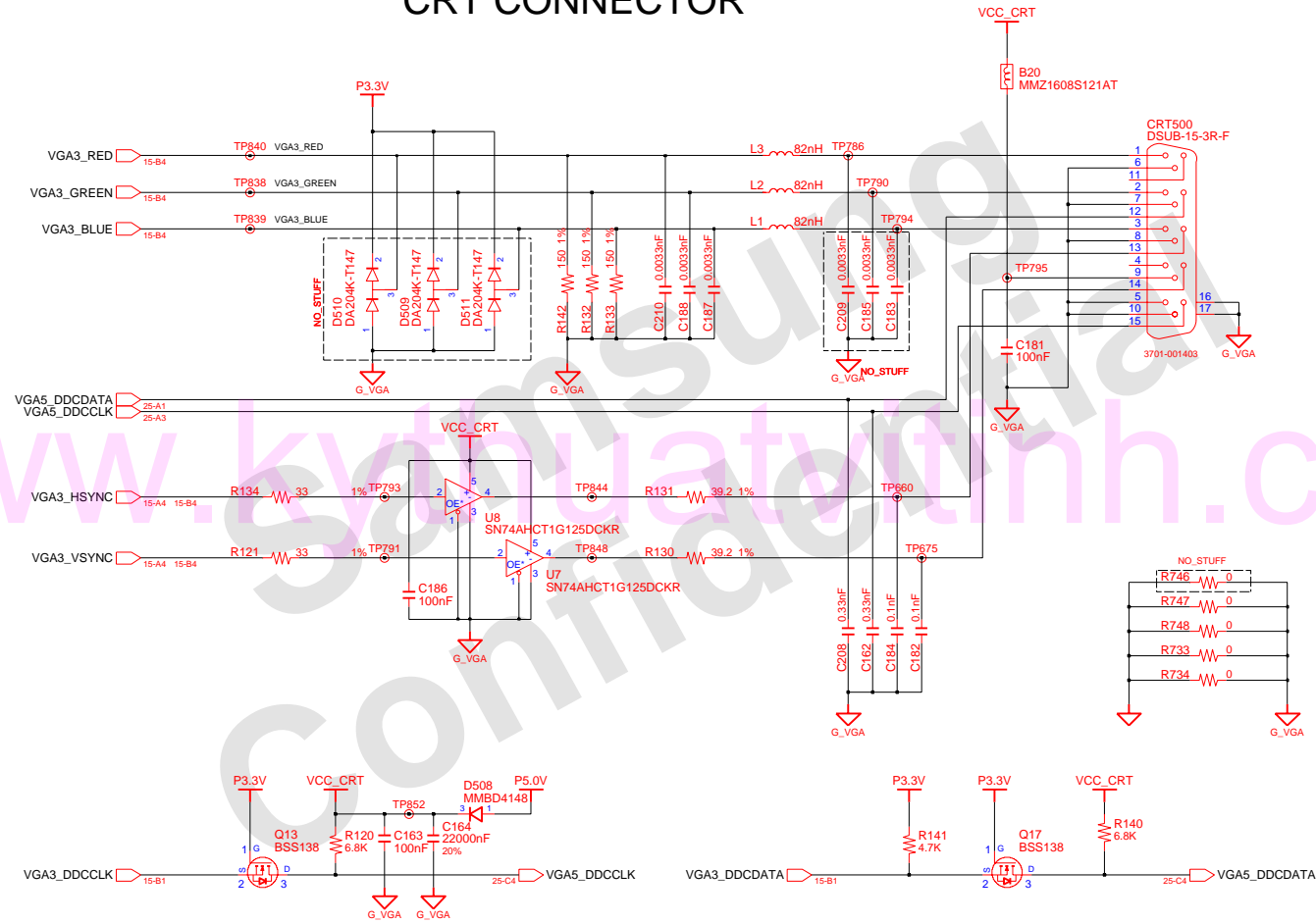


DRAW	ZHOU JUN	DATE	1/23/2008	TITLE	XI'AN	SAMSUNG ELECTRONICS
CHECK	GUO LEI	DEV. STEP	PV	MAIN	MAIN	
APPROVAL	KEVIN LEE	REV	1.0	LVDS	LVDS	
MODULE CODE		LAST EDIT	November 26, 2007 11:01:51 AM	PAGE	24	OF 48



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# CRT CONNECTOR

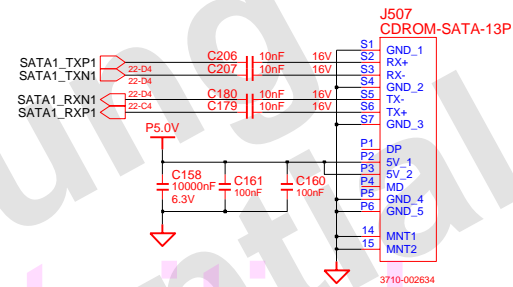
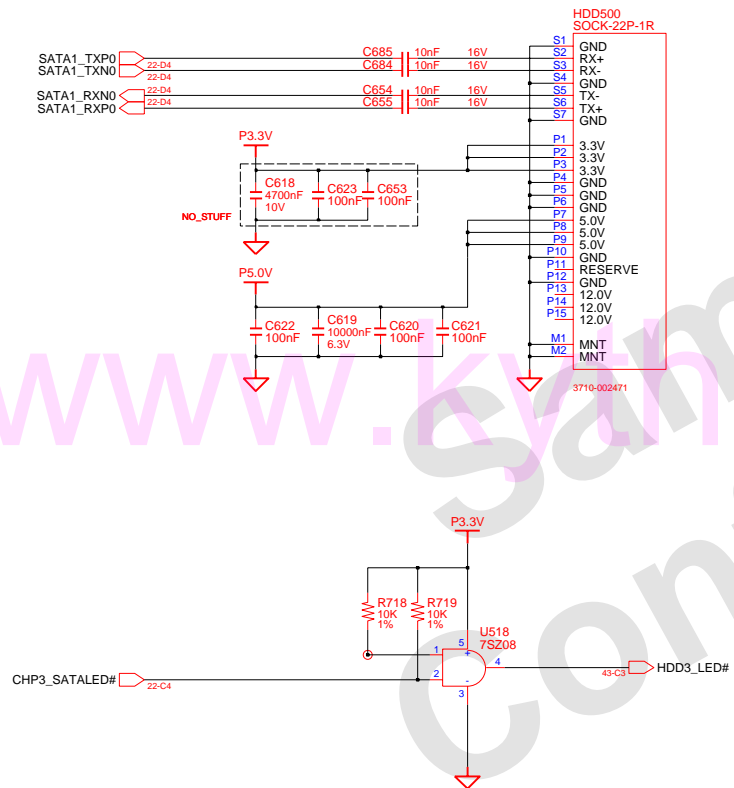


DRAW	ZHOU JUN	DATE	1/23/2008	TITLE	XI'AN	SAMSUNG ELECTRONICS
CHECK	GUO LEI	DEV. STEP	PV		MAIN	
APPROVAL	KEVIN LEE	REV	1.0		CRT	
MODULE CODE		LAST EDIT				
				November 26, 2007 11:01:51 AM	PAGE	25 OF 48

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### Main to HDD

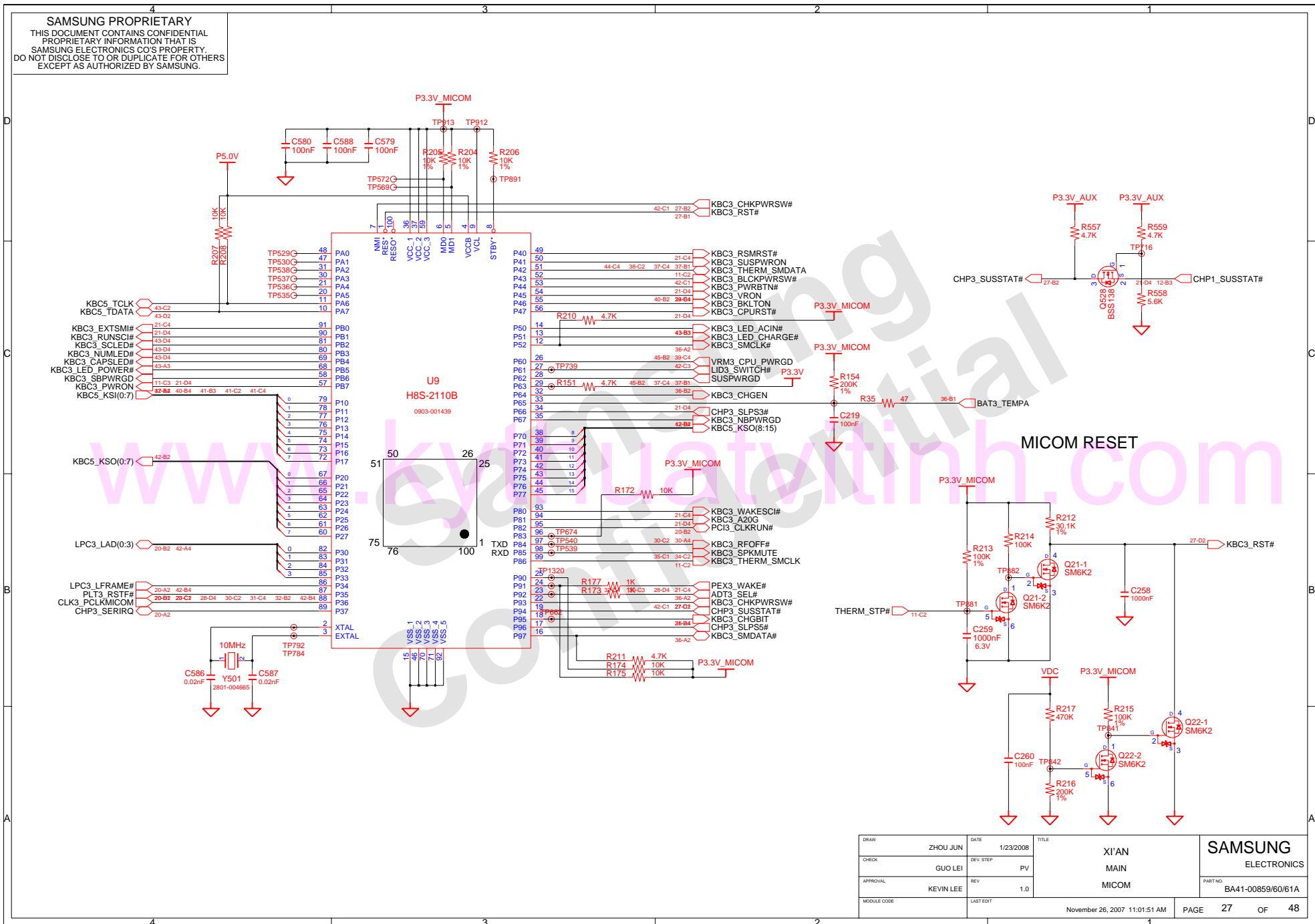
### Main to ODD



www.kyathuatvithinh.com

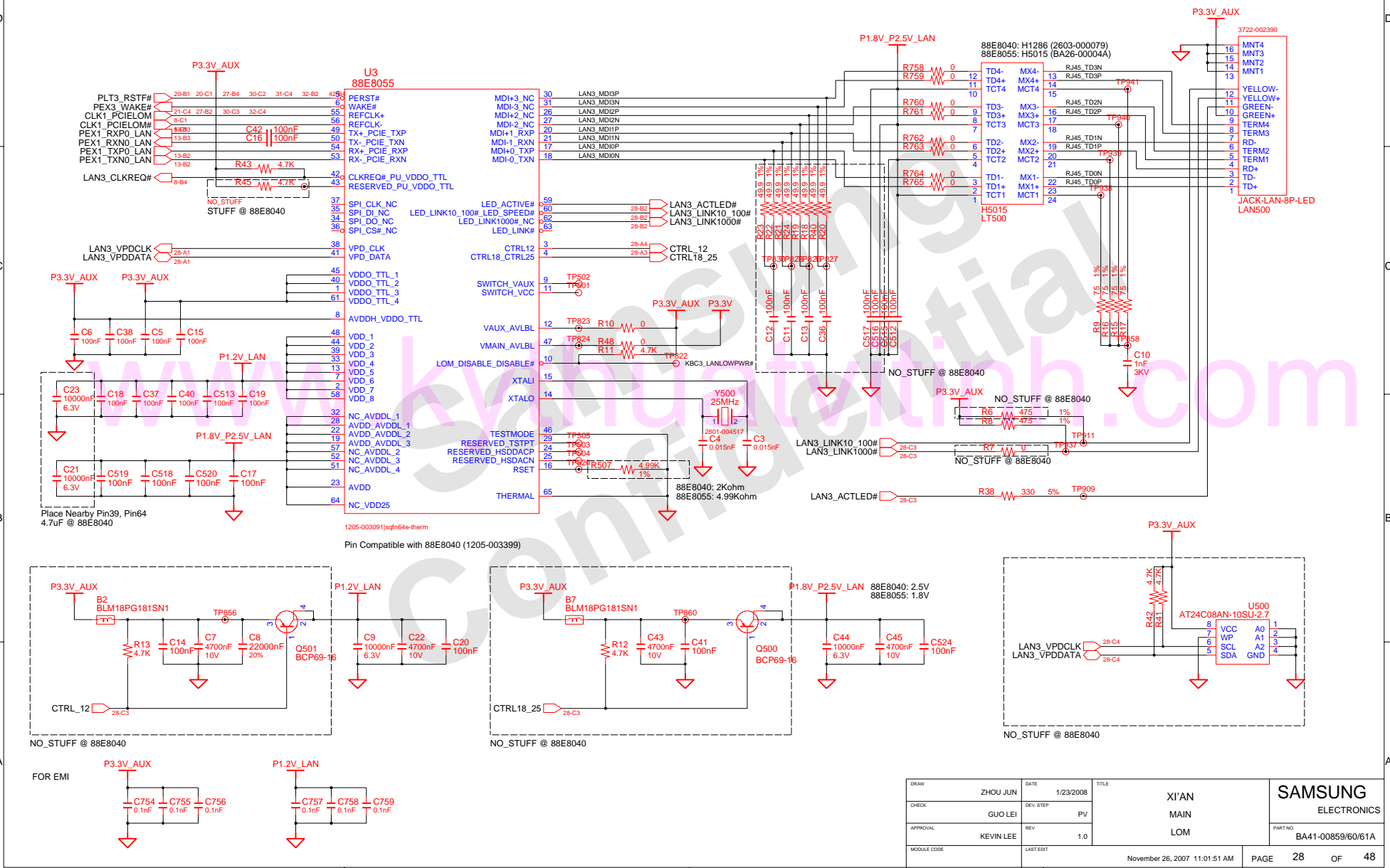
DRAW	ZHOU JUN	DATE	1/23/2008	TITLE	XI'AN	SAMSUNG ELECTRONICS
CHECK	GUO LEI	DEV STEP	PV	MAIN		
APPROVAL	KEVIN LEE	REV	1.0	IDE		
MODULE CODE		LAST EDIT	November 26, 2007 11:01:51 AM		PART NO. BA41-00859/60/61A	
						PAGE 26 OF 48

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DRAW	ZHOU JUN	DATE	1/23/2008	TITLE	XI'AN MAIN MICOM	<b>SAMSUNG</b> ELECTRONICS
CHECK	GUO LEI	DEV. STEP	PV			
APPROVAL	KEVIN LEE	REV	1.0			PART NO. BA41-00859/60/61A
MODULE CODE		LAST EDIT		November 26, 2007 11:01:51 AM	PAGE	27 OF 48

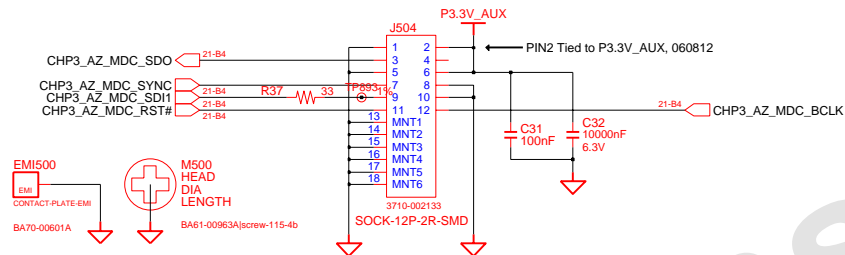
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DRAW	ZHOU JUN	DATE	1/23/2008	TITLE	XI'AN MAIN LOM		<b>SAMSUNG</b> ELECTRONICS PART NO. BA41-00859/60/61A
CHECK	GUO LEI	DEV_STEP	PV				
APPROVAL	KEVIN LEE	REV	1.0				
MODULE CODE		LAST EDIT					
				November 26, 2007 11:01:51 AM	PAGE	28 OF 48	

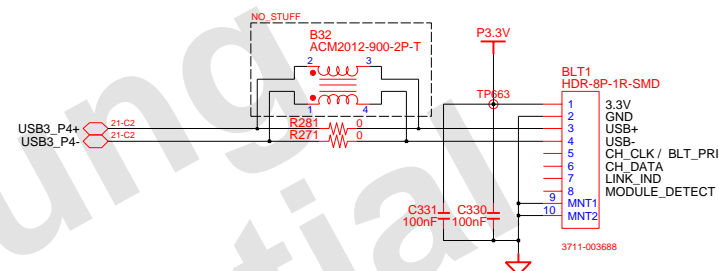
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## MDC connector

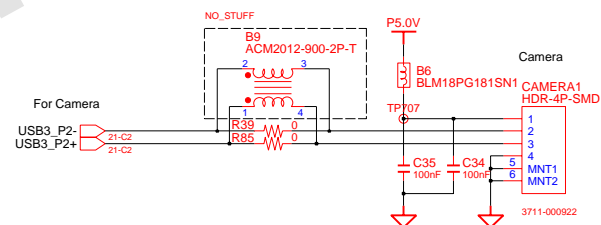
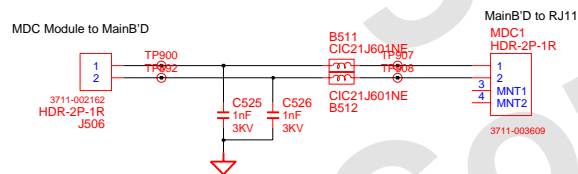


## BLUETOOTH

Bluetooth 2.0 Standard



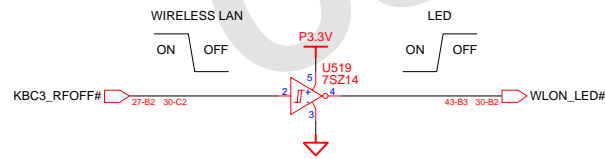
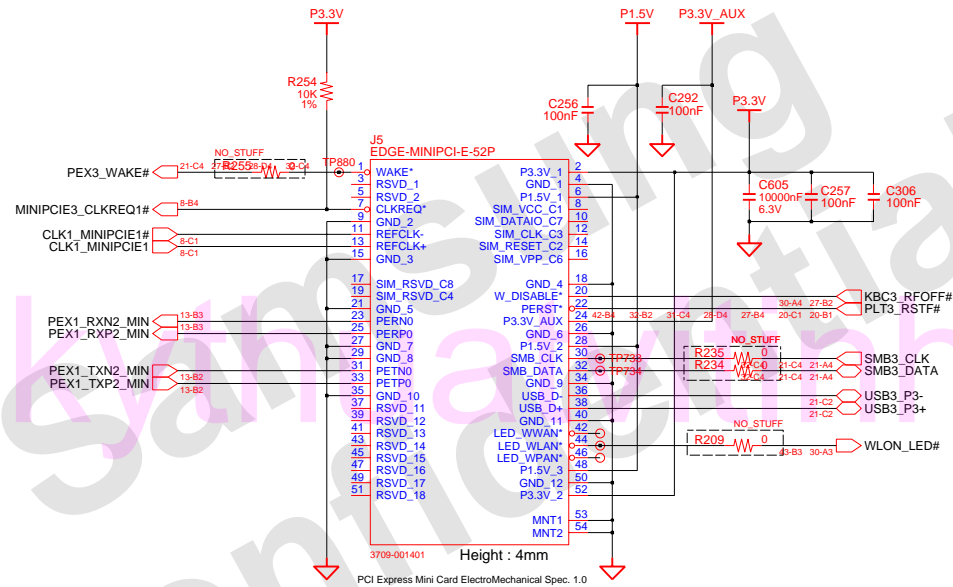
## CAMERA



DRAW	ZHOU JUN	DATE	1/23/2008	TITLE	XI'AN MAIN	SAMSUNG ELECTRONICS
CHECK	GUO LEI	DEV. STEP	PV	USB, MDC & BLUETOOTH		
APPROVAL	KEVIN LEE	REV	1.0			PART NO. BA41-00859/60/61A
MODULE CODE		LAST EDIT		November 26, 2007 11:01:51 AM	PAGE	29 OF 48

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## Mini PCI-E Card (WLAN)

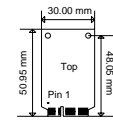


WLAN MINICARD NUT  
 Height : 4mm



BA61-00932A[screw-115-4t-h0250]

Mini PCI Express Card

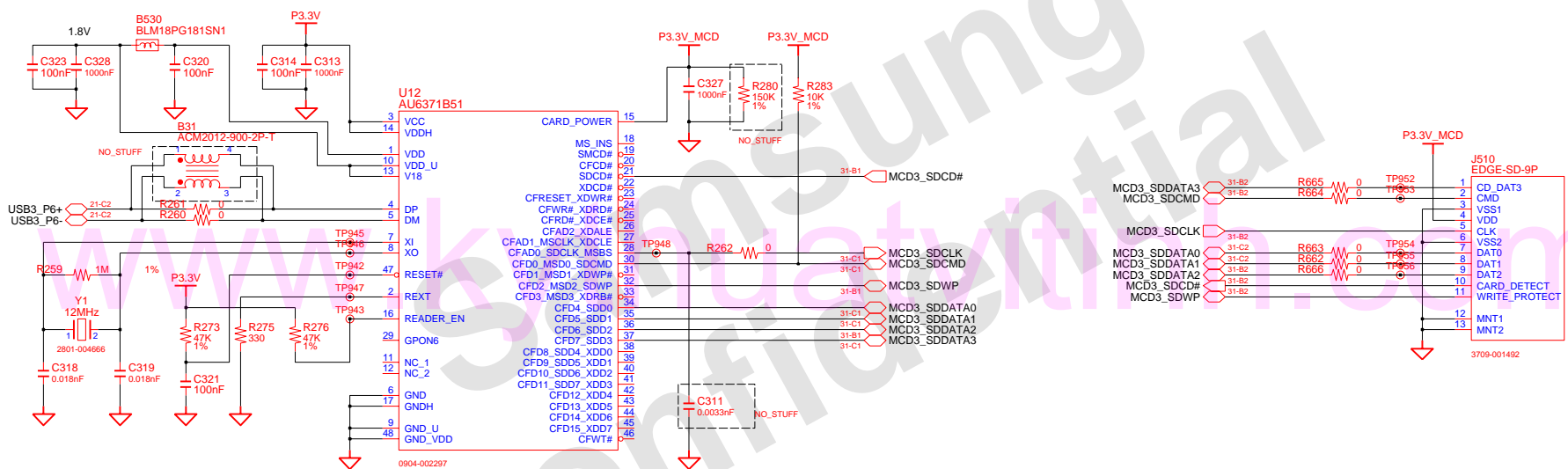


Odd Pins : Top side  
 Even Pins : Bottom Side

DRAW	ZHOU JUN	DATE	1/23/2008	TITLE	XI'AN MAIN MINI CARD	SAMSUNG ELECTRONICS
CHECK	GUO LEI	DEV. STEP	PV			
APPROVAL	KEVIN LEE	REV	1.0			PART NO. BA41-00859/60/61A
MODULE CODE		LAST EDIT		November 26, 2007 11:01:51 AM	PAGE	30 OF 48

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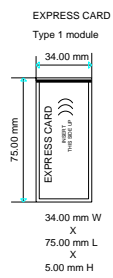
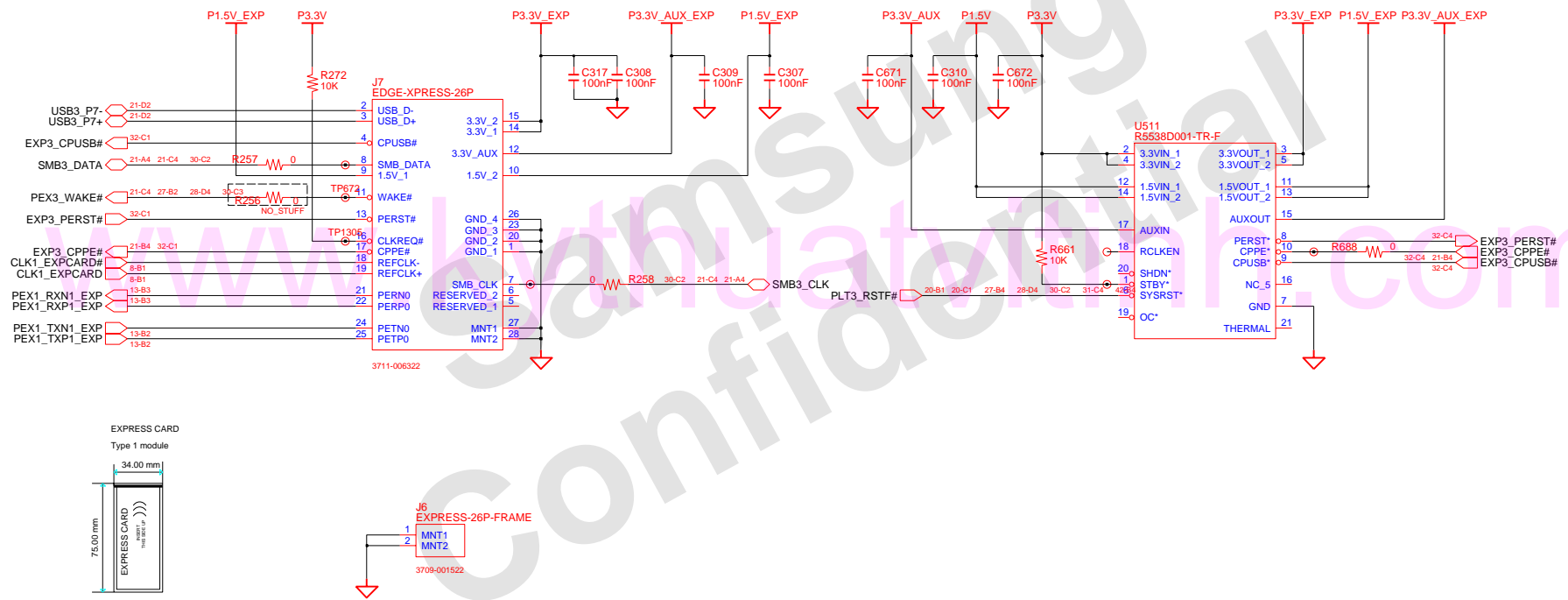
# MEMORY CARD (2 IN 1)



DRAW	ZHOU JUN	DATE	1/23/2008	TITLE	XI'AN MAIN MEMORY CARD	SAMSUNG ELECTRONICS
CHECK	GUO LEI	DEV. STEP	PV			
APPROVAL	KEVIN LEE	REV	1.0			PART NO. BA41-00859/60/61A
MODULE CODE		LAST EDIT	November 26, 2007 11:01:51 AM	PAGE	31	OF 48

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# EXPRESS CARD

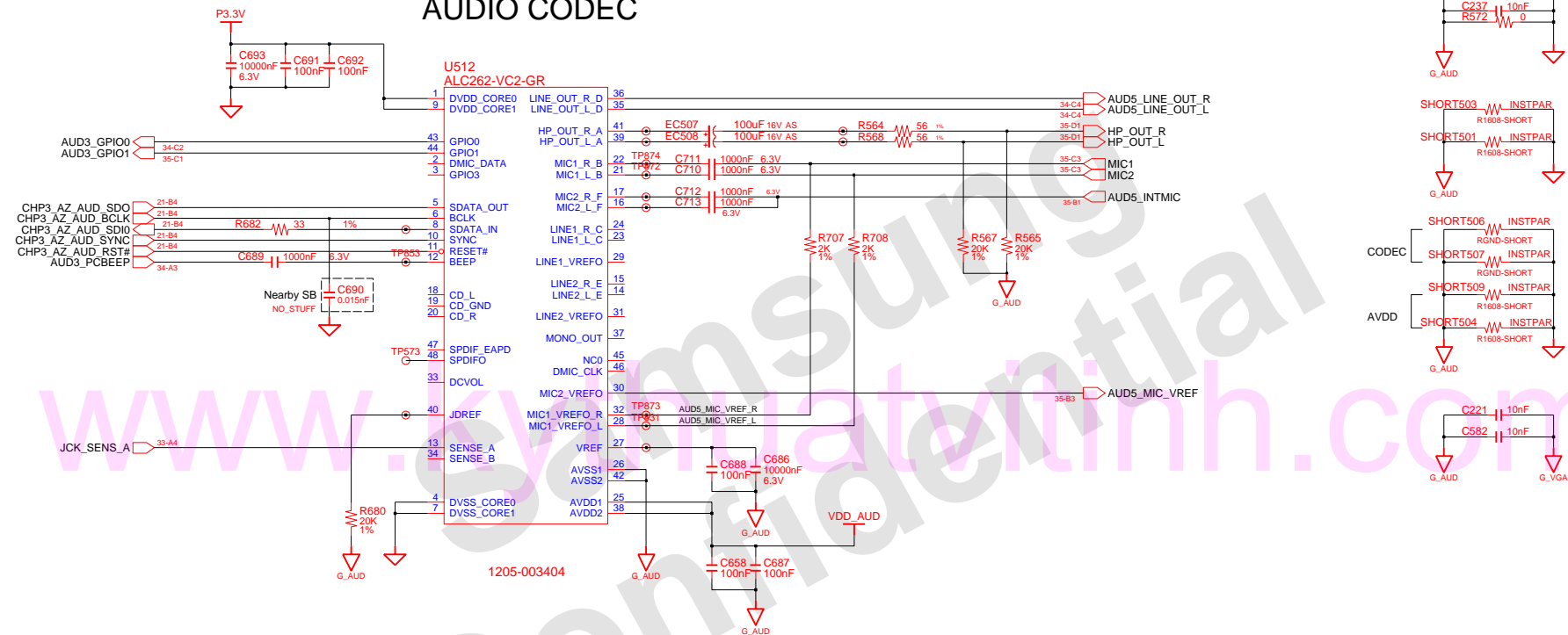


DRAW	ZHOU JUN	DATE	1/23/2008	TITLE	XI'AN MAIN	SAMSUNG ELECTRONICS
CHECK	GUO LEI	DEV. STEP	PV	EXPRESS CARD		
APPROVAL	KEVIN LEE	REV	1.0			PART NO. BA41-00859/60/61A
MODULE CODE		LAST EDIT	November 26, 2007 11:01:51 AM	PAGE	32	OF 48

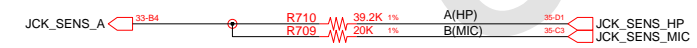
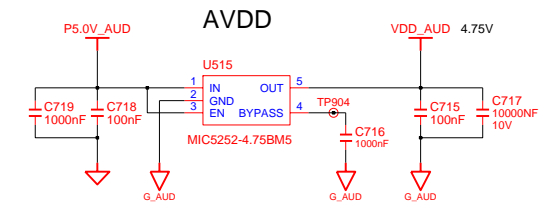
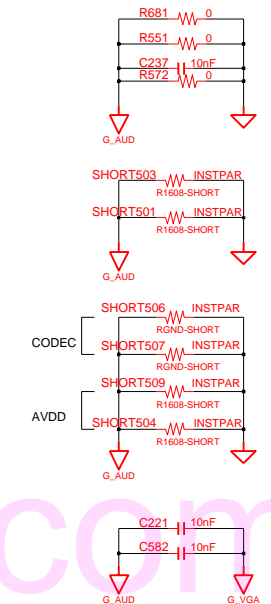


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### AUDIO CODEC



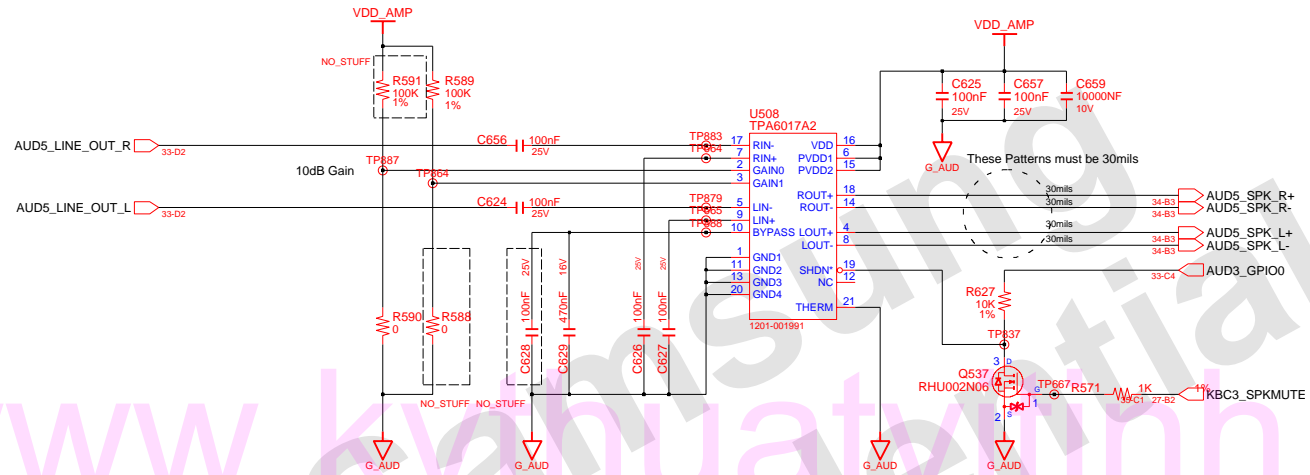
ALL 1608 SIZE



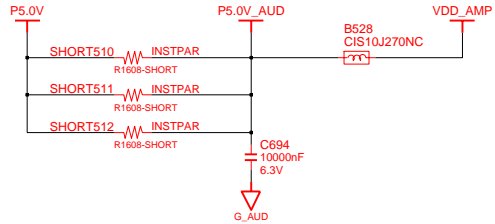
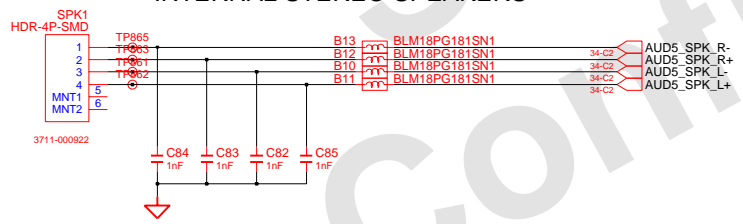
DRAW	ZHOU JUN	DATE	1/23/2008	TITLE	XI'AN MAIN AUDIO CODEC	SAMSUNG ELECTRONICS
CHECK	GUO LEI	DEV. STEP	PV			
APPROVAL	KEVIN LEE	REV	1.0			PART NO. BA41-00859/60/61A
MODULE CODE		LAST EDIT		November 26, 2007 11:01:51 AM	PAGE 33 OF 48	

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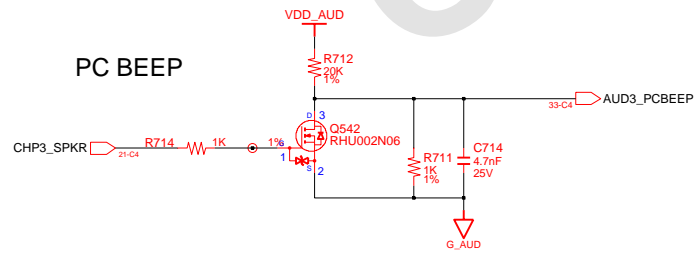
# AUDIO AMP



## INTERNAL STEREO SPEAKERS

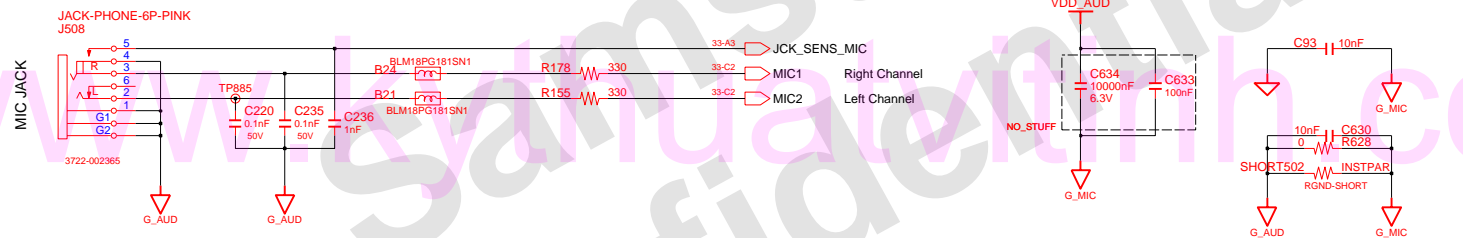
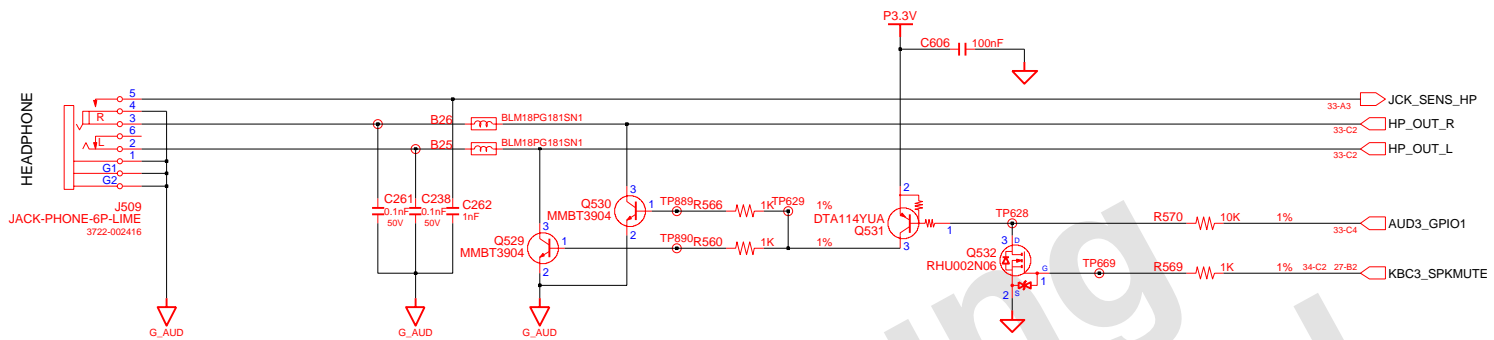


## PC BEEP

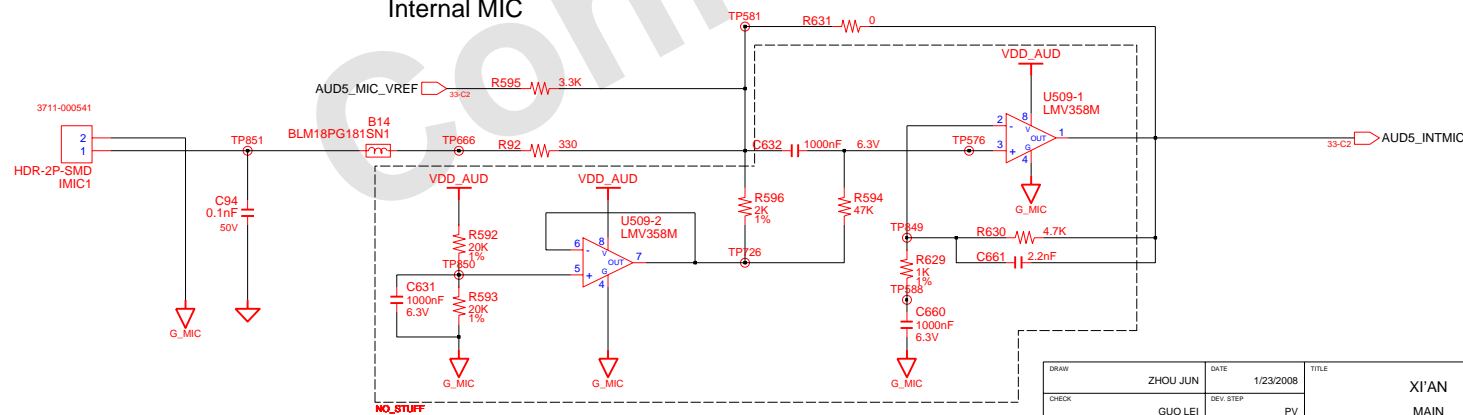


DRAW	ZHOU JUN	DATE	1/23/2008	TITLE	XI'AN MAIN		SAMSUNG ELECTRONICS
CHECK	GUO LEI	DEV. STEP	PV	AUDIO AMPLIFIER		PART NO.	
APPROVAL	KEVIN LEE	REV	1.0			BA41-00859/60/61A	
MODULE CODE		LAST EDIT	November 26, 2007 11:01:51 AM	PAGE	34	OF	48

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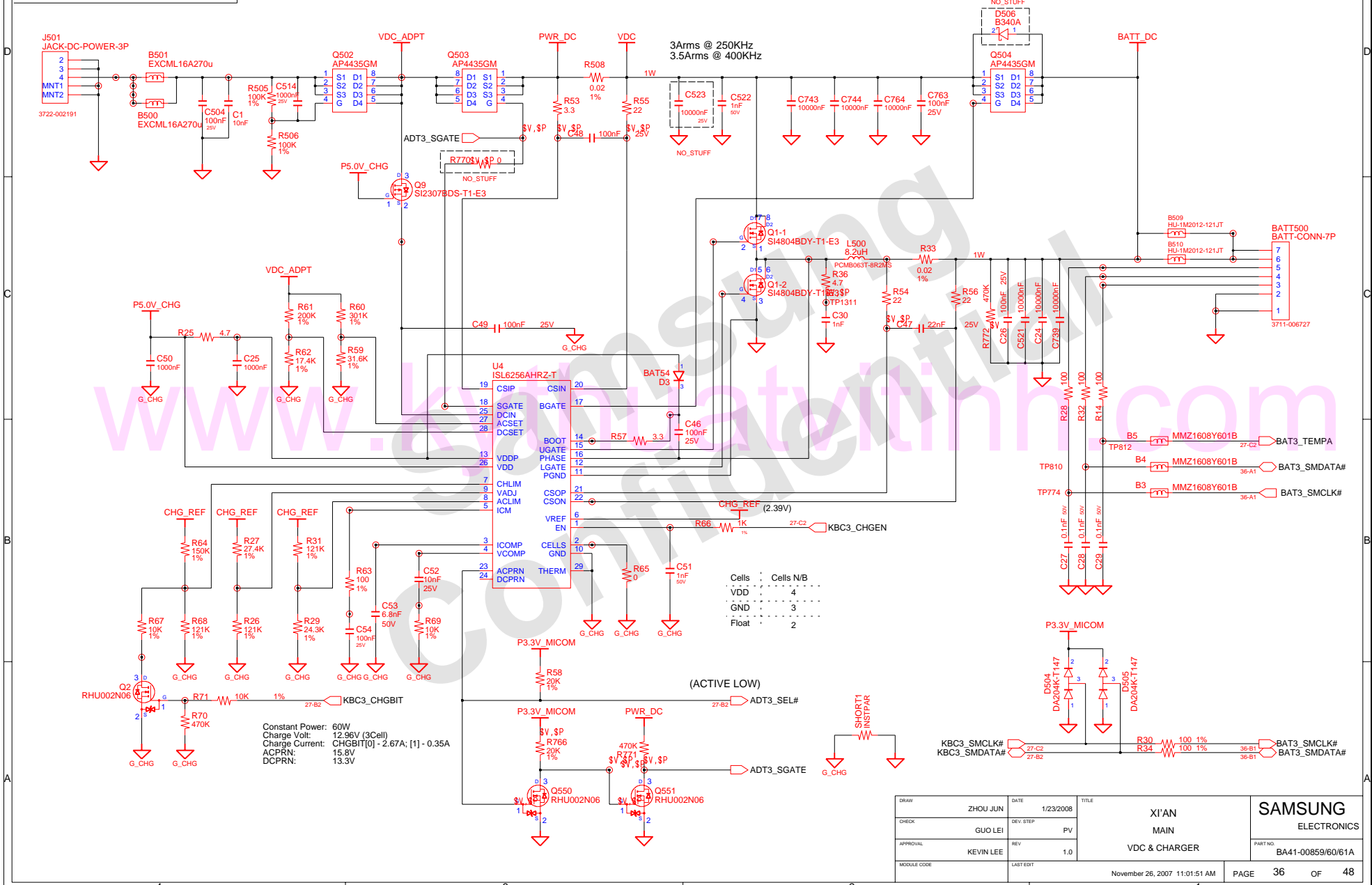
**Internal MIC**



DRAW	ZHOU JUN	DATE	1/23/2008	TITLE	XI'AN MAIN	SAMSUNG ELECTRONICS
CHECK	GUO LEI	DEV. STEP	PV	AUDIO JACK		
APPROVAL	KEVIN LEE	REV	1.0			PART NO. BA41-00859/60/61A
MODULE CODE		LAST EDIT		November 26, 2007 11:01:51 AM		PAGE 35 OF 48

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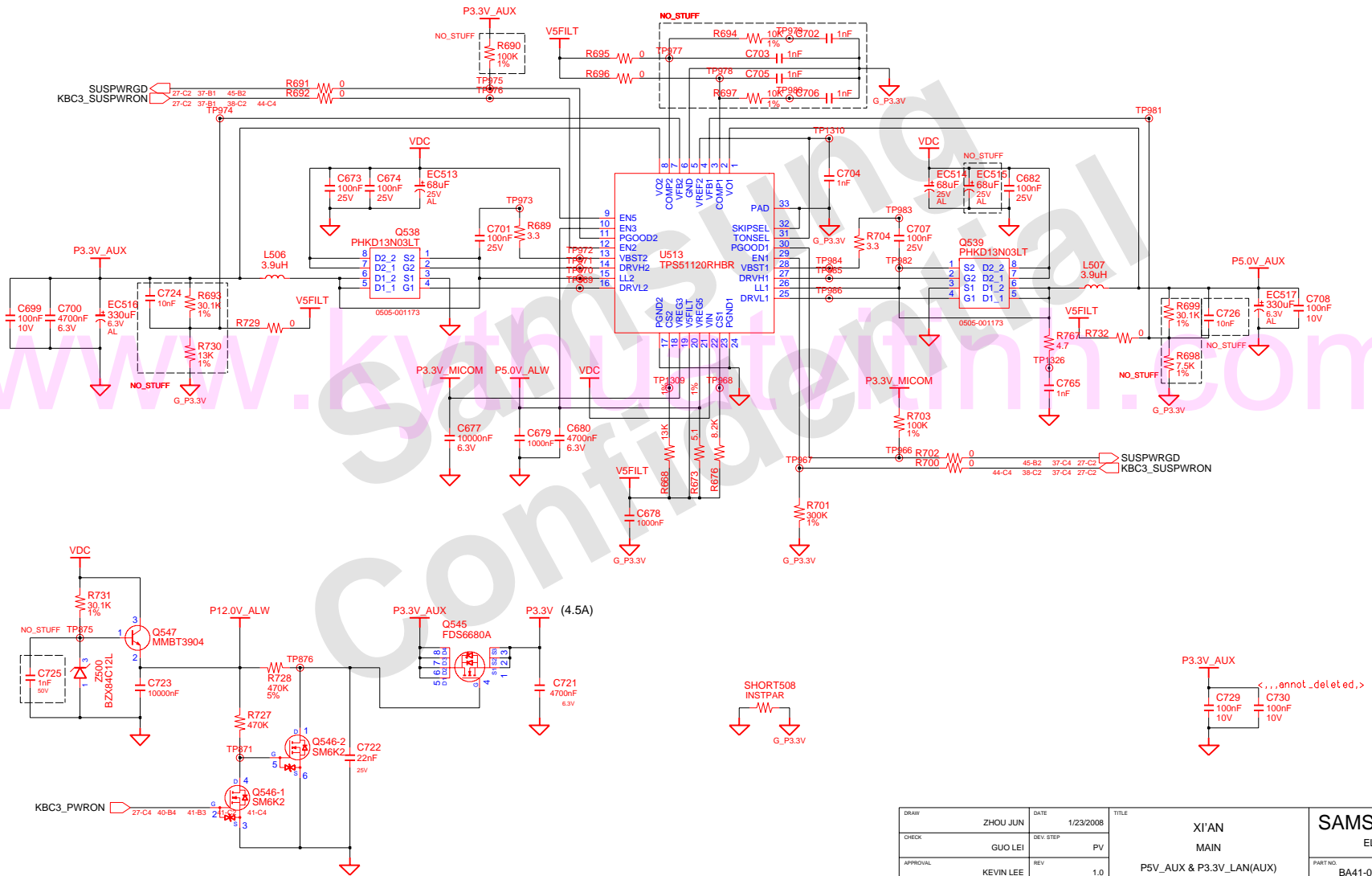
# CHARGER & POWER MANAGEMENT



DRAW	ZHOU JUN	DATE	1/23/2008	TITLE	XI'AN MAIN		SAMSUNG ELECTRONICS
CHECK	GUO LEI	DEV STEP	PV	VDC & CHARGER		PART NO.	
APPROVAL	KEVIN LEE	REV	1.0			BA41-00859/60/61A	
MODULE CODE		LAST EDIT		November 26, 2007 11:01:51 AM		PAGE	36 OF 48

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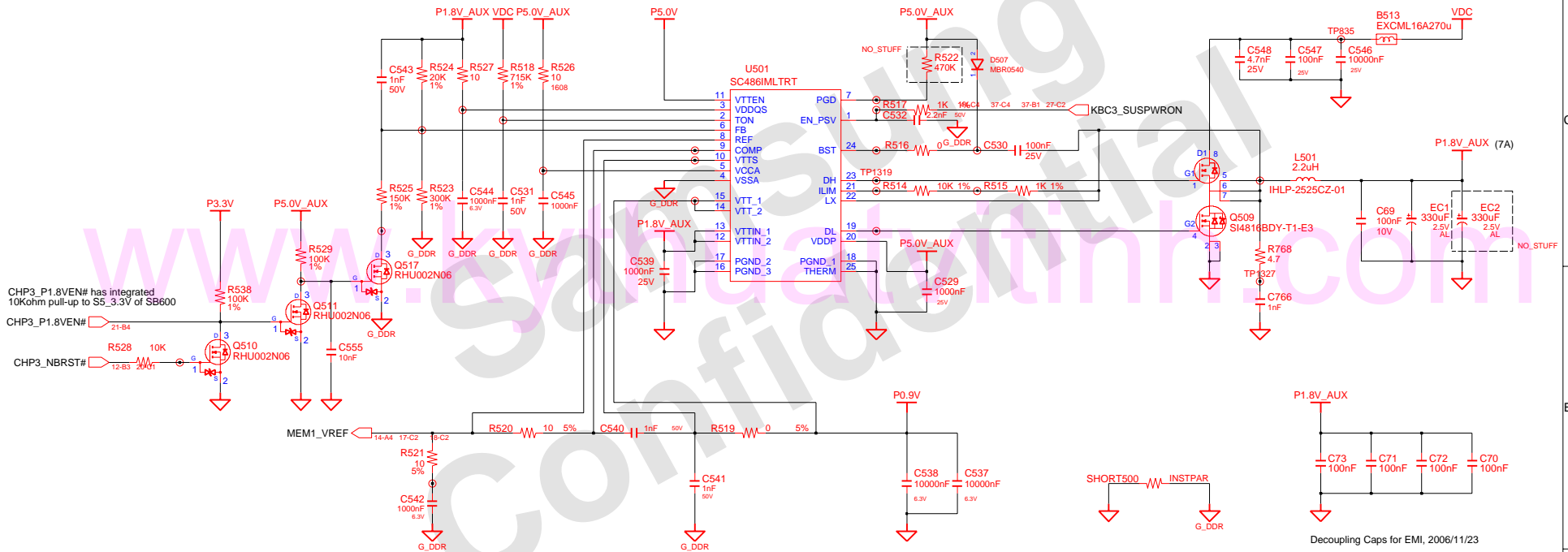
# P5V\_AUX & P3.3V\_AUX



DRAW	ZHOU JUN	DATE	1/23/2008	TITLE	XI'AN MAIN	SAMSUNG ELECTRONICS
CHECK	GUO LEI	DEV. STEP	PV	P5V_AUX & P3.3V_LAN(AUX)		
APPROVAL	KEVIN LEE	REV	1.0			PART NO. BA41-00859/60/61A
MODULE CODE		LAST EDIT		November 26, 2007 11:01:51 AM		PAGE 37 OF 48

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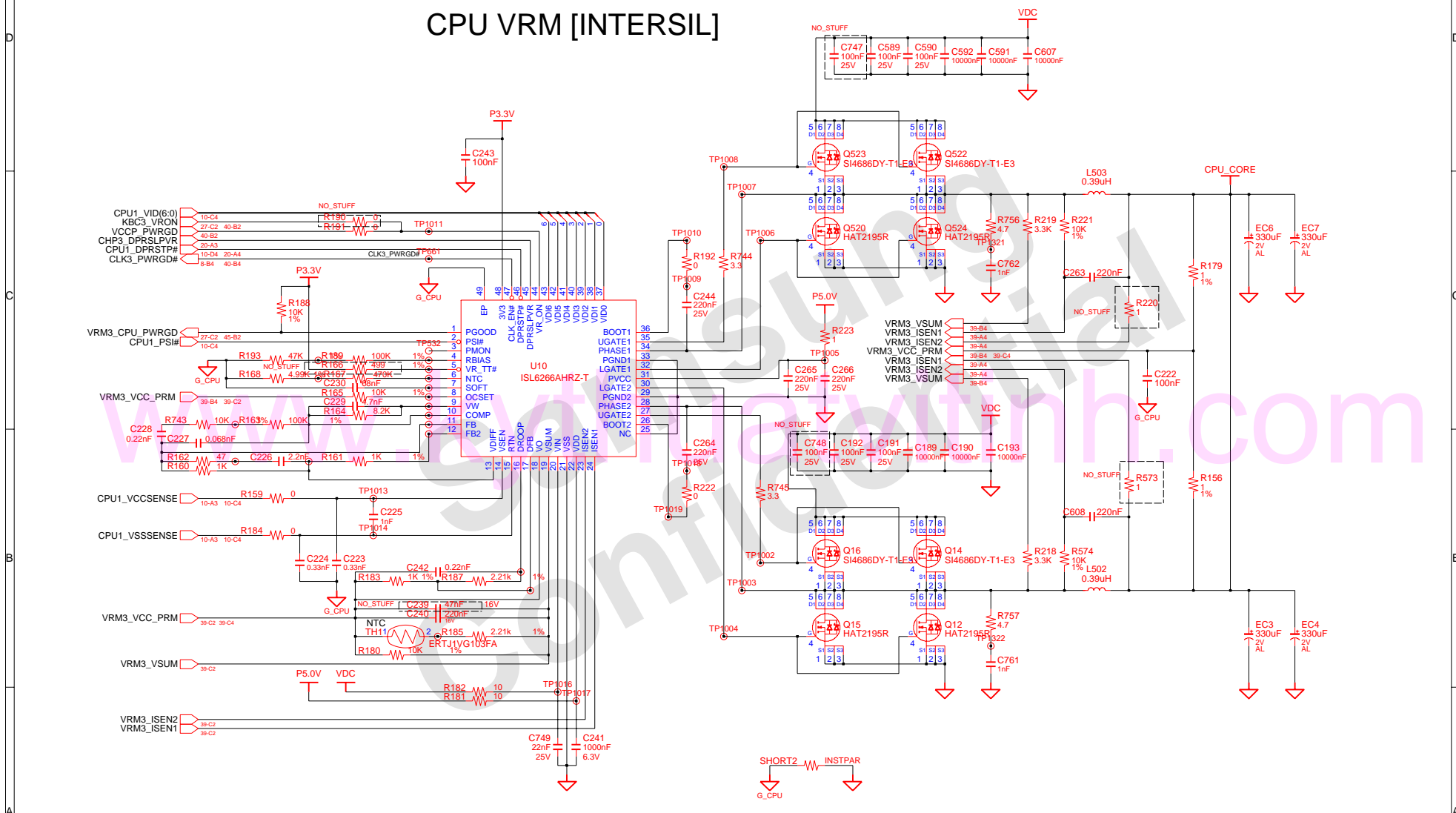
# DDR2 POWER



DRAW	ZHOU JUN	DATE	1/23/2008	TITLE	XI'AN MAIN	SAMSUNG ELECTRONICS
CHECK	GUO LEI	DEV. STEP	PV	DDR2 POWER		
APPROVAL	KEVIN LEE	REV	1.0			PART NO. BA41-00859/60/61A
MODULE CODE		LAST EDIT		November 26, 2007 11:01:51 AM	PAGE	38 OF 48

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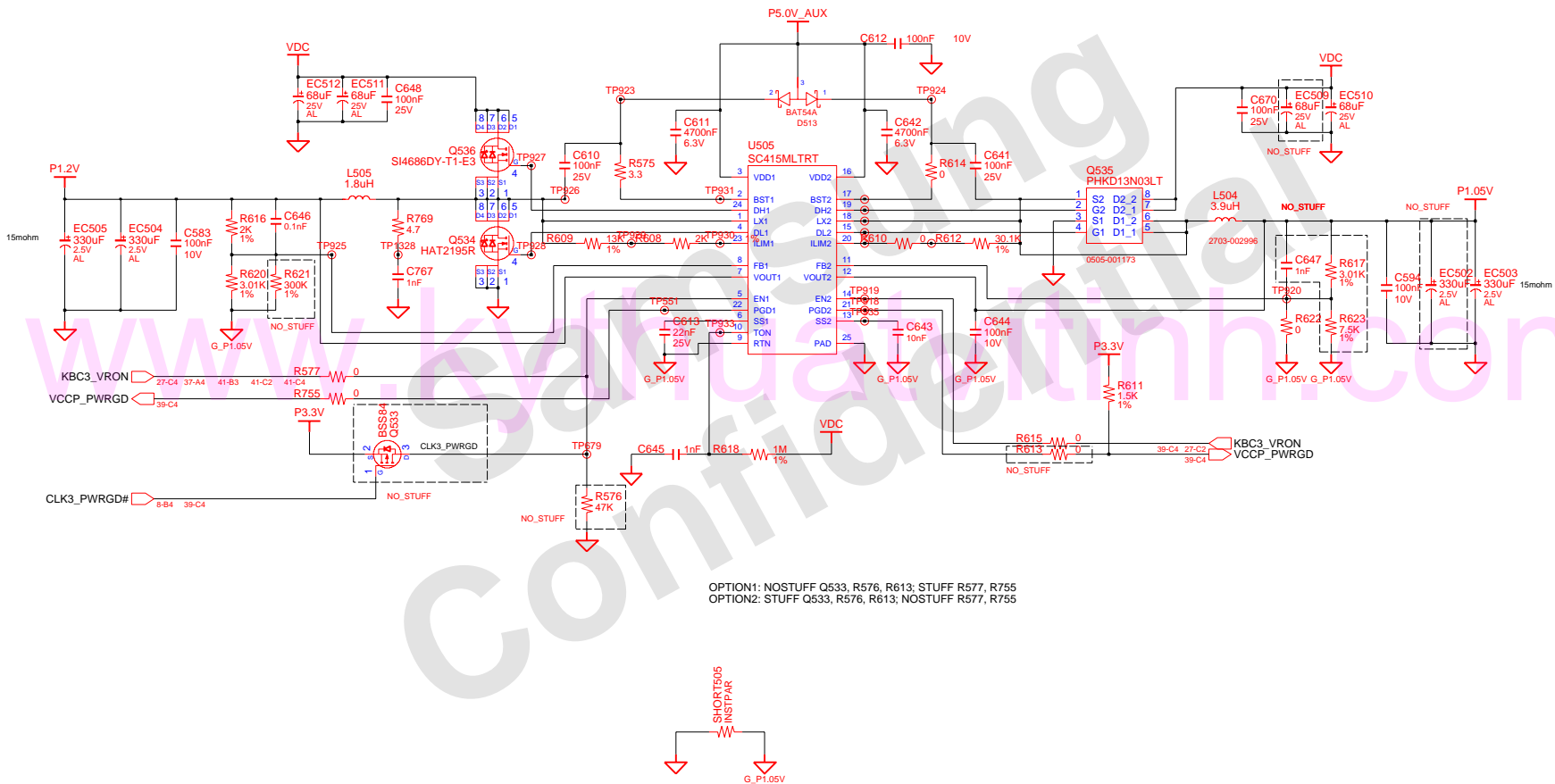
# CPU VRM [INTERSIL]



DRAW	ZHOU JUN	DATE	1/23/2008	TITLE	XI'AN MAIN CPU VRM	<b>SAMSUNG</b> ELECTRONICS PART NO. BA41-00859/60/61A
CHECK	GUO LEI	DEV. STEP	PV			
APPROVAL	KEVIN LEE	REV	1.0			
MODULE CODE		LAST EDIT				
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# P1.2V & P1.05V

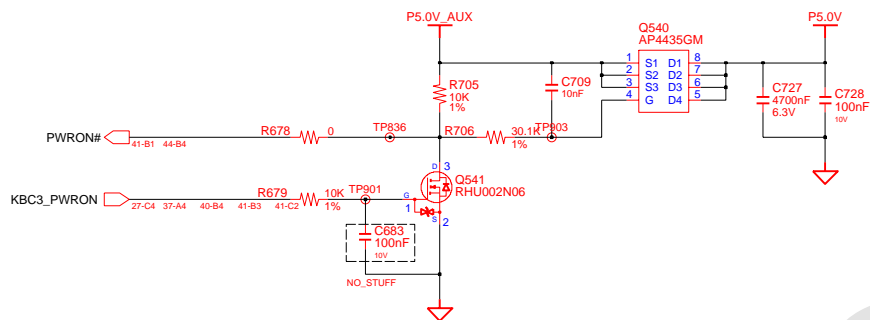


DRAW	ZHOU JUN	DATE	1/23/2008	TITLE	XI'AN MAIN	SAMSUNG ELECTRONICS
CHECK	GUO LEI	DEV. STEP	PV	P1.2V & P1.05V		
APPROVAL	KEVIN LEE	REV	1.0			PART NO. BA41-00859/60/61A
MODULE CODE		LAST EDIT		November 26, 2007 11:01:51 AM	PAGE	40 OF 48

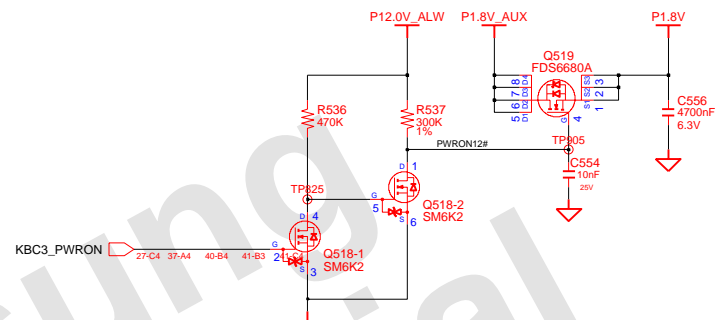


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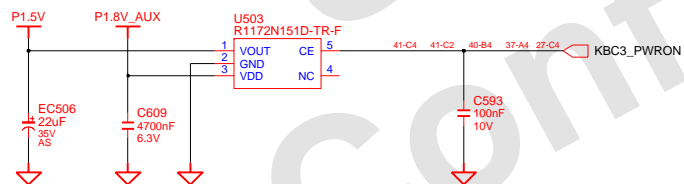
### Switched Power On (P5V)



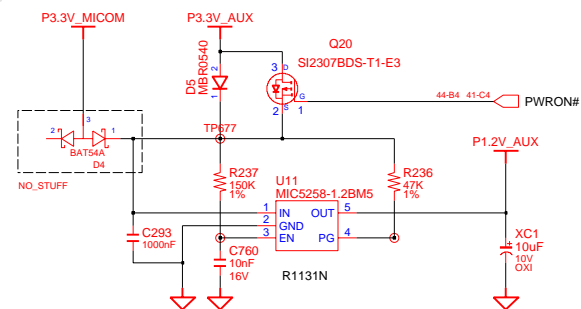
### Switched Power On (P1.8V)



### P1.5V POWER



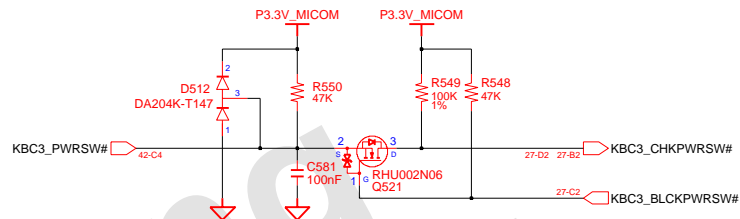
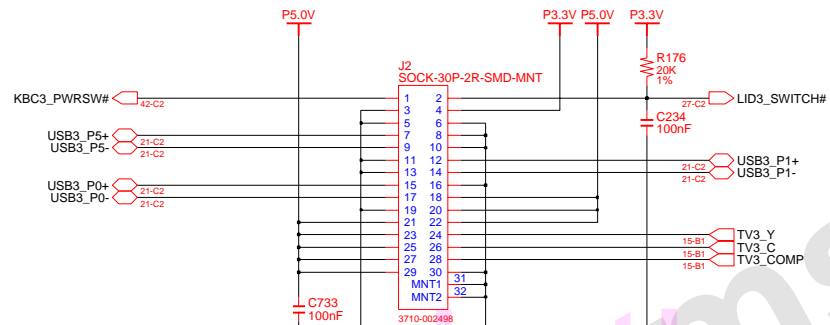
### P1.2V\_AUX



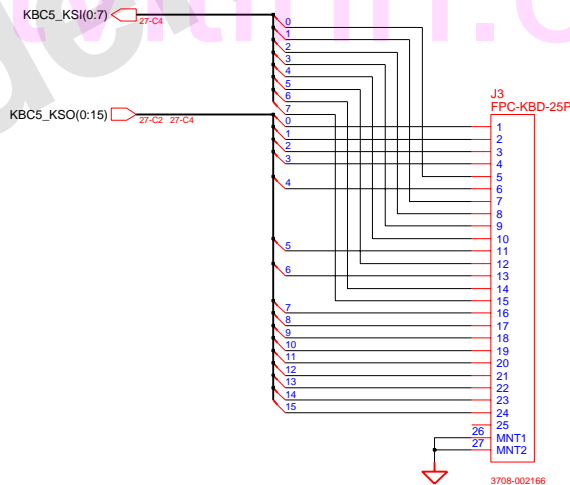
DRAW	ZHOU JUN	DATE	1/23/2008	TITLE	XI'AN MAIN	SAMSUNG ELECTRONICS
CHECK	GUO LEI	DEV. STEP	PV	SWITCHED POWER		
APPROVAL	KEVIN LEE	REV	1.0			PART NO. BA41-00859/60/61A
MODULE CODE		LAST EDIT		November 26, 2007 11:01:51 AM	PAGE	41 OF 48

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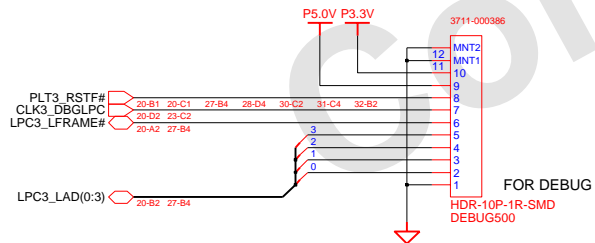
### Main to SUB Connector



### KEYBOARD

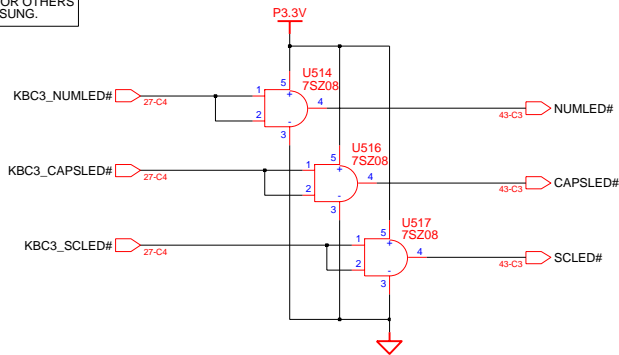


### DEBUG PORT

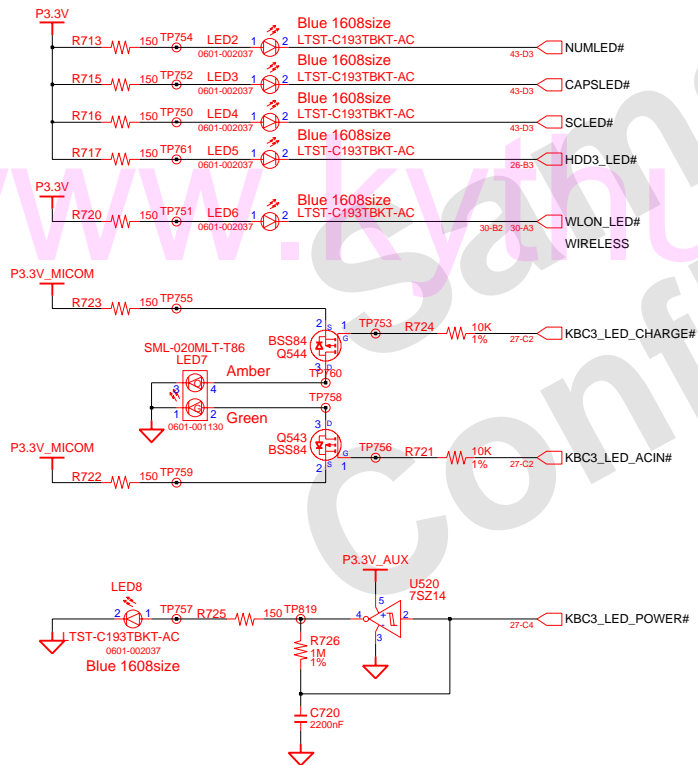


DRAW	ZHOU JUN	DATE	1/23/2008	TITLE	XI'AN MAIN	SAMSUNG ELECTRONICS
CHECK	GUO LEI	DEV. STEP	PV	DMB & KBD & DEBUG & POWER S/W		
APPROVAL	KEVIN LEE	REV	1.0	PART NO. BA41-00859/60/61A		PAGE 42 OF 48
MODULE CODE	LAST EDIT		November 26, 2007 11:01:51 AM			

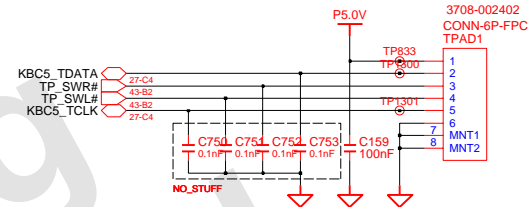
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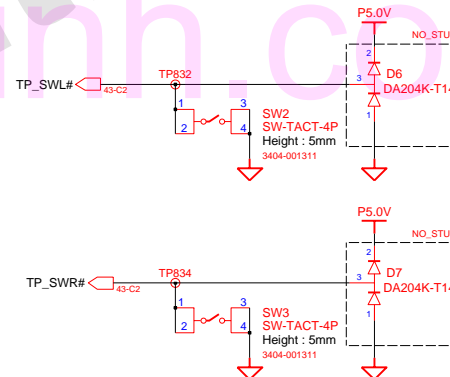
**LEDS**



**TOUCH PAD**



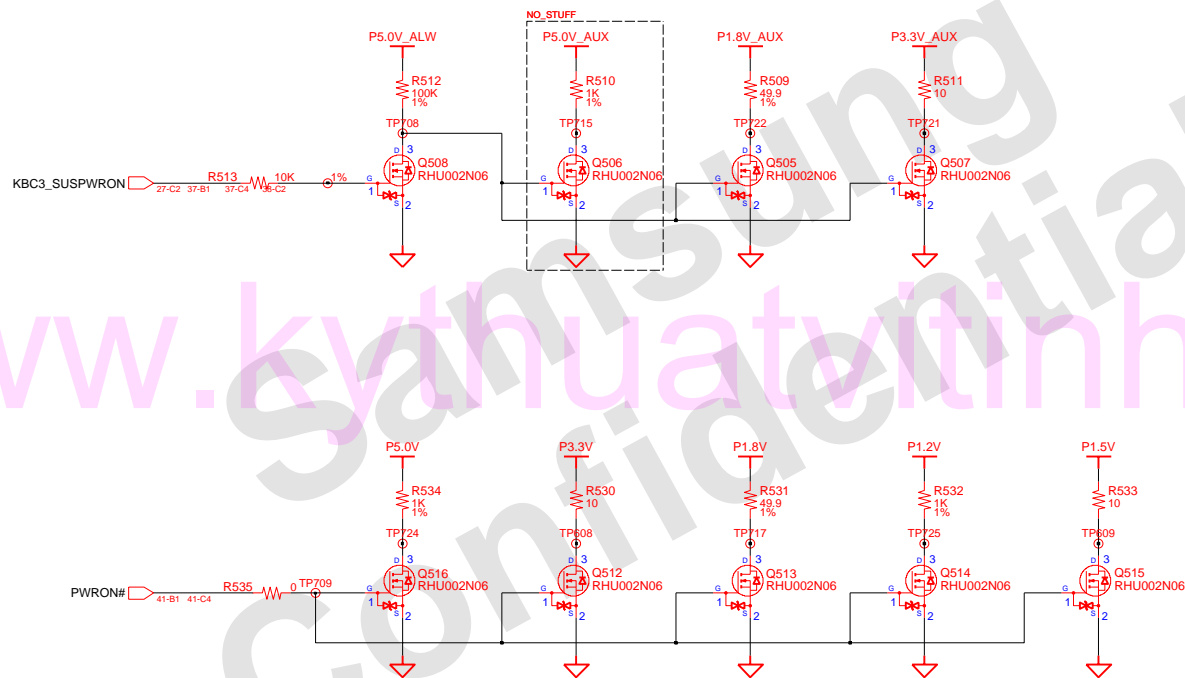
**TP\_SWITCH**



DRAW	ZHOU JUN	DATE	1/23/2008	TITLE	XI'AN MAIN	SAMSUNG ELECTRONICS
CHECK	GUO LEI	DEV. STEP	PV	TOUCH PAD & LEDS		
APPROVAL	KEVIN LEE	REV	1.0			PART NO. BA41-00859/60/61A
MODULE CODE	LAST EDIT		November 26, 2007 11:01:51 AM		PAGE	43 OF 48

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DISCHARGE

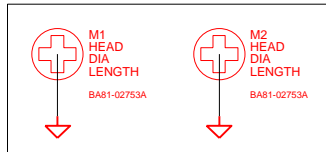


www.kythuatinh.com

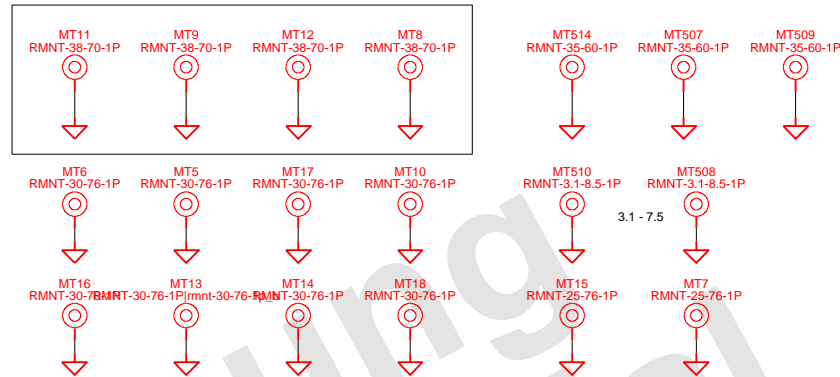
DRAW	ZHOU, JUN	DATE	1/23/2008	TITLE	XI'AN MAIN DISCHARGE	SAMSUNG ELECTRONICS
CHECK	GUO, LEI	DEV. STEP	PV			
APPROVAL	LEE, KEVIN	REV	1.0			PART NO. BA41-00859/60/61A
MODULE CODE		LAST EDIT	November 26, 2007 11:01:51 AM	PAGE	44	OF 48

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**FAN-NUT**

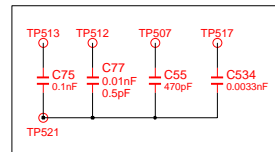


**CPU RHE**

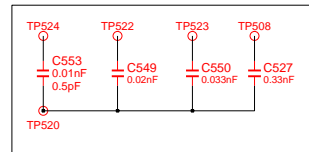


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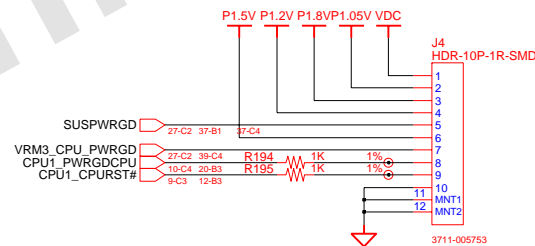
**1 - 499 SIDE**



**500 - SIDE**



**ICT PORT**



REV1  
 1 O  
 2 O O3

PCB REVISION CONTROL ( ICT )				
NO	CONNECTION	DATE(Y/M/M/DD)	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	ZHOU JUN	DATE	1/23/2008	TITLE	XI'AN MAIN MOUNT HOLE	SAMSUNG ELECTRONICS
CHECK	GUO LEI	DEV. STEP	PV			
APPROVAL	KEVIN LEE	REV	1.0			PART NO. BA41-00859/60/61A
MODULE CODE		LAST EDIT	November 26, 2007 11:01:51 AM	PAGE	45	OF 48

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TP1283 ADT3\_SEL#  
 TP1238 AUD3\_GP00  
 TP1239 AUD3\_GPI01  
 TP1264 AUD3\_PCBEEP  
 TP1265 AUD5\_INTMIC  
 TP1124 AUD5\_LINE\_OUT\_L  
 TP1125 AUD5\_LINE\_OUT\_R  
 TP1168 AUD5\_MIC\_VREF  
 TP1266 AUD5\_SPK\_L+  
 TP1203 AUD5\_SPK\_L-  
 TP1204 AUD5\_SPK\_R+  
 TP1205 AUD5\_SPK\_R-  
 TP1206 BAT3\_SMCLK#  
 TP1191 BAT3\_SMDATA#  
 TP1240 BAT3\_TEMP#  
 TP1275 CAPSLD#  
 TP1192 CHP1\_DPRST#  
 TP1169 CHP1\_SUSSTAT#  
 TP1126 CHP3\_ALINK\_RST#  
 TP1127 CHP3\_AZ\_AUD\_SDD  
 TP1128 CHP3\_AZ\_MDC\_SDD  
 TP1131 CHP3\_AZ\_AUD\_BCLK  
 TP1132 CHP3\_AZ\_AUD\_RST#  
 TP1133 CHP3\_AZ\_AUD\_SDD  
 TP1134 CHP3\_AZ\_AUD\_SYNC  
 TP1135 CHP3\_AZ\_MDC\_BCLK  
 TP1136 CHP3\_AZ\_MDC\_RST#  
 TP1137 CHP3\_AZ\_MDC\_SDD  
 TP1138 CHP3\_AZ\_MDC\_SYNC  
 TP1193 CHP3\_CAPSLD#  
 TP1170 CHP3\_DPRSLPVR  
 TP1207 CHP3\_NBRST#  
 TP1107 CHP3\_P1\_SVEN#  
 TP1108 CHP3\_SATALED#  
 TP1208 CHP3\_SERRIO  
 TP1209 CHP3\_SLPSS3#  
 TP1210 CHP3\_SLPSS5#  
 TP1284 CHP3\_SPKR  
 TP1109 CHP3\_SUSSTAT#  
 TP1241 CLK3\_ICH14  
 TP1242 CLK3\_NB14M  
 TP1211 CLK3\_SMBCLK  
 TP1194 CLK3\_SMBDATA  
 TP1243 CLK3\_USB48  
 TP1244 CPU1\_A20M#  
 TP1245 CPU1\_BSEL0  
 TP1246 CPU1\_BSEL1  
 TP1247 CPU1\_BSEL2  
 TP1195 CPU1\_CPURST#  
 TP1196 CPU1\_DPRST#  
 TP1212 CPU1\_DPSLP#  
 TP1248 CPU1\_FERR#  
 TP1213 CPU1\_IGNNE#  
 TP1249 CPU1\_INIT#  
 TP1286 CPU1\_INTR  
 TP1287 CPU1\_PSH#  
 TP1110 CPU1\_PWRGDPCPU  
 TP1288 CPU1\_SLP#  
 TP1289 CPU1\_SMI#  
 TP1197 CPU1\_STPCLK#  
 TP1117 CPU1\_THRMTRIP#  
 TP1111 CPU1\_VCCSENSE  
 TP1112 CPU1\_VSSSENSE  
 TP1214 CPU1\_VID(0)  
 TP1215 CPU1\_VID(1)  
 TP1216 CPU1\_VID(2)  
 TP1217 CPU1\_VID(3)  
 TP1218 CPU1\_VID(4)  
 TP1219 CPU1\_VID(5)  
 TP1283 CPU1\_VID(6)  
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 TP1199 CPU2\_THERMDC  
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 TP1290 CTRL18\_25  
 TP1273 CTRL12

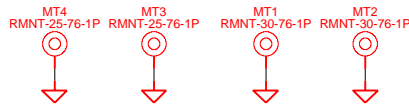
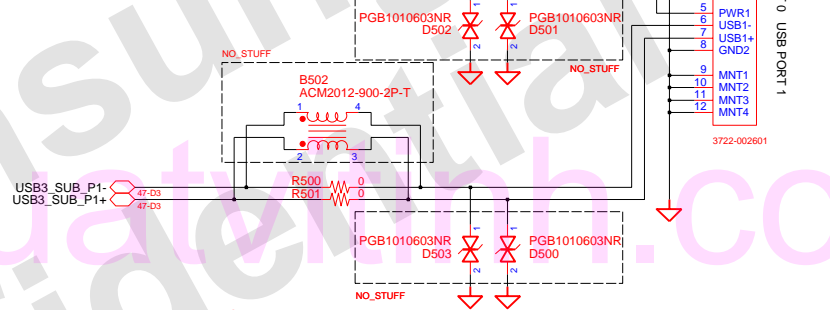
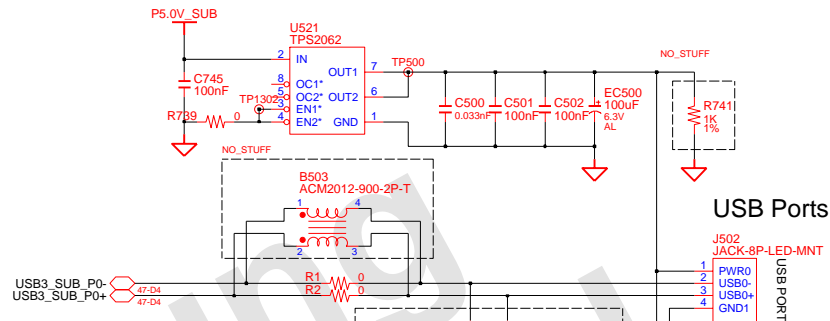
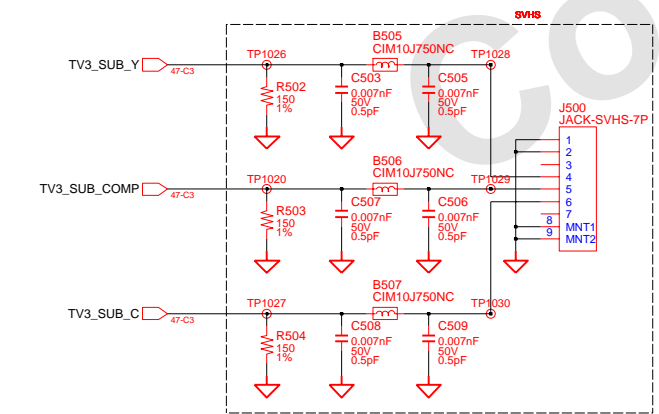
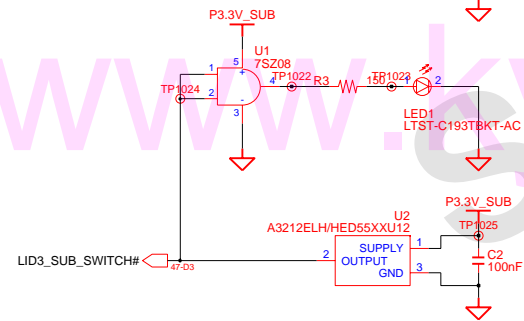
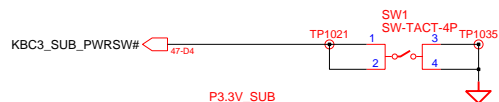
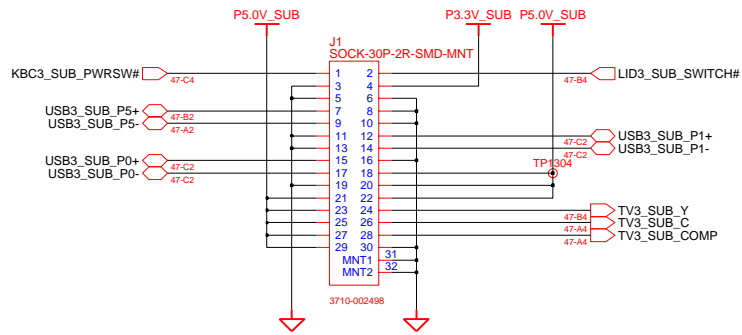
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 TP1221 EXP3\_CPUS#  
 TP1222 EXP3\_PERST#  
 TP1291 HDD3\_LED#  
 TP1276 HP\_OUT\_L  
 TP1277 HP\_OUT\_R  
 TP1200 JCK\_SYSTR#  
 TP1223 JCK\_SENS\_HP  
 TP1201 JCK\_SENS\_MIC  
 TP1292 KBK3\_A20G  
 TP1224 KBK3\_BKLTON  
 TP1129 KBK3\_BLKPWRSW#  
 TP1113 KBK3\_CAPSLD#  
 TP1251 KBK3\_CHGEN  
 TP1119 KBK3\_CHKPWRSW#  
 TP1272 KBK3\_CPURST#  
 TP1139 KBK3\_EXSTM#  
 TP1120 KBK3\_LED\_ACIN#  
 TP1075 KBK3\_LED\_CHARGE#  
 TP1130 KBK3\_LED\_POWER#  
 TP1140 KBK3\_NBPWRGD  
 TP1141 KBK3\_NUMLED#  
 TP1142 KBK3\_PWRBTN#  
 TP1252 KBK3\_PWRON  
 TP1134 KBK3\_PWRSW#  
 TP1143 KBK3\_RSMRST#  
 TP1293 KBK3\_RST#  
 TP1144 KBK3\_RUNSCI#  
 TP1145 KBK3\_SBPWRGD  
 TP1125 KBK3\_SLED#  
 TP1227 KBK3\_SMCLK  
 TP1146 KBK3\_SMDATA#  
 TP1114 KBK3\_SUSPWRON  
 TP1078 KBK3\_THERM\_SMCLK  
 TP1077 KBK3\_THERM\_SMDATA  
 TP1294 KBK3\_VRON  
 TP1115 KBK3\_WAKESCI#  
 TP1228 KBK5\_KSI(0)  
 TP1229 KBK5\_KSI(1)  
 TP1230 KBK5\_KSI(2)  
 TP1231 KBK5\_KSI(3)  
 TP1232 KBK5\_KSI(4)  
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 TP1234 KBK5\_KSI(6)  
 TP1171 KBK5\_KSI(7)  
 TP1172 KBK5\_KSO(0)  
 TP1173 KBK5\_KSO(1)  
 TP1174 KBK5\_KSO(2)  
 TP1175 KBK5\_KSO(3)  
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 TP1154 LAN3\_CLKREQ#  
 TP1121 LAN3\_LINK1000#  
 TP1182 LAN3\_VPDCLK  
 TP1155 LAN3\_VPDATA  
 TP1116 LCD3\_BKLTCTRL  
 TP1183 LCD3\_BKLTEN  
 TP1184 LCD3\_BKLTON  
 TP1122 LCD3\_EDID\_DATA  
 TP1253 LCD3\_VDDEN  
 TP1185 LRPC3\_LAD(0)  
 TP1186 LRPC3\_LAD(1)  
 TP1187 LRPC3\_LAD(2)  
 TP1188 LRPC3\_LAD(3)  
 TP1156 LRPC3\_LFRAME#

TP1161 MCH2\_THERMDN  
 TP1162 MCH2\_THERMDP  
 TP1254 MCD3\_SDCD#  
 TP1255 MCD3\_SDCCLK  
 TP1256 MCD3\_SDCMD  
 TP1157 MCD3\_SDDATA0  
 TP1158 MCD3\_SDDATA1  
 TP1159 MCD3\_SDDATA2  
 TP1160 MCD3\_SDDATA3  
 TP1295 MCD3\_SDDP  
 TP1296 MEM1\_VREF  
 TP1078 MINIPCIE3\_CLKREQ1#  
 TP1274 NUMLED#  
 TP1163 PCIE3\_CLKRUN#  
 TP1257 PEX3\_WAKE#  
 TP1258 PLT3\_RSTF#  
 TP1271 PWRON#  
 TP1278 SMB3\_CLK  
 TP1297 SMB3\_DATA  
 TP1279 SPS3\_CLK  
 TP1280 SPS3\_CS#  
 TP1225 SPS3\_MISO  
 TP1235 SPS3\_MOSI  
 TP1281 SUSPWGRD  
 TP1164 THERM\_ALERT#  
 TP1269 TV3\_C  
 TP1226 TV3\_COMP  
 TP1270 TV3\_Y  
 TP1259 VCCP\_PWRGD  
 TP1189 VG3\_DDCCLK  
 TP1165 VG3\_DDCDATA  
 TP1261 VG3\_HSYNCR  
 TP1261 VG3\_HSYNCR  
 TP1166 VG4\_DDCDATA  
 TP1190 VG4\_DDCCLK  
 TP1123 VRM3\_CPU\_PWRGD  
 TP1262 VRM3\_ISEN1  
 TP1263 VRM3\_ISEN2  
 TP1236 VRM3\_VSUM  
 TP1167 VRM3\_VGC\_FRM  
 TP1237 WLN\_ON\_LED#  
 TP1079 CHG\_REF  
 TP1080 CPU\_CORE  
 TP1081 CPU\_CORE  
 TP1082 CPU\_CORE  
 TP1083 CPU\_CORE  
 TP1084 G\_AUD  
 TP1085 G\_CHG  
 TP1086 G\_CPU  
 TP1087 G\_DDR  
 TP1088 G\_MIC  
 TP1089 G\_VGA  
 TP1090 G\_P3\_3V  
 TP1091 G\_P1.05V  
 TP1092 LCD\_VDD3V  
 TP1093 P1.2V  
 TP1094 P1.2V  
 TP1095 P1.2V  
 TP1096 P1.2V  
 TP1097 P1.5V  
 TP1098 P1.8V  
 TP1099 P1.8V  
 TP1100 P1.8V  
 TP1101 P1.8V  
 TP1102 P1.05V  
 TP1103 P1.05V  
 TP1104 P1.05V  
 TP1105 P1.05V  
 TP1106 PWR\_DC  
 TP1043 PWR\_DC  
 TP1044 PWR\_DC  
 TP1045 PWR\_DC

TP1049 PRTC\_BAT  
 TP1050 P1.2V\_AUX  
 TP1051 P1.2V\_LAN  
 TP1052 P1.5V\_EXP  
 TP1053 P1.8V\_AUX  
 TP1054 P1.8V\_AUX  
 TP1055 P1.8V\_AUX  
 TP1056 P1.8V\_AUX  
 TP1057 P3.3V\_AUX  
 TP1058 P3.3V\_AUX  
 TP1059 P3.3V\_AUX  
 TP1060 P3.3V\_AUX  
 TP1061 P3.3V\_EXP  
 TP1062 P3.3V\_MCD  
 TP1063 P5.0V\_ALW  
 TP1064 P5.0V\_AUD  
 TP1065 P5.0V\_AUX  
 TP1066 P5.0V\_AUX  
 TP1067 P5.0V\_AUX  
 TP1068 P5.0V\_AUX  
 TP1069 P5.0V\_CHG  
 TP1070 PCIE\_VDDR  
 TP1071 P12.0V\_ALW  
 TP1072 P3.3V\_AUX\_EXP  
 TP1073 P1.8V\_P2.5V\_LAN  
 TP1074 VDDC  
 TP1036 VDDC  
 TP1037 VDDC  
 TP1038 VDDC  
 TP1039 VSFILT  
 TP1040 VDDC\_INV  
 TP1041 VDDC\_AMP  
 TP1042 VDDC\_AMP

DRAW	ZHOU JUN	DATE	1/23/2008	TITLE	XI'AN MAIN TEST POINT	SAMSUNG ELECTRONICS
CHECK	GUO LEI	DEV_STEP	PV			
APPROVAL	KEVIN LEE	REV	1.0			
MODULE CODE		LAST ENT				
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DRAW	ZHOU JUN	DATE	1/23/2008	TITLE	XI'AN MAIN ON TOP BOARD	<b>SAMSUNG</b> ELECTRONICS
CHECK	GUO LEI	DEV STEP	PV			
APPROVAL	KEVIN LEE	REV	1.0			
MODULE CODE		LAST EDIT				
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REVISION HISTORY

REVISION	DATE	NO.#	CONTENTS
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NOTES

Note1. Schematic Revision: MP 1 . 0 . 0  
 Development Stage  
 PCB Version  
 Schematic Version

Note2. PCB SEC Code  
 Vendor: SGCE P/N: BA41-??????  
 Vendor: TPT P/N: BA41-??????

DRAW	ZHOU JUN	DATE	1/23/2008	TITLE	XI'AN MAIN	SAMSUNG ELECTRONICS
CHECK	GUO LEI	DEV STEP	PV	REVISION HISTORY	PART NO. BA41-00859/60/61A	
APPROVAL	KEVIN LEE	REV	1.0	November 26, 2007 11:01:51 AM		PAGE 48 OF 48
MODULE CODE	LAST EDIT					