

SAMSUNG PROPRIETARY

THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

BONN-L

CPU : Intel Penryn
Chip Set : Intel Cantiga & ICH9M
Remarks : Montevina Platform

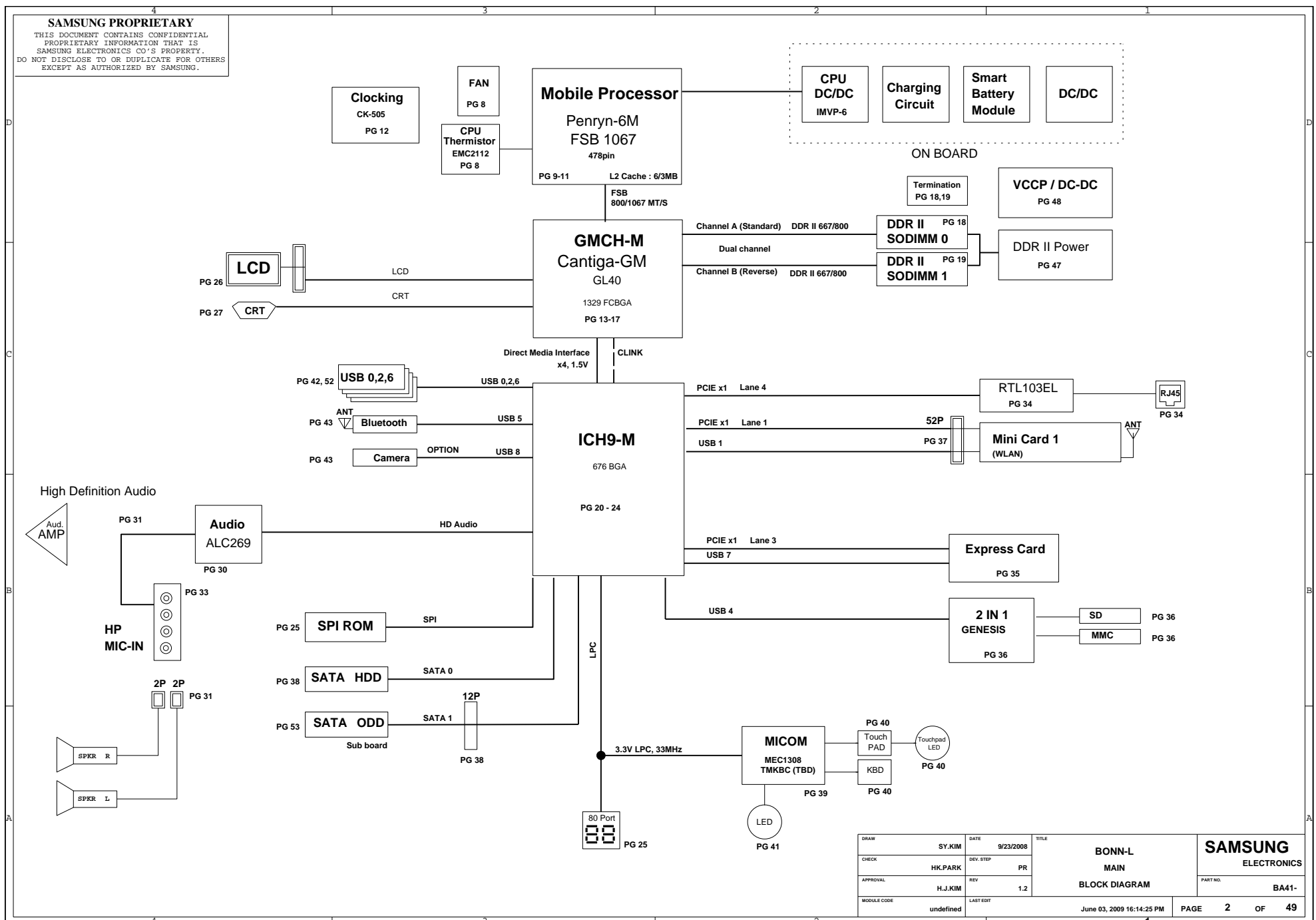
Model Name : R519
PBA Name : MAIN
PCB Code : GCE :
 NAN :
 HAN :
Dev. Step : PR
Revision : 1.2
T.R. Date : 2009.06.03

Design	CHECK	APPROVAL

■ Owner : SEC Mobile R & D Signature : X

DRAW	SY.KIM	DATE	10/10/2008	TITLE	BONN-L MAIN COVER	SAMSUNG ELECTRONICS				
CHECK	HK.PARK	DEV.STEP	PR	PART NO.			BA41-			
APPROVAL	H.J.KIM	REV	1.2	MODULE CODE		LAST EDIT	June 03, 2009 16:14:25 PM	PAGE	1	OF

SAMSUNG PROPRIETARY
 THIS DOCUMENT CONTAINS CONFIDENTIAL
 PROPRIETARY INFORMATION THAT IS
 SAMSUNG ELECTRONICS CO.'S PROPERTY.
 DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
 EXCEPT AS AUTHORIZED BY SAMSUNG.



DRAW	SY.KIM	DATE	9/23/2008	TITLE	BONN-L MAIN	SAMSUNG ELECTRONICS
CHECK	HK.PARK	DEV.STEP	PR			
APPROVAL	H.J.KIM	REV	1.2		BLOCK DIAGRAM	PART NO. BA41-
MODULE CODE	undefined	LAST EDIT	June 03, 2009 16:14:25 PM		PAGE	2 OF 49

SAMSUNG PROPRIETARY

THIS DOCUMENT CONTAINS CONFIDENTIAL PROPRIETARY INFORMATION THAT IS SAMSUNG ELECTRONICS CO.'S PROPERTY. DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS EXCEPT AS AUTHORIZED BY SAMSUNG.

BOARD INFORMATION

SCHEMATIC ANNOTATIONS AND BOARD INFORMATION

PCI Devices

Devices	IDSEL#	REQ/GNT#	Interrupts
Cardbus	AD25	3	A,B,C
USB	AD29(internal)	-	USB2.0 #0 (USB0) : A USB2.0 #1 (USB1) : D USB2.0 #2 (USB4) : C USB2.0 #3 (USB5) : E USB2.0 #4 (EHCI) : H
Hub to PCI LPC bridge/IDE/AC97/SMBUS	AD30(internal) AD31(internal)	- -	- B
Internal MAC AC Link GLAN	AD24(internal) - -	- - -	E B F

Crystal / Oscillator

TYPE	FREQUENCY	DEVICE	USAGE
Crystal	32.768KHz	ICH9-M	Real Time Clock
Crystal	10MHz	MICOM	HD64F2169/2160
Crystal	14.318MHz	CLOCK-Generator	CK-505
Crystal	25MHz	LAN	RealTek 88E8057

LCD Pannel Detect (TBD)

Devices	Resolution	PANNEL_DETECT_0

Voltage Rails

VDC	Primary DC system power supply (9 to 20V)
VCC_CORE	Core Voltage for CPU
P1.05V (VCCP)	VTT for CPU, Crestline & ICH9-M
P3.3V_MICOM	3.3V always power rail (for Micom)
P1.5V	1.5V switched power rail (off in S3-S5)
P1.8V	1.8V switched power rail (off in S3-S5)
P1.8V_AUX	1.8V power rail for DDR (off in S4-S5)
P0.9V	0.9V power rail for DDR (off in S3-S5)
P3.3V	3.3V switched power rail (off in S3-S5)
P3.3V_AUX	3.3V switched on power rail (off in S4-S5)
P5.0V	5.0V switched power rail (off in S3-S5)
P5.0V_AUX	5.0V switched on power rail (off in S4-S5)
P5.0V_ALW	5.0V always power rail

I²C / SMB Address

Devices	Address	Hex	Bus
ICH9-M	Master	-	SMBUS Master
CPU Thermal Sensor	0111 101x	7Ah	Thermal Sensor
SODIMM0	1010 000x	A0h	-
SODIMM1	1010 010x	A4h	-
Thermal Sensor on SODIMM0	0011 000x	30h	-
Thermal Sensor on SODIMM1	0011 010x	34h	-
CK-505M (Clock Generator)	1101 001x	D2h	Clock, Unused Clock Output Disable

USB PORT Assign

PORT #	ASSIGNED TO
0	SYSTEM PORT 0
1	SYSTEM PORT 1
2	SYSTEM PORT 2
3	NC
4	NC
5	Bluetooth
6	Mini PCI Express 2
7	Camera
8	NC
9	NC

PCI Express Assign

PORT #	ASSIGNED TO
0	NC
1	Mini Card 1 (WLAN)
2	NC
3	LOM
4	Mini Card 2 (ROBSON or DVB-T)
5	NC

(This table will be update.)

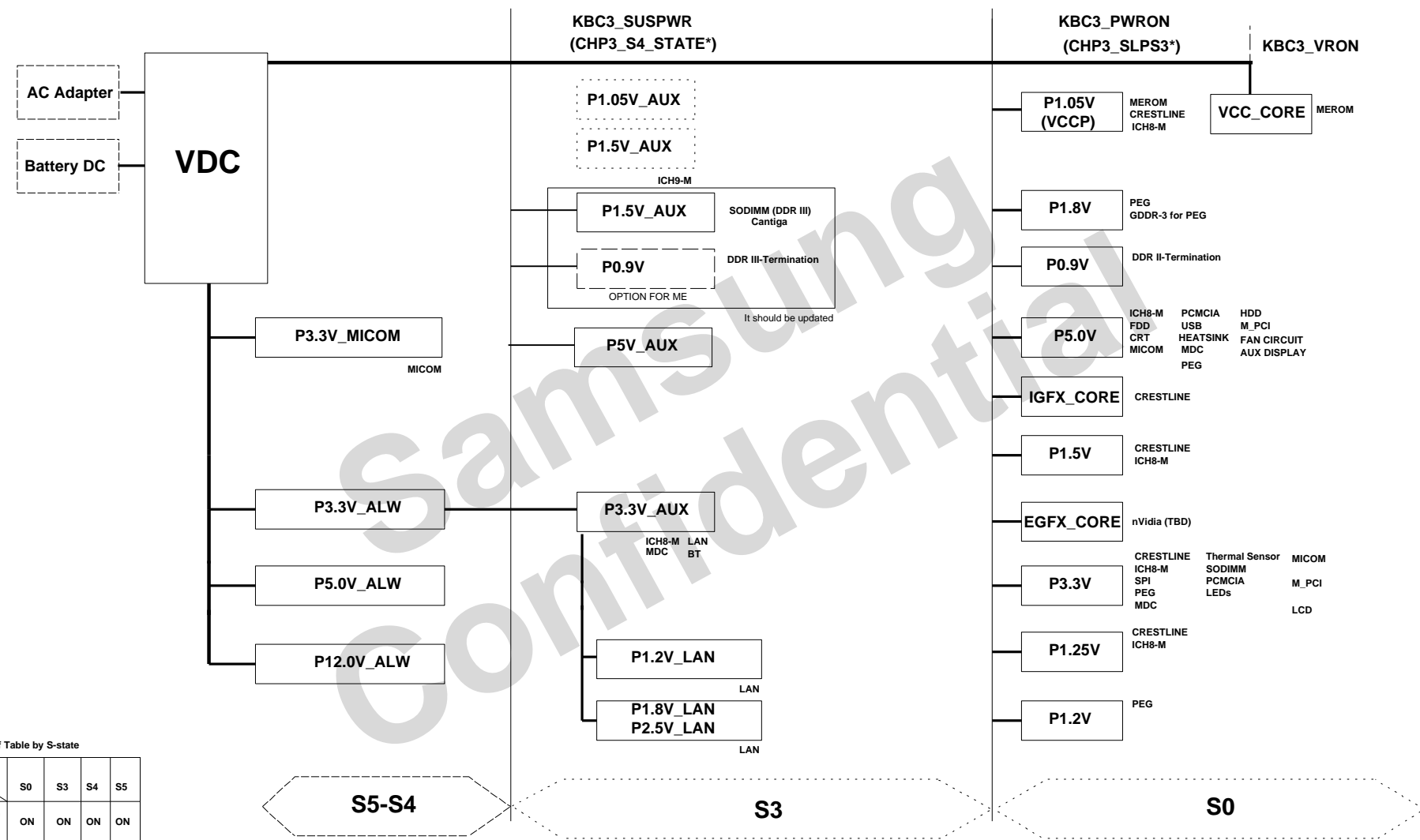
REVISION HISTORY

See rev notes for more information.

DRAW	SY.KIM	DATE	9/23/2008	TITLE	BONN-L MAIN BOARD INFO	SAMSUNG ELECTRONICS
CHECK	HK.PARK	DEV.STEP	PR			
APPROVAL	H.J.KIM	REV	1.2			
MODULE CODE	undefined	LAST EDIT	June 03, 2009 16:14:25 PM			
					PAGE	3 OF 49

SAMSUNG PROPRIETARY
 THIS DOCUMENT CONTAINS CONFIDENTIAL
 PROPRIETARY INFORMATION THAT IS
 SAMSUNG ELECTRONICS CO.'S PROPERTY.
 DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
 EXCEPT AS AUTHORIZED BY SAMSUNG.

POWER DIAGRAM Rev 0.1



Power On/Off Table by S-state

Rail \ State	S0	S3	S4	S5
+V*(LWS) +V*LAN	ON	ON	ON	ON
+1.8V_AUX +0.9V	ON	ON	---	---
+V*AUX	ON	ON	---	---
+V	ON	---	---	---
+V* (CORE)	ON	---	---	---



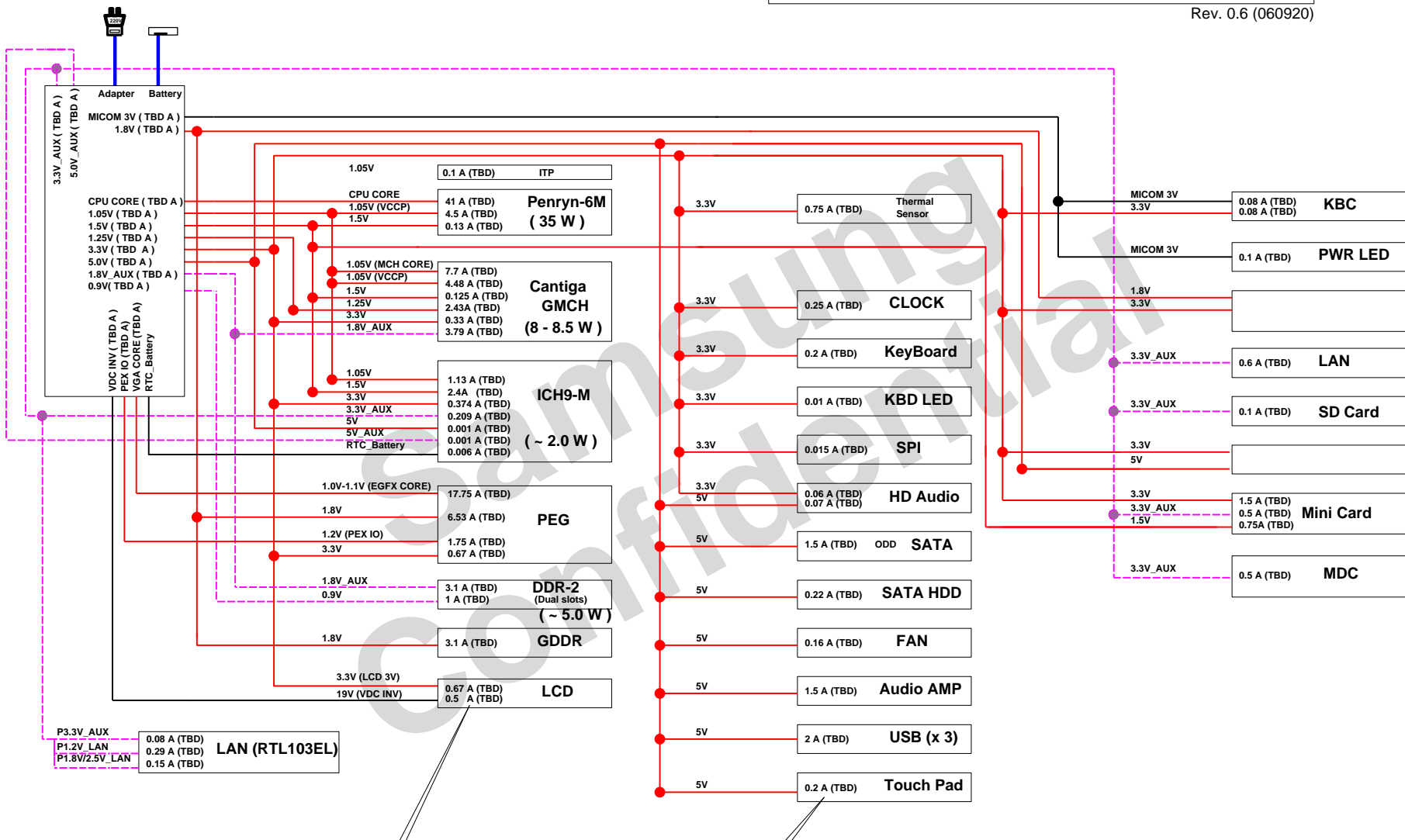
DRAW	SY.KIM	DATE	9/23/2008	TITLE	BONN-L	SAMSUNG ELECTRONICS
CHECK	HK.PARK	DEV.STEP	PR	MAIN		
APPROVAL	H.J.KIM	REV	1.2	POWER DIAGRAM	PART NO.	BA41-
MODULE CODE	undefined	LAST EDIT	June 03, 2009 16:14:25 PM	PAGE	4	OF 49

SAMSUNG PROPRIETARY

THIS DOCUMENT CONTAINS CONFIDENTIAL PROPRIETARY INFORMATION THAT IS SAMSUNG ELECTRONICS CO.'S PROPERTY. DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS EXCEPT AS AUTHORIZED BY SAMSUNG.

POWER RAILS ANALYSIS

Rev. 0.6 (060920)



Value by Datasheet/Application notes (Value by measurement)

DRAW	SY.KIM	DATE	9/23/2008	TITLE	BONN-L	SAMSUNG ELECTRONICS
CHECK	HK.PARK	DEV.STEP	PR	MAIN	POWER RAILS	
APPROVAL	H.J.KIM	REV	1.2			
MODULE CODE	undefined	LAST EDIT	June 03, 2009 16:14:25 PM	PAGE	5	OF 49

SAMSUNG PROPRIETARY

THIS DOCUMENT CONTAINS CONFIDENTIAL PROPRIETARY INFORMATION THAT IS SAMSUNG ELECTRONICS CO.'S PROPERTY. DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS EXCEPT AS AUTHORIZED BY SAMSUNG.

Host Boot / ME Off

(SLPS4* = S4_STATE*) > (SLPM* = SLPS3*)

M-1) KBC3_DDR_PWRON (TBD) = 8) KBC3_SUSPWR

M-2) KBC3_ME_PWRON = 15) KBC3_PWRON

Host / ME Boot

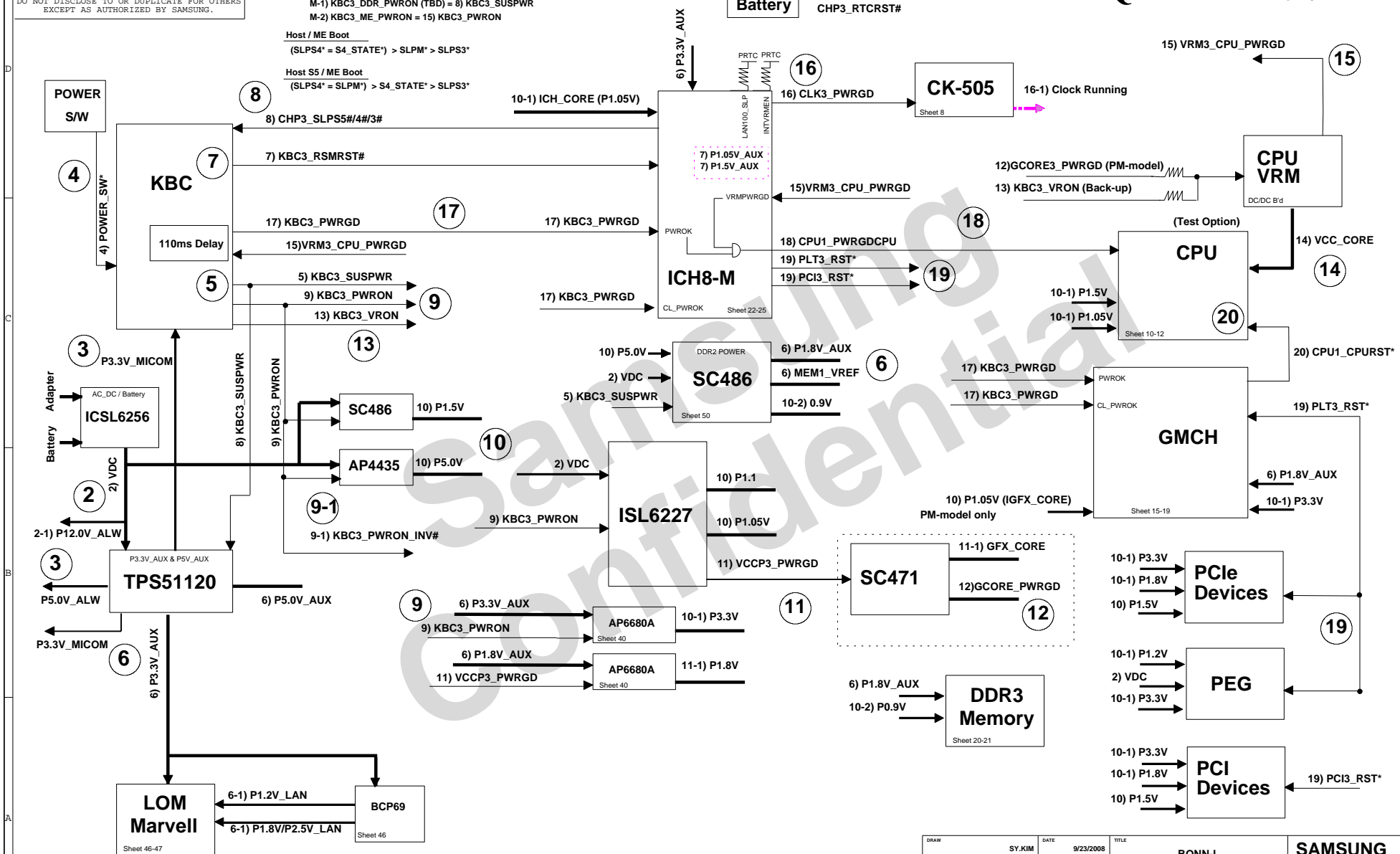
(SLPS4* = S4_STATE*) > SLPM* > SLPS3*

Host S5 / ME Boot

(SLPS4* = SLPM*) > S4_STATE* > SLPS3*

POWER SEQUENCE

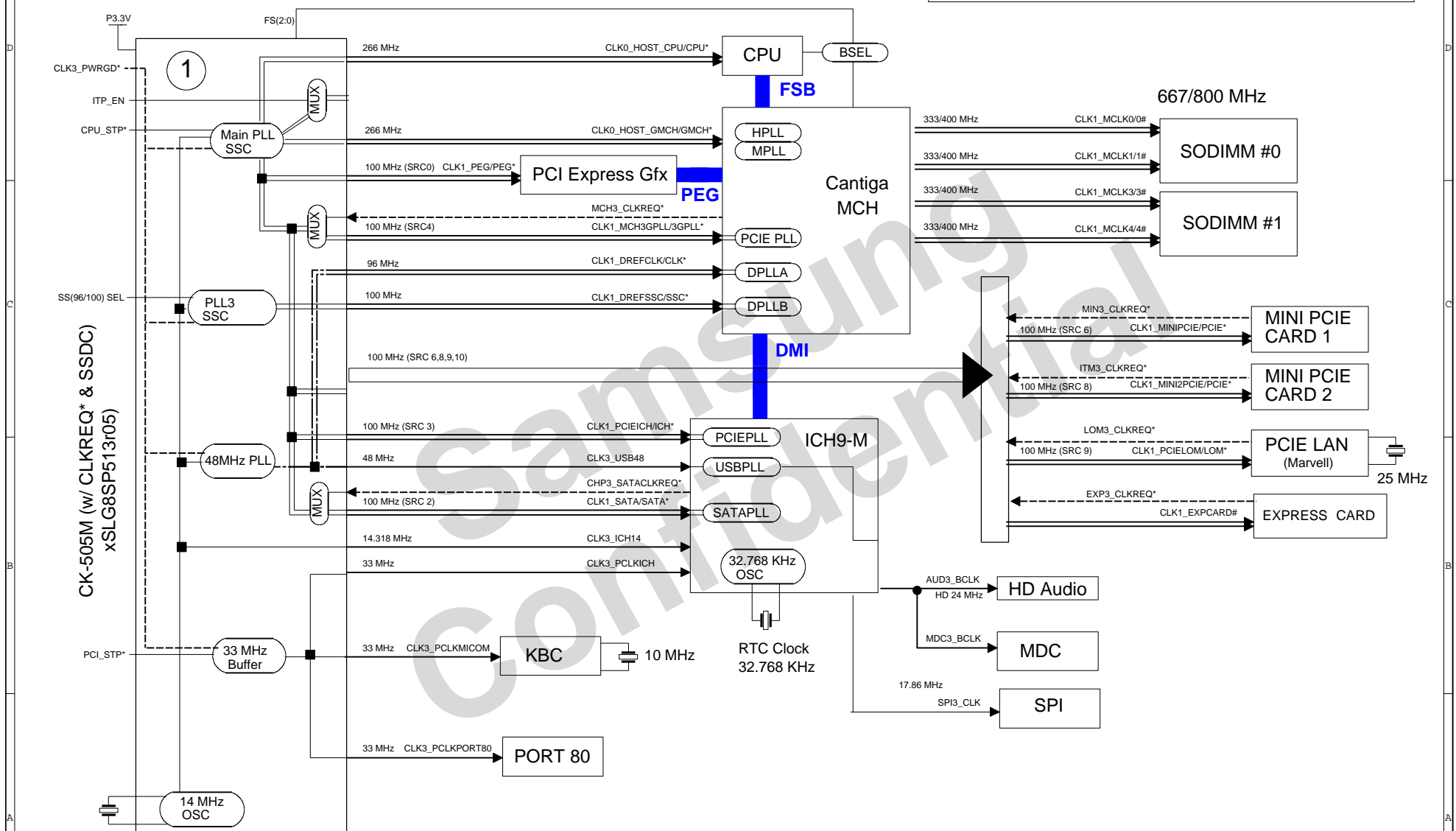
Rev. 0.7



DRAW	SY.KIM	DATE	9/23/2008	TITLE	BONN-L	SAMSUNG ELECTRONICS
CHECK	HK.PARK	DEV.STEP	PR	MAIN		
APPROVAL	H.J.KIM	REV	1.2	POWER SEQUENCE	PART NO.	BA41-
MODULE CODE	undefined	LAST EDIT	June 03, 2009 16:14:25 PM	PAGE	6	OF 49

CLOCK DISTRIBUTION Rev. 0.1

SAMSUNG PROPRIETARY
 THIS DOCUMENT CONTAINS CONFIDENTIAL
 PROPRIETARY INFORMATION THAT IS
 SAMSUNG ELECTRONICS CO.'S PROPERTY.
 DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
 EXCEPT AS AUTHORIZED BY SAMSUNG.



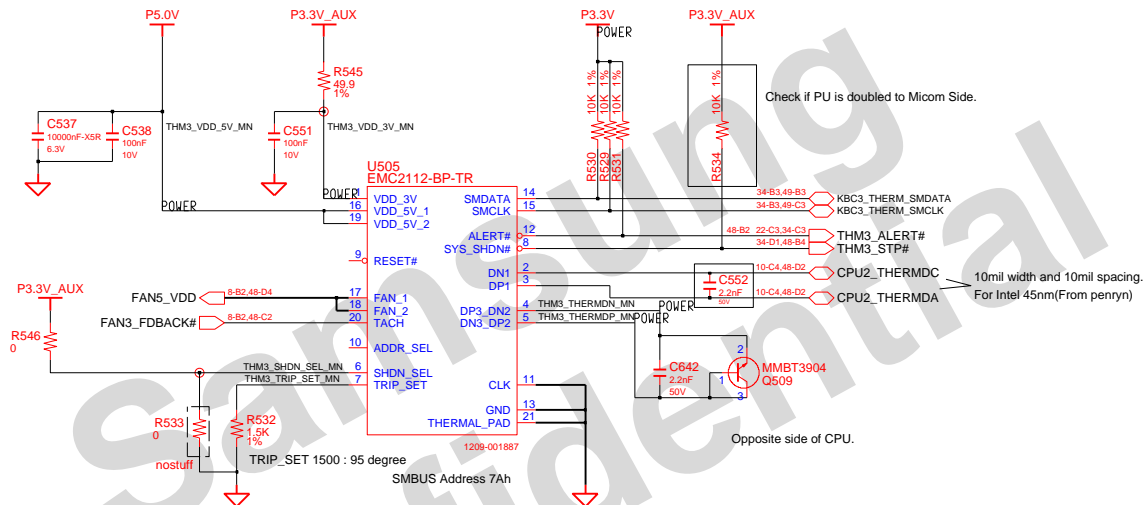
14.318 MHz
Page 8

DRAW	SY.KIM	DATE	9/23/2008	TITLE	BONN-L	SAMSUNG ELECTRONICS
CHECK	HK.PARK	DEV.STEP	PR	MAIN		
APPROVAL	H.J.KIM	REV	1.2	CLOCK DIAGRAM	PART NO.	BA41-
MODULE CODE	undefined	LAST EDIT	June 03, 2009 16:14:25 PM	PAGE	7	OF 49

SAMSUNG PROPRIETARY

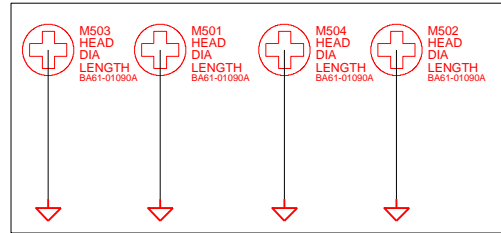
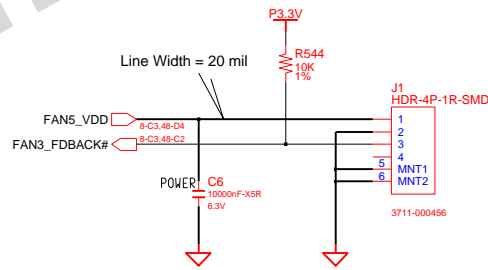
THIS DOCUMENT CONTAINS CONFIDENTIAL PROPRIETARY INFORMATION THAT IS SAMSUNG ELECTRONICS CO.'S PROPERTY. DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS EXCEPT AS AUTHORIZED BY SAMSUNG.

THERMAL SENSOR & FAN CONTROL



SHDN_SEL MODE	
0	INTEL TR MODE
HIGH Z	AMD CPU/DIODE MODE
<input checked="" type="checkbox"/> 1	EXT.DIODE 2 MODE

ADDRESSSEL MODE	
0	0101 111xb
<input checked="" type="checkbox"/> HIGH Z	0111 101xb (7A)
1	0101 110xb

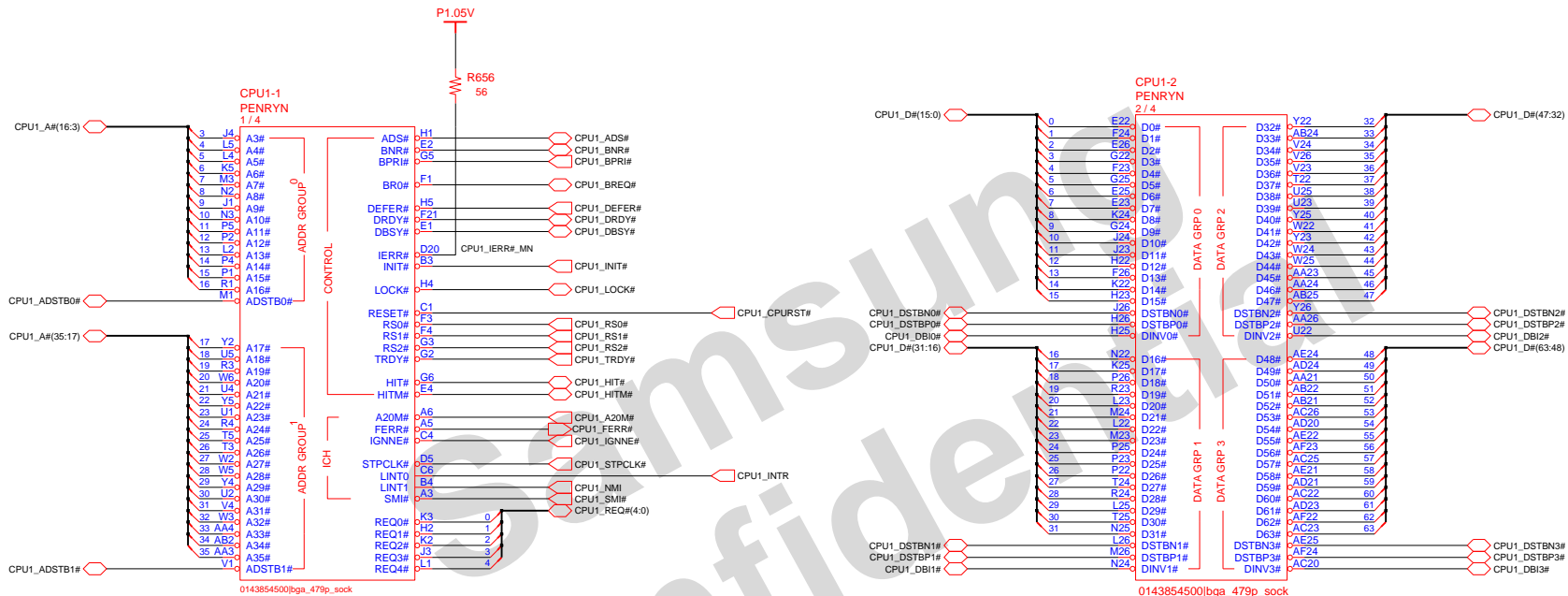


To support heatsink

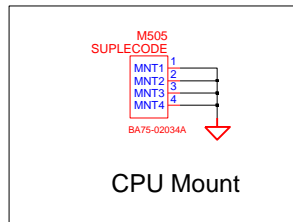
DESIGN	SY.KIM	DATE	9/23/2008	TITLE	BONN-L	SAMSUNG ELECTRONICS
CHECK	HK.PARK	DEV.STEP	PR		THERMAL SENSOR	
APPROVAL	H.J.KIM	REV	1.2		THERMAL SENSOR EMC2112	PART NO. BA41-
MODULE CODE		LAST EDIT			June 03, 2009 16:14:25 PM	PAGE 8 OF 49

SAMSUNG PROPRIETARY

THIS DOCUMENT CONTAINS CONFIDENTIAL PROPRIETARY INFORMATION THAT IS SAMSUNG ELECTRONICS CO.'S PROPERTY. DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS EXCEPT AS AUTHORIZED BY SAMSUNG.



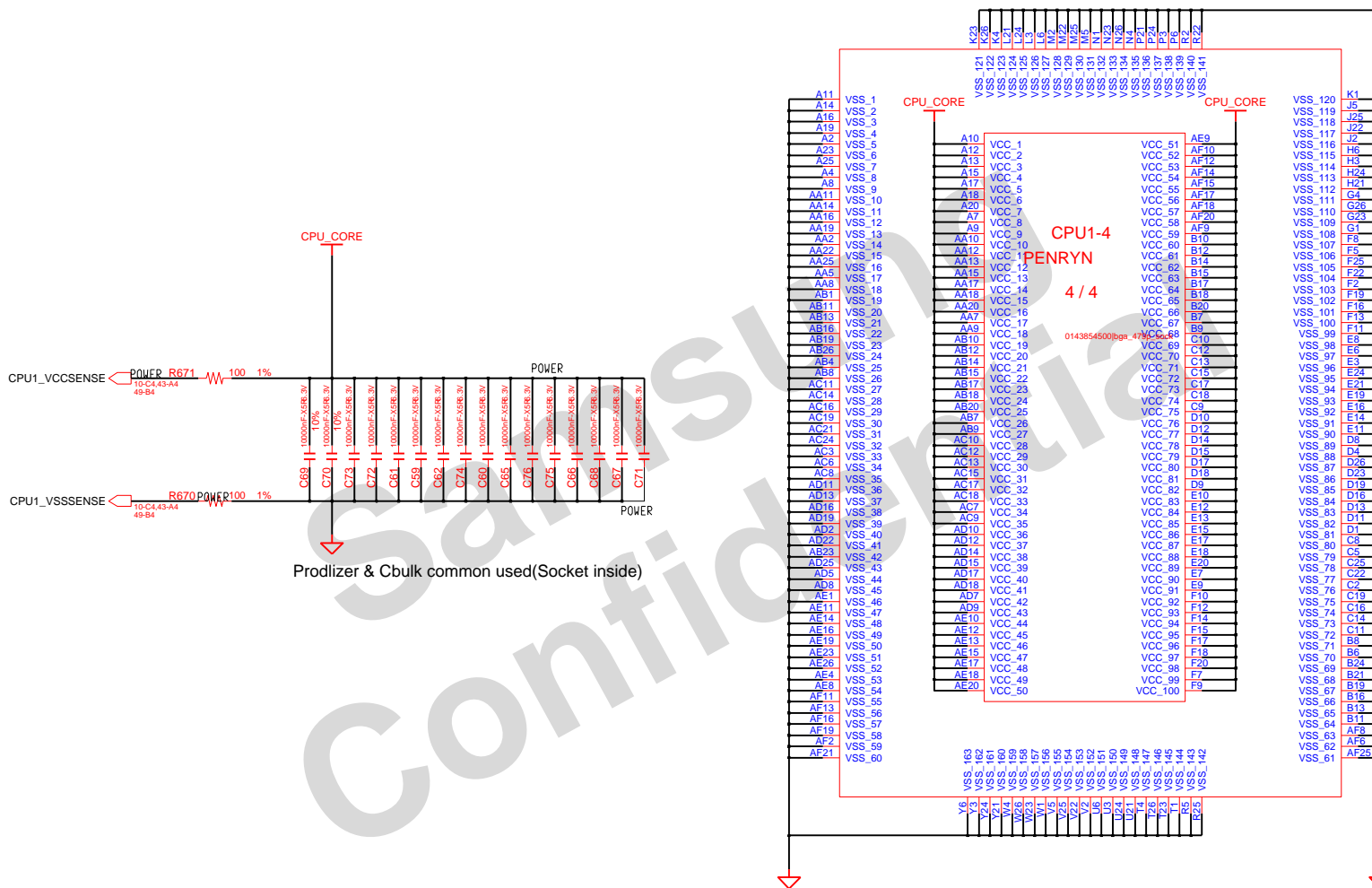
CPU Socket : 3704-001153



DRAW	SY.KIM	DATE	9/23/2008	TITLE	BONN-L CPU PENRYN (1/3)		SAMSUNG ELECTRONICS
CHECK	HK.PARK	DEV.STEP	PR				
APPROVAL	H.J.KIM	REV	1.2				PART NO. BA41-
MODULE CODE	undefined	LAST EDIT	June 03, 2009 16:14:25 PM		PAGE	9	OF 49

SAMSUNG PROPRIETARY

THIS DOCUMENT CONTAINS CONFIDENTIAL PROPRIETARY INFORMATION THAT IS SAMSUNG ELECTRONICS CO.'S PROPERTY. DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS EXCEPT AS AUTHORIZED BY SAMSUNG.



Confidential

DRAW	SY.KIM	DATE	9/23/2008	TITLE	BONN-L CPU PENRYN (3/3)	SAMSUNG ELECTRONICS PART NO. BA41-
CHECK	HK.PARK	DEV.STEP	PR			
APPROVAL	H.J.KIM	REV	1.2			
MODULE CODE	undefined	LAST EDIT		June 03, 2009 16:14:25 PM	PAGE 11 OF 49	

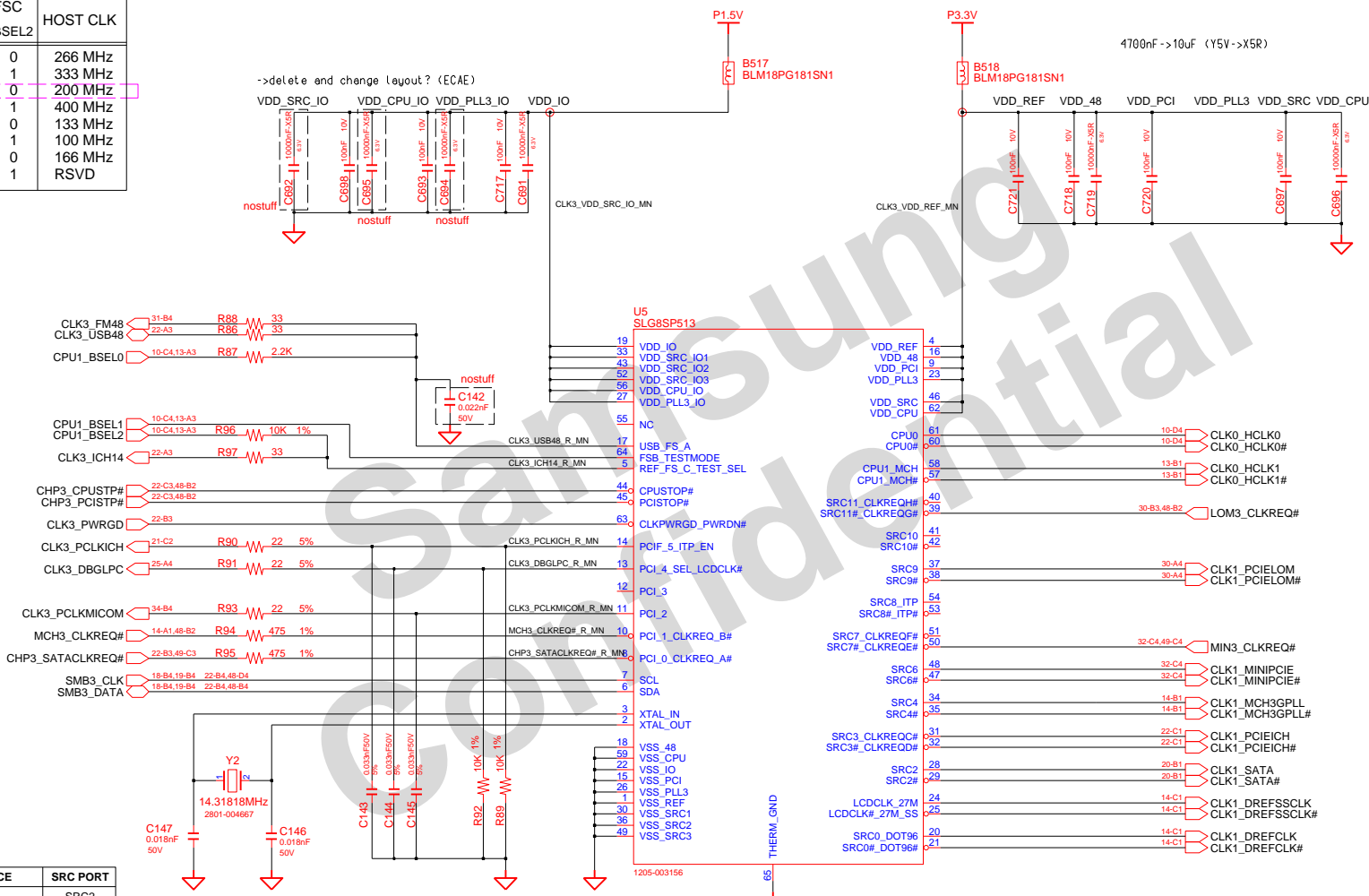
SAMSUNG PROPRIETARY

THIS DOCUMENT CONTAINS CONFIDENTIAL PROPRIETARY INFORMATION THAT IS SAMSUNG ELECTRONICS CO.'S PROPERTY. DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS EXCEPT AS AUTHORIZED BY SAMSUNG.

CK505M

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

->delete and change layout? (ECAE)



CLK REQ	DEVICE	SRC PORT
CLK REQ A	SATA	SRC2
CLK REQ B	GMCH	SRC4
CLK REQ E	MINI CARD	SRC6
CLK REQ F	EXP3_CLKREQ#	SRC8

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

Place 14.31818MHz within 500mils of CK-505

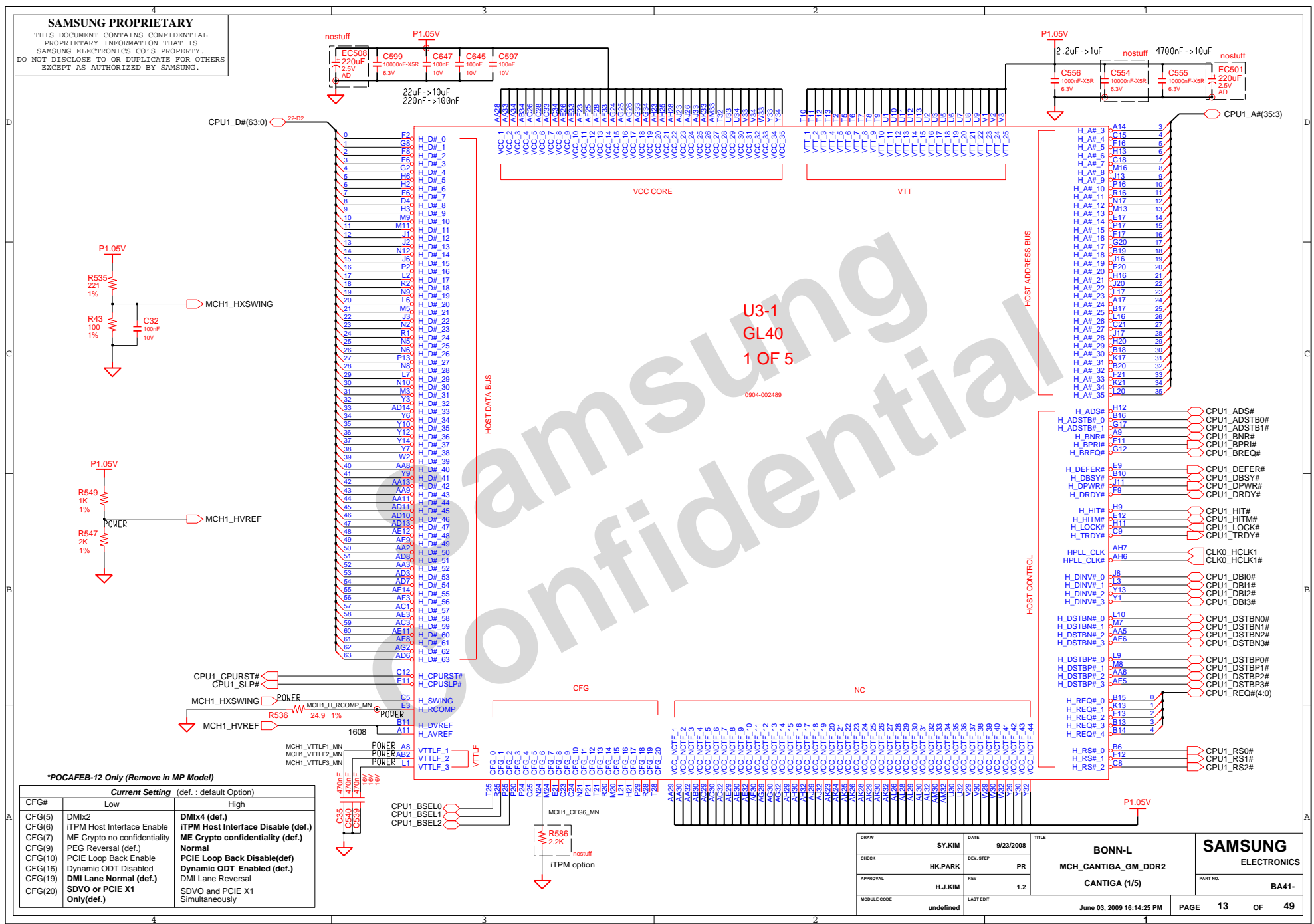
This part is 64pin QFN package.

IDT : 1205-003159
SL : 1205-003533

DRAW	SY.KIM	DATE	9/23/2008	TITLE	BONN-L	SAMSUNG
CHECK	HK.PARK	DEV.STEP	PR	MAIN_CLOCK_CIRCUIT	ELECTRONICS	
APPROVAL	H.J.KIM	REV	1.2	CK_Clock_505M	PART NO.	BA41-
MODULE CODE	undefined	LAST EDIT	June 03, 2009 16:14:25 PM	PAGE	12	OF 49

SAMSUNG PROPRIETARY

THIS DOCUMENT CONTAINS CONFIDENTIAL PROPRIETARY INFORMATION THAT IS SAMSUNG ELECTRONICS CO.'S PROPERTY. DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS EXCEPT AS AUTHORIZED BY SAMSUNG.



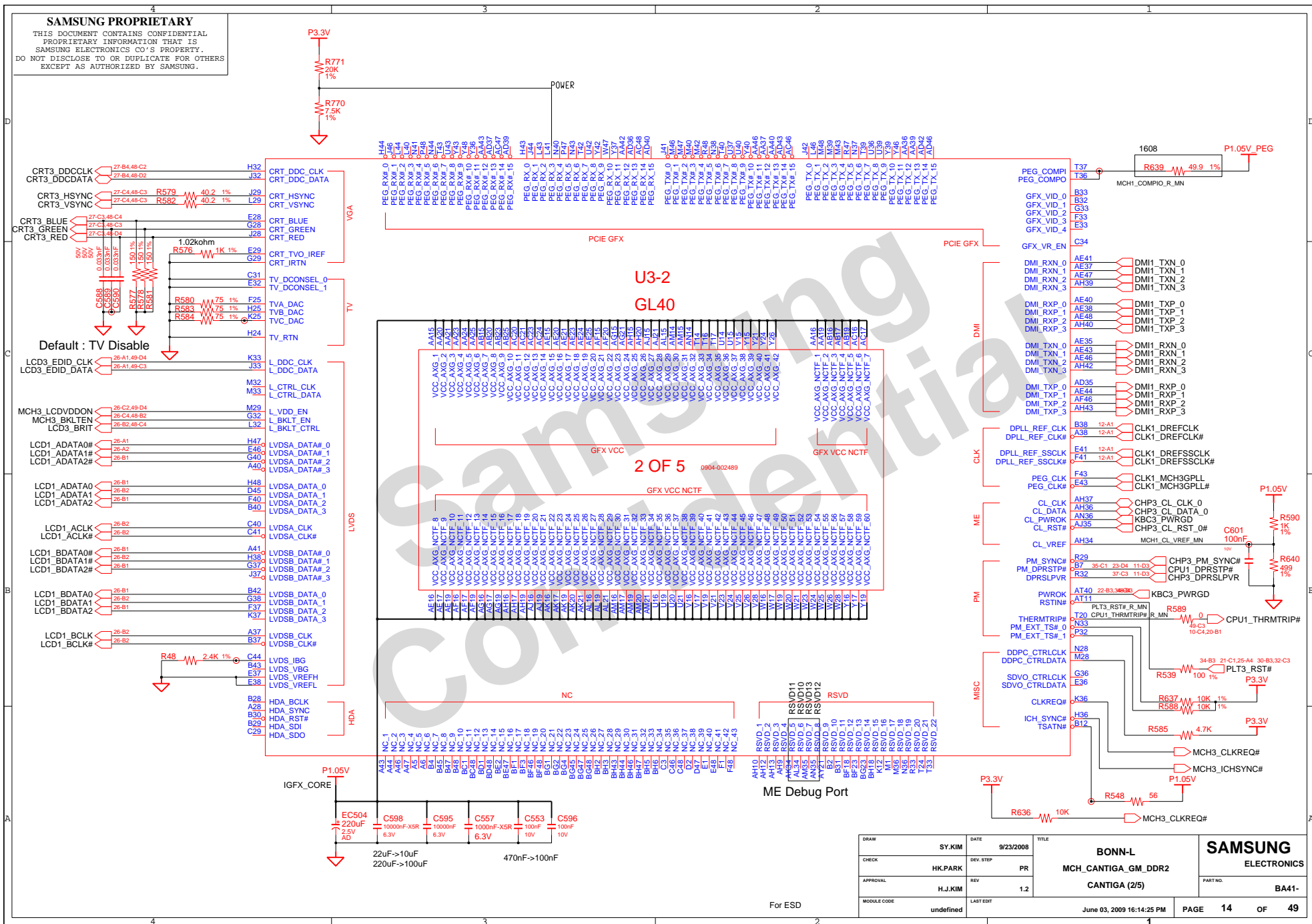
***POCAFEB-12 Only (Remove in MP Model)**

CFG#	Low	High
CFG(5)	DMiX2	DMiX4 (def.)
CFG(6)	iTPM Host Interface Enable	iTPM Host Interface Disable (def.)
CFG(7)	ME Crypto no confidentiality	ME Crypto confidentiality (def.)
CFG(9)	PEG Reversal (def.)	Normal
CFG(10)	PCIe Loop Back Enable	PCIe Loop Back Disable(def)
CFG(16)	Dynamic ODT Disabled	Dynamic ODT Enabled (def.)
CFG(19)	DMI Lane Normal (def.)	DMI Lane Reversal
CFG(20)	SDVO or PCIe X1 Only(def.)	SDVO and PCIe X1 Simultaneously

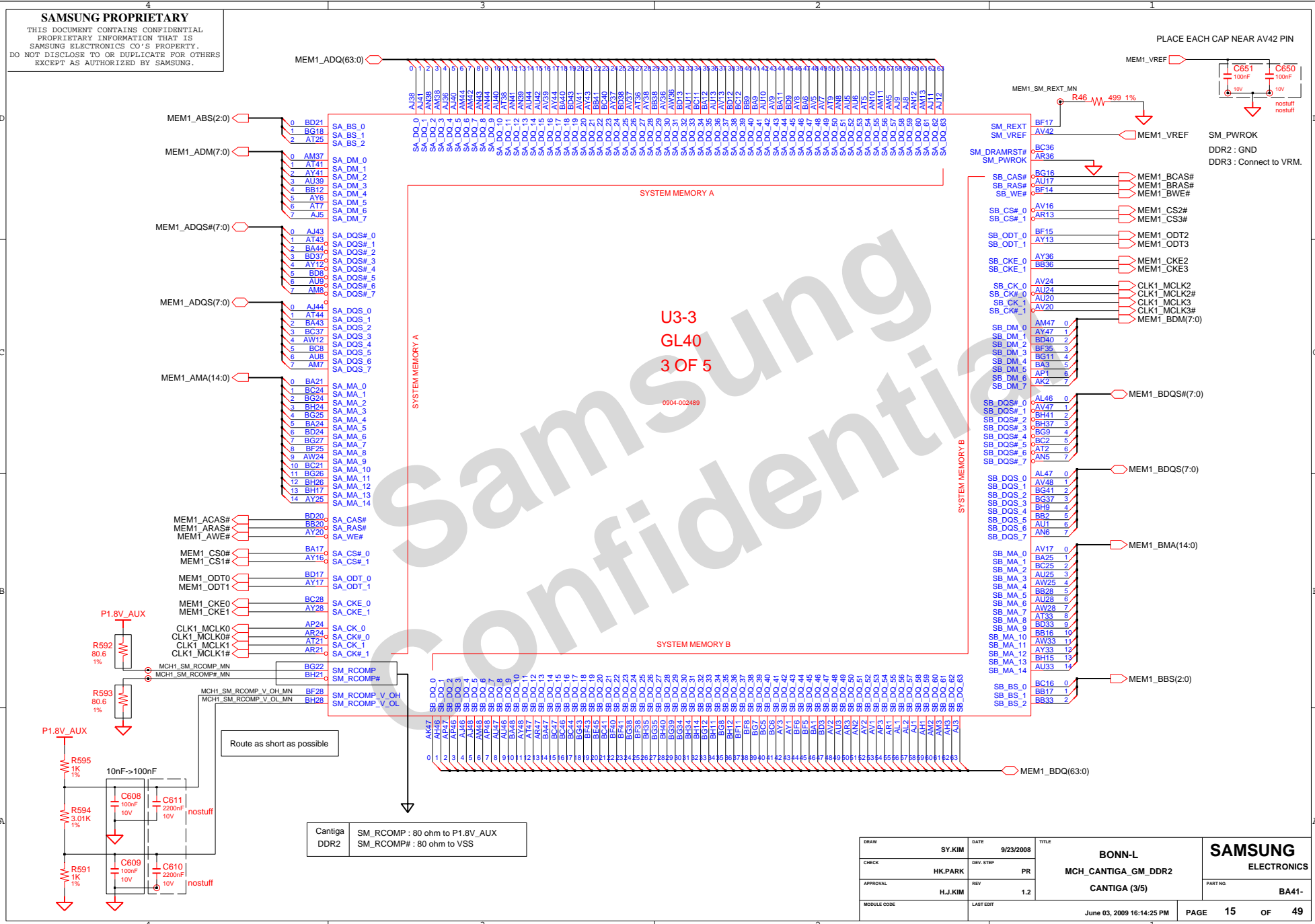
DRAW	SY.KIM	DATE	9/23/2008	TITLE	BONN-L	SAMSUNG ELECTRONICS
CHECK	HK.PARK	DEV.STEP	PR	MCH_CANTIGA_GM_DDR2		
APPROVAL	H.J.KIM	REV	1.2	CANTIGA (1/5)		PART NO. BA41-
MODULE CODE	undefined	LAST EDIT		June 03, 2009 16:14:25 PM	PAGE 13 OF 49	

SAMSUNG PROPRIETARY

THIS DOCUMENT CONTAINS CONFIDENTIAL PROPRIETARY INFORMATION THAT IS SAMSUNG ELECTRONICS CO.'S PROPERTY. DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS EXCEPT AS AUTHORIZED BY SAMSUNG.

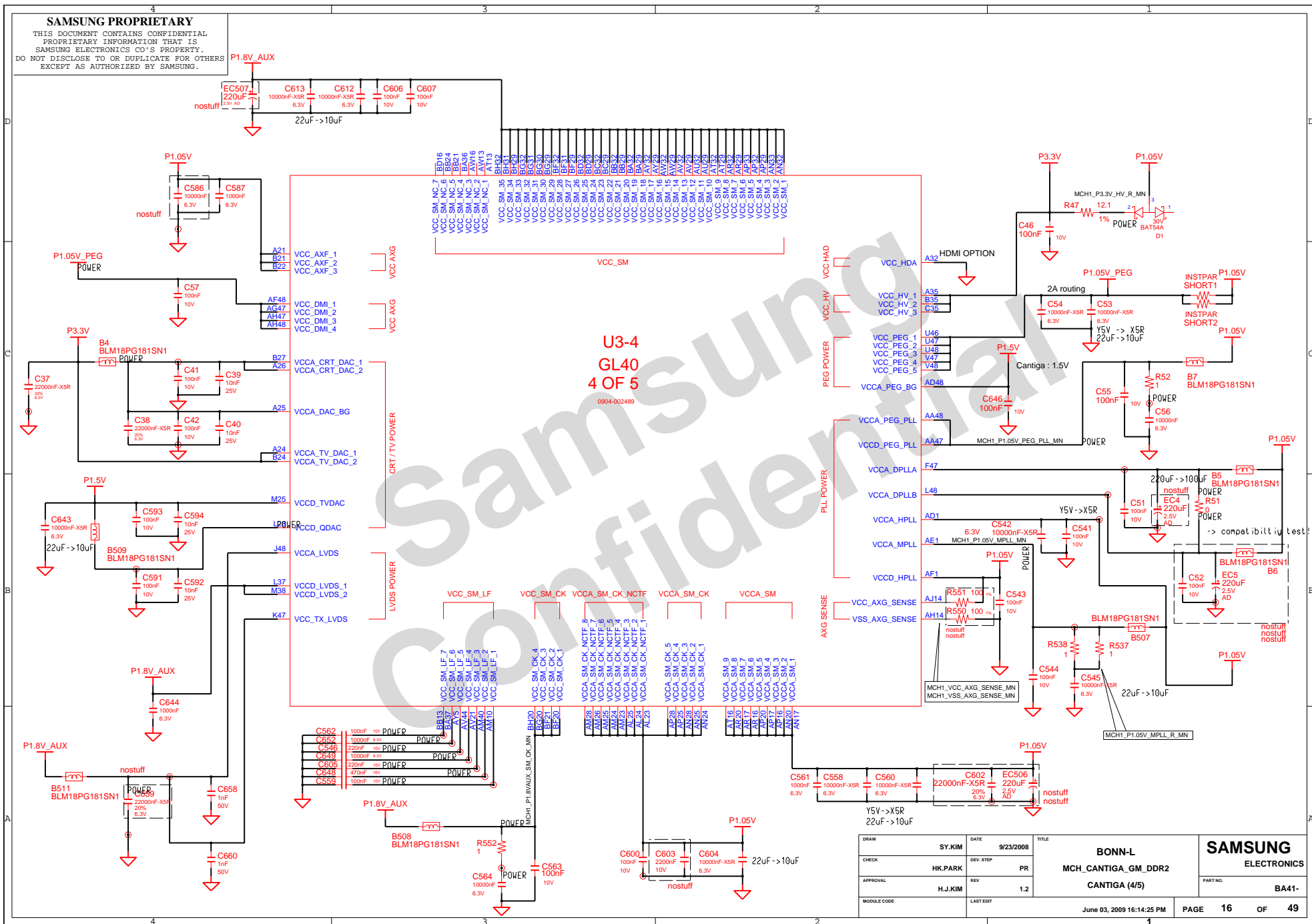


DRAW	SY.KIM	DATE	9/23/2008	TITLE	BONN-L	SAMSUNG ELECTRONICS PART NO. BA41-
CHECK	HK.PARK	DEV.STEP	PR	MCH_CANTIGA_GM_DDR2		
APPROVAL	H.J.KIM	REV	1.2	CANTIGA (2/5)		
MODULE CODE	undefined	LAST EDIT				
For ESD				DATE	June 03, 2009 16:14:25 PM	PAGE 14 OF 49



SAMSUNG PROPRIETARY

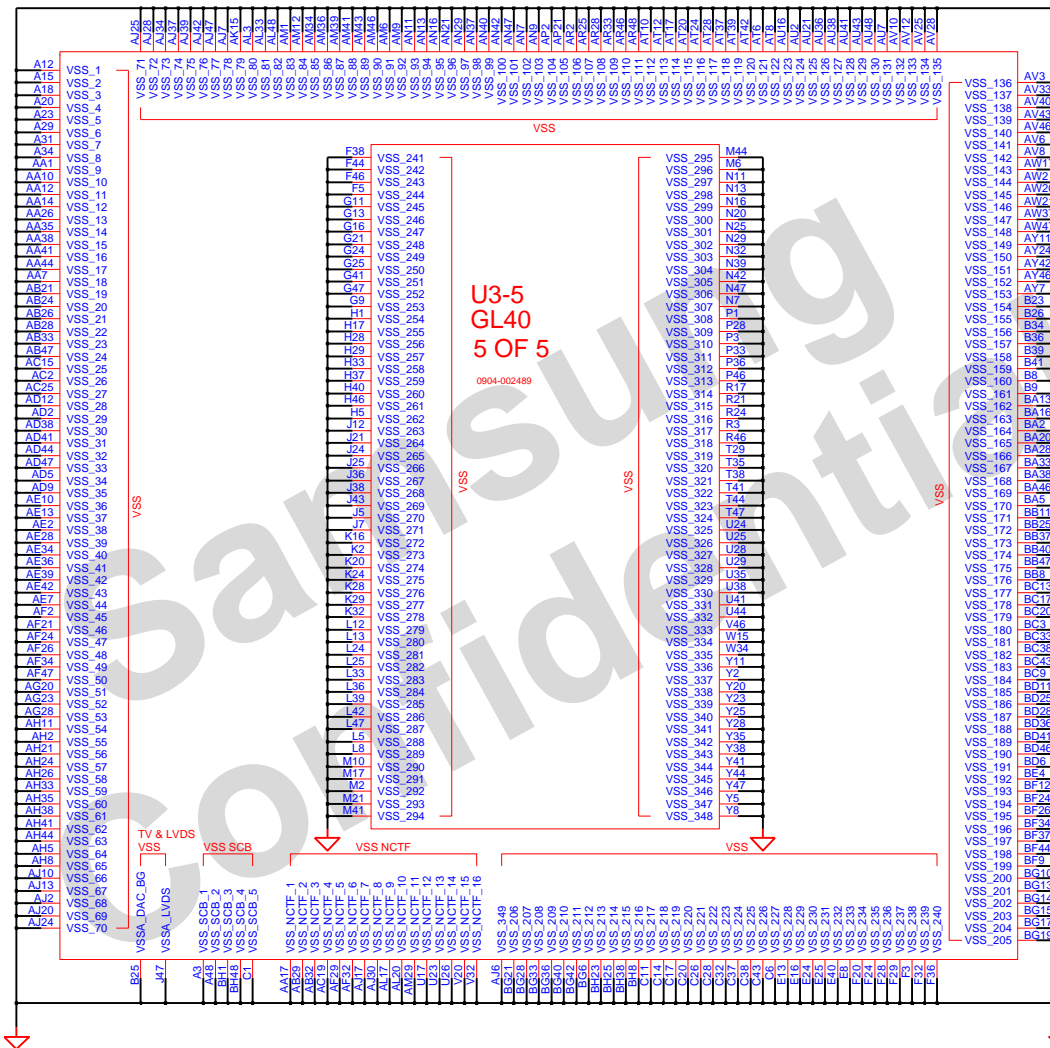
THIS DOCUMENT CONTAINS CONFIDENTIAL PROPRIETARY INFORMATION THAT IS SAMSUNG ELECTRONICS CO.'S PROPERTY. DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS EXCEPT AS AUTHORIZED BY SAMSUNG.



DRAW	SY.KIM	DATE	9/23/2008	TITLE	BONN-L	SAMSUNG ELECTRONICS
CHECK	HK.PARK	DEV.STEP	PR	MCH_CANTIGA_GM_DDR2	PART NO.	
APPROVAL	H.J.KIM	REV	1.2	CANTIGA (4/5)	BA41-	
MODULE CODE		LAST EDIT		June 03, 2009 16:14:25 PM	PAGE	16 OF 49

SAMSUNG PROPRIETARY

THIS DOCUMENT CONTAINS CONFIDENTIAL PROPRIETARY INFORMATION THAT IS SAMSUNG ELECTRONICS CO.'S PROPERTY. DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS EXCEPT AS AUTHORIZED BY SAMSUNG.

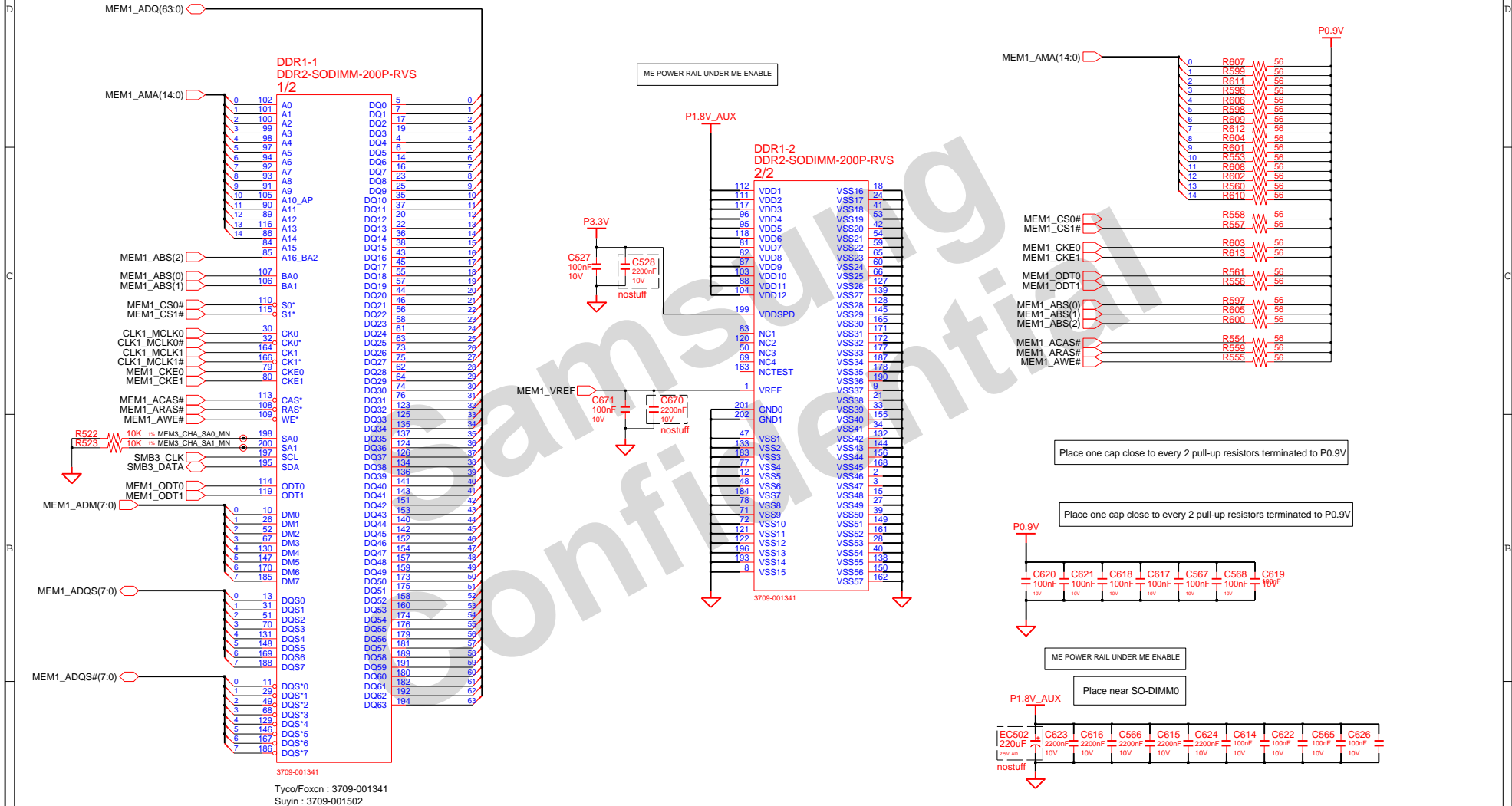


DRAW	SY.KIM	DATE	9/23/2008	TITLE	BONN-L MCH_CANTIGA_GM_DDR2 CANTIGA (5/5)	SAMSUNG ELECTRONICS PART NO. BA41-
CHECK	HK.PARK	DEV.STEP	PR			
APPROVAL	H.J.KIM	REV	1.2			
MODULE CODE		LAST EDIT				
				June 03, 2009 16:14:25 PM	PAGE	17 OF 49

SAMSUNG PROPRIETARY

THIS DOCUMENT CONTAINS CONFIDENTIAL PROPRIETARY INFORMATION THAT IS SAMSUNG ELECTRONICS CO.'S PROPERTY. DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS EXCEPT AS AUTHORIZED BY SAMSUNG.

DDR SO-DIMM #0
Height : 5.2mm (Reverse)



Tyco/Foxcn : 3709-001341
Suyin : 3709-001502

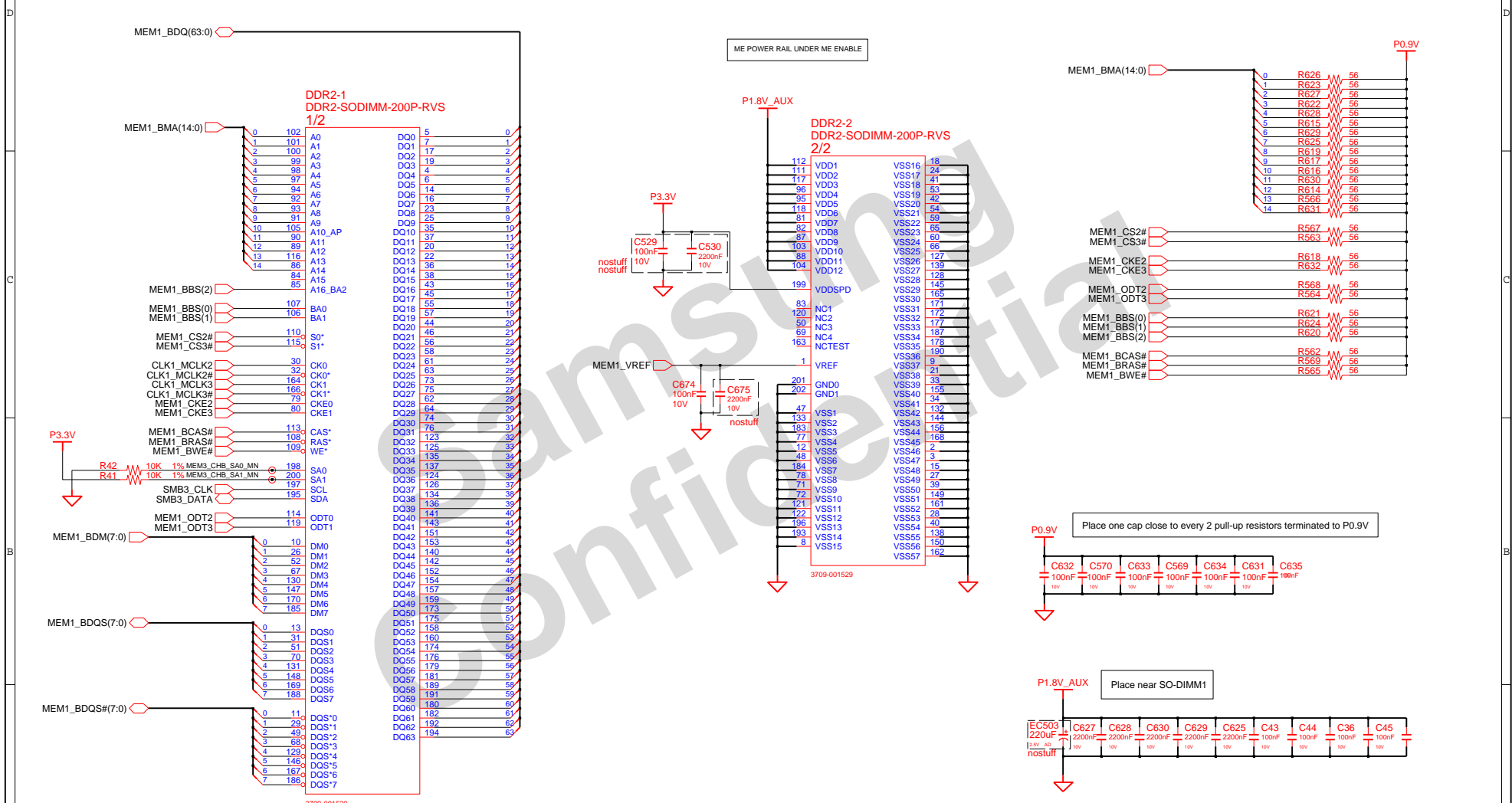
DRAW	SY.KIM	DATE	9/23/2008	TITLE	BONN-L	SAMSUNG ELECTRONICS
CHECK	HK.PARK	DEV.STEP	PR	SODIMM_DDR2		
APPROVAL	H.J.KIM	REV	1.2	SODIMM_DDR2 #1		
MODULE CODE	LAST EDIT		June 03, 2009 16:14:25 PM	PAGE	18 OF 49	

SAMSUNG PROPRIETARY

THIS DOCUMENT CONTAINS CONFIDENTIAL PROPRIETARY INFORMATION THAT IS SAMSUNG ELECTRONICS CO.'S PROPERTY. DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS EXCEPT AS AUTHORIZED BY SAMSUNG.

DDR SO-DIMM #1

Height : 9.2mm (Reverse)



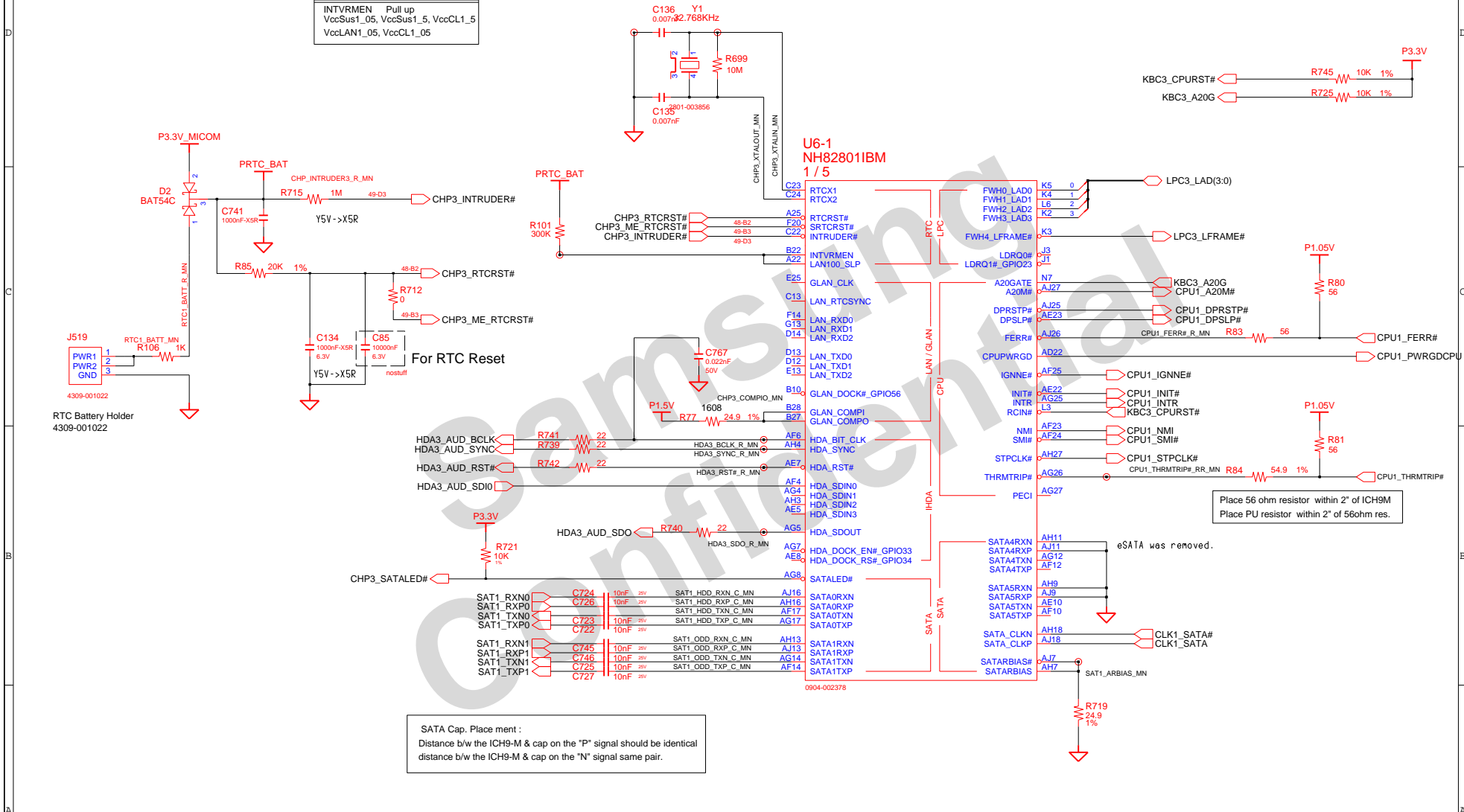
3709-001529
Foxcn : 3709-001529
Suyin : 3709-001503

DRAW	SY.KIM	DATE	9/23/2008	TITLE	BONN-L	SAMSUNG ELECTRONICS
CHECK	HK.PARK	DEV. STEP	PR	SODIMM_DDR2		
APPROVAL	H.J.KIM	REV	1.2	SODIMM_DDR2 #2		PART NO.
MODULE CODE		LAST EDIT		June 03, 2009 16:14:25 PM		BA41-
						PAGE 19 OF 49

SAMSUNG PROPRIETARY

THIS DOCUMENT CONTAINS CONFIDENTIAL PROPRIETARY INFORMATION THAT IS SAMSUNG ELECTRONICS CO.'S PROPERTY. DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS EXCEPT AS AUTHORIZED BY SAMSUNG.

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



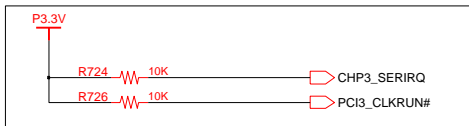
SATA Cap. Placement :
Distance b/w the ICH9-M & cap on the "P" signal should be identical
distance b/w the ICH9-M & cap on the "N" signal same pair.

Place 56 ohm resistor within 2" of ICH9M
Place PU resistor within 2" of 56ohm res.

DRAW	SY.KIM	DATE	9/23/2008	TITLE	BONN-L ICH_9M_B ICH9-M (1/5)	SAMSUNG ELECTRONICS PART NO. BA41-
CHECK	HK.PARK	DEV.STEP	PR			
APPROVAL	H.J.KIM	REV	1.2			
MODULE CODE		LAST EDIT				
June 03, 2009 16:14:25 PM						PAGE 20 OF 49

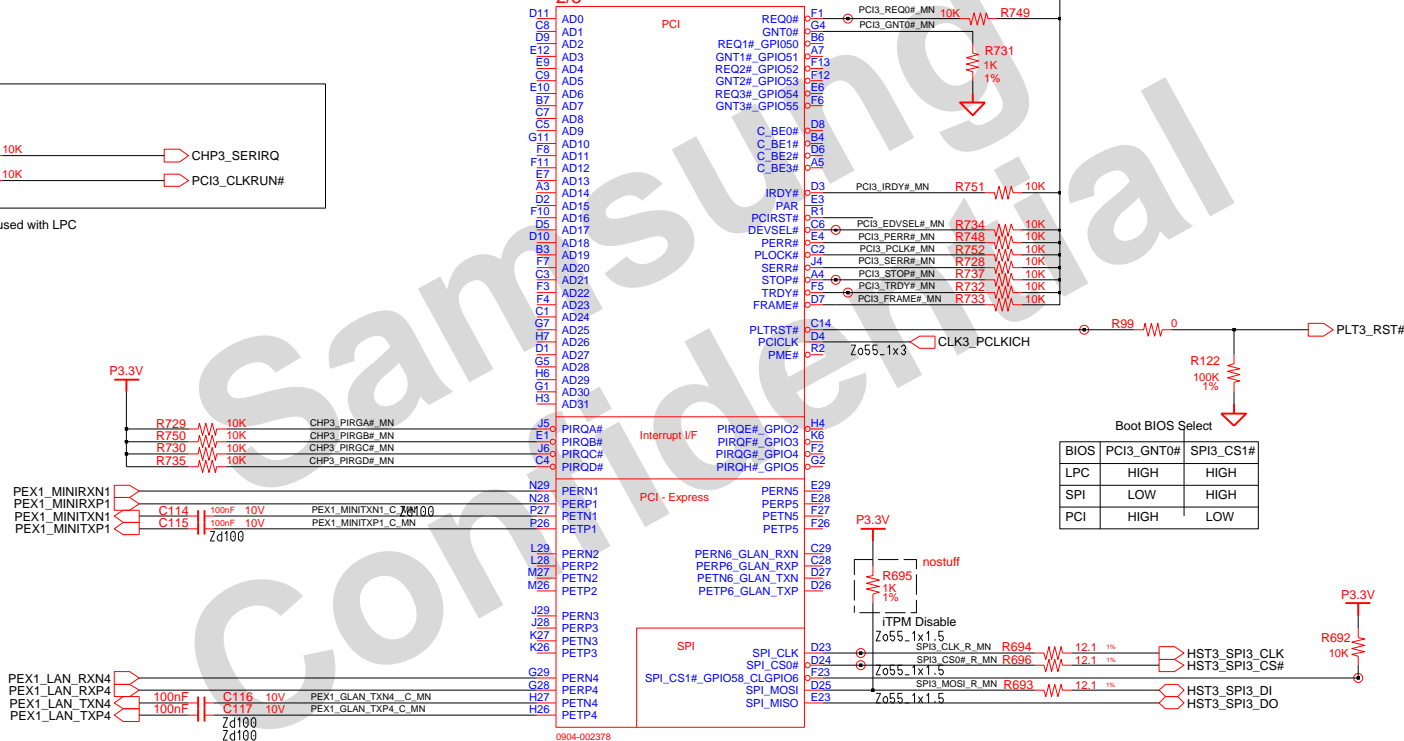
SAMSUNG PROPRIETARY

THIS DOCUMENT CONTAINS CONFIDENTIAL PROPRIETARY INFORMATION THAT IS SAMSUNG ELECTRONICS CO.'S PROPERTY. DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS EXCEPT AS AUTHORIZED BY SAMSUNG.



LPC option ; These are used with LPC

**U6-2
NH82801IBM
2/5**

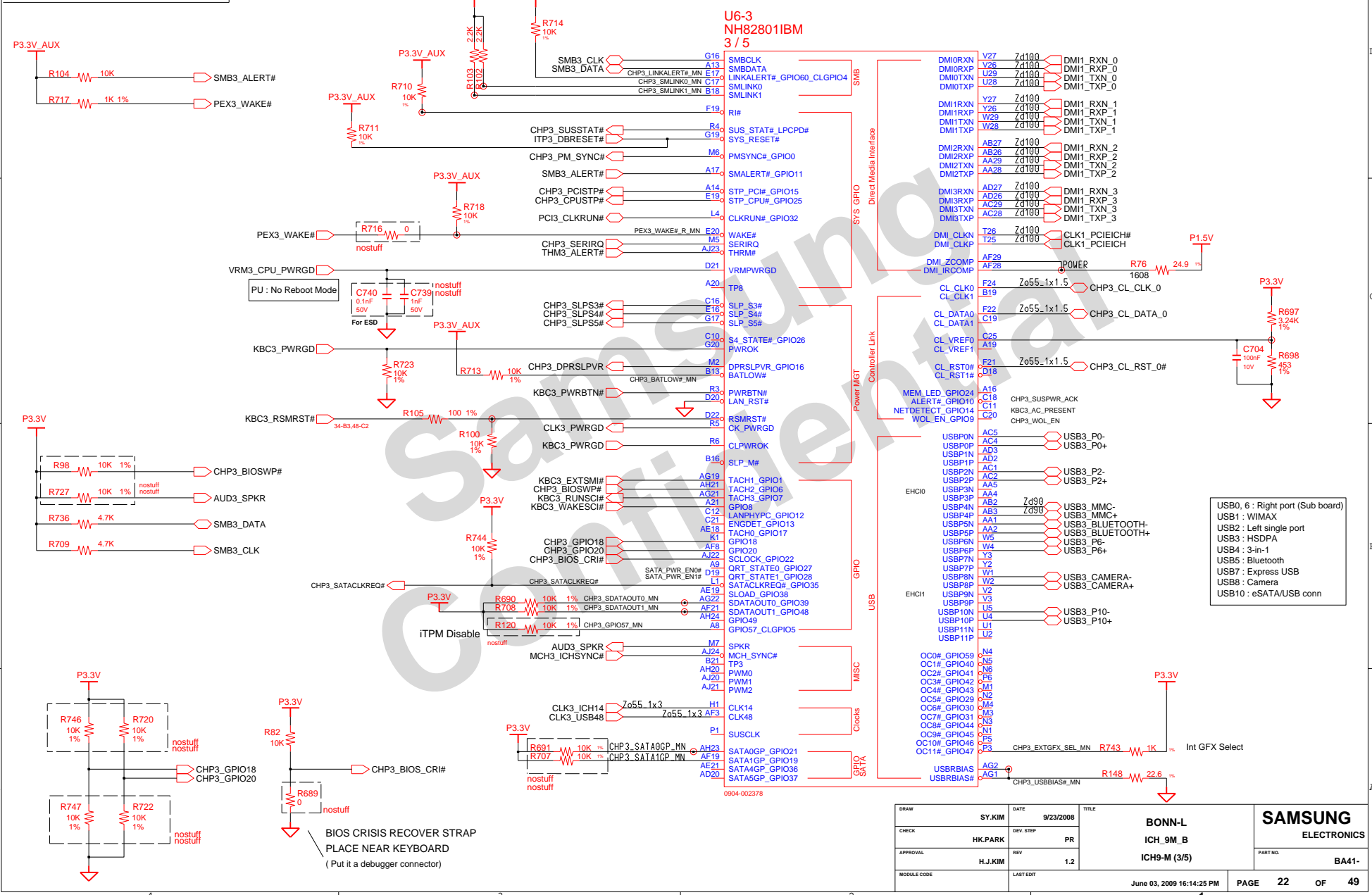


AC caps : PCIE need to be within 250mils of the driver
Resistor for Test : Place Stuffing Option to minimize stubs

DRAW	SY.KIM	DATE	9/23/2008	TITLE	BONN-L	SAMSUNG ELECTRONICS
CHECK	HK.PARK	DEV.STEP	PR		ICH_9M_B	
APPROVAL	H.J.KIM	REV	1.2		ICH9-M (2/5)	PART NO. BA41-
MODULE CODE	undefined	LAST EDIT	June 03, 2009 16:14:25 PM	PAGE	21	OF 49

SAMSUNG PROPRIETARY

THIS DOCUMENT CONTAINS CONFIDENTIAL PROPRIETARY INFORMATION THAT IS SAMSUNG ELECTRONICS CO.'S PROPERTY. DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS EXCEPT AS AUTHORIZED BY SAMSUNG.

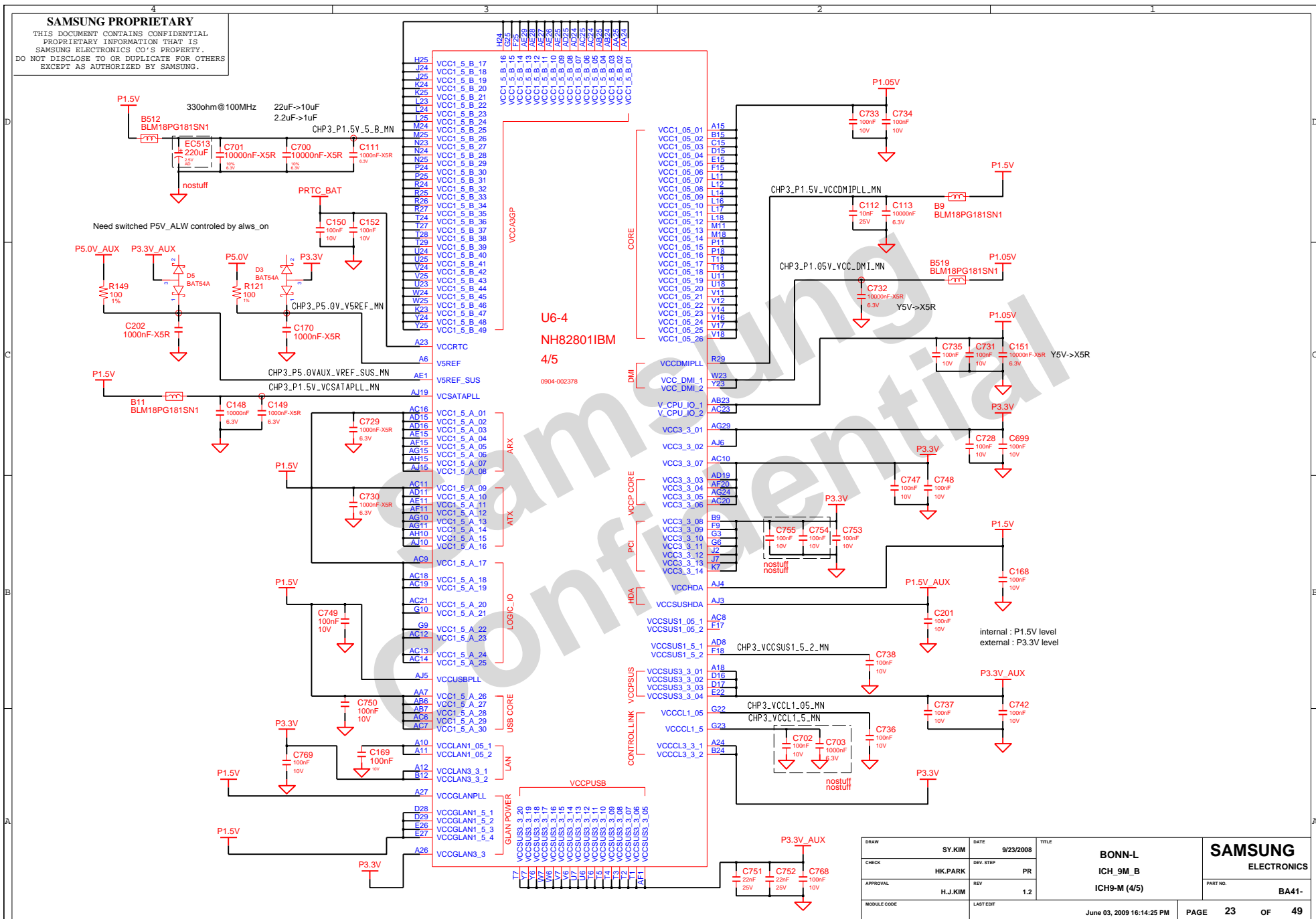


USB0 : Right port (Sub board)
 USB1 : WIMAX
 USB2 : Left single port
 USB3 : HSDPA
 USB4 : 3-in-1
 USB5 : Bluetooth
 USB7 : Express USB
 USB8 : Camera
 USB10 : eSATA/USB conn

DRAW	SY.KIM	DATE	9/23/2008	TITLE	BONN-L	SAMSUNG ELECTRONICS
CHECK	HK.PARK	DEV.STEP	PR		ICH_9M_B	
APPROVAL	H.J.KIM	REV	1.2		ICH9-M (3/5)	PART NO. BA41-
MODULE CODE		LAST EDIT				
				June 03, 2009 16:14:25 PM	PAGE	22 OF 49

SAMSUNG PROPRIETARY

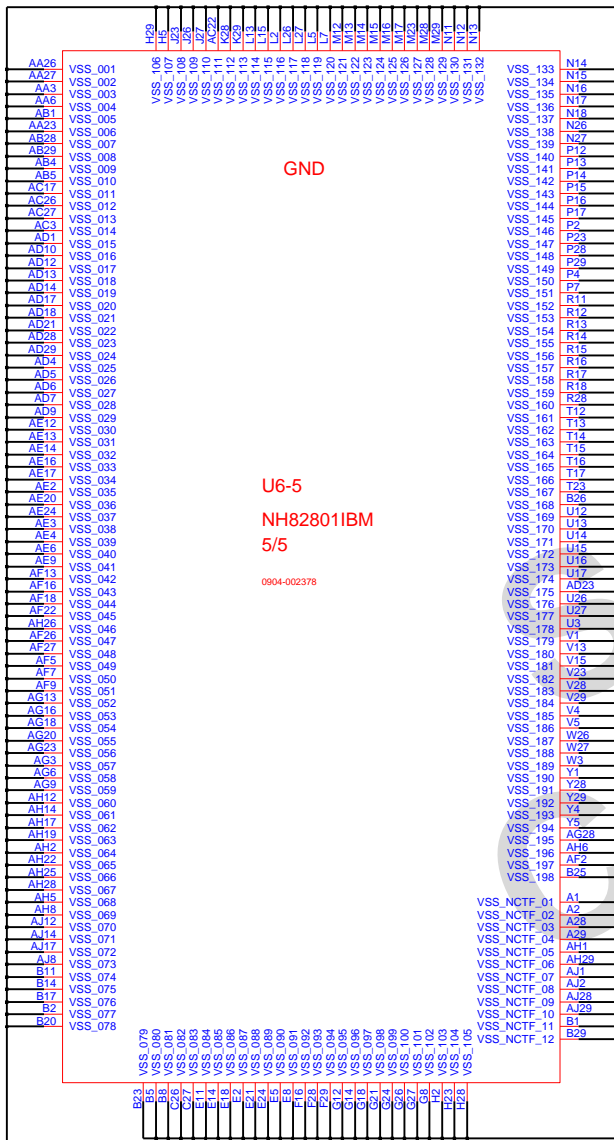
THIS DOCUMENT CONTAINS CONFIDENTIAL PROPRIETARY INFORMATION THAT IS SAMSUNG ELECTRONICS CO.'S PROPERTY. DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS EXCEPT AS AUTHORIZED BY SAMSUNG.



DRAW	SY.KIM	DATE	9/23/2008	TITLE	BONN-L ICH_9M_B ICH9-M (4/5)	SAMSUNG ELECTRONICS PART NO. BA41-	
CHECK	HK.PARK	DEV.STEP	PR				
APPROVAL	H.J.KIM	REV	1.2				
MODULE CODE		LAST EDIT					
June 03, 2009 16:14:25 PM				PAGE	23	OF	49

SAMSUNG PROPRIETARY

THIS DOCUMENT CONTAINS CONFIDENTIAL PROPRIETARY INFORMATION THAT IS SAMSUNG ELECTRONICS CO.'S PROPERTY. DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS EXCEPT AS AUTHORIZED BY SAMSUNG.



GND

U6-5
NH828011BM
5/5

0904-002378

Samsung
Confidential

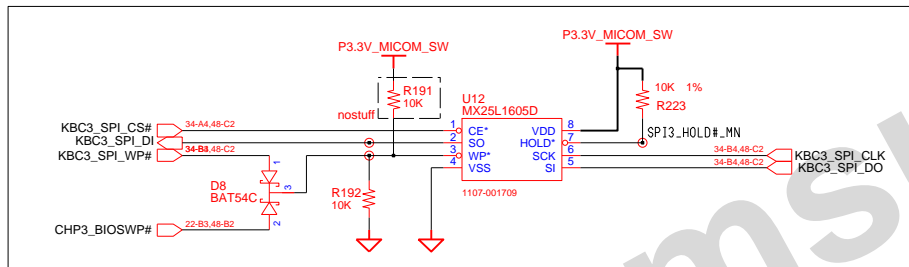
DRAW	SY.KIM	DATE	9/23/2008	TITLE	BONN-L ICH_9M_B	SAMSUNG ELECTRONICS
CHECK	HK.PARK	DEV.STEP	PR		ICH9-M (5/5)	
APPROVAL	H.J.KIM	REV	1.2			PART NO. BA41-
MODULE CODE		LAST EDIT		June 03, 2009 16:14:25 PM	PAGE 24 OF 49	

SAMSUNG PROPRIETARY

THIS DOCUMENT CONTAINS CONFIDENTIAL PROPRIETARY INFORMATION THAT IS SAMSUNG ELECTRONICS CO'S PROPERTY. DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS EXCEPT AS AUTHORIZED BY SAMSUNG.

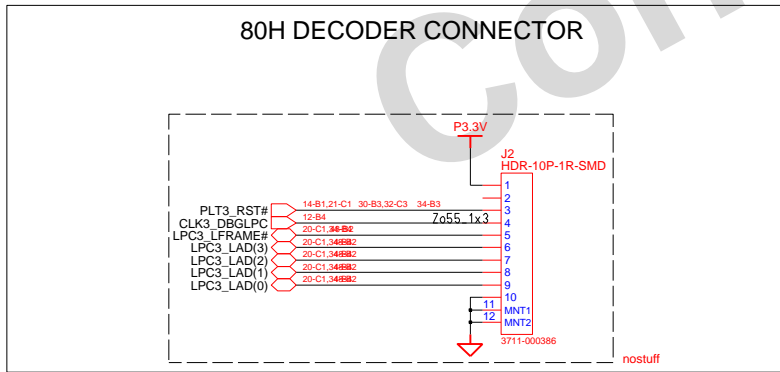
SPI_BIOS_ROM

16MBit



02	VERIFY REAL MODE	66	CONFIGURE ADVANCE CACHE REG.
03	DISABLE NMI	6A	DISPLAY EXTERNAL CACHE SIZE
04	GET CPU TYPE	6C	DISPLAY SHADOW MESSAGE
06	INIT SYSTEM H/W	6E	DISPLAY NON-DISPOSABLE SEGMENT
08	INIT CHIPSET REG.	70	DISPLAY ERROR MESSAGE
09	SET IN POST FLAG	72	CHECK FOR CONFIGURATION ERROR
0A	INIT CPU REG	74	TEST REAL-TIME CLOCK
0B	CPU CACHE ON	76	CHECK FOR KEYBOARD ERROR
0C	INIT CACHE TO POST	7C	SETUP HARDWARE INTERRUPT VECTOR
0E	INIT I/O VALUE	7E	TEST COPROCESSER IF PRESENT
0F	ENABLE THE L-BUS IDE	80	DISABLE ON-BOARD I/O PORT
10	INIT. POWER MANAGER	82	DETECT AND INSTALL EXT RS232C
11	LOAD ALTERNATE REG	84	DETECT AND INSTALL EXT PARALLEL
13	PCI BUS MASTER RESET	86	RE-INIT. ON-BOARD I/O PORT
		88	INIT. BIOS DATA ROM
	WITH INITIAL POST VALUE	8A	INIT. EXTENDED BIOS DATA AREA
14	INIT. KEYBOARD CONTROLLER	8C	INIT. FDD CONTROLLER
16	CHECK CHECKSUM	8E	SHADOW OPTION ROMS
18	8254 TIMER INIT	9A	SETUP POWER MANAGEMENT
1A	8237 DMA CONTROLLER INIT.	9E	ENABLE H/W INTERRUPT
1C	RESET INTERRUPT CONTROLLER	A0	SET TIME OF DAY
20	TEST DRAM REFRESH	A4	INIT. TYPEMATIC RATE
22	TEST 8742 KEYBOARD CONTROLLER	A8	ERASE F2 PROMPT
24	SET ES SEGMENT REG. TO 4GB	AA	SCAN FOR F2 KEY STROKE
26	ENABLE A20	AC	ENTER SETUP
28	AUTO SIZING DRAM	AE	CLEAR IN POST FLAG
32	COMPUTE THE CPU SPEED	B0	CHECK FOR ERRORS
34	TEST CMOS RAM	B2	POST DONE-PREPARE TO BOOT O/S
38	SHADOW SYSTEM BIOS ROM	B4	ONE BEEP
3A	AUTO SIZING CACHE	B6	CHECK PASSWORD (OPTION)
3C	CONFIGURE ADVANCED CHIPSET REG.	B7	ACPI INIT
3D	LOAD ALTER REG. WITH CMOS VALUE	BA	DMI INIT
42	INIT. INTERRUPT VECTOR	BE	CLEAR SCREEN
44	INIT. BIOS INTERRUPT	C0	TRY BOOT WITH INT19
46	CHECK ROM COPYRIGHT NOTICE	D0	INTERRUPT HANDLER ERROR
47	INIT. A20 SUPPORT IF INSTALLED	D2	UNKNOWN INTERRUPT ERROR
48	CHECK VIDEO CONFIGURE AGAINST CMOS	D4	PENDING INTERRUPT ERROR
49	INIT. PCI BUS AND DEVICE	D6	SHUTDOWN 5
4A	INIT. ALL VIDEO BIOS ROM	D8	SHUTDOWN ERROR
4C	SHADOW VIDEO BIOS ROM	DA	EXTENDED BLOCK MOVE
50	DISPLAY CPU TYPE AND SPEED	DC	SHUTDOWN 10
52	TEST KEYBOARD	D9	ENABLE NMI
54	SET KEY CLICK IF ENABLED	90	INIT. HDD CONTROLLER
56	ENABLE KEYBOARD	91	INIT. LOCAL BUS HDD CONTROLLER
58	TEST FOR UNEXPECTED INTERRUPTS	92	JUMP TO USER PATCH 2
5A	DISPLAY PRESS SETUP	94	DISABLE A20 ADDRESS LINE
5C	TEST RAM BETWEEN 812K AND 640K	96	CLEAR HUGE ES SEGMENT REG.
60	TEST EXTENDED MEMORY	98	SEARCH FOR OPTION ROMS
62	TEST EXTENDED MEMORY ADDRESS LINE		
64	JUMP TO USER PATCH 1		

80H DECODER CONNECTOR



80port will be removed in MP stage.

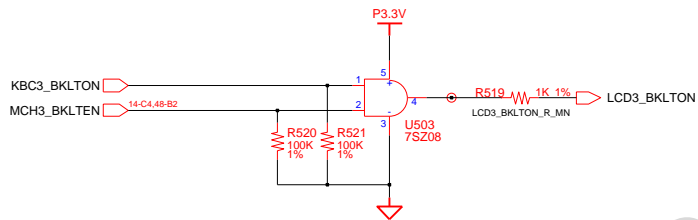
DRAW	SY.KIM	DATE	9/23/2008	TITLE	BONN-L	SAMSUNG ELECTRONICS PART NO. BA41-
CHECK	HK.PARK	DEV.STEP	PR	SPI_BIOS_ROM		
APPROVAL	H.J.KIM	REV	1.2	SPI_BIOS_ROM		
MODULE CODE		LAST EDIT			June 03, 2009 16:14:25 PM	PAGE 25 OF 49

SAMSUNG PROPRIETARY

THIS DOCUMENT CONTAINS CONFIDENTIAL PROPRIETARY INFORMATION THAT IS SAMSUNG ELECTRONICS CO.'S PROPERTY. DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS EXCEPT AS AUTHORIZED BY SAMSUNG.

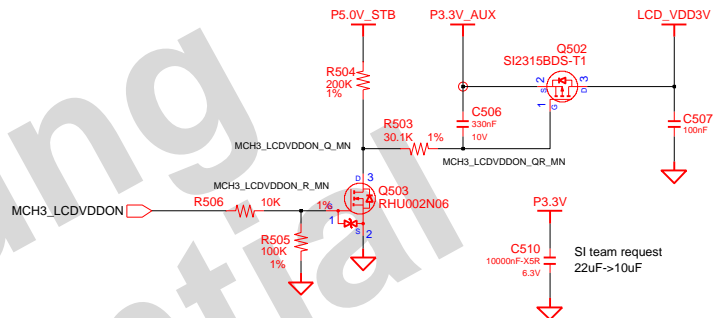
LVDS

Backlight On

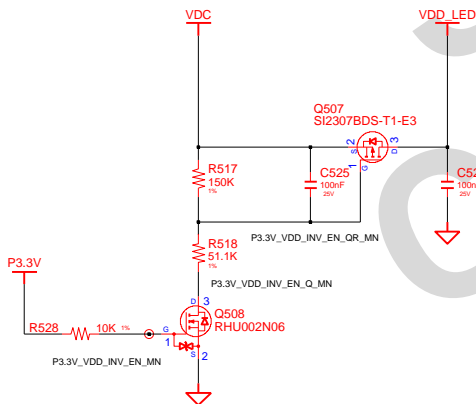


LCD Power

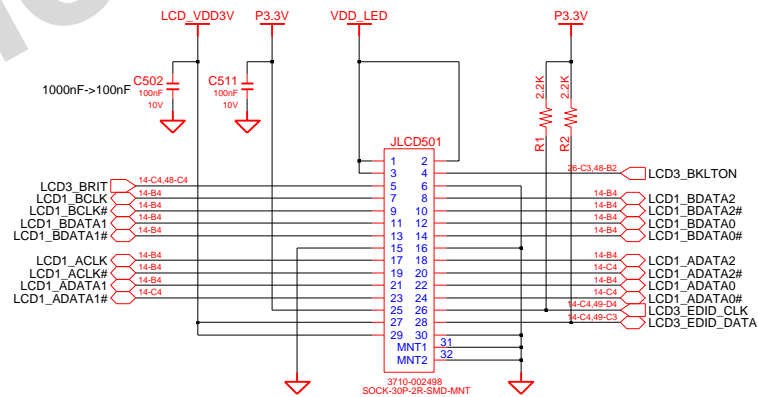
EBL Purpose



LED Power



2Ch. LCD Connector



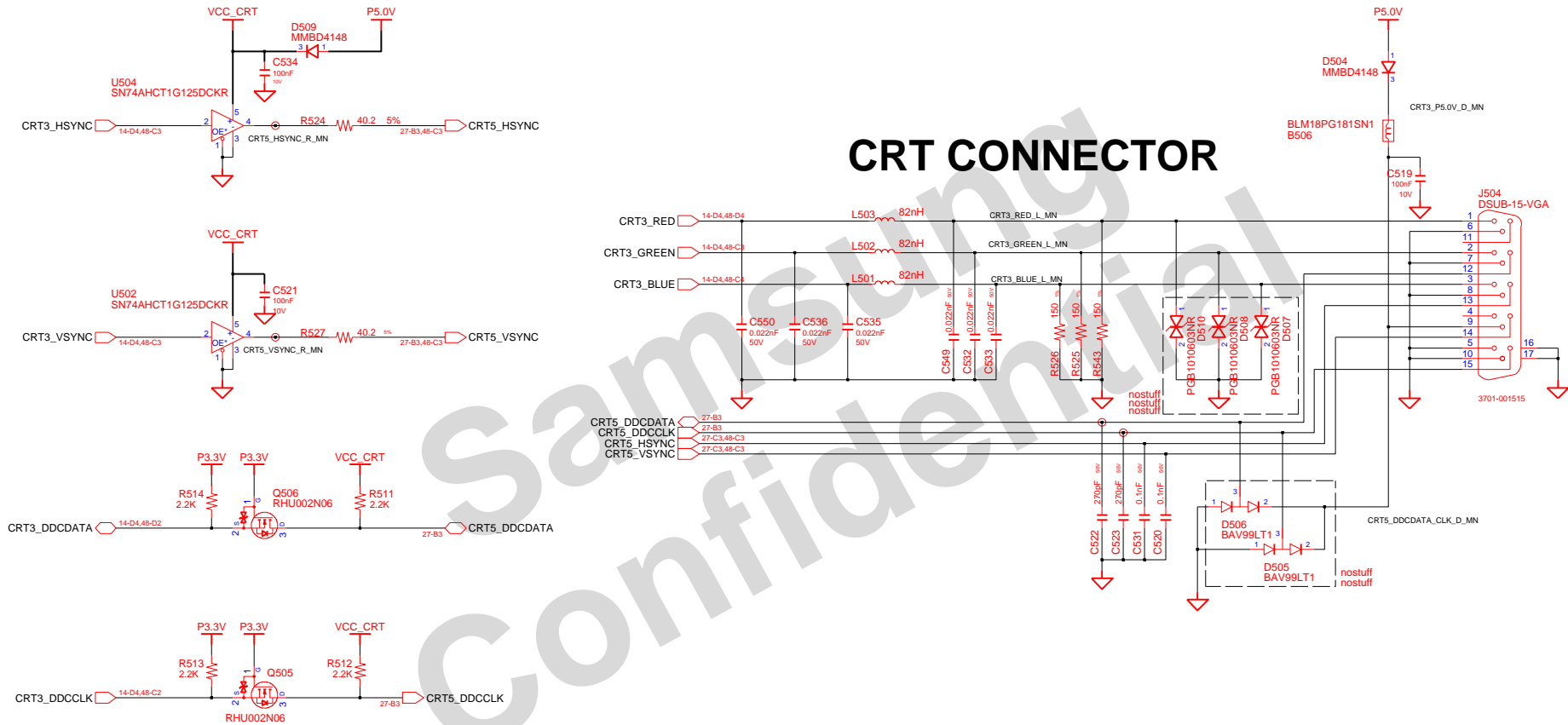
DESIGN	SY.KIM	DATE	9/23/2008	TITLE	BONN-L	SAMSUNG ELECTRONICS
CHECK	HK.PARK	DEV.STEP	PR	GRAPHICS_IF	PART NO.	
APPROVAL	H.J.KIM	REV	1.2	LVDS	BA41-	
MODULE CODE		LAST EDIT		June 03, 2009 16:14:25 PM	PAGE 26 OF 49	

SAMSUNG PROPRIETARY

THIS DOCUMENT CONTAINS CONFIDENTIAL PROPRIETARY INFORMATION THAT IS SAMSUNG ELECTRONICS CO.'S PROPERTY. DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS EXCEPT AS AUTHORIZED BY SAMSUNG.

CRT

CRT CONNECTOR



Check "CRT3_DDCCLK/DATA" Voltage Level
2N06 Can be replaced with SM6K2

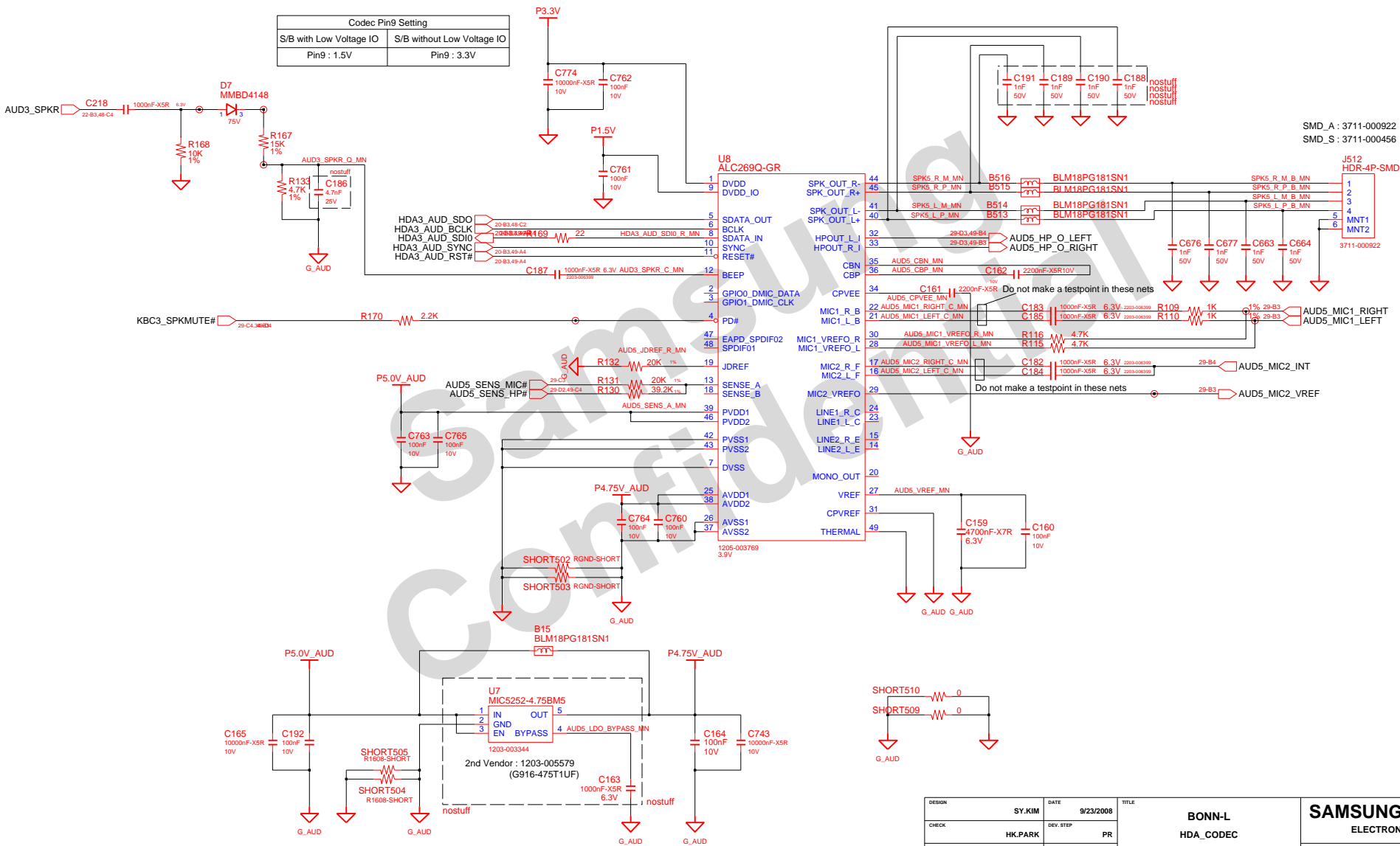
DESIGN	SY.KIM	DATE	9/23/2008	TITLE	BONN-L	SAMSUNG ELECTRONICS
CHECK	HK.PARK	DEV.STEP	PR	GRAPHICS_IF	PART NO.	
APPROVAL	H.J.KIM	REV	1.2	CRT	BA41-	
MODULE CODE		LAST EDIT		June 03, 2009 16:14:25 PM	PAGE	27 OF 49

SAMSUNG PROPRIETARY

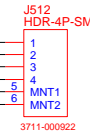
THIS DOCUMENT CONTAINS CONFIDENTIAL PROPRIETARY INFORMATION THAT IS SAMSUNG ELECTRONICS CO.'S PROPERTY. DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS EXCEPT AS AUTHORIZED BY SAMSUNG.

AUdio Codec (ALC269)

Codec Pin9 Setting	
S/B with Low Voltage IO	S/B without Low Voltage IO
Pin9 : 1.5V	Pin9 : 3.3V



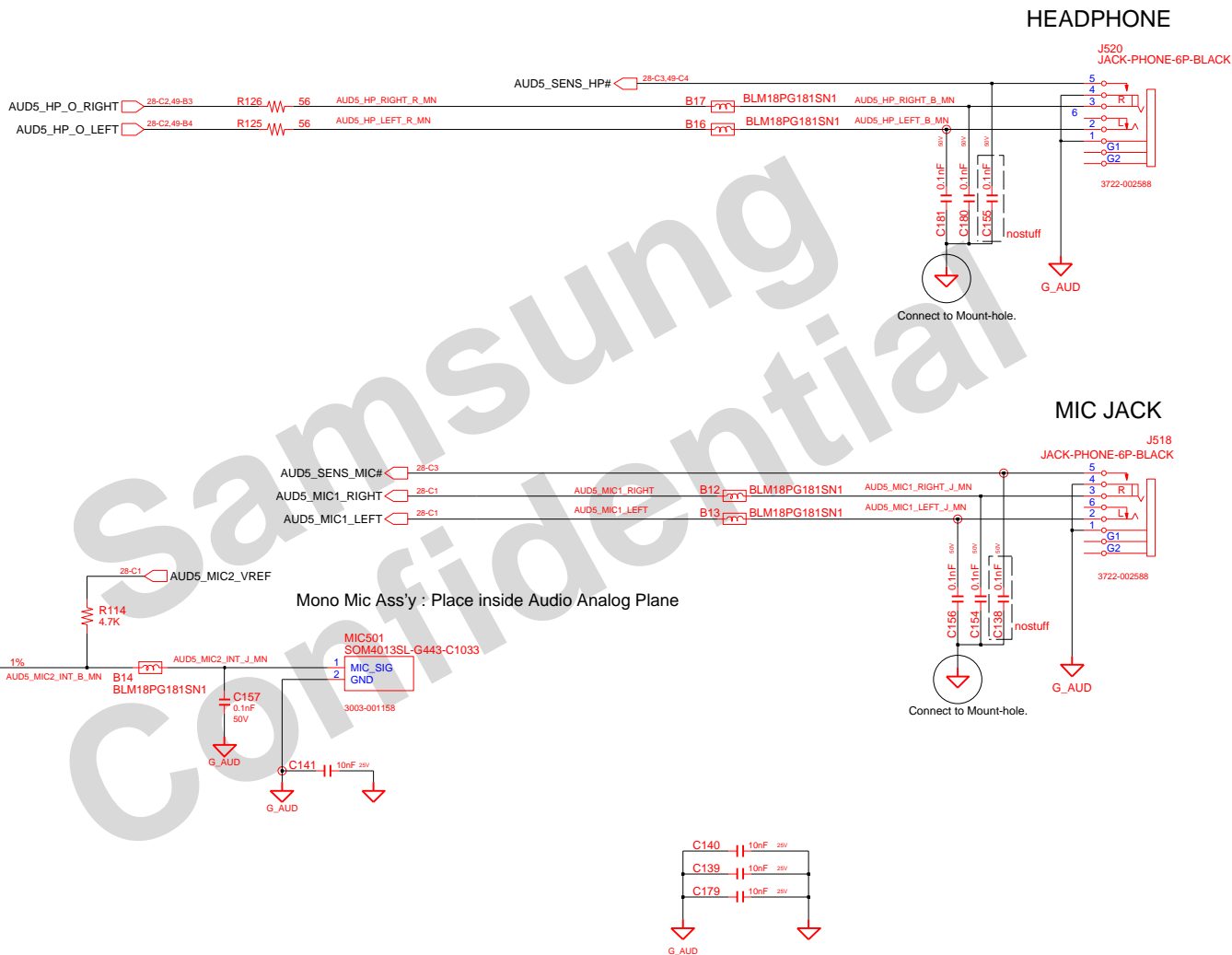
SMD_A : 3711-000922
SMD_S : 3711-000456



DESIGN	SY.KIM	DATE	9/23/2008	TITLE	BONN-L	SAMSUNG ELECTRONICS	
CHECK	HK.PARK	DEV.STEP	PR		HDA_CODEC		PART NO.
APPROVAL	H.J.KIM	REV	1.2		AUDIO CODEC ALC269_GR	BA41-	
MODULE CODE		LAST EDIT					
June 03, 2009 16:14:25 PM						PAGE	28 OF 49

SAMSUNG PROPRIETARY

THIS DOCUMENT CONTAINS CONFIDENTIAL PROPRIETARY INFORMATION THAT IS SAMSUNG ELECTRONICS CO.'S PROPERTY. DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS EXCEPT AS AUTHORIZED BY SAMSUNG.

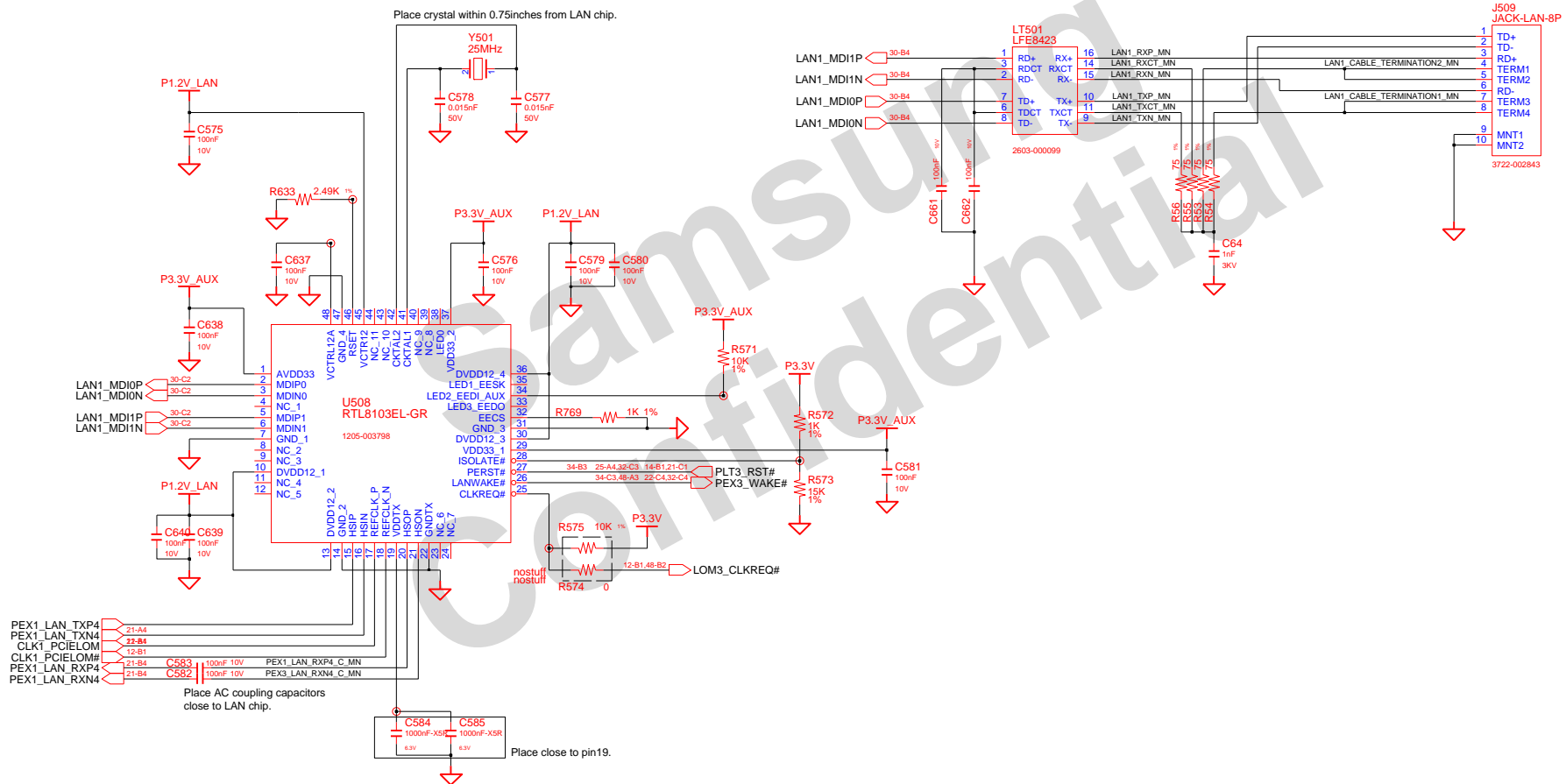


DESIGN	SY.KIM	DATE	9/23/2008	TITLE	BONN-L	SAMSUNG ELECTRONICS
CHECK	HK.PARK	DEV.STEP	PR		HDA_CODEC	
APPROVAL	H.J.KIM	REV	1.2		AUDIO INPUT/OUTPUT	PART NO. BA41-
MODULE CODE		LAST EDIT				
					June 03, 2009 16:14:25 PM	PAGE 29 OF 49

SAMSUNG PROPRIETARY

THIS DOCUMENT CONTAINS CONFIDENTIAL PROPRIETARY INFORMATION THAT IS SAMSUNG ELECTRONICS CO.'S PROPERTY. DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS EXCEPT AS AUTHORIZED BY SAMSUNG.

LAN Controller (RTL8103EL)

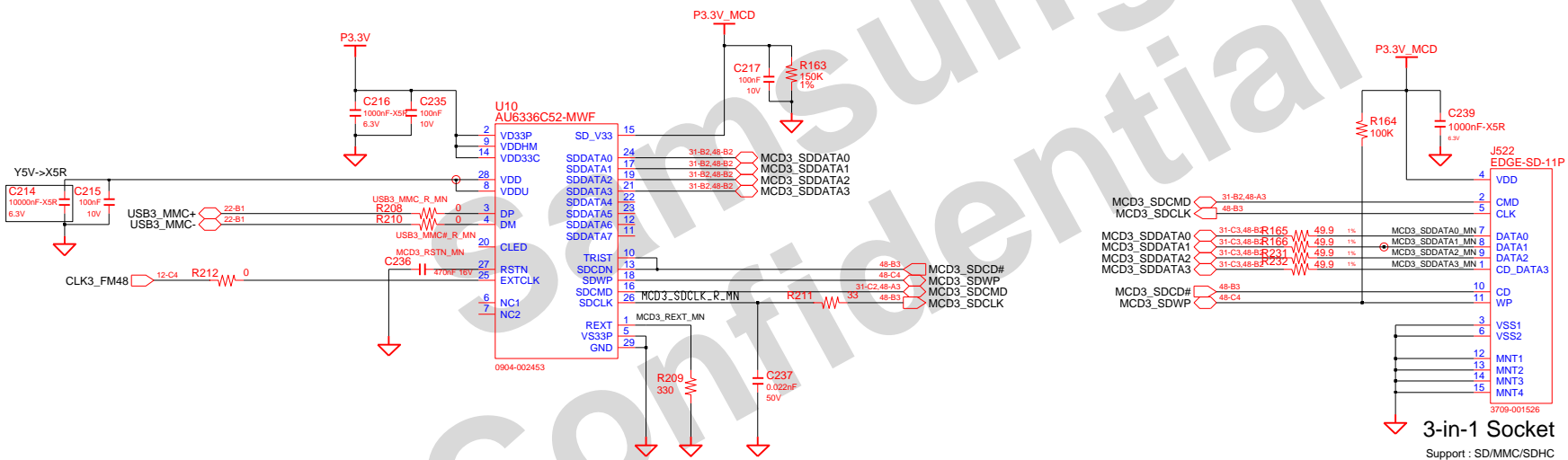


DESIGN	SY.KIM	DATE	9/23/2008	TITLE	BONN-L	SAMSUNG ELECTRONICS
CHECK	HK.PARK	DEV.STEP	PR	LAN		
APPROVAL	H.J.KIM	REV	1.2	LAN_MARVELL_8057		PART NO. BA41-
MODULE CODE		LAST EDIT		June 03, 2009 16:14:25 PM		PAGE 30 OF 49

SAMSUNG PROPRIETARY

THIS DOCUMENT CONTAINS CONFIDENTIAL PROPRIETARY INFORMATION THAT IS SAMSUNG ELECTRONICS CO.'S PROPERTY. DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS EXCEPT AS AUTHORIZED BY SAMSUNG.

3 IN 1 CARD (AU6336)



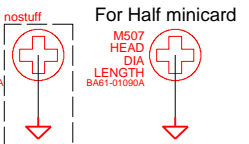
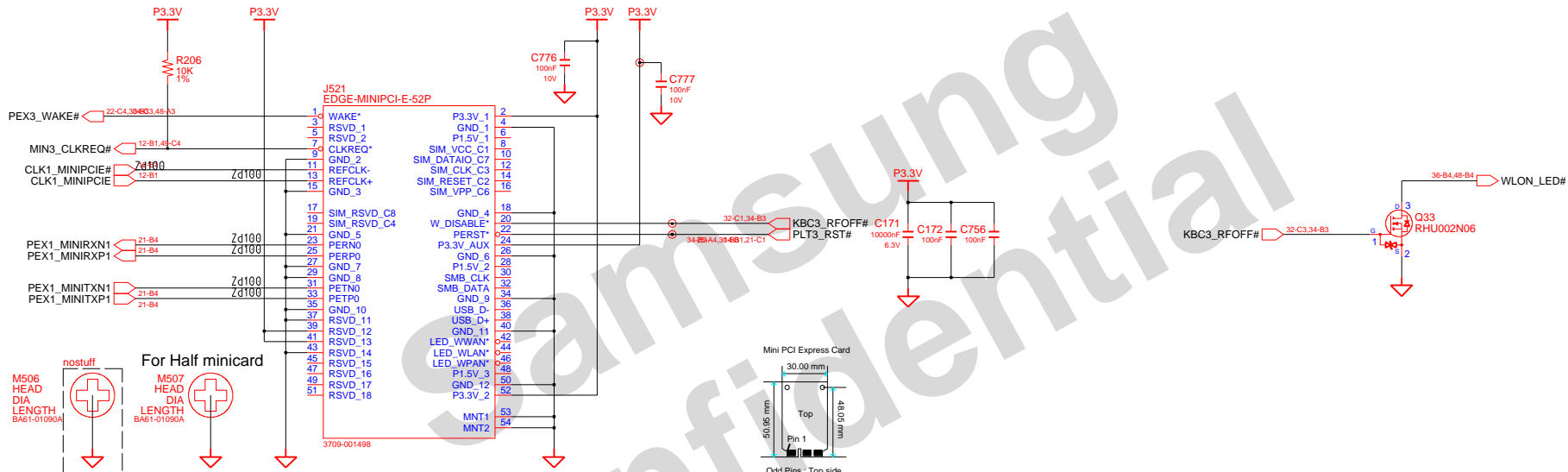
DESIGN	SY.KIM	DATE	9/23/2008	TITLE	BONN-L	SAMSUNG ELECTRONICS PART NO. BA41-
CHECK	HK.PARK	DEV.STEP	PR		MULTICARD	
APPROVAL	H.J.KIM	REV	1.2		2 IN 1 CARD	
MODULE CODE		LAST EDIT	June 03, 2009 16:14:25 PM	PAGE	31 OF 49	

SAMSUNG PROPRIETARY

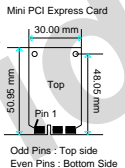
THIS DOCUMENT CONTAINS CONFIDENTIAL PROPRIETARY INFORMATION THAT IS SAMSUNG ELECTRONICS CO.'S PROPERTY. DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS EXCEPT AS AUTHORIZED BY SAMSUNG.

Wireless LAN

WLAN, 4mm



PEM : WLAN minicard + Half minicard



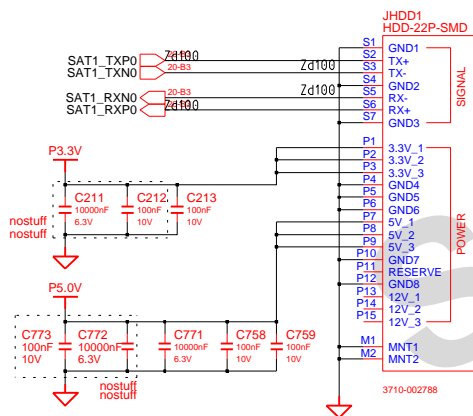
DESIGN	SY.KIM	DATE	9/23/2008	TITLE	BONN-L	SAMSUNG ELECTRONICS
CHECK	HK.PARK	DEV.STEP	PR		MINI_PCIE_CONN	
APPROVAL	H.J.KIM	REV	1.2		WLAN & HSDPA & SIM CARD	PART NO. BA41-
MODULE CODE		LAST EDIT			June 03, 2009 16:14:25 PM	PAGE 32 OF 49

SAMSUNG PROPRIETARY

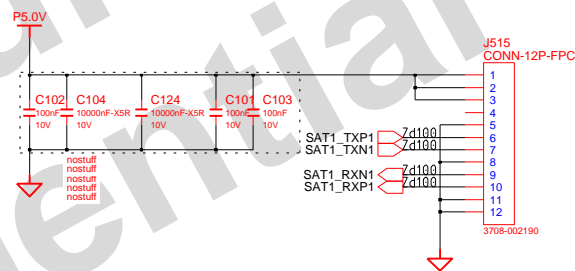
THIS DOCUMENT CONTAINS CONFIDENTIAL PROPRIETARY INFORMATION THAT IS SAMSUNG ELECTRONICS CO.'S PROPERTY. DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS EXCEPT AS AUTHORIZED BY SAMSUNG.

SATA I/F CONN

SATA HDD CONN



MAIN TO SUB SATA ODD CONN

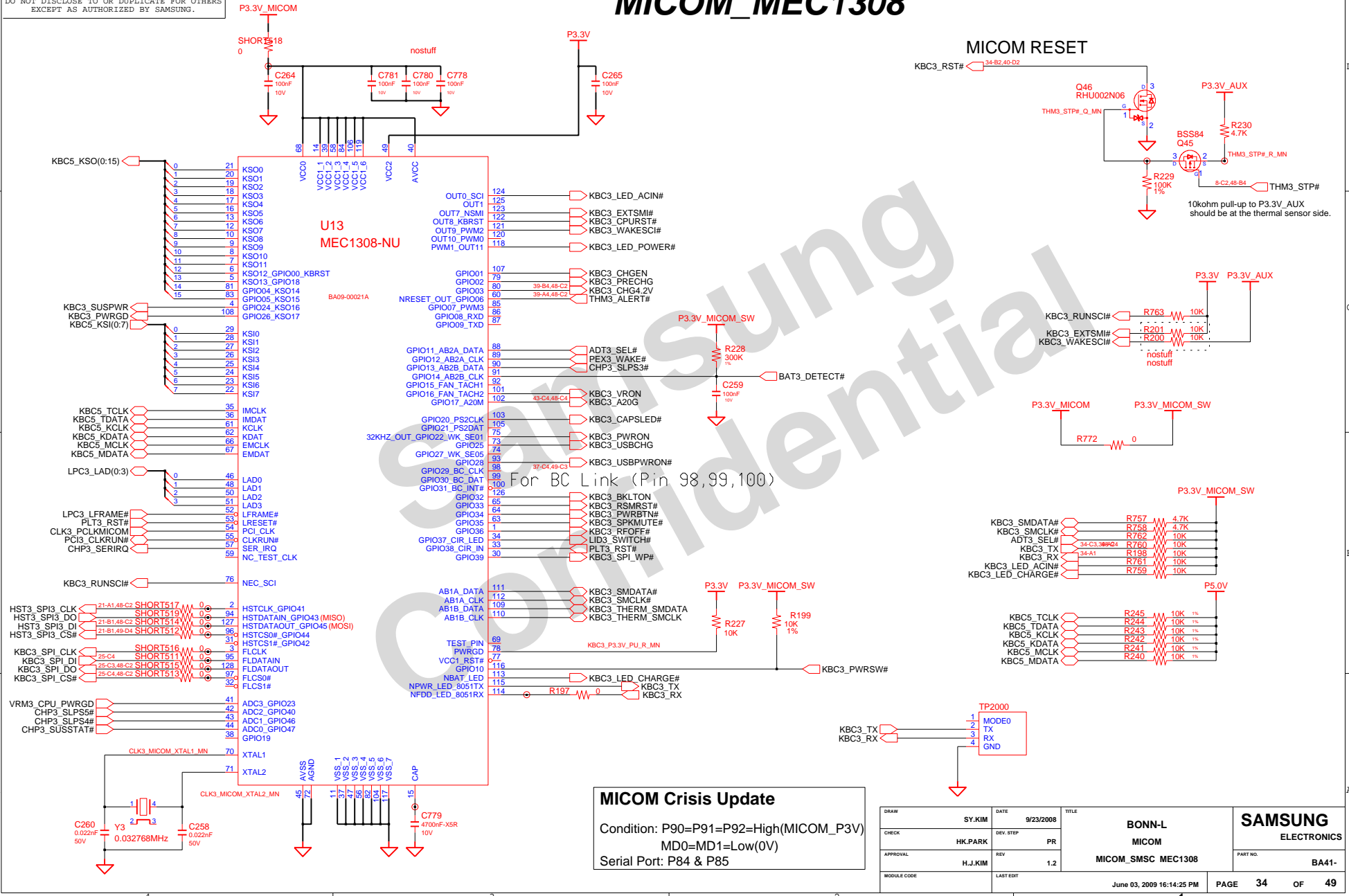


DESIGN	SY.KIM	DATE	9/23/2008	TITLE	BONN-L	SAMSUNG ELECTRONICS
CHECK	HK.PARK	DEV.STEP	PR	SATA_DEVICES	PART NO.	
APPROVAL	H.J.KIM	REV	1.2	HDD & ODD SUB CONNECTOR	BA41-	
MODULE CODE		LAST EDIT	June 03, 2009 16:14:25 PM	PAGE	33	OF 49

SAMSUNG PROPRIETARY

THIS DOCUMENT CONTAINS CONFIDENTIAL PROPRIETARY INFORMATION THAT IS SAMSUNG ELECTRONICS CO.'S PROPERTY. DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS EXCEPT AS AUTHORIZED BY SAMSUNG.

MICOM_MEC1308



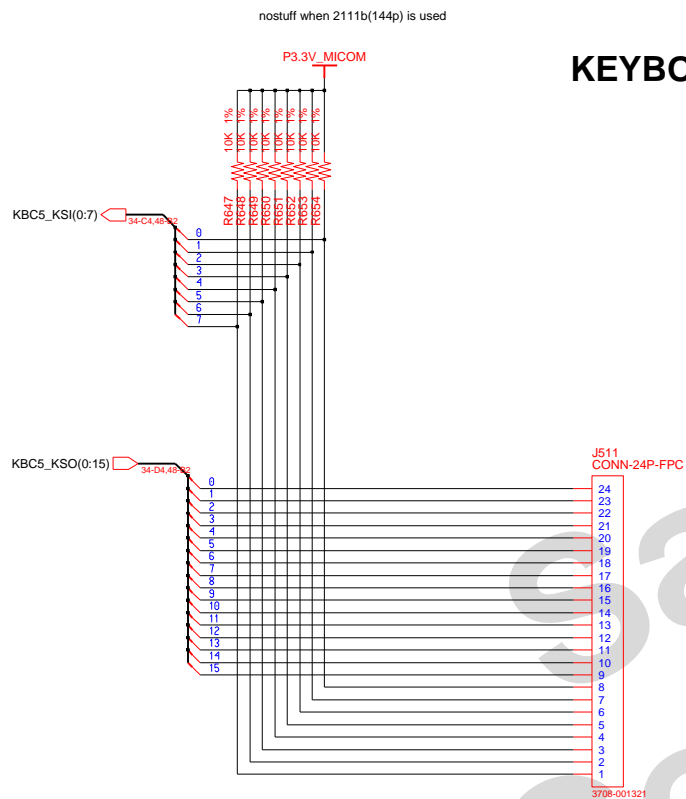
DRAW	SY.KIM	DATE	9/23/2008	TITLE	BONN-L MICOM MICOM_SMSC MEC1308	SAMSUNG ELECTRONICS PART NO. BA41-
CHECK	HK.PARK	DEV.STEP	PR			
APPROVAL	H.J.KIM	REV	1.2			
MODULE CODE		LAST EDIT			June 03, 2009 16:14:25 PM	PAGE 34 OF 49

SAMSUNG PROPRIETARY

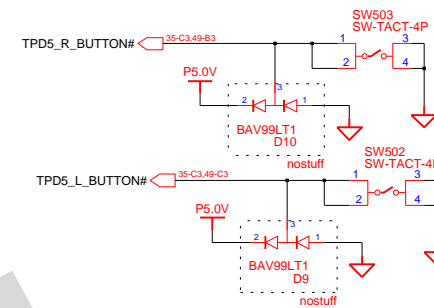
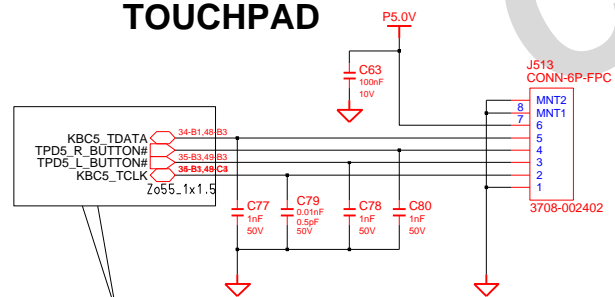
THIS DOCUMENT CONTAINS CONFIDENTIAL PROPRIETARY INFORMATION THAT IS SAMSUNG ELECTRONICS CO.'S PROPERTY. DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS EXCEPT AS AUTHORIZED BY SAMSUNG.

Micom Glue Logic

KEYBOARD

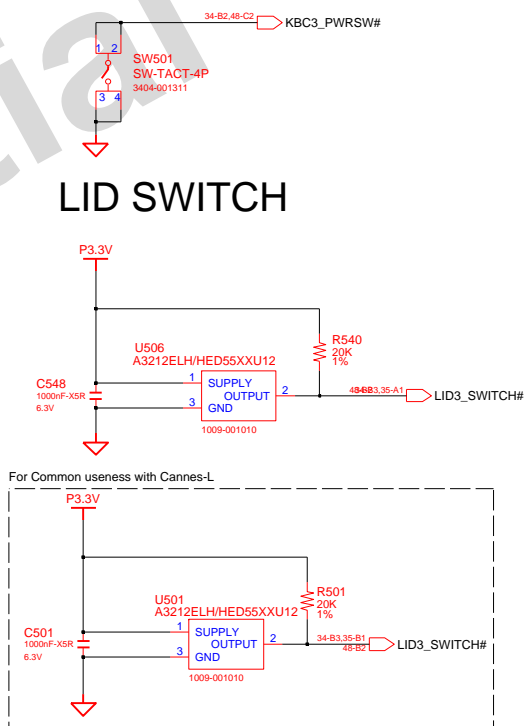


TOUCHPAD



Power Switch Button

LID SWITCH



DESIGN	SY.KIM	DATE	9/23/2008	TITLE	BONN-L	SAMSUNG ELECTRONICS
CHECK	HK.PARK	DEV.STEP	PR	MICOM GLUE LOGIC		
APPROVAL	H.J.KIM	REV	1.2	KEYBOARD & TOUCHPAD		PART NO.
MODULE CODE		LAST EDIT		June 03, 2009 16:14:25 PM	PAGE	35 OF 49

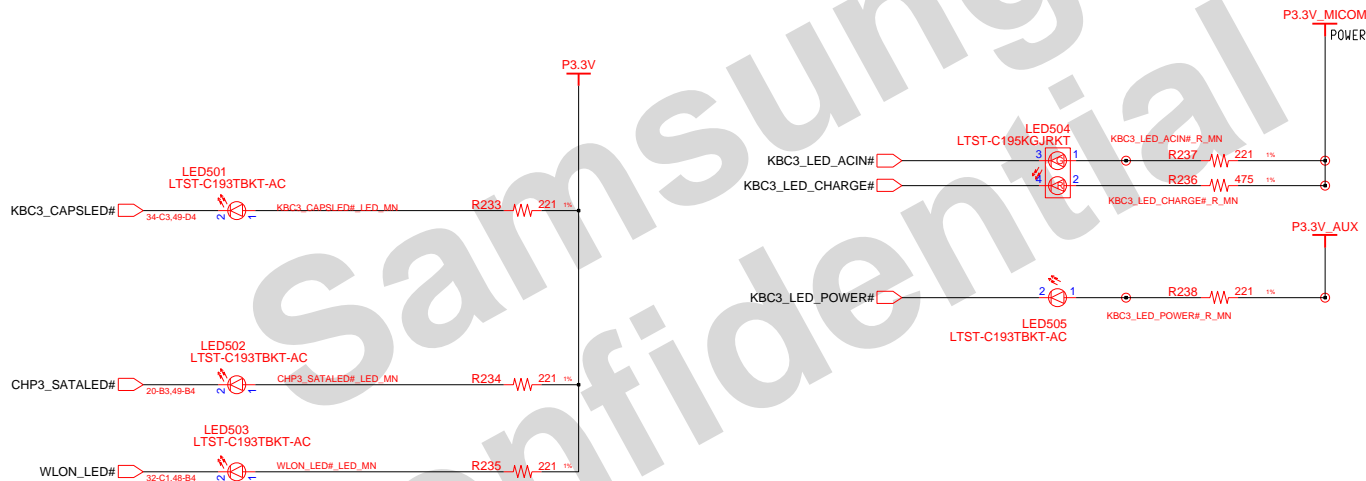
SAMSUNG PROPRIETARY

THIS DOCUMENT CONTAINS CONFIDENTIAL PROPRIETARY INFORMATION THAT IS SAMSUNG ELECTRONICS CO.'S PROPERTY. DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS EXCEPT AS AUTHORIZED BY SAMSUNG.

LEDs

FUNCTION KEY LED

ADAPTERIN/CHARGING LED



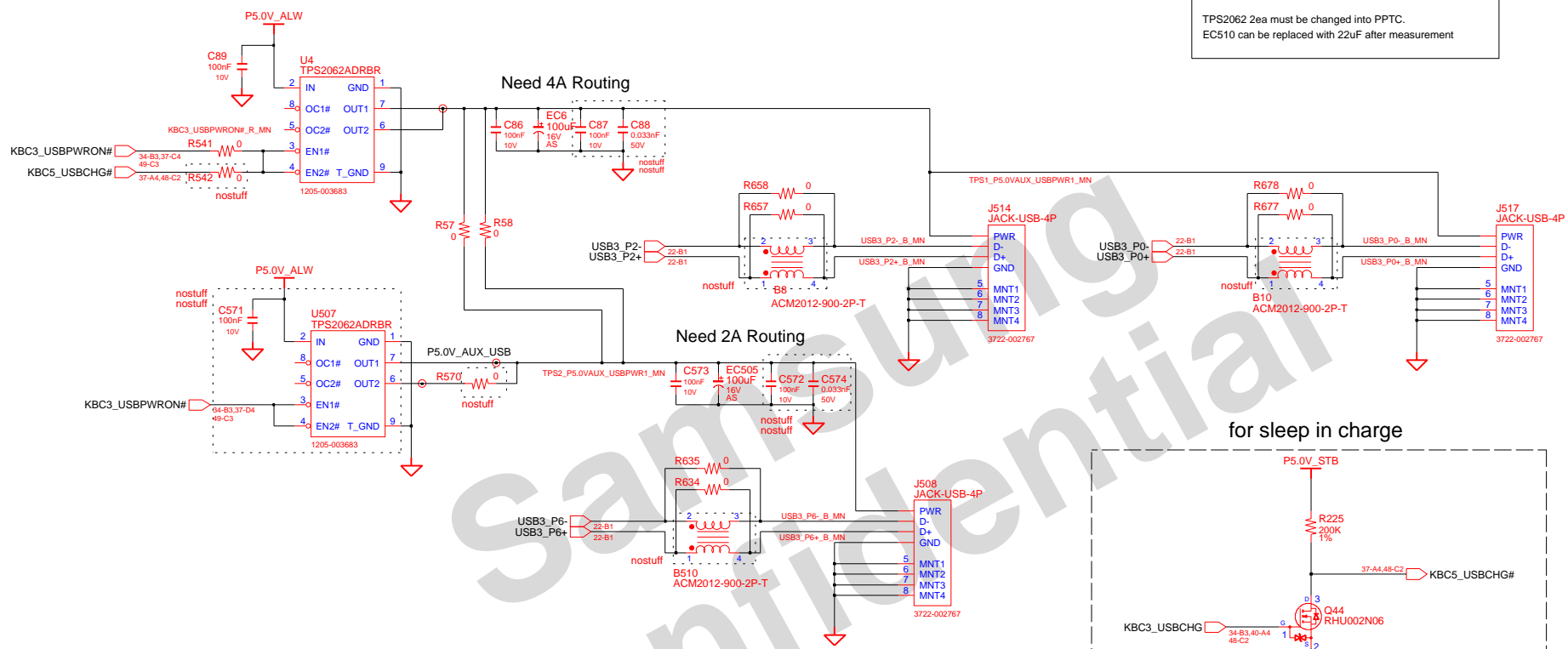
DRAW	SY.KIM	DATE	9/23/2008	TITLE	BONN-L LED_SWITCH LED_SWITCH	SAMSUNG ELECTRONICS
CHECK	HK.PARK	DEV.STEP	PR	PART NO.		
APPROVAL	H.J.KIM	REV	1.2	BA41-		
MODULE CODE		LAST EDIT	June 03, 2009 16:14:25 PM	PAGE 36 OF 49		

SAMSUNG PROPRIETARY

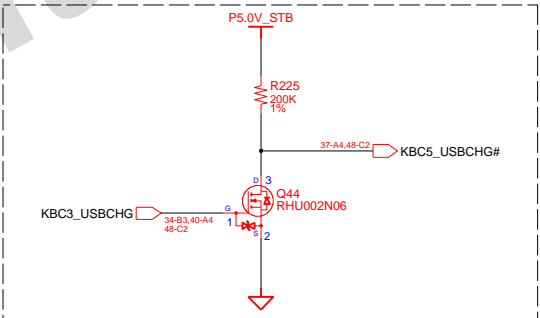
THIS DOCUMENT CONTAINS CONFIDENTIAL PROPRIETARY INFORMATION THAT IS SAMSUNG ELECTRONICS CO.'S PROPERTY. DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS EXCEPT AS AUTHORIZED BY SAMSUNG.

USB Single connector X 3 (Left)

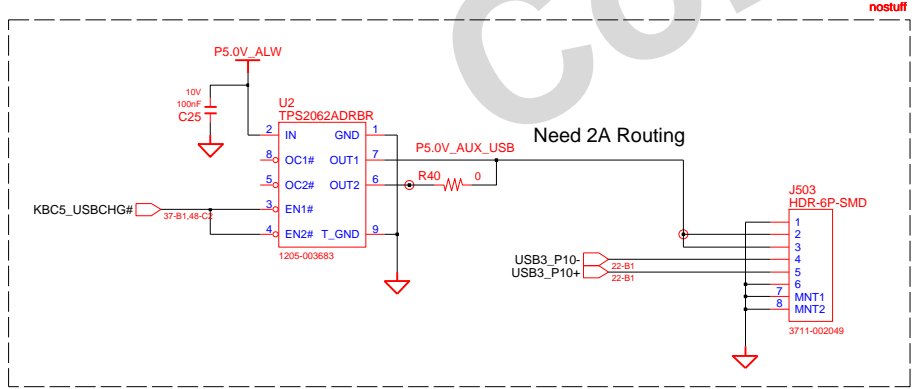
TPS2062 2ea must be changed into PPTC.
EC510 can be replaced with 22uF after measurement



for sleep in charge



USB SUB B'D CONNECTOR



DESIGN	SY.KIM	DATE	9/23/2008	TITLE	BONN-L USB_CONN	SAMSUNG ELECTRONICS
CHECK	HK.PARK	DEV.STEP	PR			
APPROVAL	H.J.KIM	REV	1.2		USB & eSATA	PART NO. BA41-
MODULE CODE		LAST EDIT				
				June 03, 2009 16:14:25 PM	PAGE	37 OF 49

SAMSUNG PROPRIETARY

THIS DOCUMENT CONTAINS CONFIDENTIAL PROPRIETARY INFORMATION THAT IS SAMSUNG ELECTRONICS CO.'S PROPERTY. DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS EXCEPT AS AUTHORIZED BY SAMSUNG.

USB I/F Devices

Bluetooth Interface

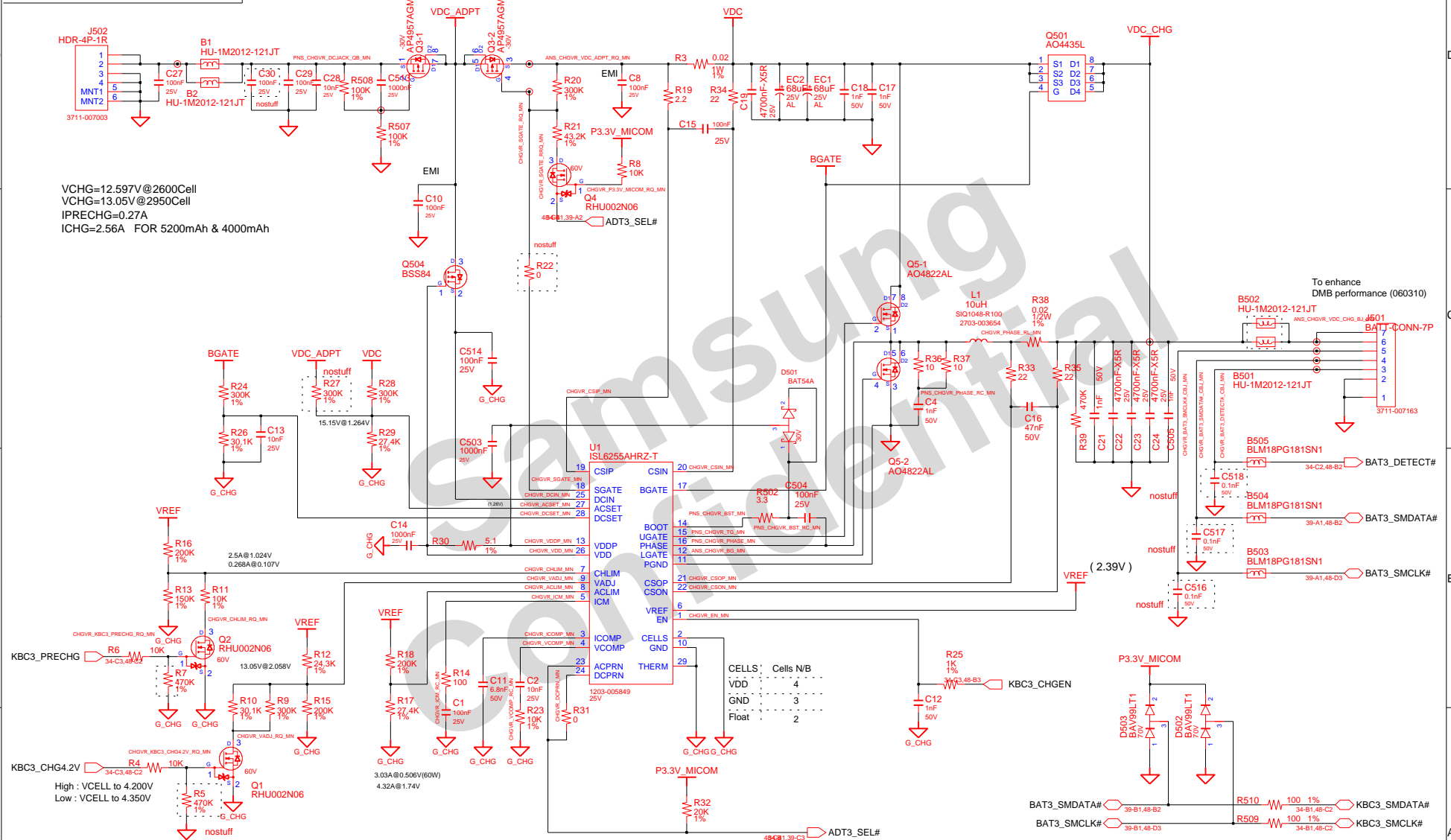
CAMERA



DESIGN	SY.KIM	DATE	9/23/2008	TITLE	BONN-L USB_DEVICES	SAMSUNG ELECTRONICS
CHECK	HK.PARK	DEV.STEP	PR			
APPROVAL	H.J.KIM	REV	1.2		BLUETOOTH & CAMERA	PART NO. BA41-
MODULE CODE		LAST EDIT		June 03, 2009 16:14:25 PM	PAGE 38 OF 49	

SAMSUNG PROPRIETARY
 THIS DOCUMENT CONTAINS CONFIDENTIAL
 PROPRIETARY INFORMATION THAT IS
 SAMSUNG ELECTRONICS CO.'S PROPERTY.
 DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
 EXCEPT AS AUTHORIZED BY SAMSUNG.

CHARGE & POWER MANAGEMENT



VCHG=12.597V @2600Cell
 VCHG=13.05V @2950Cell
 IPRECHG=0.27A
 ICHG=2.56A FOR 5200mAh & 4000mAh

To enhance
 DMB performance (060310)

Adapter configuration				
60W / 3.03A / 96%		90W / 4.32A / 91.2%		
Value	SEC Code	Value	SEC Code	
Rtop	200K	2007-007334	10K	2007-007142
Rbot	27.4K	2007-007274	30.1K	2007-002910

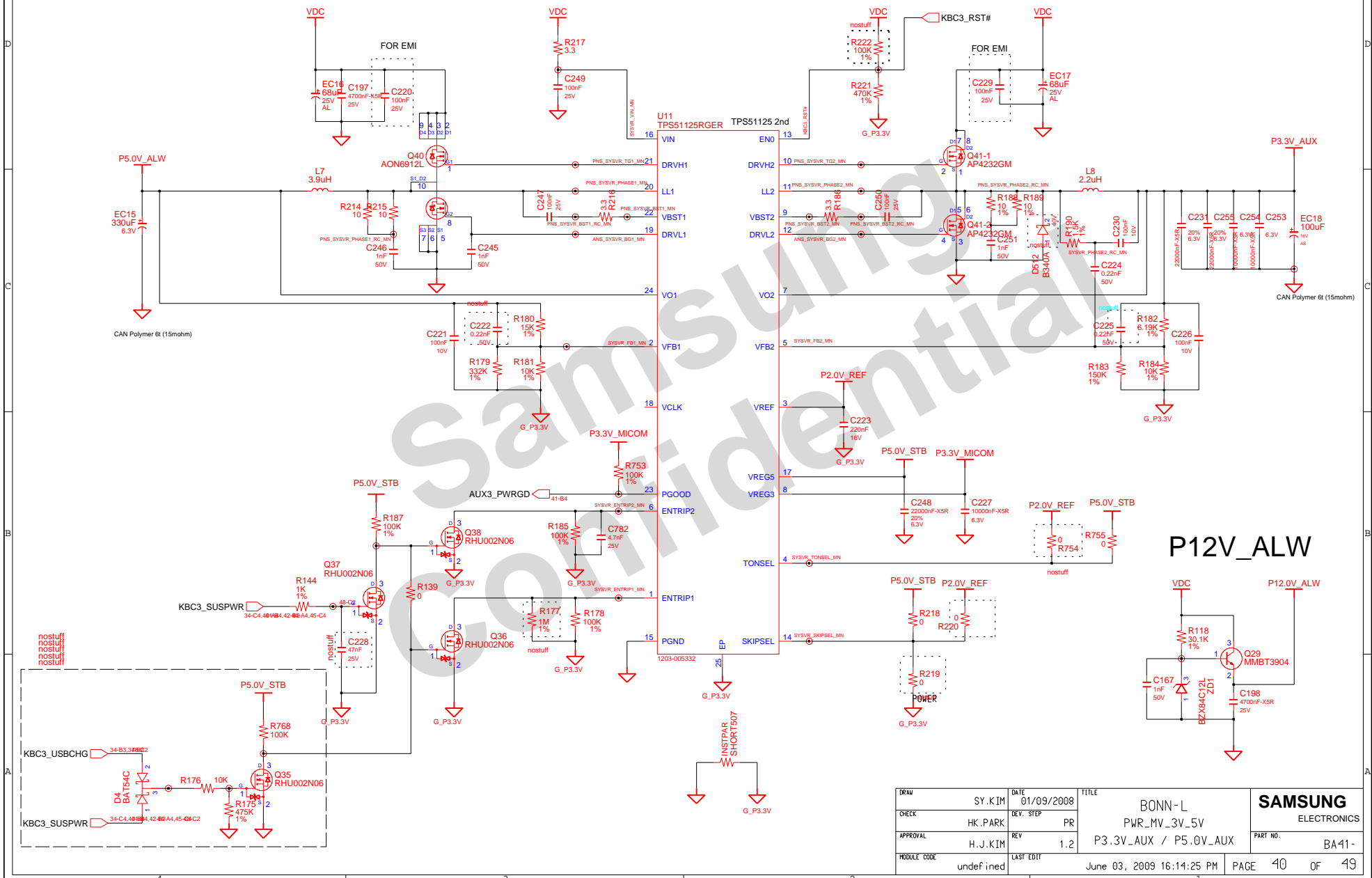
CELLS	Cells NB
VDD	4
GND	3
Float	2

DRAW	SY.KIM	DATE	9/23/2008	TITLE	BONN-L	SAMSUNG
CHECK	HK.PARK	DEV_STEP	PR		5.0V_AUX&3.3V_AUX	ELECTRONICS
APPROVAL	H.J.KIM	REV	1.2		CHARGER (MAX17085GTL)	PART NO. BA41-
MODULE CODE	undefined	LAST EDIT	June 03, 2009 16:14:25 PM		PAGE 39 OF 49	

SAMSUNG PROPRIETARY

THIS DOCUMENT CONTAINS CONFIDENTIAL PROPRIETARY INFORMATION THAT IS SAMSUNG ELECTRONICS CO.'S PROPERTY. DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS EXCEPT AS AUTHORIZED BY SAMSUNG.

P3.3V_AUX & P5.0V_ALW

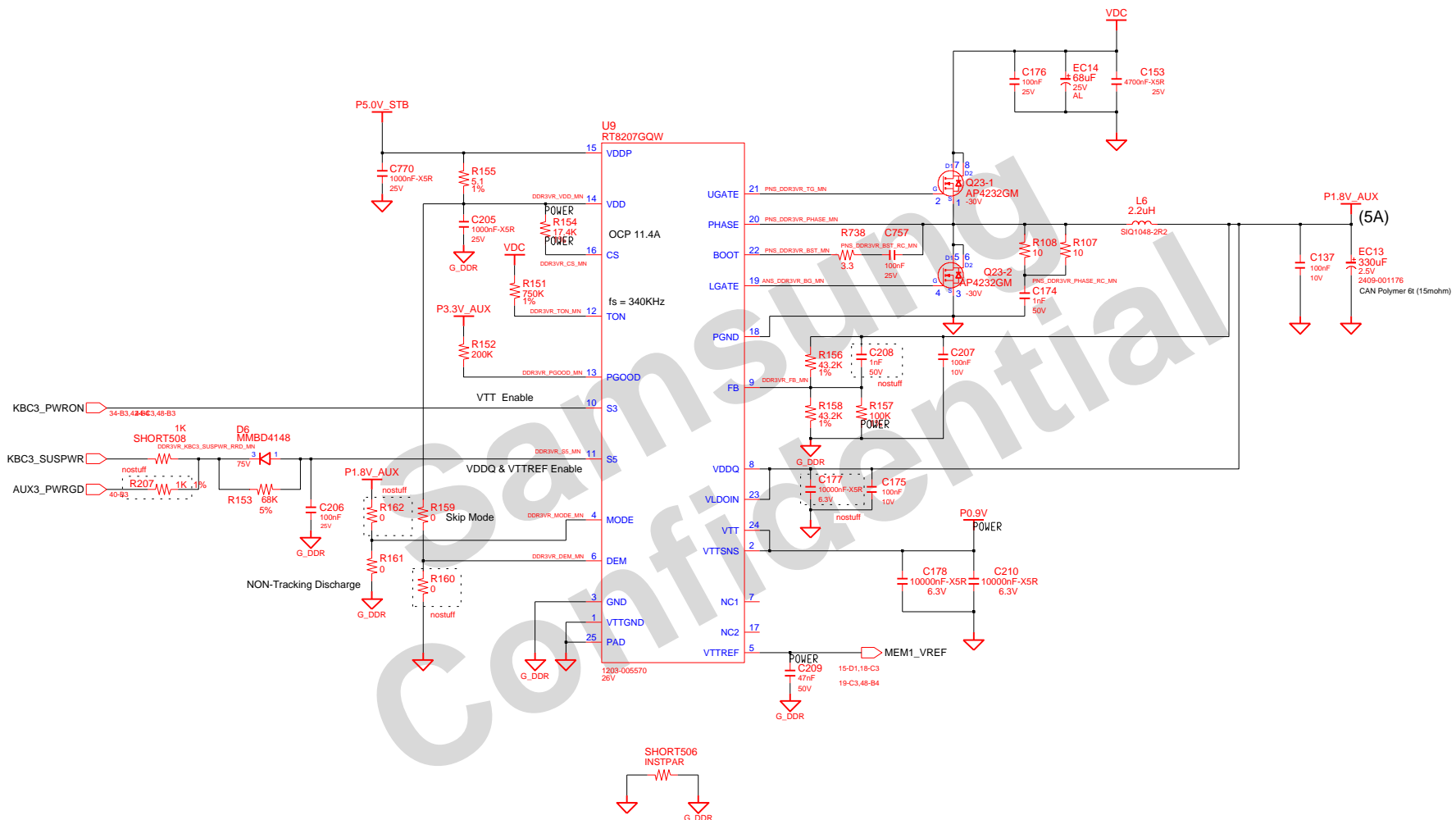


DRAW	SY.KIM	DATE	01/09/2008	TITLE	BONN-L	SAMSUNG ELECTRONICS
CHECK	HK.PARK	DEV. STEP	PR	PWR_MV_3V_5V	PART NO.	
APPROVAL	H.J.KIM	REV	1.2	P3.3V_AUX / P5.0V_AUX	BA11-	
MODULE CODE	undef ined	LAST EDIT	June 03, 2009 16:14:25 PM	PAGE	40	OF 49

SAMSUNG PROPRIETARY

THIS DOCUMENT CONTAINS CONFIDENTIAL PROPRIETARY INFORMATION THAT IS SAMSUNG ELECTRONICS CO.'S PROPERTY. DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS EXCEPT AS AUTHORIZED BY SAMSUNG.

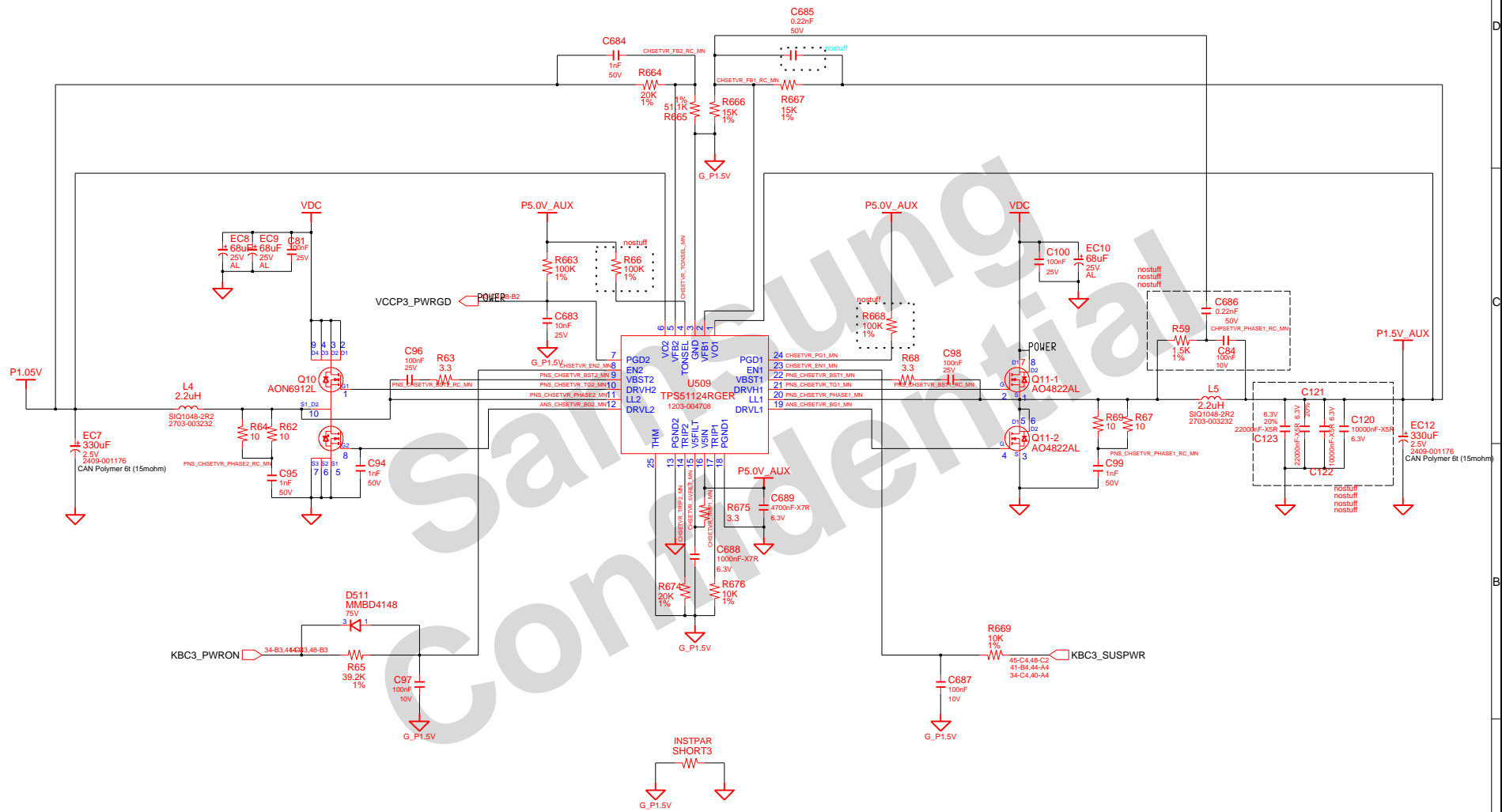
DDR2 Power



DRAW	SY.KIM	DATE	9/23/2008	TITLE	BONN-L PWR_MEMORY DDR2 POWER	SAMSUNG ELECTRONICS PART NO. BA41-
CHECK	HK.PARK	DEV.STEP	PR			
APPROVAL	H.J.KIM	REV	1.2			
MODULE CODE	undefined	LAST EDIT	June 03, 2009 16:14:25 PM	PAGE 41 OF 49		

SAMSUNG PROPRIETARY
 THIS DOCUMENT CONTAINS CONFIDENTIAL
 PROPRIETARY INFORMATION THAT IS
 SAMSUNG ELECTRONICS CO'S PROPERTY.
 DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
 EXCEPT AS AUTHORIZED BY SAMSUNG.

CHIPSET POWER(P1.5V_AUX & P1.05V)

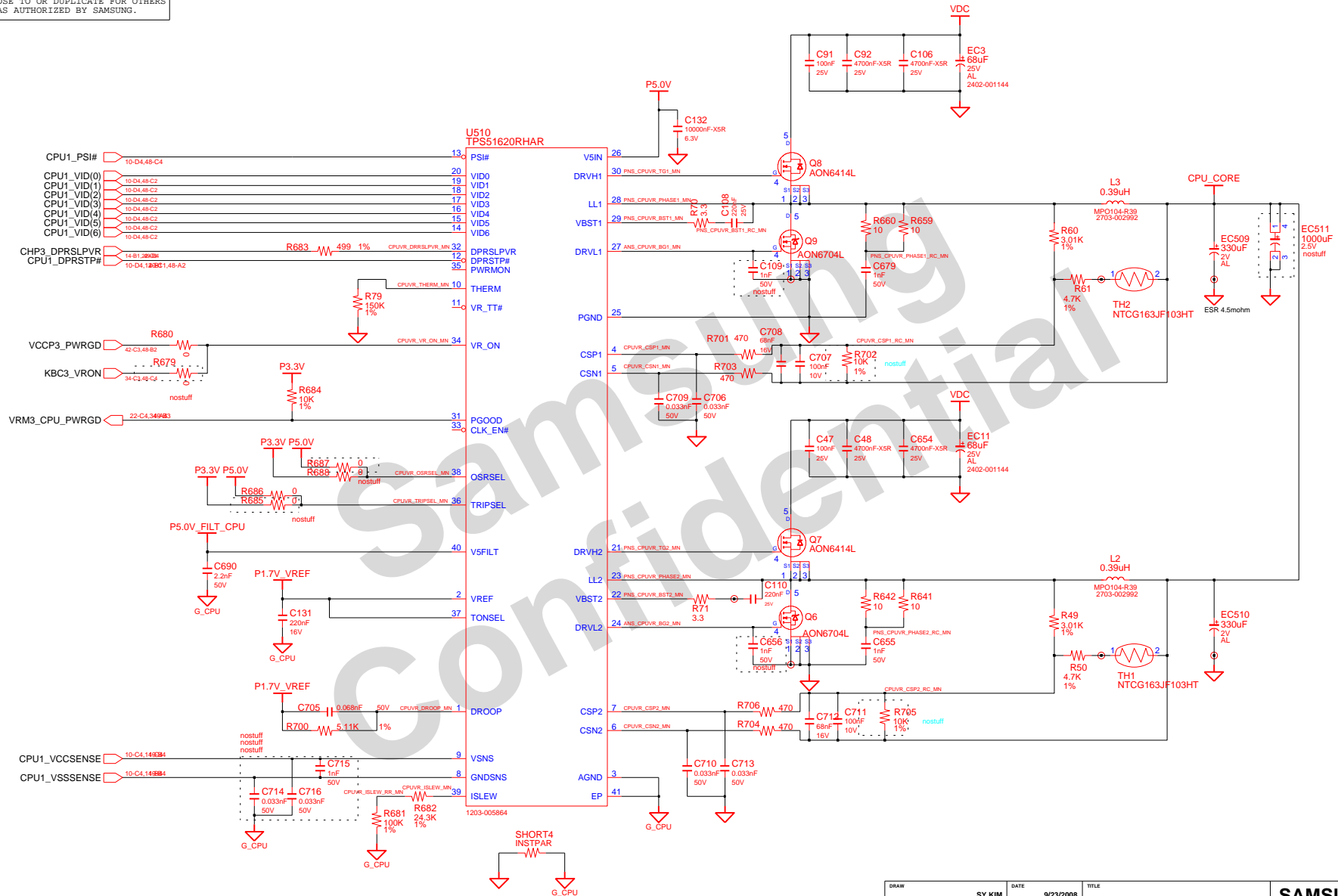


DRAW	SY.KIM	DATE	9/23/2008	TITLE	BONN-L	SAMSUNG ELECTRONICS PART NO. BA41-
CHECK	HK.PARK	DEV. STEP	PR		PWR_MV_Cantiga	
APPROVAL	H.J.KIM	REV	1.2		P1.5V_AUX, P1.05V	
MODULE CODE	undefined	LAST EDIT				
					June 03, 2009 16:14:25 PM	PAGE 42 OF 49

SAMSUNG PROPRIETARY

THIS DOCUMENT CONTAINS CONFIDENTIAL PROPRIETARY INFORMATION THAT IS SAMSUNG ELECTRONICS CO.'S PROPERTY. DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS EXCEPT AS AUTHORIZED BY SAMSUNG.

CPU VRM [TI IMVP6+]



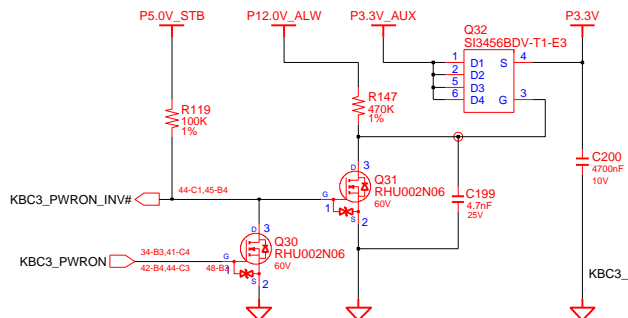
DRAW	SY.KIM	DATE	9/23/2008	TITLE	BONN-L	SAMSUNG ELECTRONICS
CHECK	HK.PARK	DEV.STEP	PR	PWR_CPU_MV_TPS51620		
APPROVAL	H.J.KIM	REV	1.2	CPU1 VRM (IMVP6+)		PART NO. BA41-
MODULE CODE	undefined	LAST EDIT	June 03, 2009 16:14:25 PM	PAGE	43	OF 49

SAMSUNG PROPRIETARY

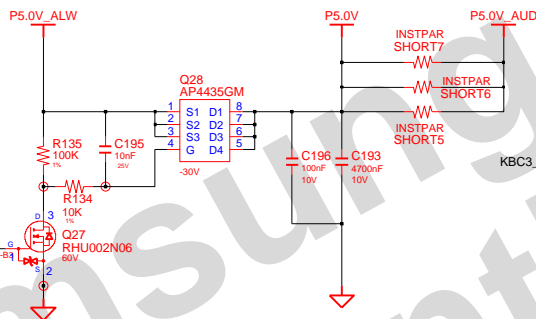
THIS DOCUMENT CONTAINS CONFIDENTIAL PROPRIETARY INFORMATION THAT IS SAMSUNG ELECTRONICS CO.'S PROPERTY. DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS EXCEPT AS AUTHORIZED BY SAMSUNG.

Switched Power

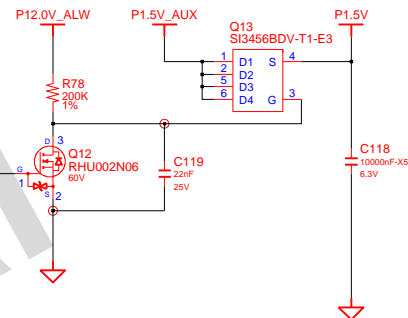
Switched Power On (P3.3V)



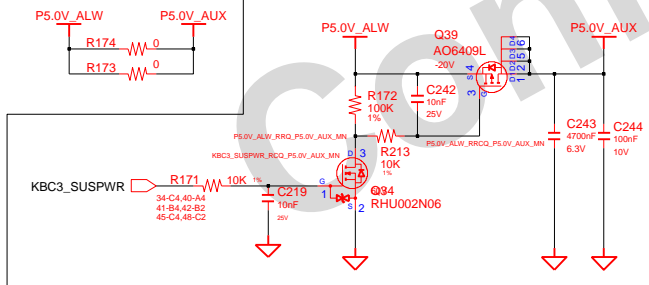
Switched Power On (P5.0V)



Switched Power On (P1.5V)



Sleep'n Charger



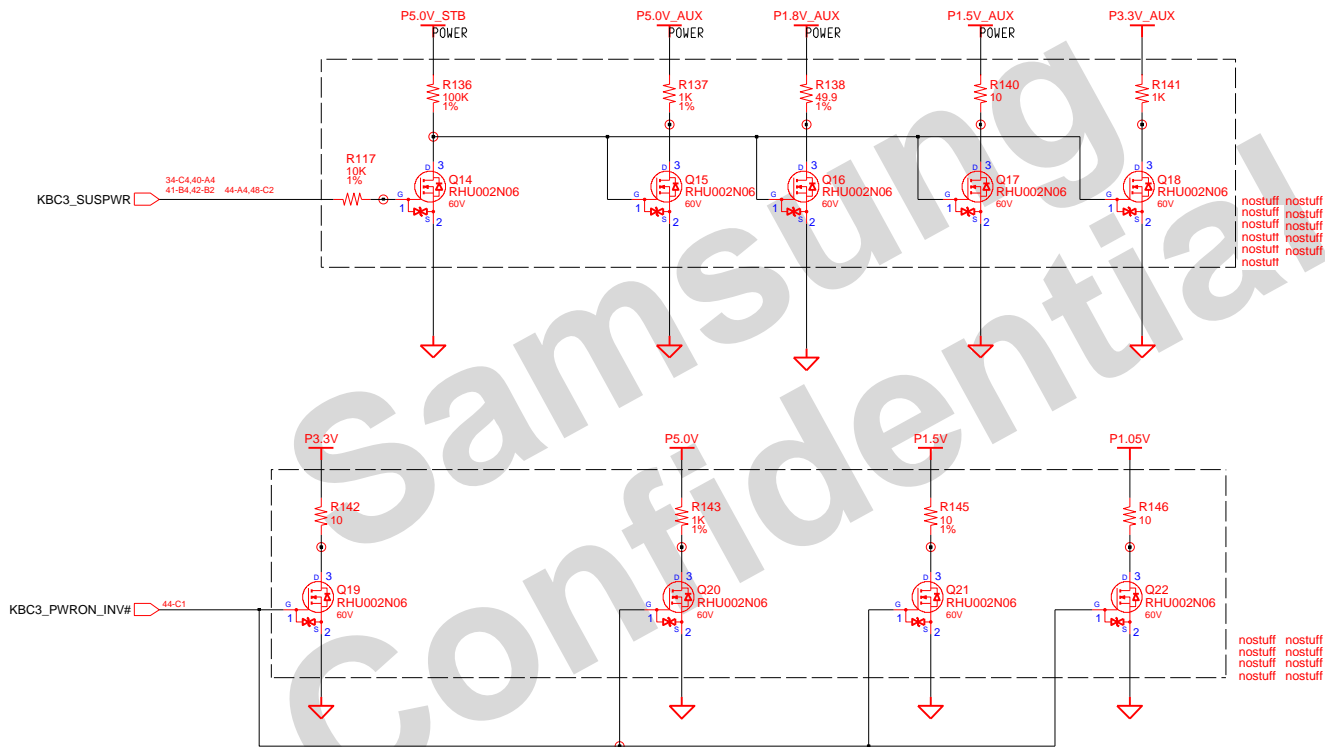
DRAW	SY.KIM	DATE	9/23/2008	TITLE	BONN-L PWR_MV_SWITCHED	SAMSUNG ELECTRONICS
CHECK	HK.PARK	DEV.STEP	PR			
APPROVAL	H.J.KIM	REV	1.2		SWITCHED POWER	PART NO. BA41-
MODULE CODE		LAST EDIT		June 03, 2009 16:14:25 PM	PAGE 44 OF 49	

SAMSUNG PROPRIETARY

THIS DOCUMENT CONTAINS CONFIDENTIAL PROPRIETARY INFORMATION THAT IS SAMSUNG ELECTRONICS CO.'S PROPERTY. DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS EXCEPT AS AUTHORIZED BY SAMSUNG.

POWER DISCHARGER

This page will be deleted in PV stage.



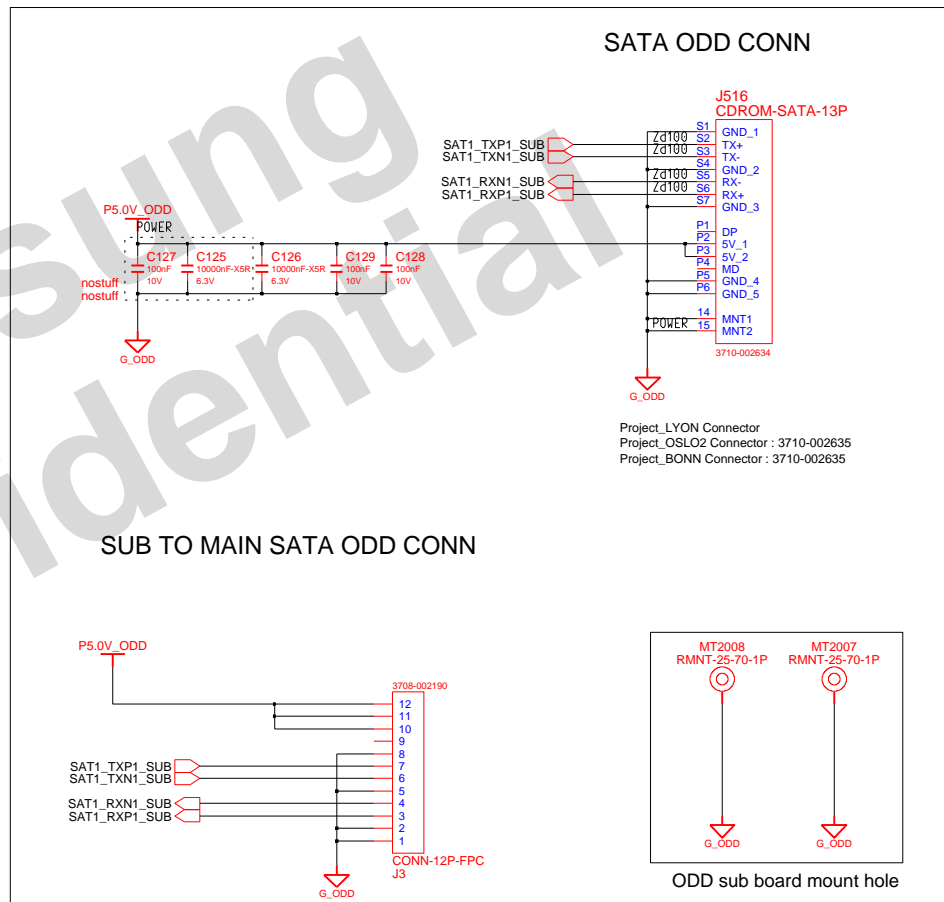
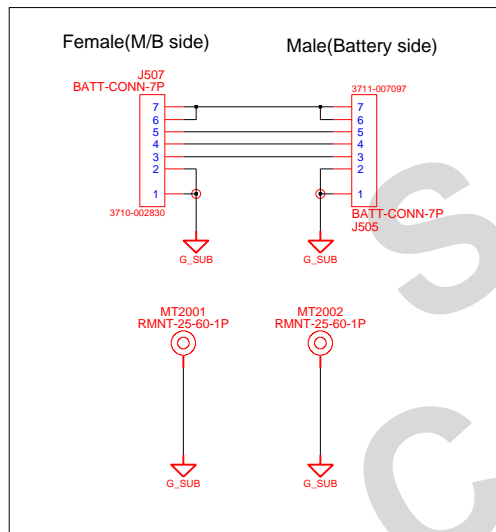
DRAW	SY.KIM	DATE	9/23/2008	TITLE	BONN-L PWR_MV_DISCHARGER DISCHARGING LOGIC	SAMSUNG ELECTRONICS	
CHECK	HK.PARK	DEV.STEP	PR	PART NO.			
APPROVAL	H.J.KIM	REV	1.2	BA41-			
MODULE CODE	undefined	LAST EDIT	June 03, 2009 16:14:25 PM	PAGE	45	OF	49

SAMSUNG PROPRIETARY

THIS DOCUMENT CONTAINS CONFIDENTIAL PROPRIETARY INFORMATION THAT IS SAMSUNG ELECTRONICS CO'S PROPERTY. DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS EXCEPT AS AUTHORIZED BY SAMSUNG.

Battery & SATA ODD SUBBOARD

SATA ODD SUB BOARD

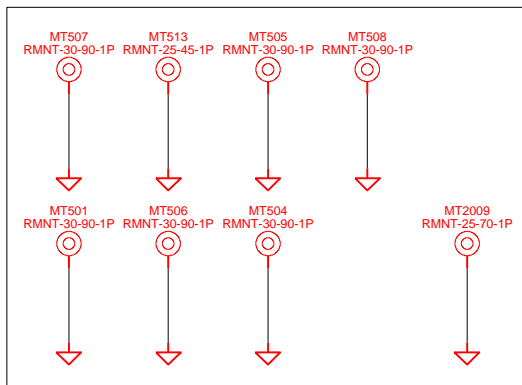


DRAW	SY.KIM	DATE	9/23/2008	TITLE	BONN-L SUB BOARD2 SATA ODD SUB BOARD	SAMSUNG ELECTRONICS PART NO. BA41-
CHECK	HK.PARK	DEV.STEP	PR			
APPROVAL	H.J.KIM	REV	1.2			
MODULE CODE	undefined	LAST EDIT	June 03, 2009 16:14:25 PM	PAGE 46 OF 49		

SAMSUNG PROPRIETARY

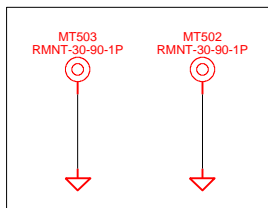
THIS DOCUMENT CONTAINS CONFIDENTIAL PROPRIETARY INFORMATION THAT IS SAMSUNG ELECTRONICS CO.'S PROPERTY. DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS EXCEPT AS AUTHORIZED BY SAMSUNG.

Mainboard Mount



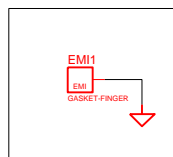
(30.90) x 7, (25.70) x 1

Keyboard Mount

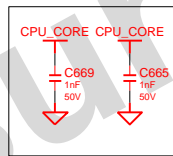


(30.90) x 2

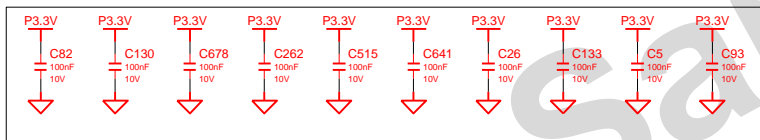
EMI FINGER



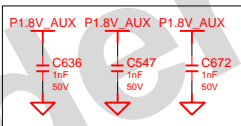
cannesi



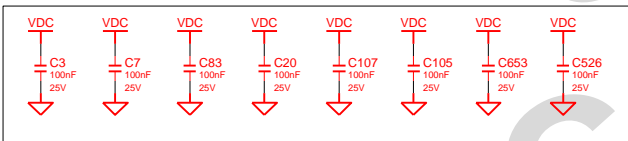
Add for EMC (Top), 2008.11.19



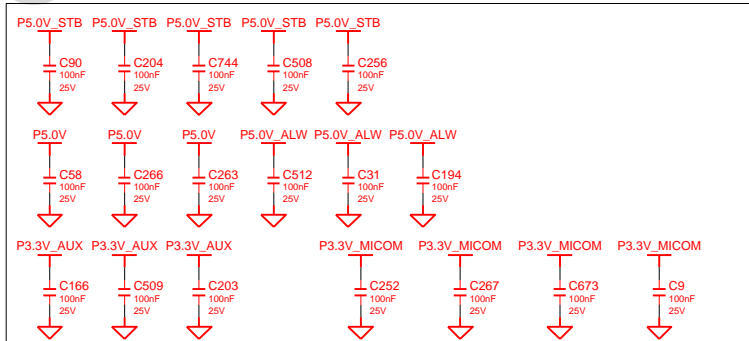
Add for EMC (5th Layer), 2008.11.19



Add for EMC (Bottom), 2008.11.19



Add for EMC (Bottom), 2008.11.19



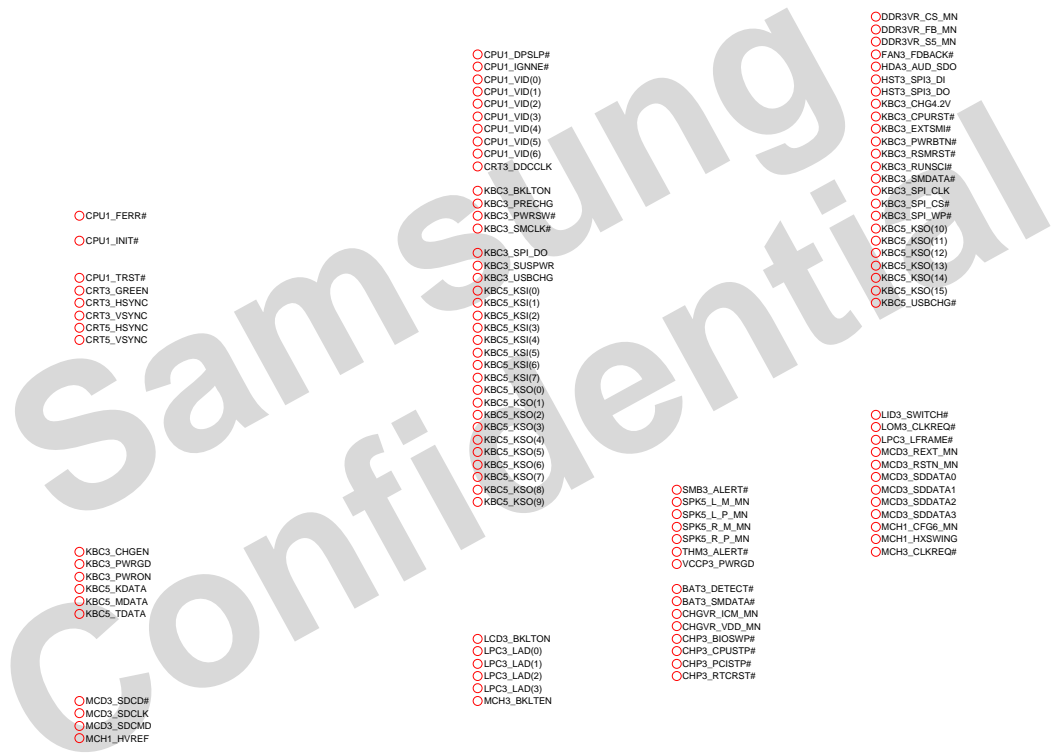
Add for EMC (Bottom), 2009.01.28

DRAW	SY.KIM	DATE	9/23/2008	TITLE	BONN-L ICT PORT ICT PORT	SAMSUNG ELECTRONICS
CHECK	HK.PARK	DEV.STEP	PR	PART NO.		
APPROVAL	H.J.KIM	REV	1.2	BA41-		
MODULE CODE		LAST EDIT				
				June 03, 2009 16:14:25 PM	PAGE	47 OF 49

SAMSUNG PROPRIETARY

THIS DOCUMENT CONTAINS CONFIDENTIAL PROPRIETARY INFORMATION THAT IS SAMSUNG ELECTRONICS CO.'S PROPERTY. DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS EXCEPT AS AUTHORIZED BY SAMSUNG.

- CPU1_NMI
- CPU1_TCK
- CPU1_TDI
- CPU1_TMS
- CRT3_RED
- FAN5_VDD
- SMB3_CLK
- ADT3_SEL#
- AUD3_SPKR
- CPU1_PSI#
- CPU1_SMI#
- CRT3_BLUE
- KBC3_A20G
- KBC3_VRON
- KBC5_KCLK
- KBC5_MCLK
- KBC5_TCLK
- LCD3_BRIT
- MCD3_SDWP
- MEM1_VREF
- KBC3_CHGEN
- KBC3_PWRGD
- KBC3_PWRON
- KBC5_KDATA
- KBC5_MDATA
- KBC5_TDATA
- SMB3_DATA
- THM3_STP#
- WLON_LED#
- MCD3_SDCD#
- MCD3_SDCLK
- MCD3_SDCMD
- MCH1_HVREF
- PEX3_WAKE#
- CPU1_FERR#
- CPU1_INIT#
- CPU1_TRST#
- CRT3_GREEN
- CRT3_HSYNC
- CRT3_VSYNC
- CRT5_HSYNC
- CRT5_VSYNC
- KBC3_BKLTON
- KBC3_PRECHG
- KBC3_PWRSW#
- KBC3_SMCLK#
- KBC3_SPI_DO
- KBC3_SUSPWR
- KBC3_USBCHG
- KBC5_KSI(0)
- KBC5_KSI(1)
- KBC5_KSI(2)
- KBC5_KSI(3)
- KBC5_KSI(4)
- KBC5_KSI(5)
- KBC5_KSI(6)
- KBC5_KSI(7)
- KBC5_KSO(0)
- KBC5_KSO(1)
- KBC5_KSO(2)
- KBC5_KSO(3)
- KBC5_KSO(4)
- KBC5_KSO(5)
- KBC5_KSO(6)
- KBC5_KSO(7)
- KBC5_KSO(8)
- KBC5_KSO(9)
- LCD3_BKLTEN
- LPC3_LAD(0)
- LPC3_LAD(1)
- LPC3_LAD(2)
- LPC3_LAD(3)
- MCH3_BKLTEN
- CPU1_DPSLP#
- CPU1_IENNE#
- CPU1_VID(0)
- CPU1_VID(1)
- CPU1_VID(2)
- CPU1_VID(3)
- CPU1_VID(4)
- CPU1_VID(5)
- CPU1_VID(6)
- CRT3_DCCCLK
- KBC3_BKLTEN
- KBC3_PRECHG
- KBC3_PWRSW#
- KBC3_SMCLK#
- KBC3_SPI_DO
- KBC3_SUSPWR
- KBC3_USBCHG
- KBC5_KSI(0)
- KBC5_KSI(1)
- KBC5_KSI(2)
- KBC5_KSI(3)
- KBC5_KSI(4)
- KBC5_KSI(5)
- KBC5_KSI(6)
- KBC5_KSI(7)
- KBC5_KSO(0)
- KBC5_KSO(1)
- KBC5_KSO(2)
- KBC5_KSO(3)
- KBC5_KSO(4)
- KBC5_KSO(5)
- KBC5_KSO(6)
- KBC5_KSO(7)
- KBC5_KSO(8)
- KBC5_KSO(9)
- MCH3_BKLTEN
- CPU1_CPURST#
- CPU1_DPRST#
- CPU1_STPCLK#
- CPU2_THERMDA
- CPU2_THERMDC
- CRT3_DCCDATA
- DDR3V3_CS_MN
- DDR3V3_FB_MN
- DDR3V3_S5_MN
- FAN3_FDBACK#
- HD43_AUD_SDO
- HST3_SPI3_DI
- HST3_SPI3_DO
- KBC3_CHG4.2V
- KBC3_CPURST#
- KBC3_EXT5M#
- KBC3_PWRBTN#
- KBC3_RSMRST#
- KBC3_RUNSCI#
- KBC3_SMDATA#
- KBC3_SPI_CLK
- KBC3_SPI_CS#
- KBC3_SPI_WP#
- KBC5_KSO(10)
- KBC5_KSO(11)
- KBC5_KSO(12)
- KBC5_KSO(13)
- KBC5_KSO(14)
- KBC5_KSO(15)
- KBC5_USBCHG#
- LID3_SWITCH#
- LOM3_CLKREG#
- LPC3_LFRAME#
- MCD3_REXT_MIN
- MCD3_RSTN_MIN
- MCD3_SDDATA0
- MCD3_SDDATA1
- MCD3_SDDATA2
- MCD3_SDDATA3
- MCH1_CFG6_MN
- MCH1_HXSWING
- MCH3_CLKREG#
- BAT3_DETECT#
- BAT3_SMDATA#
- CHGVR_ICM_MN
- CHGVR_VDD_MN
- CHP3_BIOSWPP#
- CHP3_CPURST#
- CHP3_POICSTP#
- CHP3_RTCRST#
- SPK5_L_M_MN
- SPK5_R_M_MN
- SPK5_R_P_MN
- THM3_ALERT#
- VCCP3_PWRGD



DESIGN	SY.KIM	DATE	4/21/2009	TITLE	BONN-L MAIN COVER	SAMSUNG ELECTRONICS PART NO. BA41-
CHECK	HK.PARK	DEV. STEP	PR			
APPROVAL	H.J.KIM	REV	1.2			
MODULE CODE		LAST EDIT	June 03, 2009 16:14:25 PM	PAGE	48 OF 49	

