

# for VE

## Ramos-15L

CPU : Ivy Bridge BGA  
Chip Set : Intel Panther Point  
GFX : NV N14M\_GL/N14P\_GV2  
INTEL HD 3000/4000  
Remarks : Chief River Platform

Model Name : Ramos-15L  
PBA Name : MAIN  
PCB Code : BA41-02317A (GCE/HST/PTC)  
  
Dev. Step : PV  
Revision : 1.0  
T.R. Date : 2013.06.01

Design	CHECK	APPROVAL
Pei Wang	RJ Zheng	BL LEE

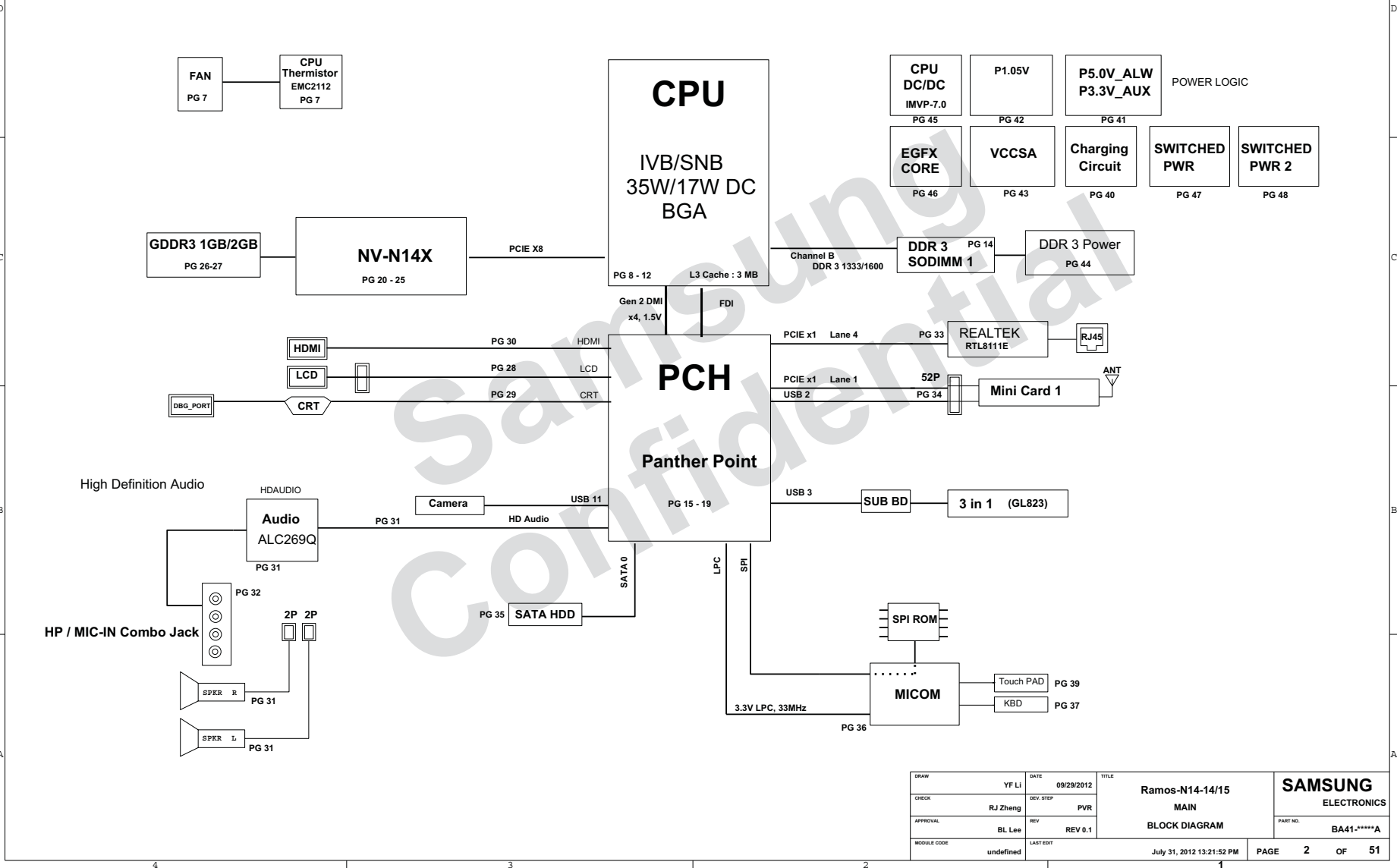
Owner : SEC Mobile R & D Signature : X

sheet01 : Cover  
sheet02 : BLOCK DIAGRAM  
sheet03 : BOARD INFORMATION  
sheet04 : POWER DIAGRAM  
sheet05 : CLOCK DISTRIBUTION  
sheet06 : Green Clock  
sheet07 : Thermal Sensor  
sheet08 : CPU-IvyBridge (1/5)  
sheet09 : CPU-IvyBridge (2/5)  
sheet10 : CPU-IvyBridge (3/5)  
sheet11 : CPU-IvyBridge (4/5)  
sheet12 : CPU-IvyBridge (5/5)  
sheet13 :  
sheet14 : DDR3 SODIMM1  
sheet15 : PCH-PantherPoint (1/5)  
sheet16 : PCH-PantherPoint (2/5)  
sheet17 : PCH-PantherPoint (3/5)  
sheet18 : PCH-PantherPoint (4/5)  
sheet19 : PCH-PantherPoint (5/5)  
sheet20 : NV-N14X (1/5)  
sheet21 : NV-N14X (2/5)  
sheet22 : NV-N14X (3/5)  
sheet23 : NV-N14X (4/5)  
sheet24 : NV-N14X (5/5)  
sheet25 : NV-N14X STRAP  
sheet26 : GFX memory  
sheet27 : GFX memory  
sheet28 : LVDS / CAMERA  
sheet29 : VGA  
sheet30 : HDMI  
sheet31 : Audio - ALC269Q-VC-GR  
sheet32 : Audio - Combo Jack  
sheet33 : LAN (Realtek RTL8111E)  
sheet34 : WLAN  
sheet35 : SATA interface (HDD I/F)  
  
sheet36 : MICOM / BIOS(MEC1310)  
sheet37 : MICOM Glue Logic  
sheet38 : USB3.0 connector  
sheet39 : MAIN TO SUB CONNECTOR  
sheet40 : Power - charger  
sheet41 : Power - P3.3V\_AUX / P5.0V\_AUX  
sheet42 : Power - P1.05V (Chipset Power)  
sheet43 : Power - VCCSA  
sheet44 : Power - DDR3  
sheet45 : Power - CPU VRM  
sheet46 : Power - EGFX\_CORE  
sheet47 : Power - Switched Power 1  
sheet48 : Power - Switched Power 2  
sheet49 : Power - Power Discharge  
sheet50 : Mount Hole  
sheet51 : SUB (TOUCHPAD)

DRAW	LI, YF	DATE	09/29/2012	TITLE	Ramos-N14-14/15	SAMSUNG ELECTRONICS
CHECK	ZHENG, RJ	REV. STEP	PVR	MAIN		
APPROVAL	LEE, BL	REV	REV 0.1	COVER	PART NO. BA41-*****A	
MOBILE CODE		LAST EDIT		December, 17, 2012 1:42:04 PM	PAGE	1 OF 51

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## BLOCK DIAGRAM



DRAW	YF Li	DATE	09/29/2012	TITLE	Ramos-N14-14/15	SAMSUNG ELECTRONICS
CHECK	RJ Zheng	DEV. STEP	PVR	MAIN		
APPROVAL	BL Lee	REV	REV 0.1	BLOCK DIAGRAM	PART NO. BA41-*****A	
MODULE CODE	undefined	LAST EDIT	July 31, 2012 13:21:52 PM	PAGE	2 OF 51	

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# BOARD INFORMATION

## SCHEMATIC ANNOTATIONS AND BOARD INFORMATION

Voltage Rails		Active in
VDC P3.3V_MICOM P5.0V_ALW P5.0V_STB	Primary DC system power supply (7 to 21V) 3.3V always power rail (for Micom) 5.0V always power rail 5.0V always power rail	<b>S4 - S5</b>
P5.0V_AUX P3.3V_AUX P1.5V_AUX	5.0V switched on power rail (off in S4-S5) 3.3V switched on power rail (off in S4-S5) 1.5V power rail for DDR3 (off in S4-S5)	<b>S3</b>
P6.0V P3.3V P1.8V P1.5V P0.75V P0.85V	5.0V switched power rail (off in S3-S5) 3.3V switched power rail (off in S3-S5) 1.8V switched power rail (off in S3-S5) 1.5V switched power rail (off in S3-S5) 0.75V power rail for DDR3 (off in S3-S5) 0.85V switched power rail (off in S3-S5)	<b>S0</b>
VCC_CORE EGFX_CORE P1.05V (VCCP)	Core Voltage for CPU Core Voltage for GPU VCC for PANTHERPOINT	<b>S0</b>

USB PORT Assign		PCI Express Assign	
PORT #	ASSIGNED TO	PORT #	ASSIGNED TO
0	SYSTEM PORT 0	0	Mini Card 1 (WLAN)
1	SYSTEM PORT 1	1	NC
2	Multi Memory Card Controller	2	NC
3	SYSTEM PORT 2	3	LAN CONTROLLER
4	NC	4	NC
5	NC	5	NC
6	NC	6	NC
7	NC	7	NC
8	HSDPA		
9	NC		
10	Mini PCI Express (WLAN)		
11	Camera		
12	NC		
13	NC		

SATA PORT Assign	
PORT #	ASSIGNED TO
0	HDD
1	NC
2	NC
3	NC
4	NC
5	NC

Crystal / Oscillator			
TYPE	FREQUENCY	DEVICE	USAGE
Crystal	32.768KHz	PANTHER POINT	Real Time Clock
Crystal	25MHz	Green Clock	REALTEK
Crystal	27MHz	N14M	

LCD Pannel Detect (TBD)		
Devices	Resolution	PANNEL_DETECT_0

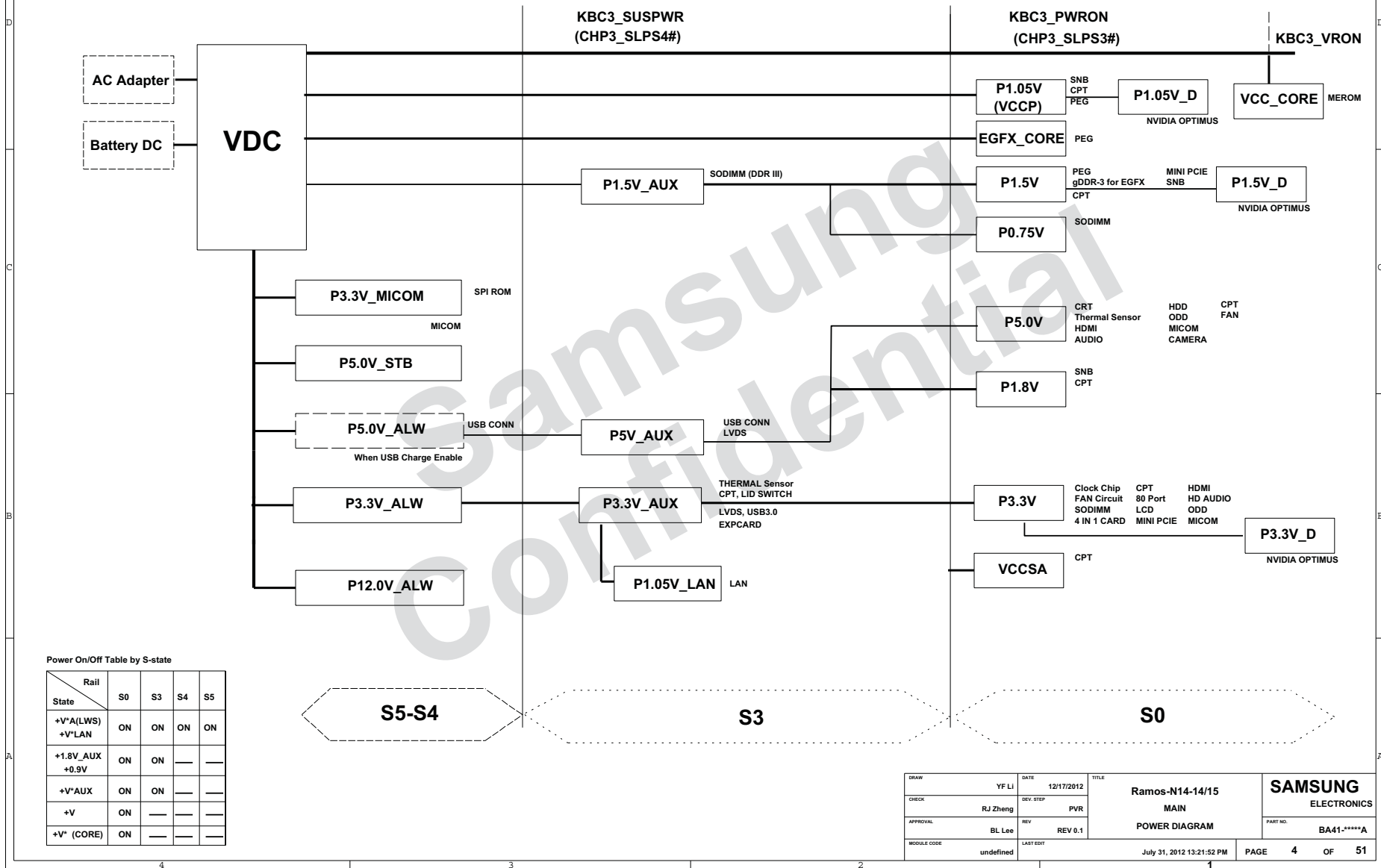
I <sup>2</sup> C / SMB Address			
Devices	Address	Hex	Bus
PANTHERPOINT	Master	-	SMBUS Master
CPU Thermal Sensor	0011 000X	30h	Thermal Sensor
SODIMM0	1010 000x	A0h	-
SODIMM1	1010 010x	A4h	-
Thermal Sensor on SODIMM0	0011 000x	30h	-
Thermal Sensor on SODIMM1	0011 010x	34h	-
on board DDR3 thermal Sensor	1001 100x	98h	-
Platform thermal management TS	1001 011x	96h	-

DRAW	YF Li	DATE	12/17/2012	TITLE	Ramos-N14-14/15	<b>SAMSUNG</b> ELECTRONICS PART NO. BA41-*****A
CHECK	RJ Zheng	DEV. STEP	PVR		MAIN	
APPROVAL	BL Lee	REV	REV 0.1		BOARD INFO	
MODULE CODE	undefined	LAST EDIT		July 31, 2012 13:21:52 PM		
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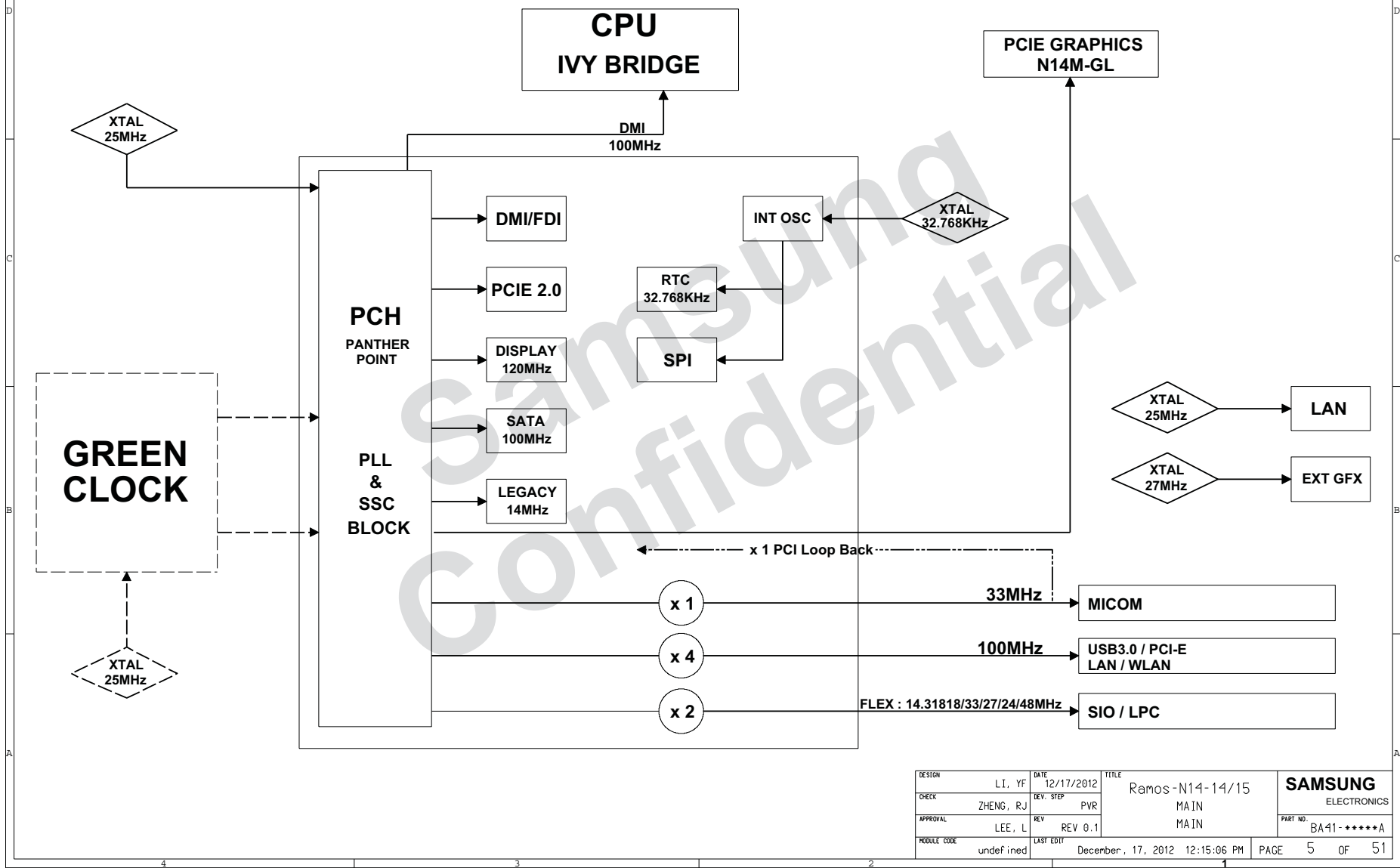
# POWER DIAGRAM

Rev 0.7



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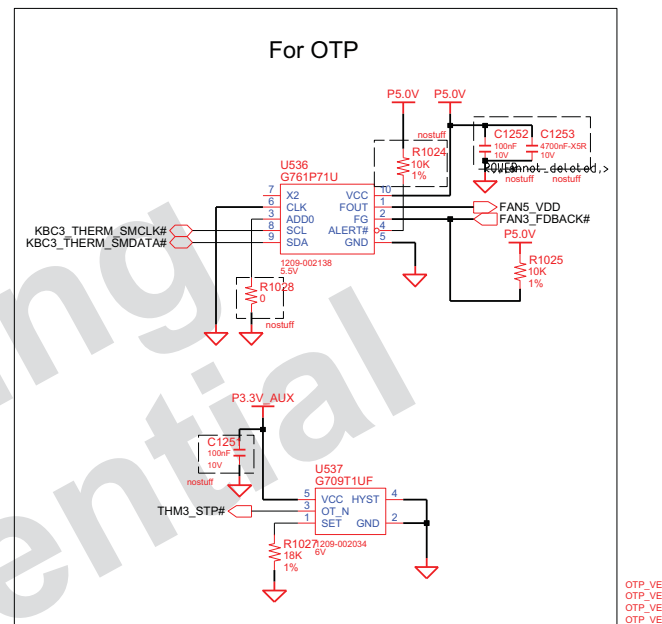
# CLOCK DISTRIBUTION Rev. 0.8



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APPROVAL	LEE, L	REV	REV 0.1	MAIN		
MODULE CODE	undefined	LAST EDIT	December, 17, 2012 12:15:06 PM	PAGE	5 OF 51	

A

# THERMAL SENSOR & FAN CONTROL



Temperature : 95.78c  
confirmed by thermal charger  
(2011.05.02)  
 $R \text{ (kohm)} = 0.0012T - 0.9308T + 96.147$

Line Width = 20 mil

FAN5\_VDD

FAN3\_FDBACK#

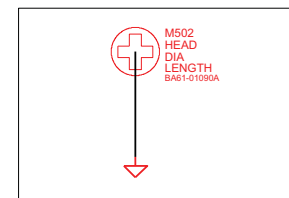
C1008  
10000nF XSR  
6.3V

JFAN1  
HDR-3P-1R-SMD  
STD

1  
2  
3  
4  
5

MNT1  
MNT2

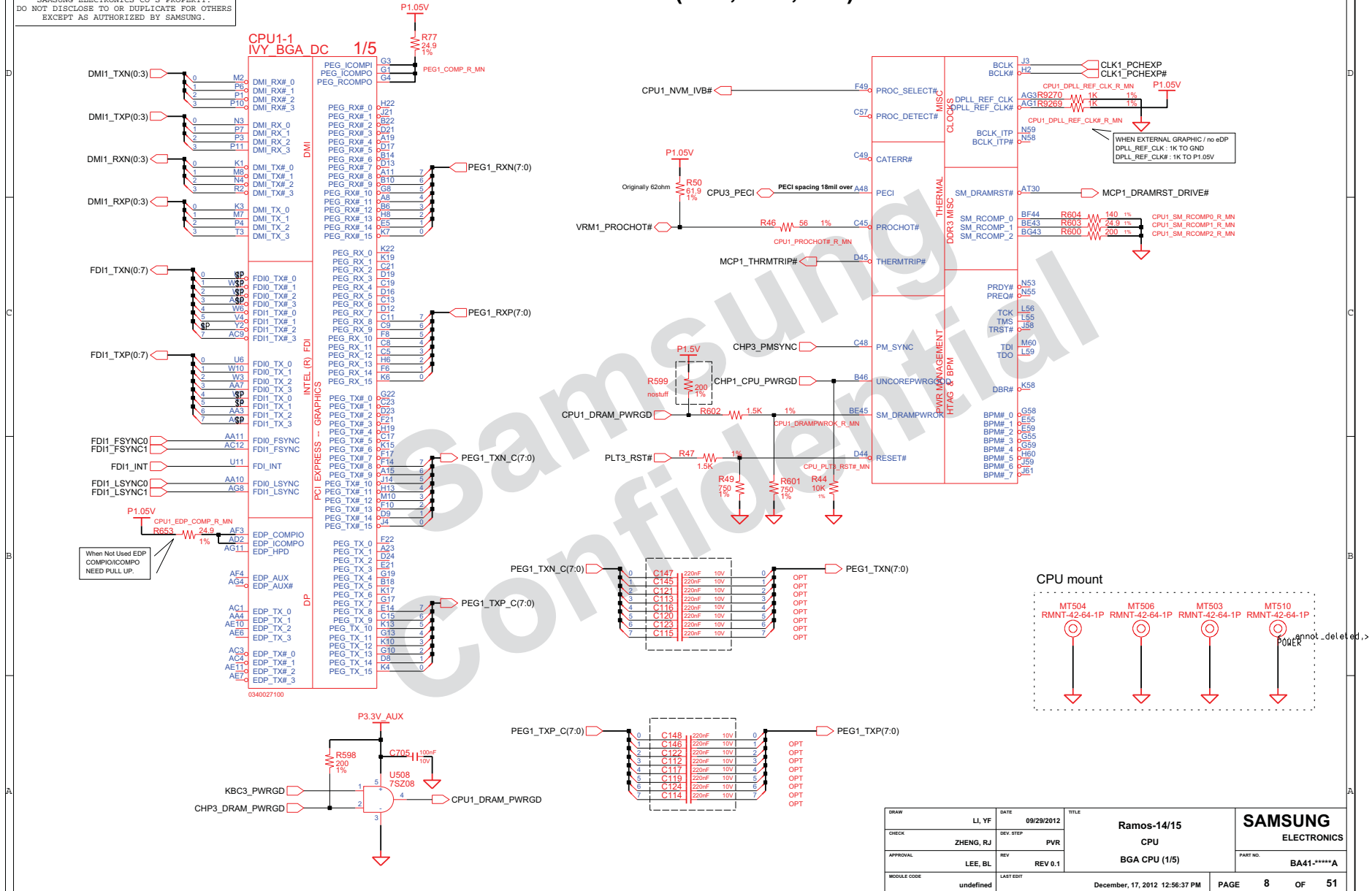
3711-007519

FAN PEM

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

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## IVYBRIDGE PROCESSOR (DMI,PEG, FDI)



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CHECK	ZHENG, RJ	DEV. STEP	PVR	CPU		
APPROVAL	LEE, BL	REV	REV 0.1	BGA CPU (1/5)		
MODULE CODE	undefined	LAST EDIT	December, 17, 2012 12:56:37 PM	PAGE	8 OF 51	



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CPU1-2  
IVY BGA DC 2/5

AG6	SA_DQ_0	AU36
AJ8	SA_DQ_1	AV36
AP11	SA_DQ_2	AY26
AL6	SA_CLK_0	
AJ10	SA_DQ_3	
AJ8	SA_DQ_4	
AL6	SA_DQ_5	
AL7	SA_DQ_6	
AR11	SA_DQ_7	
AP8	SA_DQ_8	AT40
AJ6	SA_DQ_9	AU40
AV9	SA_DQ_10	BB26
AR6	SA_DQ_11	
AP8	SA_DQ_12	
AT13	SA_DQ_13	
AJ13	SA_DQ_14	
AL7	SA_DQ_15	
BC7	SA_DQ_16	BB40
BB7	SA_DQ_17	BC41
BA13	SA_CS#_0	
BB11	SA_CS#_1	
BA7	SA_DQ_18	
BA9	SA_DQ_19	
BB9	SA_DQ_20	
AY13	SA_DQ_21	
AV14	SA_DQ_22	
AR14	SA_DQ_23	AY40
AY17	SA_DQ_24	BA41
AR19	SA_DQ_25	
BA14	SA_DQ_26	
BA14	SA_DQ_27	
BB14	SA_DQ_28	
BB17	SA_DQ_29	
BA45	SA_DQ_30	AL11
AR43	SA_DQ_31	AR8
AW48	SA_DQ_32	AT17
BC48	SA_DQ_33	AY45
BC45	SA_DQ_34	AY51
AR45	SA_DQ_35	AY55
AT48	SA_DQ_36	AK55
AY48	SA_DQ_37	
BA49	SA_DQ_38	
BB51	SA_DQ_39	
AY53	SA_DQ_40	
BB59	SA_DQ_41	
AJ49	SA_DQ_42	
BA53	SA_DQ_43	
BB55	SA_DQ_44	
BA55	SA_DQ_45	AI11
AV56	SA_DQ_46	AR10
AP50	SA_DQ_47	AY11
AP53	SA_DQ_48	AU17
AV54	SA_DQ_49	AW45
AT54	SA_DQ_50	AV51
AP56	SA_DQ_51	AT56
AP52	SA_DQ_52	AK54
AN57	SA_DQ_53	
AN53	SA_DQ_54	
AG56	SA_DQ_55	
AG53	SA_DQ_56	
AN55	SA_DQ_57	
AN52	SA_DQ_58	
AG55	SA_DQ_59	
AK56	SA_DQ_60	
	SA_DQ_61	
	SA_DQ_62	
	SA_DQ_63	

SA\_MA\_0  
SA\_MA\_1  
SA\_MA\_2  
SA\_MA\_3  
SA\_MA\_4  
SA\_MA\_5  
SA\_MA\_6  
SA\_MA\_7  
SA\_MA\_8  
SA\_MA\_9  
SA\_MA\_10  
SA\_MA\_11  
SA\_MA\_12  
SA\_MA\_13  
SA\_MA\_14  
SA\_MA\_15

SA\_BS\_0  
SA\_BS\_1  
SA\_BS\_2

SA\_CAS#  
SA\_RAS#  
SA\_WE#

0340027100

MEM1\_BDQ(63:0)

0	AL4	SB_DQ_0
1	AL1	SB_DQ_1
2	AN3	SB_DQ_2
3	AK4	SB_DQ_3
4	AK4	SB_DQ_4
5	AK3	SB_DQ_5
6	AN4	SB_DQ_6
7	AR1	SB_DQ_7
8	AJ4	SB_DQ_8
9	AT2	SB_DQ_9
10	AV4	SB_DQ_10
11	BA4	SB_DQ_11
12	AU3	SB_DQ_12
13	AR3	SB_DQ_13
14	AY2	SB_DQ_14
15	BA3	SB_DQ_15
16	BE9	SB_DQ_16
17	BD9	SB_DQ_17
18	BD13	SB_DQ_18
19	BF12	SB_DQ_19
20	BF8	SB_DQ_20
21	BD10	SB_DQ_21
22	BD14	SB_DQ_22
23	BE13	SB_DQ_23
24	BF16	SB_DQ_24
25	BE17	SB_DQ_25
26	BE18	SB_DQ_26
27	BE21	SB_DQ_27
28	BE14	SB_DQ_28
29	BE14	SB_DQ_29
30	BE18	SB_DQ_30
31	BE19	SB_DQ_31
32	BD50	SB_DQ_32
33	BF48	SB_DQ_33
34	BD53	SB_DQ_34
35	BF52	SB_DQ_35
36	BD49	SB_DQ_36
37	BE49	SB_DQ_37
38	BD54	SB_DQ_38
39	BE53	SB_DQ_39
40	BF66	SB_DQ_40
41	BE57	SB_DQ_41
42	BC59	SB_DQ_42
43	AY60	SB_DQ_43
44	BE54	SB_DQ_44
45	BC54	SB_DQ_45
46	BA58	SB_DQ_46
47	AW59	SB_DQ_47
48	AJ58	SB_DQ_48
49	AJ58	SB_DQ_49
50	AN61	SB_DQ_50
51	AN59	SB_DQ_51
52	AJ59	SB_DQ_52
53	AJ61	SB_DQ_53
54	AN58	SB_DQ_54
55	AK58	SB_DQ_55
56	AK58	SB_DQ_56
57	AL58	SB_DQ_57
58	AG58	SB_DQ_58
59	AG59	SB_DQ_59
60	AM60	SB_DQ_60
61	AL59	SB_DQ_61
62	AF61	SB_DQ_62
63	AN60	SB_DQ_63

MEM1\_BBS(2:0)

0	BG39	SB_BS_0
1	BD42	SB_BS_1
2	AT22	SB_BS_2

MEM1\_BCAS#  
MEM1\_BRAS#  
MEM1\_BWE#

AV43  
BF40  
BD45

DDR SYSTEM MEMORY B

BA34  
AY34  
AR22

BA36  
BB36  
BF27

BE41  
BE47

AT43  
BG47

AL3  
AV3  
BG11  
BD17  
BG51  
BA59  
AT60  
AK59

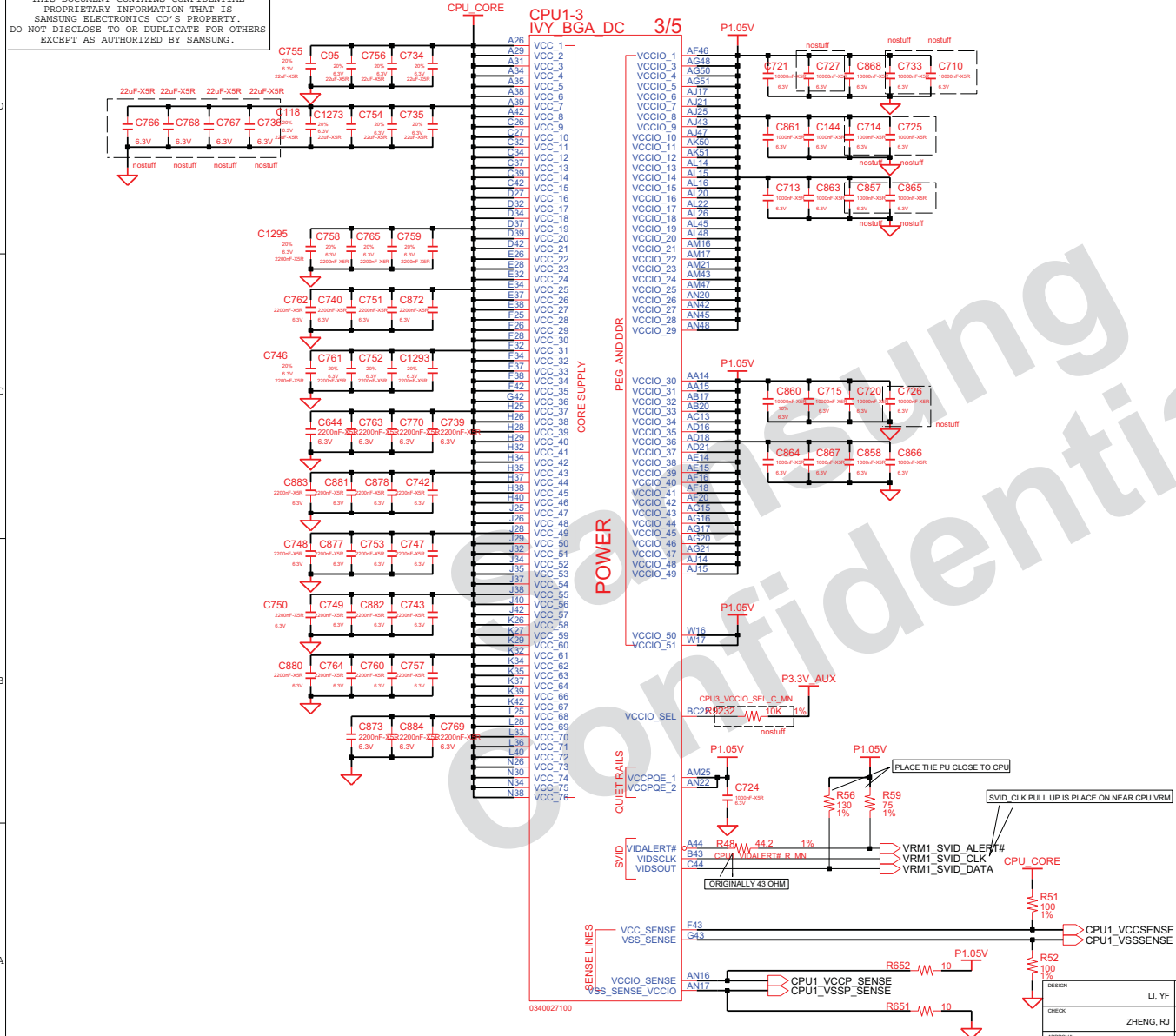
AM2  
AV1

BE11  
BD18  
BE51  
BA61  
AR59  
AK61

BF32  
BE33  
BD33  
AU30  
BD30  
AV30  
BG30  
BD29  
BE30  
BE28  
BD43  
AT28  
AV28  
BD45  
AT26  
AU22

DRAW	LI, YF	DATE	09/29/2012	TITLE	Ramos-14/15	<b>SAMSUNG</b> ELECTRONICS PART NO. BA41-*****A
CHECK	ZHENG, RJ	DEV. STEP	PVR	CPU		
APPROVAL	LEE, BL	REV	REV 0.1	BGA CPU (2/5)		
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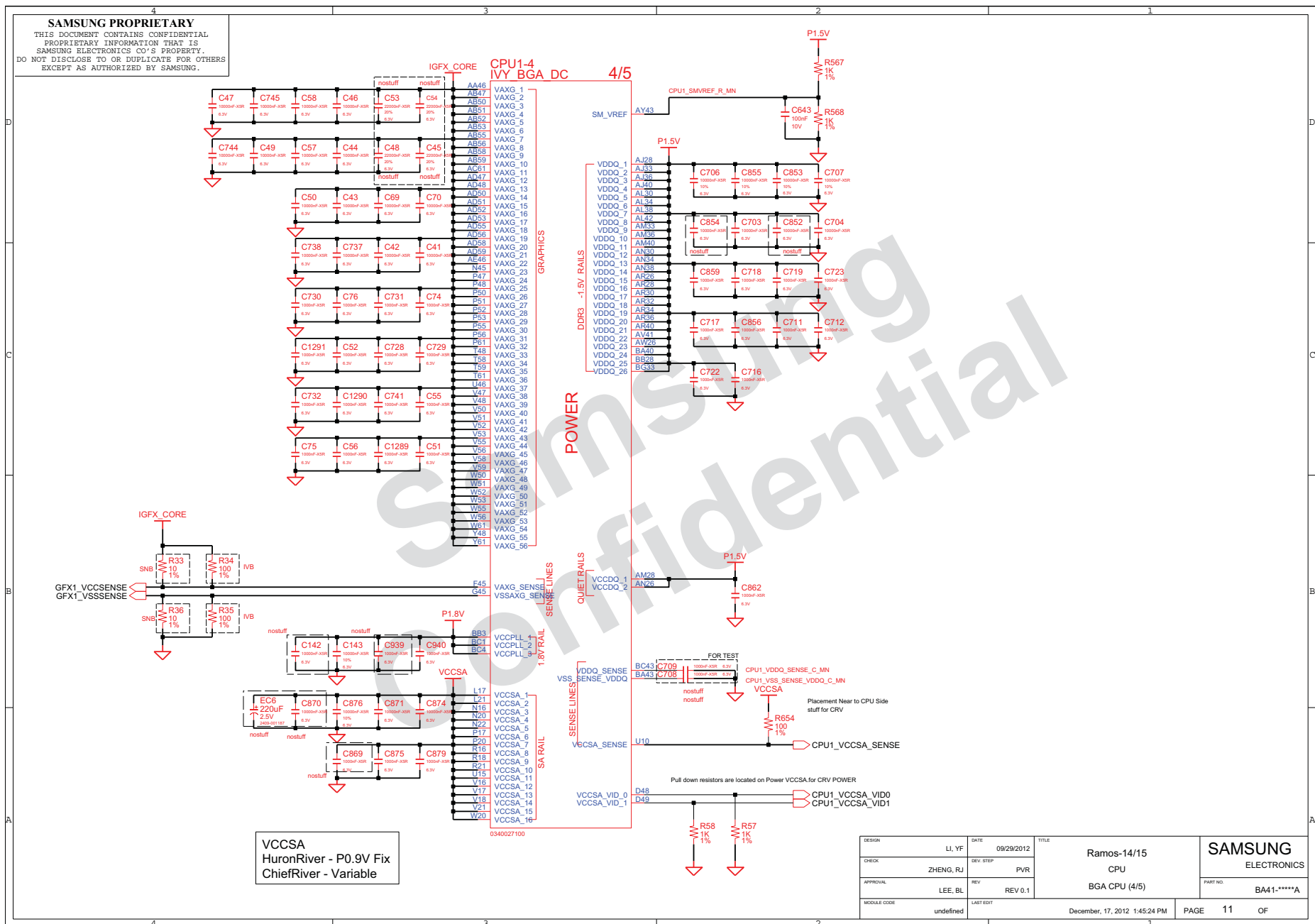
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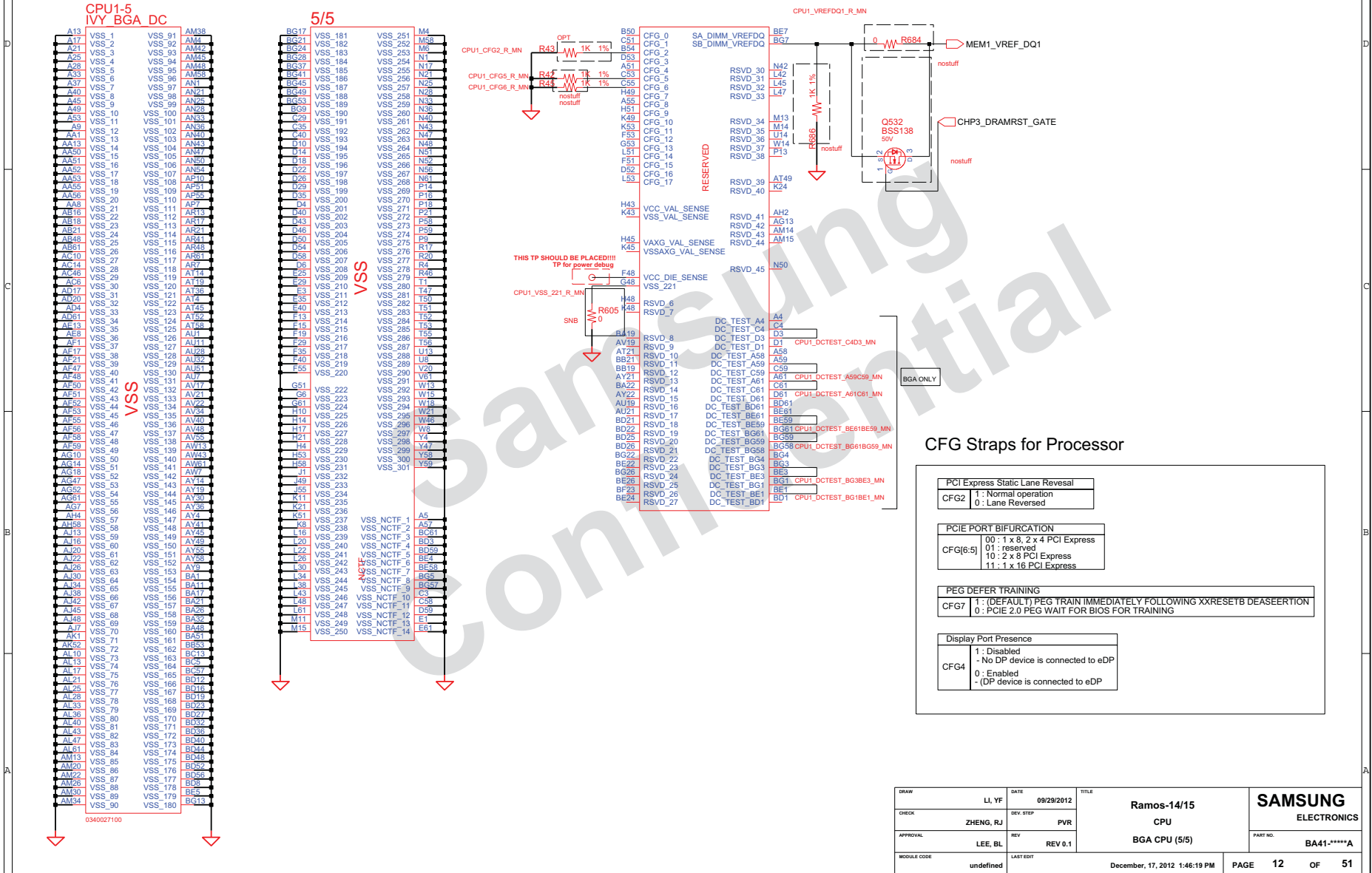
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APPROVAL	LEE, BL	REV	REV 0.1	BGA CPU (3/5)	
MODULE CODE	undefined	LAST EDIT			

PAGE	10	OF	51
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CHECK	ZHENG, RJ	REV. STEP	PVR		CPU	
APPROVAL	LEE, BL	REV	REV 0.1		BGA CPU (5/5)	PART NO. BA41-*****A
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																CHECK		ZHENG, RJ		DEV. STEP		PVR		MEMORY #0 2 RANK(4/4)				ELECTRONICS							
																APPROVAL		LEE, L		REV		REV 0.1		DDR3 2Gb				PART NO.							
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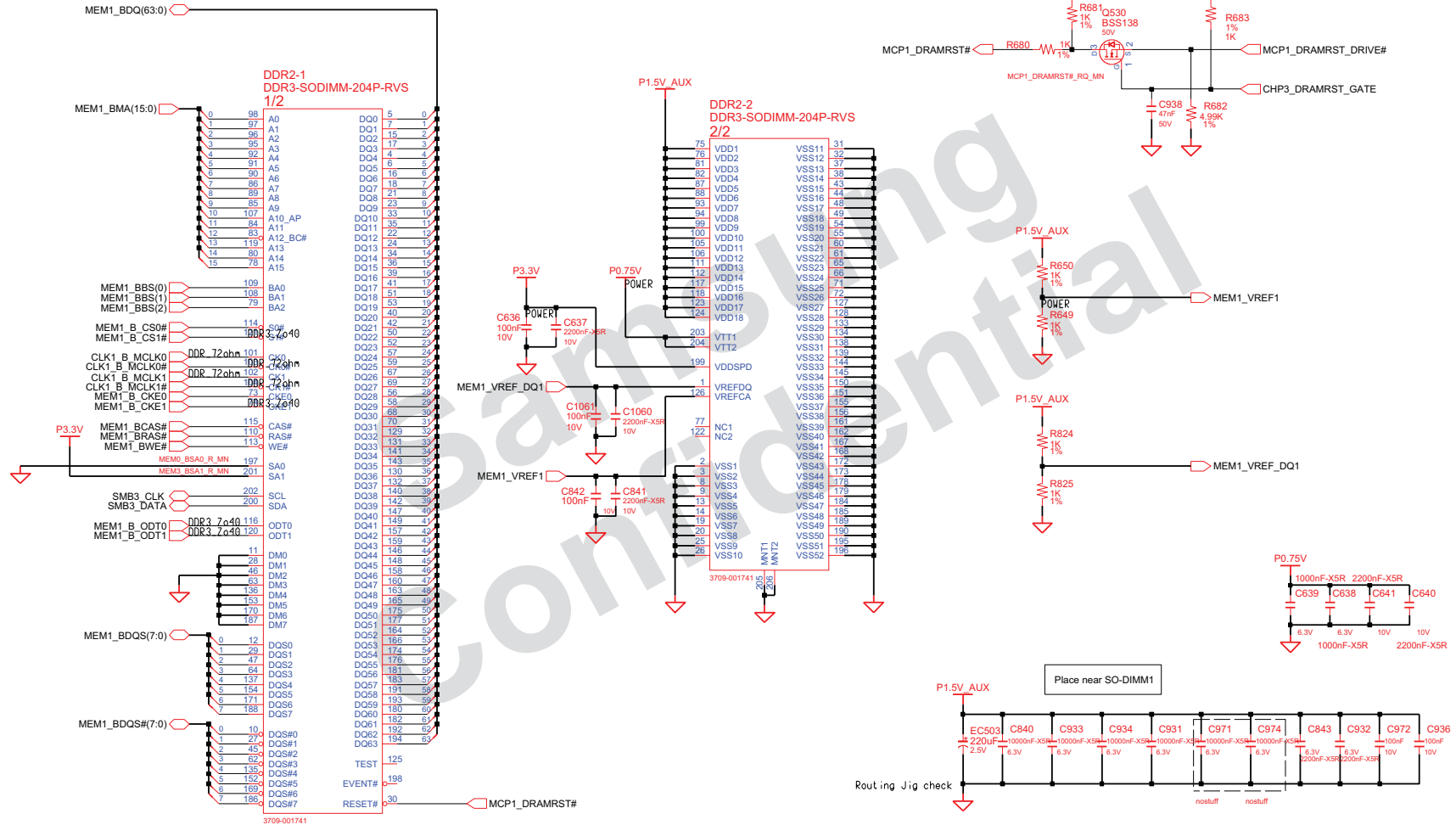
## SO-DIMM #1 : 1st SO-DIMM

### DDR SO-DIMM #1

Height : 8 mm (STANDARD)

P/N : 3709-001615 (FOXCONN)

P/N : 3709-001622 (CONCRAFT)

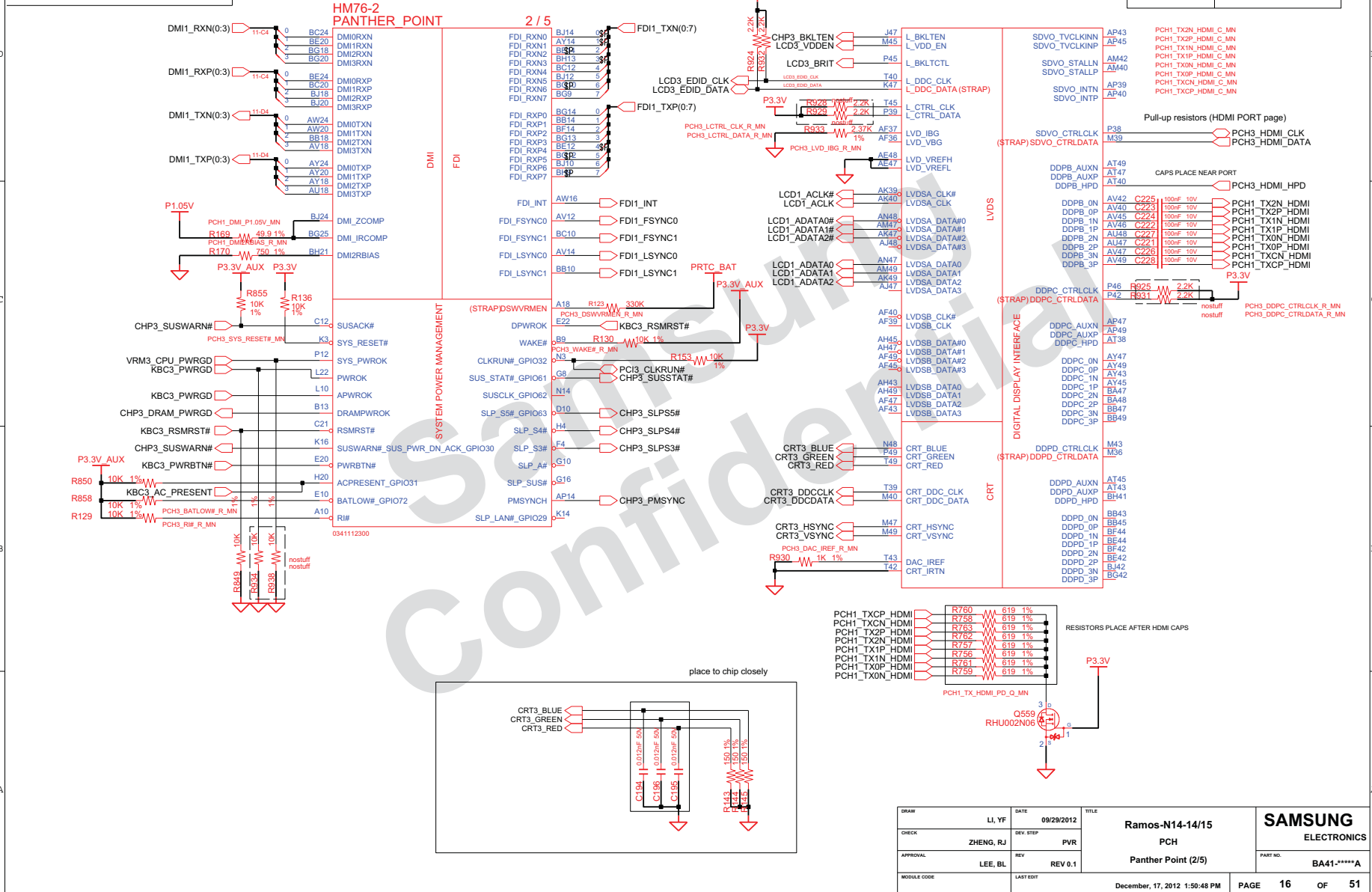


DRAW	LI, YF	DATE	09/29/2012	TITLE	Ramos-14/15	SAMSUNG ELECTRONICS PART NO. BA41-*****A
CHECK	ZHENG, RJ	DEV. STEP	PVR		SODIMM B	
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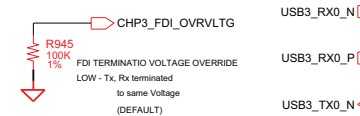
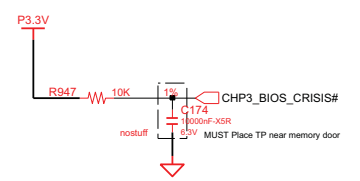
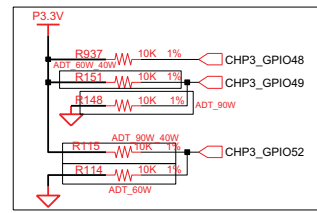
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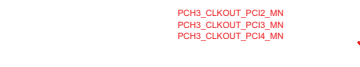
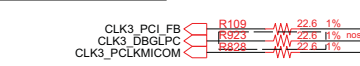
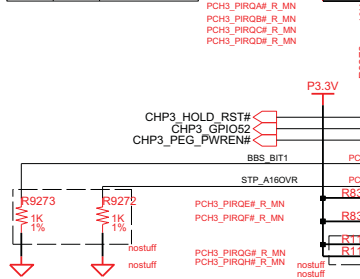


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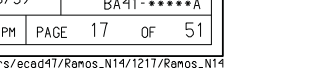
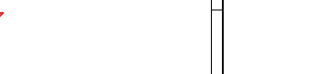
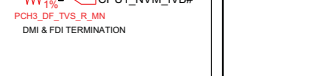
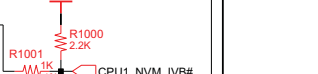
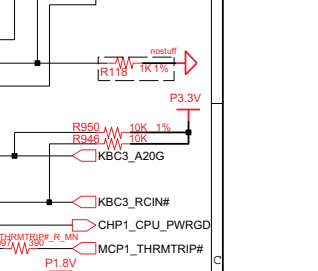
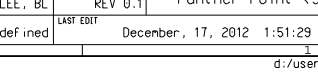
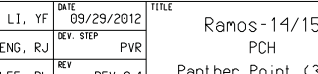
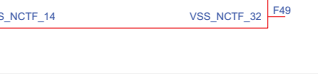
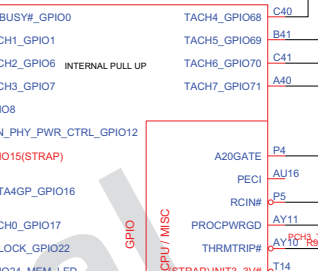
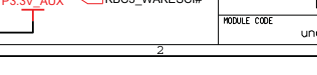
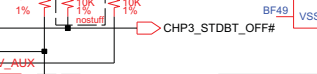
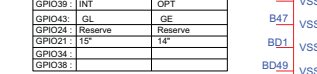
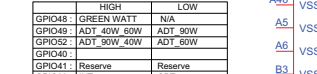
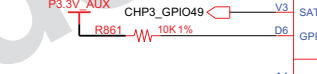
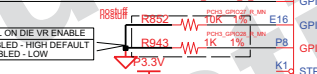
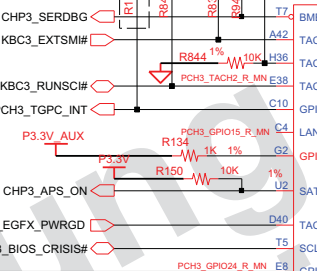
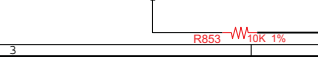
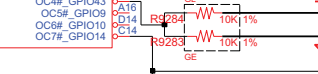
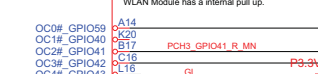
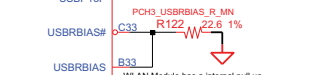
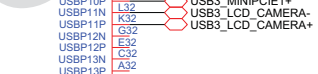
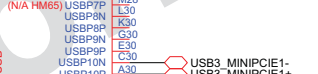
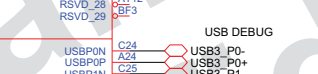
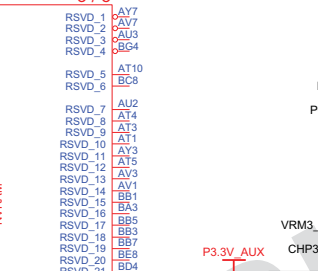
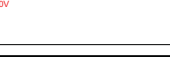
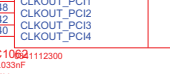
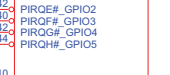
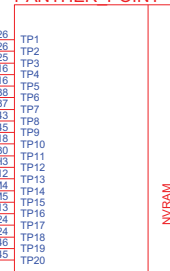
## GREEN WATT



BBS_BIT	BBS_BIT	BOOT BIOS STRAP
0	0	LPC
1	0	RESERVED (NAND)
0	1	SP1



## HM76-3 PANTHER POINT 3/5

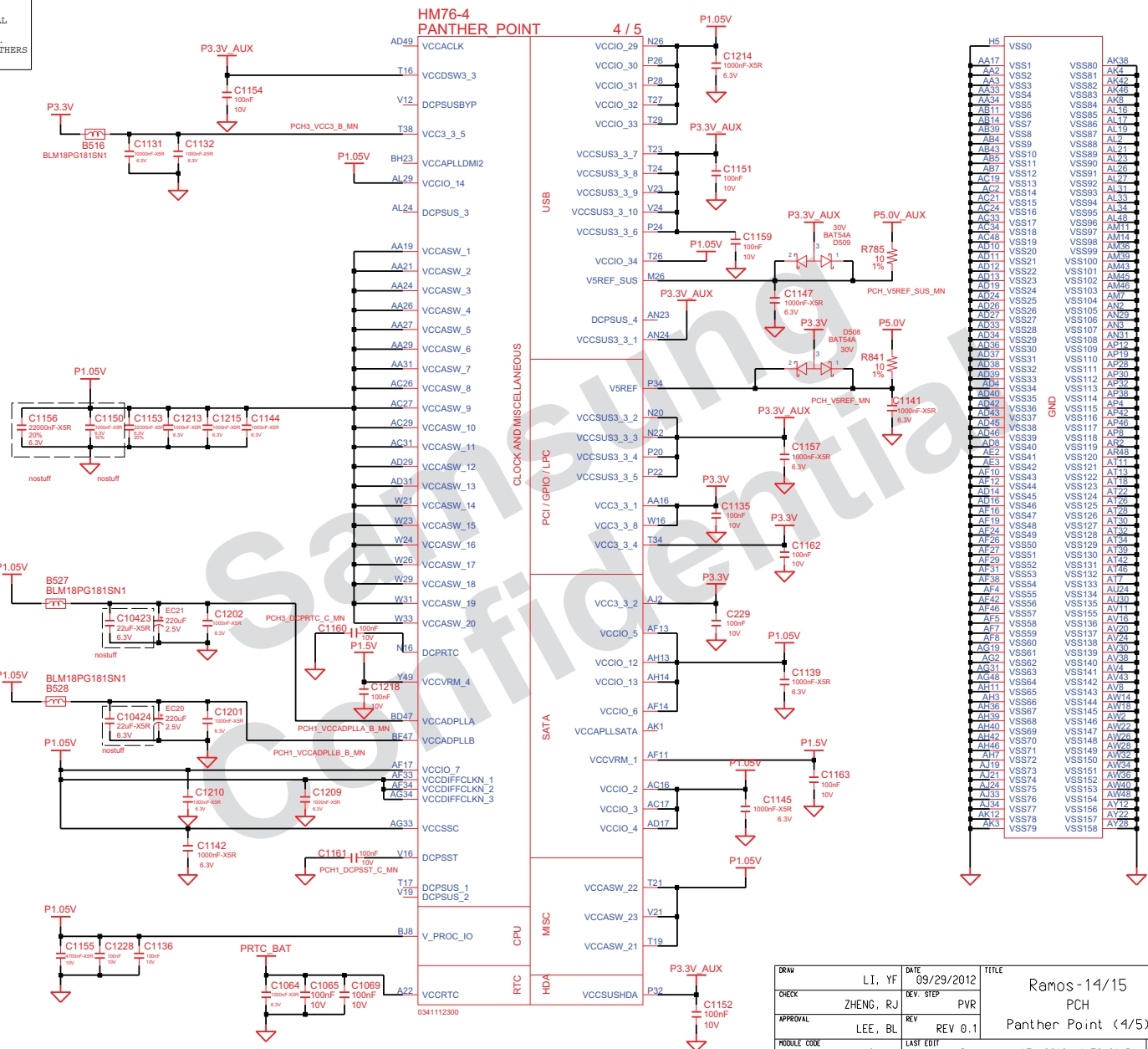


GPIO	SETTING
GPIO48	HIGH
GPIO49	LOW
GPIO52	LOW
GPIO53	LOW
GPIO54	LOW
GPIO55	LOW
GPIO56	LOW
GPIO57	LOW
GPIO58	LOW
GPIO59	LOW
GPIO60	LOW
GPIO61	LOW
GPIO62	LOW
GPIO63	LOW
GPIO64	LOW
GPIO65	LOW
GPIO66	LOW
GPIO67	LOW
GPIO68	LOW
GPIO69	LOW
GPIO70	LOW
GPIO71	LOW
GPIO72	LOW
GPIO73	LOW
GPIO74	LOW
GPIO75	LOW
GPIO76	LOW
GPIO77	LOW
GPIO78	LOW
GPIO79	LOW
GPIO80	LOW
GPIO81	LOW
GPIO82	LOW
GPIO83	LOW
GPIO84	LOW
GPIO85	LOW
GPIO86	LOW
GPIO87	LOW
GPIO88	LOW
GPIO89	LOW
GPIO90	LOW
GPIO91	LOW
GPIO92	LOW
GPIO93	LOW
GPIO94	LOW
GPIO95	LOW
GPIO96	LOW
GPIO97	LOW
GPIO98	LOW
GPIO99	LOW
GPIO100	LOW

DATE	09/29/2012
TITLE	Ramos-14/15
CHK	LI, YF
REV	STEP
APPROVAL	REV 0.1
MODULE CODE	undef ined
LAST EDIT	December, 17, 2012 1:51:29 PM
PAGE	17
OF	51

**SAMSUNG**  
ELECTRONICS  
PART NO. BA41-\*\*\*\*\*A

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DRAW	LI, YF	DATE	09/29/2012	TITLE	Ramos-14/15	<b>SAMSUNG</b>	
CHECK	ZHENG, RJ	REV. STEP	PVR	PCH		ELECTRONICS	
APPROVAL	LEE, BL	REV	REV 0.1	Panther Point (4/5)		PART NO.	BA41-*****A
MODULE CODE	undefined	LAST EDIT	December, 17, 2012 1:52:21 PM	PAGE	18	OF	51



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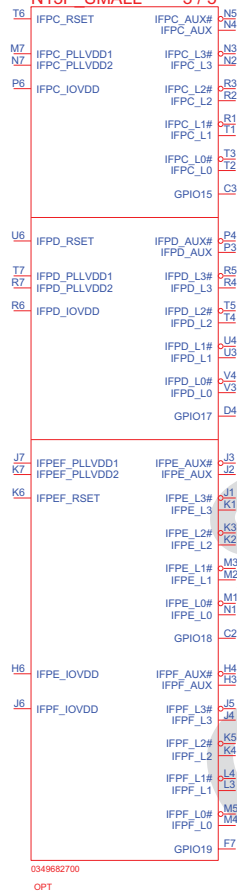



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GPU1-3  
N13P SMALL 3 / 5



DESIGN	LI, YF	DATE	1/27/2012	TITLE Ramos-N14-14/15 N14X_SMALL N14X(3/5)	
CHECK	ZHENG, RJ	DEV. STEP	PVR		
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DESIGN	LI, YF	DATE	1/27/2012	TITILE Ramos-N14-14/15 N14X_SMALL N14X(4/5)	<b>SAMSUNG</b> ELECTRONICS	
CHECK	ZHENG, RJ	DEV. STEP	PVR			
APPROVAL	LEE, BL	REV	REV 0.1		PART NO.	BA41-xxxxxx
MODULE CODE	undefined	LAST EDIT	December, 17, 2012 1:59:42 PM		PAGE	23 OF 51



COM-22C-015 (1996 E 5) PEV 3

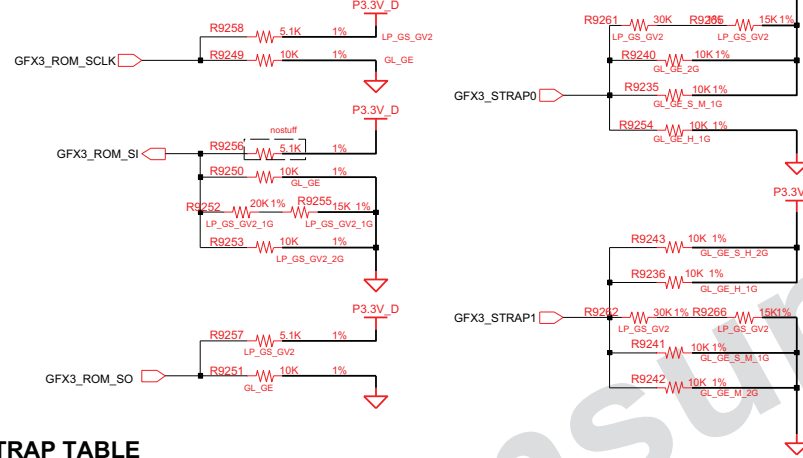


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## GF117\_N14M\_GL/GE STRAP DEFINITION

## GK208\_N14M\_LP/GS STRAP DEFINITION

## GK208\_N14P\_GV2 STRAP DEFINITION



### RESISTOR MAPPING TO HEX VALUES

RESISTOR	PULL UP	PULL DOWN
5K	1000	0000
10K	1001	0001
15K	1010	0010
20K	1011	0011
25K	1100	0100
30K	1101	0101
35K	1110	0110
45K	1111	0111

### GPU STRAP TABLE

STRAP PIN	GK208			GF117			VRAM	GPU
	N14P_GV2	N14M_GS	N14M_LP	N14M_GE	N14M_GL	N14M_GL		
ROM_SCLK	5K PU LP_GS_GV2	5K PU LP_GS_GV2	5K PU LP_GS_GV2	10K PD GL_GE	10K PD GL_GE	10K PD GL_GE	SAM1G	N14M-GL
ROM_SI	refer to RAM strap	refer to RAM strap	refer to RAM strap	10K PD GL_GE	10K PD GL_GE	10K PD GL_GE	SAM2G	N14M-GE
ROM_SO	5K PU LP_GS_GV2	5K PU LP_GS_GV2	5K PU LP_GS_GV2	10K PD GL_GE	10K PD GL_GE	10K PD GL_GE	HY1G	N14M-LP
STRAP0	45K PU LP_GS_GV2	45K PU LP_GS_GV2	45K PU LP_GS_GV2	refer to RAM strap	refer to RAM strap	refer to RAM strap	HY2G	N14M-GS
STRAP1	45K PD LP_GS_GV2	45K PD LP_GS_GV2	45K PD LP_GS_GV2	refer to RAM strap	refer to RAM strap	refer to RAM strap	MICRO1G	N14P-GV2
STRAP2	15K PD GV2	5K PD GS	10K PD LP	refer to RAM strap	refer to RAM strap	refer to RAM strap	MICRO2G	
STRAP3	5K PD LP_GS_GV2	5K PD LP_GS_GV2	5K PD LP_GS_GV2	refer to RAM strap	refer to RAM strap	refer to RAM strap		
STRAP4	45K PD LP_GS_GV2	45K PD LP_GS_GV2	45K PD LP_GS_GV2	10K PD GL_GE	10K PD GL_GE	10K PD GL_GE		

### MULTI-LEVEL MODE STRAPPING

STRAP PIN	BIT 3	BIT 2	BIT 1	BIT0	STRAP PIN	STRAP MAPPING	RESISTANCE	POLARITY
ROM_SCLK	PCI_DEVID[4]	SUB_VENDOR	PCI_DEVID[5]	PEX_PLL_EN_TERM	ROM_SCLK	SMB_ALT_ADDR	10K	PD
ROM_SI	RAMCFG[3]	RAMCFG[2]	RAMCFG[1]	RAMCFG[0]	ROM_SI	SUB_VENDOR	10K	PU TO 3V3 IF VBIOS ROM EXISTS PD IF NO VBIOS ROM EXISTS
ROM_SO	FB[1]	FB[0]	SMB_ALT_ADDR	VGA_DEVICE	ROM_SO	VGA_DEVICE	10K	PD(NO DISPLAY)
STRAP0	USER[3]	USER[2]	USER[1]	USER[0]	STRAP0	RAM_CFG[0]	10K	NA
STRAP1	3GIO_PADCFG[3]	3GIO_PADCFG[2]	3GIO_PADCFG[1]	3GIO_PADCFG[0]	STRAP1	RAM_CFG[1]	10K	NA
STRAP2	PCI_DEVID[3]	PCI_DEVID[2]	PCI_DEVID[1]	PCI_DEVID[0]	STRAP2	RAM_CFG[2]	10K	NA
STRAP3	SOR3_EXPOSED	SOR2_EXPOSED	SOR1_EXPOSED	SOR0_EXPOSED	STRAP3	RAM_CFG[3]	10K	NA
STRAP4	RESERVED	PCIE_SPEED_CHANGE_GEN	PCIE_MAX_SPEED	DP_PLL_VDD33V	STRAP4	PCIE_MAX_SPEED	10K	PD

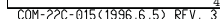
### BINARY STRAP

### VRAM STRAP TABLE

	SAM 1G	SAM 2G	HY 1G	HY 2G	MICRO 1G	MICRO 2G
GK208 ROM_SI	LP_GS_GV2_1G 45K PD	LP_GS_GV2_2G 20K PD	LP_GS_GV2_1G 35K PD	NA	LP_GS_GV2_1G 30K PD	LP_GS_GV2_2G 10K PD
GF117 STRAP0	SAM_MICRO_1G 10K PU	SAM_HY_MICRO_2G 10K PU	HY_1G 10K PD	SAM_HY_MICRO_2G 10K PU	SAM_MICRO_1G 10K PU	SAM_HY_MICRO_2G 10K PU
GF117 STRAP1	SAM_MICRO_1G 10K PD	SAM_HY_2G 10K PU	HY_1G 10K PU	SAM_HY_2G 10K PU	SAM_MICRO_1G 10K PD	MICRO_2G 10K PD
GF117 STRAP2	SAM_HY_1G 10K PU	SAM_HY_2G 10K PD	SAM_HY_1G 10K PU	SAM_HY_2G 10K PD	MICRO_1G 10K PD	MICRO_2G 10K PU
GF117 STRAP3	SAM_HY_MICRO_1G 10K PD	SAM_MICRO_2G 10K PU	SAM_HY_MICRO_1G 10K PD	HY_2G 10K PD	SAM_HY_MICRO_1G 10K PD	SAM_MICRO_2G 10K PU

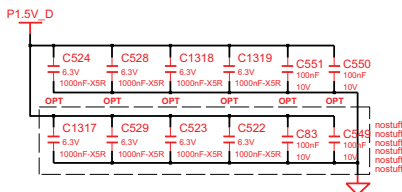
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APPROVAL	LEE, BL	REV	REV 0.1		GRAPHIC STRAP	PART NO.
MODULE CODE	undefined	LAST EDIT				BA41-xxxxxx
				December, 17, 2012 2:02:10 PM	PAGE	25 OF 51

## A-Channel #0 (D-mode)



d:/users/ecad47/Ramos N14/1217/Ramos N14

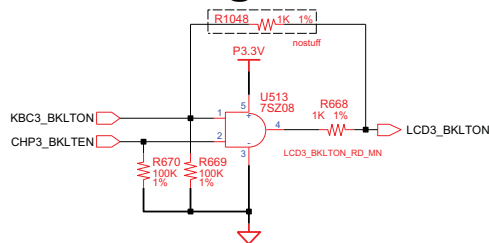
## A-Channel #1 (D-mode)



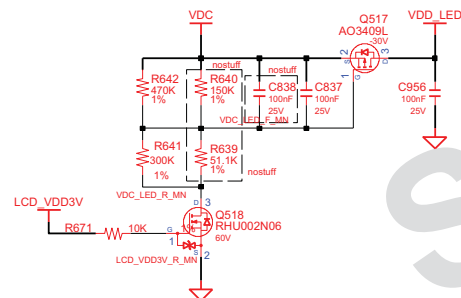
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# LVDS LOGIC

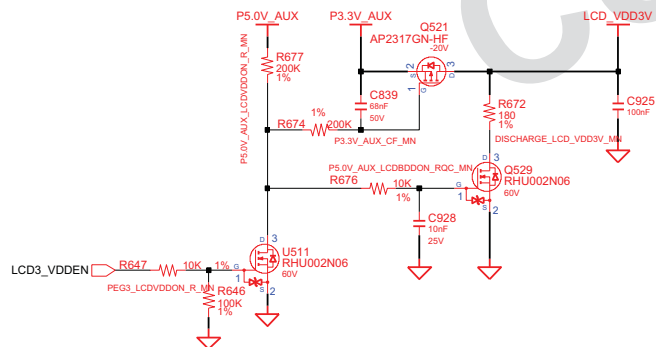
## Backlight On



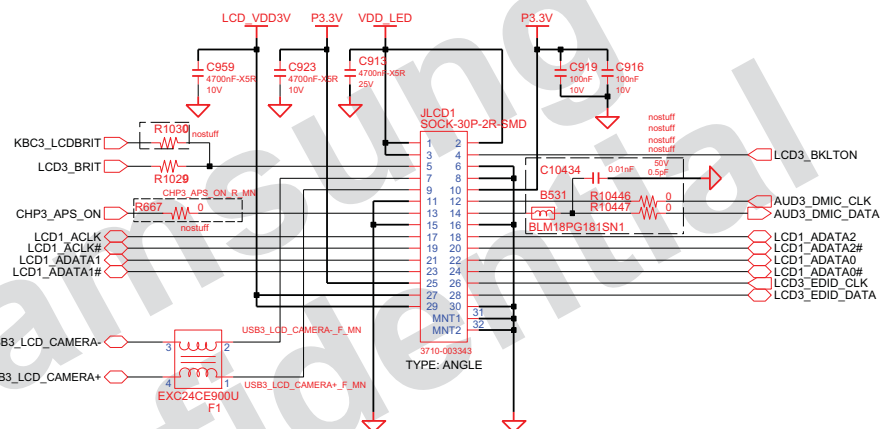
## LED Power



## LCD Power



## 1Ch. LCD Connector + CAMERA + INT MIC

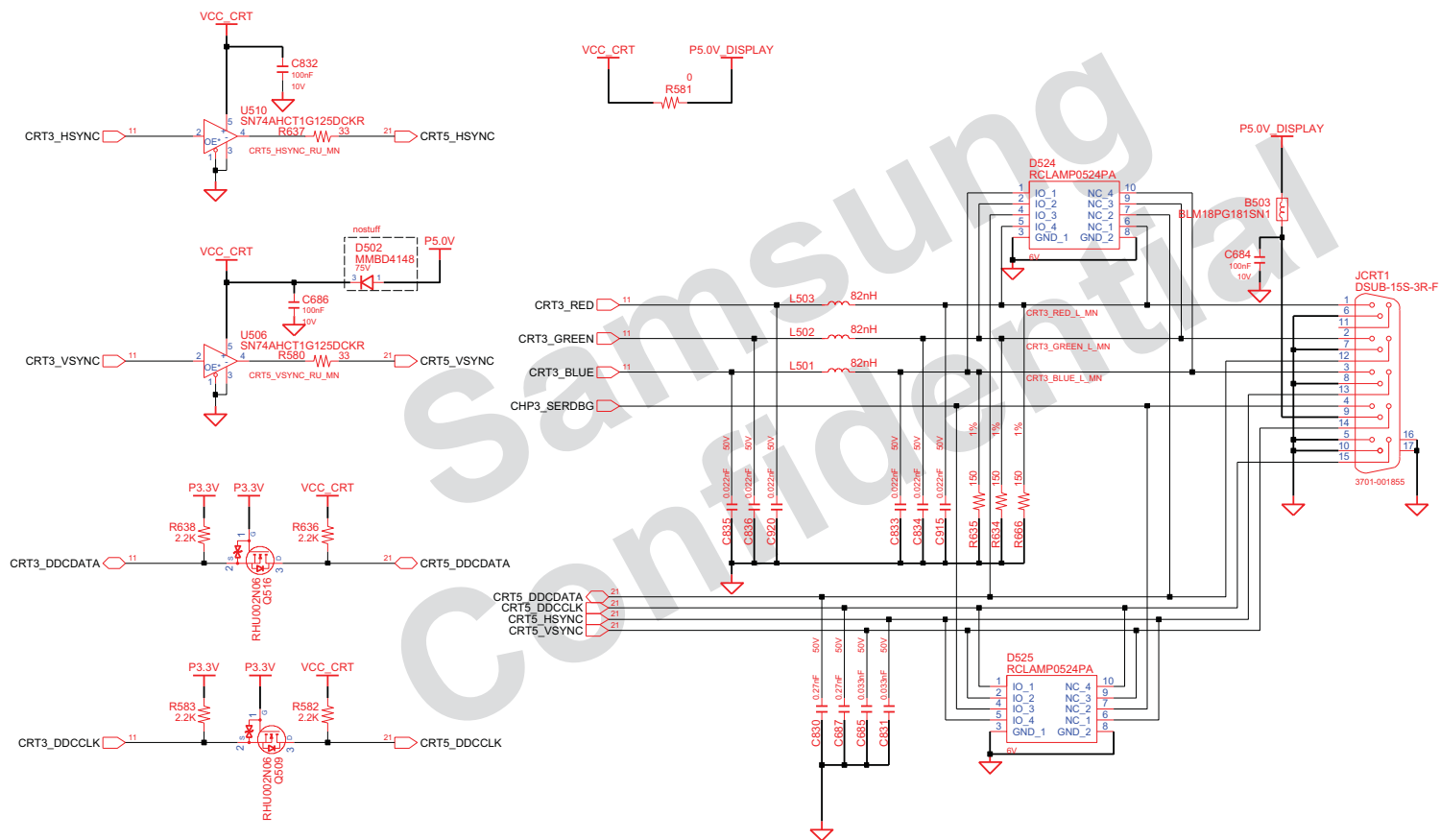


USB signal stub should be less than 100mil

DESIGN	LI, YF	DATE	09/29/2012	TITLE	Ramos-N14-14/15	SAMSUNG ELECTRONICS
CHECK	ZHENG, RJ	DEV. STEP	PVR	GRAPHICS_H		
APPROVAL	LEE, BL	REV	REV 0.1	LVDS		
MODULE CODE	undefined	LAST EDIT		December, 17, 2012 2:05:09 PM	PAGE 28 OF 51	PART NO. BA41-*****A

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# VGA

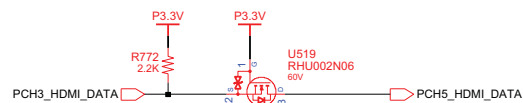
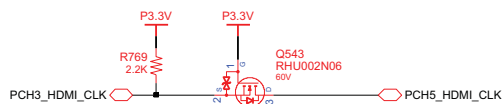


DESIGN	LI, YF	DATE	09/29/2012	TITLE	<b>SAMSUNG</b> ELECTRONICS  Ramos-14/15 GRAPHIC_IF CRT	PART NO.	BA41-*****A
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APPROVAL	LEE, BL	REV	REV 0.1				
MODULE CODE	undefined	LAST EDIT	December, 17, 2012 2:05:49 PM	PAGE 29 OF 51			

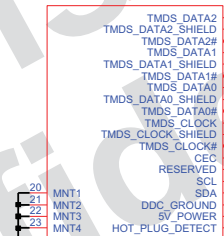
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# HDMI

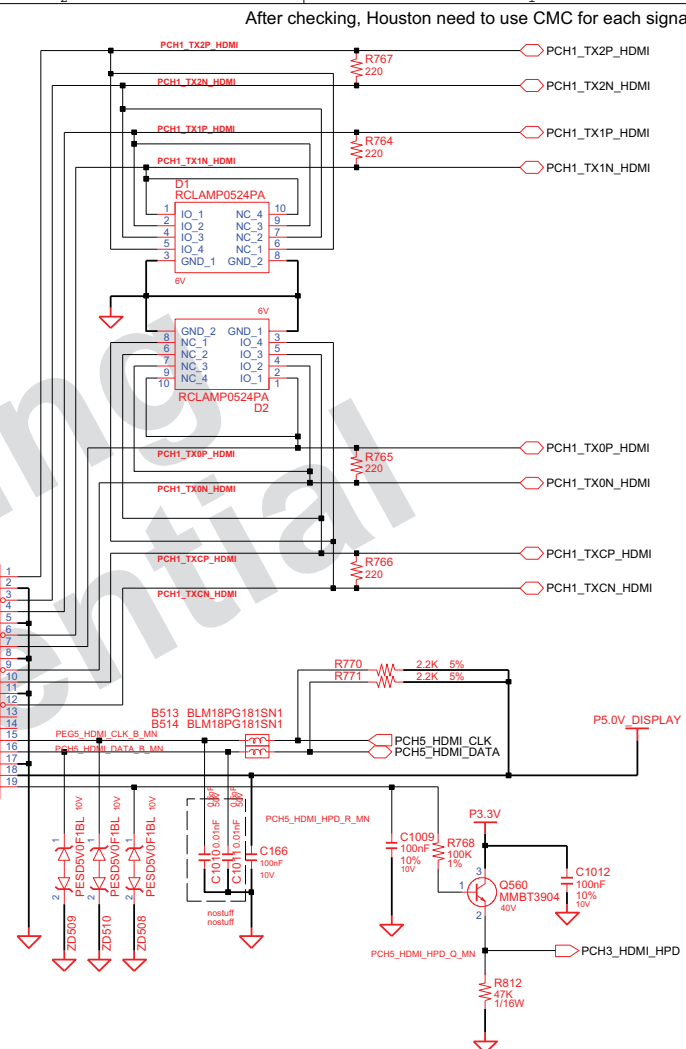
FOR HDMI VERIFICATION TEST



## JHDMI1 HDMI-19P-FEMALE



3701-001775



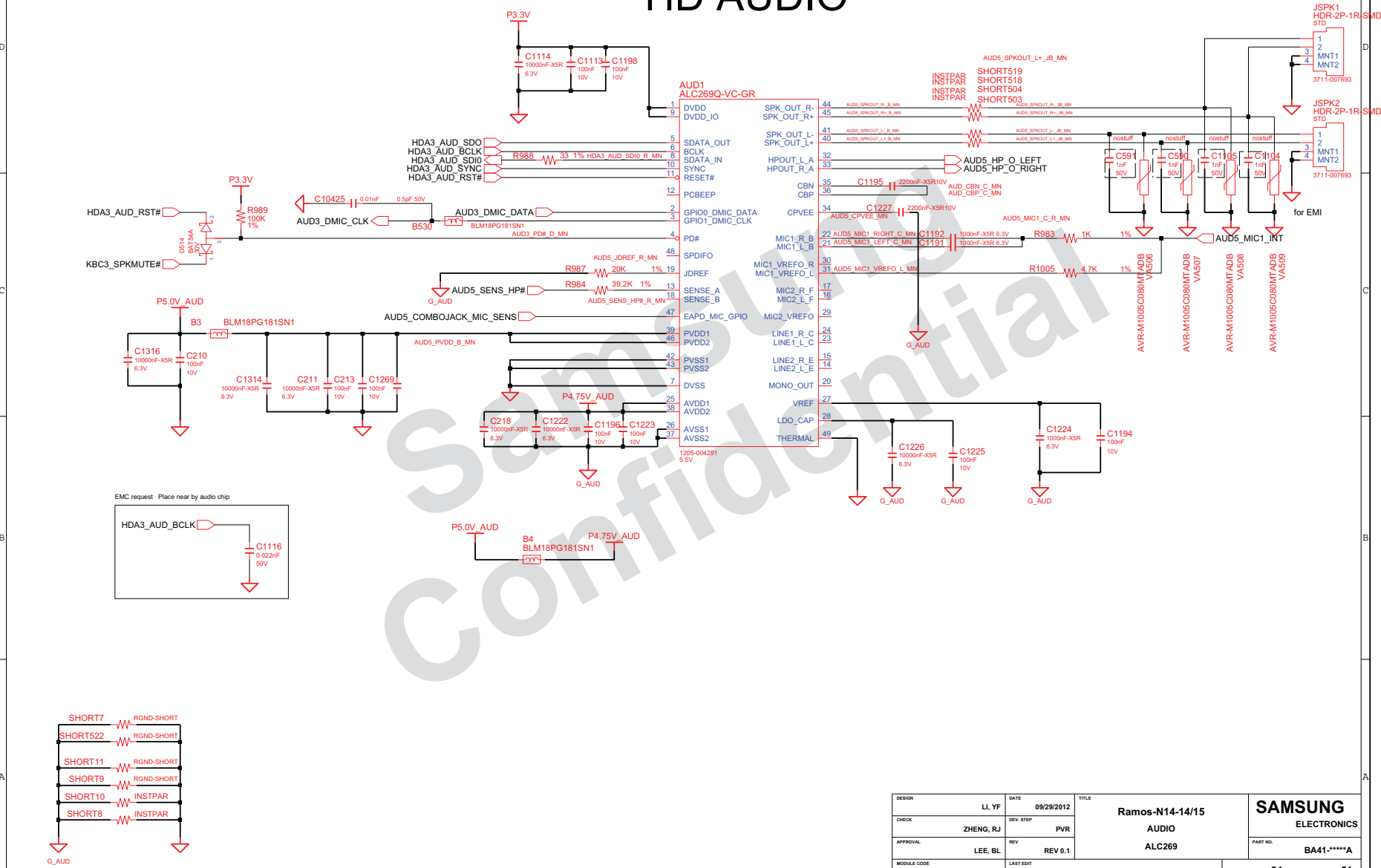
After checking, Houston need to use CMC for each signal.

N10x/N11x\_40nm HDMI/DP/LVDS support only 3.3V voltage tolerance

DESIGN	LI_YF	DATE	09/29/2012	TITLE	Ramos-N14-14/15	SAMSUNG ELECTRONICS
CHECK	ZHENG, RJ	DEV. STEP	PVR	GRAPHICS_IF		
APPROVAL	LEE, BL	REV	REV 0.1	HDMI		
MODULE CODE	undefined	LAST EDIT		December, 17, 2012 2:06:34 PM	PAGE 30 OF 51	PART NO. BA41-*****A

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# HD AUDIO



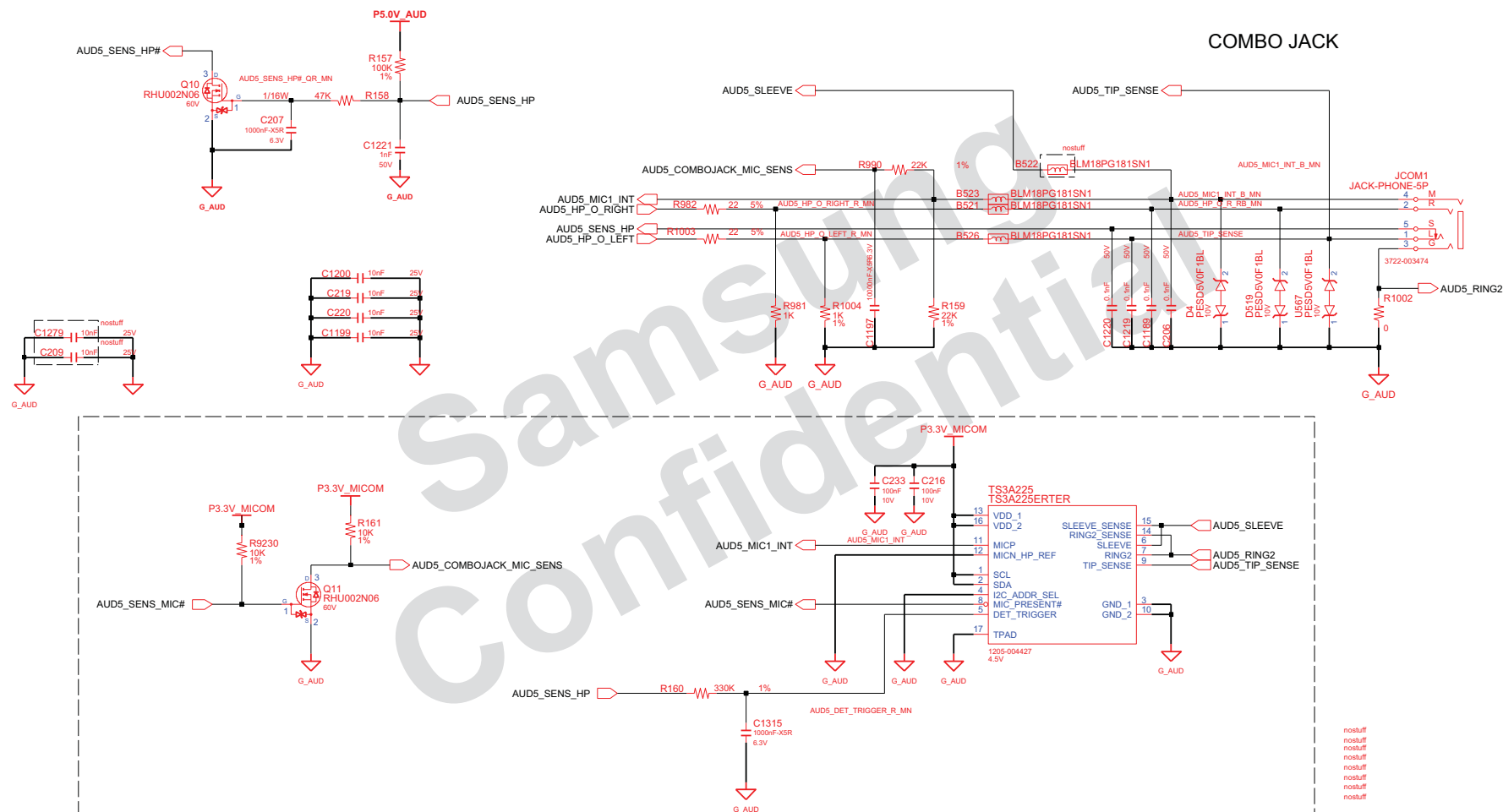
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December, 17, 2012 2:07:18 PM					PAGE 31 OF 51	

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## HD AUDIO

### COMBO JACK

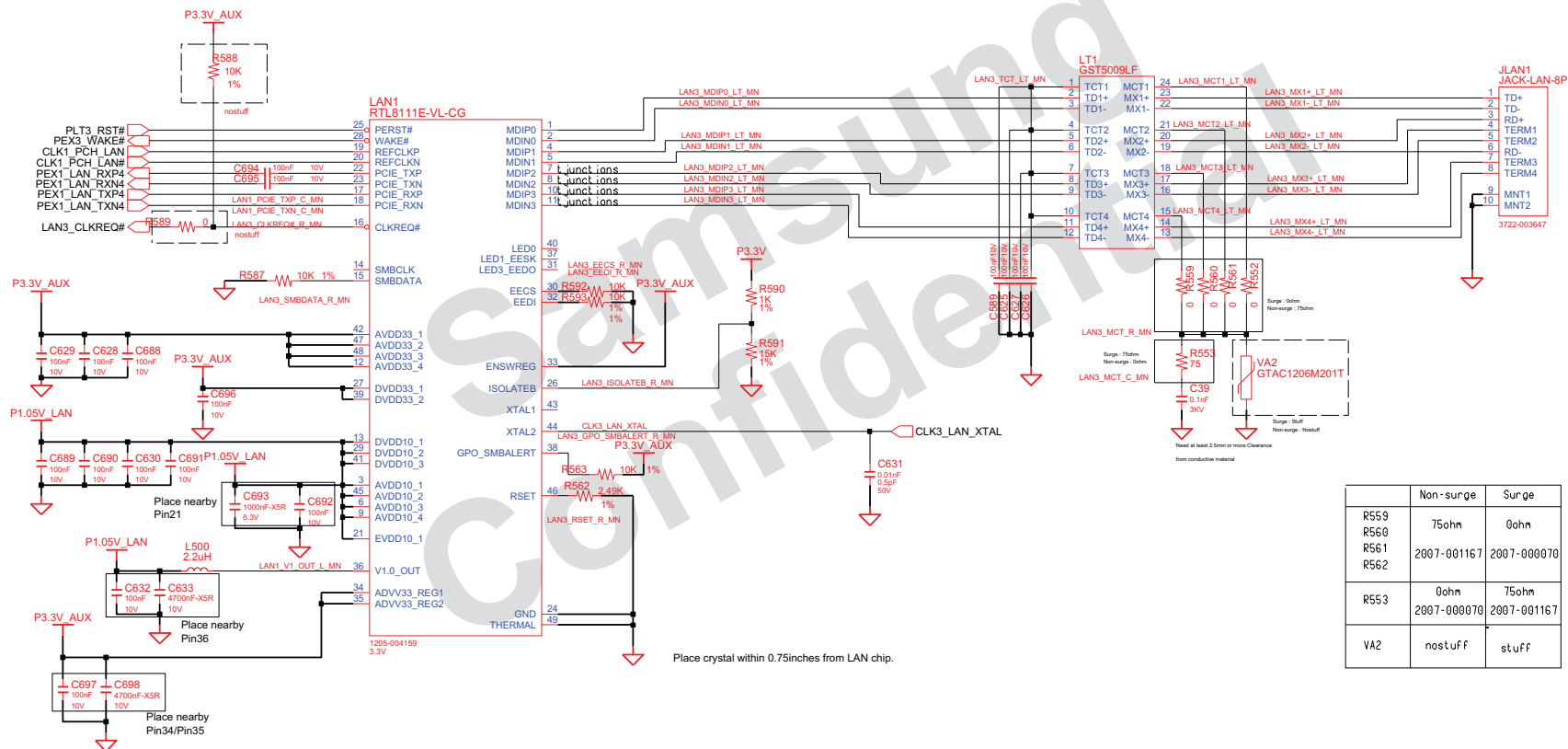


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December, 17, 2012 2:08:12 PM					PAGE	32 OF 51



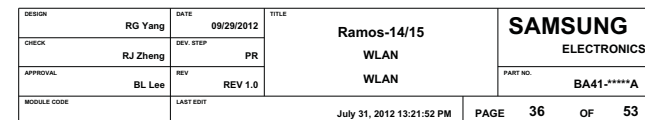
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## Realtek RTL8111E (GigaBit)



DESIGN	LI_YF	DATE	09/29/2012	TITLE	Ramos-N14-14/15	SAMSUNG ELECTRONICS
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APPROVAL	LEE_BJ	REV	REV 0.1		LAN_Realttek_RTL8111E)	
MODULE CODE	undefined	LAST EDIT				
December, 17, 2012 2:09:00 PM						PAGE 33 OF 51

WLAN\_MOB(MD335)

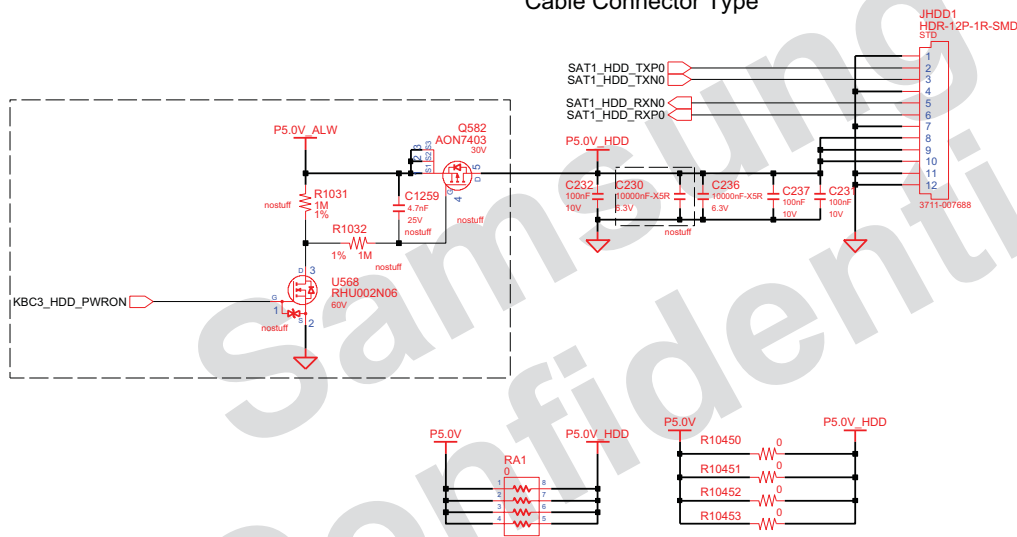


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# SATA I/F CONN

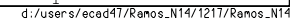
## SATA HDD CONN

Cable Connector Type



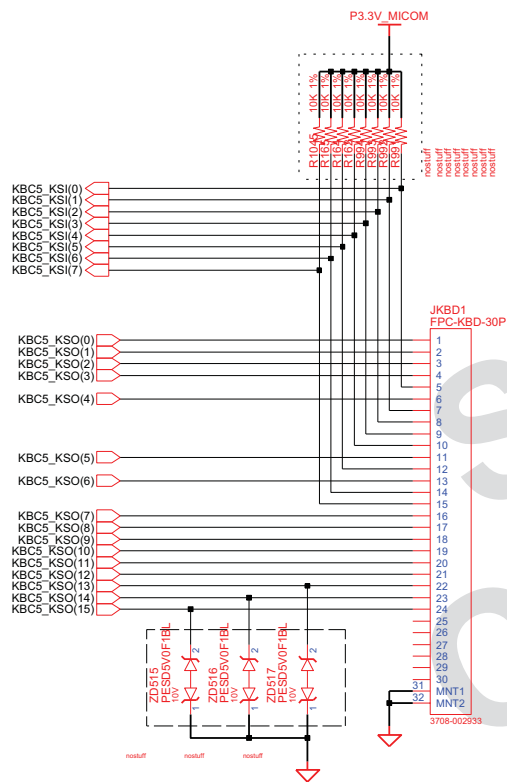
DESIGN	LI, YF	DATE	09/29/2012	TITLE	Ramos-N14-14/15	SAMSUNG ELECTRONICS
CHECK	ZHENG, RJ	DEV. STEP	PVR	SATA I/F		
APPROVAL	LEE, BL	REV	REV 0.1	SATA I/F		
MODULE CODE	undefined	LAST EDIT	December, 17, 2012 2:10:21 PM	PAGE	35	OF 51

## MAIN BOARD (MICOM)

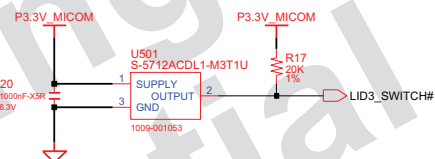


# Micom Glue

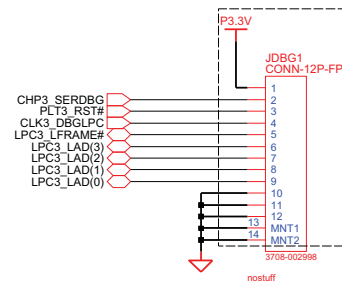
## KEYBOARD



## LID3\_SWITCH



## 80H PORT DEBUG



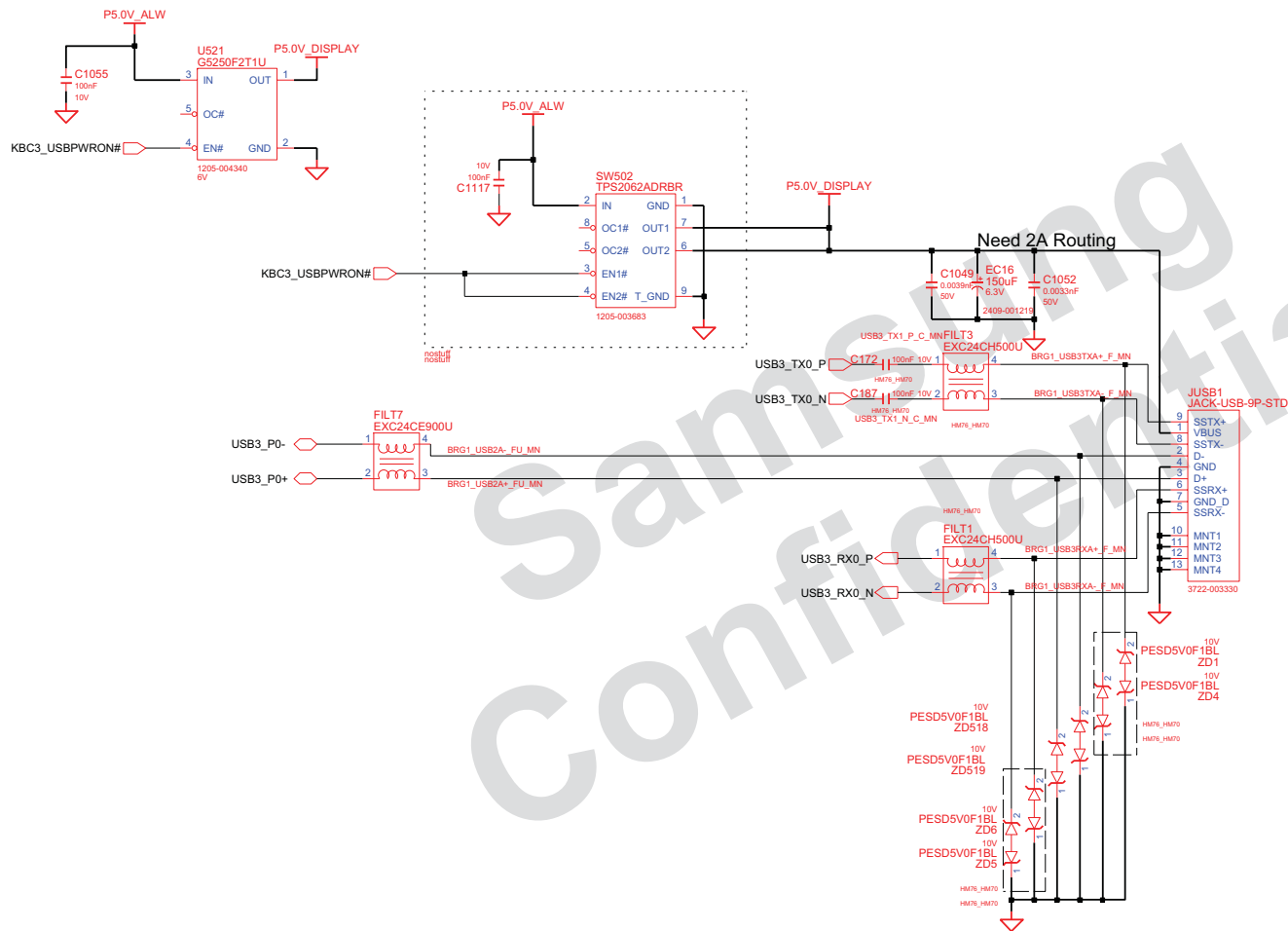
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DRAW	LI, YP	DATE	09/29/2012	TITLE	Ramos-N14-14/15	<b>SAMSUNG</b> ELECTRONICS PART NO. BA41-*****A
CHECK	ZHENG, RJ	DEV. STEP	PVR	MICOM		
APPROVAL	LEE, BL	REV	REV 0.1	MICOM GLUE LOGIC		
MODULE CODE		LAST EDIT				

December, 17, 2012 2:11:59 PM PAGE 37 OF 51

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## USB 3.0 CONNECTOR

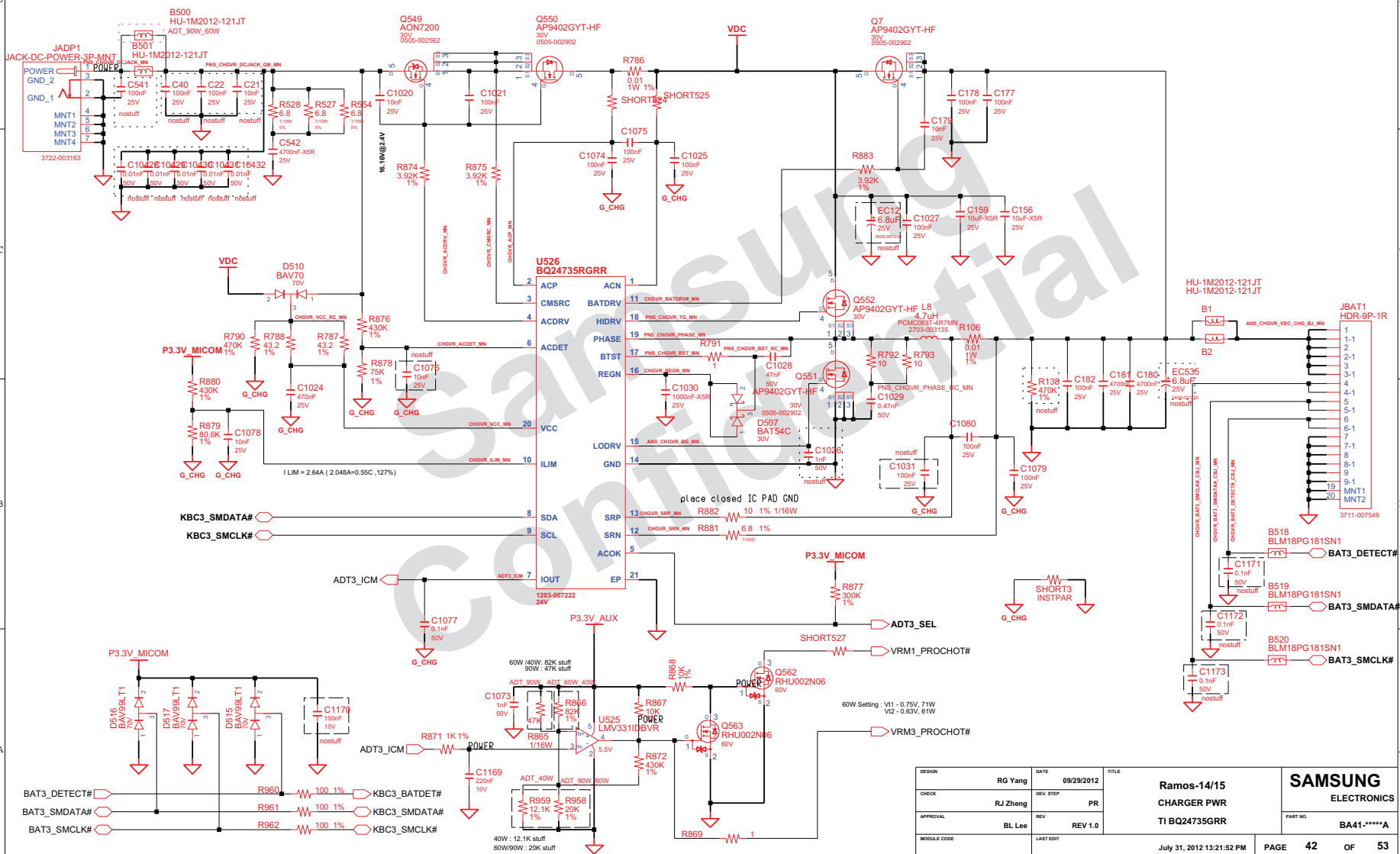


DRAW	LI, YF	DATE	09/29/2012	TITLE	Ramos-N14-14/15	<b>SAMSUNG</b> ELECTRONICS PART NO. BA41-xxxxxxx
CHECK	ZHENG, RJ	DEV. STEP	PVR	USB3.0		
APPROVAL	LEE, BL	REV	REV 0.1	USB 3.0 CONNECTOR		
MODULE CODE		LAST EDIT		December, 17, 2012 2:12:44 PM	PAGE 38 OF 51	



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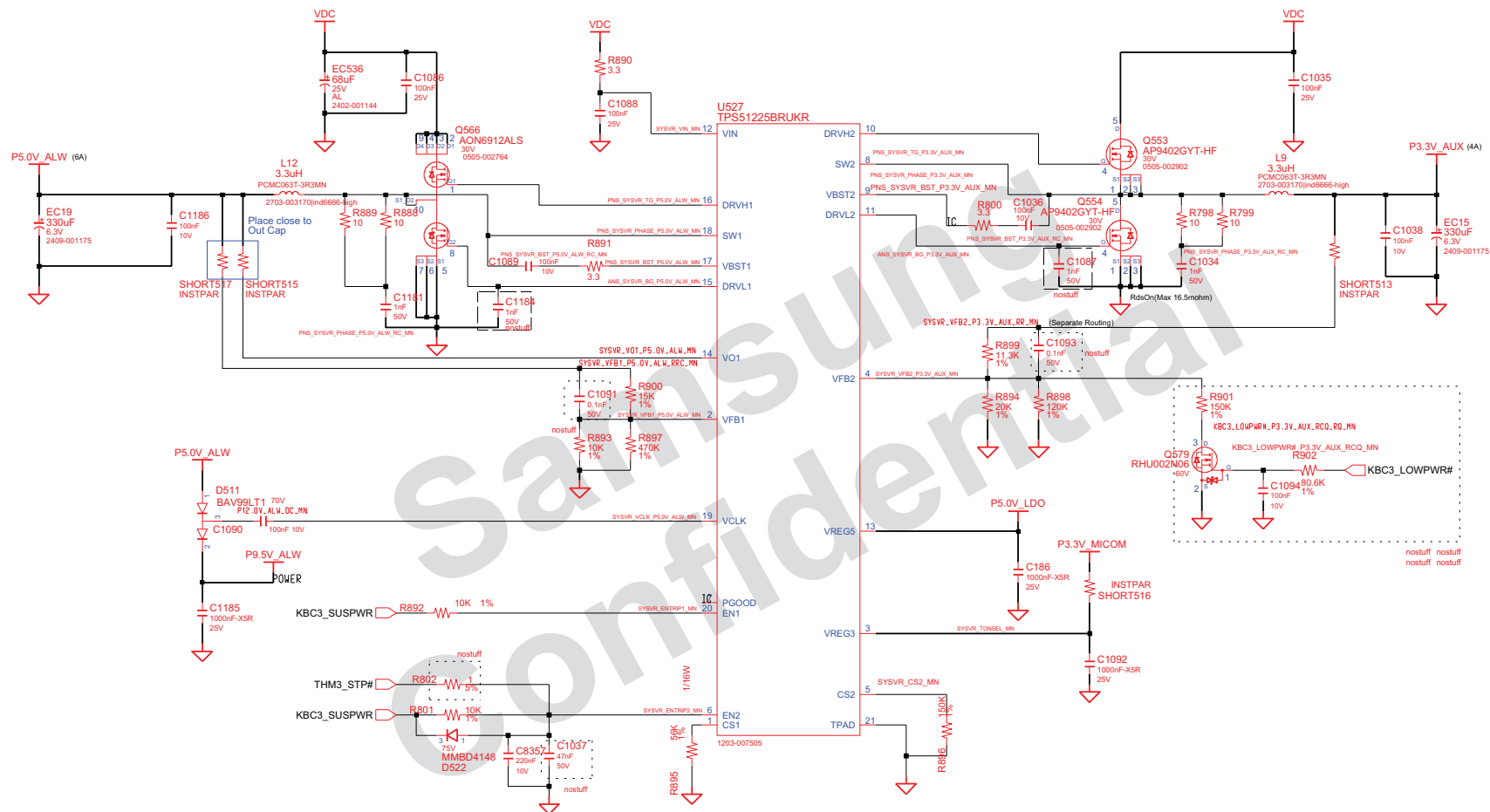
# CHARGER & POWER MANAGEMENT





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# P3.3V\_AUX & P5.0V\_ALW

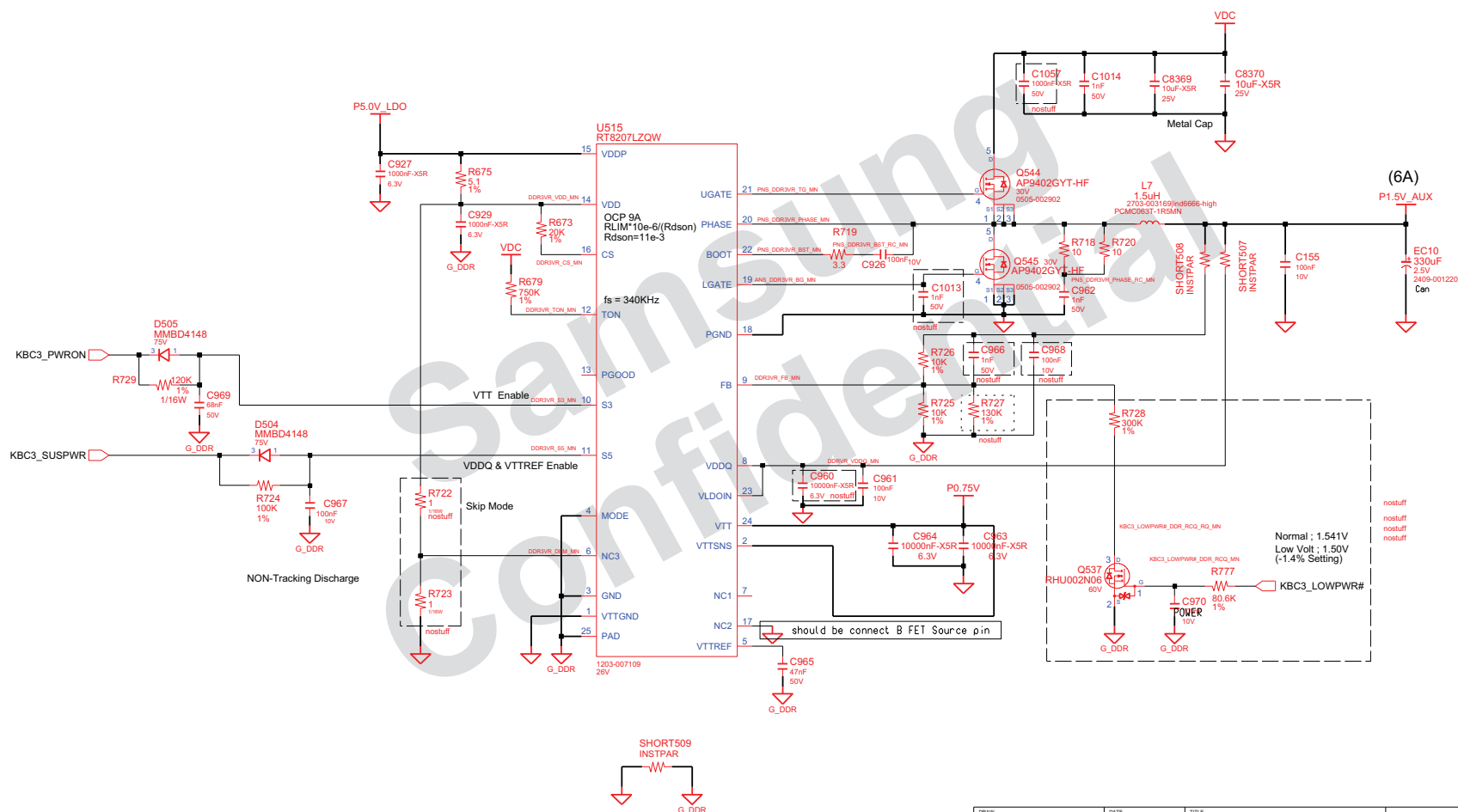


DRAW	RG Yang	DATE	09/29/2012	TITLE	Ramos-14/15	SAMSUNG ELECTRONICS
CHECK	RJ Zheng	DEV. STEP	PR		P3.3V_AUX & P5.0V_ALW	
APPROVAL	BL Lee	REV	REV 1.0		P3.3V_AUX & P5.0V_ALW	
MODULE CODE	undefined	LAST EDIT				
					July 31, 2012 13:21:52 PM	PAGE 43 OF 53





## DDR3 Power



DRAW	RG Yang	DATE	09/29/2012	TITLE	Ramos-14/15	<b>SAMSUNG</b> ELECTRONICS PART NO. BA41-*****A
CHECK	RJ Zheng	DEV. STEP	PR		P1.05V	
APPROVAL	BL Lee	REV	REV 1.0		VT386FCX	
MODULE CODE	undefined	LAST EDIT				

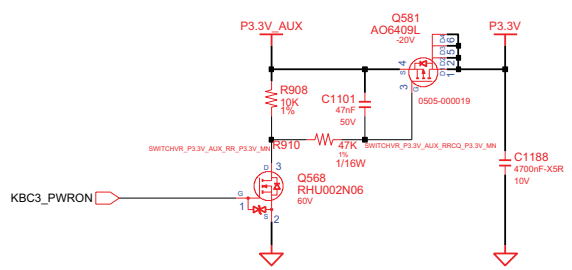




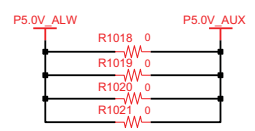
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# Switched Power

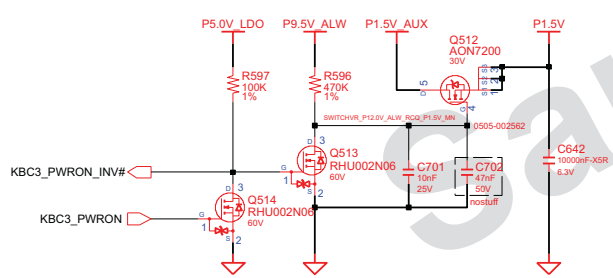
Switched Power On (P3.3V)



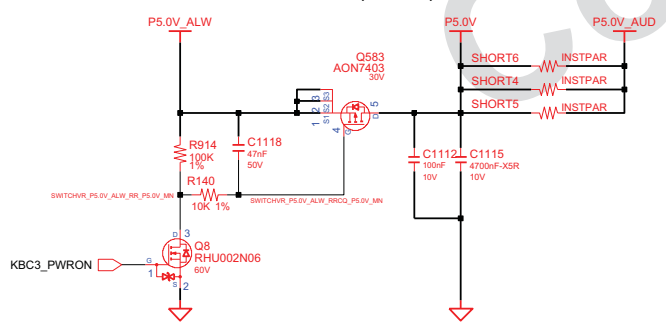
P5.0V\_AUX



Switched Power On (P1.5V)



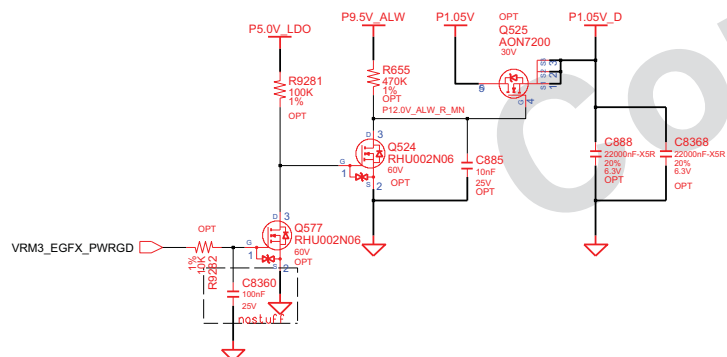
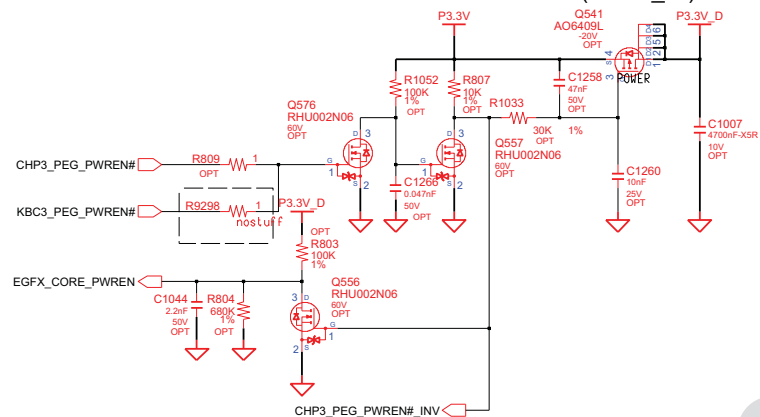
Switched Power On (P5.0V)



DRAW	RG Yang	DATE	09/29/2012	TITLE  Ramos-14/15  PWR_MV_SWITCHED  SWITCHED POWER		SAMSUNG ELECTRONICS  PART NO. BA41-*****A	
CHECK	RJ Zheng	DEV. STEP	PR				
APPROVAL	BL Lee	REV	REV 1.0				
MODULE CODE	LAST EDIT		July 31, 2012 13:21:52 PM		PAGE	49	OF 53

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## Discrete Switched Power (P3.3V\_D )

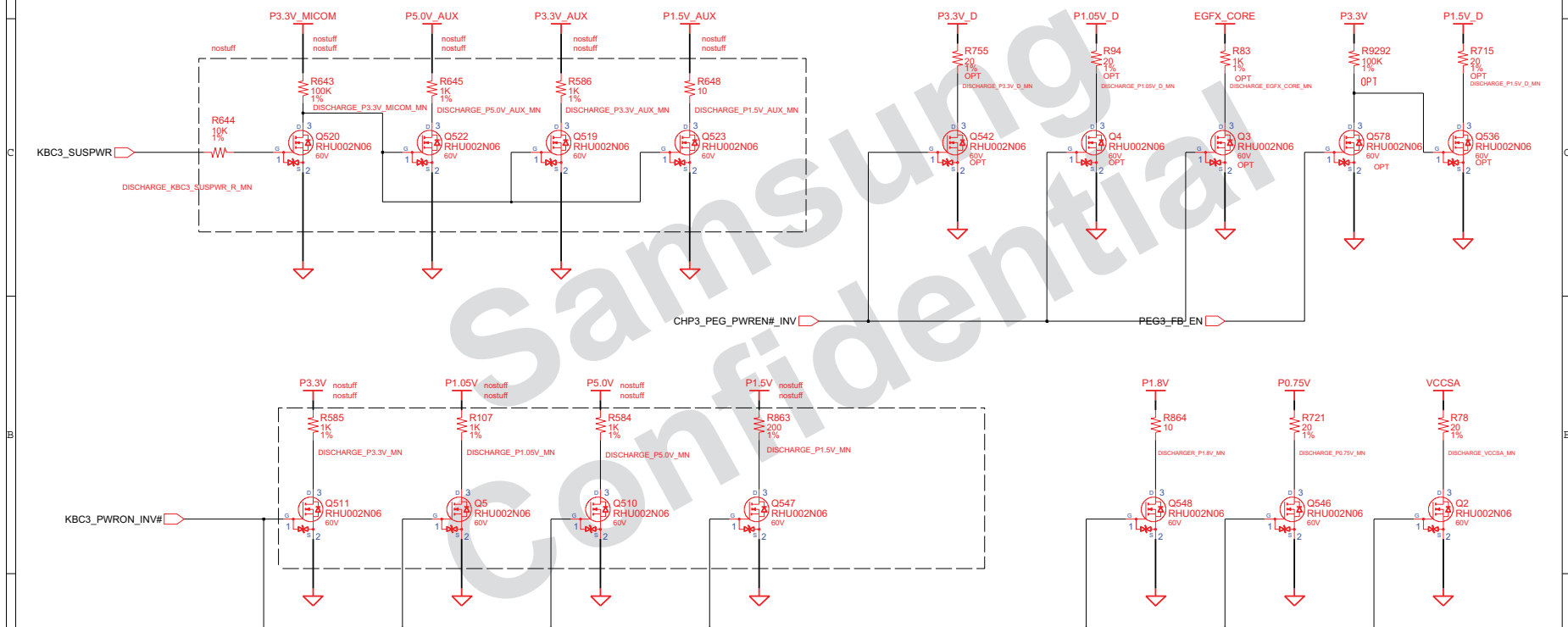


DRAWN	RG Yang	DATE	09/29/2012	Ramos-14/15 Switched PWR 2 Switched PWR 2	<b>SAMSUNG</b> ELECTRONICS
CHECK	RJ Zheng	REV. STEP	PR		
APPROVAL	BL Lee	REV	REV 1.0		
MODULE CODE	LAST EDIT				
				July 31, 2012 13:21:52 PM	PAGE 50 OF 53

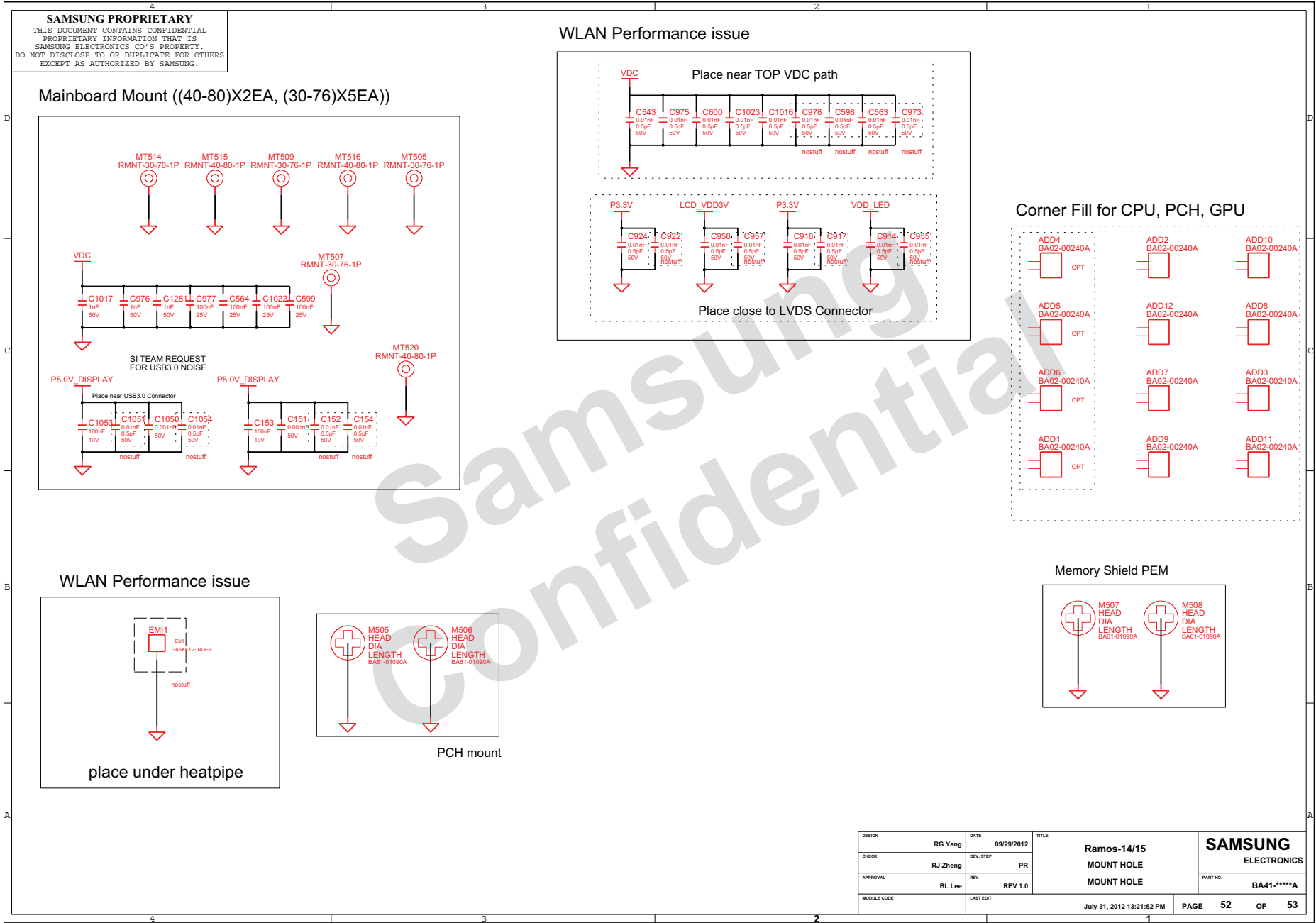


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## POWER DISCHARGER

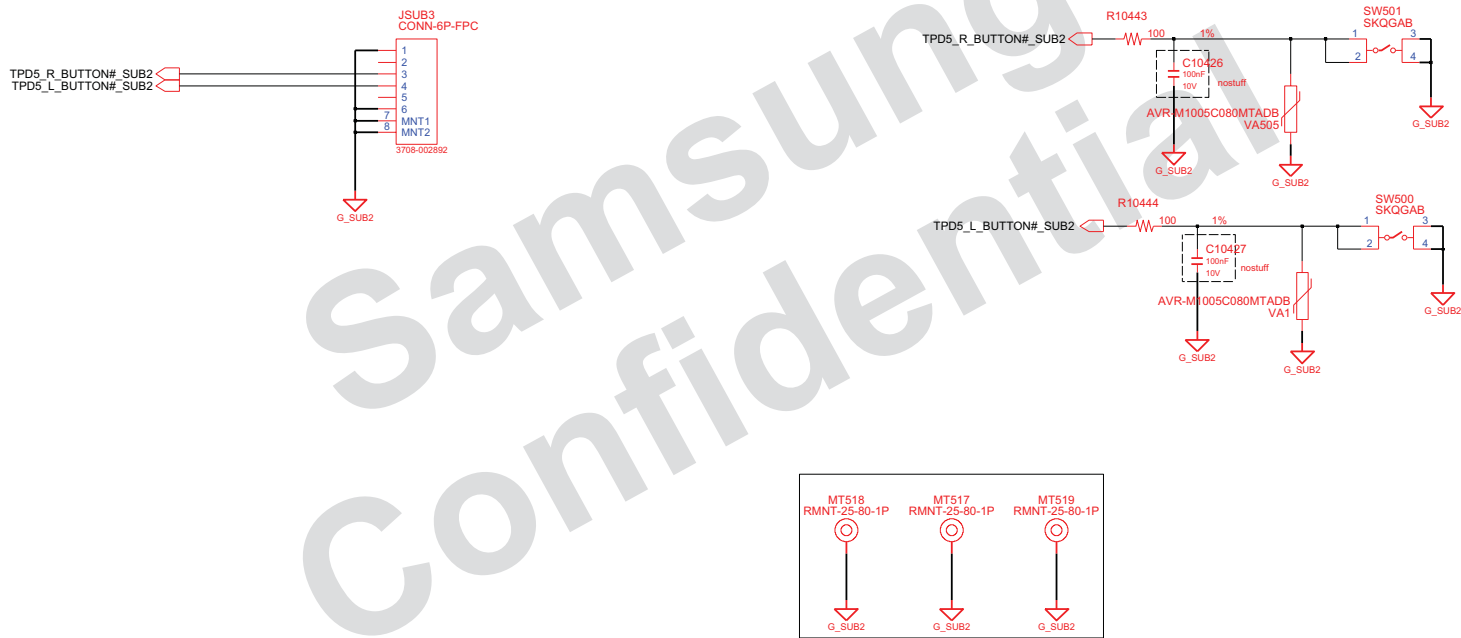


DRAW	RG Yang	DATE	09/29/2012	TITLE	Ramos-14/15	SAMSUNG ELECTRONICS
CHECK	RJ Zheng	REV. STEP	PR		PWR_MV_DISCHARGER	
APPROVAL	BL Lee	REV	REV 1.0		DISCHARGING LOGIC	PART NO.
MODULE CODE	undefined	LAST EDIT				BA41-*****A
July 31, 2012 13:21:52 PM						PAGE 51 OF 53



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# TP SUB BOARD



DRAW	RG Yang	DATE	09/29/2012	TITLE	Ramos-14/15 SUB2 TOUCHPAD & LED	SAMSUNG ELECTRONICS PART NO. BA41-*****A
CHECK	RJ Zheng	DEV. STEP	PR			
APPROVAL	BL Lee	REV	REV 1.0			
MODULE CODE		LAST EDIT	July 31, 2012 13:21:52 PM			

PAGE 53 OF 53

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