

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.

BREMEN-D

CPU : AMD Caspin
Chip Set : AMD RX881 + SB710
Remarks : Tigris Platform
Park-XT M2

Model Name : Bremen-D
PBA Name : MAIN
PCB Code : GCE :
NAN :
HAN :
Dev. Step : PV
Revision : 1.4
T.R. Date : 2009.11.10

Design	CHECK	APPROVAL

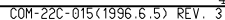
Owner : SEC Mobile R & D Signature : X

Table of Contents

Page. 1	COVER
Page. 2	OPERATION BLOCK DIAGRAM
Page. 3	BOARD INFORMATION
Page. 4	POWER DIAGRAM
Page. 5	POWE RAILS ANALYSIS
Page. 6	TIMING DIAGRAM, POWER ON
Page. 7	CLOCK DISTRIBUTION
Page. 8	THERMAL SENSOR&FAN CONTROL
Page. 9~11	CASPIAN S1G3 CPU
Page. 12	CLOCK GENERATOR
Page. 13~15	RX881M
Page. 16~17	SODIMM DDR2
Page. 18~22	MADISON-LP
Page. 23~27	gDDR3 & MADISON STRAPS
Page. 25~32	SB710
Page. 33	SPI_BIOS_ROM
Page. 34	LVDS (LCD CONNECTOR)
Page. 35	CRT CONNECTOR
Page. 36	HDMI CONNECTOR
Page. 37~38	AUDIO
Page. 39	LOM(RTL8103EL)
Page. 40	MEMORY CARD (3 IN 1)
Page. 41	WLAN
Page. 42	HDD / ODD
Page. 43	MICOM
Page. 44	KBD CONN & TOUCHPAD
Page. 45	LED LOGIC
Page. 46	USB CONNECTOR
Page. 47	BLUETOOTH
Page. 48	CHARGER
Page. 49	P3.3V_AUX / P5.0V_AUX / P12V_ALW
Page. 50	DDR2 POWER / VTT
Page. 51	CPU VRM
Page. 52	CHIPSET POWER(P1.1V)
Page. 53	CHIPSET POWER(P1.2V)
Page. 54	GFX POWER
Page. 55	gDDR3 POWER / P1.0V
Page. 56	SWITCHED POWER (P5.0V / P3.3V / P2.5V / P1.8V / P1.2_AUX)
Page. 57	POWER DISCHARGER
Page. 58	USB SUB BOARD_POWER SWITCH
Page. 59	SUB BOARDS
Page. 60	MOUNT HOLES
Page. 61	TEST POINTS

DRAW	XIE, BIN	DATE	10/10/2008	TITLE	Bremen-D	SAMSUNG
CHECK	GUO, LEI	DEV. STEP	PV	MAIN		ELECTRONICS
APPROVAL	LEE, BC	REV	1.0	COVER	PART NO.	BA41-xxxxxA
MODULE CODE	LAST EDIT		October, 28, 2009 11:35:37 AM		PAGE	1 OF

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 0.3

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.

AC Adapter

Battery DC

VDC

P3.3V_MICOM

MICOM LED SB710

P5.0V_STB

USB N Charger

P12.0V_ALW

KBC3_SUSPWR
(CHP3_S4_STATE*)

P5V_AUX

USB connector

P1.8V_AUX

AMD S1G3
SODIMM (DDR II)

P0.9V_AUX

DDR II-Termination

P1.2V_AUX

SB710

P3.3V_AUX

SB710
WLAN
LAN
THERMAL
LVDS
LED

P1.2V_LAN

LAN

KBC3_PWRON
(CHP3_SLPS3*)

P1.8V

RX881
Park-XT M2 / Madison-LP
gDDR-3 for EGfx
AU6336

P5.0V

THERMAL CRT HDMI
SB710 MICOM AUDIO
ODD HDD CAMERA
TOUCH PAD

EGFX_CORE

Park-XT M2 / Madison-LP

P1.5V

CK505
WLAN
EXPRESS CARD

P1.0V

Park-XT M2 / Madison-LP

P2.5V

S1G3

P3.3V

CK505 THERMAL RX881
DDR2 CRT PARK / MADISON
LVDS HDMI SB710
SPI WLAN LEDS
LAN AUDIO AU6336
HDD BT

KBC3_VRON

CPU_CORE

S1G3

P1.2V

S1G3
RX881
SB710

P1.1V

RX881
Park-XT M2
Madison-LP

Power On/Off Table by S-state

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

S5-S4

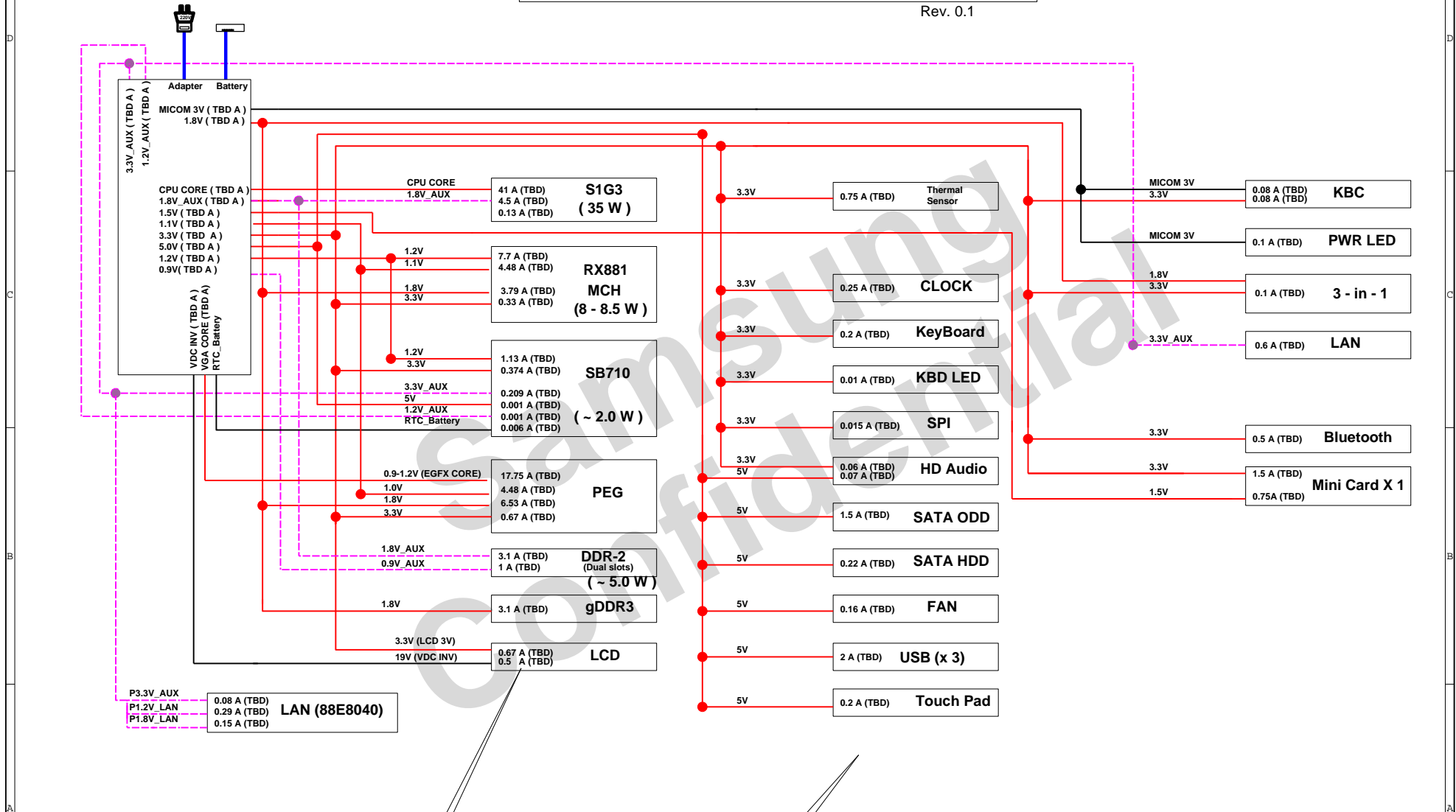
S3

S0

DRAW	H.J.Ra	DATE	08/18/2009	TITLE	Bremen-D MAIN POWER DIAGRAM	SAMSUNG ELECTRONICS
CHECK	K.Y.Kim	DEV. STEP	ADV1			PART NO. BA41-xxxxxA
APPROVAL	H.K.Park	REV	1.1			
MODULE CODE		LAST EDIT		October 10, 2009 16:50:44 PM	PAGE 4 OF 61	

POWER RAILS ANALYSIS

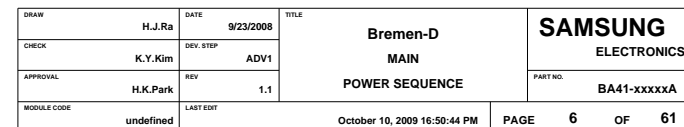
Rev. 0.1



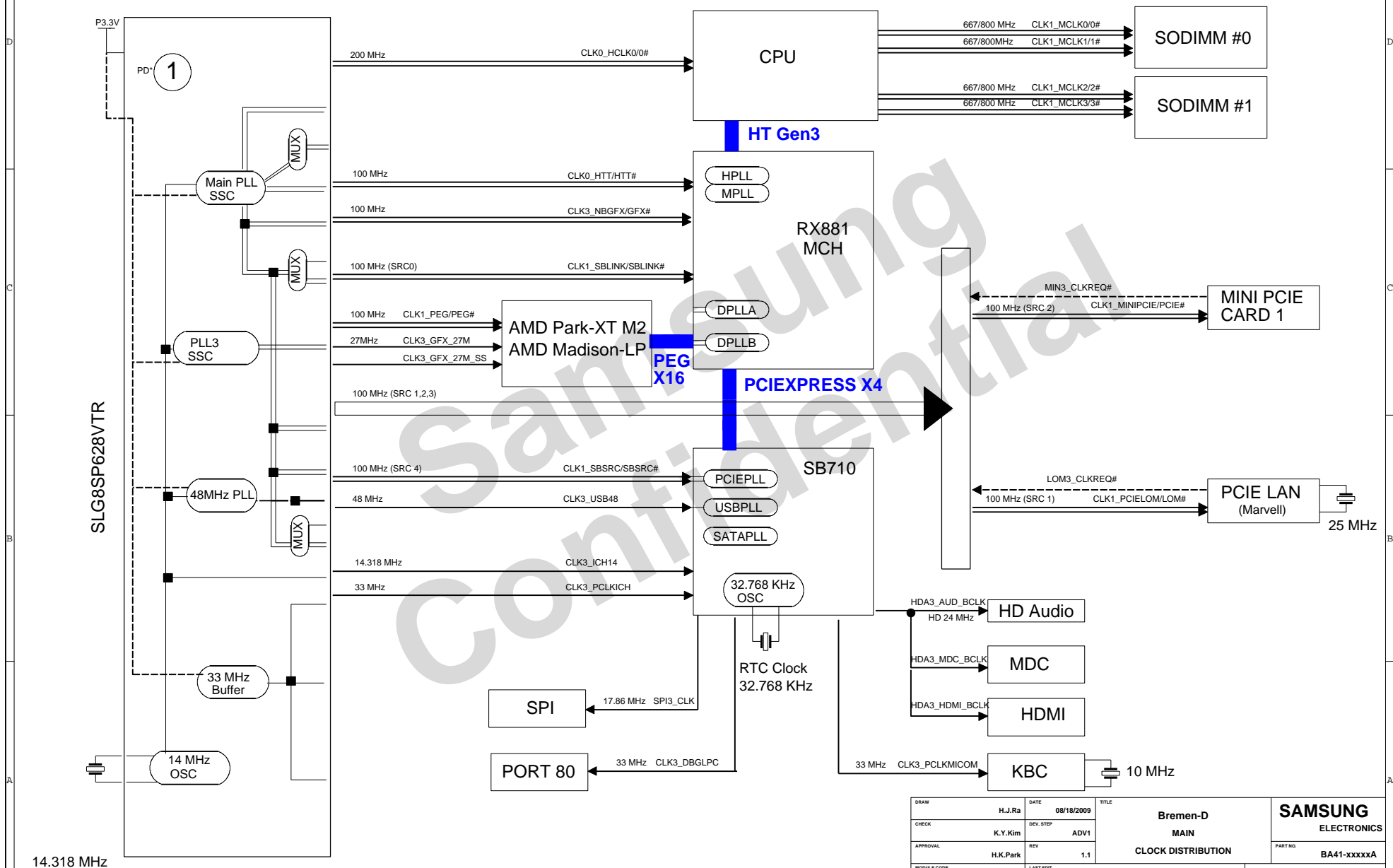
Value by Datasheet/Application notes (Value by measurement)

DRAW	H.J.Ra	DATE	08/18/2009	TITLE	Bremen-D MAIN POWER RAILS ANALYSIS	SAMSUNG ELECTRONICS
CHECK	K.Y.Kim	DEV. STEP	ADV1			PART NO. BA41-xxxxxA
APPROVAL	H.K.Park	REV	1.1			
MODULE CODE		LAST EDIT				
				October 10, 2009 16:50:44 PM	PAGE	5 OF 61

M-2) KBC3 ME PWRON = 15) KBC3 PWRON

$$(SLPS4^* = SLPM^*) > S4 \text{ STATE}^* > SLPS3^*$$


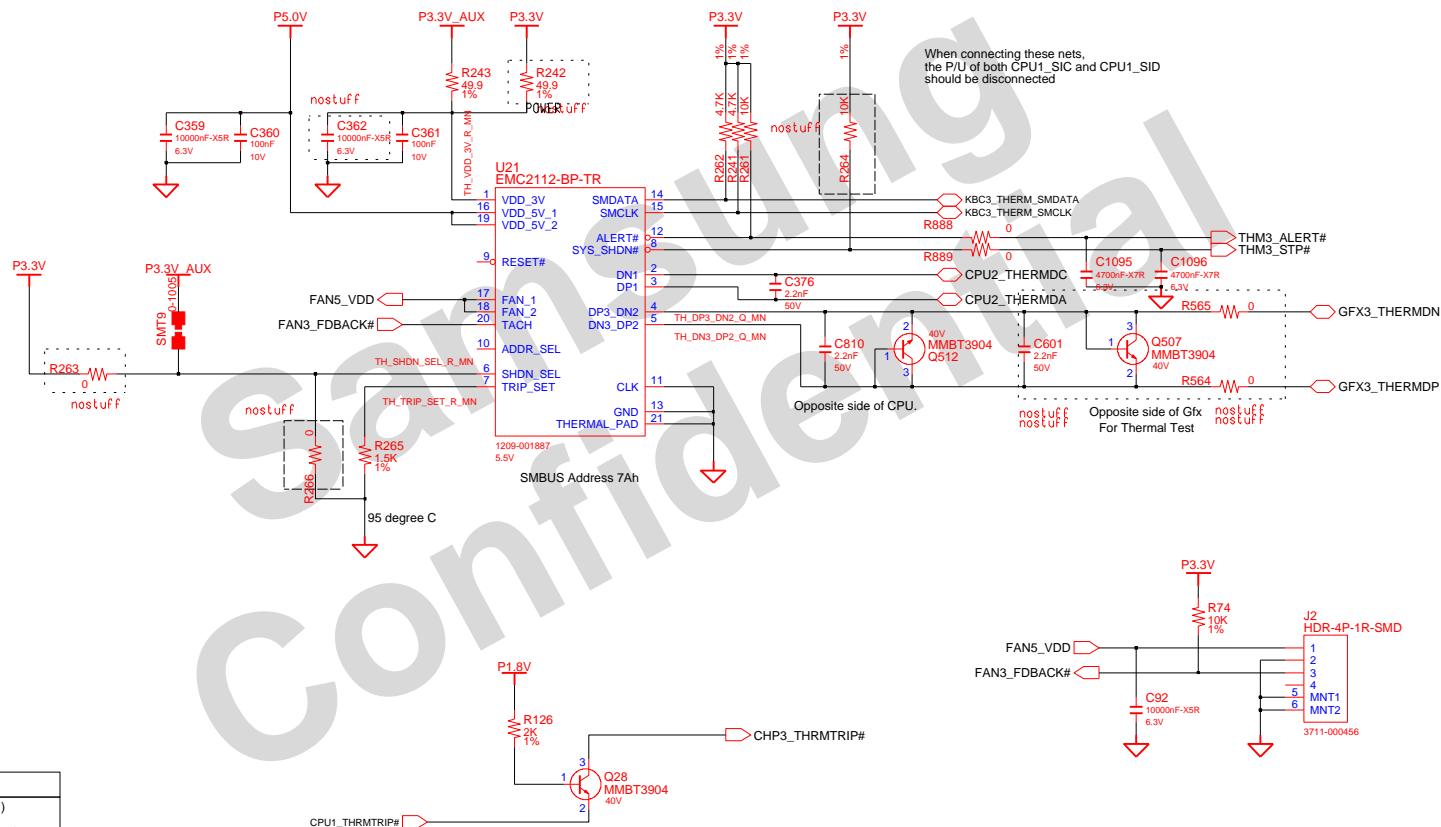
CLOCK DISTRIBUTION



SAMSUNG PROPRIETARY

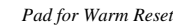
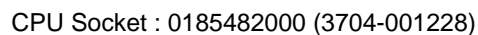
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

THERMAL SENSOR & FAN CONTROL



DESIGN	H.J.Ra	DATE	9/23/2008	TITLE	Bremen-D THERMAL SENSOR THERMAL SENSOR EMC2112	SAMSUNG ELECTRONICS
CHECK	K.Y.Kim	DEV. STEP	ADV1			PART NO. BA41-xxxxxA
APPROVAL	H.K.Park	REV	1.1			
MODULE CODE		LAST EDIT		October 10, 2009 16:50:44 PM	PAGE 8 OF 61	

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.

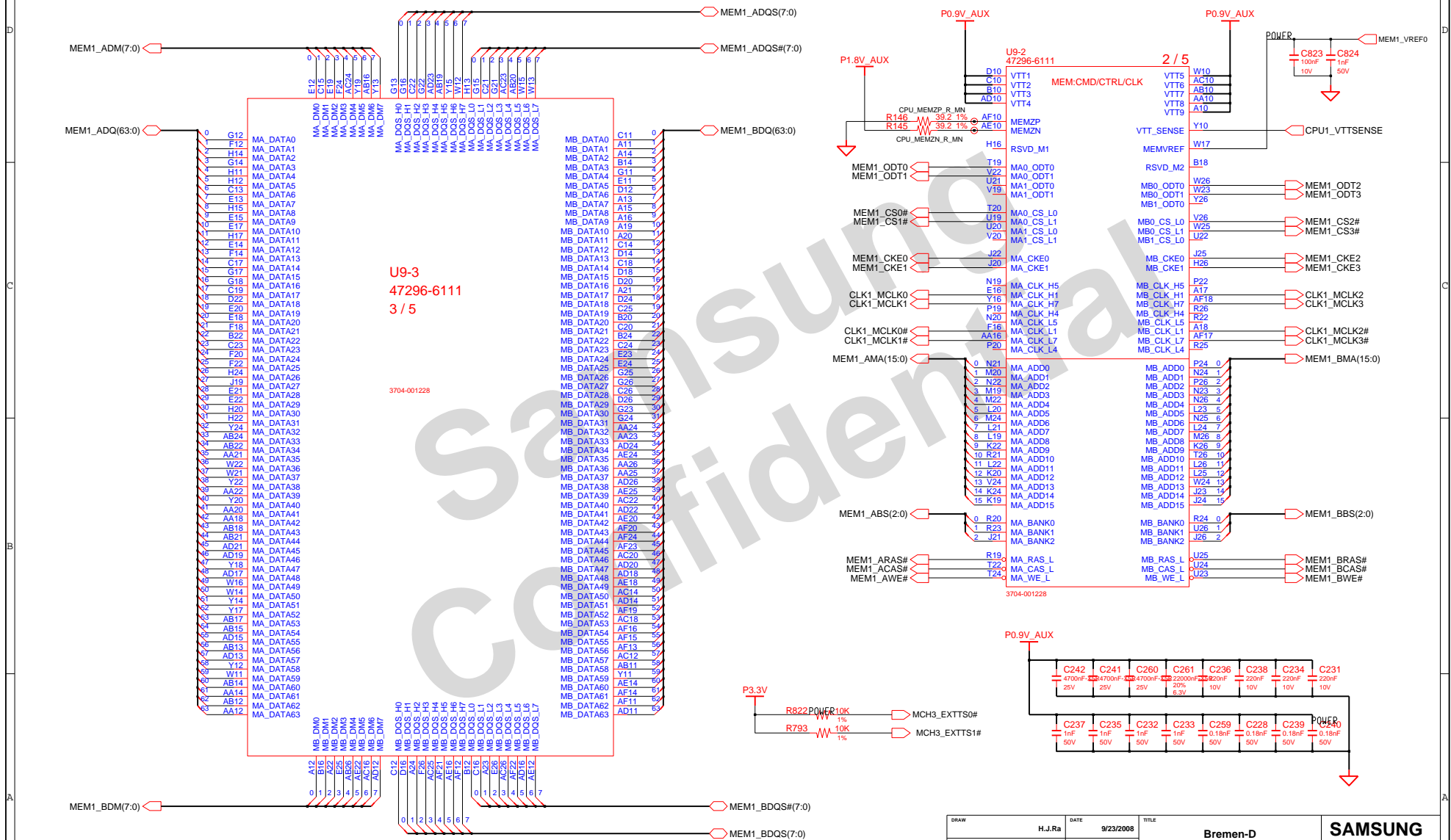


DRAW	H.J.Ra	DATE	9/23/2008	<p>Bremen-D</p> <p>CPU</p> <p>Caspian (1/3)</p>	<p>SAMSUNG</p> <p>ELECTRONICS</p>	
CHECK	K.Y.Kim	DEV. STEP	ADV1		PART NO.	BA41-xxxxxxA
APPROVAL	H.K.Park	REV	1.1			
MODULE CODE	undefined	LAST EDIT	October 10, 2009 16:50:44 PM		PAGE	9 OF 61

SAMSUNG PROPRIETARY

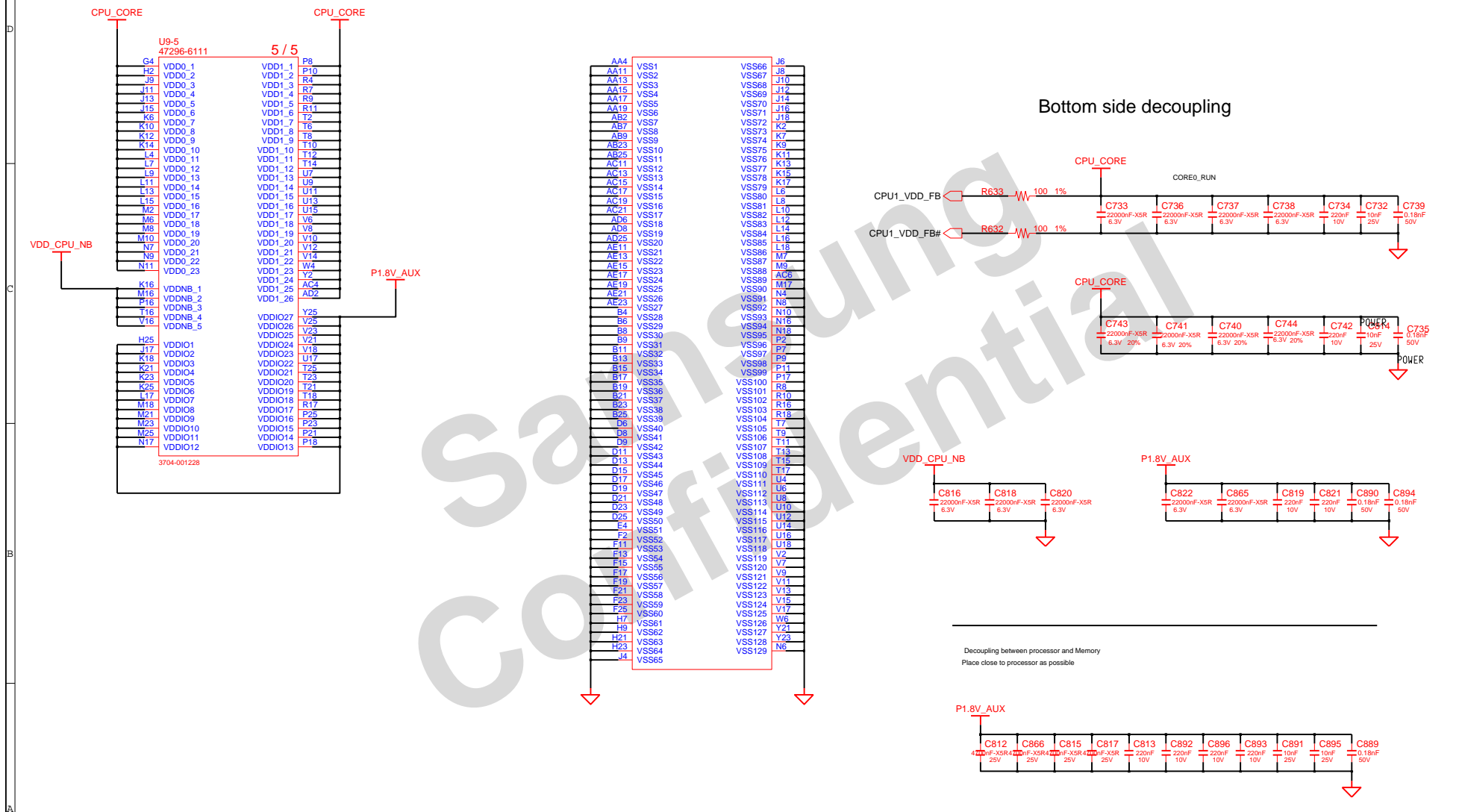
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

CPU_Caspian



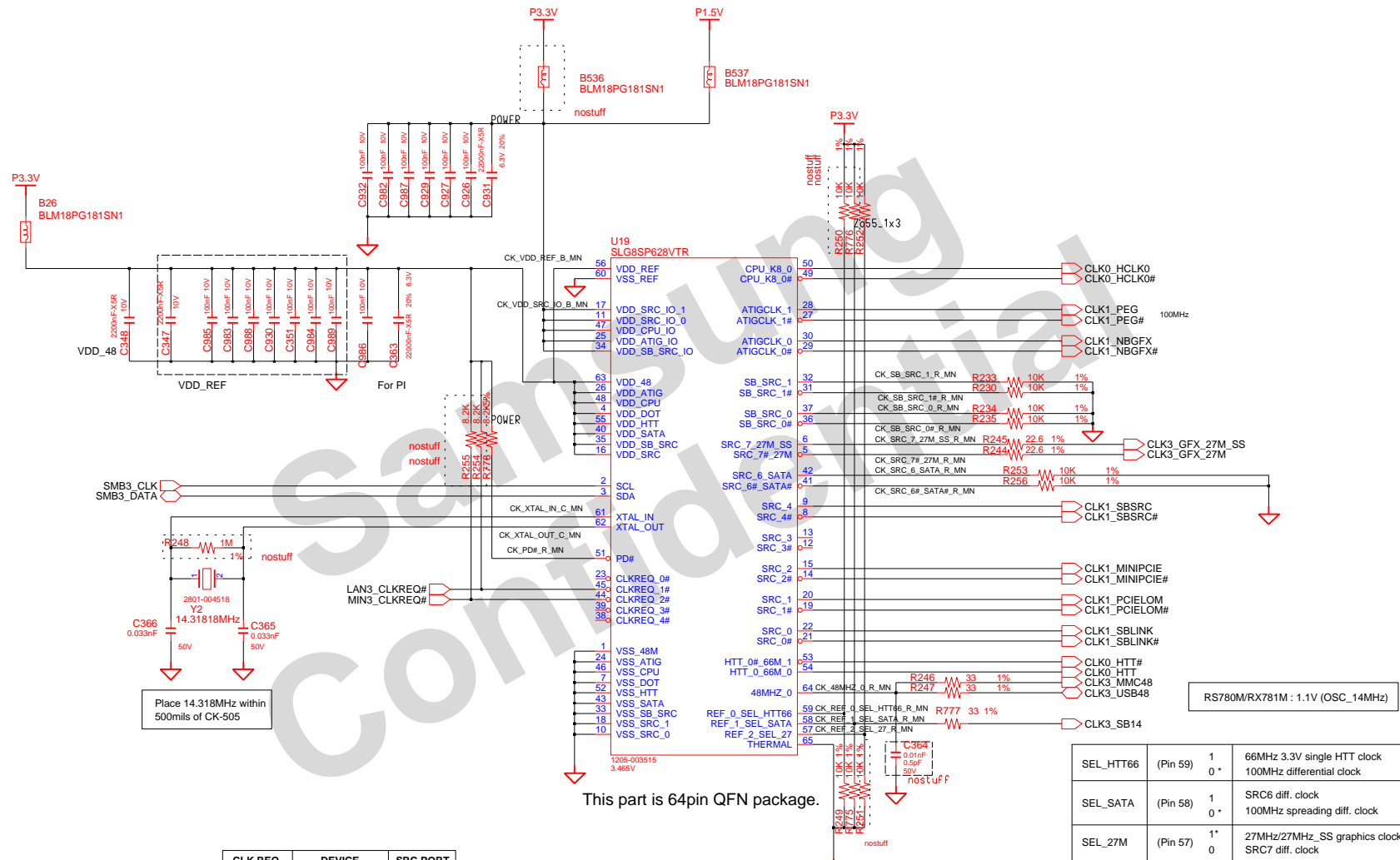
DRAW	H.J.Ra	DATE	9/23/2008	TITLE	Bremen-D CPU Caspian (2/3)	SAMSUNG ELECTRONICS PART NO. BA41-xxxxxA
CHECK	K.Y.Kim	DEV. STEP	ADV1			
APPROVAL	H.K.Park	REV	1.1			
MODULE CODE	undefined	LAST EDIT				
October 10, 2009 16:50:44 PM						PAGE 10 OF 61

CPU_Caspian



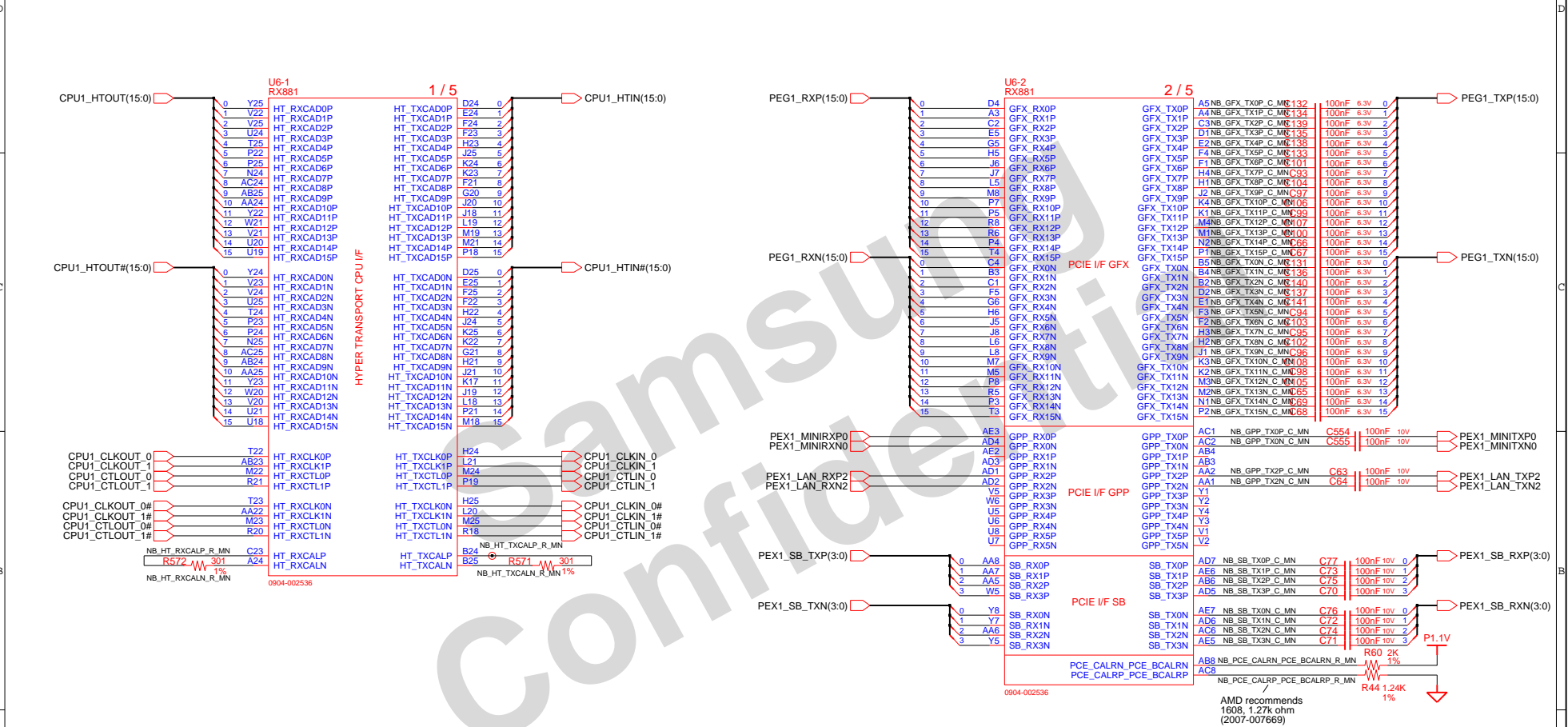
DRAW	H.J.Ra	DATE	9/23/2008	TITLE	Bremen-D CPU Caspian (3/3)	SAMSUNG ELECTRONICS
CHECK	K.Y.Kim	DEV. STEP	ADV1			PART NO. BA41-xxxxxA
APPROVAL	H.K.Park	REV	1.1			
MODULE CODE	undefined	LAST EDIT	October 10, 2009 16:50:44 PM	PAGE	11	OF 61

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.



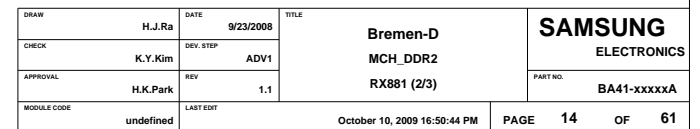
NB_RX881_AMD

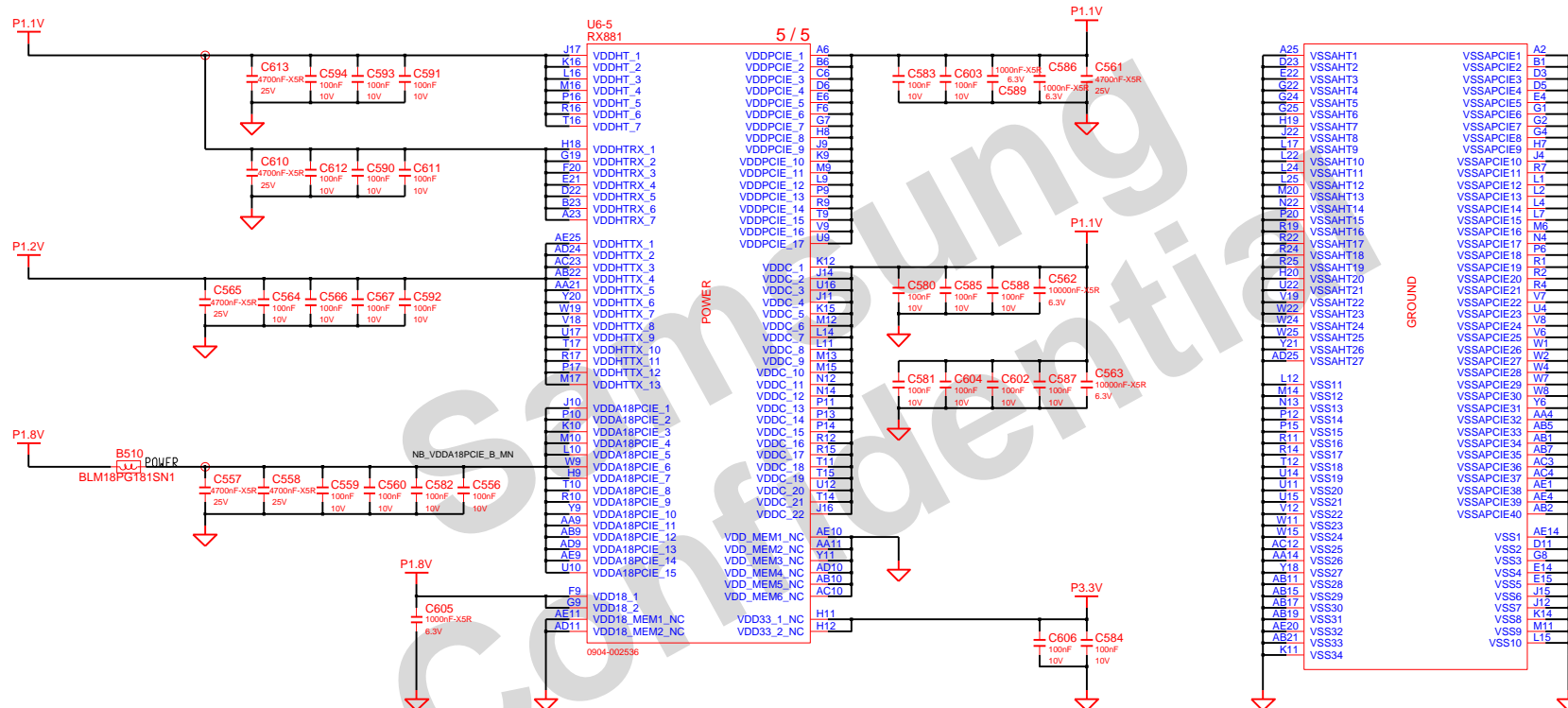
SAMSUNG PROPRIETARY
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.



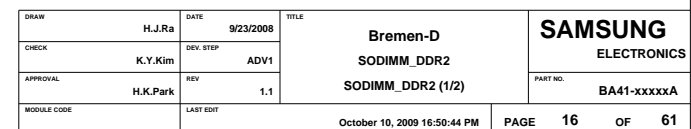
DRAW	H.J.Ra	DATE	9/23/2008	TITLE	Bremen-D	SAMSUNG ELECTRONICS
CHECK	K.Y.Kim	DEV. STEP	ADV1		MCH_DDR2	
APPROVAL	H.K.Park	REV	1.1		RX881 (1/3)	
MODULE CODE	undefined	LAST EDIT				
			October 10, 2009 16:50:44 PM	PAGE	13	OF 61

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	H.J.Ra	DATE	9/23/2008	TITLE	Bremen-D	SAMSUNG ELECTRONICS PART NO. BA41-xxxxxA
CHECK	K.Y.Kim	DEV. STEP	ADV1	MCH_DDR2		
APPROVAL	H.K.Park	REV	1.1	RX881 (3/3)		
MODULE CODE		LAST EDIT				
October 10, 2009 16:50:44 PM						PAGE 15 OF 61



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

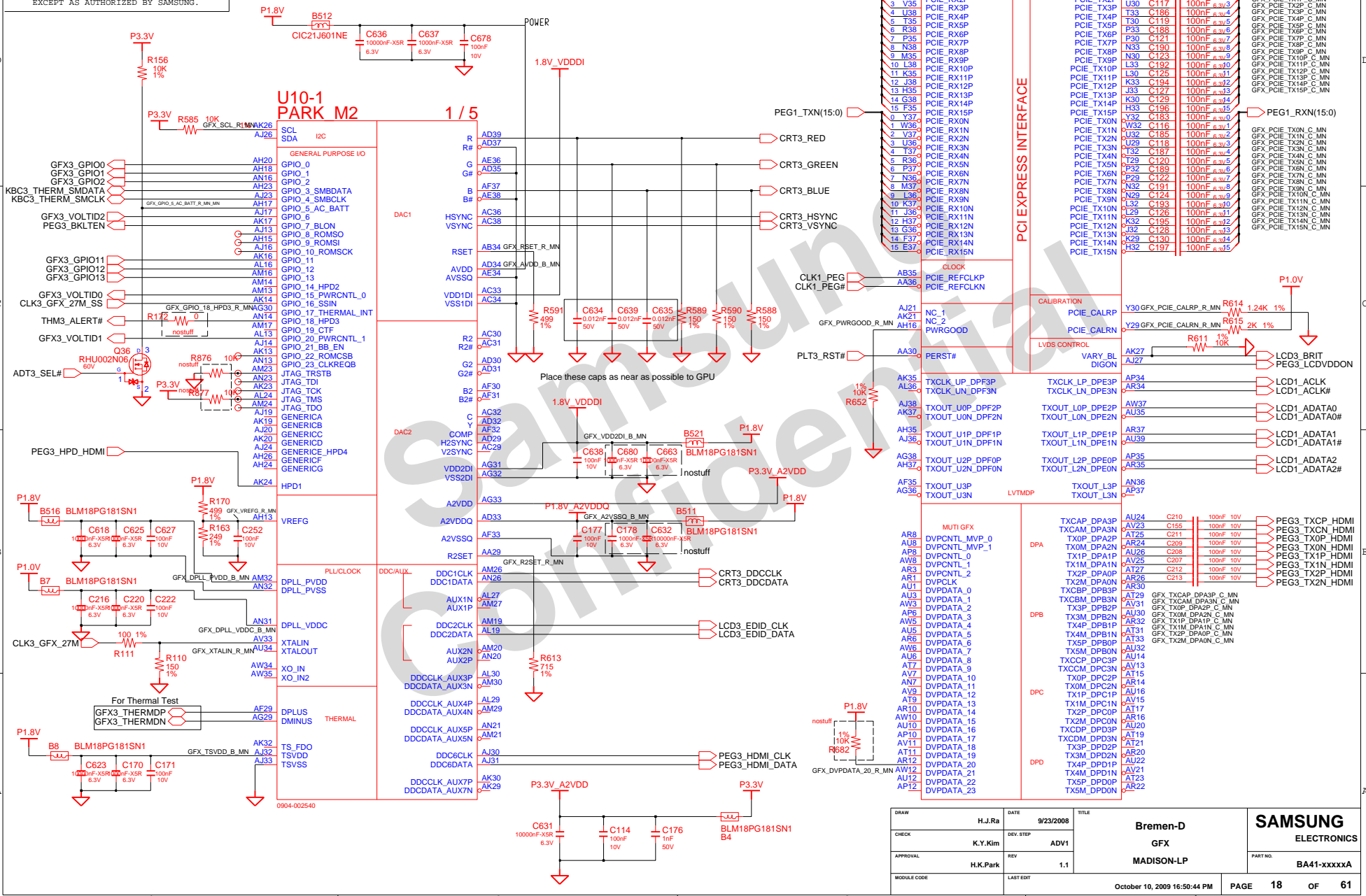
The diagram illustrates the pin configuration and electrical connections for a DDR SO-DIMM #1. It includes the following components and connections:

- MEM1_BDQ(63:0)**: Data bus connection.
- MEM1_BMA(15:0)**: Memory Bank Address connection.
- MEM1_BBS(2)**, **MEM1_BBS(1)**, **MEM1_CS2#**, **MEM1_CS3#**: Memory Bank Select and Chip Select connections.
- CLK1_MCLK2**, **CLK1_MCLK3**: Memory Clock connections.
- MEM1_CKE2**, **MEM1_CKE3**: Memory Clock Enable connections.
- MEM1_BCAS#**, **MEM1_BRAS#**, **MEM1_BWE#**: Memory Bank Control connections.
- SMB3_CLK**, **SMB3_DATA**: SMBus connections.
- MEM1_ODT2**, **MEM1_ODT3**: Memory On-Die Termination connections.
- MEM1_BDM(7:0)**: Memory Bank Data Mask connection.
- MEM1_BDQS(7:0)**: Memory Bank Data Sense connection.
- MEM1_BDQS#(7:0)**: Memory Bank Data Sense Enable connection.
- DDR2M1-1 DDR2-SODIMM-200P-RVS 1/2**: Memory module 1.
- DDR2M1-2 DDR2-SODIMM-200P-RVS 2/2**: Memory module 2.
- Power Supply Rails**: P3.3V, P0.9V_AUX, P1.8V_AUX, P2.5V_AUX.
- Resistors**: R758, R759, R754, R755, R752, R745, R746, R751, R745, R746, R747, R764, R748, R741, R762, R765, R743, R742, R766, R767, R757, R760, R761, R756, R763, R771, R770.
- Capacitors**: C809, C826, C976, C977, C958, C959, C973, C974, C971, C969, C968, C963, C965, C961, C962, C960, C1026, C966, C975, C970, C964, C967, C972, C921, C920.
- Other Components**: MCH3_EXTTS1#, MEM1_VREF1, 3709-001327 (nostuff).

Pin Configuration:

Pin	Signal	Pin	Signal
0	A0	112	VDD1
1	A1	111	VSS17
2	A2	117	VDD2
3	A3	116	VSS18
4	A4	117	VDD3
5	A5	96	VSS19
6	A6	95	VDD4
7	A7	94	VSS20
8	A8	81	VDD5
9	A9	82	VSS21
10	A10	87	VDD6
11	A11	86	VSS22
12	A12	87	VDD7
13	A13	88	VSS23
14	A14	103	VDD8
15	A15	104	VSS24
16	A16	105	VDD9
17	BA0	106	VSS25
18	BA1	107	VDD10
19	BA2	108	VSS26
20	BA3	109	VDD11
21	BA4	110	VSS27
22	BA5	111	VDD12
23	BA6	112	VSS28
24	BA7	113	VDD13
25	BA8	114	VSS29
26	BA9	115	VDD14
27	BA10	116	VSS30
28	BA11	117	VDD15
29	BA12	118	VSS31
30	BA13	119	VDD16
31	BA14	120	VSS32
32	BA15	121	VDD17
33	BA16	122	VSS33
34	BA17	123	VDD18
35	BA18	124	VSS34
36	BA19	125	VDD19
37	BA20	126	VSS35
38	BA21	127	VDD20
39	BA22	128	VSS36
40	BA23	129	VDD21
41	BA24	130	VSS37
42	BA25	131	VDD22
43	BA26	132	VSS38
44	BA27	133	VDD23
45	BA28	134	VSS39
46	BA29	135	VDD24
47	BA30	136	VSS40
48	BA31	137	VDD25
49	BA32	138	VSS41
50	BA33	139	VDD26
51	BA34	140	VSS42
52	BA35	141	VDD27
53	BA36	142	VSS43
54	BA37	143	VDD28
55	BA38	144	VSS44
56	BA39	145	VDD29
57	BA40	146	VSS45
58	BA41	147	VDD30
59	BA42	148	VSS46
60	BA43	149	VDD31
61	BA44	150	VSS47
62	BA45	151	VDD32
63	BA46	152	VSS48
64	BA47	153	VDD33
65	BA48	154	VSS49
66	BA49	155	VDD34
67	BA50	156	VSS50
68	BA51	157	VDD35
69	BA52	158	VSS51
70	BA53	159	VDD36
71	BA54	160	VSS52
72	BA55	161	VDD37
73	BA56	162	VSS53
74	BA57	163	VDD38
75	BA58	164	VSS54
76	BA59	165	VDD39
77	BA60	166	VSS55
78	BA61	167	VDD40
79	BA62	168	VSS56
80	BA63	169	VDD41
81	BA64	170	VSS57
82	BA65	171	VDD42
83	BA66	172	VSS58
84	BA67	173	VDD43
85	BA68	174	VSS59
86	BA69	175	VDD44
87	BA70	176	VSS60
88	BA71	177	VDD45
89	BA72	178	VSS61
90	BA73		

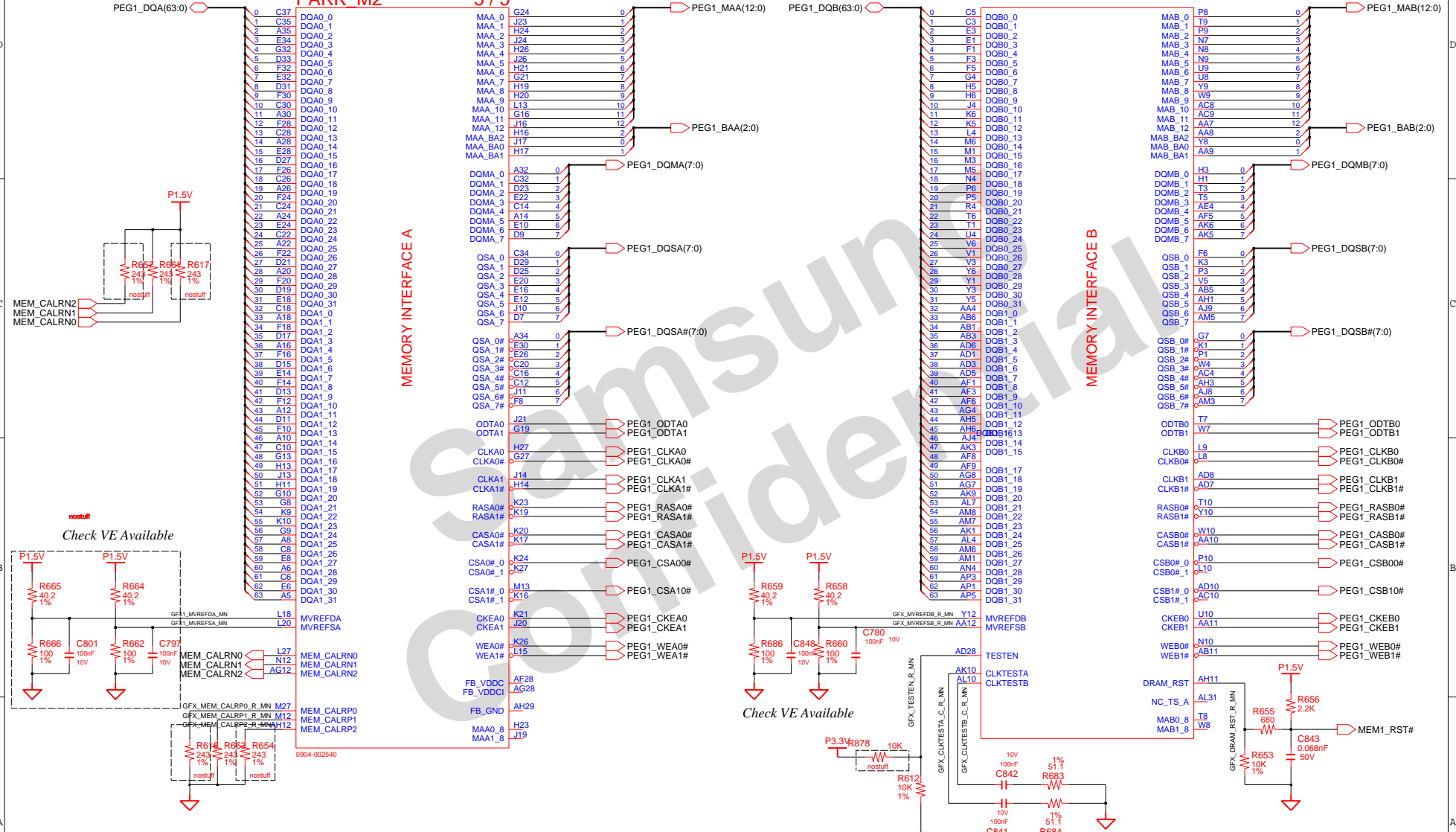
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.



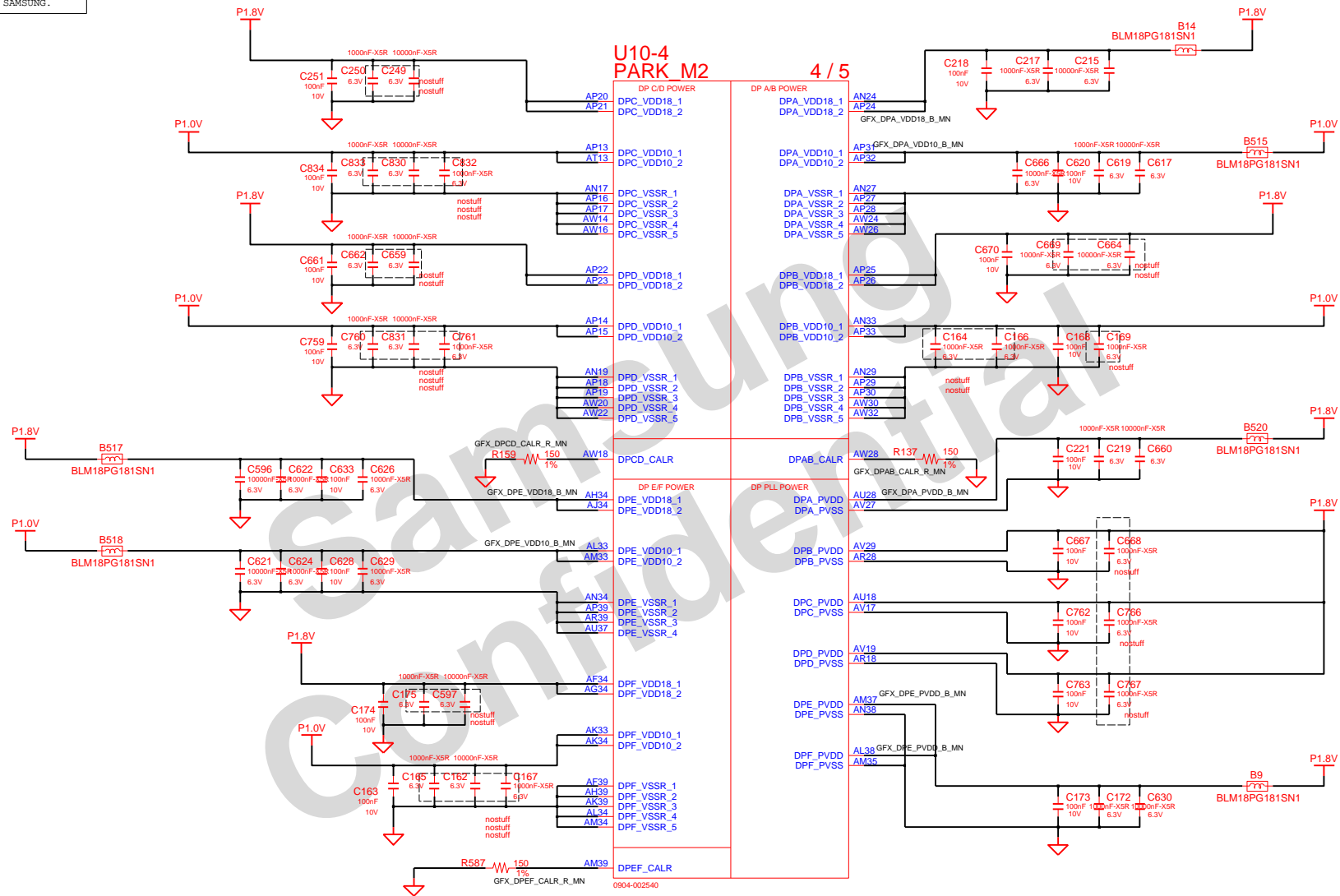
SAMSUNG PROPRIETARY
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

U10-5
PARK M2

5 / 5



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	H.J.Ro	DATE	9/3/2009	TITLE	Bremen-D GFX MADISON-LP	SAMSUNG ELECTRONICS
CHECK	K.Y.Kim	DEV. STEP	ADV1			PART NO. BA41-xxxxxA
APPROVAL	H.K.Park	REV	1.1			
MODULE CODE		LAST EDIT	October 10, 2009 16:50:44 PM	PAGE	20	OF 61

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.

U10-2
PARK M2 2 / 5

E39	PCIE_VSS_1	A3	GND_1
F34	PCIE_VSS_2	A37	GND_2
F39	PCIE_VSS_3	B7	GND_3
G33	PCIE_VSS_4	B9	GND_4
G34	PCIE_VSS_5	B11	GND_5
H31	PCIE_VSS_6	B13	GND_6
H34	PCIE_VSS_7	B15	GND_7
H39	PCIE_VSS_8	B17	GND_8
J31	PCIE_VSS_9	B19	GND_9
J34	PCIE_VSS_10	B21	GND_10
K31	PCIE_VSS_11	B23	GND_11
K34	PCIE_VSS_12	B25	GND_12
K39	PCIE_VSS_13	B27	GND_13
L31	PCIE_VSS_14	B29	GND_14
L34	PCIE_VSS_15	B31	GND_15
M34	PCIE_VSS_16	B33	GND_16
M39	PCIE_VSS_17	C1	GND_17
N31	PCIE_VSS_18	C39	GND_18
N34	PCIE_VSS_19	E5	GND_19
P31	PCIE_VSS_20	E35	GND_20
P34	PCIE_VSS_21	F7	GND_21
P39	PCIE_VSS_22	F9	GND_22
R34	PCIE_VSS_23	F11	GND_23
T31	PCIE_VSS_24	F13	GND_24
T34	PCIE_VSS_25	F15	GND_25
T39	PCIE_VSS_26	F17	GND_26
U31	PCIE_VSS_27	F19	GND_27
U34	PCIE_VSS_28	F21	GND_28
Y34	PCIE_VSS_29	F23	GND_29
Y39	PCIE_VSS_30	F25	GND_30
W31	PCIE_VSS_31	F27	GND_31
W34	PCIE_VSS_32	F29	GND_32
Y34	PCIE_VSS_33	F31	GND_33
Y39	PCIE_VSS_34	F33	GND_34
AB39	PCIE_VSS_35	G2	GND_35
		G6	GND_36
		H9	GND_37
		J2	GND_38
		J6	GND_39
		J8	GND_40
		J27	GND_41
		K7	GND_42
		K14	GND_43
		L2	GND_44
		L6	GND_45
		L11	GND_46
		L17	GND_47
		L22	GND_48
		L24	GND_49
		M17	GND_50
		M22	GND_51
		M24	GND_52
		N2	GND_53
		N6	GND_54
		N16	GND_55
		N18	GND_56
		N21	GND_57
		N23	GND_58
		N25	GND_59
		R2	GND_60

GND

0904-002540

AC21	GND_120	R6	GND_61
AC23	GND_121	R15	GND_62
AC26	GND_122	R17	GND_63
AC28	GND_123	R20	GND_64
AD9	GND_124	R22	GND_65
AD15	GND_125	R24	GND_66
AD17	GND_126	R27	GND_67
AD20	GND_127	T11	GND_68
AD22	GND_128	T13	GND_69
AD24	GND_129	T16	GND_70
AE2	GND_130	T18	GND_71
AE6	GND_131	T21	GND_72
AF10	GND_132	T23	GND_73
AF18	GND_133	T26	GND_74
AF21	GND_134	U2	GND_75
AG2	GND_135	U6	GND_76
AG5	GND_136	U13	GND_77
AG9	GND_137	U15	GND_78
AG17	GND_138	U17	GND_79
AG20	GND_139	U20	GND_80
AG22	GND_140	U22	GND_81
AG27	GND_141	U24	GND_82
AJ2	GND_142	U27	GND_83
AJ6	GND_143	V11	GND_84
AJ8	GND_144	V13	GND_85
AJ10	GND_145	V16	GND_86
AJ11	GND_146	V18	GND_87
AJ28	GND_147	V21	GND_88
AK7	GND_148	V23	GND_89
AK11	GND_149	V26	GND_90
AL2	GND_150	W2	GND_91
AL5	GND_151	W6	GND_92
AL8	GND_152	Y15	GND_93
AL11	GND_153	Y17	GND_94
AL14	GND_154	Y20	GND_95
AL17	GND_155	Y22	GND_96
AL20	GND_156	Y24	GND_97
AR5	GND_157	Y27	GND_98
AL23	GND_158	A22	GND_99
AL26	GND_159	AA6	GND_100
AL32	GND_160		
AM9	GND_161		
AM11	GND_162		
AM17	GND_163		
AM2	GND_164		
AN2	GND_165		
AN6	GND_166		
AN8	GND_167		
AN30	GND_168		
AP7	GND_169		
AP9	GND_170		
AP11	GND_171		
AL21	GND_172		
	GND_173		
	GND_174		

GND

VSS_MECH_1
VSS_MECH_2
VSS_MECH_3

A39
AW1
AW39

DESIGN	H.J.Ra	DATE	9/3/2009	TITLE	Bremen-D GFX MADISON-LP	SAMSUNG ELECTRONICS
CHECK	K.Y.Kim	DEV. STEP	ADV1			PART NO. BA41-xxxxxA
APPROVAL	H.K.Park	REV	1.1			
MODULE CODE		LAST EDIT	October 10, 2009 16:50:44 PM	PAGE	22	OF 61

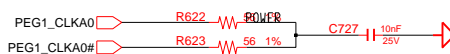
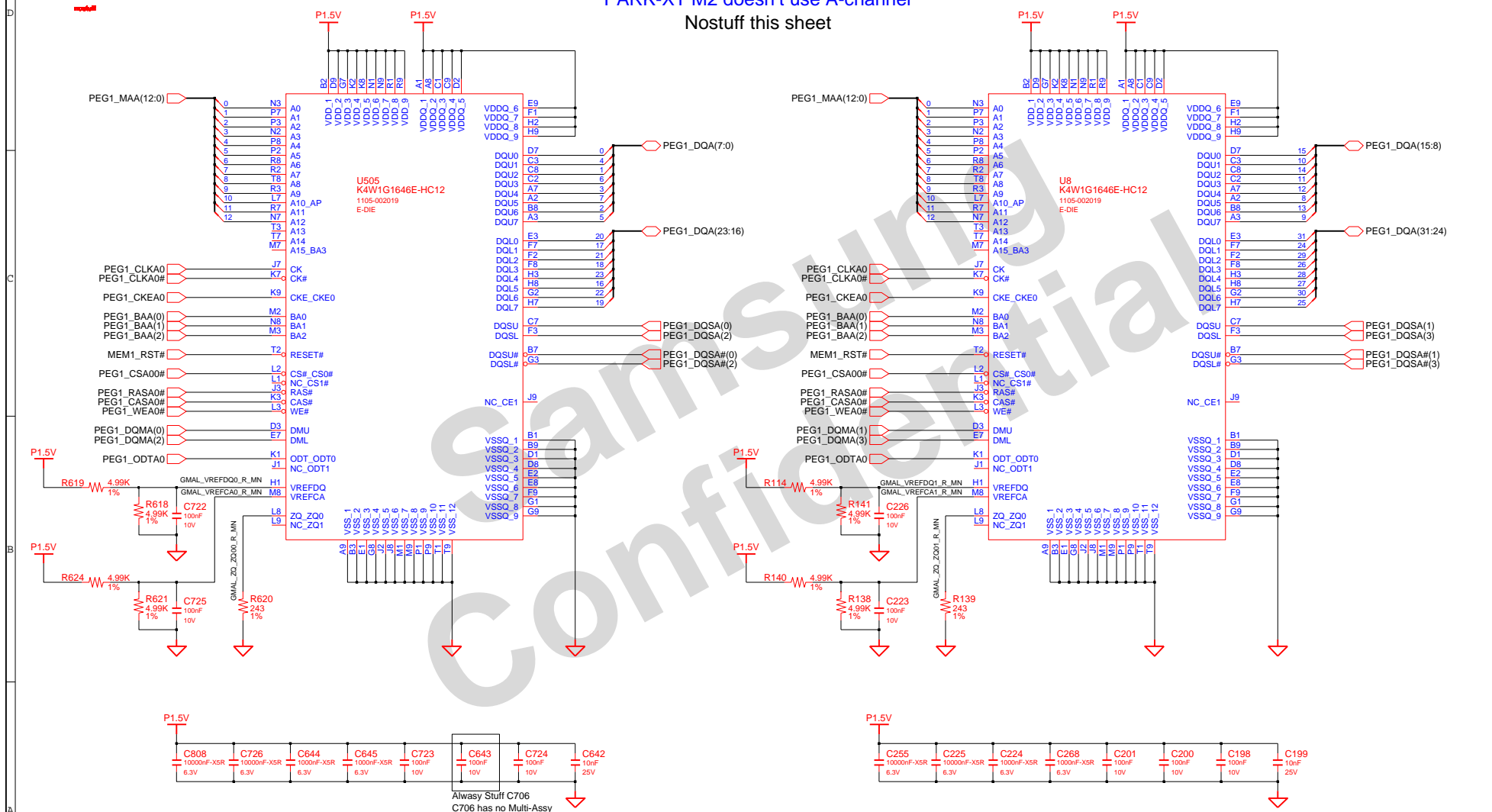
SAMSUNG PROPRIETARY

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.

A-channel Lower Data

PARK-XT M2 doesn't use A-channel

Nostuff this sheet



DESIGN	H.J.Ra	DATE	9/3/2009	TITLE	Bremen-D
CHECK	K.Y.Kim	DEV. STEP	ADV1	GRAPHICS MEMORY	
APPROVAL	H.K.Park	REV	1.1	gDDR3	
MODULE CODE		LAST EDIT	October 10, 2009 16:50:44 PM	PAGE	23 OF 61

SAMSUNG
ELECTRONICS
PART NO. BA41-xxxxxA

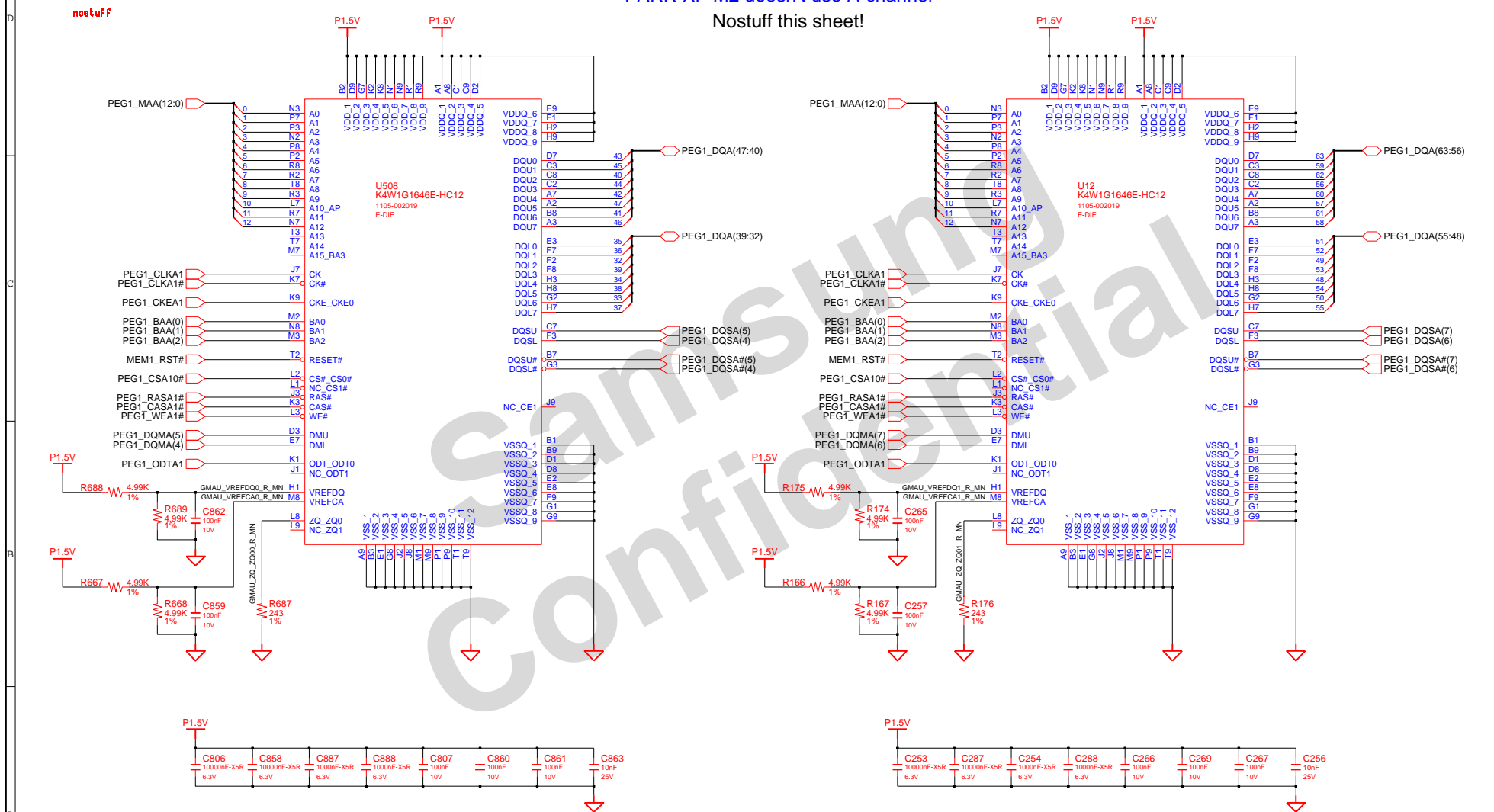
SAMSUNG PROPRIETARY

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.

A-channel Upper Data

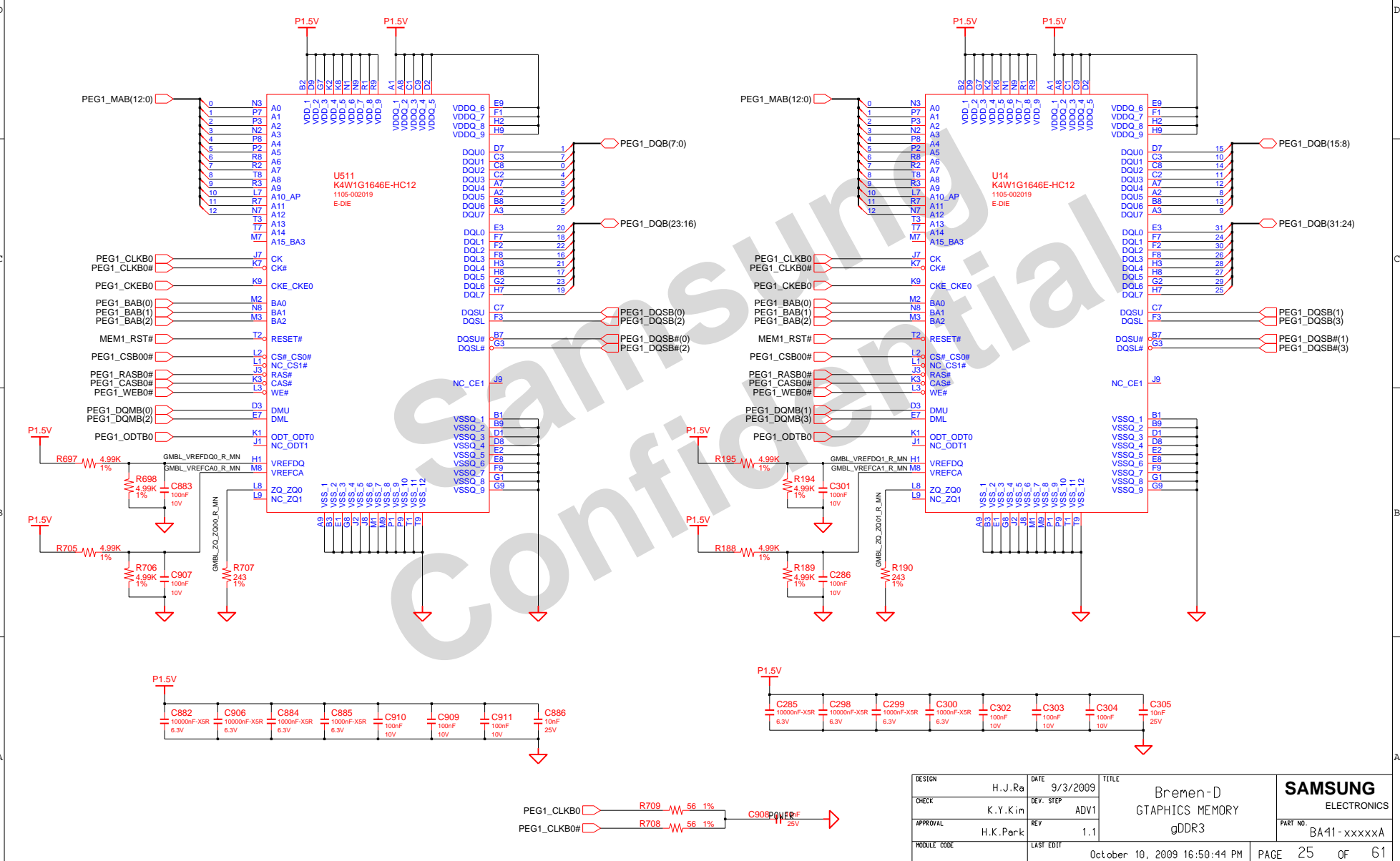
PARK-XP M2 doesn't use A-channel

Nostuff this sheet!

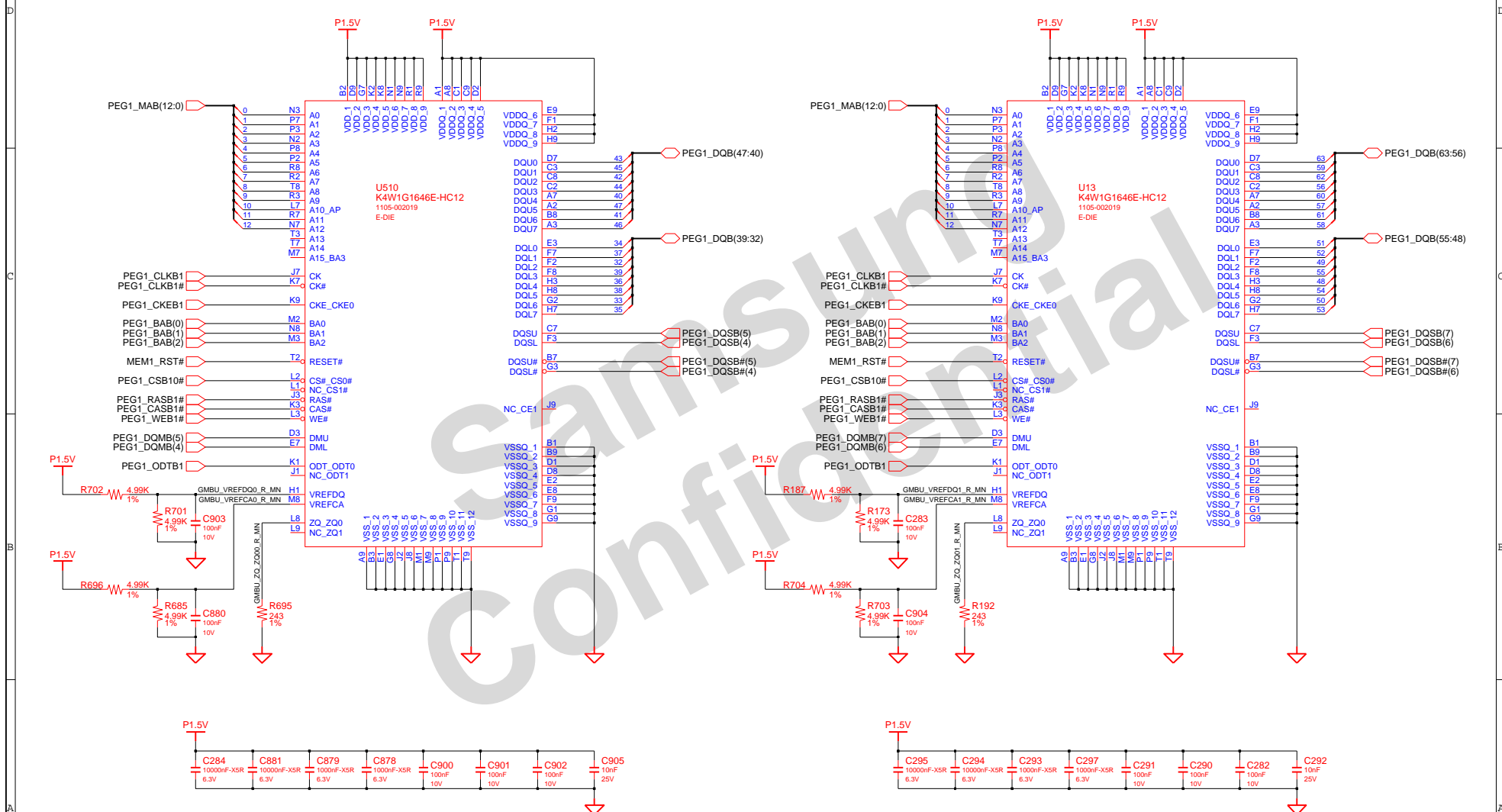


DESIGN	H.J.Ro	DATE	9/3/2009	TITLE	Bremen-D GRAPHICS MEMORY gDDR3	SAMSUNG ELECTRONICS PART NO. BA41-xxxxxA
CHECK	K.Y.Kim	DEV. STEP	ADV1			
APPROVAL	H.K.Park	REV	1.1			
MODULE CODE		LAST EDIT	October 10, 2009 16:50:44 PM	PAGE	24 OF 61	

B-channel Lower Data



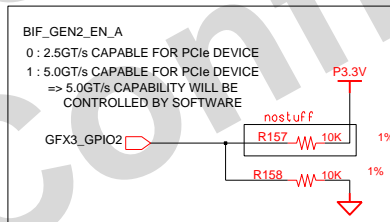
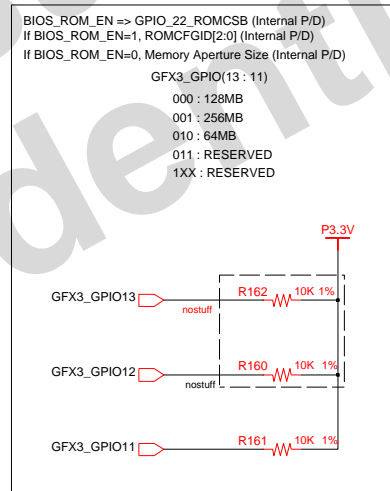
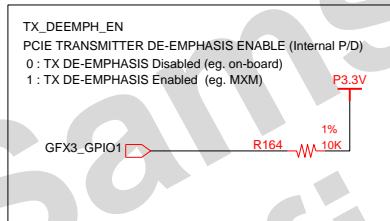
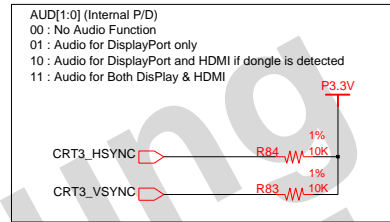
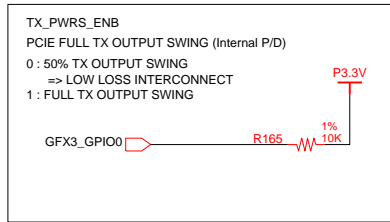
B-channel Upper Data



PEG1_CLKB1 \rightarrow R191 \rightarrow POWER
PEG1_CLKB1# \rightarrow R193 \rightarrow 56 1% \rightarrow C296 \rightarrow 10nF 25V

DESIGN	H.J.Ro	DATE	9/3/2009	TITLE	Bremen-D GRAPHICS MEMORY gDDR3	SAMSUNG ELECTRONICS PART NO. BA41-xxxxxA
CHECK	K.Y.Kim	DEV. STEP	ADV1			
APPROVAL	H.K.Park	REV	1.1			
MODULE CODE		LAST EDIT	October 10, 2009 16:50:44 PM	PAGE	26 OF 61	

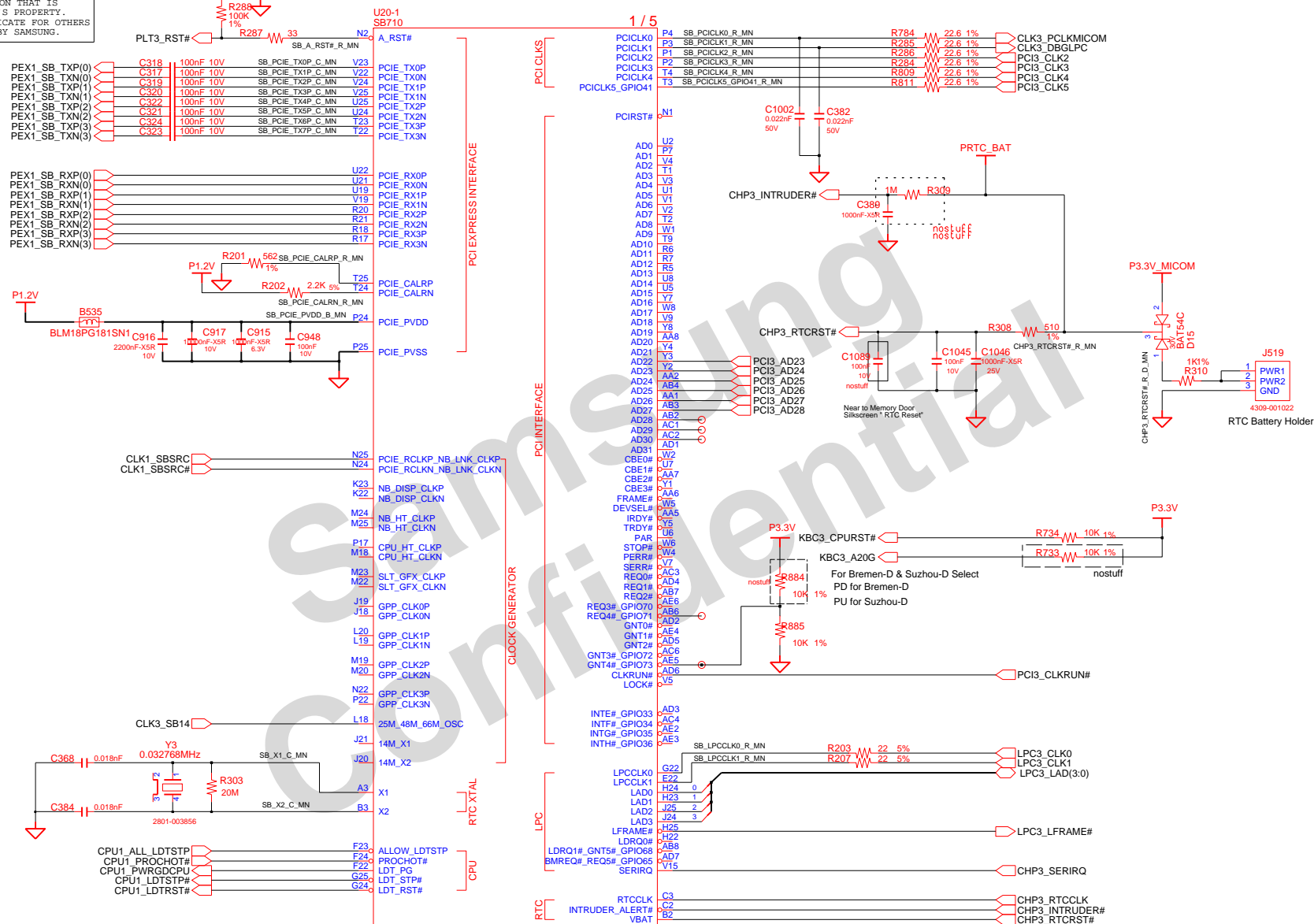
Park XT Straps



DESIGN	H.J.Ro	DATE	9/3/2009	TITLE	Bremen-D GFX MADISON-LP	SAMSUNG ELECTRONICS
CHECK	K.Y.Kim	DEV. STEP	ADV1			PART NO. BA41-xxxxxA
APPROVAL	H.K.Park	REV	1.1			
MODULE CODE		LAST EDIT	October 10, 2009 16:50:44 PM	PAGE	27	OF 61

SAMSUNG PROPRIETARY

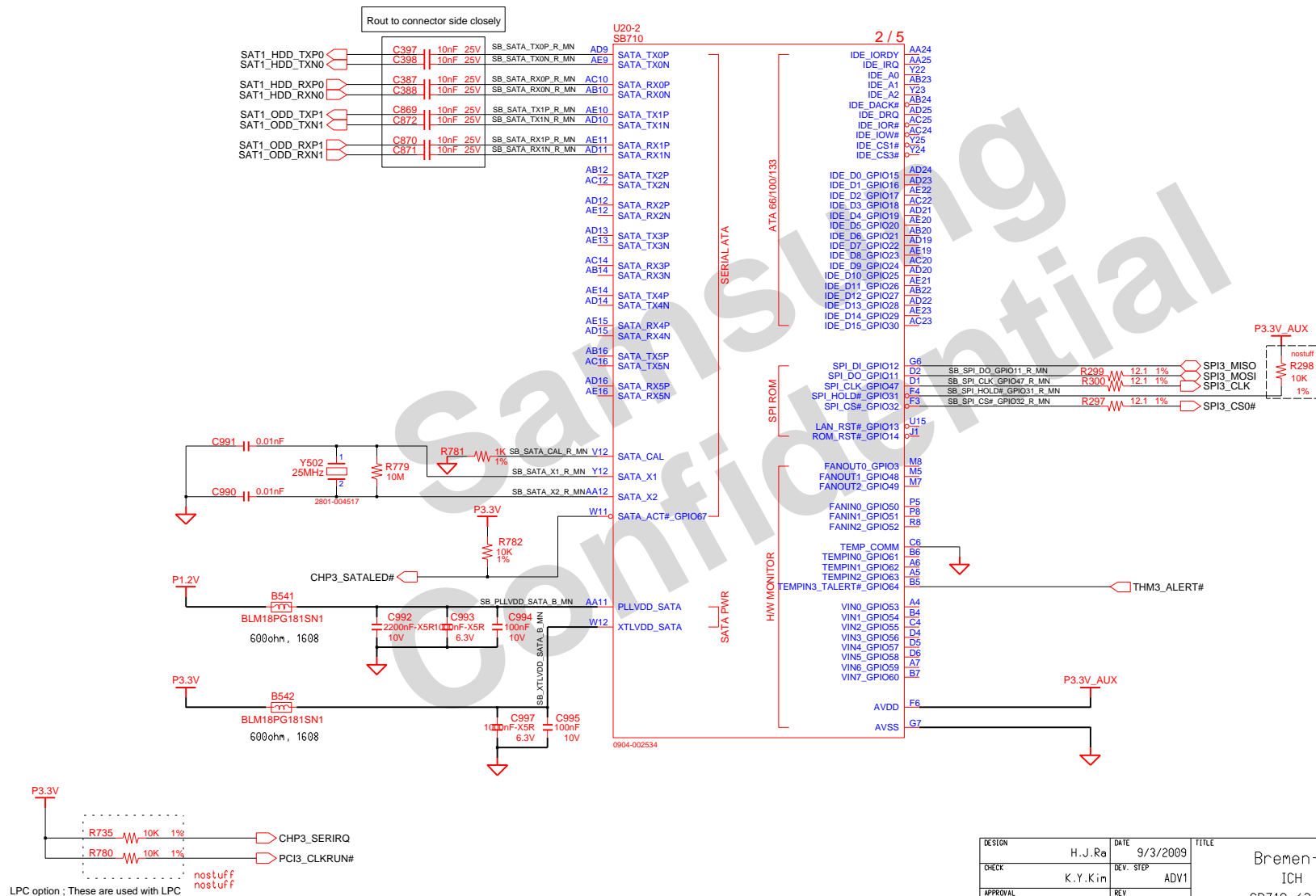
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.



DESIGN	H.J.Ro	DATE	9/3/2009	TITLE	Bremen-D ICH SB710 (1/5)	SAMSUNG ELECTRONICS PART NO. BA41-xxxxxA
CHECK	K.Y.Kim	DEV. STEP	ADV1			
APPROVAL	H.K.Park	REV	1.1			
MODULE CODE		LAST EDIT	October 10, 2009 16:50:44 PM	PAGE	28 OF 61	

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.

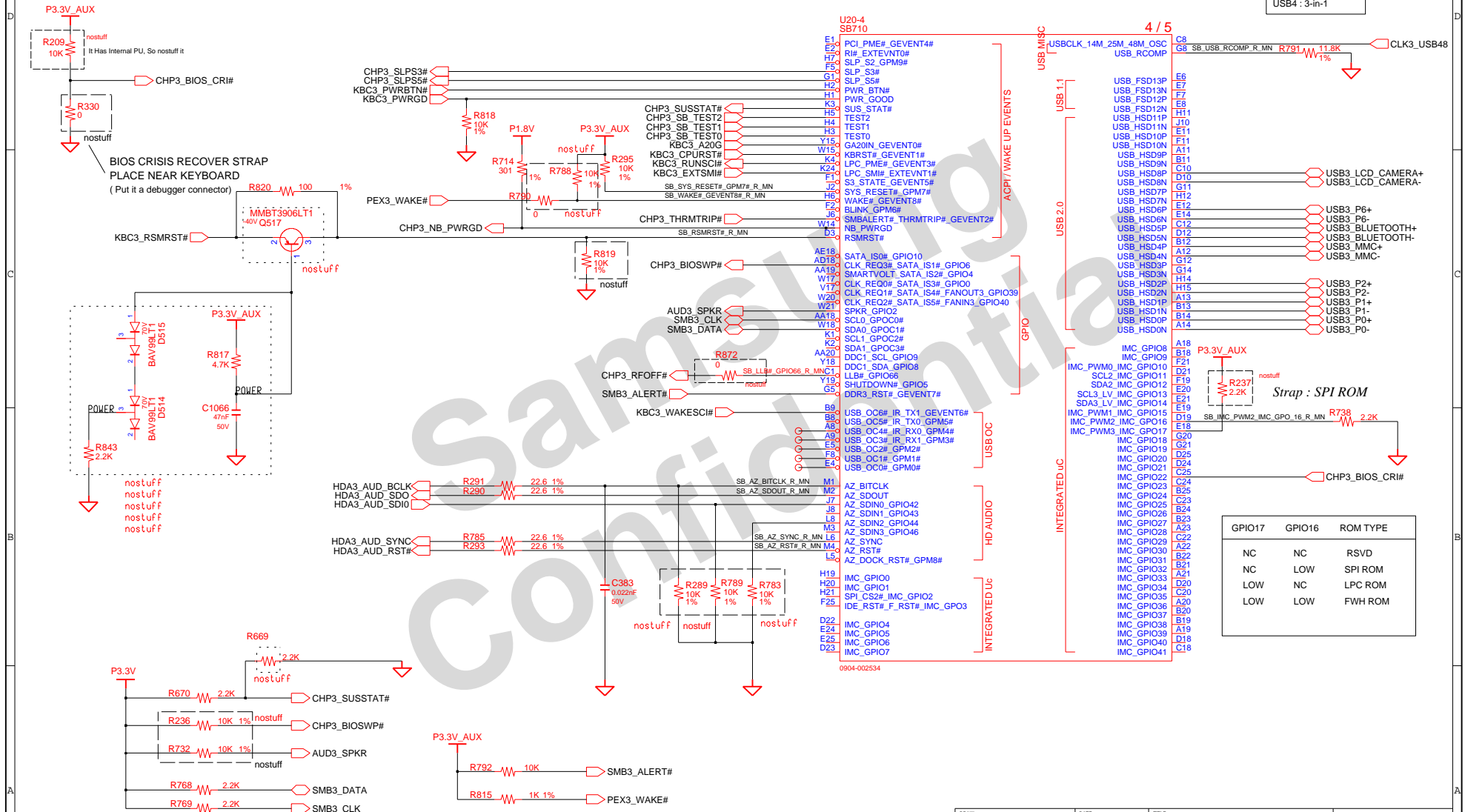


DESIGN	H.J.Ro	DATE	9/3/2009	TITLE	Bremen-D ICH SB710 (2/5)	SAMSUNG ELECTRONICS PART NO. BA41-xxxxxA
CHECK	K.Y.Kim	DEV. STEP	ADV1			
APPROVAL	H.K.Park	REV	1.1			
MODULE CODE		LAST EDIT	October 10, 2009 16:50:44 PM	PAGE	29 OF 61	

SAMSUNG PROPRIETARY

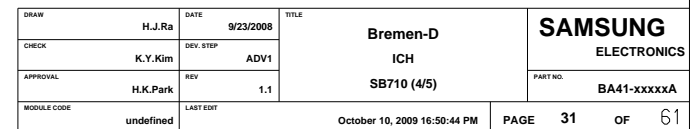
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

USB1: 6: Right Port
USB0: Left Port
USB5: Bluetooth
USB8: Camera
USB4: 3-in-1

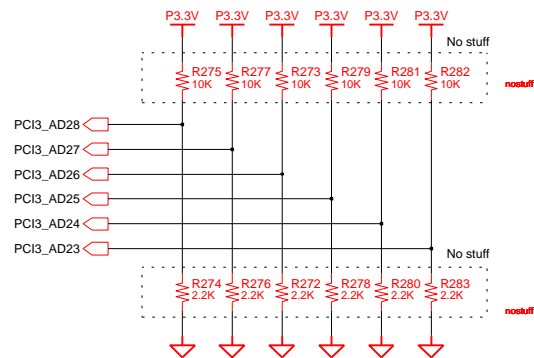


DRAW	H.J.Ra	DATE	9/23/2008	TITLE	Bremen-D	SAMSUNG ELECTRONICS
CHECK	K.Y.Kim	DEV. STEP	ADV1	ICH		
APPROVAL	H.K.Park	REV	1.1	SB710 (3/5)	PART NO.	
MODULE CODE		LAST EDIT			BA41-xxxxxxA	
October 10, 2009 16:50:44 PM						PAGE 30 OF 61

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.

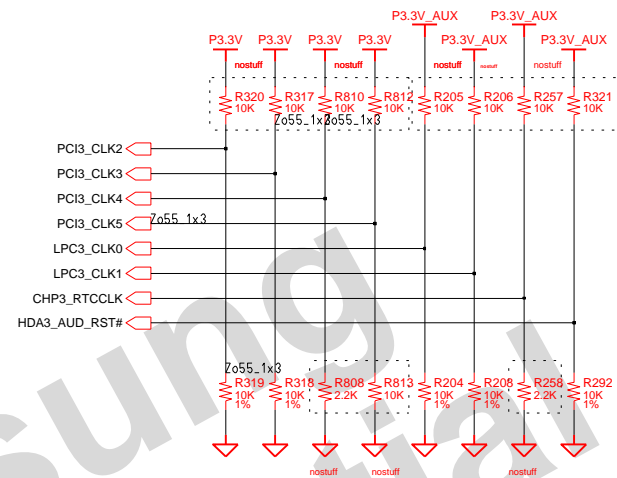


SAMSUNG PROPRIETARY
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

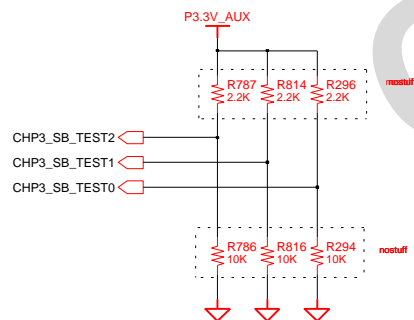


DEBUG STRAPS

	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



	PCI3_CLK2	PCI3_CLK3	PCI3_CLK4	PCI3_CLK5	LPC3_CLK0	LPC3_CLK1	RTC_CLK	AUD_RST#
STRAP HIGH	BOOTFAIL TIMER ENABLED	USER DEBUG STRAPS	RESERVED	RESERVED	EC ENABLED	CLKGEN ENABLED	INTERNAL RTC	ENABLE PCI MEM BOOT
STRAP LOW	BOOTFAIL TIMER DISABLED	IGNORE DEBUG STRAPS	RESERVED	RESERVED	EC DISABLED	CLKGEN DISABLED	EXRERNAL RTC (PD on X1, Apply 32KHz to RTC_CLK)	DISABLE PCI MEM BOOT

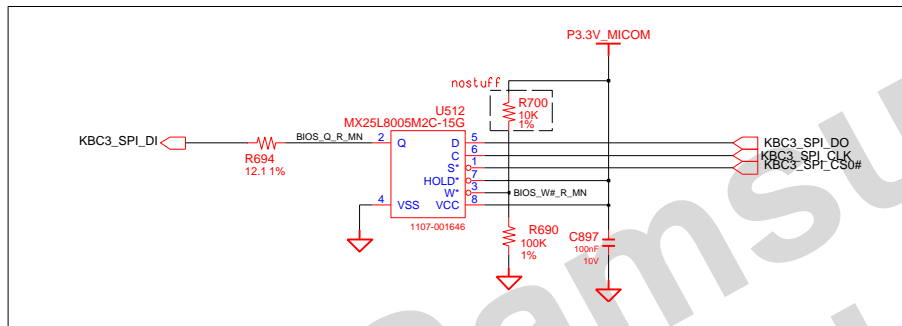


Remove SB_TEST pins for mass production. (For ASIC debug only - AMD)

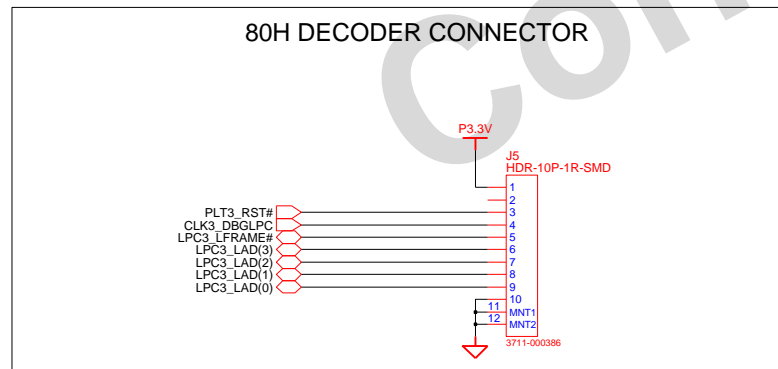
DRAW	H.J.Ra	DATE	9/23/2008	Bremen-D ICH SB710 STRAPS (5/5)		SAMSUNG ELECTRONICS			
CHECK	K.Y.Kim	DEV. STEP	ADV1						
APPROVAL	H.K.Park	REV	1.1						
MODULE CODE		LAST EDIT		October 10, 2009 16:50:44 PM		PAGE	32	OF	61

SPI_BIOS_ROM

8MBit

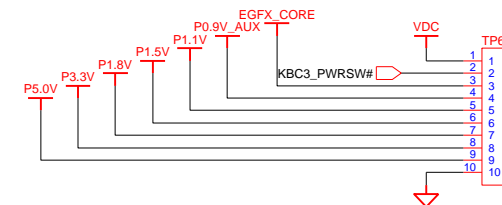


80H DECODER CONNECTOR



02 VERIFY REAL MODE
03 DISABLE NMI
04 GET CPU TYPE
06 INIT SYSTEM H/W
08 INIT CHIPSET REG.
09 SET IN POST FLAG
0A INIT CPU REG
0B CPU CACHE ON
0C INIT CACHE TO POST
0E INIT I/O VALUE
0F ENABLE THE L-BUS IDE
10 INIT. POWER MANAGER
11 LOAD ALTERNATE REG
13 PCI BUS MASTER RESET
WITH INITIAL POST VALUE
14 INIT. KEYBOARD CONTROLLER
16 CHECK CHECKSUM
18 8254 TIMER INIT
1A 8237 DMA CONTROLLER INIT
1C RESET INTERRUPT CONTROLLER
20 TEST DRAM REFRESH
22 TEST 8742 KEYBOARD CONTROLLER
24 SET ES SEGMENT REG. TO 4GB
26 ENABLE A20
28 AUTO SIZING DRAM
32 COMPUTE THE CPU SPEED
34 TEST CMOS RAM
38 SHADOW SYSTEM BIOS ROM
3A AUTO SIZING CACHE
3C CONFIGURE ADVANCED CHIPSET REG.
3D LOAD ALTER REG. WITH CMOS VALUE
42 INIT. INTERRUPT VECTOR
44 INIT. I/O INTERRUPT
46 CHECK ROM COPYRIGHT NOTICE
47 INIT. I20 SUPPORT IF INSTALLED
48 CHECK VIDEO CONFIGURE AGAINST CMOS
49 INIT. PCI BUS AND DEVICE
4A INIT. ALL VIDEO BIOS ROM
4C SHADOW VIDEO BIOS ROM
50 DISPLAY CPU TYPE AND SPEED
52 TEST KEYBOARD
54 SET KEYCLICK IF ENABLED
56 ENABLE KEYBOARD
58 TEST FOR UNEXPECTED INTERRUPTS
5A DISPLAY *PRESS* SETUP*
5C TEST RAM BETWEEN 512K AND 640K
60 TEST EXTENDED MEMORY
62 TEST EXTENDED MEMORY ADDRESS LINE
64 JUMP TO USER PATCH 1
66 CONFIGURE ADVANCE CACHE REG.
6A DISPLAY EXTERNAL CACHE SIZE
6C DISPLAY SHADOW MESSAGE
6E DISPLAY NON-DISPOSABLE SEGMENT
70 DISPLAY ERROR MESSAGE
72 CHECK FOR CONFIGURATION ERROR
74 TEST REAL-TIME CLOCK
76 CHECK FOR KEYBOARD ERROR
78 SETUP HARDWARE INTERRUPT VECTOR
7E TEST COPROCESSOR IF PRESENT
80 DISABLE ON-BOARD I/O PORT
82 DETECT AND INSTALL EXT RS232C
84 DETECT AND INSTALL EXT PARALLEL
86 RE-INIT. ON-BOARD I/O PORT
88 INIT. BIOS DATA ROM
8A INIT. EXTENDED BIOS DATA AREA
8C INIT. FDD CONTROLLER
8E SHADOW OPTION ROMS
9C SETUP POWER MANAGEMENT
9E ENABLE H/W INTERRUPT
A0 SET TIME OF DAY
A4 INIT. TYPEMATIC RATE
A8 ERASE F2 PROMPT
AA SCAN FOR F2 KEY STROKE
AC ENTER SETUP
AE CLEAR IN POST FLAG
B0 CHECK FOR ERRORS
B2 POST DONE-PREPARE TO BOOT O/S
B4 ONE BEEP
B6 CHECK PASSWORD (OPTION)
B7 ACPI INIT
BA DIMM INIT
BE CLEAR SCREEN
C0 TRY BOOT WITH INT19
C2 INTERRUPT HANDLER ERROR
C4 UNKNOWN INTERRUPT ERROR
C6 PENDING INTERRUPT ERROR
D6 SHUTDOWN 5
D8 SHUTDOWN ERROR
DA EXTENDED BLOCK MOVE
DC SHUTDOWN 10
E0 ENABLE NMI
E2 INIT. HDD CONTROLLER
E4 INIT. LOCAL BUS HDD CONTROLLER
E6 JUMP TO USER PATCH 2
E8 DISABLE A20 ADDRESS LINE
F6 CLEAR HUGE ES SEGMENT REG.
F8 SEARCH FOR OPTION ROMS

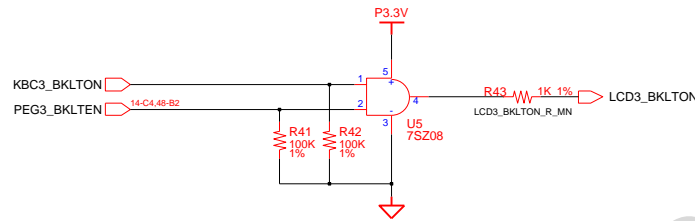
Pins for ICT FREE
should be rearranged. ICT FREE



DRAW	H.J.Ra	DATE	9/23/2008	TITLE	Bremen-D	SAMSUNG
CHECK	K.Y.Kim	DEV. STEP	ADV1		SPI_BIOS_ROM	ELECTRONICS
APPROVAL	H.K.Park	REV	1.1		SPI_BIOS_ROM	PART NO.
MODULE CODE		LAST EDIT				BA41-xxxxxA
				October 10, 2009 16:50:44 PM	PAGE	33 OF 61

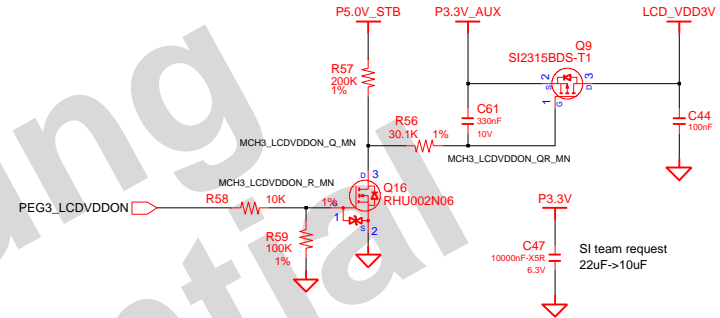
LVDS

Backlight On

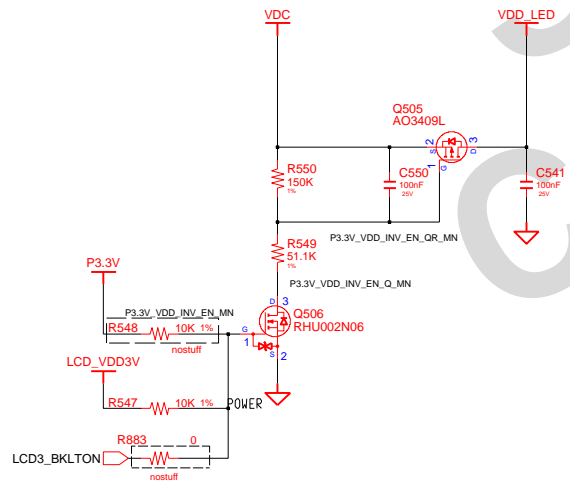


LCD Power

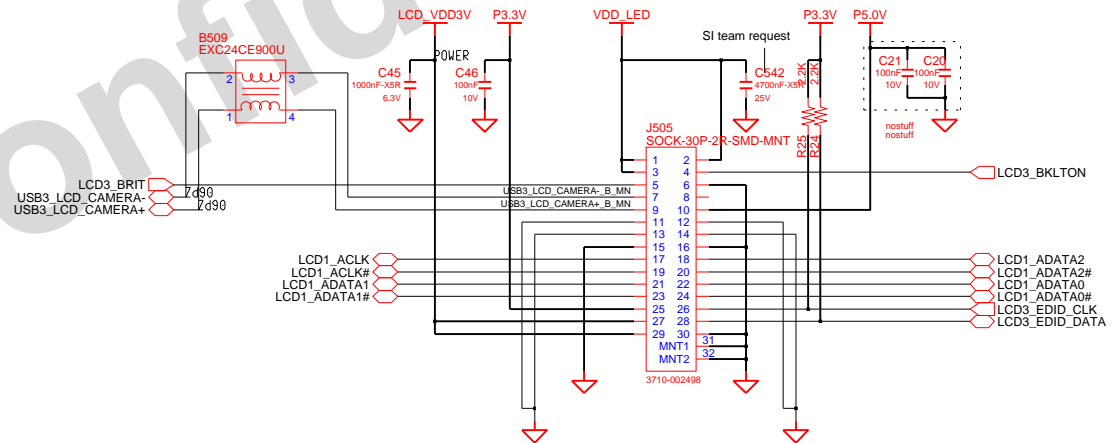
EBL Purpose



LED Power



Camera + LCD Connector



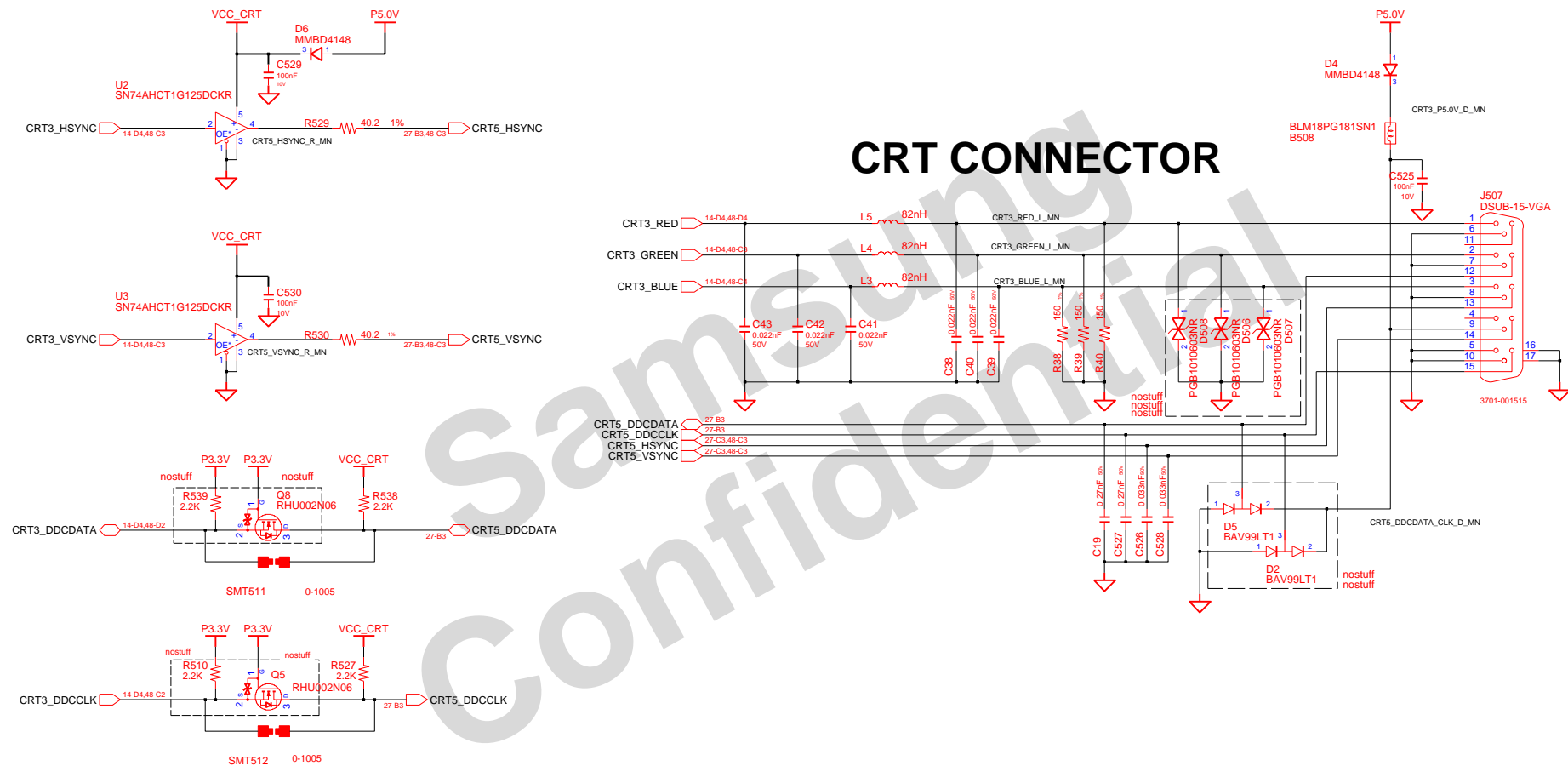
DESIGN	H.J.Ra	DATE	9/23/2008	TITLE	Bremen-D
CHECK	K.Y.Kim	DEV. STEP	ADV1	GRAPHICS_IF	
APPROVAL	H.K.Park	REV	1.1	LVDS	
MODULE CODE		LAST EDIT			
				October 10, 2009 16:50:44 PM	PAGE 34 OF 61

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

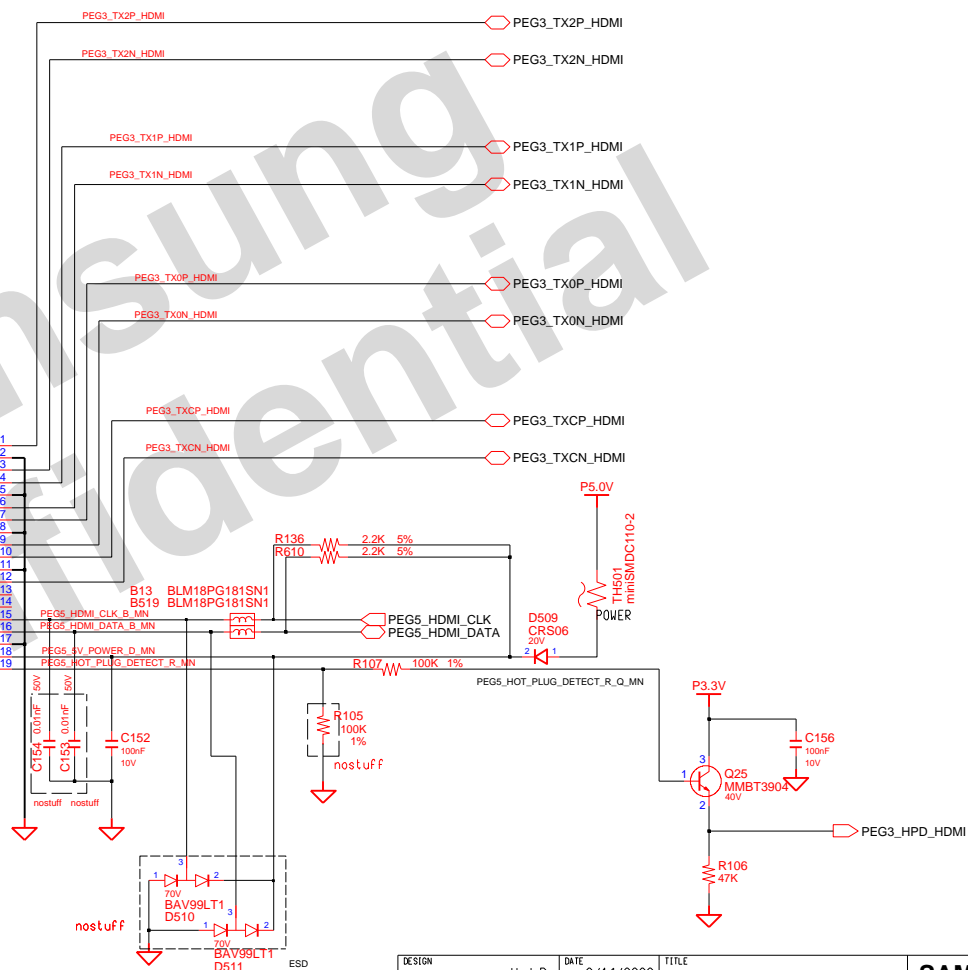
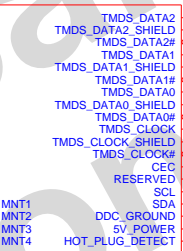
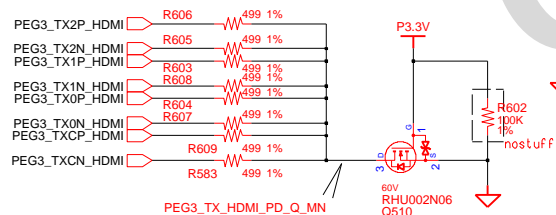
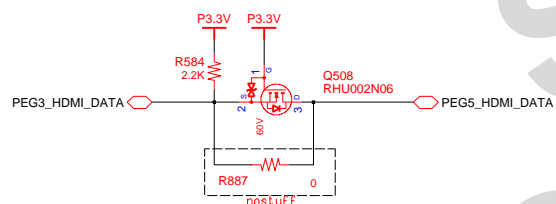


Check "CRT3_DDCCLK/DATA" Voltage Level
2N06 Can be replaced with SM6K2

DESIGN	H.J.Ra	DATE	9/23/2008	TITLE	Bremen-D GRAPHICS_IF CRT	SAMSUNG ELECTRONICS
CHECK	K.Y.Kim	DEV. STEP	ADV1			PART NO. BA41-xxxxxA
APPROVAL	H.K.Park	REV	1.1			
MODULE CODE		LAST EDIT				
October 10, 2009 16:50:44 PM						PAGE 35 OF 61

HDMI

The schematic diagram illustrates the HDMI signal path. It features a differential signal line connecting PEG3_HDMI_CLK to PEG5_HDMI_CLK. The signal path includes a 2.2K resistor (R135) and a 6V regulator (Q30, RHU002N06). A poststuff component (R886) is shown in a dashed box, indicating it is not present in the final design.

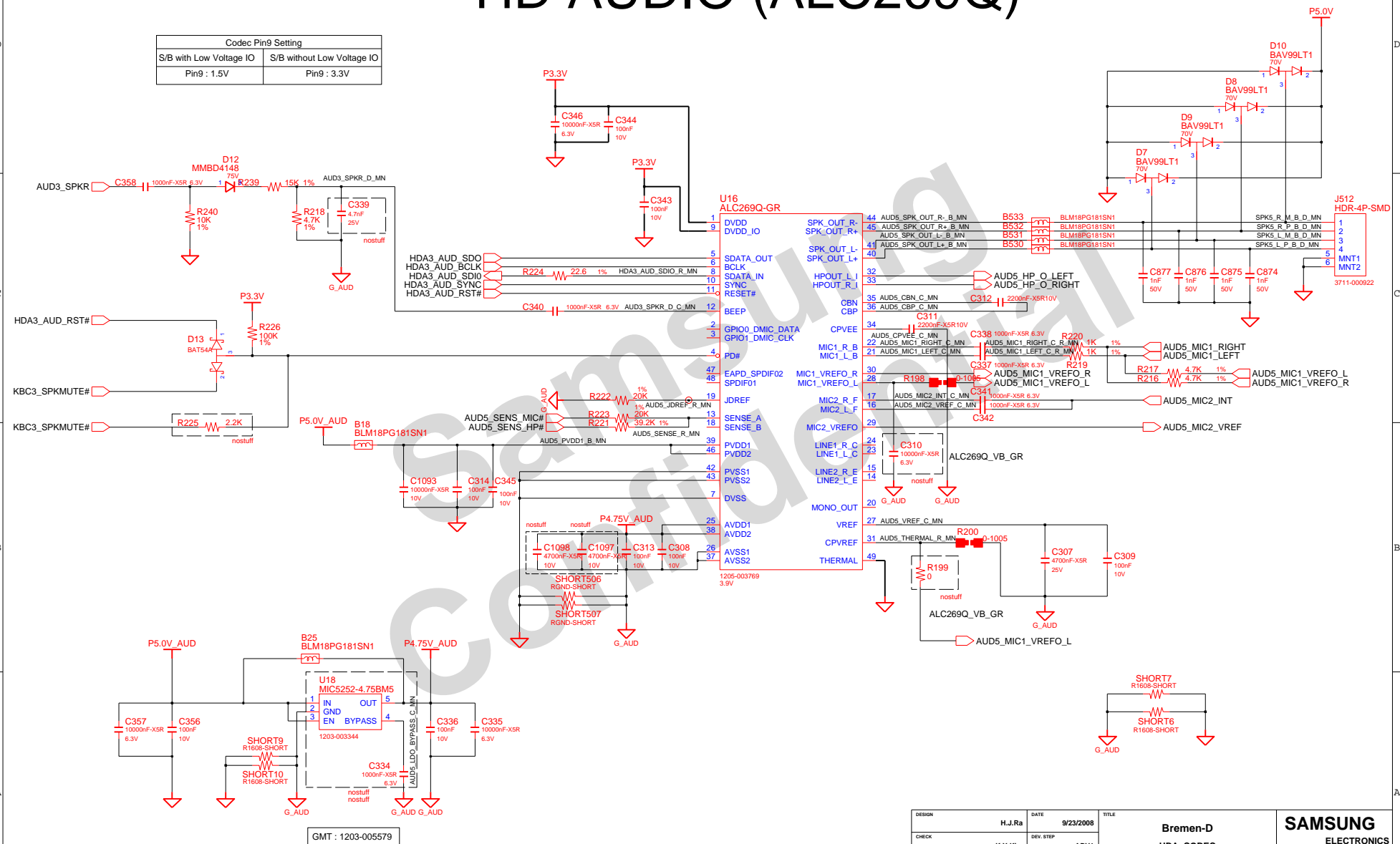


DESIGN	H.J.Rø	DATE	8/14/2009	TITLE Bremen-D HDMI HDMI	SAMSUNG ELECTRONICS
CHECK	K.Y.Kim	DEV. STEP	ADV1		
APPROVAL	H.K.Park	REV	1.1		
PART NO.		BA41-xxxxxA			
MODULE CODE		LAST EDIT		October 10, 2009 16:50:44 PM	PAGE 36 OF 61

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.

HD AUDIO (ALC269Q)

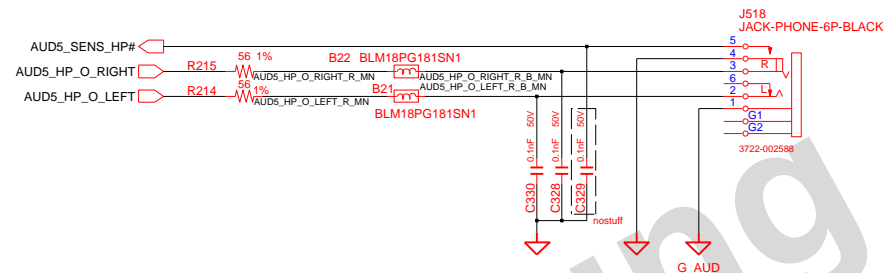
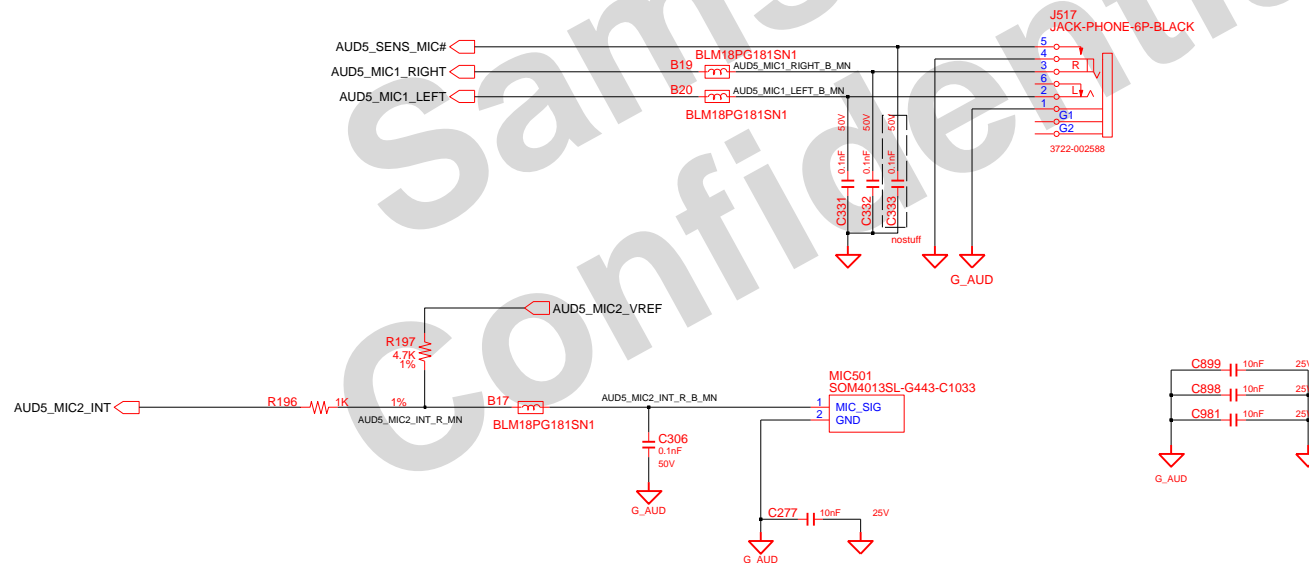
Codec Pin9 Setting	
S/B with Low Voltage IO	S/B without Low Voltage IO
Pin9 : 1.5V	Pin9 : 3.3V



DESIGN	H.J.Ra	DATE	9/23/2008	Bremen-D HDA_CODEC AUDIO CODEC ALC269Q_GR	SAMSUNG ELECTRONICS		
CHECK	K.Y.Kim	DEV. STEP	ADV1		PART NO. BA41-xxxxxxA		
APPROVAL	H.K.Park	REV	1.1				
MODULE CODE	LAST EDIT					October 10, 2009 16:50:44 PM	PAGE 37

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.

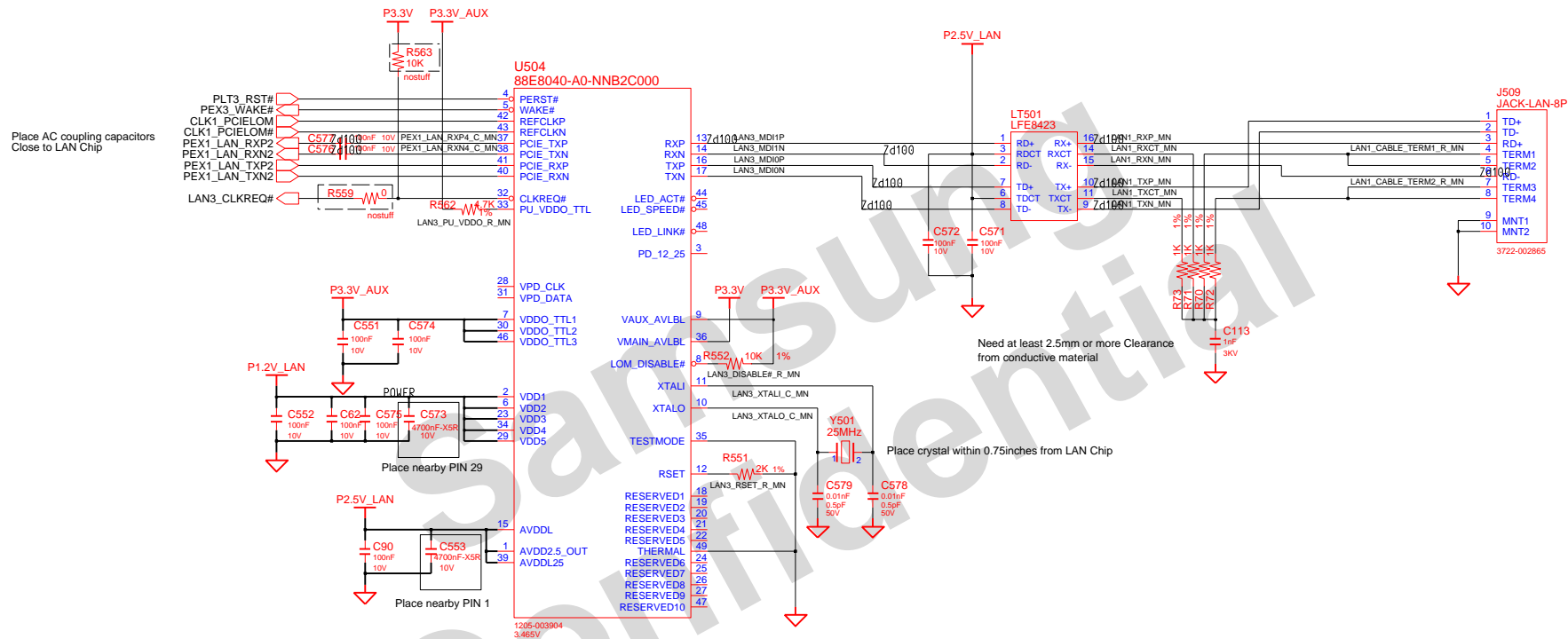
HEADPHONE(BLACK)**MIC JACK(BLACK)**

DESIGN	H.J.Ra	DATE	9/23/2008	TITLE	Bremen-D HDA_CODEC AUDIO INPUT/OUTPUT	SAMSUNG ELECTRONICS
CHECK	K.Y.Kim	DEV. STEP	ADV1			PART NO. BA41-xxxxxA
APPROVAL	H.K.Park	REV	1.1			
MODULE CODE		LAST EDIT		October 10, 2009 16:50:44 PM	PAGE 38 OF 61	

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 (88E8040)

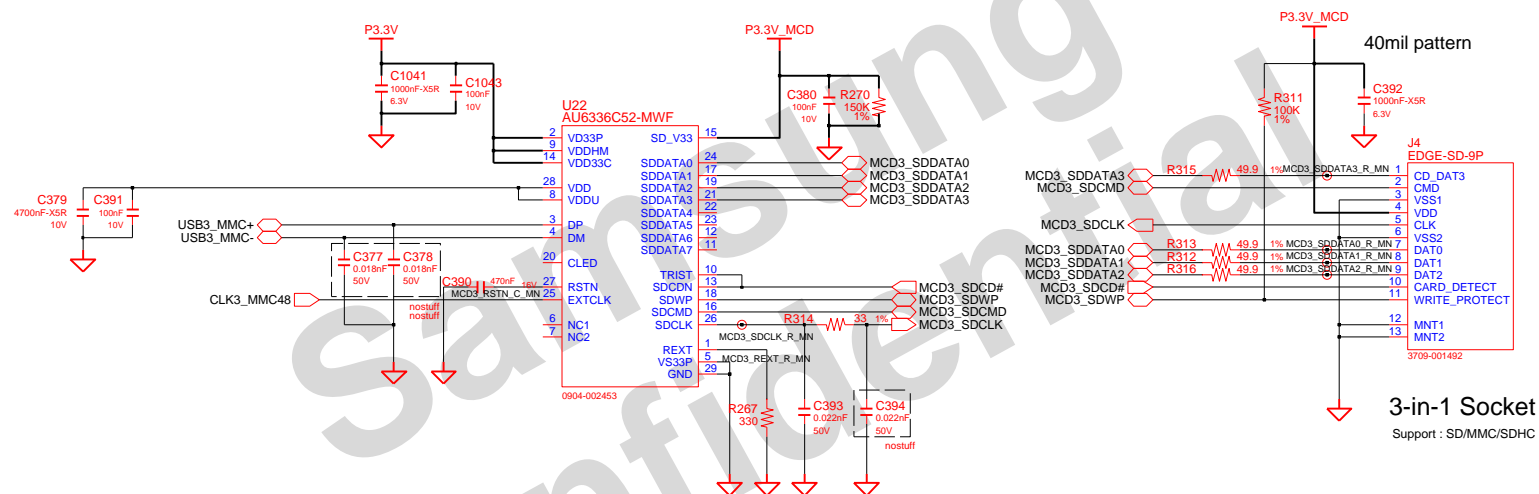


DESIGN	H.J.Ra	DATE	9/23/2008	TITLE	Bremen-D LAN LAN_MARVELL_8040	SAMSUNG ELECTRONICS
CHECK	K.Y.Kim	DEV. STEP	ADV1			PART NO. BA41-xxxxxA
APPROVAL	H.K.Park	REV	1.1			
MODULE CODE		LAST EDIT		October 10, 2009 16:50:44 PM	PAGE 39 OF 61	

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)



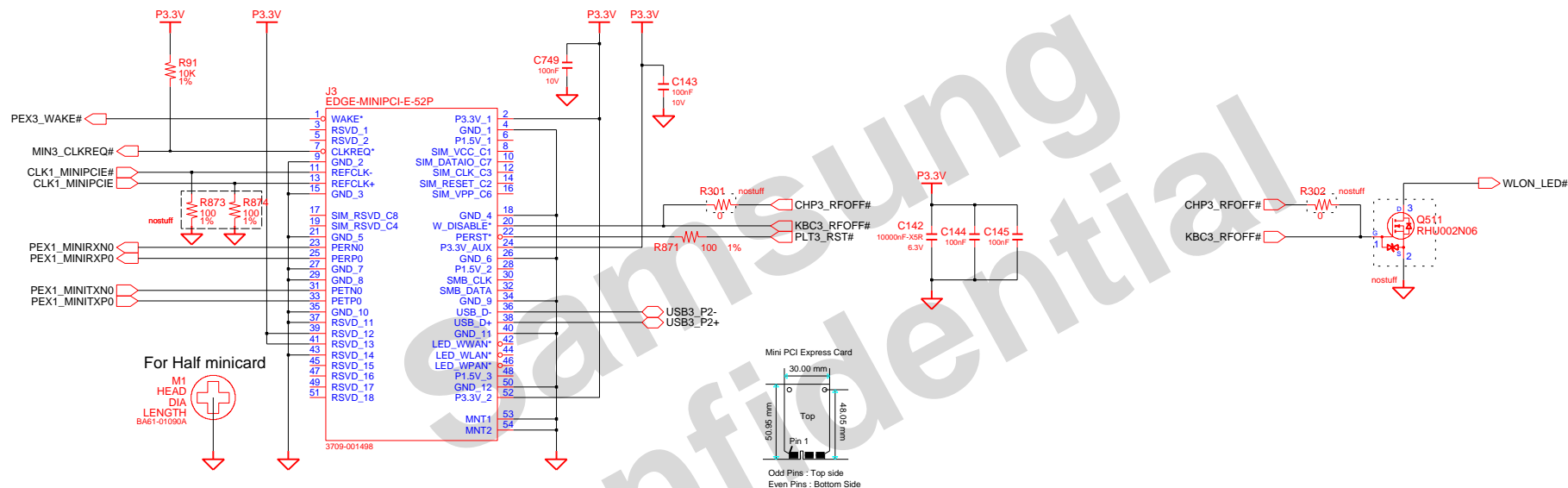
DESIGN	H.J.Ra	DATE	9/23/2008	TITLE	Bremen-D MULTICARD 3 IN 1 CARD	SAMSUNG ELECTRONICS
CHECK	K.Y.Kim	DEV. STEP	ADV1			PART NO. BA41-xxxxxA
APPROVAL	H.K.Park	REV	1.1			
MODULE CODE		LAST EDIT		October 10, 2009 16:50:44 PM	PAGE 40 OF 61	

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



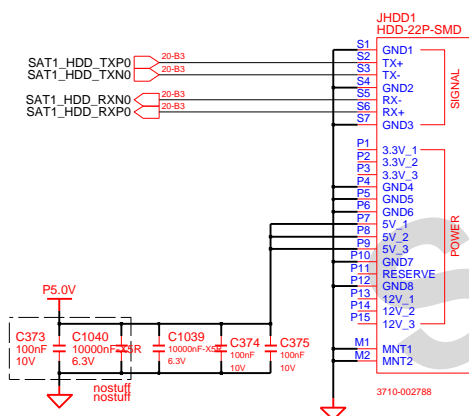
DESIGN	H.J.Ra	DATE	9/23/2008	TITLE	Bremen-D MINI_PCIE_CONN WLAN	SAMSUNG ELECTRONICS
CHECK	K.Y.Kim	DEV. STEP	ADV1			PART NO. BA41-xxxxxA
APPROVAL	H.K.Park	REV	1.1			
MODULE CODE		LAST EDIT	October 10, 2009 16:50:44 PM	PAGE	41	OF 61

SAMSUNG PROPRIETARY

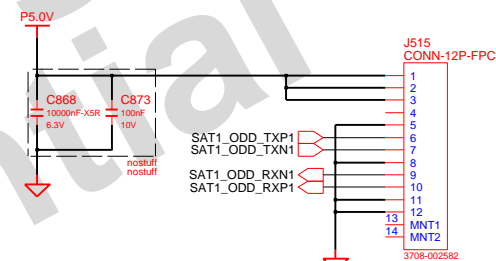
THIS DOCUMENT CONTAINS CONFIDENTIAL
 PROPRIETARY INFORMATION THAT IS
 SAMSUNG ELECTRONICS CO.'S PROPERTY.
 DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
 EXCEPT AS AUTHORIZED BY SAMSUNG.

SATA I/F CONN

SATA HDD CONN

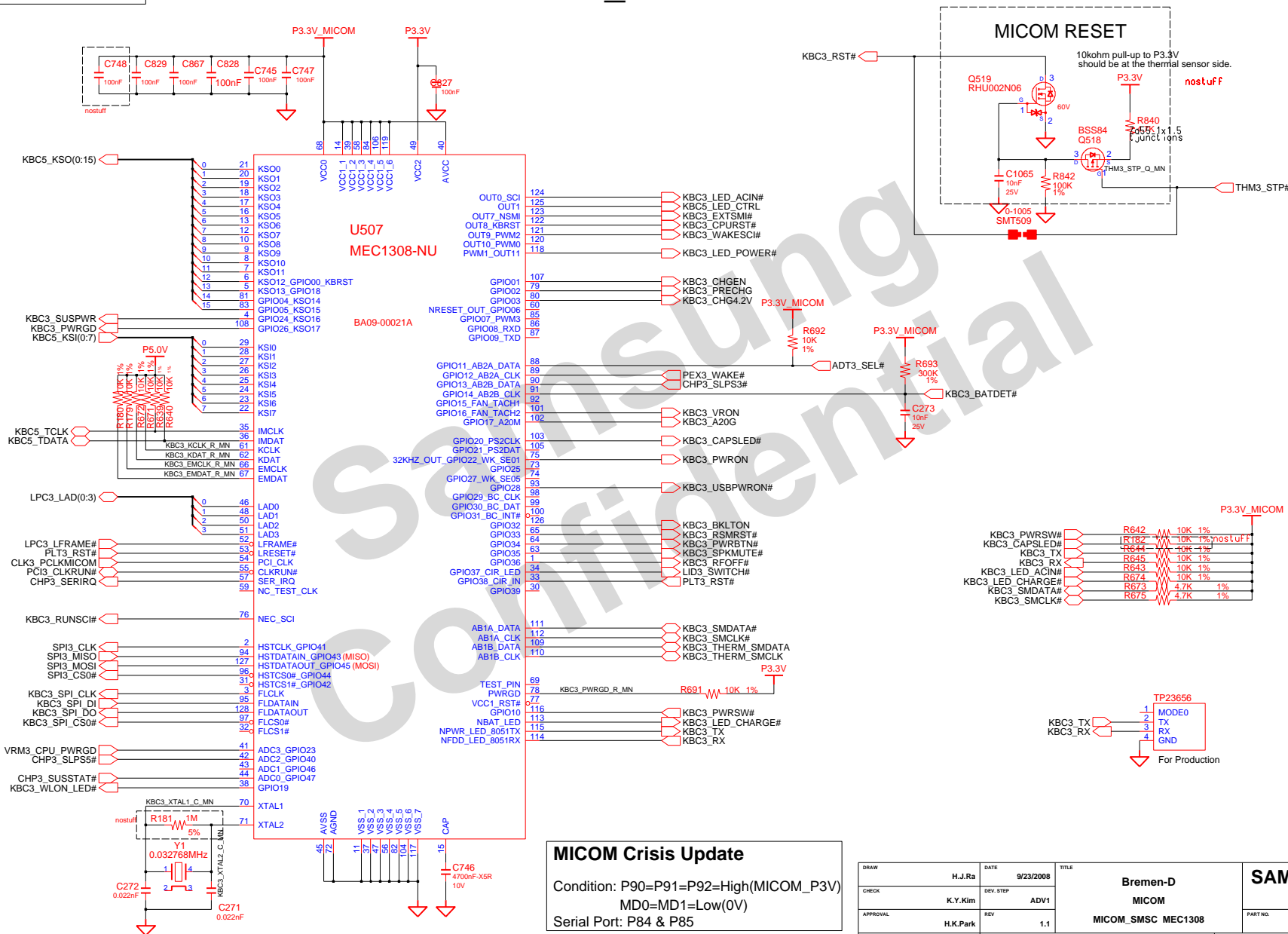


MAIN TO SUB SATA ODD CONN



DESIGN	H.J.Ra	DATE	9/23/2008	TITLE	Bremen-D	SAMSUNG
CHECK	K.Y.Kim	DEV. STEP	ADV1	SATA_DEVICES	SATA_DEVICES	ELECTRONICS
APPROVAL	H.K.Park	REV	1.1	HDD & ODD SUB CONNECTOR	PART NO.	BA41-xxxxxA
MODULE CODE	LAST EDIT			October 10, 2009 16:50:44 PM	PAGE	42 OF 61

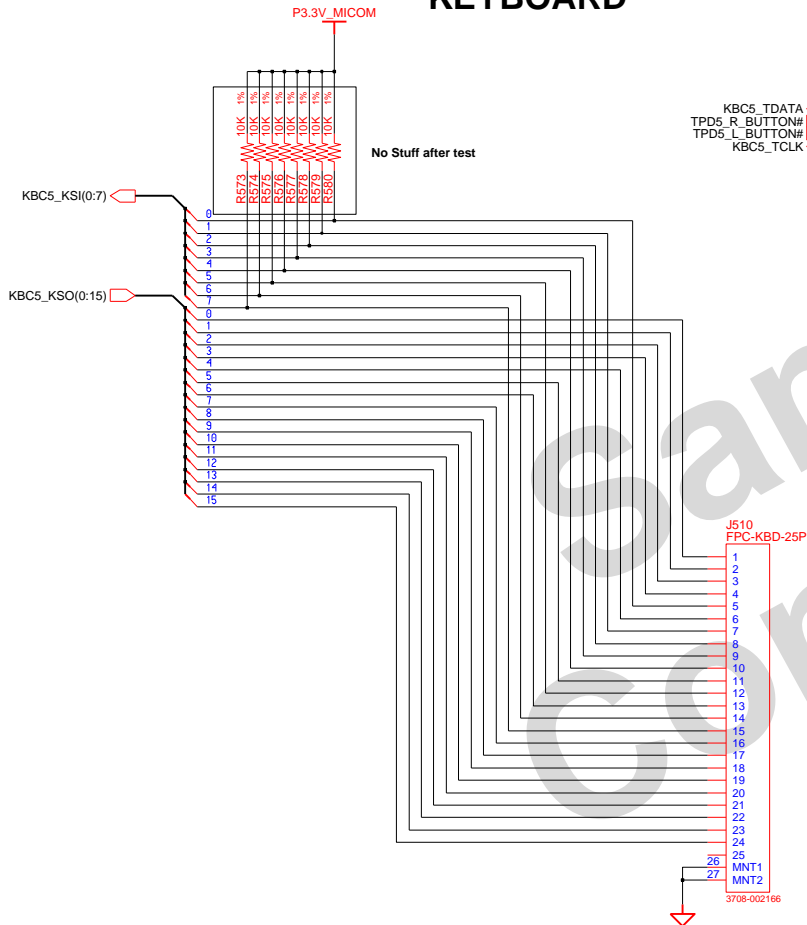
MICOM_MEC1308



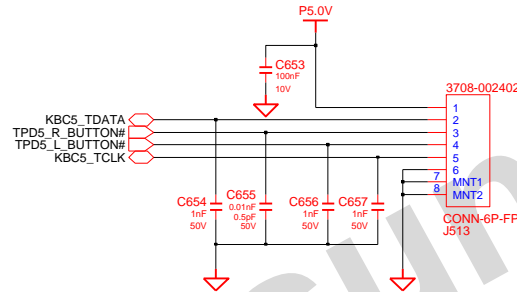
SAMSUNG PROPRIETARY
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

Micom Glue Logic

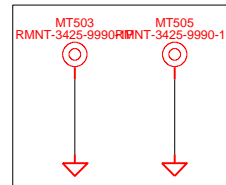
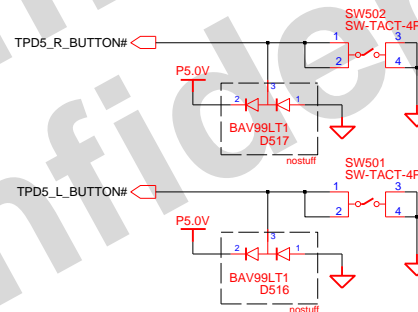
KEYBOARD



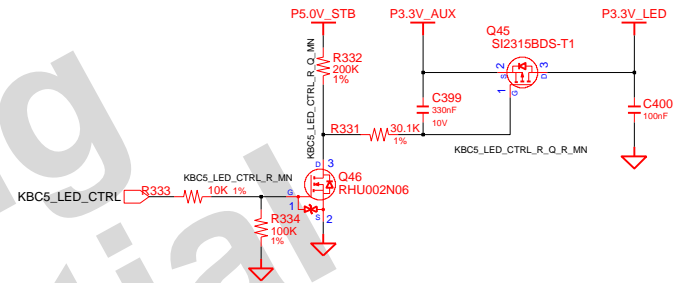
TOUCHPAD



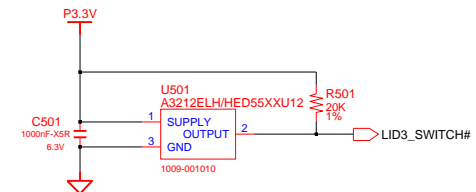
TOUCHPAD BUTTON



TOUCHPAD LED



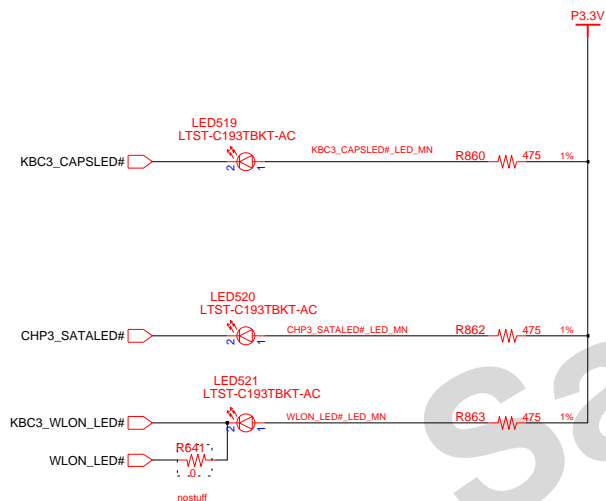
LID SWITCH



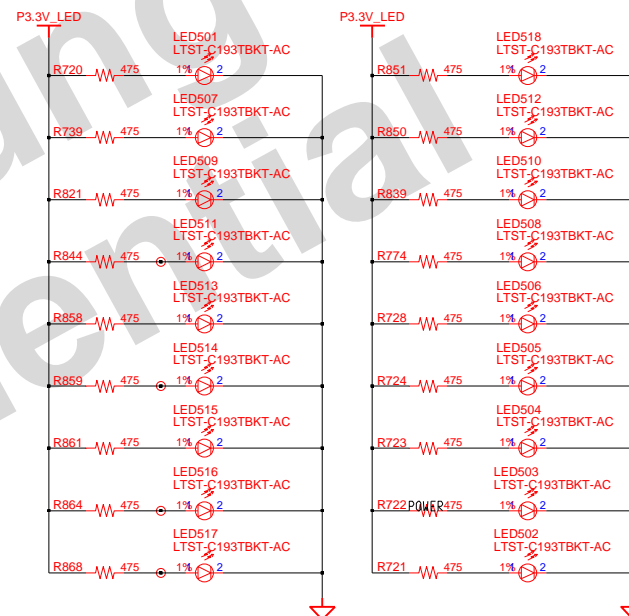
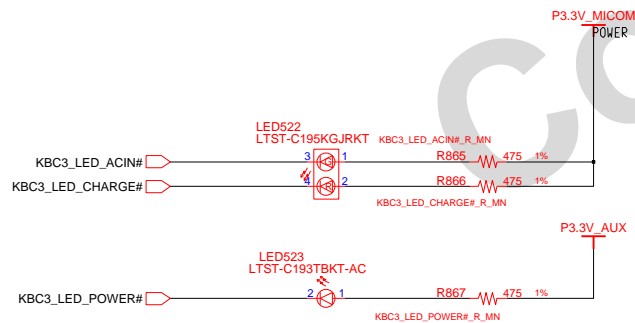
DESIGN	H.J.Ra	DATE	9/23/2008	TITLE	Bremen-D MICOM GLUE LOGIC KEYBOARD & TOUCHPAD	SAMSUNG ELECTRONICS
CHECK	K.Y.Kim	DEV. STEP	ADV1			PART NO. BA41-xxxxxA
APPROVAL	H.K.Park	REV	1.1			
MODULE CODE		LAST EDIT	October 10, 2009 16:50:44 PM	PAGE	44	OF 61

LEDs

FUNCTION KEY LED



ADAPTERIN/CHARGING LED

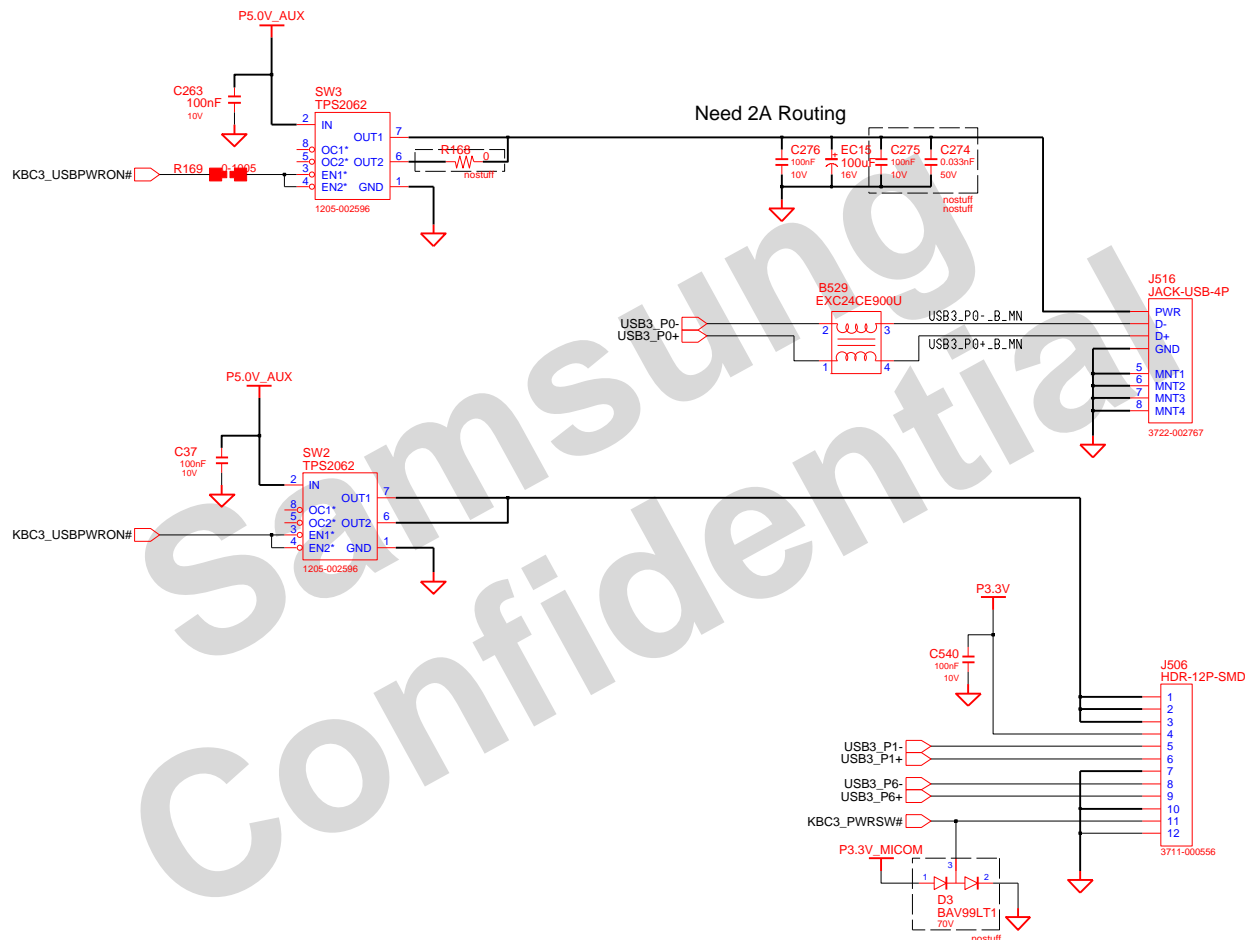


DRAW	H.J.Ra	DATE	9/23/2008	TITLE	Bremen-D	SAMSUNG
CHECK	K.Y.Kim	DEV. STEP	ADV1	LED_SWITCH	LED_SWITCH	ELECTRONICS
APPROVAL	H.K.Park	REV	1.1	LED_SWITCH		PART NO.
MODULE CODE		LAST EDIT	October 10, 2009 16:50:44 PM			BA41-xxxxxA
				PAGE	45	OF 61

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



DESIGN	H.J.Ra	DATE	9/23/2008	TITLE	Bremen-D
CHECK	K.Y.Kim	DEV. STEP	ADV1	USB_CONN	
APPROVAL	H.K.Park	REV	1.1	USB	
MODULE CODE		LAST EDIT		October 10, 2009 16:50:44 PM	

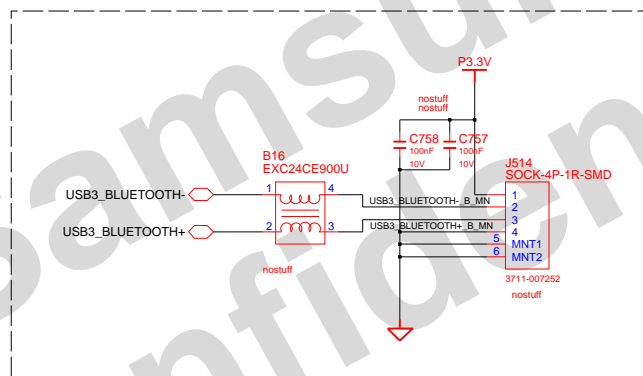
SAMSUNG	
ELECTRONICS	
PART NO.	BA41-xxxxxA

PAGE	46	OF	61
------	----	----	----

USB I/F Devices

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.

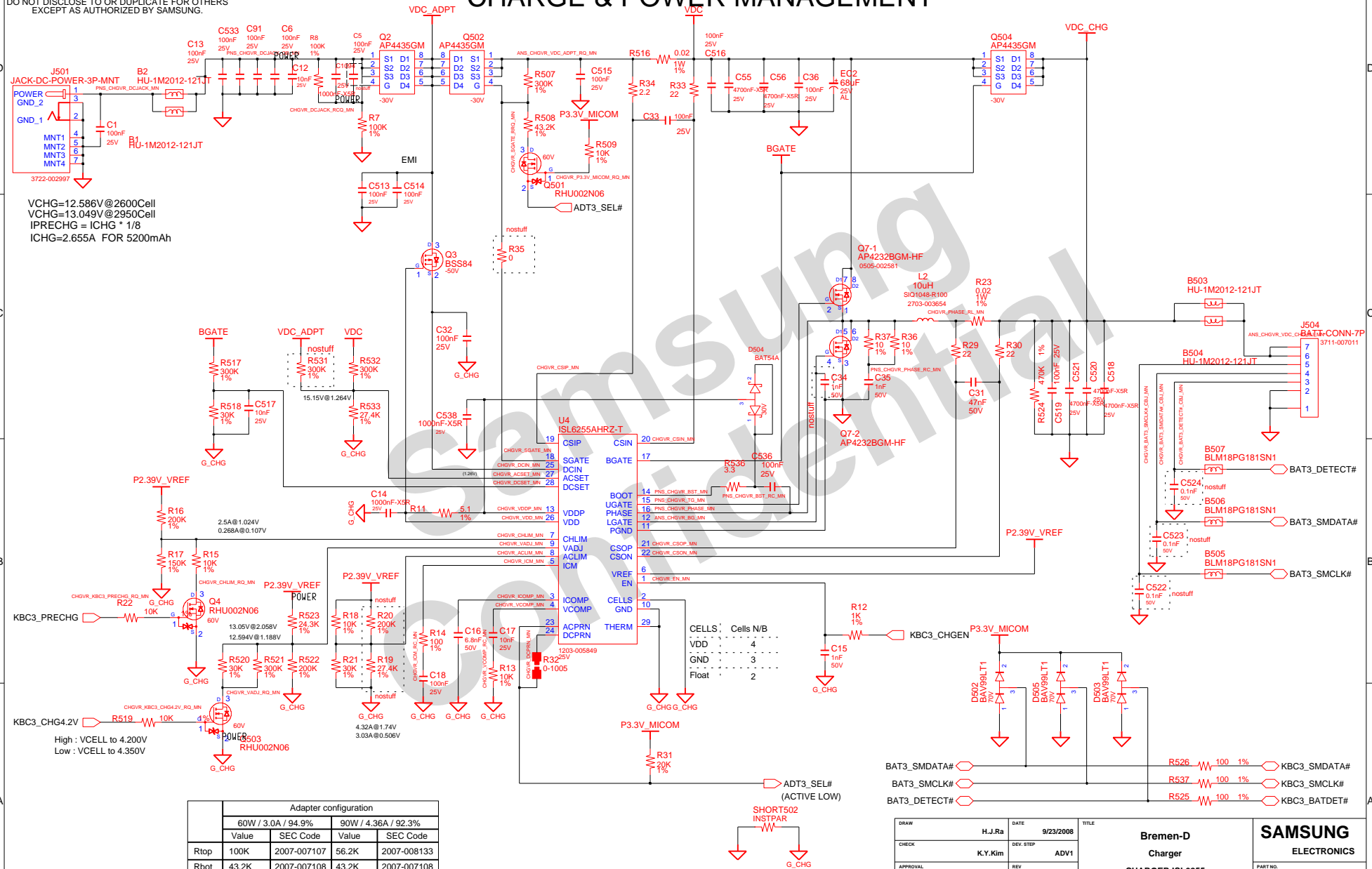
Bluetooth Interface



DESIGN	H.J.Ra	DATE	9/23/2008	TITLE Bremen-D USB DEVICES BLUETOOTH	SAMSUNG ELECTRONICS			
CHECK	K.Y.Kim	DEV. STEP	ADV1					
APPROVAL	H.K.Park	REV	1.1		PART NO.	BA41-XXXXXA		
MODULE CODE	LAST EDIT				October 10, 2009 16:50:44 PM	PAGE	47	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.

CHARGE & POWER MANAGEMENT



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.

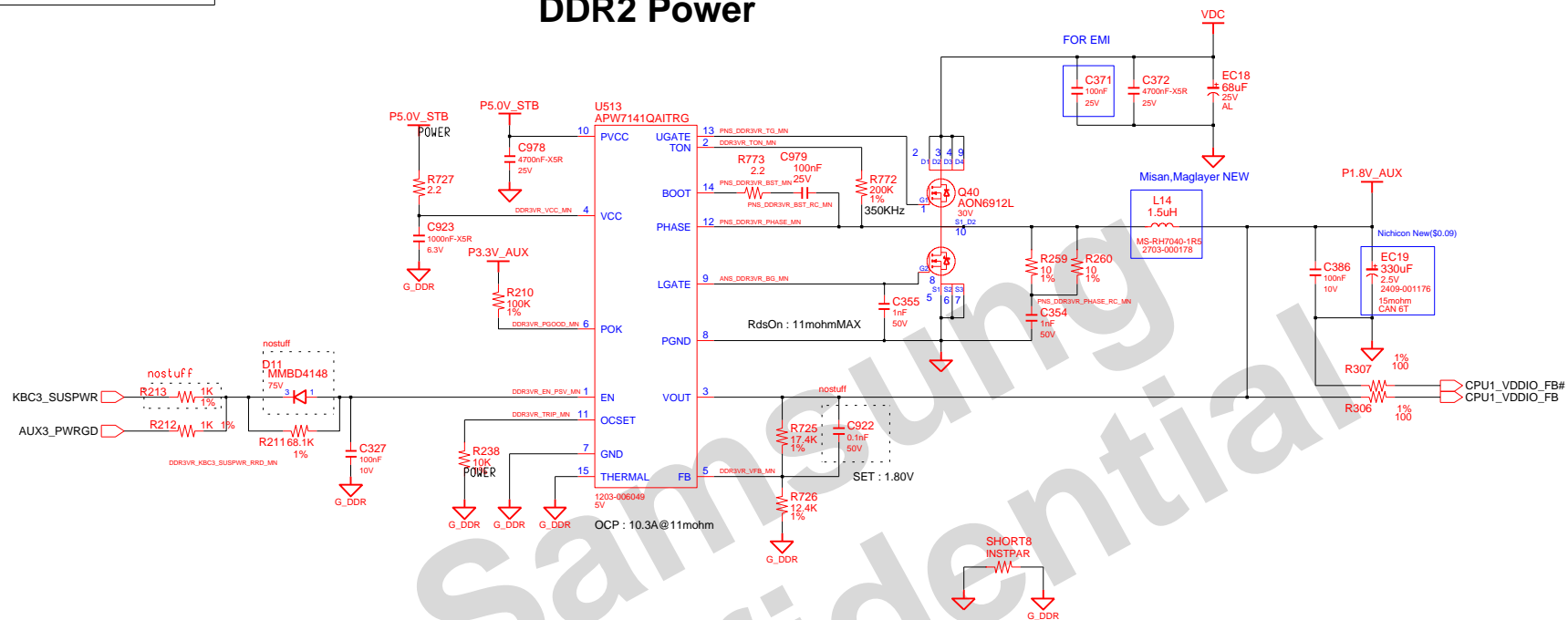
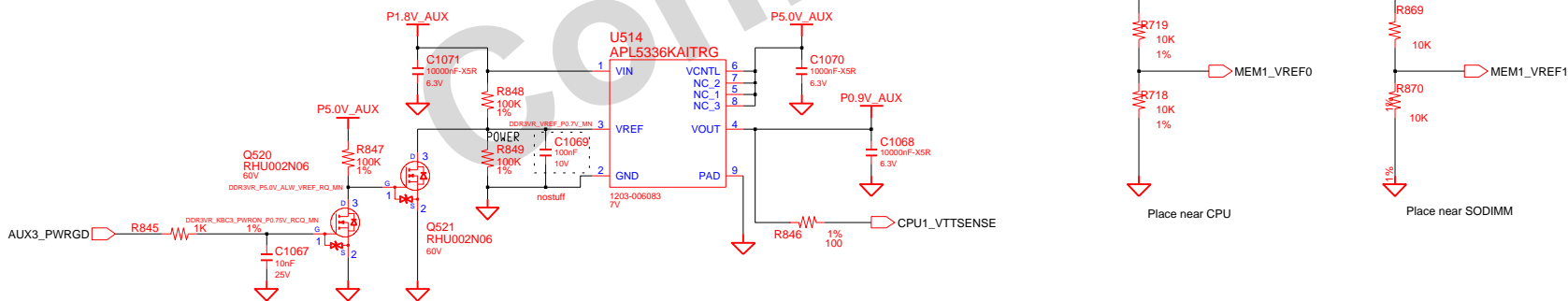
Component List:

Ref	Value	Part Number	Notes
EC11	68uF 25V AL	MS-RH7040S-L72	2703-000339
C245	100nF-XSR	2703-000339	
C244	100nF 25V	2703-000339	
EC12	330uF 6.3V	2409-001175	Can 4.5T 18mm
C262	100nF 10V	2703-000339	
L11	3.3uH	MS-RH7040S-L72	2703-000339
R134	10K 1%	2703-000339	
R133	10K 1%	2703-000339	
C658	100nF 25V	2703-000339	
R601	3.3K 1%	2703-000339	
C204	1nF 50V	2703-000339	
Q35-2	AP4232BGM-HF	0505-002581	nostuff
C243	1nF 50V	2703-000339	
C203	0.22uF 50V	2703-000339	
R130	15K 1%	2703-000339	
R129	470K 1%	2703-000339	
R131	10K 1%	2703-000339	
R132	100K 1%	2703-000339	
Q23	RHU002N06	0-1005	
Q24	RHU002N06	0-1005	
Q29	RHU002N06	0-1005	
R93	100K 1%	2703-000339	
R94	10K 1%	2703-000339	
C146	10nF 25V	2703-000339	
R127	100K	2703-000339	
R128	475K 1%	2703-000339	
R104	3.3K	2703-000339	
C206	100nF 25V	2703-000339	
R100	300K 1%	2703-000339	
R99	100K 1%	2703-000339	
C112	100nF 25V	2703-000339	
EC9	68uF 25V AL	MS-RH7040S-L72	2703-000339
Q22-1	AP4232BGM-HF	0505-002581	nostuff
Q22-2	AP4232BGM-HF	0505-002581	nostuff
C151	1nF 50V	2703-000339	
R82	10K 1%	2703-000339	
R81	10K 1%	2703-000339	
C111	1nF 50V	2703-000339	
C145	0.22uF 50V	2703-000339	
R96	10K 1%	2703-000339	
R97	10K 1%	2703-000339	
C202	220nF 16V	2703-000339	
C205	2200nF-XSR	2703-000339	
C149	1000nF-XSR	2703-000339	
R582	0-1005	0-1005	
R581	0	0-1005	
R102	0-1005	0-1005	
R103	0	0-1005	
Q14	MMBT3904	0-1005	
C57	1nF 50V	2703-000339	
C58	3700nF-XSR	2703-000339	
R54	30K 1%	2703-000339	
SHORT504	INSTPAR	0-1005	

DRAM	H.J.Rø	DATE	01/09/2008	TITLE Bremen-D PWR_MV_3V_5V P3.3V_AUX / P5.0V_AUX		SAMSUNG ELECTRONICS	
CHECK	K.Y.Kim	DEV. STEP	ADV1				
APPROVAL	H.K.Pørk	REV	1.1			PART NO.	BA41-xxxxxA
MODULE CODE	undefined		LAST EDIT		October 10, 2009 16:50:44 PM	PAGE	49 OF 61

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**DDR2 VTT(0.9V_AUX)**

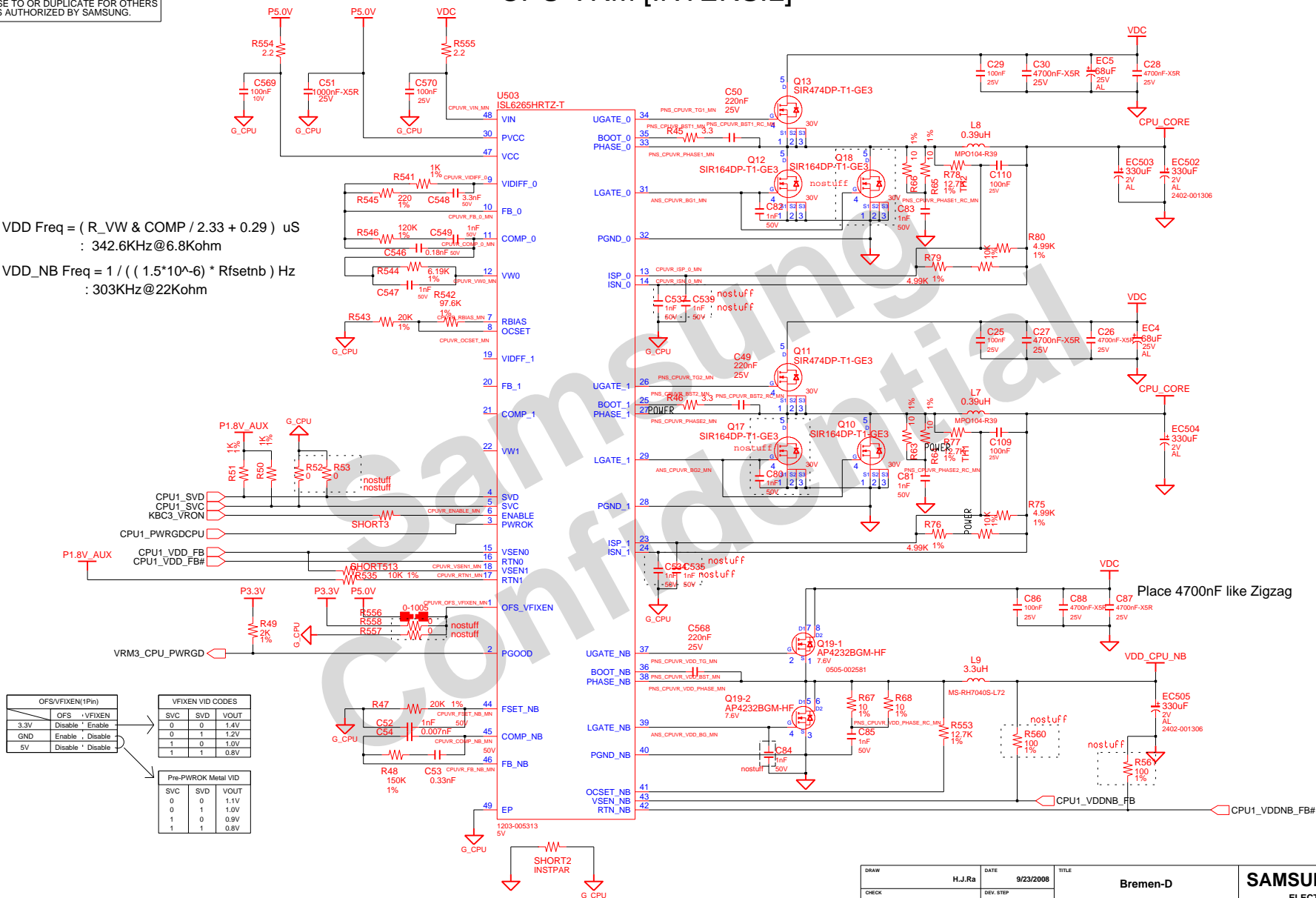
DRAW	H.J.Ra	DATE	9/23/2008	TITLE	Bremen-D PWR_MEMORY DDR2 POWER	SAMSUNG ELECTRONICS
CHECK	K.Y.Kim	DEV. STEP	ADV1			PART NO. BA41-xxxxxA
APPROVAL	H.K.Park	REV	1.1			
MODULE CODE	undefined	LAST EDIT	October 10, 2009 16:50:44 PM	PAGE	50	OF 61

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 [INTERSIL]

VDD Freq = (R_VW & COMP / 2.33 + 0.29) uS
: 342.6KHz@6.8Kohm

VDD_NB Freq = 1 / ((1.5*10^-6) * Rfsetnb) Hz
: 303KHz@22Kohm



DRAW	H.J.Ra	DATE	9/23/2008	TITLE	Bremen-D
CHECK	K.Y.Kim	DEV. STEP	ADV1		PWR CPU MV ISL6265HRT
APPROVAL	H.K.Park	REV	1.1		CPU VRM
MODULE CODE	undefined	LAST EDIT	October 10, 2009 16:50:44 PM	PAGE	51 OF 61

SAMSUNG	ELECTRONICS
PART NO.	BA41-xxxxxA

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.

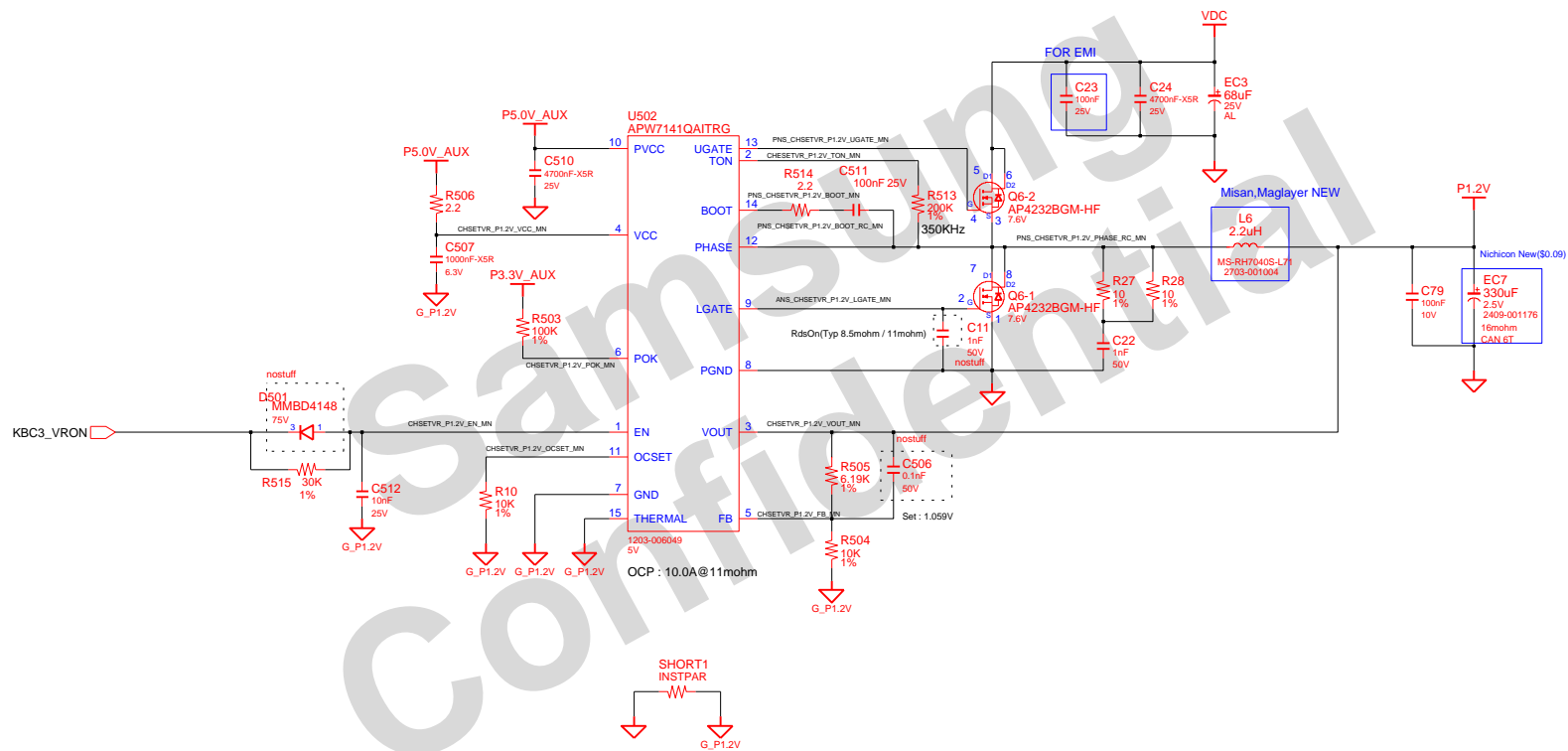
[illegible]

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

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(P1.2V)



DRAW	H.J.Ra	DATE	9/23/2008	TITLE	Bremen-D	SAMSUNG
CHECK	K.Y.Kim	DEV. STEP	ADV1	PWR MV RX881	ELECTRONICS	
APPROVAL	H.K.Park	REV	1.1	P1.2V	PART NO.	BA41-xxxxxA
MODULE CODE	undefined	LAST EDIT	October 10, 2009 16:50:44 PM	PAGE	53	OF 61

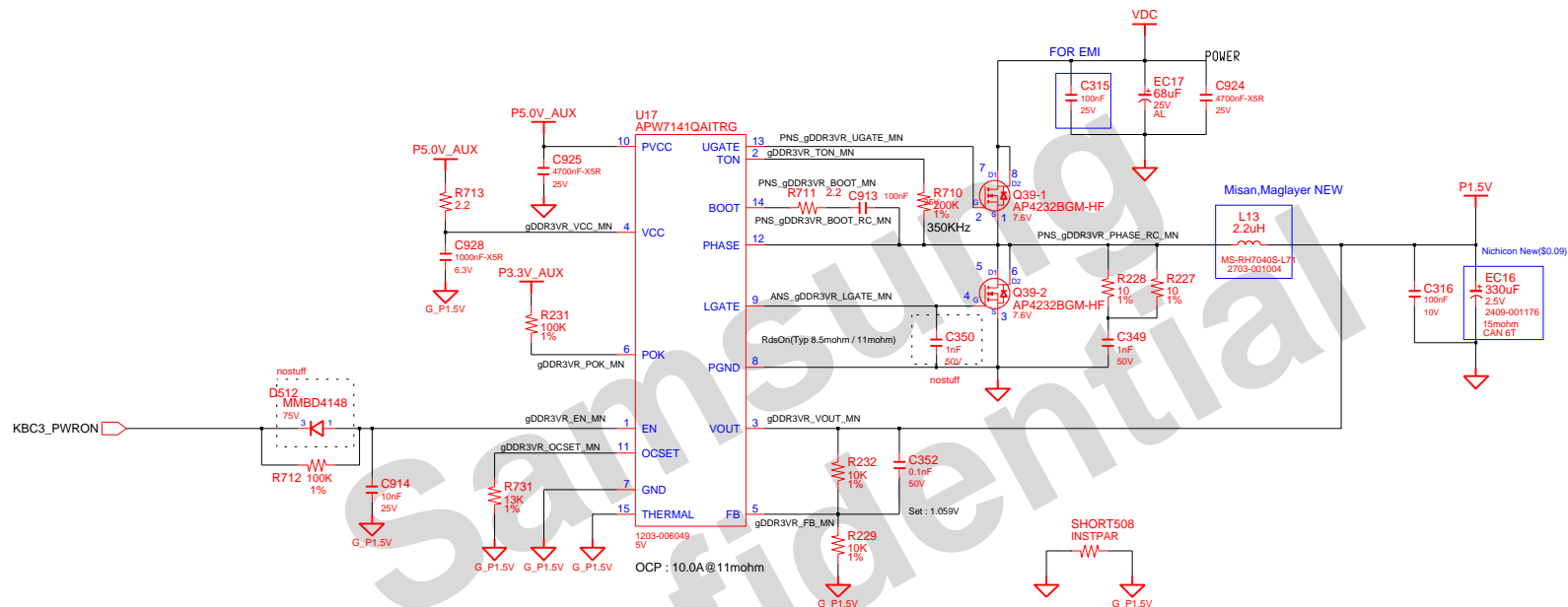
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

GFX3_VOLTID		
G1	G0	
1	1	0.90V (0.904V)
1	0	0.95V (0.950V)
0	1	1.00V (1.001V)
0	0	1.05V (1.050V)

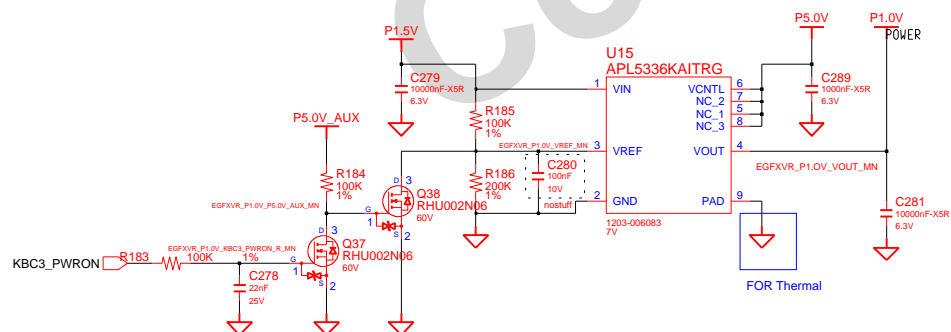
DRAW	H.J.Ra	DATE	9/23/2008	Bremen-D PWR GFX GFX POWER	SAMSUNG ELECTRONICS	
CHECK	K.Y.Kim	DEV. STEP	ADV1			PART NO. BA41-xxxxxxA
APPROVAL	H.K.Park	REV	1.1			
MODULE CODE	LAST EDIT			October 10, 2009 16:50:44 PM	PAGE 54 OF 61	

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.

gDDR3 POWER(P1.5V)



P1.0V



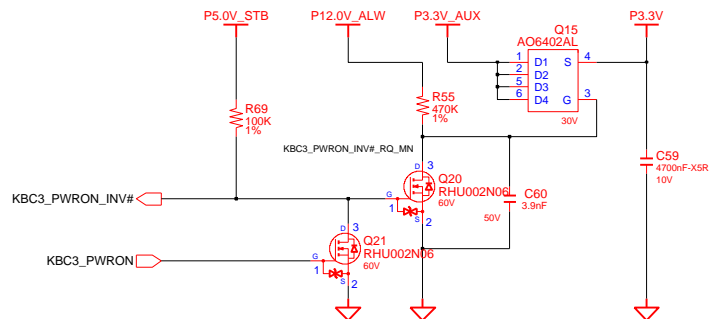
DRAW	H.J.Ra	DATE	9/23/2008	Bremen-D PWR GFX MEMORY gDDR3 POWER		SAMSUNG ELECTRONICS		
CHECK	K.Y.Kim	DEV. STEP	ADV1					
APPROVAL	H.K.Park	REV	1.1					
MODULE CODE		LAST EDIT		October 10, 2009 16:50:44 PM	PAGE	55	OF	61

SAMSUNG PROPRIETARY

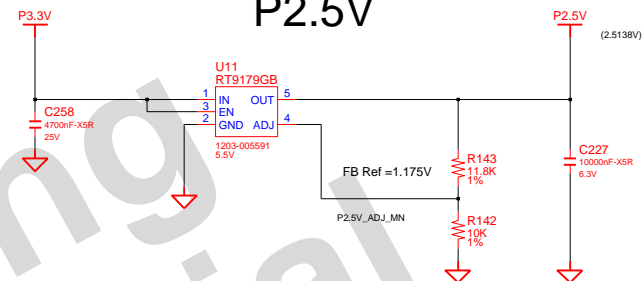
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

Switched Power

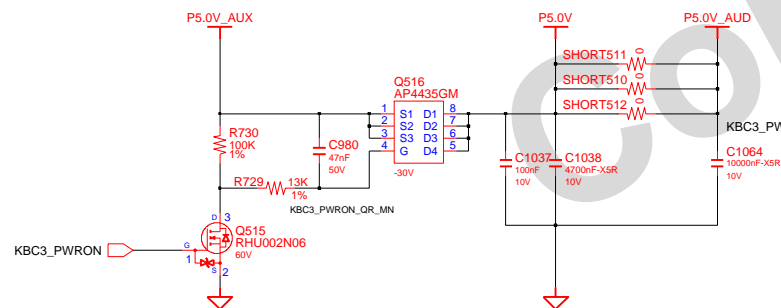
Switched Power On (P3.3V)



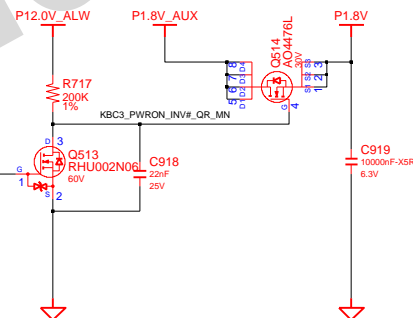
P2.5V



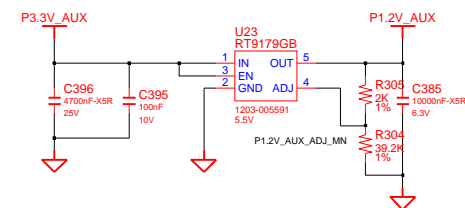
Switched Power On (P5.0V)



Switched Power On (P1.8V)



P1.2V_AUX

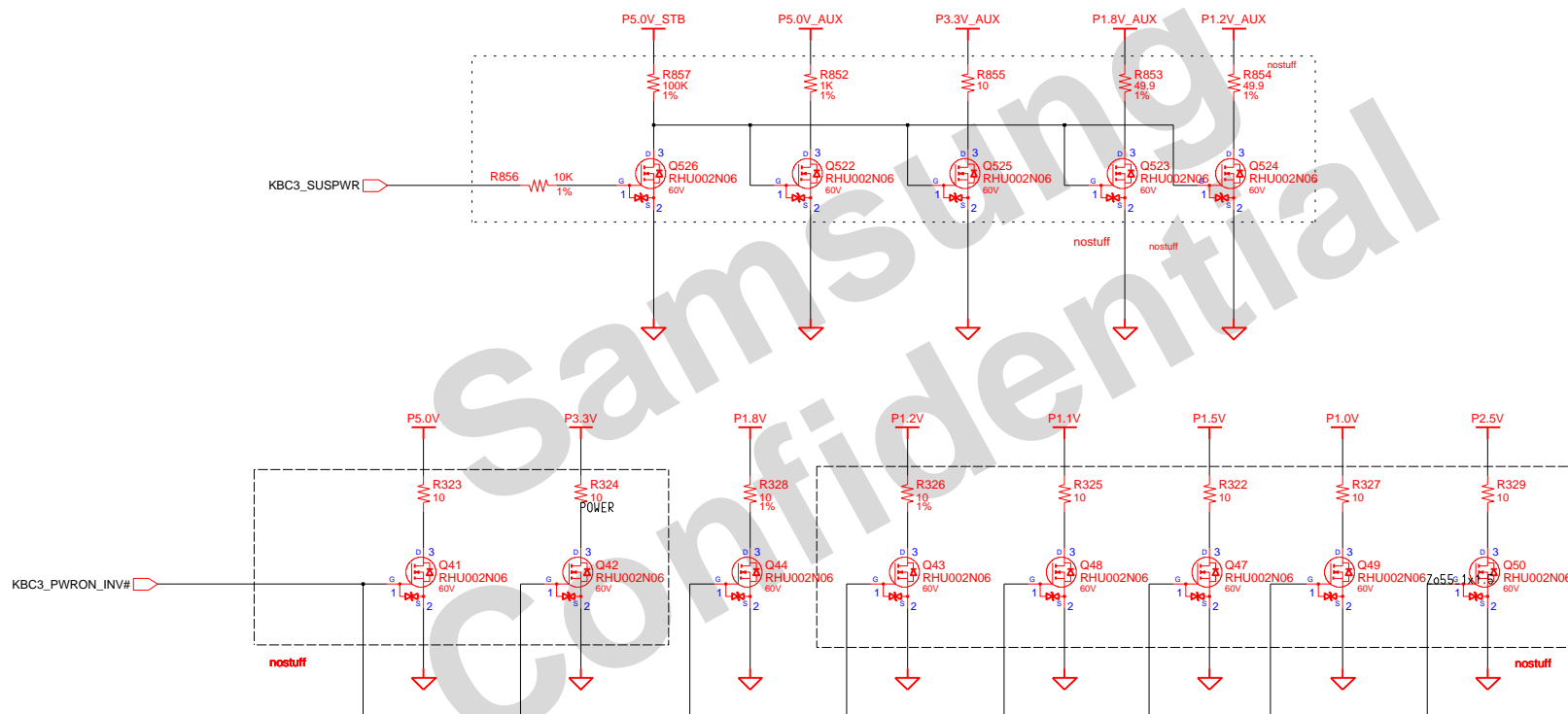


DESIGN	H.J.Ro	DATE	8/22/2009	TITLE	Bremen-D PWR_MV_SWITCHED SWITCHED POWER	SAMSUNG ELECTRONICS PART NO. BA41-xxxxxA
CHECK	K.Y.Kim	DEV. STEP	ADV1			
APPROVAL	H.K.Park	REV	1.1			
MODULE CODE		LAST EDIT	October 10, 2009 16:50:44 PM	PAGE	56 OF 61	

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



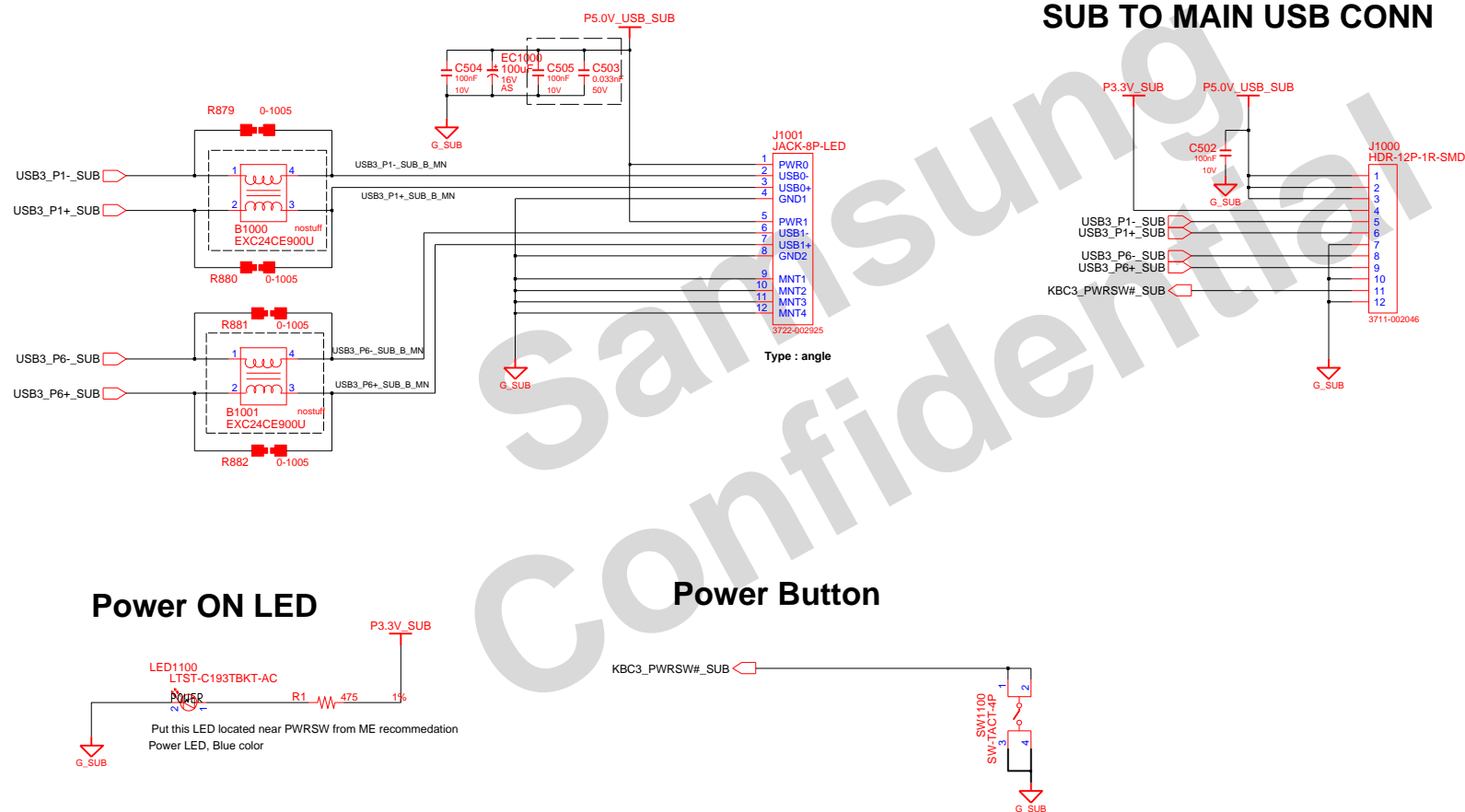
DRAW	H.J.Ra	DATE	9/23/2008	Bremen-D PWR_MV DISCHARGER DISCHARGER LOGIC		SAMSUNG ELECTRONICS	
CHECK	K.Y.Kim	DEV. STEP	ADV1				
APPROVAL	H.K.Park	REV	1,1				
				PART NO.		BA41-xxxxxA	
MODULE CODE		undefined		LAST EDIT		October 10, 2009 16:50:44 PM	
				PAGE	57	OF	61

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.

2 USB PORT & POWER S/W SUB B'D

SUB TO MAIN USB CONN



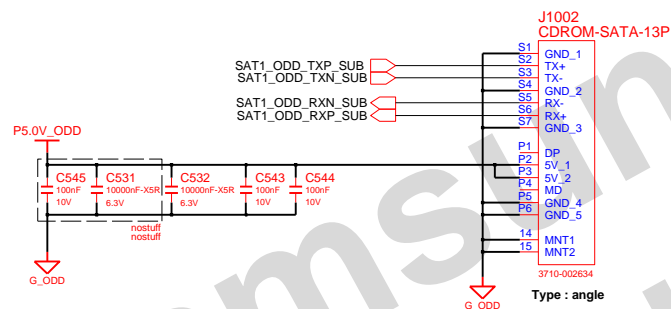
DRAW	H.J.Ra	DATE	9/23/2008	TITLE	Bremen-D SUB BOARD1	SAMSUNG ELECTRONICS
CHECK	K.Y.Kim	DEV. STEP	ADV1			PART NO. BA41-xxxxxA
APPROVAL	H.K.Park	REV	1.1		USB PORT, POWER SW SUB BOARD	
MODULE CODE		LAST EDIT	October 10, 2009 16:50:44 PM	PAGE	58	OF 61

SAMSUNG PROPRIETARY

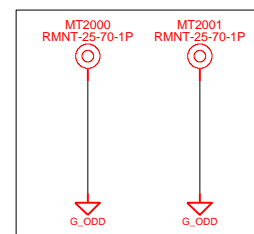
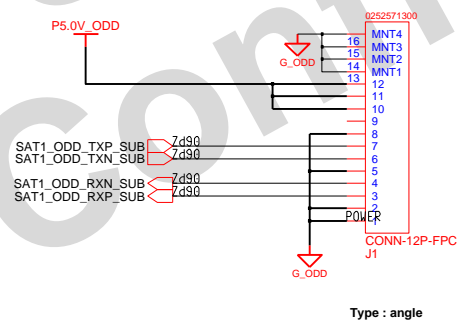
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

SATA ODD SUBBOARD

SATA ODD CONN



SUB TO MAIN SATA ODD CONN



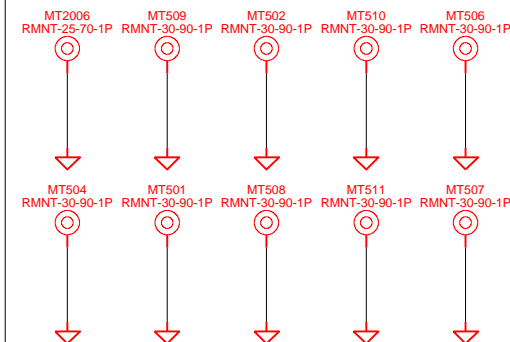
ODD sub board mount hole

DRAW	H.J.Ra	DATE	9/23/2008	TITLE	Bremen-D SUB BOARD2 SATA ODD SUB BOARD	SAMSUNG ELECTRONICS
CHECK	K.Y.Kim	DEV. STEP	ADV1			PART NO. BA41-xxxxxA
APPROVAL	H.K.Park	REV	1.1			
MODULE CODE	undefined	LAST EDIT	October 10, 2009 16:50:44 PM	PAGE	59	OF 61

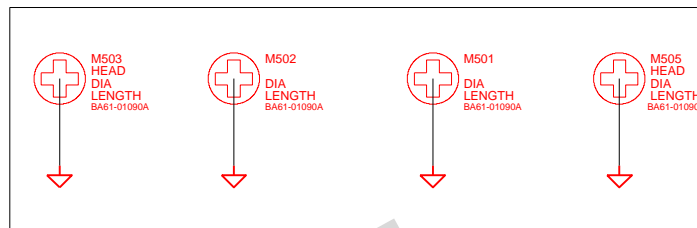
SAMSUNG PROPRIETARY

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.

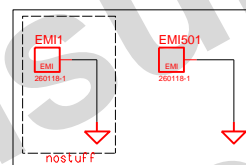
Mainboard Mount



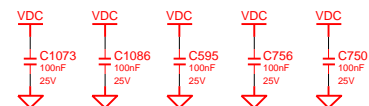
(30,90) x 7, (25,70) x 1



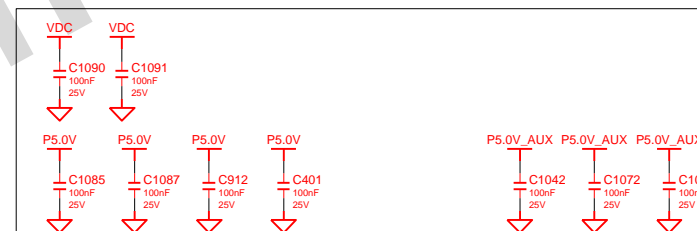
To Support Heatsink



EMI Finger



Add for EMC (Bottom)



Add for EMC (Bottom)

DRAW	H.J.Ra	DATE	9/23/2008	TITLE	Bremen-D MAIN MOUNT HOLE	SAMSUNG ELECTRONICS
CHECK	K.Y.Kim	DEV. STEP	ADV1			PART NO. BA41-xxxxxA
APPROVAL	H.K.Park	REV	1.1			
MODULE CODE		LAST EDIT	October 10, 2009 16:50:44 PM	PAGE	60	OF 61

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_LDRTE#
 CPU1_ALL_LDTSTP
 CPU1_LDRTR#
 CPU1_LDTSTP#
 CPU1_PROCHOT#
 CPU1_PWRGDCPU
 CPU1_SIC
 CPU1_SIO
 CPU1_SVC
 CPU1_SVD
 CPU1_THMRTRIP#
 CPU1_VDDIO_FB
 CPU1_VDDIO_FB#
 CPU1_VDDNB_FB
 CPU1_VDDNB_FB#
 CPU1_VDD_FB
 CPU1_VDD_FB#
 CPU1_VTSENSE
 CPUVR_COMP_0_MN
 CPUVR_COMP_NB_MN
 CPUVR_ENABLE_MN
 CPUVR_FB_0_MN
 CPUVR_FB_NB_MN
 CPUVR_FSET_NB_MN
 CPUVR_ISET_0_MN
 CPUVR_OCSET_MN
 CPUVR_OFS_VFIXEN_MN
 CPUVR_RBIAS_MN
 CPUVR_RIM_MN
 CPUVR_TDIFF_0
 CPUVR_VIN_MN
 CPUVR_VSEN1_MN
 CPUVR_VW0_MN
 CPU_VDD0A_R_MN
 CPU_VDDA1_B_MN
 CRT3_BLUE
 CRT3_BLUE_L_MN
 CRT3_DDCCLK
 CRT3_DDCDATA
 CRT3_GREEN
 CRT3_GREEN_L_MN
 CRT3_HSYNC
 CRT3_0V_D_MN
 CRT3_RED
 CRT3_RED_L_MN
 CRT3_VSYNC
 CRT3_DDCCLK
 CRT3_DDCDATA
 CRT3_DDCDATA_CLK_D_MN
 CRT3_HSYNC_R_MN
 CRT3_HSYNC_R_PSN_MN
 DDR3VR_KBC3_PWRON_0V_75V_RQ0_MN
 DDR3VR_KBC3_SUSUPR_RD0_MN
 DDR3VR_0V_ALW_VREF_RQ0_MN
 DDR3VR_PG00D_MN
 DDR3VR_VREF_MN
 DDR3VR_TRIP_MN
 DDR3VR_VCC_MN
 DDR3VR_VFB_MN
 EGF_XVR_N0_MN
 EGF_XVR_P1_MN
 EGF_XVR_P1_0V_KBC3_PWRON_R_MN
 EGF_XVR_P1_0V_PSN_0V_AUX_MN
 EGF_XVR_P1_0V_VREF_MN
 EGF_XVR_P1_0V_VOOUT_MN
 EGF_XVR_SE10_MN
 EGF_XVR_SE11_MN
 EGF_XVR_SE12_MN
 EGF_XVR_SREF_MN
 EGF_XVR_VCC_MN
 EGF_XVR_VO_MN
 FAN3_FDBACK#
 FANS_VDD
 GDDR3VR_EN_MN
 GDDR3VR_FB_MN
 GDDR3VR_OCSET_MN
 GDDR3VR_POK_MN
 GDDR3VR_TON_MN
 GDDR3VR_TOK_MN
 L03_EDIO_CLK

G0DR3VR_VCC.MN
 G0FX1.MVREFDA.MN
 G0FX1.MVREFSA.MN
 G0FX3.GPI0?
 G0FX3.VOLTID0
 G0FX3.VOLTID1
 G0FX3.VOLTID2
 G0FX.AVDD_0.B.N
 G0FX.CLKTESTA_C.R.MN
 G0FX.DPA.VDDI0_0.R.MN
 G0FX.DPA.VDDI0_1.R.MN
 G0FX.DPCD.CALR_0.R.MN
 G0FX.DPEF.CALR_0.R.MN
 G0FX.DPE.PVDD_0.B.N
 G0FX.DPE.VDDI0_0.B.N
 G0FX.DPE.VDDI0_1.B.N
 G0FX.DPLL.PVDD_0.B.N
 G0FX.DPLL.VDDC_0.B.N
 G0FX.DVPDATA_20.R.MN
 G0FX.DVPDATA_21.R.MN
 G0FX.GPI0_15.A.C.BATT_0.MN
 G0FX.MPV18_1.B.N
 G0FX.MPV18_2.B.N
 G0FX.MPV18_3.B.N
 G0FX.PCTIE.PVDD_0.B.N
 G0FX.PCTIE.VDDR_1.J.N
 G0FX.SCL_R.MN
 G0FX.SPI0_0.B.N
 G0FX.SP18_0.B.N
 G0FX.TSVD0_0.B.N
 G0FX.VDDR4_1.1.B.N
 G0FX.VDDR4_2.1.B.N
 G0FX.VDD_0.R.MN
 G0FX.VREFC0.R.MN
 G0GMA1.VREFCA0_0.R.MN
 G0GMA1.VREFCA1_0.R.MN
 G0GMA1.VREFD00_0.R.MN
 G0GMA1.VREFD01_0.R.MN
 G0GMA1.VREFD02_0.R.MN
 G0GMA1.VREFD03_0.R.MN
 G0GMA1.VREFD04_0.R.MN
 G0GMA1.VREFD05_0.R.MN
 G0GMA1.VREFD06_0.R.MN
 G0GMA1.VREFD07_0.R.MN
 G0GMA1.VREFD08_0.R.MN
 G0GMA1.VREFD09_0.R.MN
 G0GMA1.VREFD10_0.R.MN
 G0GMA1.VREFD11_0.R.MN
 G0GMA1.VREFD12_0.R.MN
 G0GMA1.VREFD13_0.R.MN
 G0GMA1.VREFD14_0.R.MN
 G0GMA1.VREFD15_0.R.MN
 G0GMA1.VREFD16_0.R.MN
 G0GMA1.VREFD17_0.R.MN
 G0GMA1.VREFD18_0.R.MN
 G0GMA1.VREFD19_0.R.MN
 G0GMA1.VREFD20_0.R.MN
 G0GMA1.VREFD21_0.R.MN
 G0GMA1.VREFD22_0.R.MN
 G0GMA1.VREFD23_0.R.MN
 G0GMA1.VREFD24_0.R.MN
 G0GMA1.VREFD25_0.R.MN
 G0GMA1.VREFD26_0.R.MN
 G0GMA1.VREFD27_0.R.MN
 G0GMA1.VREFD28_0.R.MN
 G0GMA1.VREFD29_0.R.MN
 G0GMA1.VREFD30_0.R.MN
 G0GMA1.VREFD31_0.R.MN
 G0GMA1.VREFD32_0.R.MN
 G0GMA1.VREFD33_0.R.MN
 G0GMA1.VREFD34_0.R.MN
 G0GMA1.VREFD35_0.R.MN
 G0GMA1.VREFD36_0.R.MN
 G0GMA1.VREFD37_0.R.MN
 G0GMA1.VREFD38_0.R.MN
 G0GMA1.VREFD39_0.R.MN
 G0GMA1.VREFD40_0.R.MN
 G0GMA1.VREFD41_0.R.MN
 G0GMA1.VREFD42_0.R.MN
 G0GMA1.VREFD43_0.R.MN
 G0GMA1.VREFD44_0.R.MN
 G0GMA1.VREFD45_0.R.MN
 G0GMA1.VREFD46_0.R.MN
 G0GMA1.VREFD47_0.R.MN
 G0GMA1.VREFD48_0.R.MN
 G0GMA1.VREFD49_0.R.MN
 G0GMA1.VREFD50_0.R.MN
 G0GMA1.VREFD51_0.R.MN
 G0GMA1.VREFD52_0.R.MN
 G0GMA1.VREFD53_0.R.MN
 G0GMA1.VREFD54_0.R.MN
 G0GMA1.VREFD55_0.R.MN
 G0GMA1.VREFD56_0.R.MN
 G0GMA1.VREFD57_0.R.MN
 G0GMA1.VREFD58_0.R.MN
 G0GMA1.VREFD59_0.R.MN
 G0GMA1.VREFD60_0.R.MN
 G0GMA1.VREFD61_0.R.MN
 G0GMA1.VREFD62_0.R.MN
 G0GMA1.VREFD63_0.R.MN
 G0GMA1.VREFD64_0.R.MN
 G0GMA1.VREFD65_0.R.MN
 G0GMA1.VREFD66_0.R.MN
 G0GMA1.VREFD67_0.R.MN
 G0GMA1.VREFD68_0.R.MN
 G0GMA1.VREFD69_0.R.MN
 G0GMA1.VREFD70_0.R.MN
 G0GMA1.VREFD71_0.R.MN
 G0GMA1.VREFD72_0.R.MN
 G0GMA1.VREFD73_0.R.MN
 G0GMA1.VREFD74_0.R.MN
 G0GMA1.VREFD75_0.R.MN
 G0GMA1.VREFD76_0.R.MN
 G0GMA1.VREFD77_0.R.MN
 G0GMA1.VREFD78_0.R.MN
 G0GMA1.VREFD79_0.R.MN
 G0GMA1.VREFD80_0.R.MN
 G0GMA1.VREFD81_0.R.MN
 G0GMA1.VREFD82_0.R.MN
 G0GMA1.VREFD83_0.R.MN
 G0GMA1.VREFD84_0.R.MN
 G0GMA1.VREFD85_0.R.MN
 G0GMA1.VREFD86_0.R.MN
 G0GMA1.VREFD87_0.R.MN
 G0GMA1.VREFD88_0.R.MN
 G0GMA1.VREFD89_0.R.MN
 G0GMA1.VREFD90_0.R.MN
 G0GMA1.VREFD91_0.R.MN
 G0GMA1.VREFD92_0.R.MN
 G0GMA1.VREFD93_0.R.MN
 G0GMA1.VREFD94_0.R.MN
 G0GMA1.VREFD95_0.R.MN
 G0GMA1.VREFD96_0.R.MN
 G0GMA1.VREFD97_0.R.MN
 G0GMA1.VREFD98_0.R.MN
 G0GMA1.VREFD99_0.R.MN
 G0GMA1.VREFD100_0.R.MN
 G0GMA1.VREFD101_0.R.MN
 G0GMA1.VREFD102_0.R.MN
 G0GMA1.VREFD103_0.R.MN
 G0GMA1.VREFD104_0.R.MN
 G0GMA1.VREFD105_0.R.MN
 G0GMA1.VREFD106_0.R.MN
 G0GMA1.VREFD107_0.R.MN
 G0GMA1.VREFD108_0.R.MN
 G0GMA1.VREFD109_0.R.MN
 G0GMA1.VREFD110_0.R.MN
 G0GMA1.VREFD111_0.R.MN
 G0GMA1.VREFD112_0.R.MN
 G0GMA1.VREFD113_0.R.MN
 G0GMA1.VREFD114_0.R.MN
 G0GMA1.VREFD115_0.R.MN
 G0GMA1.VREFD116_0.R.MN
 G0GMA1.VREFD117_0.R.MN
 G0GMA1.VREFD118_0.R.MN
 G0GMA1.VREFD119_0.R.MN
 G0GMA1.VREFD120_0.R.MN
 G0GMA1.VREFD121_0.R.MN
 G0GMA1.VREFD122_0.R.MN
 G0GMA1.VREFD123_0.R.MN
 G0GMA1.VREFD124_0.R.MN
 G0GMA1.VREFD125_0.R.MN
 G0GMA1.VREFD126_0.R.MN
 G0GMA1.VREFD127_0.R.MN
 G0GMA1.VREFD128_0.R.MN
 G0GMA1.VREFD129_0.R.MN
 G0GMA1.VREFD130_0.R.MN
 G0GMA1.VREFD131_0.R.MN
 G0GMA1.VREFD132_0.R.MN
 G0GMA1.VREFD133_0.R.MN
 G0GMA1.VREFD134_0.R.MN
 G0GMA1.VREFD135_0.R.MN
 G0GMA1.VREFD136_0.R.MN
 G0GMA1.VREFD137_0.R.MN
 G0GMA1.VREFD138_0.R.MN
 G0GMA1.VREFD139_0.R.MN
 G0GMA1.VREFD140_0.R.MN
 G0GMA1.VREFD141_0.R.MN
 G0GMA1.VREFD142_0.R.MN
 G0GMA1.VREFD143_0.R.MN
 G0GMA1.VREFD144_0.R.MN
 G0GMA1.VREFD145_0.R.MN
 G0GMA1.VREFD146_0.R.MN
 G0GMA1.VREFD147_0.R.MN
 G0GMA1.VREFD148_0.R.MN
 G0GMA1.VREFD149_0.R.MN
 G0GMA1.VREFD150_0.R.MN
 G0GMA1.VREFD151_0.R.MN
 G0GMA1.VREFD152_0.R.MN
 G0GMA1.VREFD153_0.R.MN
 G0GMA1.VREFD154_0.R.MN
 G0GMA1.VREFD155_0.R.MN
 G0GMA1.VREFD156_0.R.MN
 G0GMA1.VREFD157_0.R.MN
 G0GMA1.VREFD158_0.R.MN
 G0GMA1.VREFD159_0.R.MN
 G0GMA1.VREFD160_0.R.MN
 G0GMA1.VREFD161_0.R.MN
 G0GMA1.VREFD162_0.R.MN
 G0GMA1.VREFD163_0.R.MN
 G0GMA1.VREFD164_0.R.MN
 G0GMA1.VREFD165_0.R.MN
 G0GMA1.VREFD166_0.R.MN
 G0GMA1.VREFD167_0.R.MN
 G0GMA1.VREFD168_0.R.MN
 G0GMA1.VREFD169_0.R.MN
 G0GMA1.VREFD170_0.R.MN
 G0GMA1.VREFD171_0.R.MN
 G0GMA1.VREFD172_0.R.MN
 G0GMA1.VREFD173_0.R.MN
 G0GMA1.VREFD174_0.R.MN
 G0GMA1.VREFD175_0.R.MN
 G0GMA1.VREFD176_0.R.MN
 G0GMA1.VREFD177_0.R.MN
 G0GMA1.VREFD178_0.R.MN
 G0GMA1.VREFD179_0.R.MN
 G0GMA1.VREFD180_0.R.MN
 G0GMA1.VREFD181_0.R.M

KBC3_P0FF#
 KBC3_RSMRST#
 KBC3_RST#
 KBC3_RUNSC#
 KBC3_SMCCLK#
 KBC3_SMDATA#
 KBC3_SPT_CLK#
 KBC3_SPT_CSO#
 KBC3_SPT_DI#
 KBC3_SPT_DO#
 KBC3_SPKMUTE#
 KBC3_SUSPWR#
 KBC3_THERM_SMCCLK#
 KBC3_THERM_SMDATA#
 KBC3_USBPWRON#
 KBC3_VRON#
 KBC3_WAKESC#
 KBC3_WLONLED#
 KBC5_KST(0)
 KBC5_KST(1)
 KBC5_KST(2)
 KBC5_KST(3)
 KBC5_KST(4)
 KBC5_KST(5)
 KBC5_KST(6)
 KBC5_KST(7)
 KBC5_KSO(0)
 KBC5_KSO(1)
 KBC5_KSO(10)
 KBC5_KSO(11)
 KBC5_KSO(12)
 KBC5_KSO(13)
 KBC5_KSO(14)
 KBC5_KSO(15)
 KBC5_KSO(2)
 KBC5_KSO(3)
 KBC5_KSO(4)
 KBC5_KSO(5)
 KBC5_KSO(6)
 KBC5_KSO(7)
 KBC5_KSO(8)
 KBC5_KSO(9)
 KBC5_LED_CTRL_R_M_N
 KBC5_LED_CTRL_R_O_M_N
 KBC5_LED_CTRL_R_O_R_M_N
 KBC5_TDATA#
 LTP3_SWITCH#
 LPC3_CLK0#
 LPC3_CLK1#
 LPC3_CLK2#
 LPC3_LAD(0)
 LPC3_LAD(1)
 LPC3_LAD(2)
 LPC3_LAD(3)
 LPC3_FRAME#
 MCD3_SDCMD#
 MCD3_SDCLK#
 MCD3_SDCMD#
 MCD3_SDDATA0#
 MCD3_SDDATA1#
 MCD3_SDDATA2#
 MCD3_SDDATA3#
 MCD3_SOWP#
 MCH3_EXT1TS#
 MCH3_EXT1TS#
 MEMO_SAO_R_M_N
 MEMO_SAT_R_M_N
 MEMO_CARLNR1#
 NB_CALR_XCALR_N_R_M_N
 NB_OPI_VDD1S_NC_R_M_N
 NB_PCE_CALR_PCE_BCALR_N_R_M_N
 NB_PCE_CALR_PCE_BCALR_P_R_M_N
 NB_SYSPRES#_R_M_N
 NB_TESTMODE_R_M_N
 NB_VDDA18HTPL_L_B_N
 NB_VDDA18PCIEPLL_B_N
 NB_VDDA18_PU_ADJ#
 P2_5V_ADJ#

PC3_3V_VDD_INV_EN_Q.MN
 PC3_3V_VDD_INV_EN_OR.MN
 PC3_3V_VDD_INV_EN_Q.MN
 PEG3_BKLTEN
 PEG3_HDMI_CLK
 PEG3_HDMI_DATA
 PEG3_HPD_HDMI
 PEG3_LCDVDON
 PEG5_SV_POWER_D.MN
 PEG5_HDMI_CLK
 PEG5_HDMI_DATA
 PEG5_HOT_PLUG_DETECT_R.MN
 PEX3_3WAKE#
 PEX3_RST#
 PMS_CHESTRV_BST_QN.MN
 PMS_CHESTRV_BST_RC.MN
 PMS_CHESTRV_DCJACK_QN.MN
 PMS_CHESTRV_DCJACK_QB.MN
 PMS_CHESTRV_PHASE_MN
 PMS_CHESTRV_PHASE_RC.MN
 PMS_CHESTRV_TG.MN
 PMS_CHESTRV_TG.MN
 PMS_CHESTRV_BST1_MN
 PMS_CHESTRV_BST1_RC.MN
 PMS_CHESTRV_BST1_QN.MN
 PMS_CHESTRV_P1_2V_BOOT_RC.MN
 PMS_CHESTRV_P1_2V_PHASE_RC.MN
 PMS_CHESTRV_P1_2V_UGATE_RC.MN
 PMS_CHESTRV_PHASE_MN
 PMS_CHESTRV_PHASE_RC.MN
 PMS_CHESTRV_TG.MN
 PMS_CHESTRV_TG.MN
 PMS_CPUVR_BST1_MN
 PMS_CPUVR_BST1_RC.MN
 PMS_CPUVR_BST1_QN.MN
 PMS_CPUVR_BST2_RC.MN
 PMS_CPUVR_BST2_QN.MN
 PMS_CPUVR_PHASE1_MN
 PMS_CPUVR_PHASE1_RC.MN
 PMS_CPUVR_PHASE2_MN
 PMS_CPUVR_PHASE2_RC.MN
 PMS_CPUVR_TG1_MN
 PMS_CPUVR_TG2_MN
 PMS_CPUVR_VDD_BST1_MN
 PMS_CPUVR_VDD_PHASE1_MN
 PMS_CPUVR_VDD_PHASE2_MN
 PMS_CPUVR_VDD_TG.MN
 PMS_CPUVR_VDD_TG.MN
 PMS_DDR33V_BST1_MN
 PMS_PCIE_CARN_R.MN
 PMS_PCIE_CALIP_R.MN
 PMS_PCIE_PVID_B.MN
 PMS_DDR33V_BST1_RC.MN
 PMS_DDR33V_PHASE1_MN
 PMS_DDR33V_PHASE1_RC.MN
 PMS_DDR33V_PHASE1_RC.MN
 PMS_DDR33V_PHASE1_TG.MN
 PMS_EGFXVR_BST1_MN
 PMS_EGFXVR_BST1_RC.MN
 PMS_EGFXVR_PHASE1_MN
 PMS_EGFXVR_PHASE1_RC.MN
 PMS_EGFXVR_PHASE1_TG.MN
 PMS_GDDR33V_BOOT1_MN
 PMS_GDDR33V_BOOT1_RC.MN
 PMS_GDDR33V_PHASE1_MN
 PMS_GDDR33V_PHASE1_RC.MN
 PMS_GDDR33V_UGATE1_MN
 PMS_GDDR33V_BST1_MN
 PMS_SYSVR_BST1_RC.MN
 PMS_SYSVR_BST2_MN
 PMS_SYSVR_BST2_RC.MN
 PMS_SYSVR_BST2_QN.MN
 PMS_SYSVR_PHASE1_MN
 PMS_SYSVR_PHASE1_RC.MN
 PMS_SYSVR_PHASE2_MN
 PMS_SYSVR_PHASE2_RC.MN
 PMS_SYSVR_TG1_MN
 PMS_SYSVR_TG2_MN
 SB_AVDDCK_1_2V_B.MN
 SB_AVDDCK_3_3V_B.MN
 SB_AVDDCK_B.MN
 SB_AVDDTXXV_B.MN
 SB_AVDD_SATA_B.MN
 SB_IMC_PWM2_IMC_GPIO_16_R.MN
 SB_LL#B_GP1066_R.MN
 SB_PCTE_VDDOR_B.MN
 SB_PCTE_VDDOR_SATA_V.MN
 SB_RSMPS1E_R.MN

```

00SB_USB_RCOMP_R_MN
00SB_WAKE#_EVENT8#_R_MN
00VRM3_CPU_PWRGD
00SMB3_ALERT#
00SMB3_CLK
00SMB3_DATA
00SP13_CLK
00SP13_CS0
00SP13_MISO
00SP13_MOSI
00SYSVR_ENTRIP1_MN
00SYSVR_ENTRIP2_MN
00SYSVR_FB1_MN
00SYSVR_FB2_MN
00SYSVR_T0PSEL_MN
00SYSVR_T0NSEL_MN
00SYSVR_VIN_MN
00IHM3_ALERT#
00IHM3_STB#
00IHM3_SPP0_MN
00IHM3_SHDN_SEL_R_MN
00IHM3_TRIP_SET_R_MN
00IHM3_VDD_3V_R_MN
00P05_BUTTON#
00P05_R_BUTTON#
01_8V_VDD01
01_8V_VDD01
01_GATE
01_GATE
01_CPU_CORE
01_CPU_CORE
01_C_AUD
01_C_AUD
01_C_AUD
01_C_AUD
01_VCC_CRT
01_VDC_ADPT
01_VDC_ADPT
01_VDC_CHG
01_VDC_CHG
01_VDC_CU_NB
01_VDC_CU_NB
01_C_CPU
01_C_CPU
01_C_DDR
01_C_DDR
01_C_DFX
01_C_P1_1V
01_C_P1_1V
01_C_P1_2V
01_C_P1_2V
01_C_P1_5V
01_C_P1_5V
01_C_P3_3V
01_C_P3_3V
01_LCD_VDD3V
01_LCD_VDD3V
01_P0_9V_AUX
01_P0_9V_AUX
01_P1_2V_AUX
01_P1_2V_AUX
01_P1_2V_AUX
01_P1_2V_AUX
01_P1_2V_AUX
01_P1_2V_AUX
01_P1_8V_A2VDD0
01_P1_8V_A2VDD0
01_P1_8V_AUX
01_P1_8V_AUX
01_P12_0V_ALW
01_P12_0V_ALW
01_P2_0V_REF
01_P2_33V_VREF
01_P2_33V_VREF
01_P2_5V
01_P2_5V
01_P2_5V_LAN
01_P2_5V_LAN
01_P3_42VDD
01_P3_42VDD
01_P3_42VDD
01_P3_42VDD

```

- ☐ OP3.3V_AUX
- ☐ OP3.3V_AUX
- ☐ OP3.3V_LED
- ☐ OP3.3V_LED
- ☐ OP3.3V_MCD
- ☐ OP3.3V_MCD
- ☐ OP3.3V_MICOM
- ☐ OP3.3V_MICOM
- ☐ OP4.75V_AUD
- ☐ OP4.75V_AUD
- ☐ OP5.0V_AUD
- ☐ OP5.0V_AUD
- ☐ OP5.0V_AUX
- ☐ OP5.0V_AUX
- ☐ OP5.0V_STB
- ☐ OP5.0V_STB
- ☐ PRIC_BAT
- ☐ VCC_CRT
- ☐ VDD_LED

www.s-manuals.com