PRAHA EXT GFX

CPU : Intel Merom (800MHz)
Chip Set : RS600ME & SB600
Remarks : Mobility Platform

Model Name : PRAHA EXT GFX
PBA Name : MAIN
PCB Code : NANYA:BA41-00806A
GCE :BA41-00812A
TPT :BA41-00814A
Dev. Step : PR2 (8-Layer)
Revision : 1.0
T.R. Date : 2007.06.24

DRAW	CHECK	APPROVAL

■ *Owner : SEC Mobile R & D* *Signature :* *X*

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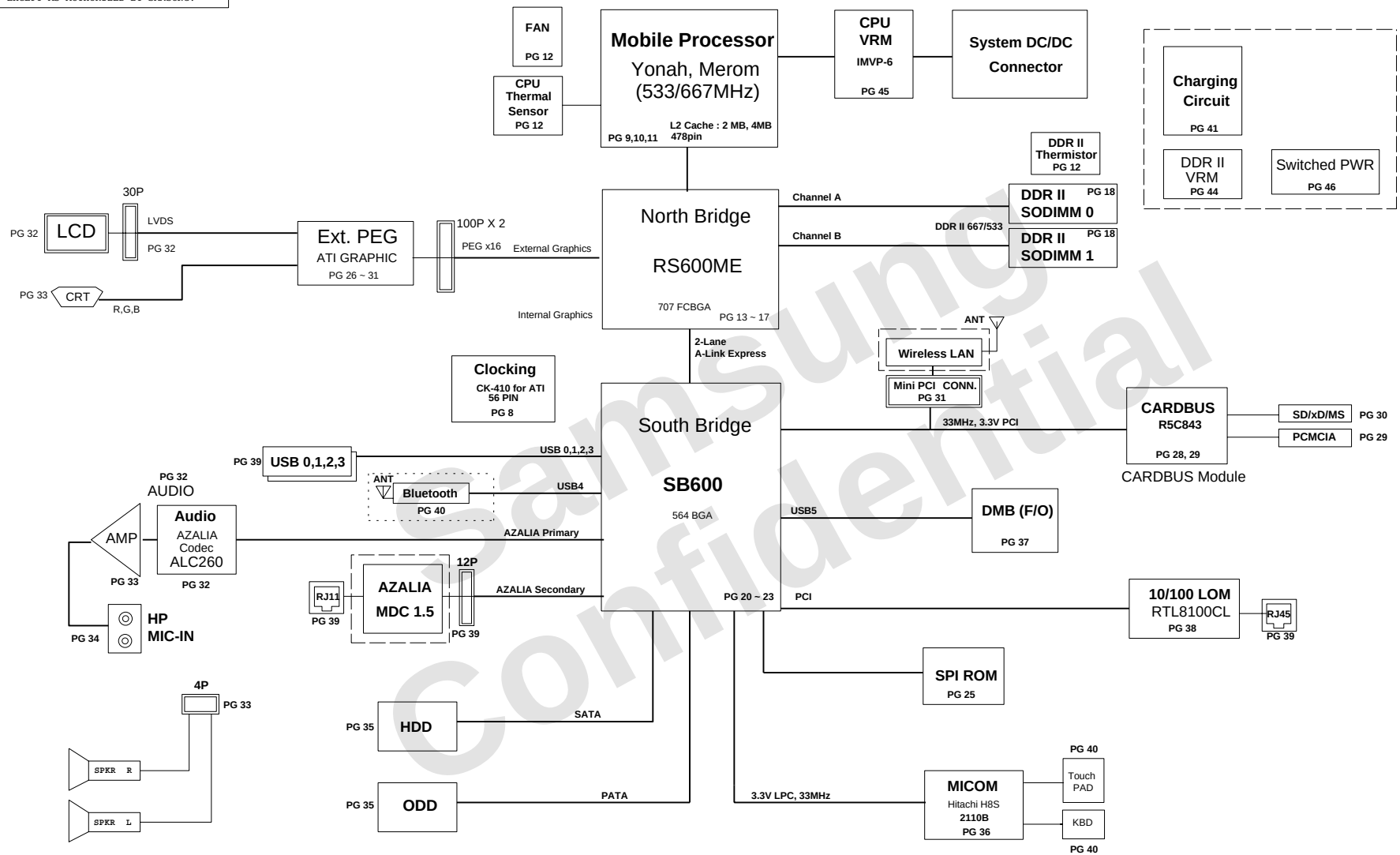
USE ICT PORT

DRAW: KI IM	DATE: 5/28/2007	TITLE: PRAHA_EXT COVER	SAMSUNG ELECTRONICS
CHECK: SS BAIK	DEV. STEP: PR		
APPROVAL: KK BIN	REV: 1.0		PART NO.: BA41-00806A
MODULE CODE:	LAST EDIT: May 28, 2007 10:24:00 AM	PAGE 1 OF 54	



DRAW: KI IM	DATE: 5/28/2007	TITLE: PRAHA_EXT MAIN OPERATION BLOCK DIAGRAM	SAMSUNG ELECTRONICS
CHECK: SS BAIK	DEV. STEP: PR		
APPROVAL: KK BIN	REV: 1.0		PART NO.: BA41-00806A
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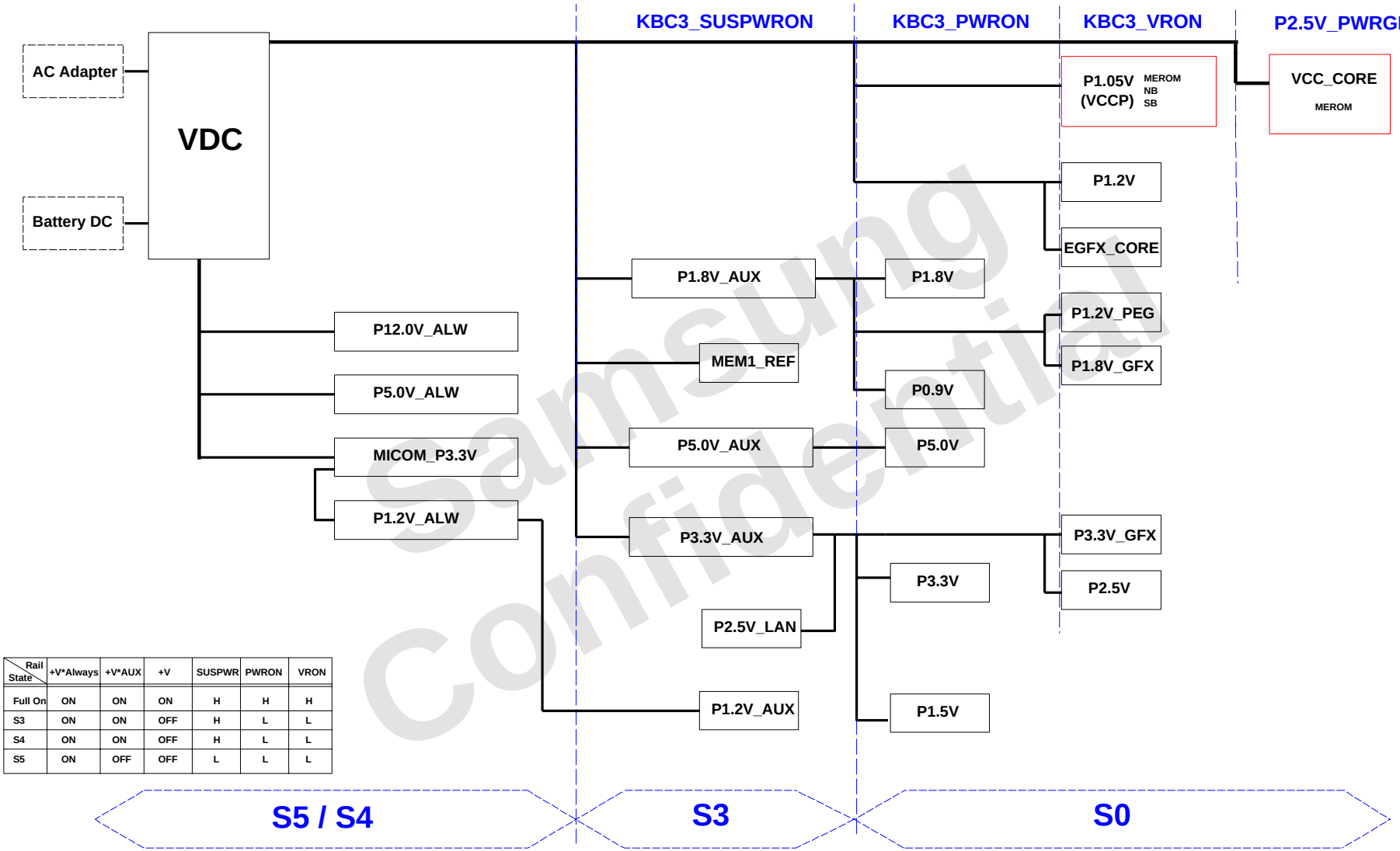
Power Diagram



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	ON	OFF	H	L	L
S5	ON	OFF	OFF	L	L	L

DRAW: KI IM	DATE: 5/28/2007	TITLE: PRAHA_EXT MAIN POWER DIAGRAM	SAMSUNG ELECTRONICS
CHECK: SS BAIK	DEV. STEP: PR		
APPROVAL: KK BIN	REV: 1.0		PART NO.: BA41-00806A
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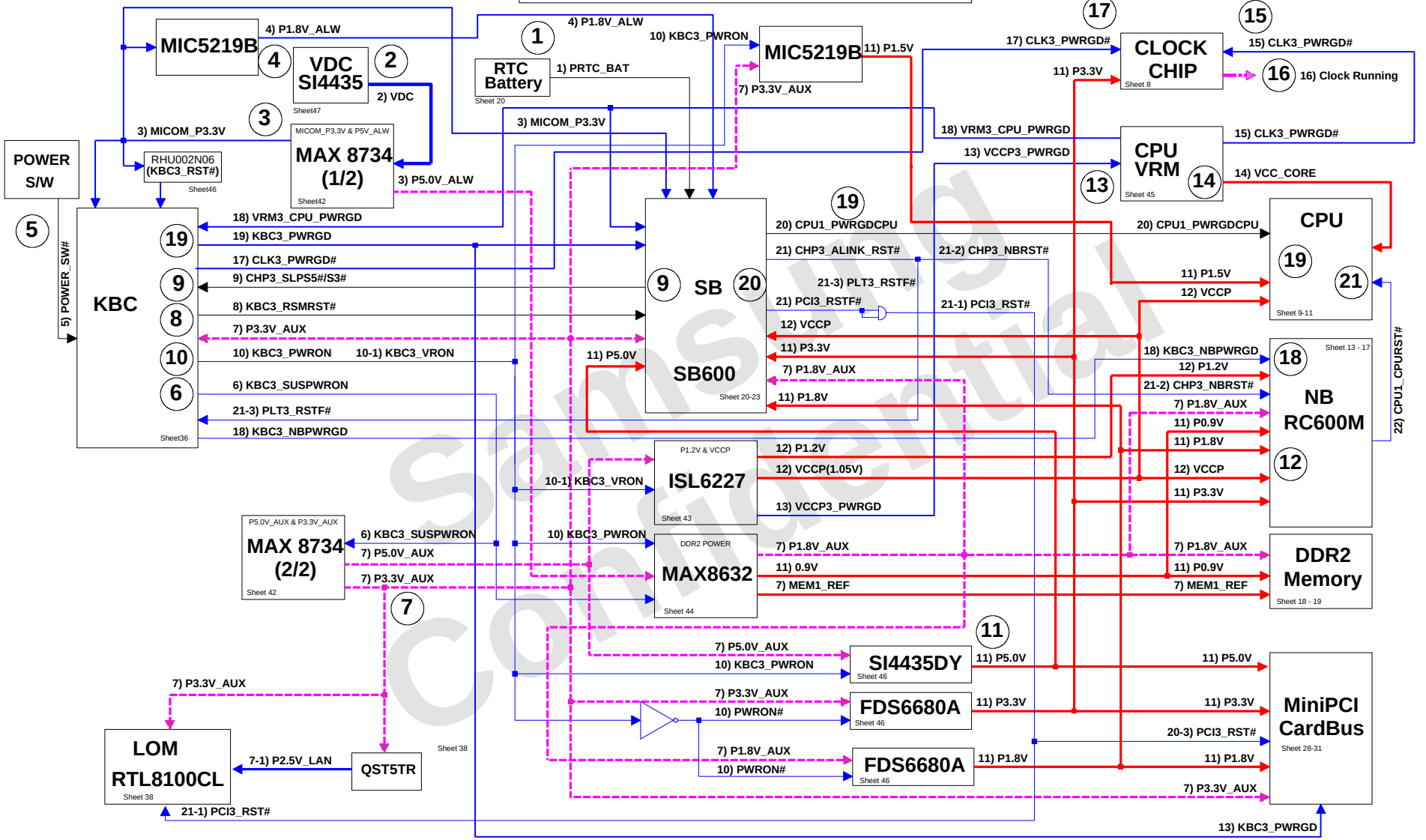
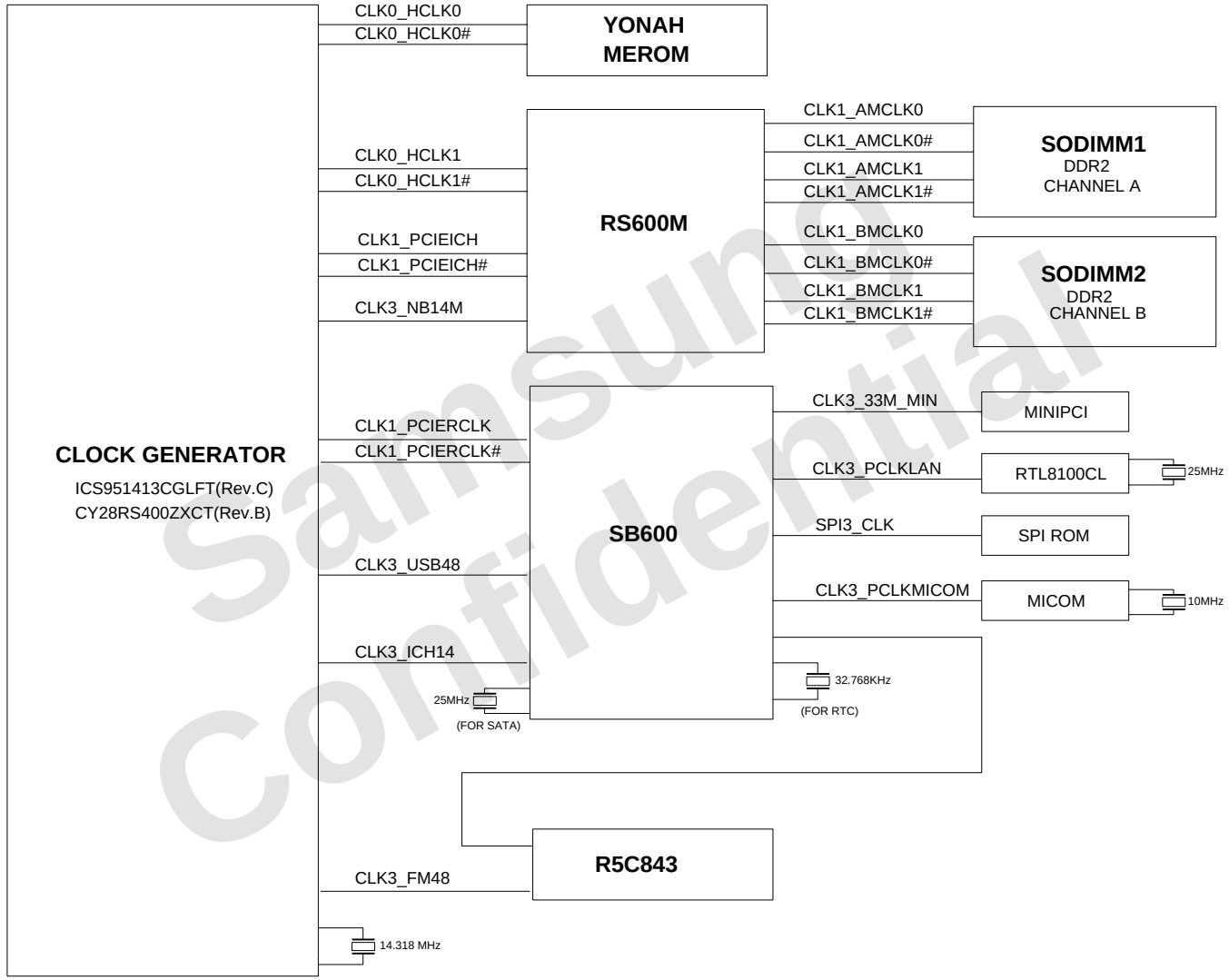
POWER SEQUENCE Rev. 0.1



DRAW: KI IM	DATE: 5/28/2007	TITLE: PRAHA_EXT	SAMSUNG ELECTRONICS
CHECK: SS BAIK	DEV. STEP: PR	POWER SEQUENCE	
APPROVAL: KK BIN	REV: 1.0		PART NO.: BA41-00806A
MODULE CODE:	LAST EDIT: May 28, 2007 10:24:00 AM	PAGE 4 OF 54	



DRAW: KI IM	DATE: 5/28/2007	TITLE: PRAHA_EXT CLOCK DIAGRAM	SAMSUNG ELECTRONICS
CHECK: SS BAIK	DEV. STEP: PR		
APPROVAL: KK BIN	REV: 1.0		PART NO.: BA41-00806A
MODULE CODE:	LAST EDIT: May 28, 2007 10:24:00 AM	PAGE 5 OF 54	

SCHEMATIC ANNOTATIONS AND BOARD INFORMATION

PCI Devices

Devices	IDSEL#	REQ/GNT#	Interrupts
Cardbus	AD25	0	A, B, C
LAN	AD21	1	D
MINIPCI	AD23	2	A,B
USB	AD30(internal)	-	-
			-
			-
Hub to PCI	AD31(internal)	-	-
LPC bridge/IDE/AC97/SMBUS	AD31(internal)	-	--
Internal MAC	AD31(internal)	-	-
AC Link	-	-	-

Voltage Rails

VDC	Primary DC system power supply (7 to 21V)
VCC_CORE	Core voltage for YONAH (0~1.5V)
VCCP	YONAH Processor System Bus(PSB) Termination (1.05V)
P0.9V	0.9V switched power rail (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)
P1.5V_AUX	1.5V power rail (off in S4-S5)
P1.8V	1.8V switched power rail (off in S3-S5)
P1.8V_AUX	1.8V power rail(off in S4-S5)
P1.8V_ALWS	1.8V power rail (Always On)
P2.5V_LAN	2.5V power rail (off in S4-S5)
MICOM_P3.3V	3.3V always on power rail for MICOM
P3.3V	3.3V switched power rail (off in S3-S5)
P3.3V_AUX	3.3V power rail (off in S4-S5)
P5V	5.0V switched power rail (off in S3-S5)
P5V_AUX	5.0V power rail (off in S4-S5)
P5.0V_ALWS	5.0V power rail (Always On)
P12V_ALWS	12V power rail (Always On)

I²C / SMB Address

Devices	Address	Hex	Bus
SB600	Master	-	SMBUS Master
SODIMM0	1010 0100	A4h	-
SODIMM1	1010 0110	A6h	-
CK-410 (Clock Generator)	1101 001x	D2h	Clock, Unused Clock Output Disable

USB PORT Assign

PORT NUMBER	ASSIGNED TO
0, 1	SYSTEM PORT A
2, 3	SYSTEM PORT B
4	BLUETOOTH
5	DMB

Crystal / Oscillator

TYPE	FREQUENCY	DEVICE	USAGE
Crystal	32.768KHz	SB600	Real Time Clock
Crystal	25MHz	SB600	SATA
Crystal	10MHz	MICOM	H8S-2110B
Crystal	14.318MHz	CLOCK-Generator	CK-410M
Crystal	25MHz	LAN	LOM

CPU Core Voltage Table

IMVP-6

Active Mode

VID(6:0)	Voltage
0 0 0 0 0 0 0	1.5000 V
0 0 0 0 0 0 1	1.4875 V
0 0 0 0 0 1 0	1.4750 V
0 0 0 0 0 1 1	1.4625 V
0 0 0 0 1 0 0	1.4500 V
0 0 0 0 1 0 1	1.4375 V
0 0 0 0 1 1 0	1.4250 V
0 0 0 0 1 **1** **1**	1.4125 V
0 0 0 1 0 0 0	1.4000 V
0 0 0 1 0 0 1	1.3875 V
0 0 0 1 0 1 0	1.3750 V
0 0 0 1 0 1 1	1.3625 V
0 0 0 1 1 0 0	1.3500 V
0 0 0 1 1 0 1	1.3375 V
0 0 0 1 1 1 0	1.3250 V
0 0 0 1 1 1 1	1.3125 V
0 0 1 0 0 0 0	1.3000 V
0 0 1 0 0 0 1	1.2875 V
0 0 1 0 0 1 0	1.2750 V
0 0 1 0 0 1 1	1.2625 V
0 0 1 0 1 0 0	1.2500 V
0 0 1 0 1 0 1	1.2375 V
0 0 1 0 1 1 0	1.2250 V
0 0 **1** 0 1 **1** **1**	1.2125 V
0 0 1 1 0 0 0	1.2000 V
0 0 1 1 0 0 1	1.1875 V
0 0 1 1 0 1 0	1.1750 V
0 0 1 1 0 1 1	1.1625 V
0 0 1 1 1 0 0	1.1500 V
0 0 1 1 1 0 1	1.1375 V
0 0 1 1 1 1 0	1.1250 V
0 0 1 1 1 1 1	1.1125 V
0 1 0 0 0 0 0	1.1000 V
0 1 0 0 0 0 1	1.0875 V
0 1 0 0 0 1 0	1.0750 V
0 1 0 0 0 1 1	1.0625 V
0 1 0 0 1 0 0	1.0500 V
0 1 0 0 1 0 1	1.0375 V
0 1 0 0 1 1 0	1.0250 V
0 **1** 0 0 **1** **1** 1	1.0125 V

Active

DPRSLPVR	0
DPRSTP*	1
PSI2*	0 or 1

Active/Deeper Sleep Dual Mode Region

VID(6:0)	Voltage
0 1 0 1 0 0 0	1.0000 V
0 1 0 1 0 0 1	0.9875 V
0 1 0 1 0 1 0	0.9750 V
0 1 0 1 0 1 1	0.9625 V
0 1 0 1 1 0 0	0.9500 V
0 1 0 1 1 0 1	0.9375 V
0 1 0 1 1 1 0	0.9250 V
0 1 0 1 1 **1** **1**	0.9125 V
0 1 1 0 0 0 0	0.9000 V
0 1 1 0 0 0 1	0.8875 V
0 1 1 0 0 1 0	0.8750 V
0 1 1 0 0 1 1	0.8625 V
0 1 1 0 1 0 0	0.8500 V
0 1 1 0 1 0 1	0.8375 V
0 1 1 0 1 1 0	0.8250 V
0 1 1 0 1 1 1	0.8125 V
0 1 1 1 0 0 0	0.8000 V
0 1 1 1 0 0 1	0.7875 V
0 1 1 1 0 1 0	0.7750 V
0 1 1 1 0 1 1	0.7625 V
0 1 1 1 1 0 0	0.7500 V
0 1 1 1 1 0 1	0.7375 V
0 1 1 1 1 1 0	0.7250 V
0 1 **1** 1 1 **1** **1**	0.7125 V
1 0 0 0 0 0 0	0.7000 V
1 0 0 0 0 0 1	0.6875 V
1 0 0 0 0 1 0	0.6750 V
1 0 0 0 0 1 1	0.6625 V
1 0 0 0 1 0 0	0.6500 V
1 0 0 0 1 0 1	0.6375 V
1 0 0 0 1 1 0	0.6250 V
1 0 0 0 1 1 1	0.6125 V
1 0 0 1 0 0 0	0.6000 V
1 0 0 1 0 0 1	0.5875 V
1 0 0 1 0 1 0	0.5750 V
1 0 0 1 0 1 1	0.5625 V
1 0 0 1 1 0 0	0.5500 V
1 0 0 1 1 0 1	0.5375 V
1 0 0 1 1 1 0	0.5250 V
1 **0** 0 1 **1** **1** 1	0.5125 V
1 **0** 1 0 **0** **0** 0	0.5000 V

Deeper Slp

DPRSLPVR	1
DPRSTP*	0
PSI2*	0 or 1

Deeper Sleep/Extended Deeper Sleep Dual Mode Region

VID(6:0)	Voltage
1 0 1 0 0 0 1	0.4875 V
1 0 1 0 0 1 0	0.4750 V
1 0 1 0 0 1 1	0.4625 V
1 0 1 0 1 0 0	0.4500 V
1 0 1 0 1 0 1	0.4375 V
1 0 1 0 1 1 0	0.4250 V
1 0 1 0 1 1 1	0.4125 V
1 0 1 1 0 **0** 0	0.4000 V
1 0 1 1 0 0 1	0.3875 V
1 0 1 1 0 1 0	0.3750 V
1 0 1 1 0 1 1	0.3625 V
1 0 1 1 1 0 0	0.3500 V
1 0 1 1 1 0 1	0.3375 V
1 0 1 1 1 1 0	0.3250 V
1 0 1 1 1 1 1	0.3125 V
1 1 0 0 0 0 0	0.3000 V
1 1 0 0 0 0 1	0.2875 V
1 1 0 0 0 1 0	0.2750 V
1 1 0 0 0 1 1	0.2625 V
1 1 0 0 1 0 0	0.2500 V
1 1 0 0 1 0 1	0.2375 V
1 1 0 0 1 1 0	0.2250 V
1 1 0 0 1 1 1	0.2125 V
1 1 **0** 1 0 0 **0**	0.2000 V
1 1 0 1 0 0 1	0.1875 V
1 1 0 1 0 1 0	0.1750 V
1 1 0 1 0 1 1	0.1625 V
1 1 0 1 1 0 0	0.1500 V
1 1 0 1 1 0 1	0.1375 V
1 1 0 1 1 1 0	0.1250 V
1 1 0 1 1 1 1	0.1125 V
1 1 1 0 0 0 0	0.1000 V
1 1 1 0 0 0 1	0.0875 V
1 1 1 0 0 1 0	0.0750 V
1 1 1 0 0 1 1	0.0625 V
1 1 1 0 1 0 0	0.0500 V
1 1 1 0 1 0 1	0.0375 V
1 1 1 0 1 1 0	0.0250 V
1 1 1 0 1 1 1	0.0125 V
1 **1** 1 1 0 **0** 0	0.0000 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	0.0000 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

*"1111111" : 0V power good asserted.

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

System Power States

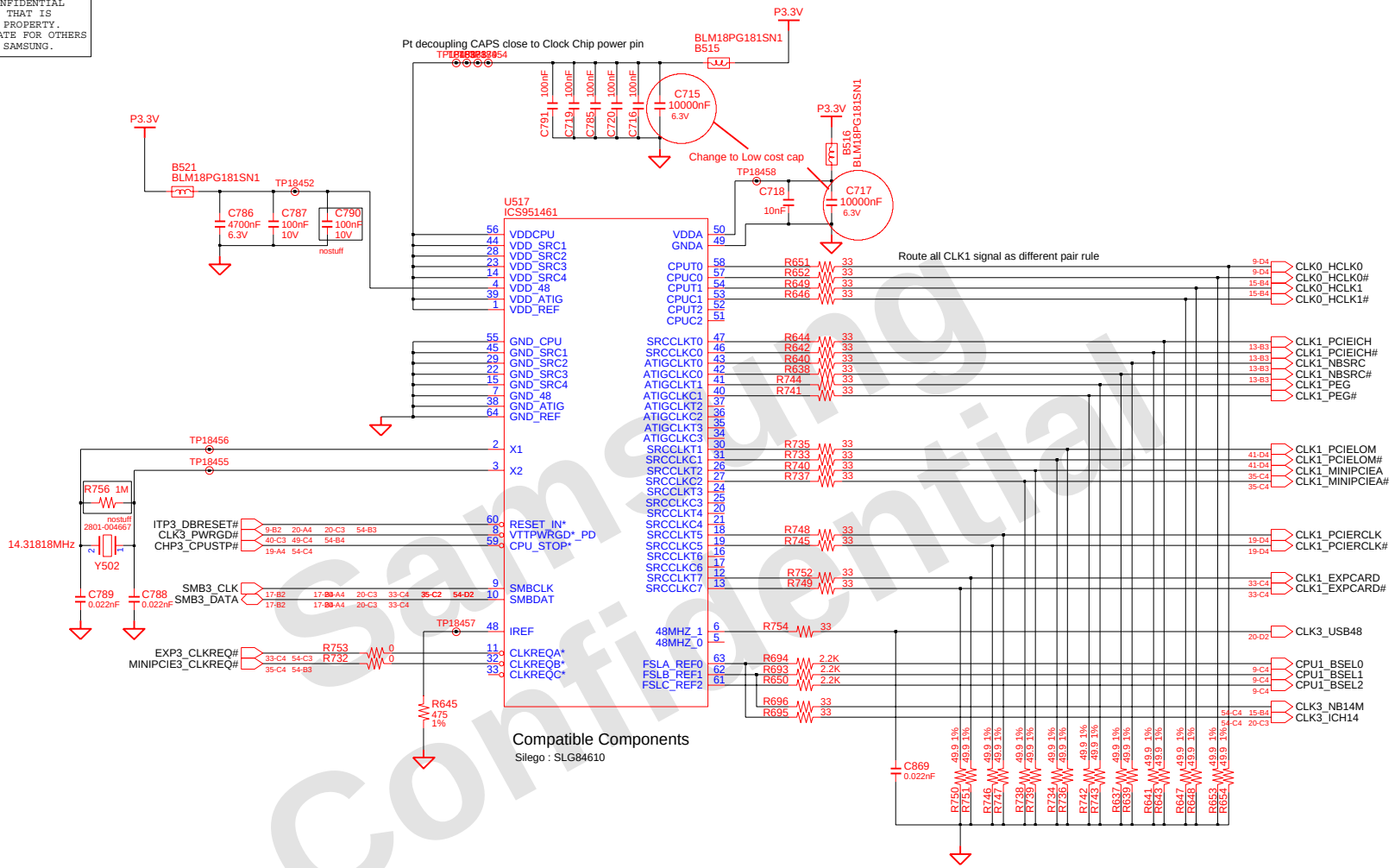
CHP3_SLPS1* S1, Powered-On-Suspend(POS) : In this state, all clocks(except the 32.768KHz clock) are stopped.
The system context is maintained in system DRAM. Power is maintained to PCI, the CPU, memory controller, memory, and all other criticial subsystems.
Note that this state does not preclude power 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_SLP4S* 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.

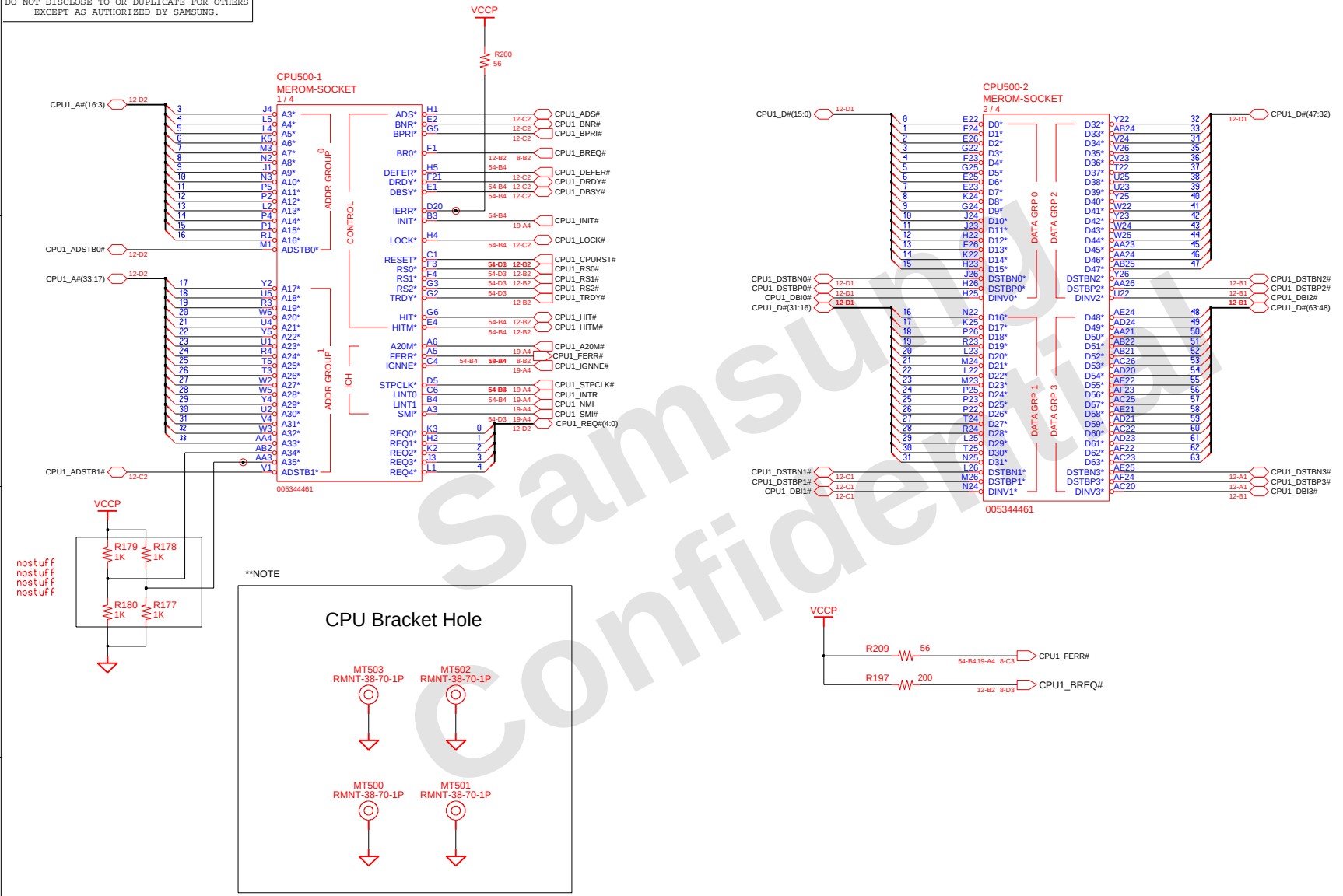
CHP3_SLPS5* S5, Soft Off(SOFF) : System context is not maintained. All power is shut off except for the logic required to restart. A full boot is required when waking.

DRAW: KI IM	DATE: 5/28/2007	TITLE: PRAHA_EXT MAIN BOARD INFORMATION	SAMSUNG ELECTRONICS
CHECK: SS BAIK	DEV. STEP: PR		
APPROVAL: KK BIN	REV: 1.0		PART NO.: BA41-00806A
MODULE CODE:	LAST EDIT: May 28, 2007 10:24:00 AM		PAGE 6 OF 54

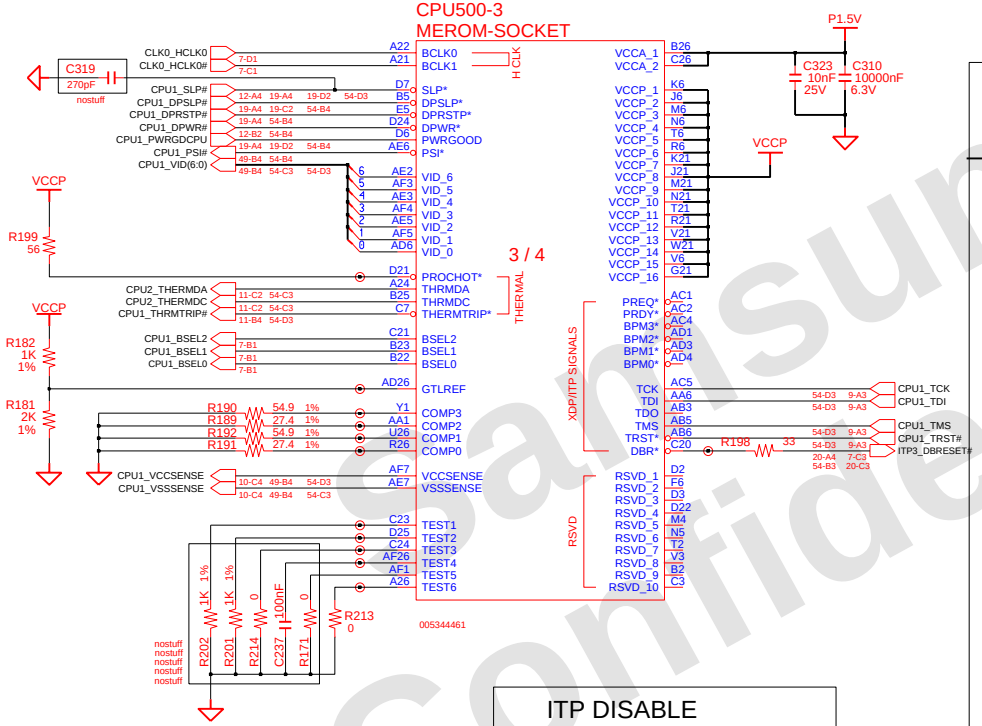


CPU	FSA BSEL0	FSB BSEL1	FSC BSEL2	HOST CLK	
	0	0	0	266 MHz	
	0	0	1	333 MHz	
	0	1	0	200 MHz	
	0	1	1	400 MHz	
	1	0	0	133 MHz	Celeron 533MHz
	1	0	1	100 MHz	
	1	1	0	166 MHz	Yonah 667MHz
	1	1	1	RSVD	

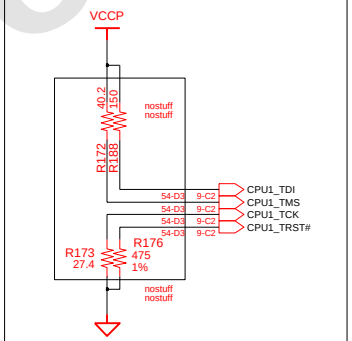
DRAW: KI IM	DATE: 5/28/2007	TITLE: PRAHA_EXT MAIN CLOCK GENERATOR	SAMSUNG ELECTRONICS
CHECK: SS BAIK	DEV. STEP: PR		
APPROVAL: KK BIN	REV: 1.0		PART NO.: BA41-00806A
MODULE CODE	LAST EDIT: May 28, 2007 10:24:00 AM		PAGE 7 OF 54



DRAW: KI IM	DATE: 5/28/2007	TITLE: PRAHA_EXT MAIN MEROM CPU (1/3)	SAMSUNG ELECTRONICS
CHECK: SS BAIK	DEV. STEP: PR		
APPROVAL: KK BIN	REV: 1.0		PART NO.: BA41-00806A
MODULE CODE:	LAST EDIT: May 28, 2007 10:24:00 AM	PAGE 8 OF 54	



ITP DISABLE



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 Zo=27.4ohm(55ohm) 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 Zo=55ohm 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.

CPU Core Voltage Table

IMVP-6

Active Mode VID(6:0)	Voltage	Active/Deeper Sleep Dual Mode Region VID(6:0)	Voltage	Deeper Sleep/Extended Deeper Sleep Dual Mode Region 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	0.4875 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 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 1 0 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 1 0 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 0 1 1 1 0	0.9250 V	1 0 1 0 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 0 **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 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 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	1 0 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 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 1 0	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 0 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 0 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 0 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 0 0 1 1	0.0625 V
0 1 0 0 0 1 1	1.0625 V	1 0 0 1 0 1 1	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 1 1 0 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 1 1 0 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 1 1 1 0	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 1 **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	0.0000 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

*"1111111" : 0V power good asserted.

Active	
DPRSLPVR	0
DPRSTP*	1
PSI2*	0 or 1

Deeper Slp	
DPRSLPVR	1
DPRSTP*	0
PSI2*	0 or 1

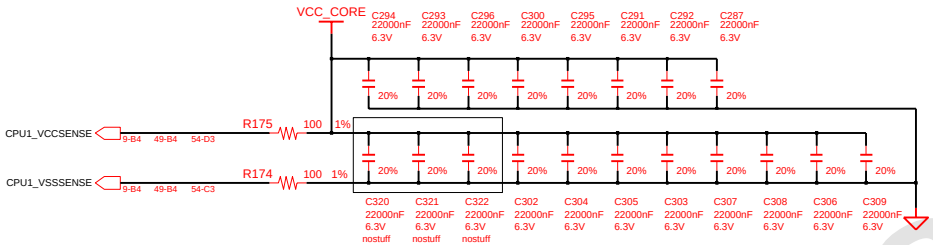
*Yonah Processor (2.33 GHz / 800 MHz : TBD)

DRAW	KI IM	DATE	5/28/2007	TITLE	PRAHA_EXT MAIN MEROM CPU(2/3)
CHECK	SS BAIK	DEV. STEP	PR		
APPROVAL	KK BIN	REV	1.0		
MODULE CODE		LAST EDIT	May 28, 2007 10:24:00 AM		

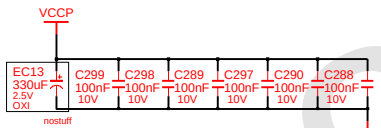
SAMSUNG ELECTRONICS

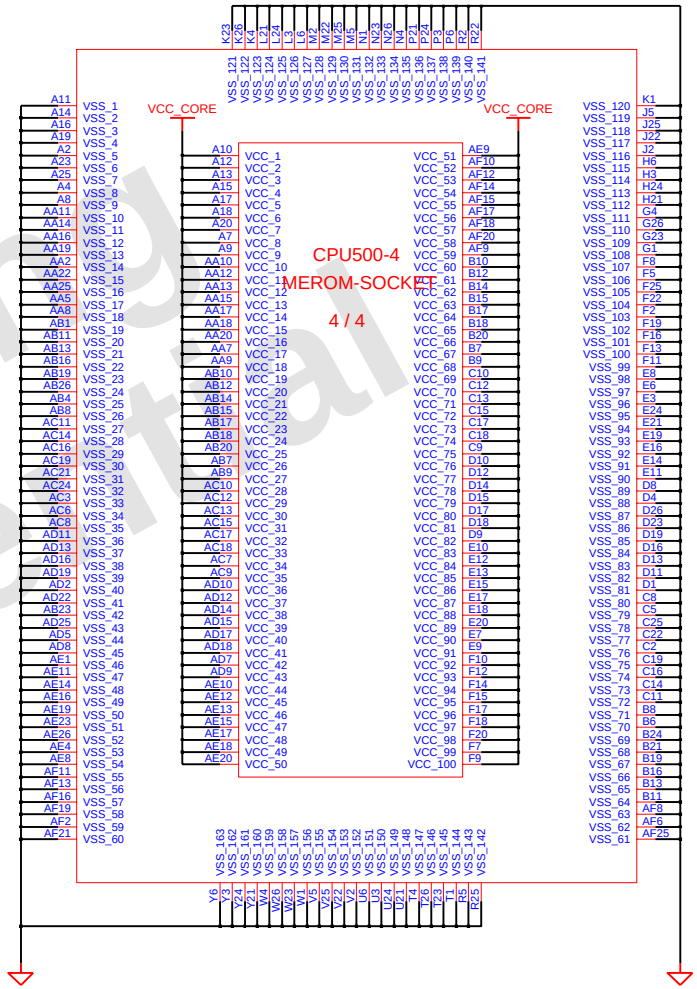
PART NO. BA41-00806A

Deleted 13 De-cap (Only use 19pcs out of 32)



CHECK BULK CAP USING IF IT DOUBLED





DRAW	KI IM	DATE	5/28/2007	TITLE	PRAHA_EXT MAIN MEROM CPU(3/3)
CHECK	SS BAIK	DEV. STEP	PR		
APPROVAL	KK BIN	REV	1.0		
MODULE CODE		LAST EDIT	May 28, 2007 10:24:00 AM	PAGE	10 OF 54

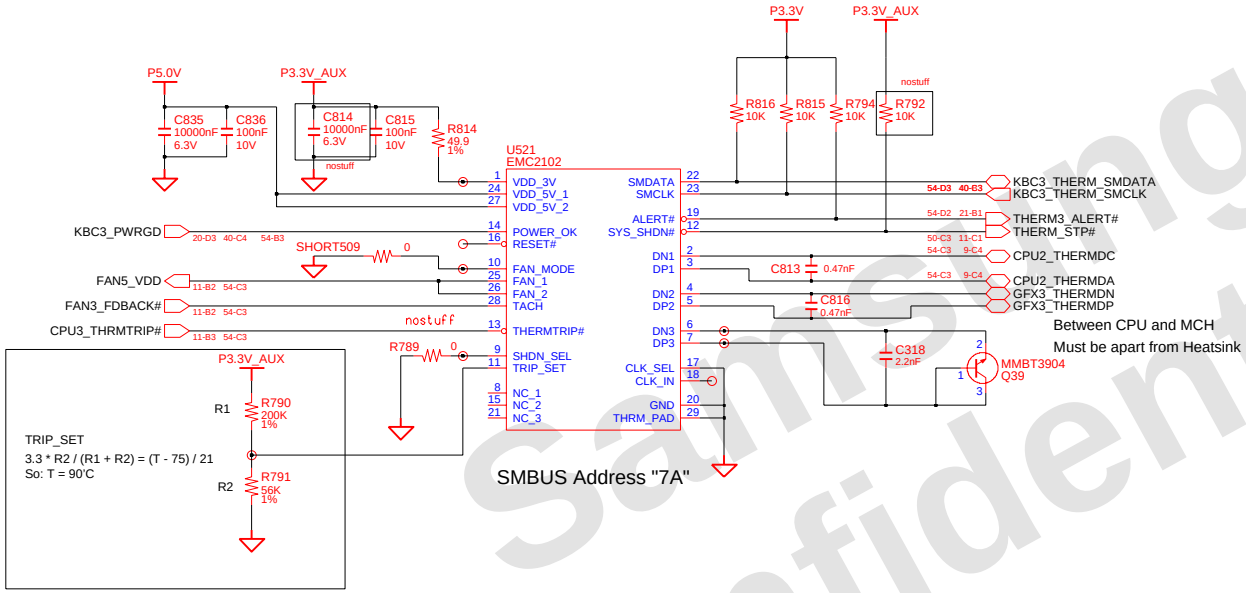
SAMSUNG ELECTRONICS

PART NO. BA41-00806A

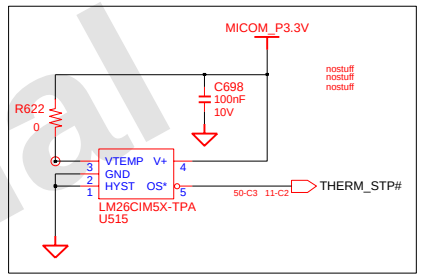
Refer To Thermal Sensor Layout Guidelines.

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

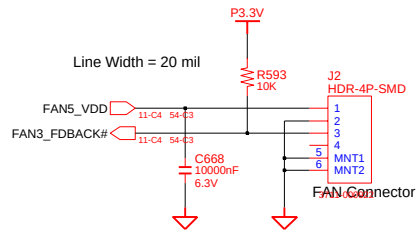
Thermal Monitor

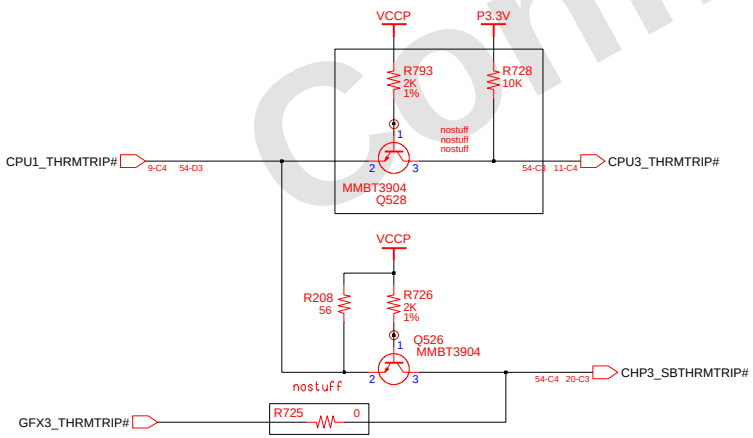


OTP (NOSTUFF)

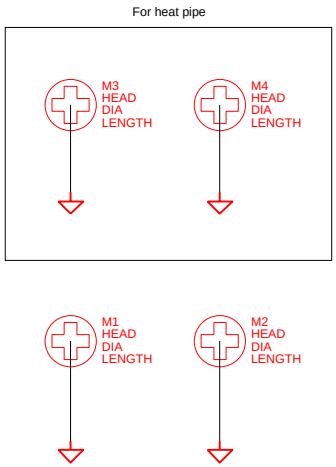


FAN Control





DRAW: KI IM	DATE: 5/28/2007	TITLE: PRAHA_EXT MAIN THERMAL SENSOR/FAN CNTRL	SAMSUNG ELECTRONICS
CHECK: SS BAIK	DEV. STEP: PR		
APPROVAL: KK BIN	REV: 1.0		PART NO.: BA41-00806A
MODULE CODE	LAST EDIT: May 28, 2007 10:24:00 AM		PAGE 11 OF 54



U513-1
RS600ME
1 OF 5
P-4 AGTL + I/F

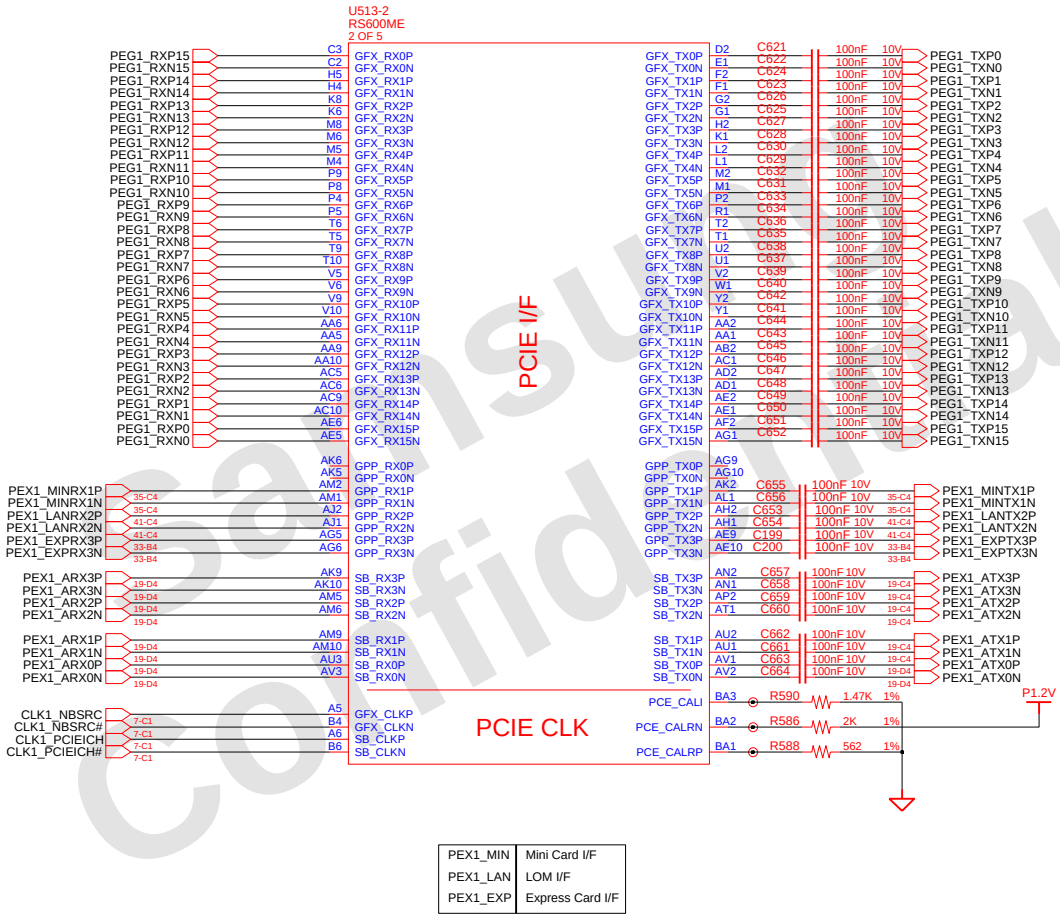
CPU1_A#(33:3)
CPU1_REQ#(4:0)
CPU1_ADSTB0#
CPU1_ADSTB1#
CPU1_ADS#
CPU1_BNR#
CPU1_BPRI#
CPU1_DEFER#
CPU1_DRDY#
CPU1_DBSY#
CPU1_LOCK#
CPU1_CPURST#
CPU1_RS2#
CPU1_RS1#
CPU1_RS0#
CPU1_BREQ#
CPU1_TRDY#
CPU1_HIT#
CPU1_HITM#
CPU1_DPWR#
CHP3_SUSSTAT#
KBC3_NBPWRGD
CHP3_NBRST#
CPU1_SLP#
CPU1_D#(63:0)
CPU1_DBI0#
CPU1_DSTBN0#
CPU1_DSTBP0#
CPU1_DBI1#
CPU1_DSTBN1#
CPU1_DSTBP1#
CPU1_DBI2#
CPU1_DSTBN2#
CPU1_DSTBP2#
CPU1_DBI3#
CPU1_DSTBN3#
CPU1_DSTBP3#

P1.8V_AUX
R112 4.7K nostuff
R183 0 nostuff
R110 0 nostuff
R111 1K 1% nostuff
P1.8V
P1.2V
VCCP
P3.3V
SHORT8
Q25 RHU002N06
B34 BLM18PG181SN1
B35 BLM18PG181SN1
C244 2200nF 10V
C247 2200nF 10V
R610 49.9 1%
R139 24.9 1%
R115 4.7K
R117 20K 1%
R121 4.7K
R141 61.9 1%
R140 127 1%
C677 1000nF 6.3V
C678 270pF
Q30 MMBT3904
Q29 MMBT3904
R116 2.2K
nostuff

PLACE CLOSE TO NB
USE 10/10MIL WIDTH/SPACE

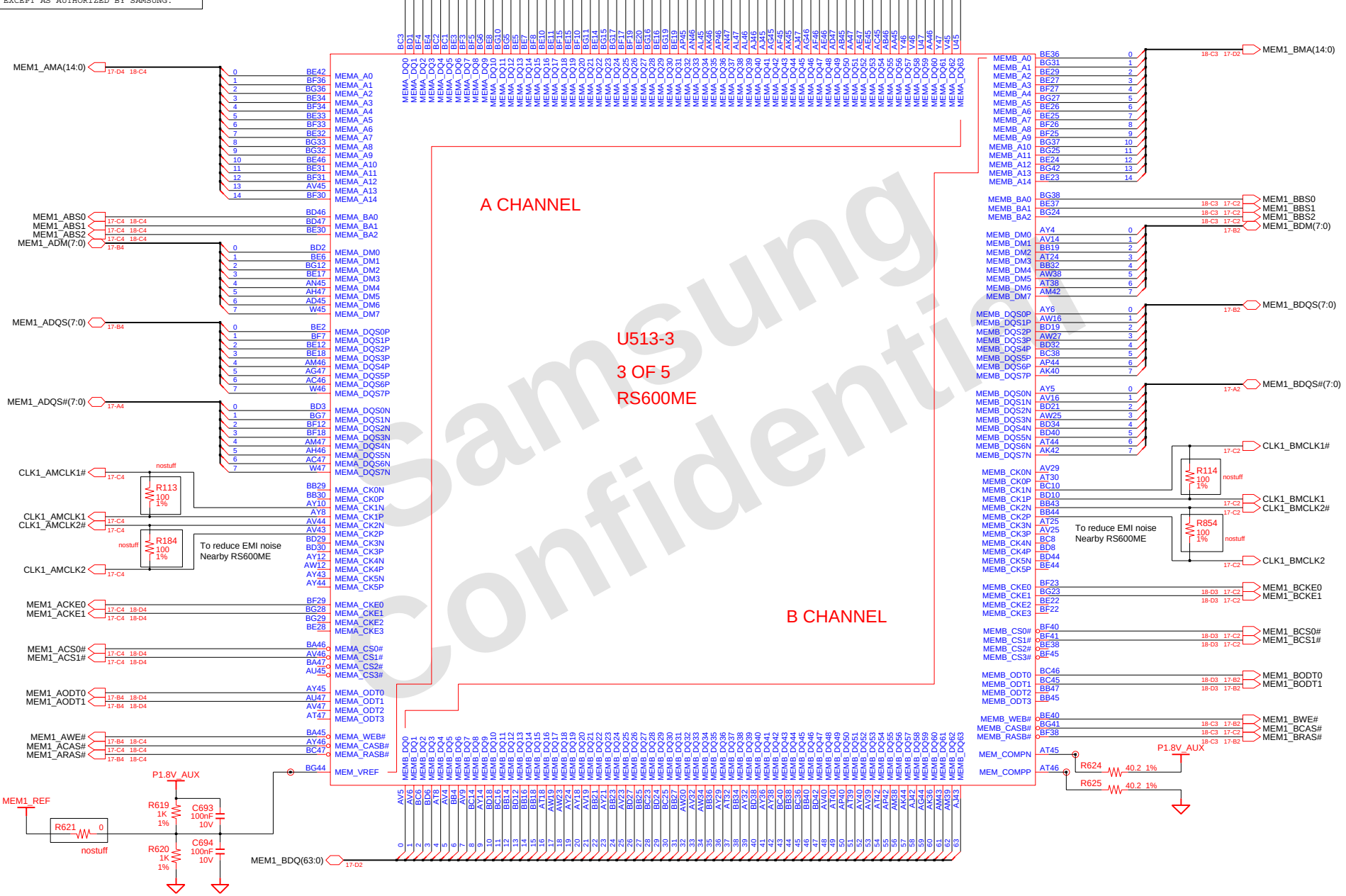
DRAW: KI IM	DATE: 5/28/2007	TITLE: PRAHA_EXT MAIN RS600ME(1/5)	SAMSUNG ELECTRONICS
CHECK: SS BAIK	DEV. STEP: PR		
APPROVAL: KK BIN	REV: 1.0		PART NO.: BA41-00806A
MODULE CODE	LAST EDIT: May 28, 2007 10:24:00 AM	PAGE 12 OF 54	

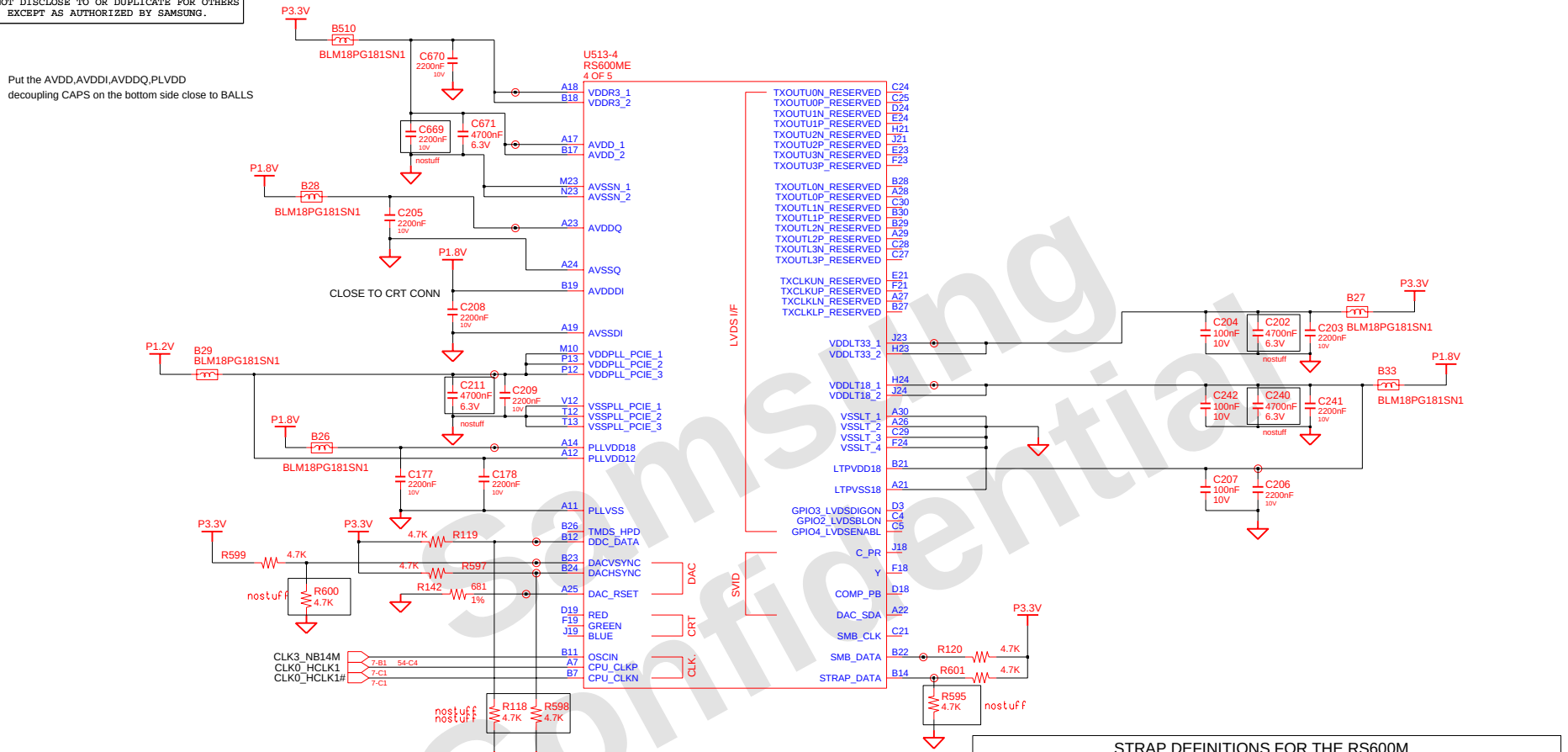
d:/users/mobile20/mentor/praha/pr/praha_main_ext



PEX1_MIN	Mini Card I/F
PEX1_LAN	LOM I/F
PEX1_EXP	Express Card I/F

DRAW: KI IM	DATE: 5/28/2007	TITLE: PRAHA_EXT MAIN RS600ME(2/5)	SAMSUNG ELECTRONICS
CHECK: SS BAIK	DEV. STEP: PR		
APPROVAL: KK BIN	REV: 1.0		PART NO.: BA41-00806A
MODULE CODE	LAST EDIT: May 28, 2007 10:24:00 AM	PAGE 13 OF 54	

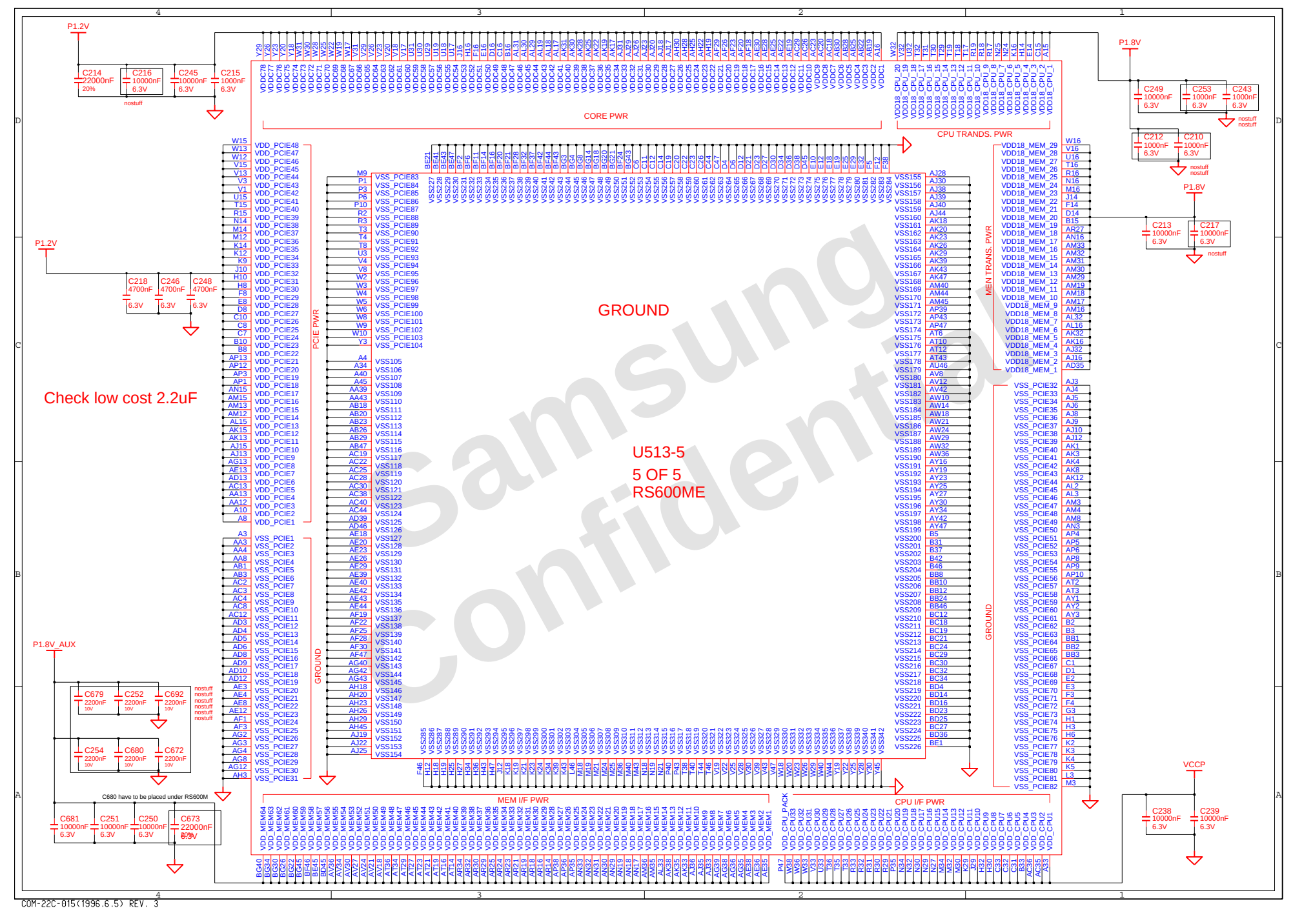


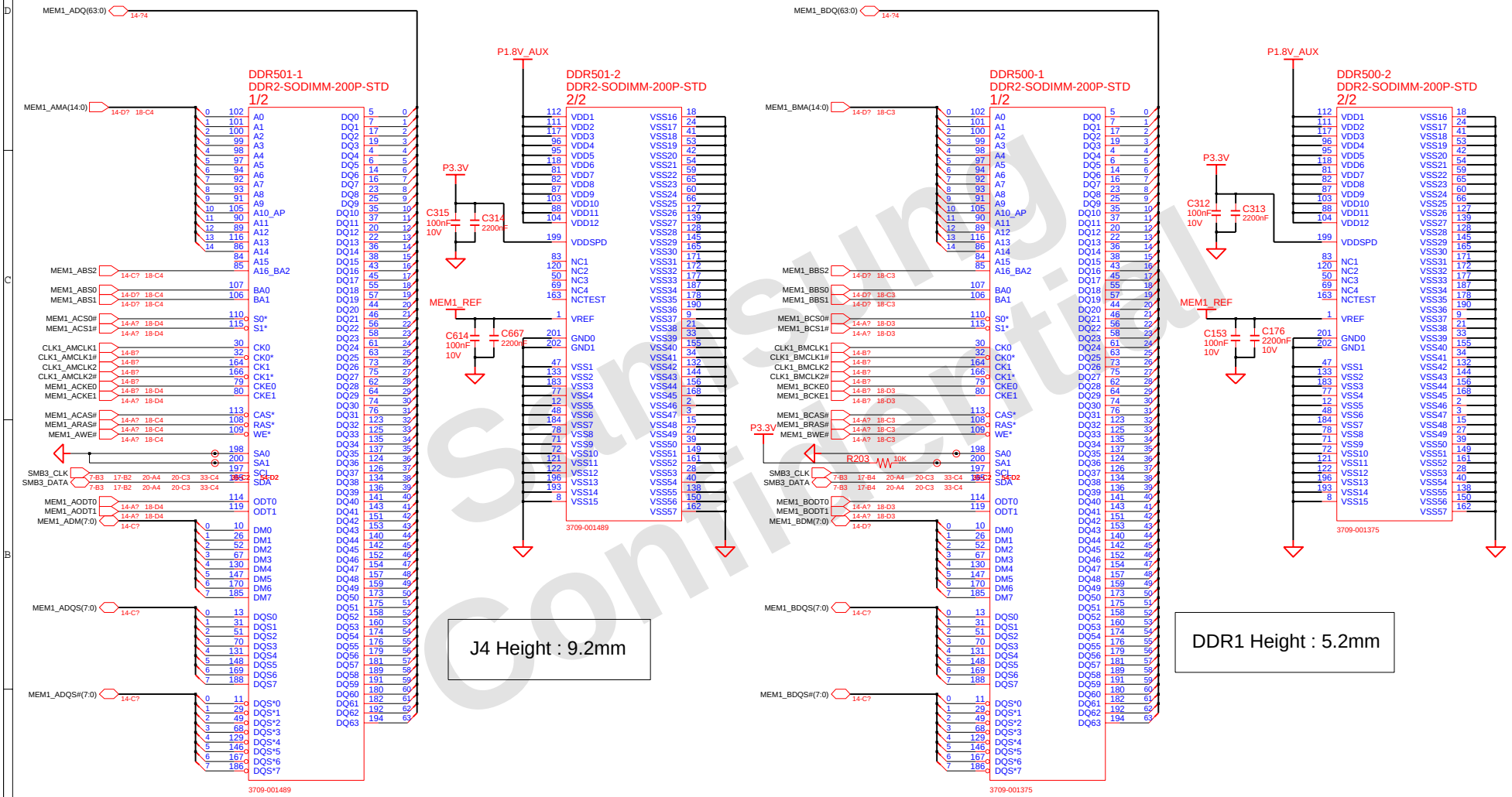


STRAP DEFINITIONS FOR THE RS600M

STRAP PIN	DESCRIPTION
DACHSYNC	Enable/Disable integrated graphics. 0 : Enable integrated graphics 1 : Disable integrated graphics
STRP_DATA	Debug strap configuration. This strap should not be set to "0" on production boards. 0 : Select Memory Channel A to be a debug bus 1 : Read debug straps from an external EEPROM, or disable debug mode when an EEPROM is absent.
DACVSYNC	Select configuration of the integrated graphics engine. 0 : Reserved 1 : Required setting for the RS600M
DDC_DATA	Select DDR2 or DDR3 signalling level for the memory interface. 0 : DDR3. On DDR3, it is necessary to put an isolation FET in series with the pull-up resistor on this strap to separate it from the I2C circuit during an NB reset 1 : DDR2

DRAW: KI IM	DATE: 5/28/2007	TITLE: PRAHA_EXT MAIN RS600ME(4/5)	SAMSUNG ELECTRONICS
CHECK: SS BAIK	DEV. STEP: PR		
APPROVAL: KK BIN	REV: 1.0		PART NO.: BA41-00806A
MODULE CODE: undefined	LAST EDIT: May 28, 2007 10:24:00 AM	PAGE 15 OF 54	

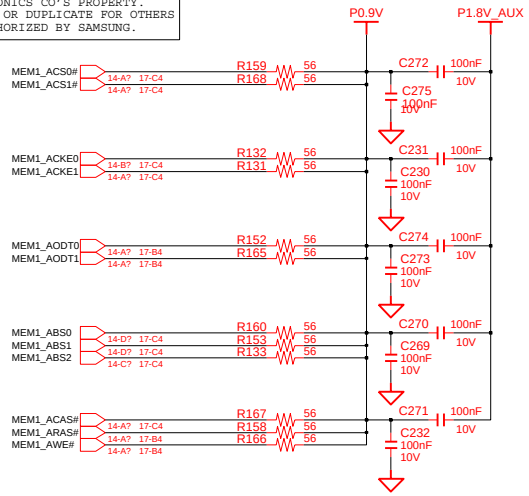


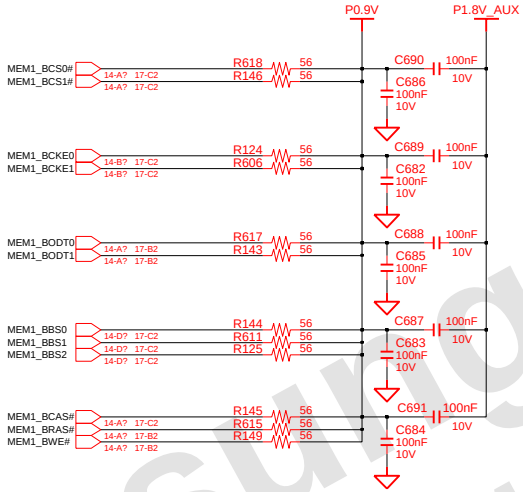


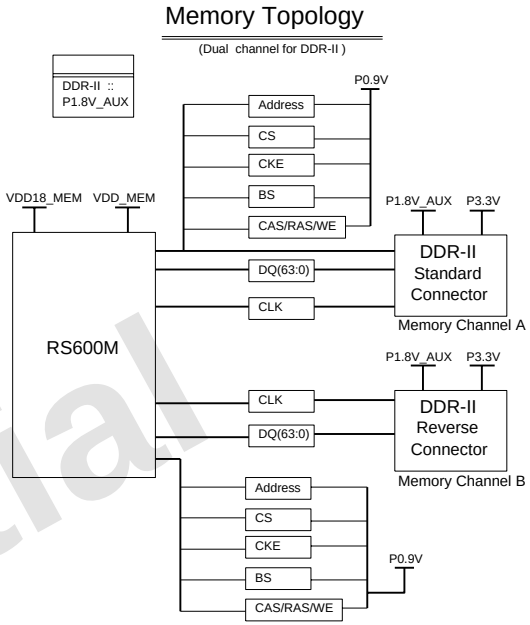
DRAW	KI IM	DATE	5/28/2007	TITLE	PRAHA_EXT MAIN DDR2 - SODIMM
CHECK	SS BAIK	DEV. STEP	PR		
APPROVAL	KK BIN	REV	1.0		
MODULE CODE	undefined	LAST EDIT	May 28, 2007 10:24:00 AM		

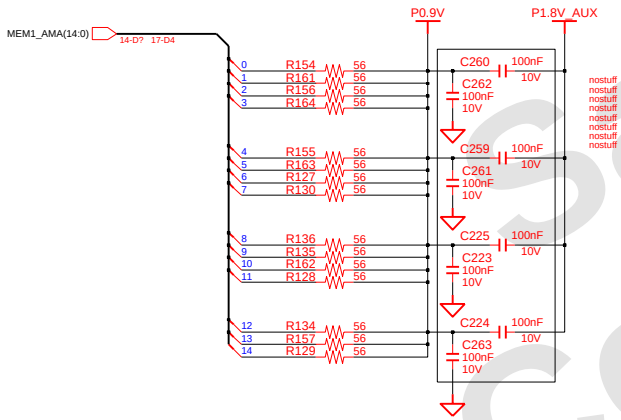
SAMSUNG ELECTRONICS

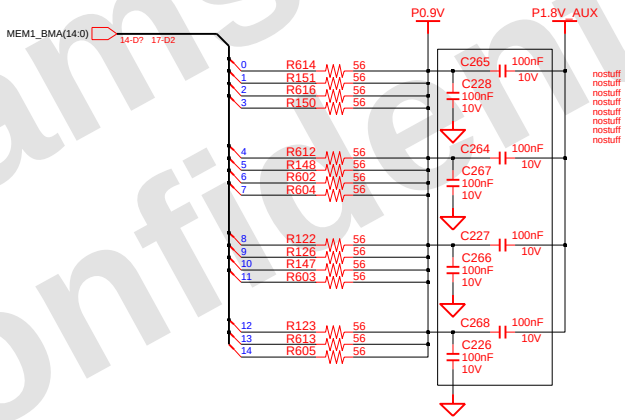
PART NO. BA41-00806A

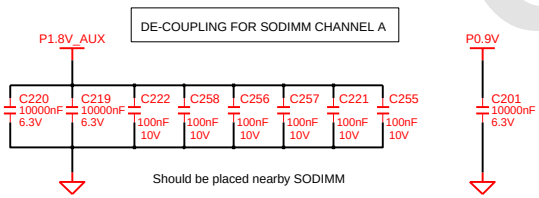


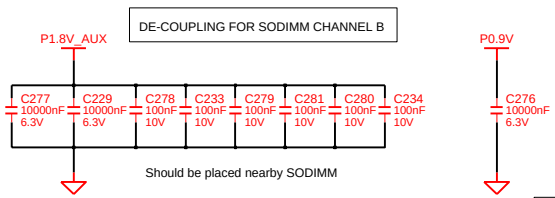




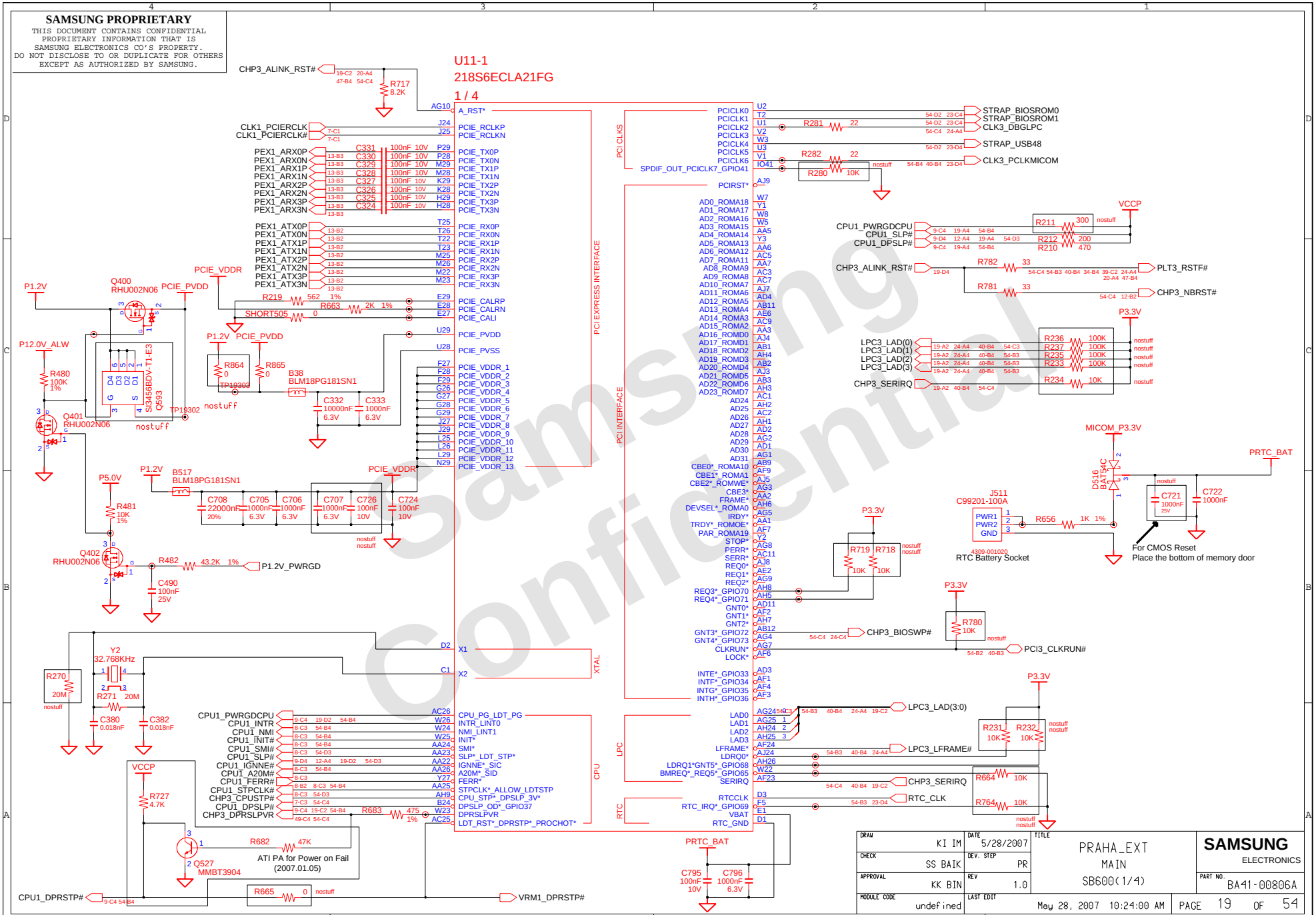






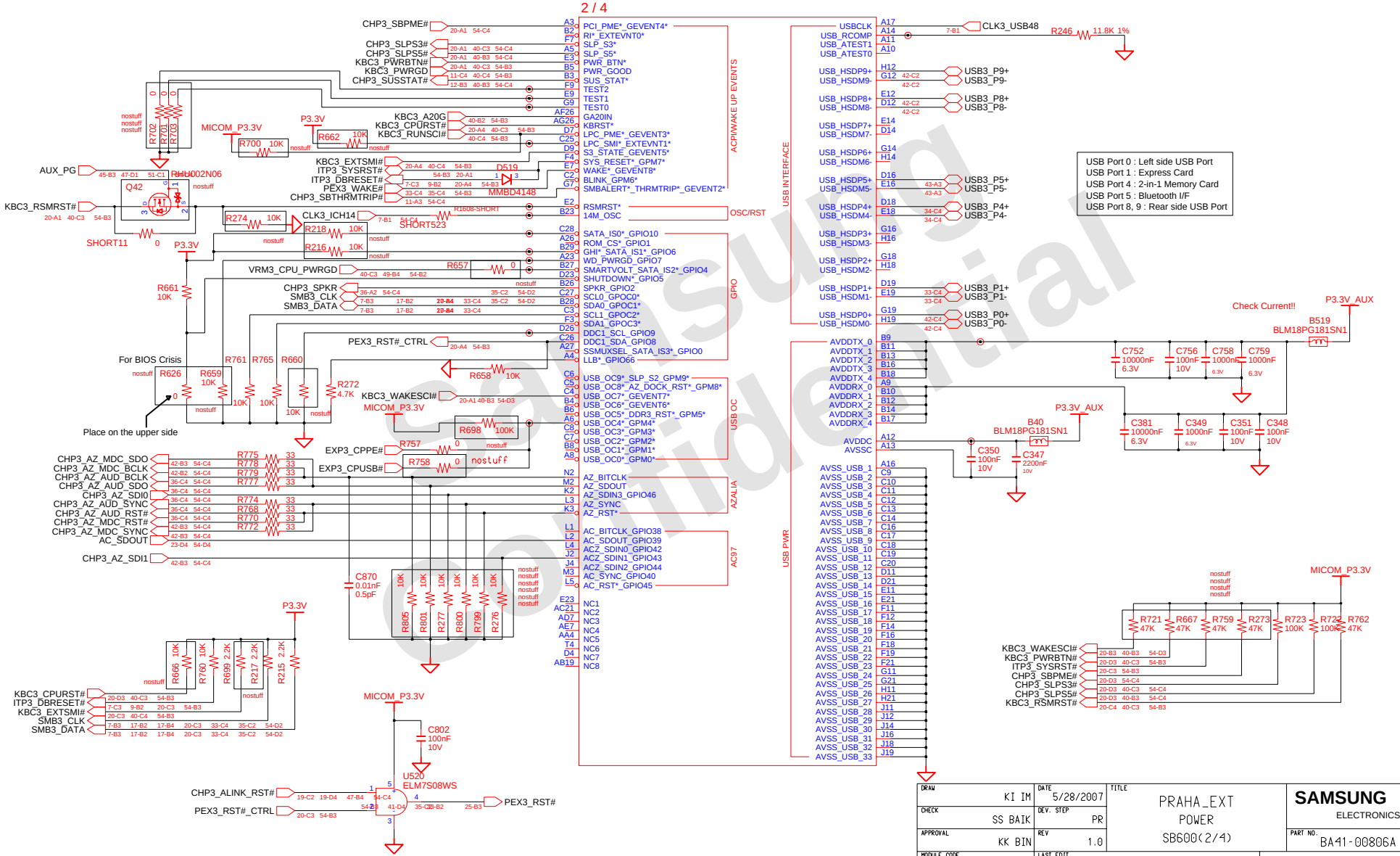


DRAW: KI IM	DATE: 5/28/2007	TITLE: PRAHA_EXT MAIN DDR2 - TERMINATION	SAMSUNG ELECTRONICS
CHECK: SS BAIK	DEV. STEP: PR		
APPROVAL: KK BIN	REV: 1.0		PART NO.: BA41-00806A
MODULE CODE: undefined	LAST EDIT: May 28, 2007 10:24:00 AM	PAGE 18 OF 54	



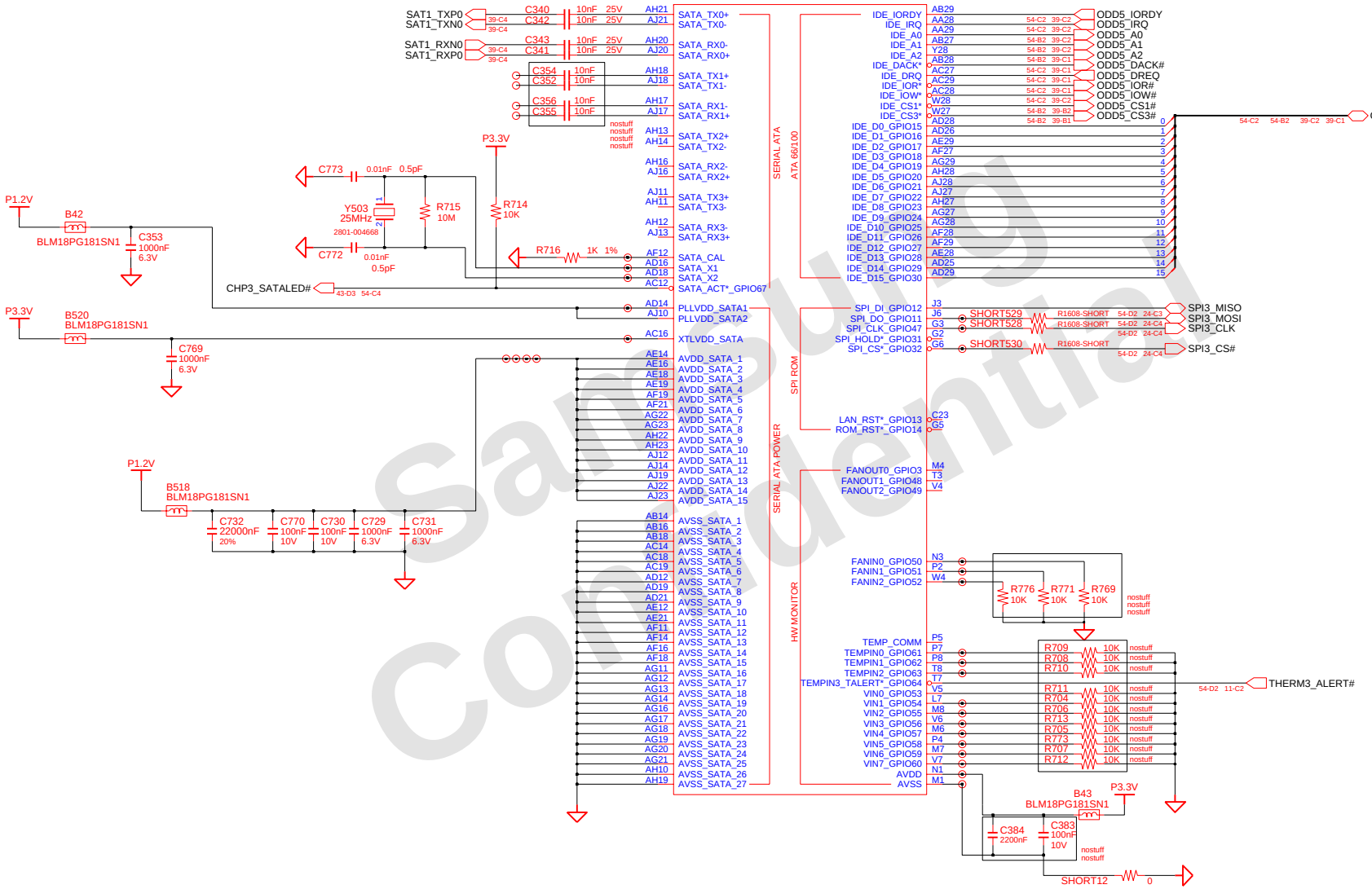
DRAW: KI IM	DATE: 5/28/2007	TITLE: PRAHA_EXT MAIN SB600(1/4)	SAMSUNG ELECTRONICS
CHECK: SS BAIK	DEV. STEP: PR		
APPROVAL: KK BIN	REV: 1.0		PART NO.: BA41-00806A
MODULE CODE: undefined	LAST EDIT: May 28, 2007 10:24:00 AM		PAGE 19 OF 54

U11-2
218S6ECLA21FG
2 / 4

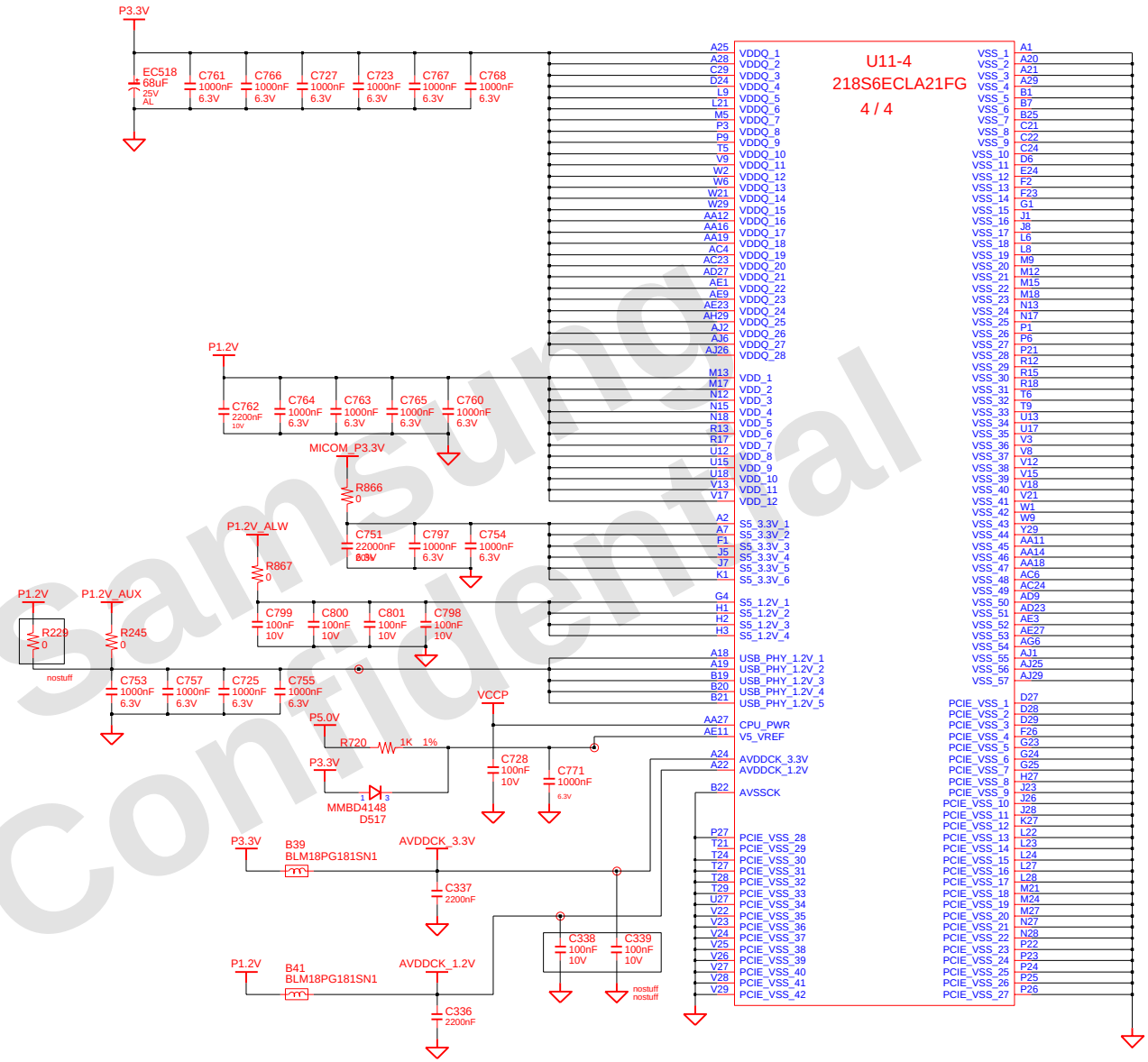


DRAW: KI IM	DATE: 5/28/2007	TITLE: PRAHA_EXT POWER SB600(2/4)	SAMSUNG ELECTRONICS
CHECK: SS BAIK	DEV. STEP: PR		
APPROVAL: KK BIN	REV: 1.0		PART NO.: BA41-00806A
MODULE CODE: undefined	LAST EDIT: May 28, 2007 10:24:00 AM		PAGE 20 OF 54

U11-3
218S6ECLA21FG
3 / 4



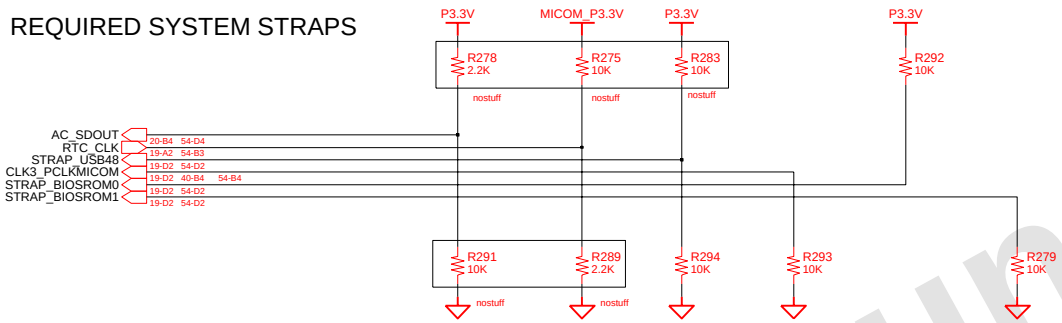
DRAW: KI IM	DATE: 5/28/2007	TITLE: PRAHA_EXT MAIN SB600(3/4)	SAMSUNG ELECTRONICS
CHECK: SS BAIK	DEV. STEP: PR		
APPROVAL: KK BIN	REV: 1.0		PART NO.: BA41-00806A
MODULE CODE: undefined	LAST EDIT: May 28, 2007 10:24:00 AM	PAGE 21 OF 54	



DRAW: KI IM	DATE: 5/28/2007	TITLE: PRAHA_EXT MAIN SB600(4/4)	SAMSUNG ELECTRONICS
CHECK: SS BAIK	DEV. STEP: PR		
APPROVAL: KK BIN	REV: 1.0		PART NO.: BA41-00806A
MODULE CODE: undefined	LAST EDIT: May 28, 2007 10:24:00 AM		PAGE 22 OF 54

SB600 HAS AN INTERNAL PD FOR AC_SDOUT
SB600 HAS AN INTERNAL PU FOR RTC_CLK

REQUIRED SYSTEM STRAPS

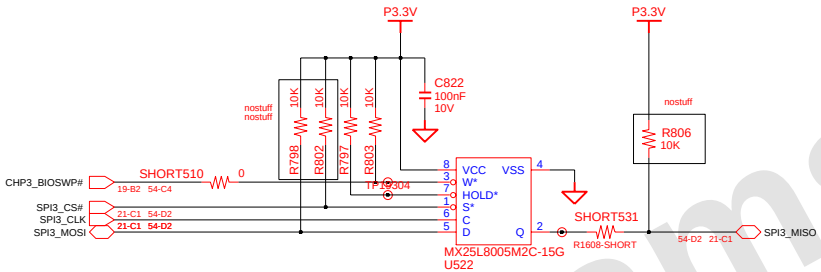


	AC_SDOUT	RTC_CLK	PCI3_CLK4	PCI3_CLK6	PCI3_CLK0 PCI3_CLK1
STRAP HIGH	USE DEBUG STRAPS	INTERNAL RTC	USE INTERNAL PLL48	CPU I/F = K8	ROM TYPE H, H = PCI ROM H, L = SPI ROM L, H = LPC ROM L, L = FWH ROM
STRAP LOW	IGNORE DEBUG STRAPS	EXRERNAL RTC (PD on X1, Apply 32KHz to RTC_CLK)	USE EXTERNAL 48MHz	CPU I/F = P4	

DEBUG STRAPS

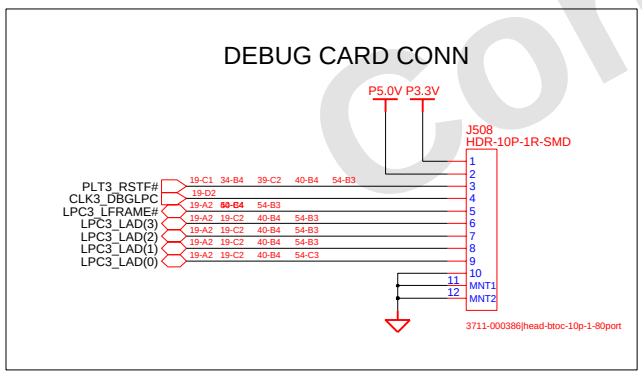
	PCI3_AD(28)	PCI3_AD(27)	PCI3_AD(26)	PCI3_AD(25)	PCI3_AD(24)	PCI3_AD(23)
STRAP HIGH	USE LONG RESET	USE PCI PLL	USE ACPI BCLK	USE IDE PLL	USE DEFAULT PCIE STRAPS	BOOTFAILTIMER DISABLED
STRAP LOW	USE SHORT RESET	BYPASS PCI PLL	BYPASS ACPI BCLK	BYPASS IDE PLL	USE EEPROM PCIE STRAPS	BOOTFAILTIMER ENABLED

DRAW: KI IM	DATE: 5/28/2007	TITLE: PRAHA_EXT	SAMSUNG ELECTRONICS
CHECK: SS BAIK	DEV. STEP: PR	STRAPS	
APPROVAL: KK BIN	REV: 1.0		PART NO.: BA41-00806A
MODULE CODE: undefined	LAST EDIT: May 28, 2007 10:24:00 AM	PAGE 23 OF 54	



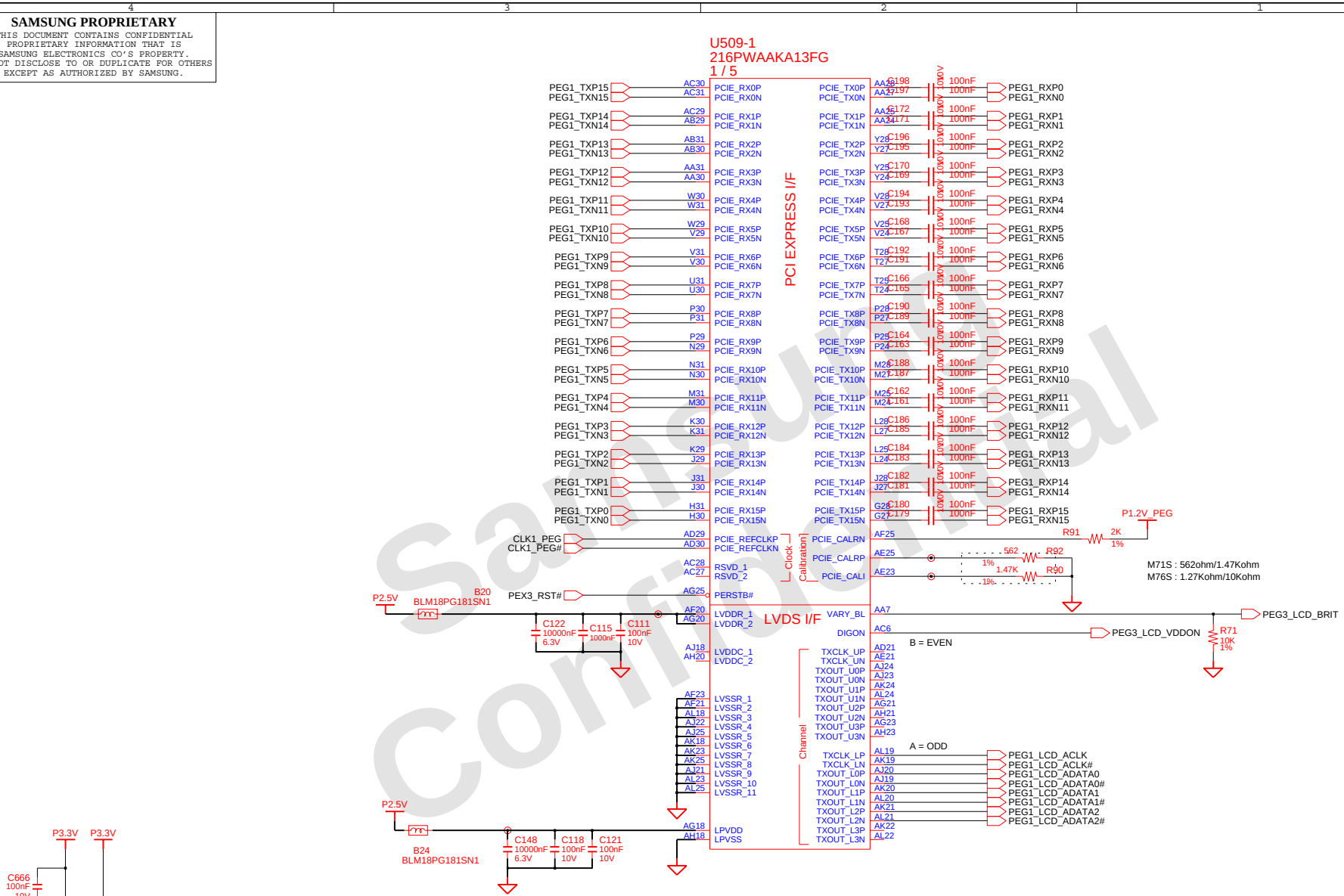
SPI3_CS#

SB600 prior to A21 : Pulled up to P3.3V_ALW with 1Kohm resistor.
SB600 A21 and newer : No external pull-up resistor required.

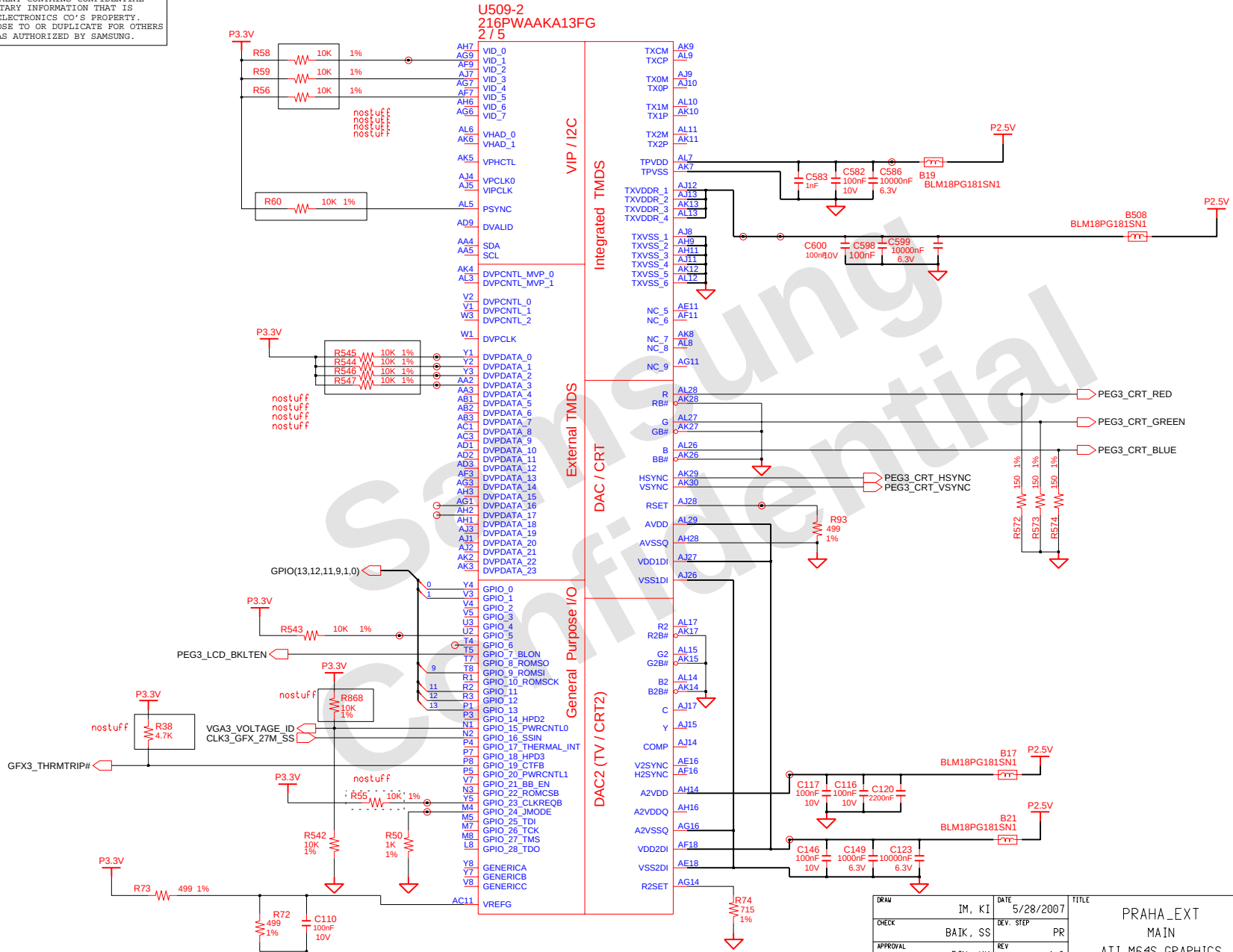


02 VERIFY REAL MODE	66 CONFIGURE ADVANCE CACHE REG.
03 DISABLE NMI	6A DISPLAY EXTERNAL CACHE SIZE
04 GET CPU TYPE	6C DISPLAY SHADOW MESSAGE
06 INIT. SYSTEM H/W	6E DISPLAY NON-DISPOSABLE SEGMENT
08 INIT. CHIPSET REG.	70 DISPLAY ERROR MESSAGE
09 SET IN POST FLAG	72 CHECK FOR CONFIGURATION ERROR
0A INIT CPU.REG	74 TEST REAL-TIME CLOCK
0B CPU CACHE ON	76 CHECK FOR KEYBOARD EERROR
0C INIT.CACHE TO POST	7C SETUP HARDWARE INTERRUPT VECTOR
OE INIT. I/O VALUE	7E TEST COPROCESSER IF PRESENT
0F ENABLE THE L-BUS IDE	80 DISABLE ON-BOARD I/O PORT
10 INIT. POWER MANAGER	82 DETECT AND INSTALL EXT.RS232C
11 LOAD ALTERNATE REG.	84 DETECT AND INSTALL EXT.PARALLEL
13 PCI BUS MASTER RESET 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 INTERRUP 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 GETWEEN 512K AND 640K	92 JUMP TO USER PATCH 2
60 TEST EXTENDED MEMORY	94 DISABLE A20 ADDRESS LINE
62 TEST EXTENDED MEMORY ADDRESS LINE	96 CLEAR HUGE ES SEGMENT REG.
64 JUMP TO USER PATCH 1	98 SEARCH FOR OPTION ROMS

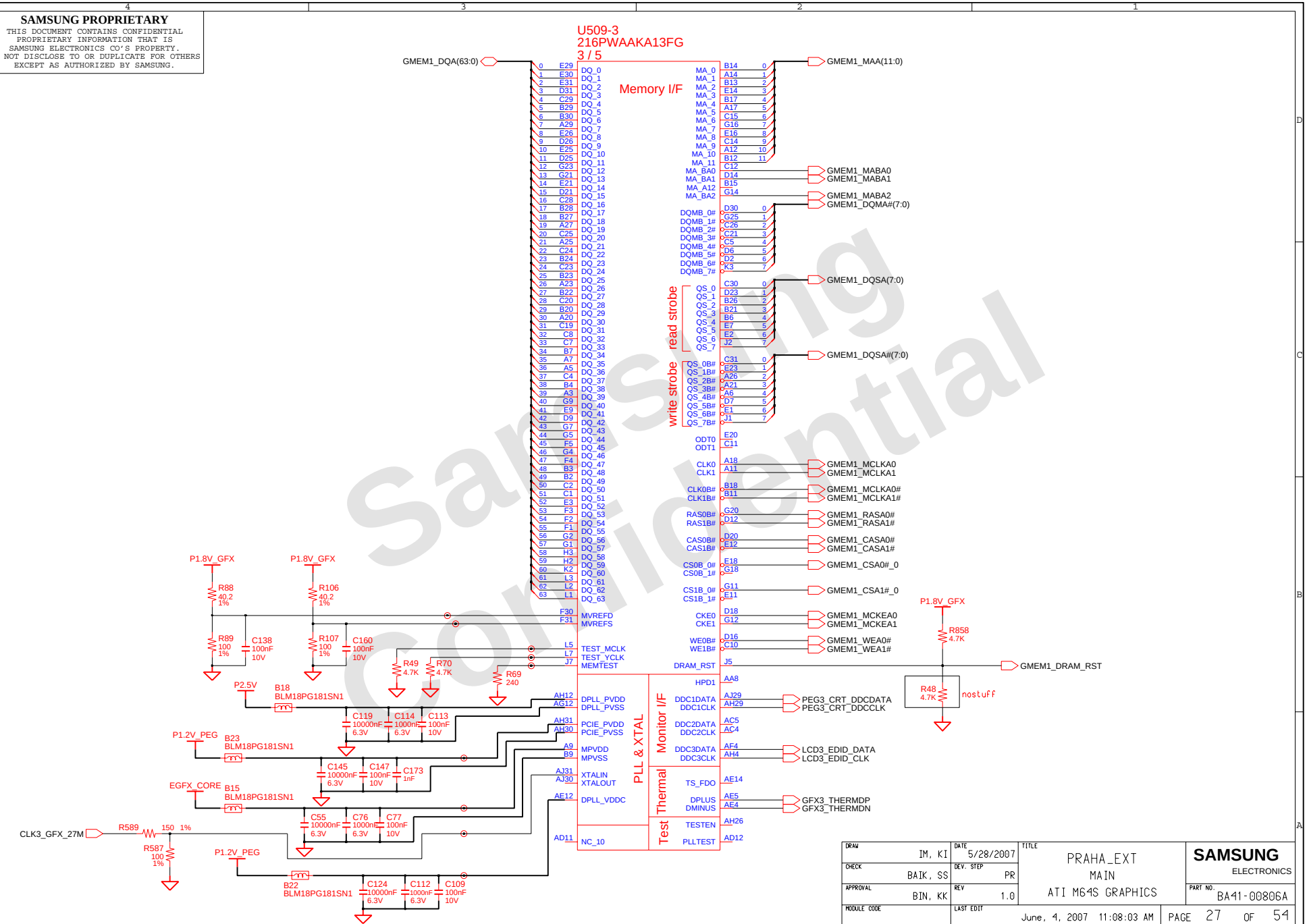
DRAW: KI IM	DATE: 5/28/2007	TITLE: PRAHA_EXT MAIN SPI ROM & DEBUG PORT	SAMSUNG ELECTRONICS
CHECK: SS BAIK	DEV. STEP: PR		
APPROVAL: KK BIN	REV: 1.0		PART NO.: BA41-00806A
MODULE CODE: undefined	LAST EDIT: May 28, 2007 10:24:00 AM	PAGE 24 OF 54	



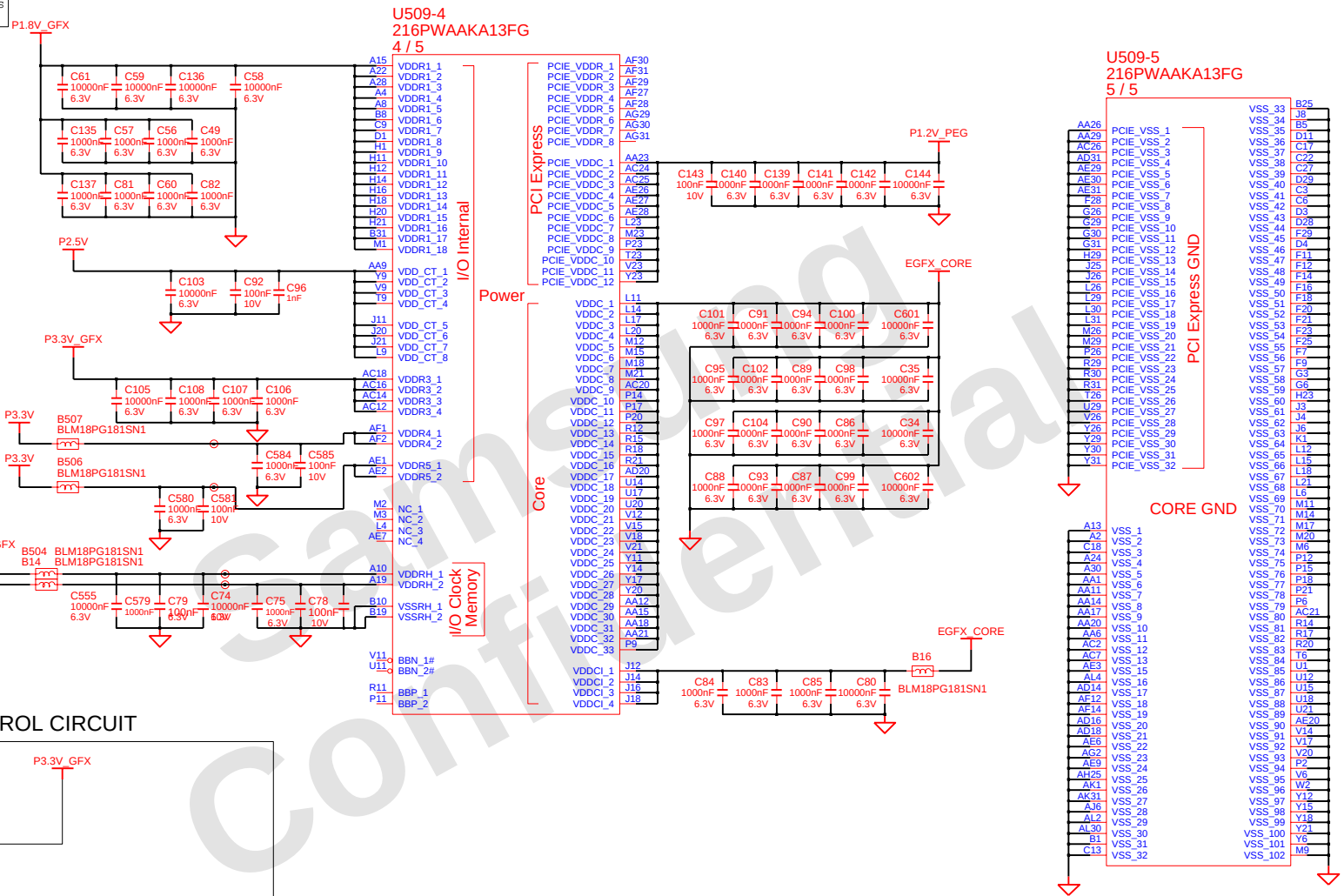
DRAW: IM, KI	DATE: 6/4/2007	TITLE: PRAHA_EXT MAIN ATI M64S GRAPHICS	SAMSUNG ELECTRONICS
CHECK: BAIK, SS	DEV. STEP: PR		
APPROVAL: BIN, KK	REV: 1.0		PART NO.: BA41-00806A
MODULE CODE	LAST EDIT: June, 4, 2007 11:06:57 AM		PAGE 25 OF 54



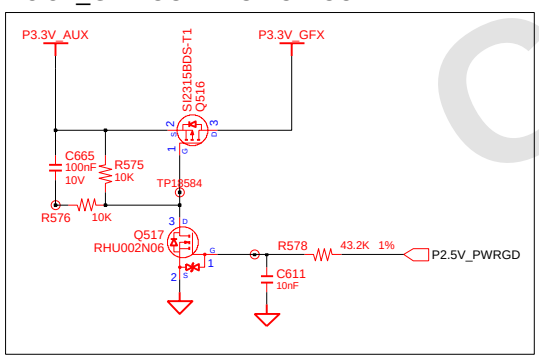
DRAW: IM, KI	DATE: 5/28/2007	TITLE: PRAHA_EXT MAIN ATI M64S GRAPHICS	SAMSUNG ELECTRONICS
CHECK: BAIK, SS	DEV. STEP: PR		
APPROVAL: BIN, KK	REV: 1.0		PART NO.: BA41-00806A
MODULE CODE	LAST EDIT: June, 4, 2007 11:07:26 AM		PAGE 26 OF 54



DRAW: IM, KI	DATE: 5/28/2007	TITLE: PRAHA_EXT MAIN ATI M64S GRAPHICS	SAMSUNG ELECTRONICS
CHECK: BAIK, SS	DEV. STEP: PR		
APPROVAL: BIN, KK	REV: 1.0		PART NO.: BA41-00806A
MODULE CODE	LAST EDIT: June, 4, 2007 11:08:03 AM		PAGE 27 OF 54

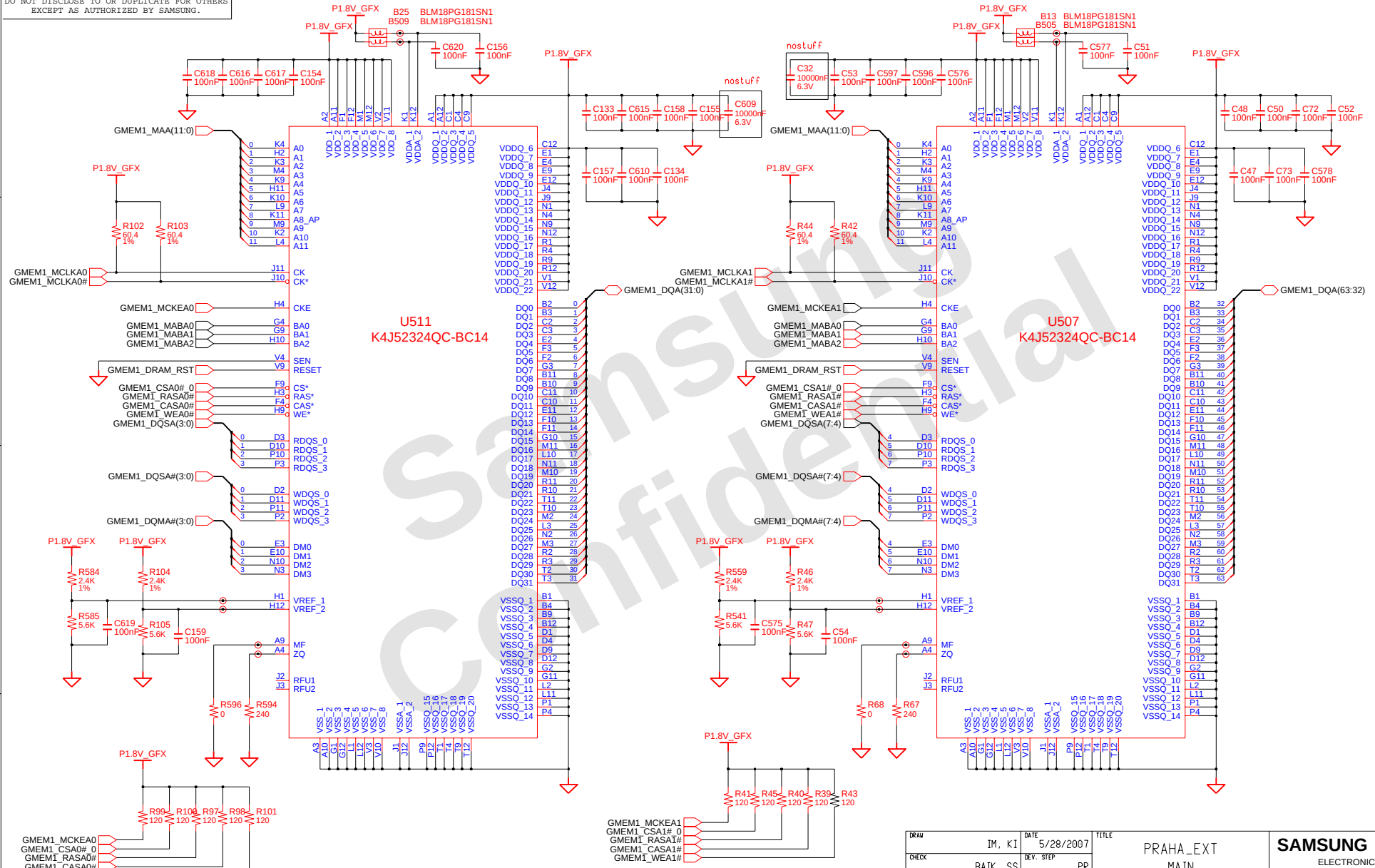


P3.3V_GFX CONTROL CIRCUIT



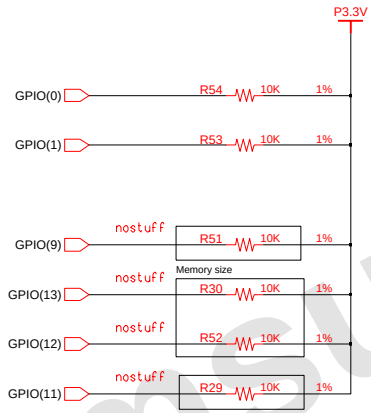
DRAW: IM, KI	DATE: 5/28/2007	TITLE: PRAHA_EXT MAIN ATI M64S GRAPHICS	SAMSUNG ELECTRONICS
CHECK: BAIK, SS	DEV. STEP: PR		
APPROVAL: BIN, KK	REV: 1.0		PART NO.: BA41-00806A
MODULE CODE	LAST EDIT: June, 4, 2007 11:08:39 AM		PAGE 28 OF 54

A-channel



DRAW: IM, KI	DATE: 5/28/2007	TITLE: PRAHA_EXT MAIN ATI M64S GRAPHICS	SAMSUNG ELECTRONICS
CHECK: BAIK, SS	DEV. STEP: PR		
APPROVAL: BIN, KK	REV: 1.0		PART NO.: BA41-00806A
MODULE CODE	LAST EDIT: June, 4, 2007 11:09:15 AM	PAGE 29 OF 54	

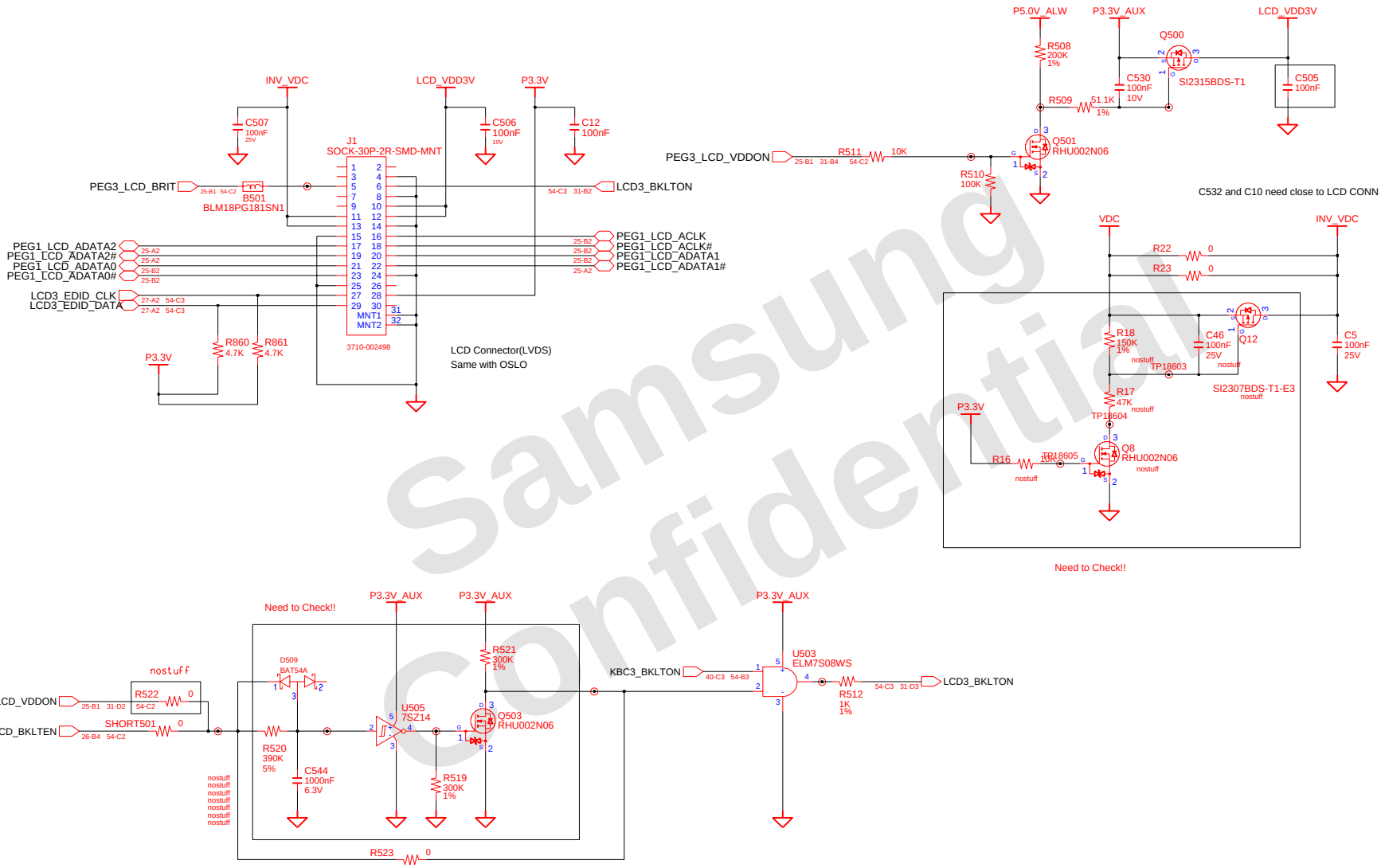
Need to option



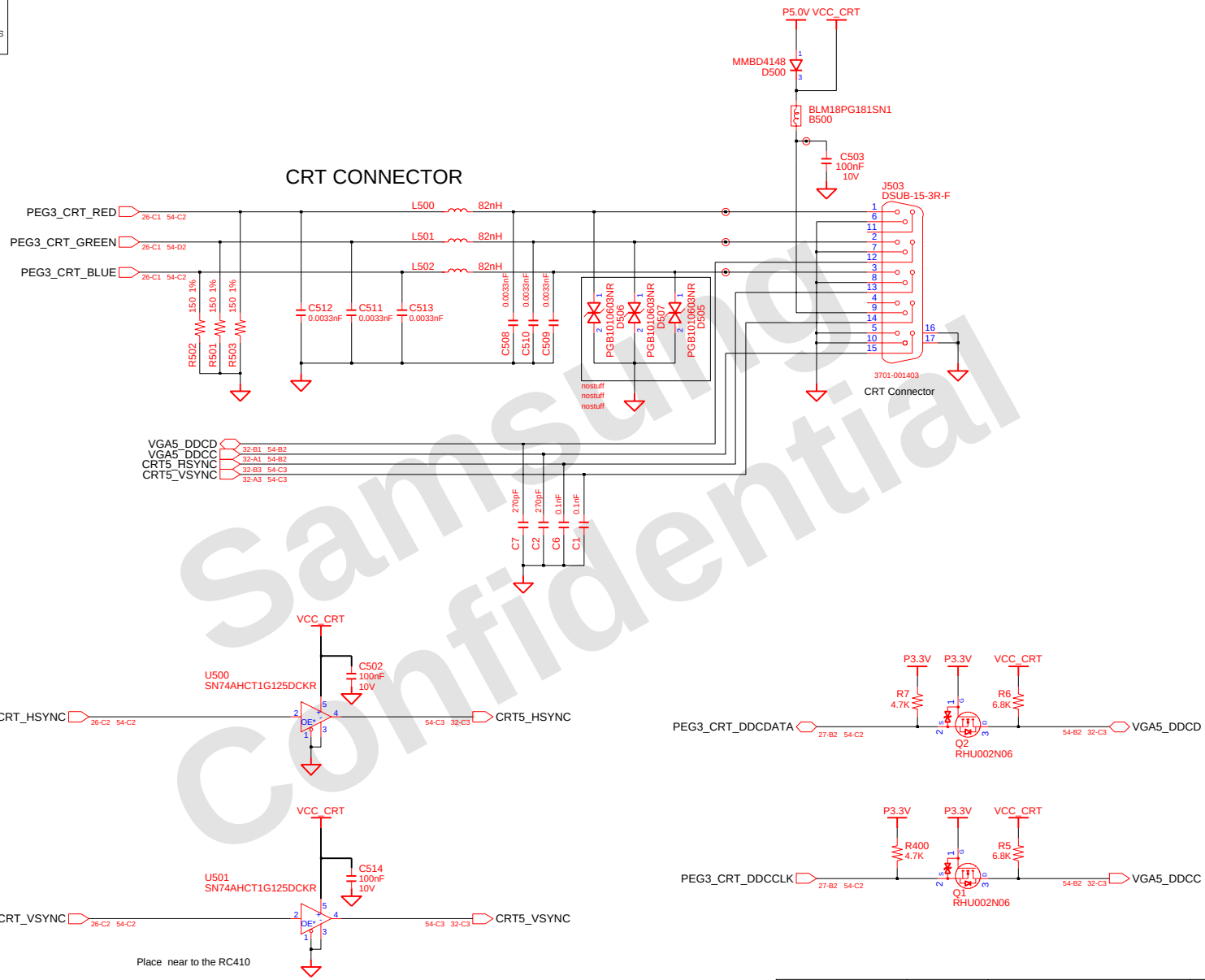
(DEFAULT : pull-down)

STRAP	PIN	DESCRIPTION
TX_PWRS_ENB	GPIO[0]	Transmitter Power Saving Enable 0: 50% Tx output swing 1: full Tx output swing
TX_DEEMPH_EN	GPIO[1]	Transmitter De-emphasis Enable 0: Tx De-emphasis disabled 1: Tx de-emphasis enabled
DEBUG_ACCESS	GPIO[4]	Strap to set the debug muxes to bring out DEBUG signals even if registers are inaccessible.
ROMIDCFG[3:0]	GPIO[9,13:11]	When no ROM is attached, GPIO[9] is set to 0. GPIO[13:12] is used to select the frame buffer aperture size. GPIO[13:12] = 00: 128M frame buffer GPIO[13:12] = 01: 256M frame buffer GPIO[13:12] = 10: 64M frame buffer GPIO[13:12] = 11: reserved

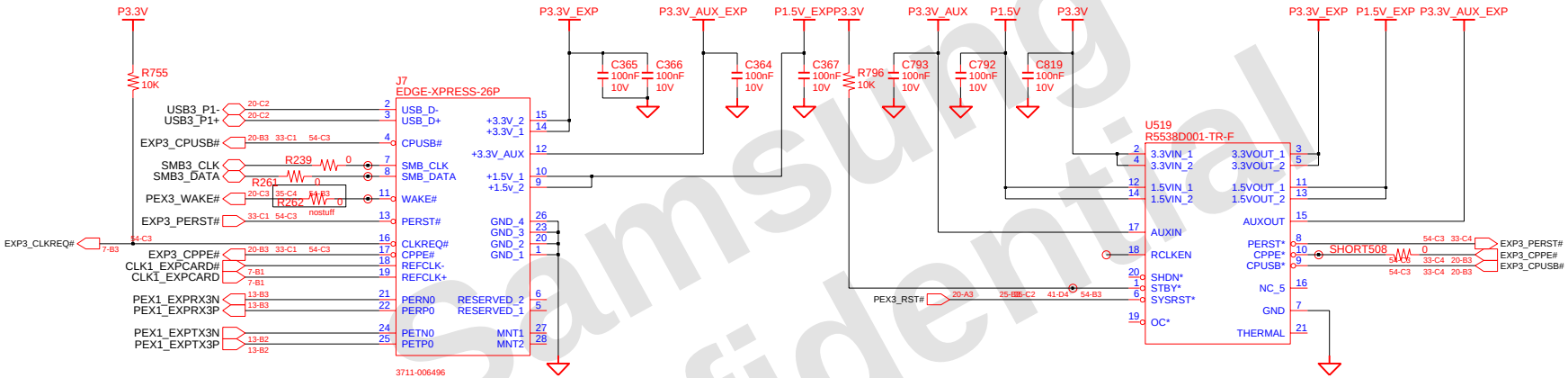
DRAW: IM, KI	DATE: 5/28/2007	TITLE: PRAHA_EXT MAIN ATI M64S GRAPHICS	SAMSUNG ELECTRONICS
CHECK: BAIK, SS	DEV. STEP: PR		
APPROVAL: BIN, KK	REV: 1.0		PART NO.: BA41-00806A
MODULE CODE	LAST EDIT: June, 4, 2007 11:09:49 AM		PAGE 30 OF 54

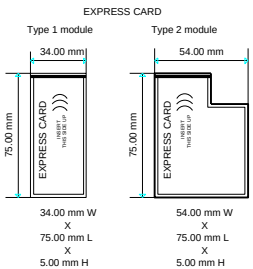


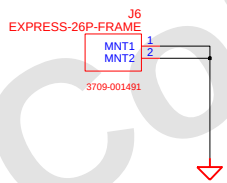
DRAW: KI IM	DATE: 5/28/2007	TITLE: PRAHA_EXT LCD Connector & SPREAD SPECTRUM	SAMSUNG ELECTRONICS
CHECK: SS BAIK	DEV. STEP: PR		
APPROVAL: KK BIN	REV: 1.0		PART NO.: BA41-00806A
MODULE CODE: undefined	LAST EDIT: May 28, 2007 10:24:00 AM		PAGE 31 OF 54



DRAW: KI IM	DATE: 5/28/2007	TITLE: PRAHA_EXT	SAMSUNG ELECTRONICS
CHECK: SS BAIK	DEV. STEP: PR		
APPROVAL: KK BIN	REV: 1.0	CRT	PART NO.: BA41-00806A
MODULE CODE: undefined	LAST EDIT: May 28, 2007 10:24:00 AM	PAGE 32 OF 54	

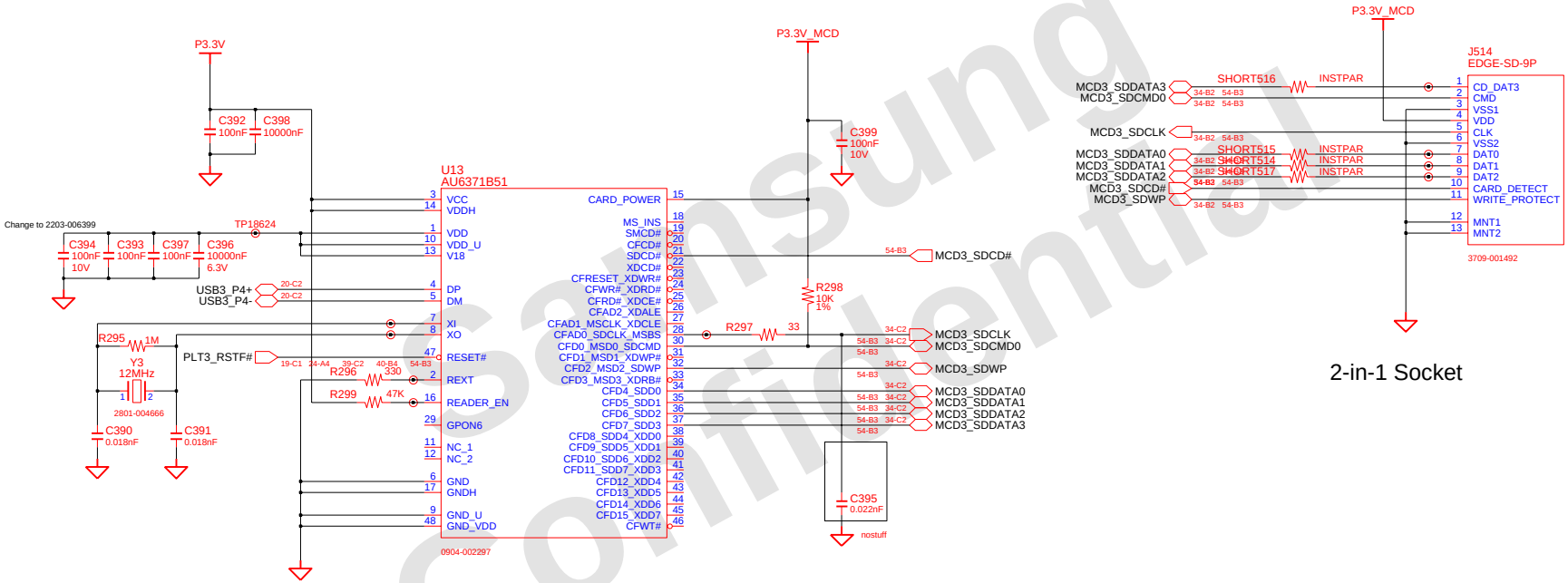






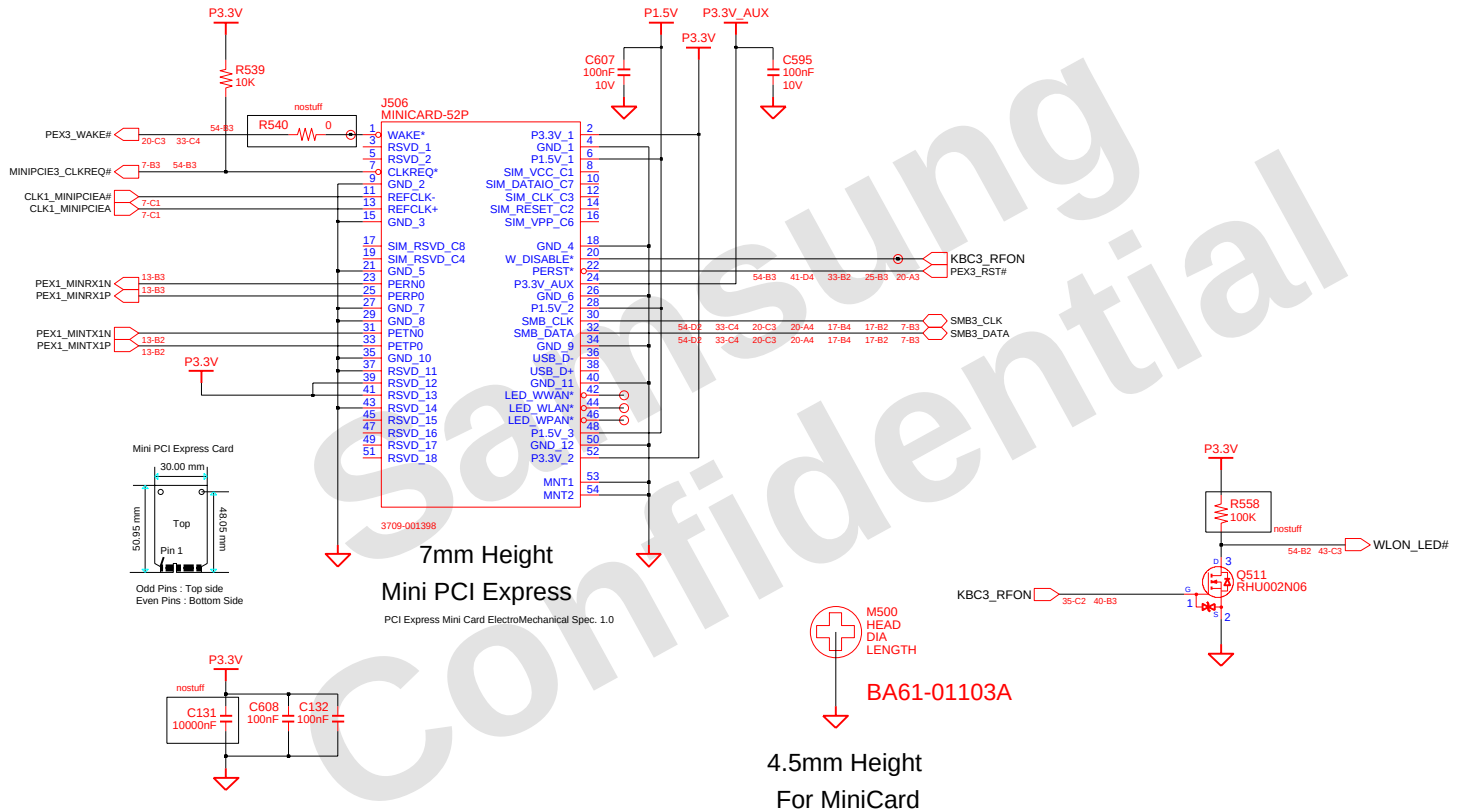
DRAW: KI IM	DATE: 5/28/2007	TITLE: PRAHA_EXT	SAMSUNG ELECTRONICS
CHECK: SS BAIK	DEV. STEP: PR	EXPRESS CARD	
APPROVAL: KK BIN	REV: 1.0		PART NO.: BA41-00806A
MODULE CODE: undefined	LAST EDIT: May 28, 2007 10:24:00 AM	PAGE 33 OF 54	

2 IN 1 CARD



2-in-1 Socket

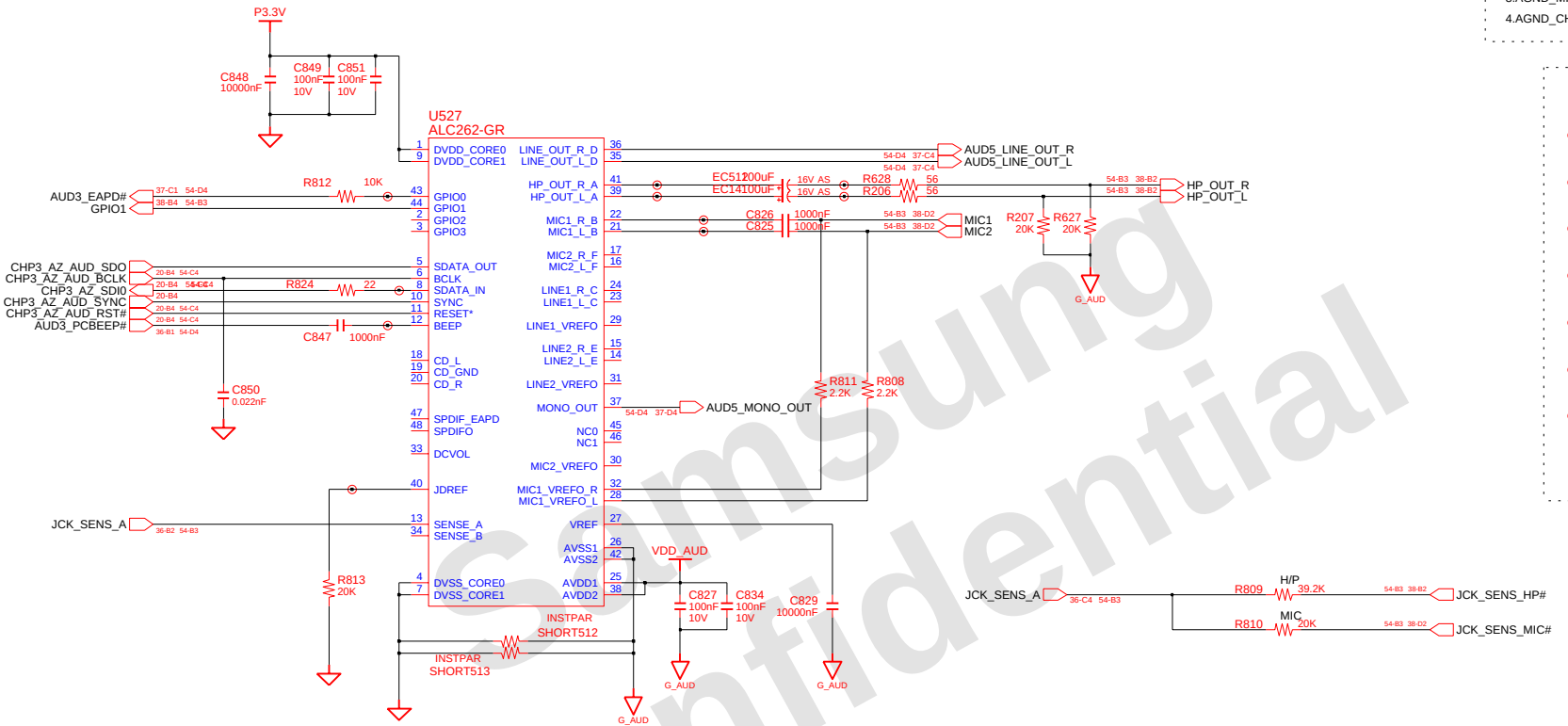
DRAW: KI IM	DATE: 5/28/2007	TITLE: PRAHA_EXT	SAMSUNG ELECTRONICS
CHECK: SS BAIK	DEV. STEP: PR	2 in 1 Socket	
APPROVAL: KK BIN	REV: 1.0		PART NO.: BA41-00806A
MODULE CODE	LAST EDIT: May 28, 2007 10:24:00 AM	PAGE 34 OF 54	

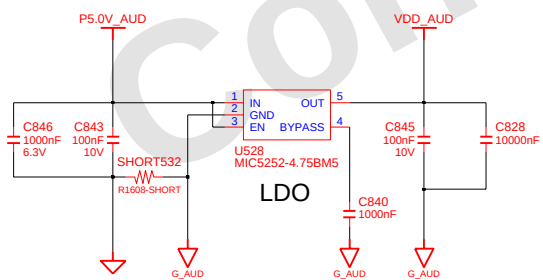


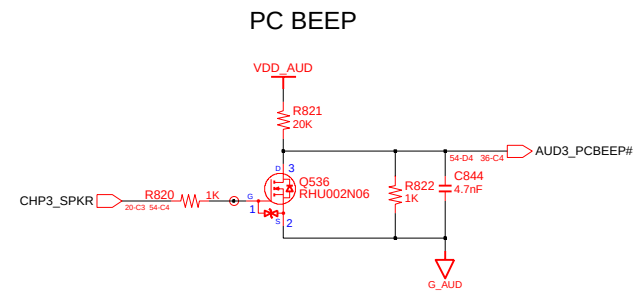
DRAW: KI IM	DATE: 5/28/2007	TITLE: PRAHA_EXT MAIN MINI CARD	SAMSUNG ELECTRONICS
CHECK: SS BAIK	DEV. STEP: PR		
APPROVAL: KK BIN	REV: 1.0		PART NO.: BA41-00806A
MODULE CODE: undefined	LAST EDIT: May 28, 2007 10:24:00 AM	PAGE 35 OF 54	

1.AGND_AUD IS AUDIO GROUND
2. GND IS DIGITAL GROUND
3.AGND_MIC IS MIC GROUND
4.AGND_CHS IS CHASS GROUND

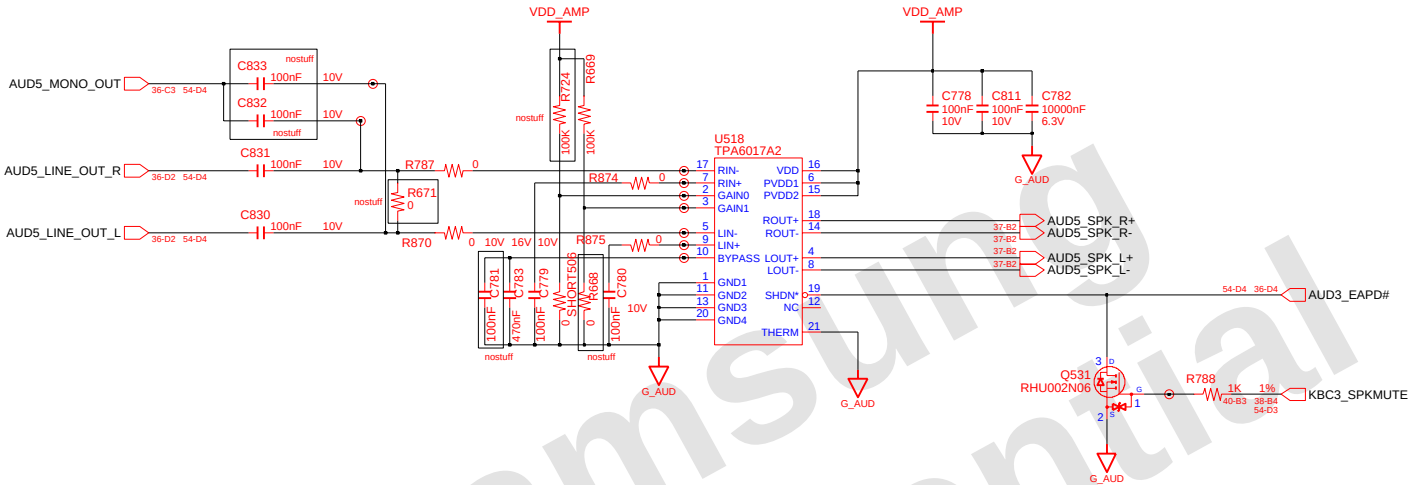
ALL TYPE IS 1608



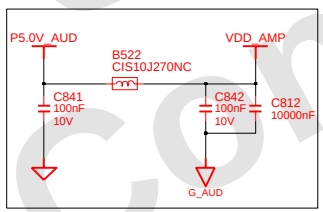




DRAW: KI IM	DATE: 5/28/2007	TITLE: PRAHA_EXT MAIN AUDIO CODEC	SAMSUNG ELECTRONICS
CHECK: SS BAIK	DEV. STEP: PR		
APPROVAL: KK BIN	REV: 1.0		PART NO.: BA41-00806A
MODULE CODE: undefined	LAST EDIT: May 28, 2007 10:24:00 AM	PAGE 36 OF 54	

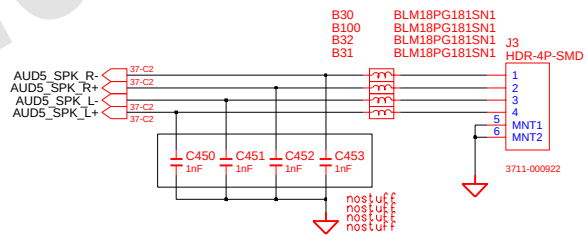


AMP_VDD



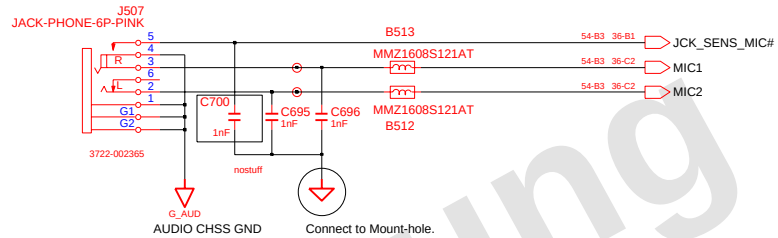
INTERNAL STEREO SPEAKERS

The trace bigger than 30mil

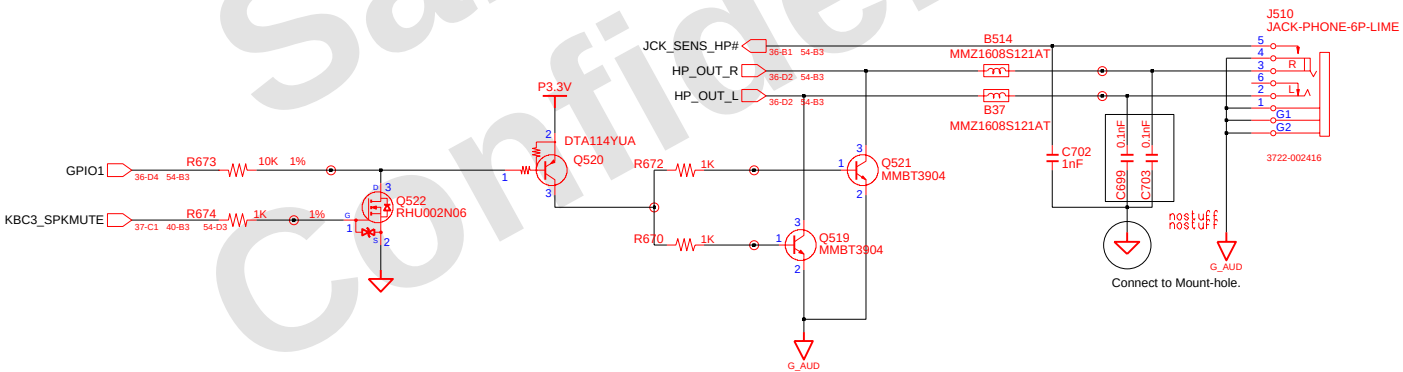


DRAW: KI IM	DATE: 5/28/2007	TITLE: PRAHA_EXT / MAIN / LIMITER & AMP	SAMSUNG ELECTRONICS
CHECK: SS BAIK	DEV. STEP: PR		
APPROVAL: KK BIN	REV: 1.0		PART NO.: BA41-00806A
MODULE CODE: undefined	LAST EDIT: May 28, 2007 10:24:00 AM	PAGE 37 OF 54	

MIC JACK



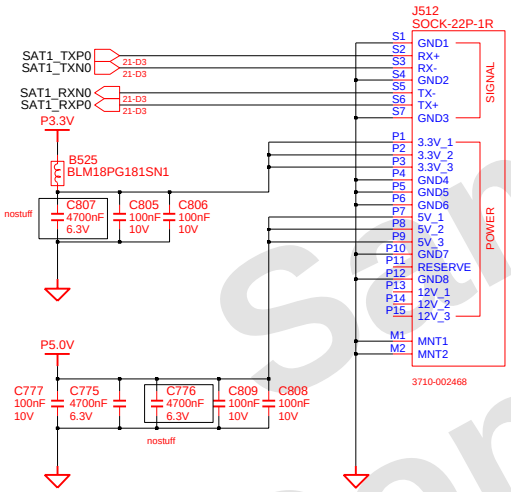
HEADPHONE



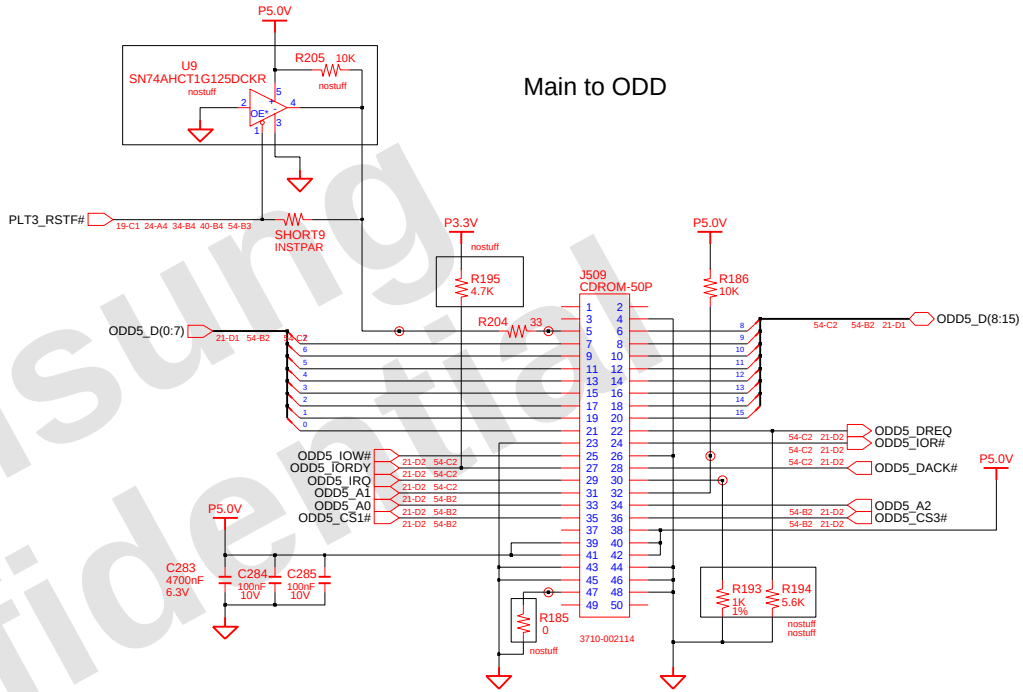
The traces led to Audio Jacks have the width over 10mil

DRAW: KI IM	DATE: 5/28/2007	TITLE: PRAHA_EXT / MAIN / MIC & HEADPHONE	SAMSUNG ELECTRONICS
CHECK: SS BAIK	DEV. STEP: PR		
APPROVAL: KK BIN	REV: 1.0		PART NO.: BA41-00806A
MODULE CODE: undefined	LAST EDIT: May 28, 2007 10:24:00 AM		PAGE 38 OF 54

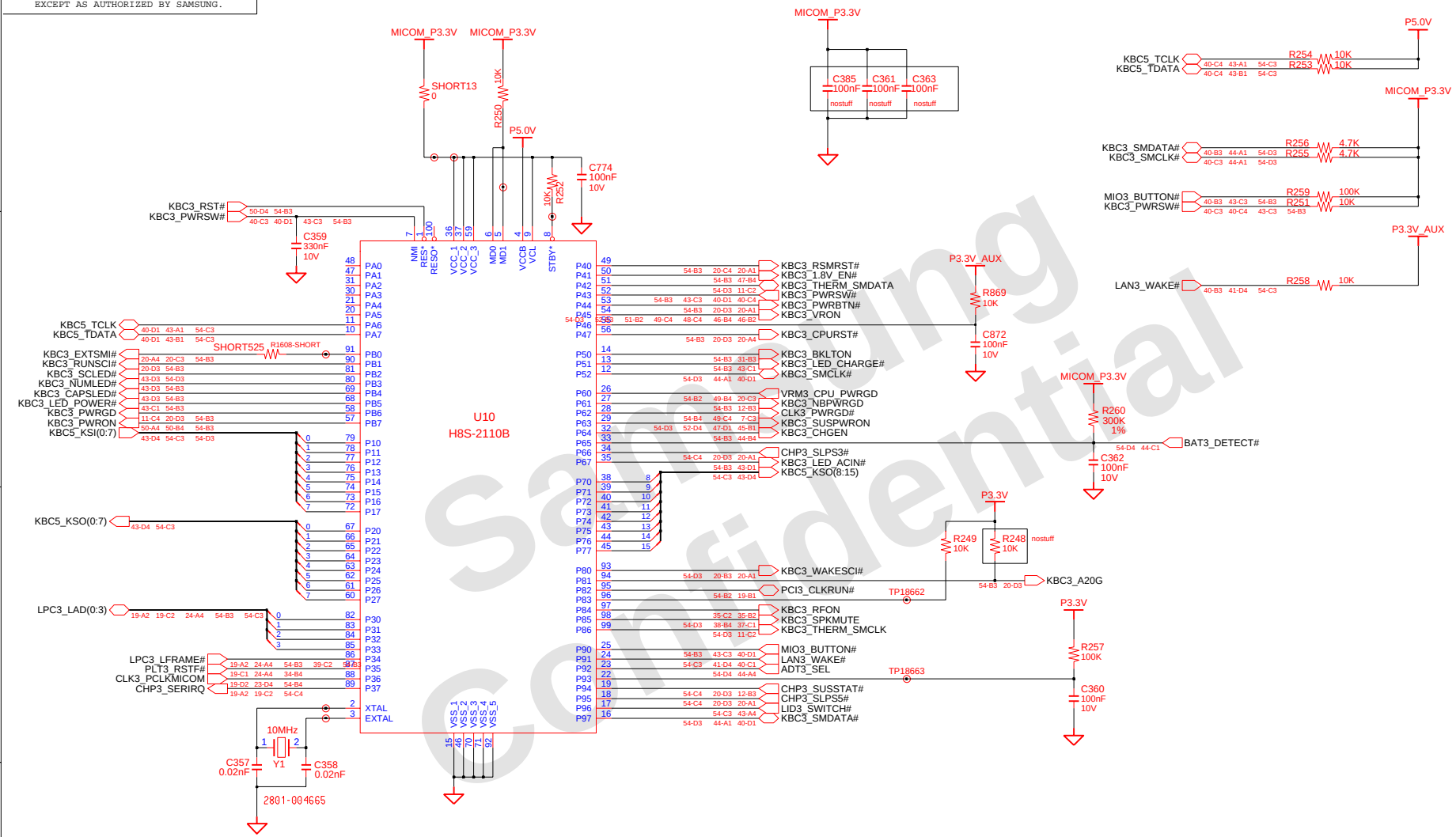
Main to HDD



Main to ODD



DRAW: KI IM	DATE: 5/28/2007	TITLE: PRAHA_EXT POWER HDD & ODD	SAMSUNG ELECTRONICS
CHECK: SS BAIK	DEV. STEP: PR		
APPROVAL: KK BIN	REV: 1.0		PART NO.: BA41-00806A
MODULE CODE: undefined	LAST EDIT: May 28, 2007 10:24:00 AM	PAGE 39 OF 54	



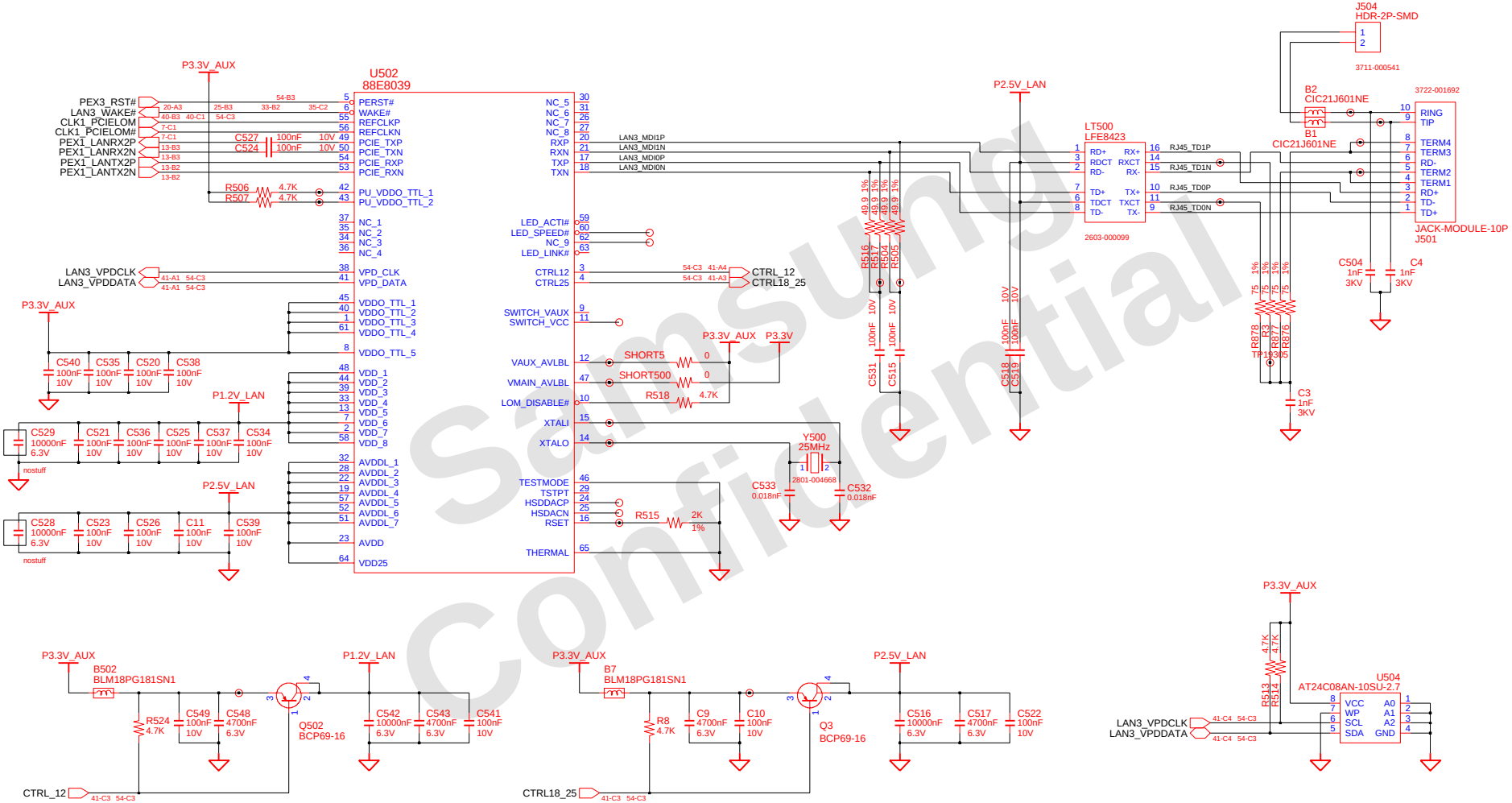
MICOM Crisis Update

Condition: P90=P91=P92=High(MICOM_P3V)
MD0=MD1=Low(0V)
Serial Port: P84 & P85

The removed signal compaired from 144pin

- KBC5_CAL_THRM*
- THRM_ALERT*
- LCD3_BKLTEN
- FAN3_FDBACK*
- THERM_STP*

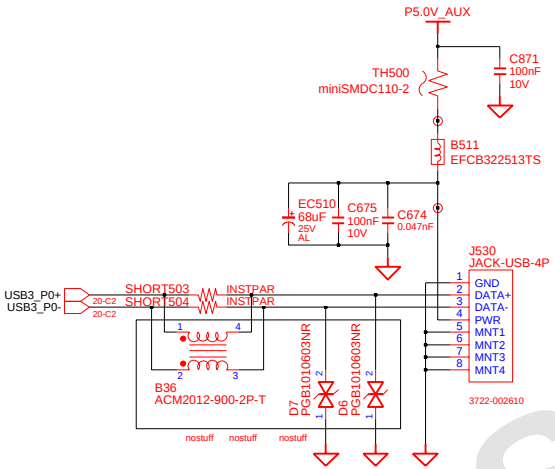
DRAW: KI IM	DATE: 5/28/2007	TITLE: PRAHA_EXT POWER MICOM	SAMSUNG ELECTRONICS
CHECK: SS BAIK	DEV. STEP: PR		
APPROVAL: KK BIN	REV: 1.0		PART NO.: BA41-00806A
MODULE CODE: undefined	LAST EDIT: May 28, 2007 10:24:00 AM	PAGE 40 OF 54	



DRAW: KI IM	DATE: 5/28/2007	TITLE: PRAHA_EXT / MAIN / LAN	SAMSUNG ELECTRONICS
CHECK: SS BAIK	DEV. STEP: PR		
APPROVAL: KK BIN	REV: 1.0		PART NO.: BA41-00806A
MODULE CODE: undefined	LAST EDIT: May 28, 2007 10:24:00 AM	PAGE 41 OF 54	

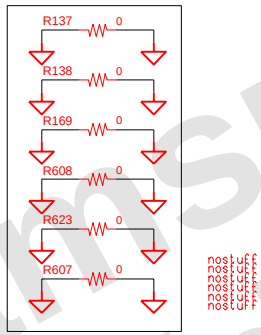
Check if need USB Power S/W(TPS2062)

Side USB Connecter



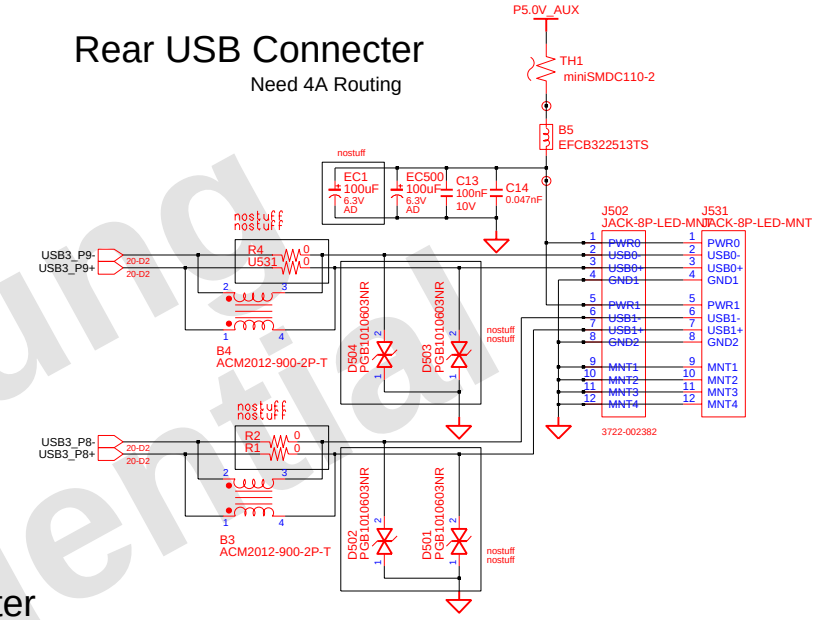
Connect left side USB GND with CPU GND

Top : 3EA Bottom : 3EA

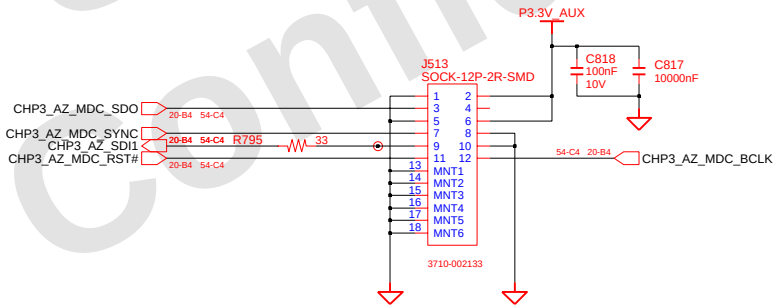


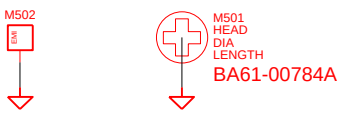
Rear USB Connecter

Need 4A Routing



MDC Connecter

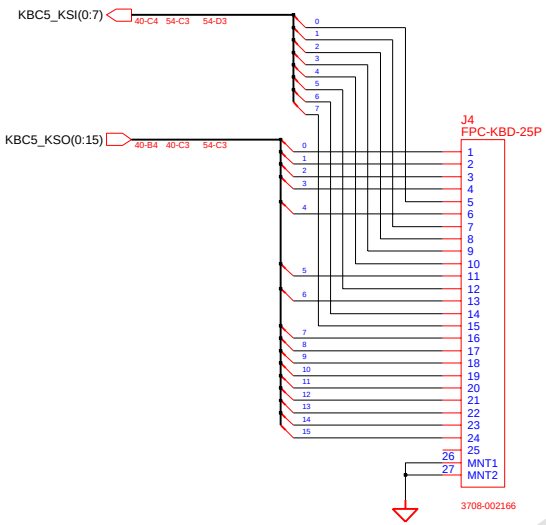


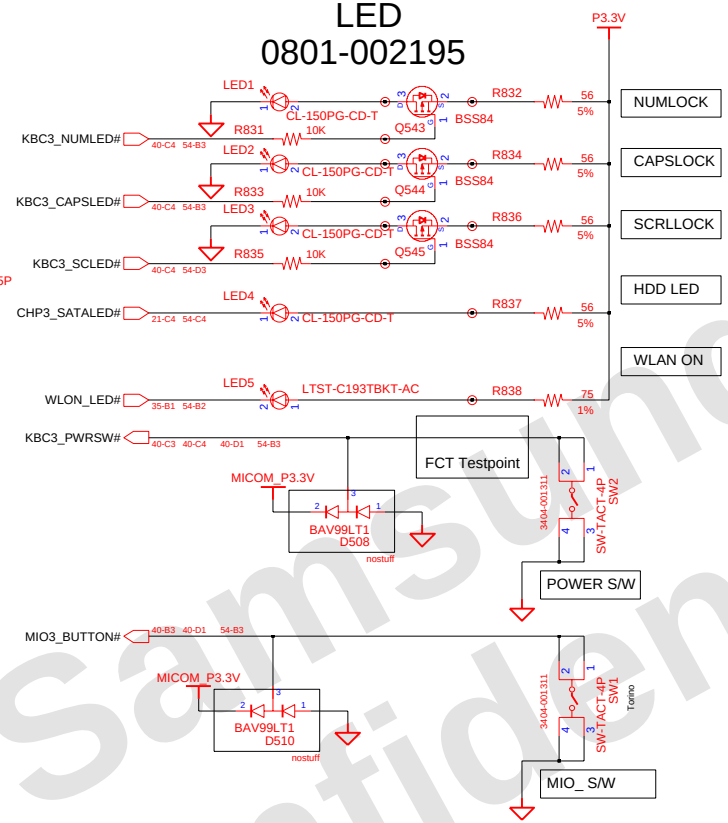


DRAW: KI IM	DATE: 5/28/2007	TITLE: PRAHA_EXT MAIN USB PORT & MDC Conn.	SAMSUNG ELECTRONICS
CHECK: SS BAIK	DEV. STEP: PR		
APPROVAL: KK BIN	REV: 1.0		PART NO.: BA41-00806A
MODULE CODE: undefined	LAST EDIT: May 28, 2007 10:24:00 AM	PAGE 42 OF 54	

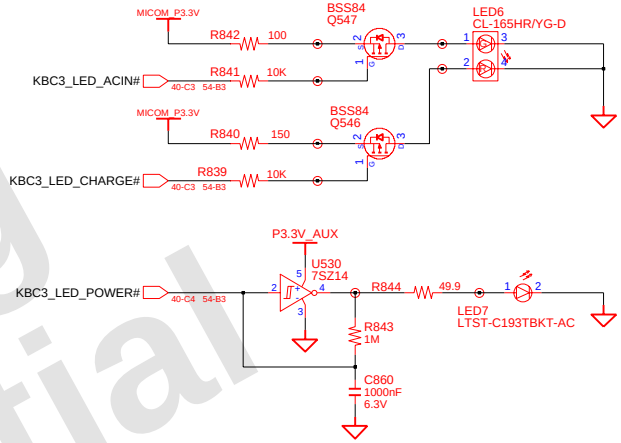
LED
0801-002195

KEYBOARD

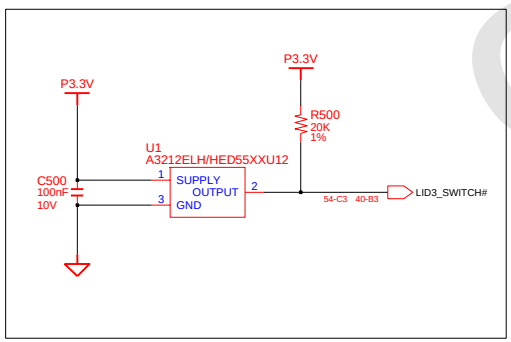




ADAPTERIN/CHARGING LED

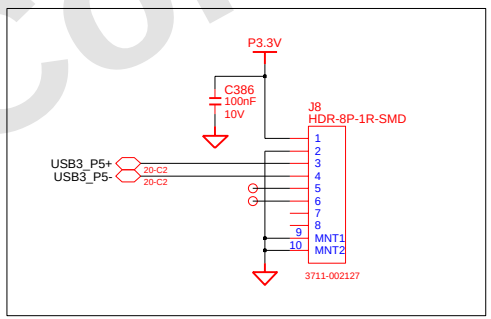


LID SWITCH

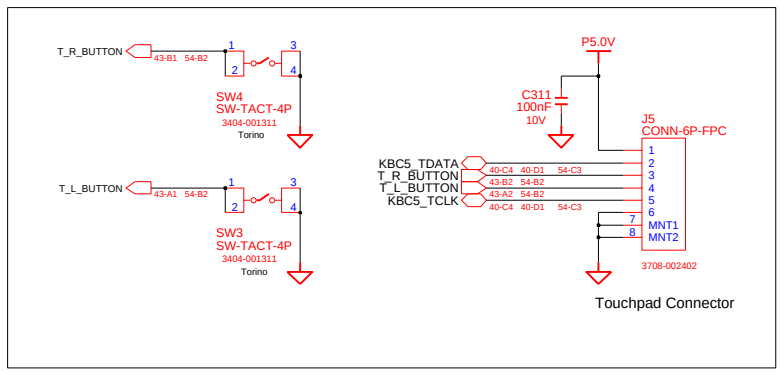


Bluetooth Interface

Factory Option

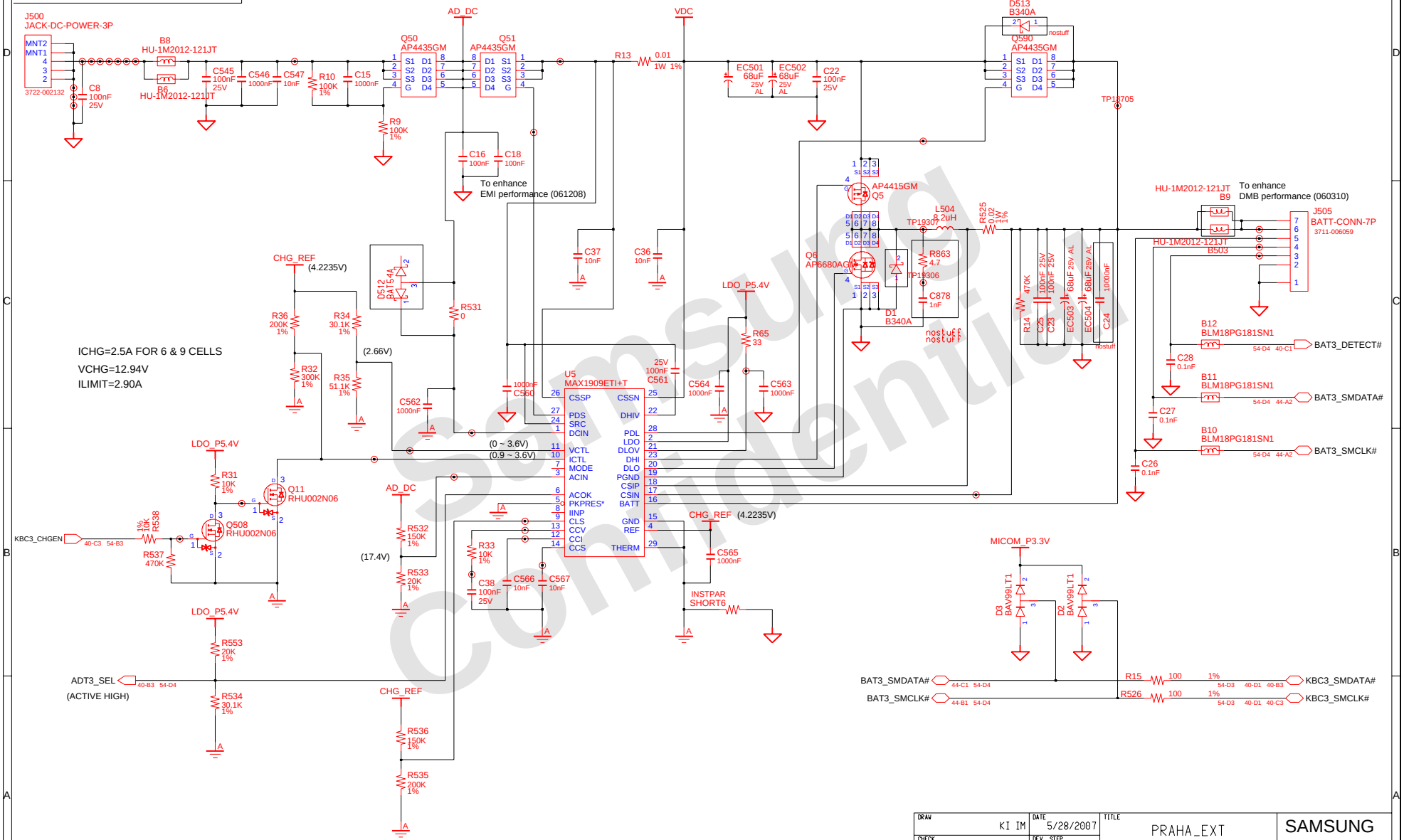


TOUCHPAD



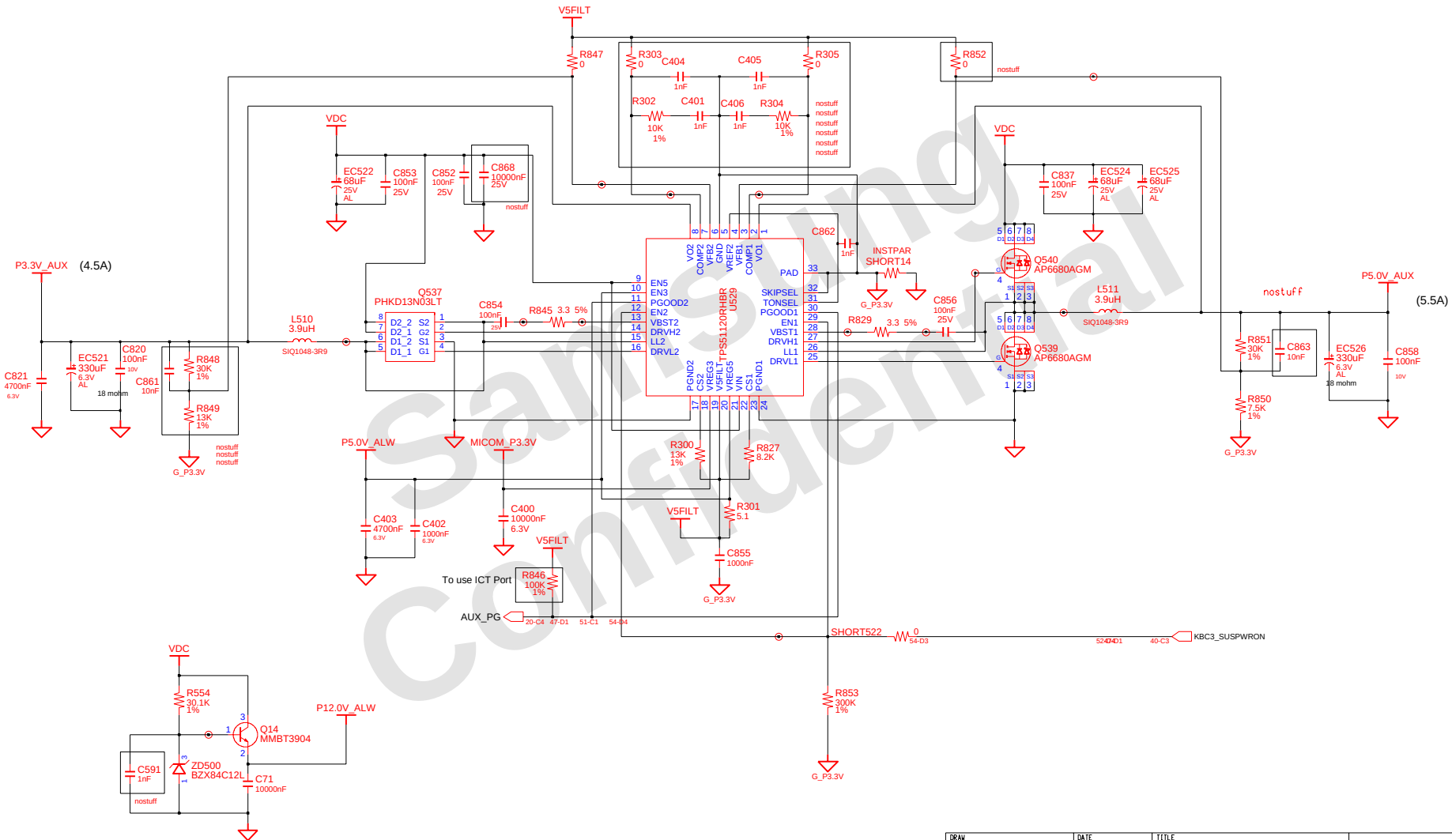
DRAW: KI IM	DATE: 5/28/2007	TITLE: PRAHA_EXT LED & BLUETOOTH TOUCHPAD & KBD & LID S/W	SAMSUNG ELECTRONICS
CHECK: SS BAIK	DEV. STEP: PR		
APPROVAL: KK BIN	REV: 1.0		PART NO.: BA41-00806A
MODULE CODE: undefined	LAST EDIT: May 28, 2007 10:24:00 AM		PAGE 43 OF 54

CHARGER & POWER MANAGEMENT



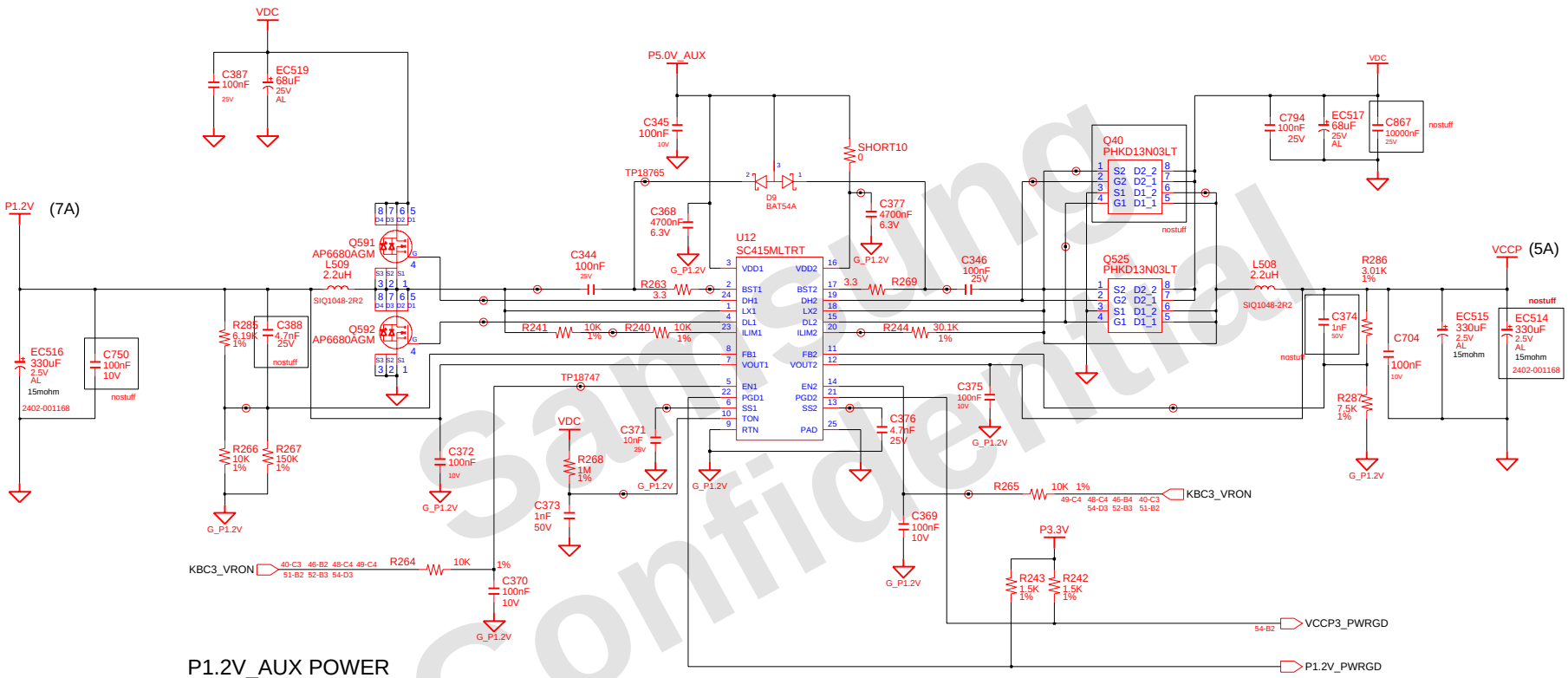
DRAW: KI IM	DATE: 5/28/2007	TITLE: PRAHA_EXT MAIN CHARGER	SAMSUNG ELECTRONICS
CHECK: SS BAIK	DEV. STEP: PR		
APPROVAL: KK BIN	REV: 1.0		PART NO.: BA41-00806A
MODULE CODE: undefined	LAST EDIT: May 28, 2007 10:24:00 AM		PAGE 44 OF 54

P3.3V_AUX & P5V_AUX

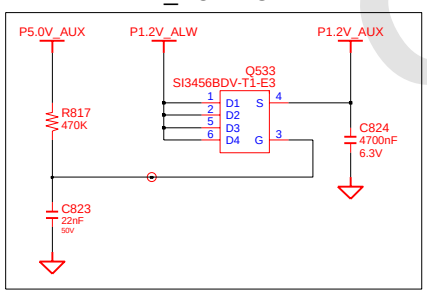


DRAW: KI IM	DATE: 5/28/2007	TITLE: PRAHA_EXT POWER P3.3V_AUX & P5V_AUX	SAMSUNG ELECTRONICS
CHECK: SS BAIK	DEV. STEP: PR		
APPROVAL: KK BIN	REV: 1.0		PART NO.: BA41-00806A
MODULE CODE: undefined	LAST EDIT: May 28, 2007 10:24:00 AM		PAGE 45 OF 54

P1.2V & VCCP (1.05V)

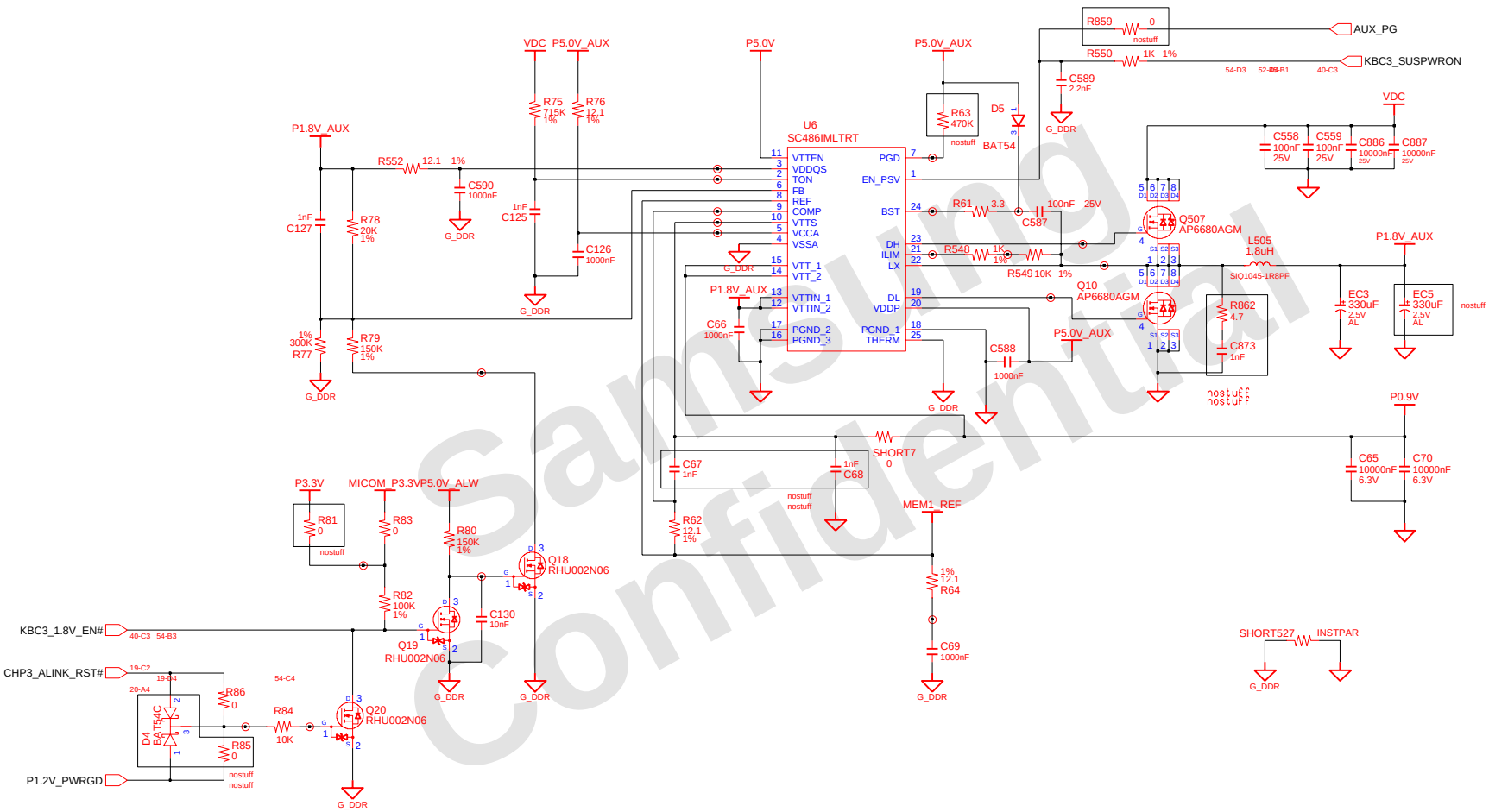


P1.2V_AUX POWER



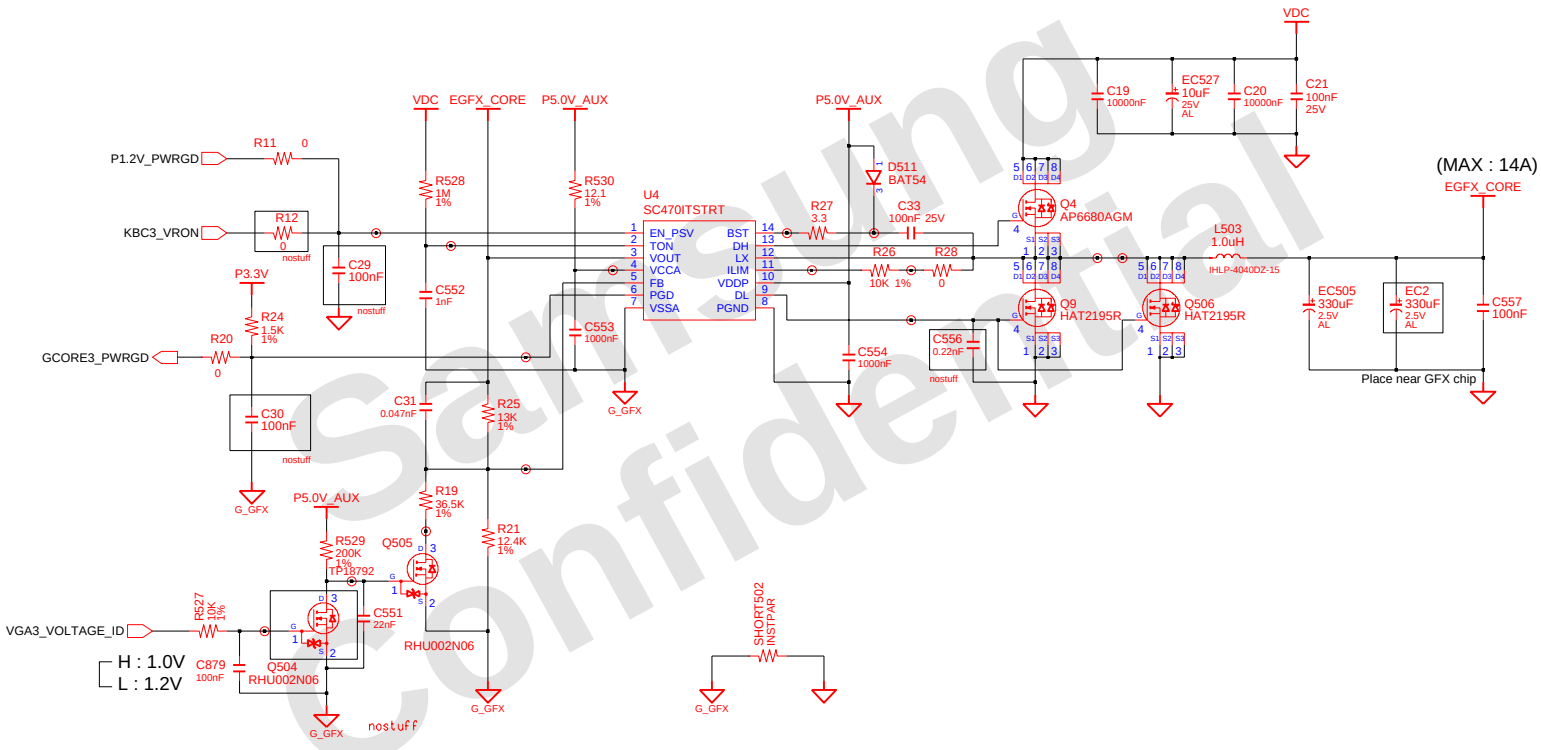
DRAW: KI IM	DATE: 5/28/2007	TITLE: PRAHA_EXT POWER P1.2V & P1.2V_AUX &VCCP	SAMSUNG ELECTRONICS
CHECK: SS BAIK	DEV. STEP: PR		
APPROVAL: KK BIN	REV: 1.0		PART NO.: BA41-00806A
MODULE CODE: undefined	LAST EDIT: May 28, 2007 10:24:00 AM		PAGE 46 OF 54

DDR2 Power



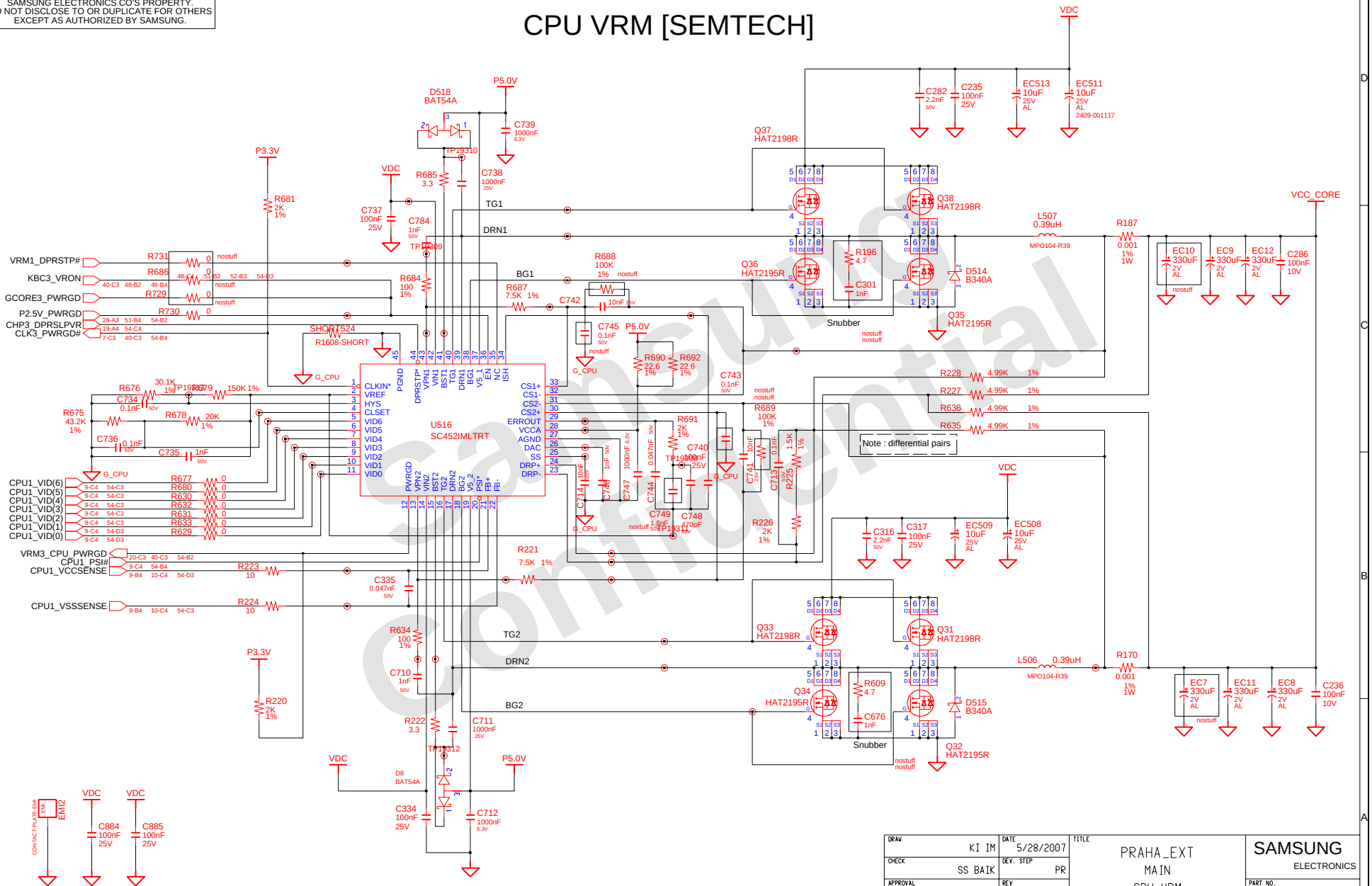
DRAW: KI IM	DATE: 5/28/2007	TITLE: PRAHA_EXT MAIN DDR2 POWER	SAMSUNG ELECTRONICS
CHECK: SS BAIK	DEV. STEP: PR		
APPROVAL: KK BIN	REV: 1.0		PART NO.: BA41-00806A
MODULE CODE: undefined	LAST EDIT: May 28, 2007 10:24:00 AM	PAGE 47 OF 54	

GFX CORE [SEMTECH]



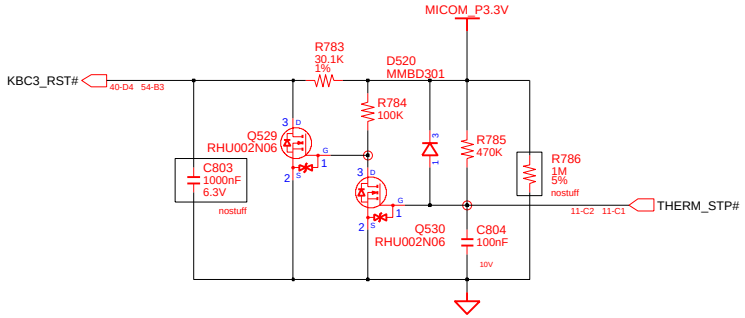
DRAW: KI IM	DATE: 5/28/2007	TITLE: PRAHA_EXT	SAMSUNG ELECTRONICS
CHECK: SS BAIK	DEV. STEP: PR	UNDEFINED	
APPROVAL: KK BIN	REV: 1.0	UNDEFINED	PART NO.: BA41-00806A
MODULE CODE:	LAST EDIT: May 28, 2007 10:24:00 AM		PAGE 48 OF 54

CPU VRM [SEMTECH]

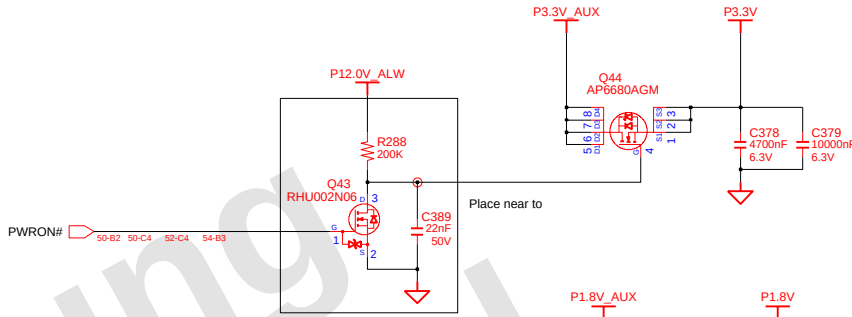


DRAW: KI IM	DATE: 5/28/2007	TITLE: PRAHA_EXT / MAIN / CPU VRM	SAMSUNG ELECTRONICS
CHECK: SS BAIK	DEV. STEP: PR		
APPROVAL: KK BIN	REV: 1.0		PART NO.: BA41-00806A
MODULE CODE: undefined	LAST EDIT: May 28, 2007 10:24:00 AM		PAGE 49 OF 54

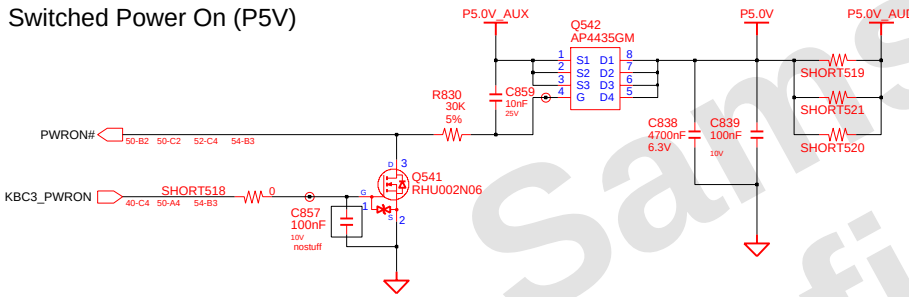
MICOM RESET

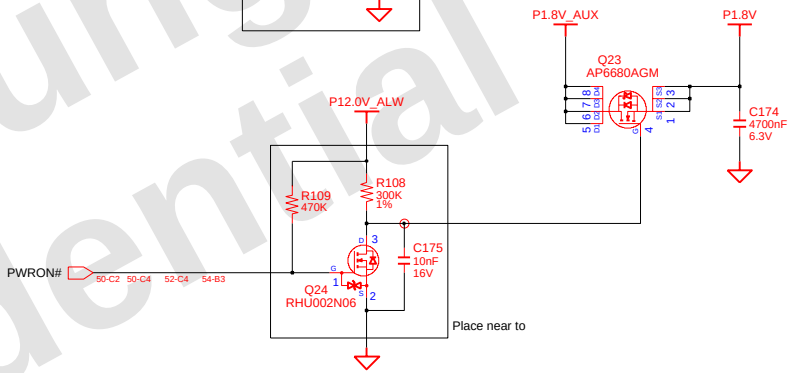


Switched Power On (P3.3V & 1.8V)

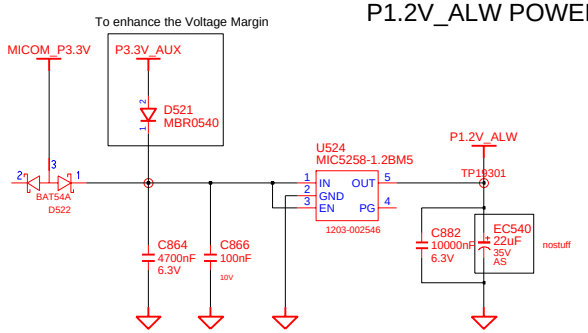


Switched Power On (P5V)



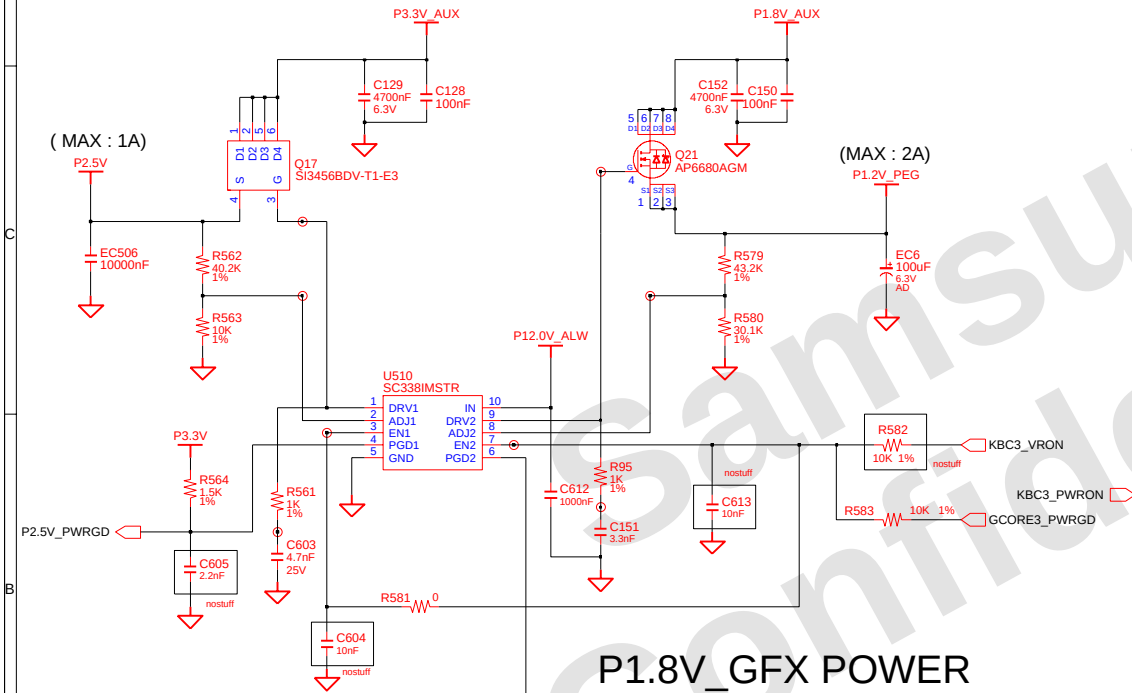


P1.2V_ALW POWER

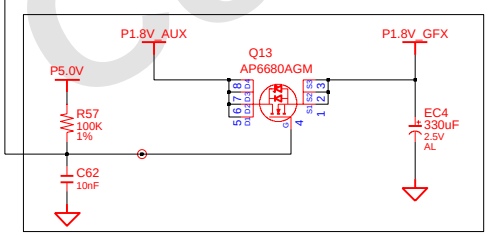


DRAW: KI IM	DATE: 5/28/2007	TITLE: PRAHA_EXT	SAMSUNG ELECTRONICS
CHECK: SS BAIK	DEV. STEP: PR	MAIN	
APPROVAL: KK BIN	REV: 1.0	MICOM & SWITCHED POWER	PART NO.: BA41-00806A
MODULE CODE: undefined	LAST EDIT: May 28, 2007 10:24:00 AM	PAGE 50 OF 54	

P1.2V_NB / P2.5V POWER

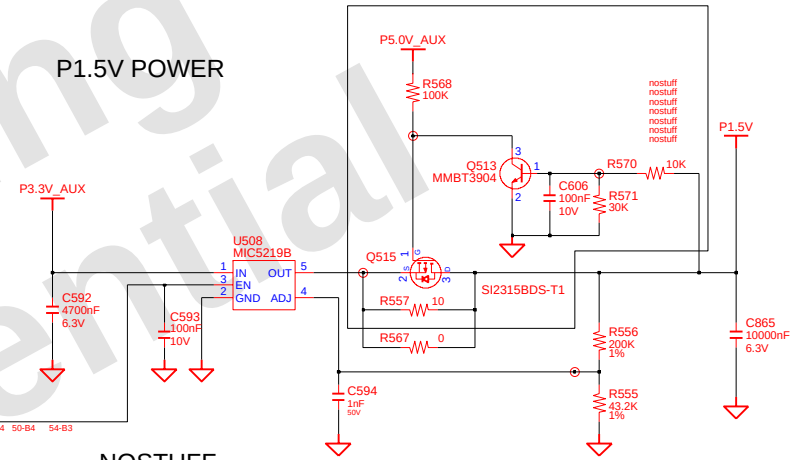


P1.8V_GFX POWER

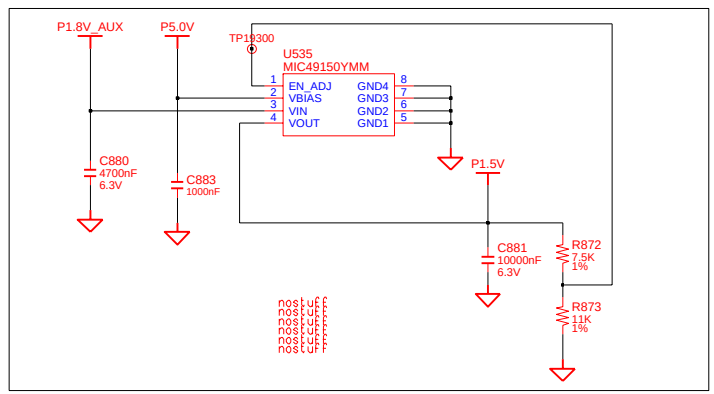


Place near GFX chip.

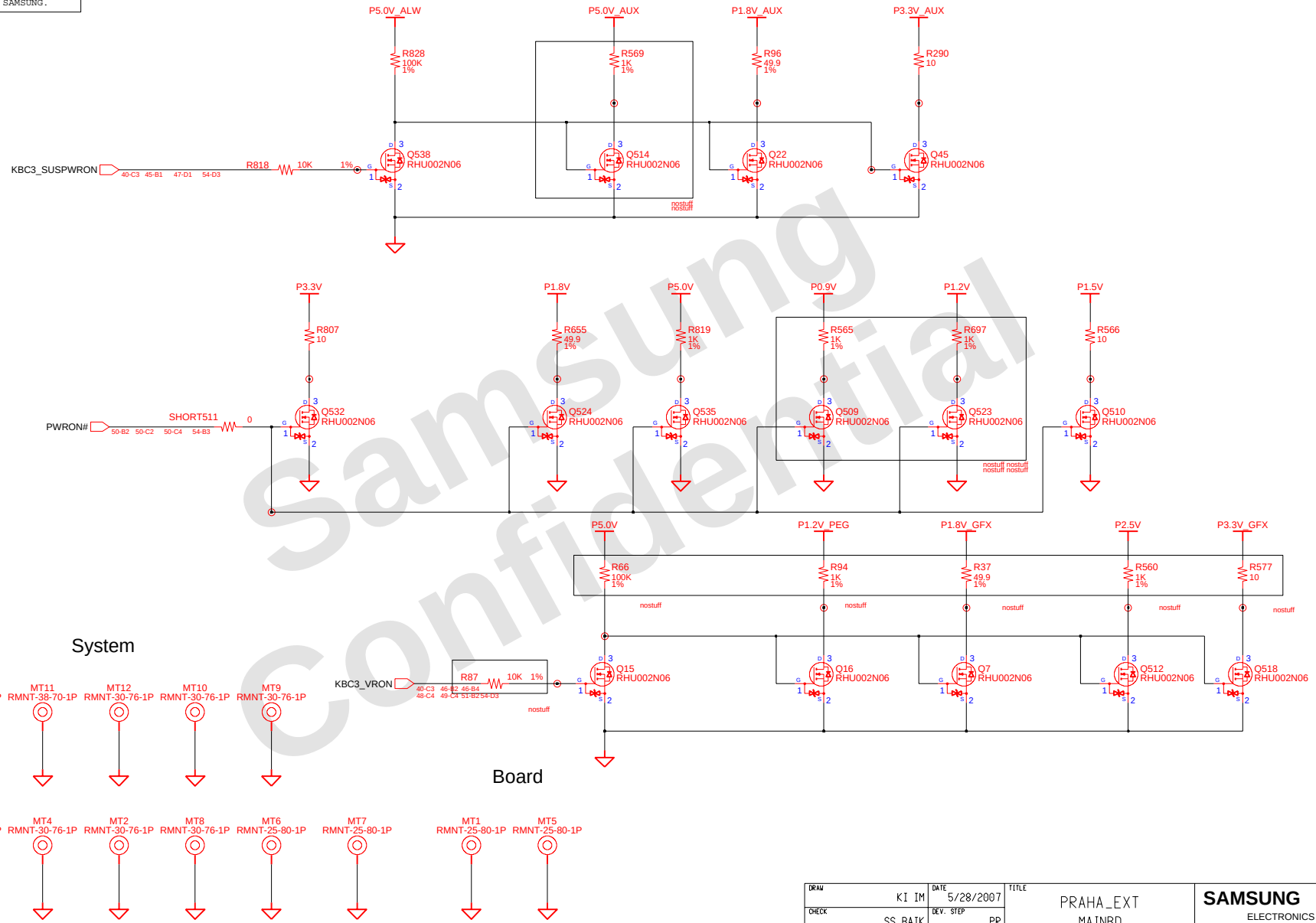
P1.5V POWER



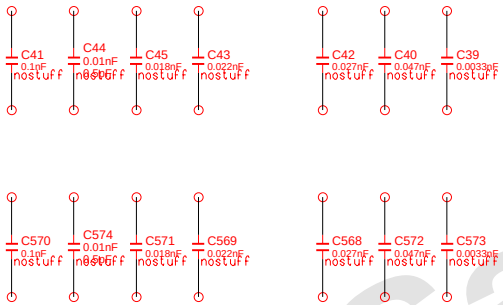
NOSTUFF



DRAW: KI IM	DATE: 5/28/2007	TITLE: PRAHA_EXT	SAMSUNG ELECTRONICS
CHECK: SS BAIK	DEV. STEP: PR		
APPROVAL: KK BIN	REV: 1.0	ICT PORT	PART NO.: BA41-00806A
MODULE CODE: undefined	LAST EDIT: May 28, 2007 10:24:00 AM	PAGE 51 OF 54	

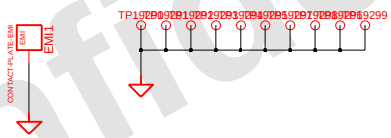


DRAW: KI IM	DATE: 5/28/2007	TITLE: PRAHA_EXT MAINBD POWER DRAW & MNT HOLE	SAMSUNG ELECTRONICS
CHECK: SS BAIK	DEV. STEP: PR		
APPROVAL: KK BIN	REV: 1.0		PART NO.: BA41-00806A
MODULE CODE: undefined	LAST EDIT: May 28, 2007 10:24:00 AM	PAGE 52 OF 54	

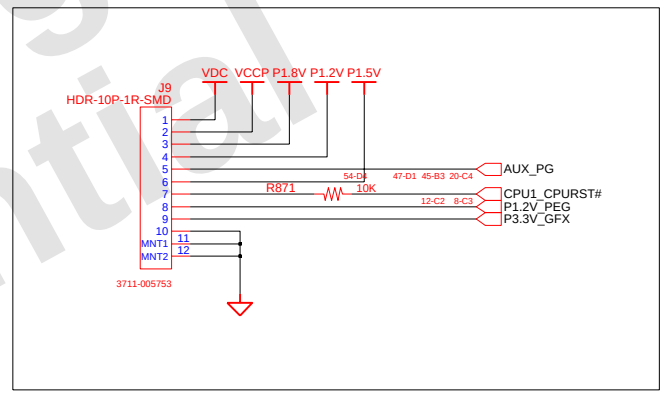


PCB REVISION CONTROL (ICT)

NO	CONNECTION	DATE(YY/MM/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			



ICT PORT



DRAW	KI IM	DATE	5/28/2007	TITLE	PRAHA_EXT
CHECK	SS BAIK	DEV. STEP	PR		TP
APPROVAL	KK BIN	REV	1.0		
MODULE CODE	undefined	LAST EDIT	May 28, 2007 10:24:00 AM		

SAMSUNG ELECTRONICS

PART NO. BA41-00806A

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TP18982 AC_SDOUT
TP18983 ADT3_SEL
TP18984 AUD3_EAPD#
TP18985 AUD3_PCBEEP#
TP18986 AUD5_LINE_OUT_L
TP18987 AUD5_LINE_OUT_R
TP18988 AUD5_MONO_OUT

TP18993 AUX_PG
TP18994 BAT3_DETECT#
TP18995 BAT3_SMCLK#
TP18996 BAT3_SMDATA#
TP18997 CHP3_ALINK_RST#
TP18998 CHP3_AZ_AUD_BCLK
TP18999 CHP3_AZ_AUD_RST#
TP19000 CHP3_AZ_AUD_SDO
TP19001 CHP3_AZ_AUD_SYNC
TP19002 CHP3_AZ_MDC_BCLK
TP19003 CHP3_AZ_MDC_RST#
TP19004 CHP3_AZ_MDC_SDO
TP19005 CHP3_AZ_MDC_SYNC
TP19006 CHP3_AZ_SDIO
TP19007 CHP3_AZ_SDI1
TP19008 CHP3_BIOSWP#
TP19009 CHP3_CPUSTP#
TP19010 CHP3_DPRSLPVR
TP19011 CHP3_NBRST#
TP19012 CHP3_SATALED#
TP19013 CHP3_SBPME#
TP18976 CHP3_SBTHRMTRIP#
TP18977 CHP3_SERIRQ
TP18978 CHP3_SLPS3#
TP18979 CHP3_SLPS5#
TP18980 CHP3_SPKR
TP18981 CHP3_SUSSTAT#
TP18968 CLK3_DBGLPC
TP18969 CLK3_GFX_27M
TP18970 CLK3_GFX_27M_SS
TP18971 CLK3_ICH14
TP18972 CLK3_NB14M
TP18973 CLK3_PCLKMICOM
TP18974 CLK3_PWRGD#

TP18962 CPU1_DBSY#
TP18963 CPU1_DEFER#
TP18964 CPU1_DPRSTP#
TP18965 CPU1_DPSLP#
TP18966 CPU1_DPWR#
TP18967 CPU1_DRDY#
TP18939 CPU1_FERR#
TP18940 CPU1_HIT#
TP18941 CPU1_HITM#
TP18942 CPU1_IGNNE#
TP18943 CPU1_INIT#
TP18944 CPU1_INTR
TP18945 CPU1_LOCK#
TP18946 CPU1_NMI
TP18947 CPU1_PSI#
TP18948 CPU1_PWRGDCPU

TP18949 CPU1_RS0#
TP18950 CPU1_RS1#
TP18951 CPU1_RS2#
TP18952 CPU1_SLP#
TP18953 CPU1_SMI#
TP18954 CPU1_STPCLK#
TP18955 CPU1_TCK
TP18956 CPU1_TDI
TP18957 CPU1_THRMTRIP#
TP18958 CPU1_TMS
TP18959 CPU1_TRDY#
TP18960 CPU1_TRST#
TP18961 CPU1_VCCSENSE
TP18914 CPU1_VID(0)
TP18915 CPU1_VID(1)
TP18916 CPU1_VID(2)
TP18917 CPU1_VID(3)
TP18918 CPU1_VID(4)
TP18919 CPU1_VID(5)
TP18920 CPU1_VID(6)
TP18921 CPU1_VSSSENSE
TP18922 CPU2_THERMDA
TP18923 CPU2_THERMDC
TP18924 CPU3_THRMTRIP#
TP18925 CRT5_HSYNC
TP18926 CRT5_VSYNC
TP18927 CTRL18_25
TP18928 CTRL_12
TP18929 EXP3_CLKREQ#
TP18930 EXP3_CPPE#
TP18931 EXP3_CPUSB#
TP18932 EXP3_PERST#
TP18933 FAN3_FDBACK#
TP18934 FAN5_VDD
TP18935 GCORE3_PWRGD

TP18938 GFX3_THRMTRIP#

TP18899 GPIO(11)

TP18901 GPIO(13)

TP18903 GPIO1
TP18904 HP_OUT_L
TP18905 HP_OUT_R
TP18906 ITP3_DBRESET#
TP18907 ITP3_SYSRST#
TP18908 JCK_SENS_A
TP18909 JCK_SENS_HP#
TP18910 JCK_SENS_MIC#
TP18911 KBC3_1.8V_EN#
TP18912 KBC3_A20G
TP18913 KBC3_BKLTON
TP18865 KBC3_CAPSLED#
TP18866 KBC3_CHGEN
TP18867 KBC3_CPURST#
TP18868 KBC3_EXTSMI#
TP18869 KBC3_LED_ACIN#
TP18870 KBC3_LED_CHARGE#
TP18871 KBC3_LED_POWER#
TP18872 KBC3_NBPWRGD
TP18873 KBC3_NUMLED#
TP18874 KBC3_PWRBTN#
TP18875 KBC3_PWRGD
TP18876 KBC3_PWRON
TP18877 KBC3_PWRSW#
TP18878 KBC3_RSMRST#
TP18879 KBC3_RST#
TP18880 KBC3_RUNSCI#

TP18881 KBC3_SCLED#
TP18882 KBC3_SMCLK#
TP18883 KBC3_SMDATA#
TP18884 KBC3_SPKMUTE
TP18885 KBC3_SUSPWRON
TP18886 KBC3_THERM_SMCLK
TP18887 KBC3_THERM_SMDATA
TP18888 KBC3_VRON
TP18889 KBC3_WAKESCI#
TP18890 KBC5_KSI(0)
TP18891 KBC5_KSI(1)
TP18892 KBC5_KSI(2)
TP18893 KBC5_KSI(3)
TP18894 KBC5_KSI(4)
TP18895 KBC5_KSI(5)
TP18896 KBC5_KSI(6)
TP18837 KBC5_KSI(7)
TP18838 KBC5_KSO(0)
TP18839 KBC5_KSO(1)
TP18840 KBC5_KSO(10)
TP18841 KBC5_KSO(11)
TP18842 KBC5_KSO(12)
TP18843 KBC5_KSO(13)
TP18844 KBC5_KSO(14)
TP18845 KBC5_KSO(15)
TP18846 KBC5_KSO(2)
TP18847 KBC5_KSO(3)
TP18848 KBC5_KSO(4)
TP18849 KBC5_KSO(5)
TP18850 KBC5_KSO(6)
TP18851 KBC5_KSO(7)
TP18852 KBC5_KSO(8)
TP18853 KBC5_KSO(9)
TP18854 KBC5_TCLK
TP18855 KBC5_TDATA
TP18856 LAN3_VPDCLK
TP18857 LAN3_VPDDATA
TP18858 LAN3_WAKE#
TP18859 LCD3_BKLTON
TP18860 LCD3_EDID_CLK
TP18861 LCD3_EDID_DATA
TP18862 LID3_SWITCH#
TP18863 LPC3_LAD(0)
TP18864 LPC3_LAD(1)
TP18826 LPC3_LAD(2)
TP18827 LPC3_LAD(3)
TP18828 LPC3_LFRAME#
TP18829 MCD3_SDCD#
TP18830 MCD3_SDCLK
TP18831 MCD3_SDCMD0
TP18832 MCD3_SDDATA0
TP18833 MCD3_SDDATA1
TP18834 MCD3_SDDATA2
TP18835 MCD3_SDDATA3
TP18836 MCD3_SDWP
TP19014 MIC1
TP19015 MIC2
TP19016 MINIPCIE3_CLKREQ#
TP19017 MIO3_BUTTON#
TP19018 PEX3_RST#
TP19019 PEX3_RST#_CTRL
TP19020 PEX3_WAKE#
TP19021 PLT3_RSTF#
TP19022 PWRON#
TP19023 RTC_CLK

TP19025 SC486_EN_PSV
TP19026 SC486_FB

TP19028 SMB3_CLK
TP19029 SMB3_DATA
TP19030 SPI3_CLK
TP19031 SPI3_CS#
TP19032 SPI3_MISO
TP19033 SPI3_MOSI
TP19034 STRAP_BIOSROM0
TP19035 STRAP_BIOSROM1
TP19036 STRAP_USB48
TP19037 THERM3_ALERT#
TP19039 PEG3_CRT_GREEN
TP19040 PEG3_CRT_HSYNC
TP19041 PEG3_CRT_RED
TP19042 PEG3_CRT_VSYNC
TP19043 PEG3_LCD_BKLTEN
TP19044 PEG3_LCD_BRIT
TP19045 PEG3_LCD_VDDON
TP19046 PEG3_CRT_BLUE
TP19047 PEG3_CRT_DDCCLK
TP19038 PEG3_CRT_DDCDATA
TP19048 ODD5_D(11)
TP19049 ODD5_D(12)
TP19050 ODD5_D(13)
TP19051 ODD5_D(14)
TP19052 ODD5_D(15)
TP19053 ODD5_D(2)
TP19054 ODD5_D(3)
TP19055 ODD5_D(4)
TP19056 ODD5_D(5)
TP19057 ODD5_D(6)
TP19058 ODD5_D(7)
TP19059 ODD5_D(8)
TP19060 ODD5_D(9)
TP19061 ODD5_DACK#
TP19062 ODD5_DREQ
TP19063 ODD5_IOR#
TP19064 ODD5_IORDY
TP19065 ODD5_IOW#
TP19066 ODD5_IRQ
TP19067 P1.2V_PWRGD
TP19068 P2.5V_PWRGD
TP19069 PCI3_CLKRUN#
TP19070 ODD5_A0
TP19071 ODD5_A1
TP19072 ODD5_A2
TP19073 ODD5_CS1#
TP19074 ODD5_CS3#
TP19075 ODD5_D(0)
TP19076 ODD5_D(1)
TP19077 ODD5_D(10)
TP19078 T_L_BUTTON
TP19079 T_R_BUTTON
TP19083 AGND_CHG

TP19092 VCCP3_PWRGD
TP19093 VGA3_VOLTAGE_ID
TP19094 VGA5_DDCC
TP19095 VGA5_DDCD
TP19096 VRM1_DPRSTP#
TP19097 VRM3_CPU_PWRGD
TP19091 WLON_LED#
TP19090 AD_DC

TP19099 V5FILT

TP19103 VCCP
TP19107 VCC_CORE
TP19111 VCC_CRT
TP19115 VDC
TP19119 VDD_AMP
TP19123 VDD_AUD
TP19127 P3.3V_EXP
TP19128 P3.3V_GFX
TP19135 P3.3V_MCD
TP19136 P5.0V
TP19140 P5.0V_ALW
TP19144 P5.0V_AUD
TP19148 P5.0V_AUX
TP19152 PCIE_VDDR

TP19159 P1.8V_AUX
TP19160 P1.8V_GFX
TP19167 P12.0V_ALW
TP19168 P2.5V
TP19175 P2.5V_LAN
TP19176 P3.3V
TP19183 P3.3V_AUX
TP19187 P3.3V_AUX_EXP
TP19191 P1.2V

TP19199 P1.2V_AUX
TP19200 P1.2V_LAN
TP19207 P1.2V_PEG
TP19208 P1.5V
TP19215 P1.5V_EXP
TP19216 P1.8V
TP19227 G_P3.3V
TP19228 INV_VDC
TP19235 LCD_VDD3V
TP19239 LDO_P5.4V
TP19240 MEM_REF
TP19247 MICOM_P3.3V
TP19248 P0.9V
TP19275 G_CPU
TP19276 G_DDR
TP19260 CHG_REF
TP19267 GFX_CORE
TP19268 G_AUD

TP19283 G_GFX
TP19284 G_P1.2V

DRAW: KI IM	DATE: 5/28/2007	TITLE: PRAHA_EXT TP	SAMSUNG ELECTRONICS
CHECK: SS BAIK	DEV. STEP: PR		
APPROVAL: KK BIN	REV: 1.0		PART NO.: BA41-00806A
MODULE CODE:	LAST EDIT: May 28, 2007 10:24:00 AM	PAGE 54 OF 54	