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Jinmao-R

CPU : Sandy Bridge PGA
Chip Set : Intel Cougar Point
GFX : N12P-GV/N11M-GE (OPTIMUS)
Remarks : Huron River Platform

Model Name : Jinmao-R

PBA Name : MAIN

PCB Code : BA41-01579A (GCE)
BA41-01580A (NY)
BA41-01581A (GBM)
BA41-01582A (HST)

Dev. Step : PR

Revision : 1.0

T.R. Date : 2011.02.16

Design	CHECK	APPROVAL
MS YANG	MK KIM	BL LEE

■ Owner : SEC IT Solution N/P LAB Signature : mansu

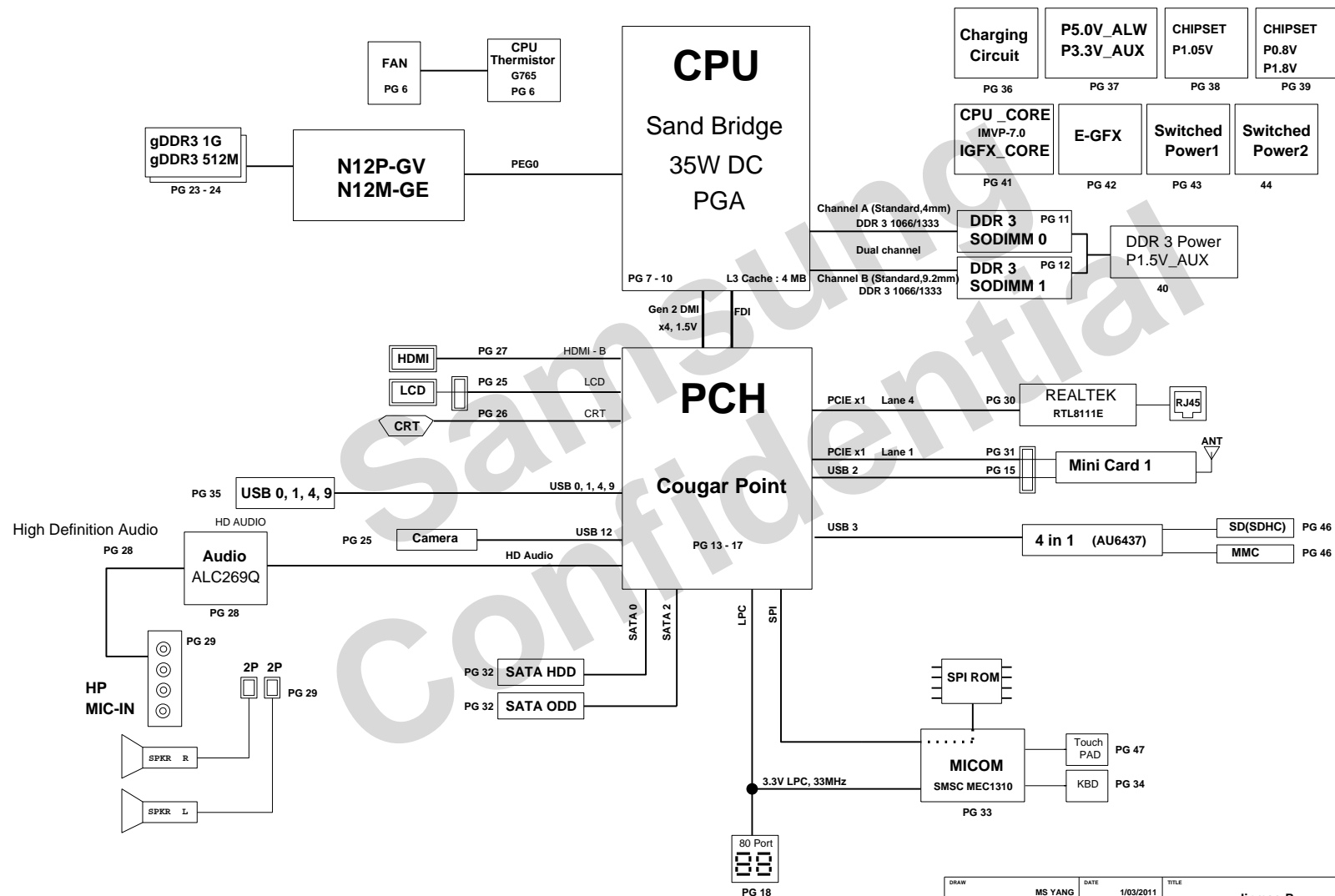
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sheet27 : CRT
sheet28 : HDMI
sheet29 : Audio - ALC269
sheet30 : Audio - HP/MIC
sheet31 : LAN (Realtek RTL8111E)
sheet32 : WLAN
sheet33 : SATA interface
sheet34 : MICOM / BIOS
sheet35 : MICOM Glue Logic (KBD / TP)
sheet36 : USB connector
sheet37 : Power - charger
sheet38 : Power - P3.3V_AUX / P5.0V_AUX
sheet39 : Power - P1.05V (Chipset Power)
sheet40 : Power - P0.8V (Chipset Power)
sheet41 : Power - DDR3
sheet42 : Power - CPU VRM
sheet43 : Power - EGFX_CORE
sheet44 : Power - Switched Power 1
sheet45 : Power - Switched Power 2
sheet46 : Power - Power Discharge
sheet47 : 3-in-1 card (AU6437)
sheet48 : Touchpad & LED
sheet49 : Mount Hole

DRAW	MS YANG	DATE	1/03/2011	TITLE	Jinmao-R	SAMSUNG ELECTRONICS
CHECK	MK KIM	DEV. STEP	PR	MAIN		
APPROVAL	BL LEE	REV	rev. 1.0	COVER	PART NO. BA41-01579A	
MODULE CODE		LAST EDIT	February 15, 2011 09:31:19 AM	PAGE	1	OF 49

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BLOCK DIAGRAM



DRAW	MS YANG	DATE	1/03/2011	TITLE	Jinmao-R MAIN BLOCK DIAGRAM	SAMSUNG ELECTRONICS
CHECK	MK KIM	DEV. STEP	PR			PART NO. BA41-01579A
APPROVAL	BL LEE	REV	rev. 1.0			
MODULE CODE	undefined	LAST EDIT		February 15, 2011 09:31:19 AM	PAGE 2 OF 49	

BOARD INFORMATION

SCHEMATIC ANNOTATIONS AND BOARD INFORMATION

Voltage Rails		Active in
VDC P3.3V_MICOM P5.0V_STB P5.0V_ALW P3.3V_ALW P12.0V_ALW	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 3.3V always power rail 12.0V always power rail	S4 - S5
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)	
P5.0V P3.3V P1.8V P1.5V P0.75V P0.8V	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) 0.8V switched power rail (off in S3-S5)	
VCC_CORE EGFX_CORE P1.05V (VCCP)	Core Voltage for CPU Core Voltage for GPU VCC for COUGARPOINT	
P3.3V_D P1.5V_D P1.05V_D	3.3V discrete power rail for N12X 1.5V discrete power rail for N12X 1.05V discrete power rail for N12X	
		S3
		S0
		S0

USB PORT Assign		PCI Express Assign	
PORT #	ASSIGNED TO	PORT #	ASSIGNED TO
0	NC	1	Mini Card 1 (WLAN)
1	SYSTEM PORT 0	2	NC
2	Mini PCI Express	3	NC
3	Multi Memory Card Controller	4	LAN CONTROLLER
4	NC	5	USB 3.0
5	NC	6	NC
6	NC (N/A WITH HM55)	7	NC
7	NC (N/A WITH HM55)	8	NC
8	Camera		
9	SYSTEM PORT 1		
10	NC		
11	Camera(LCD Cable)		
12	NC		
13	NC		

SATA PORT Assign	
PORT #	ASSIGNED TO
0	HDD
1	ODD
2	(N/A WITH HM65)
3	(N/A WITH HM65)
4	
5	

Crystal / Oscillator

TYPE	FREQUENCY	DEVICE	USAGE
Crystal	32.768KHz	HM65	Real Time Clock
Crystal	25MHz	LAN	Intel LAN
Crystal	24MHz	USB 3.0	
Crystal	25MHz	HM65	INTEL
Crystal	27MHz	N12P-LP	NVIDIA

LCD Pannel Detect (TBD)

Devices	Resolution	PANNEL_DETECT_0
---------	------------	-----------------

I²C / SMB Address

Devices	Address	Hex	Bus
HM65	Master	-	SMBUS Master
CPU Thermal Sensor	0111 101x	7Ah	
SODIMM0	1010 000x	A0h	Thermal Sensor
SODIMM1	1010 010x	A4h	-
Thermal Sensor on SODIMM0	0011 000x	30h	-
Thermal Sensor on SODIMM1	0011 010x	34h	-
Thermal Sensor on board	1101 100x	98h	
Power thermal management TS	1101 011x	96h	

DRAW	MS YANG	DATE	1/03/2011	TITLE	Jinmao-R MAIN BOARD INFO	SAMSUNG ELECTRONICS
CHECK	MK KIM	DEV. STEP	PR			PART NO. BA41-01579A
APPROVAL	BL LEE	REV	rev. 1.0			
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POWER DIAGRAM

Rev 0.8

KBC3_SUSPWR
(CHP3_SLPS4#)

KBC3_PWRON
(CHP3_SLPS3#)

KBC3_VRON

AC Adapter

Battery DC

VDC

P3.3V_MICOM

MICOM
SPI ROM
GREEN CLK
KBD

P5.0V_STB

P5.0V_ALW

USB PWR S/W
Chipset PWR IC
When USB Charge Enable

P3.3V_ALW

Thermal Sensor
PCH

P12.0V_ALW

P1.5V_AUX

SODIMM (DDR3)

P5.0V_AUX

P3.3V_AUX

LID S/W

P1.05V
(VCCP)

CPU
PCH

P1.05V_D

NVIDIA

EGFX_CORE

N12P, N12M

P1.5V

CPU
PCH

P1.5V_D

NVIDIA

P0.75V

SODIMM (DDR3)

P5.0V

Thermal Sensor
PCH
LVDS
CRT

Touchpad
HDMI
SATA IF

P1.8V

CPU
PCH
N12P, N12M

P3.3V_D

NVIDIA

P3.3V

SODIMM (DDR3)
PCH
80PORT
LVDS
CRT

HDMI
AUDIO

P0.85V_SA

CPU

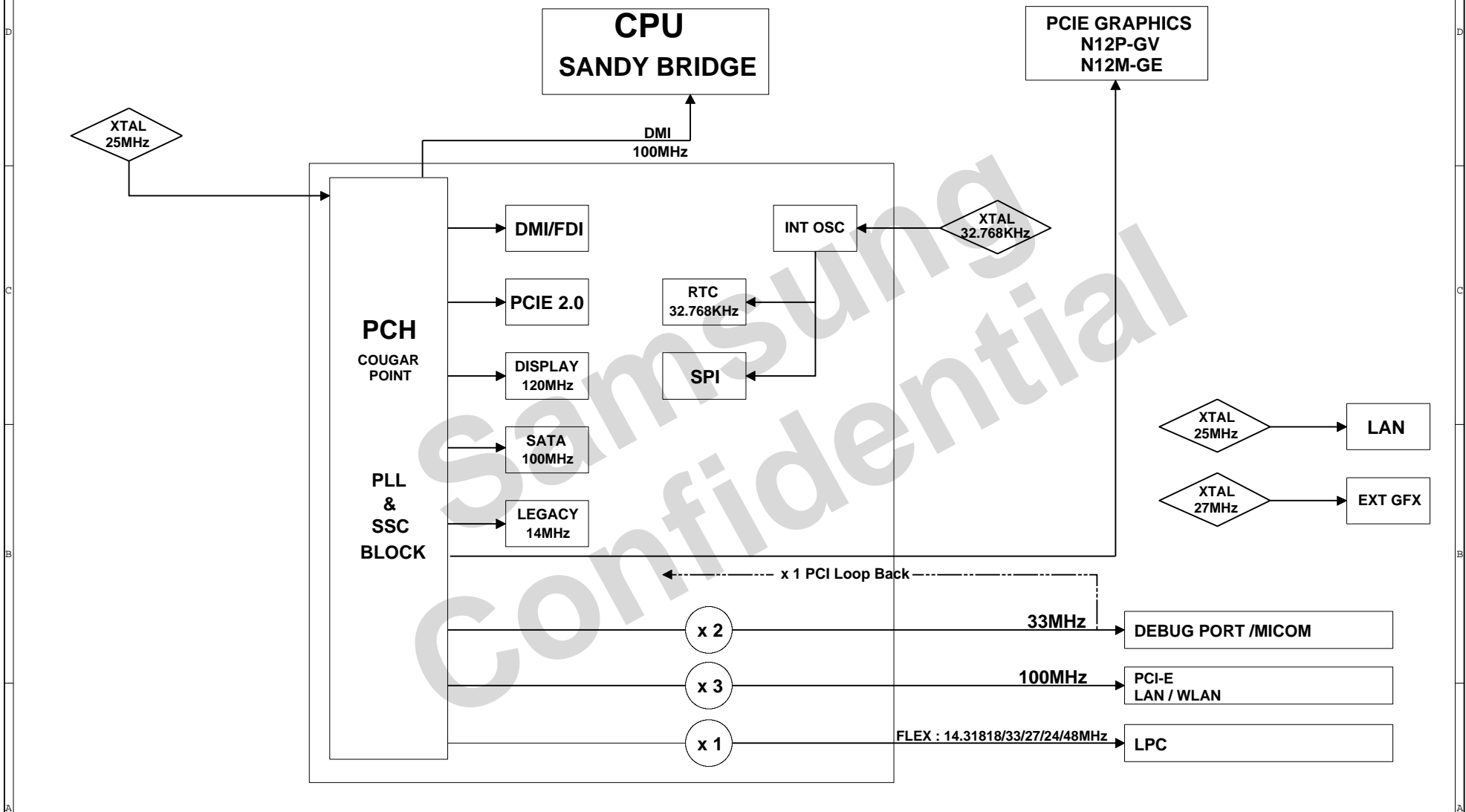
S5-S4

S3

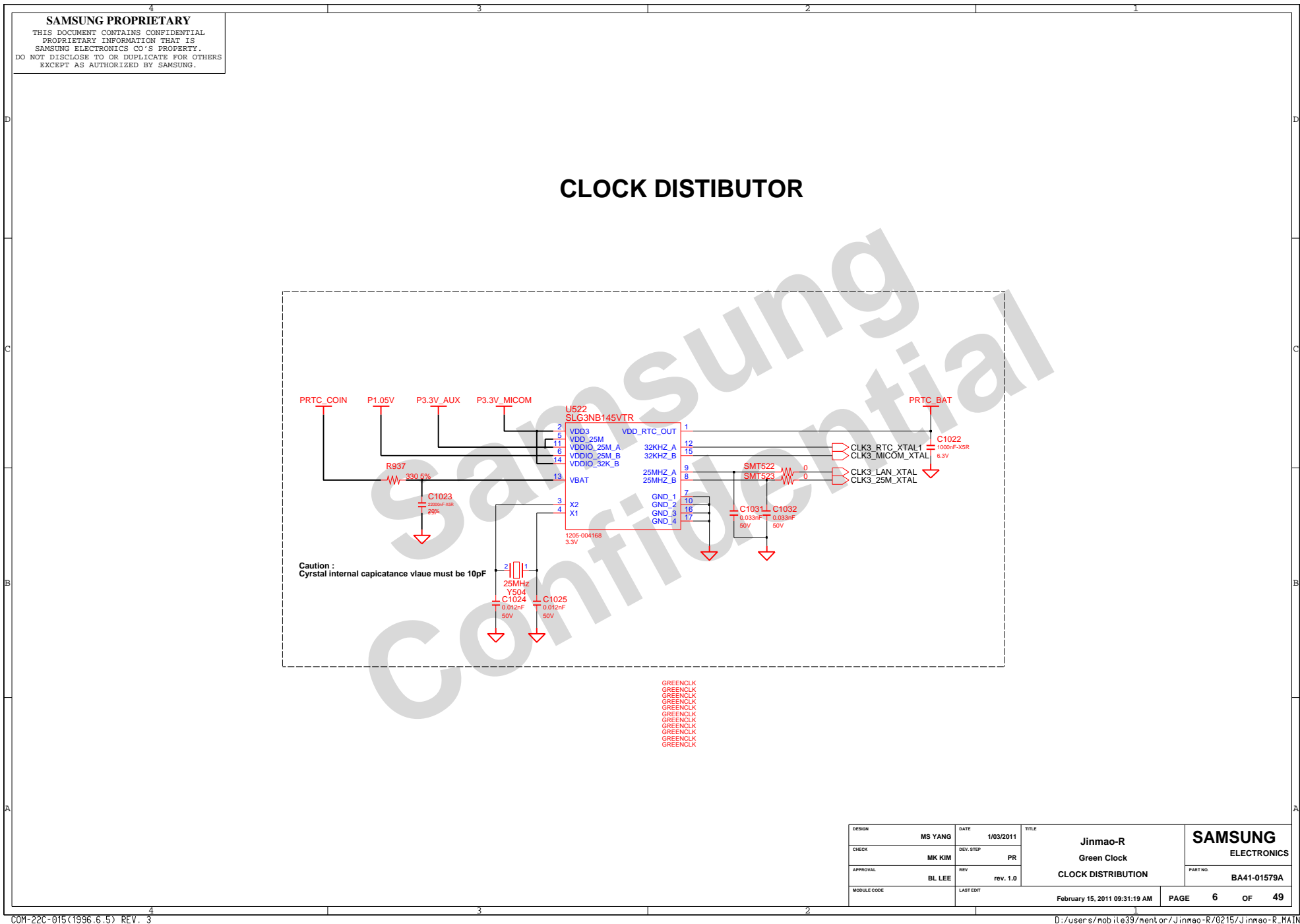
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DRAW	MS YANG	DATE	1/03/2011	TITLE	Jinmao-R MAIN	SAMSUNG ELECTRONICS
CHECK	MK KIM	DEV. STEP	PR			PART NO. BA41-01579A
APPROVAL	BL LEE	REV	rev. 1.0		POWER DIAGRAM	
MODULE CODE	undefined	LAST EDIT	February 15, 2011 09:31:19 AM	PAGE	4	OF 49

CLOCK DISTRIBUTION Rev. 0.8



DRAW	MS YANG	DATE	1/03/2011	TITLE	Jinmao-R MAIN CLOCK DIAGRAM	SAMSUNG ELECTRONICS
CHECK	MK KIM	DEV. STEP	PR			PART NO. BA41-01579A
APPROVAL	BL LEE	REV	rev. 1.0			
MODULE CODE	undefined	LAST EDIT	February 15, 2011 09:31:19 AM	PAGE	5	OF 49



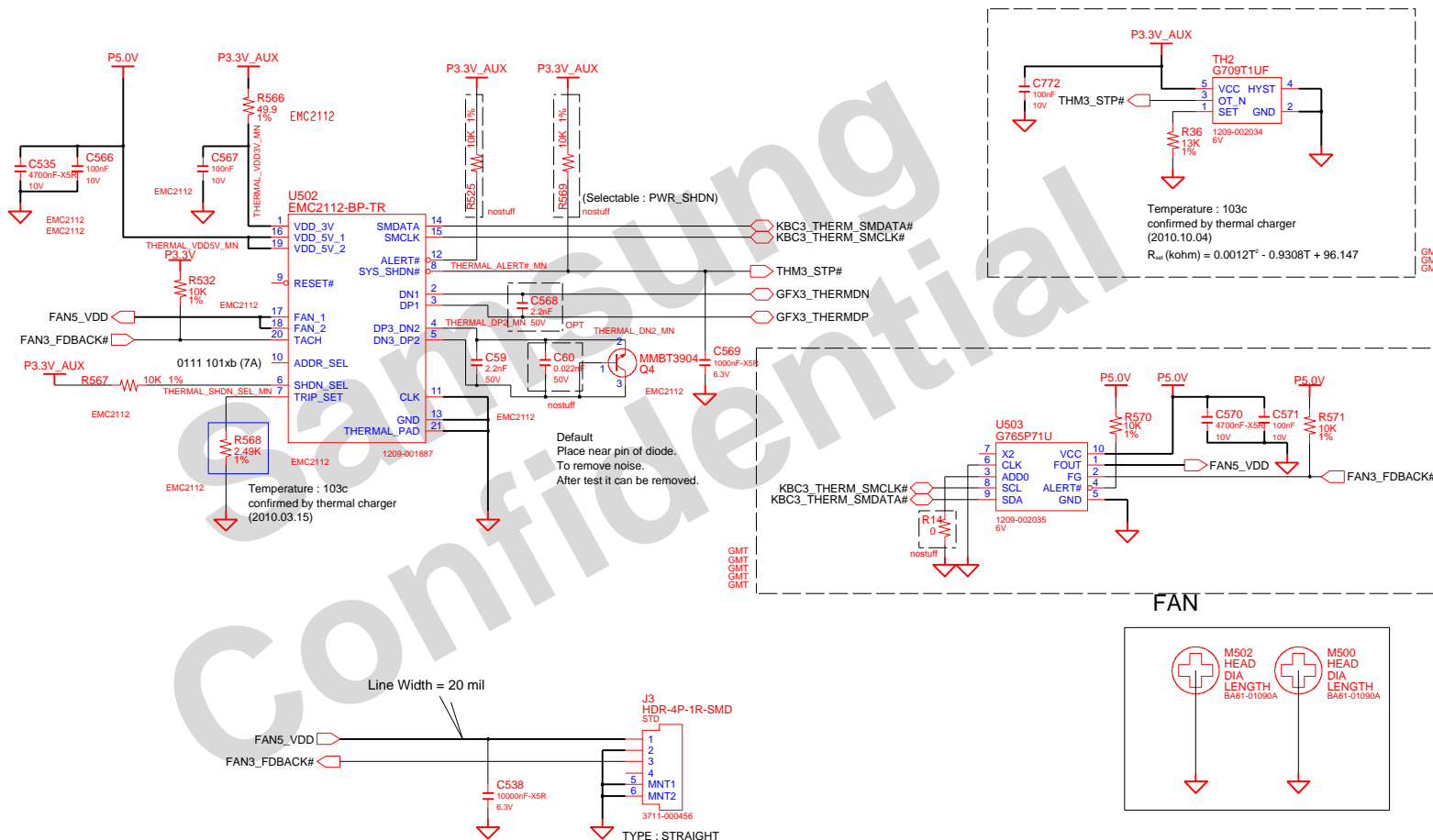
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THERMAL SENSOR & FAN CONTROL

ADDRESSSEL MODE	
0	0101 111xb
✓ HIGH Z	0111 101xb (7A)
1	0101 110xb

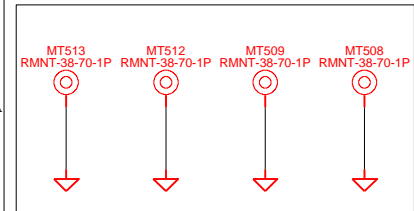
SHDNSEL MODE	
0	INTEL TR MODE
✓ HIGH Z	AMD CPU/DIODE MODE
1	EXT.DIODE 2 MODE



DESIGN	MS YANG	DATE	1/03/2011	TITLE	Jinmao-R
CHECK	MK KIM	DEV. STEP	PR		THERMAL SENSOR
APPROVAL	BL LEE	REV	rev. 1.0		THERMAL SENSOR EMC2112
MODULE CODE		LAST EDIT		February 15, 2011 09:31:19 AM	PAGE 7 OF 49

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PART NO.
BA41-01579A

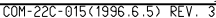
P1.05V
R785
24.9



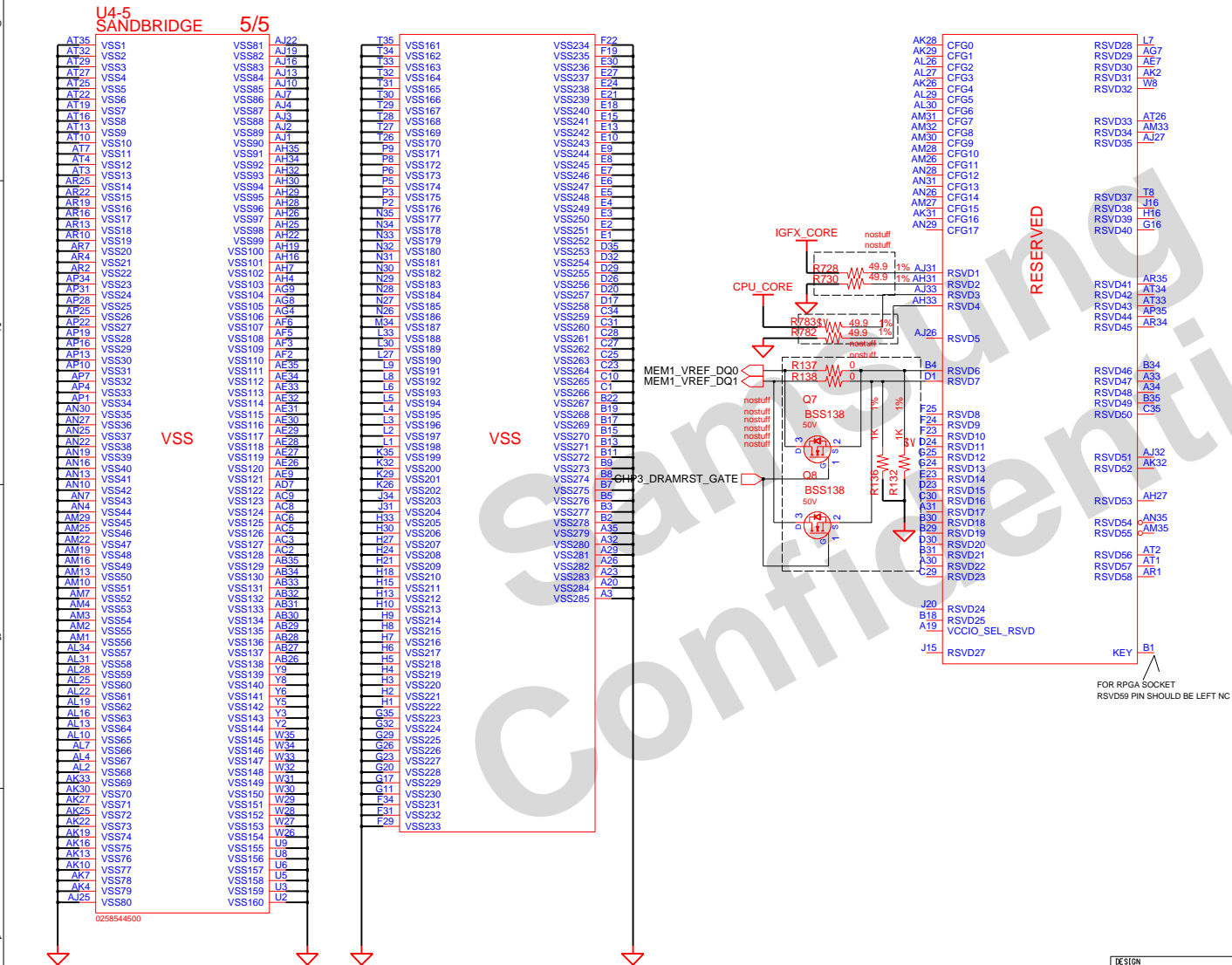


COM-22C-015(1996.6.5) REV. 3

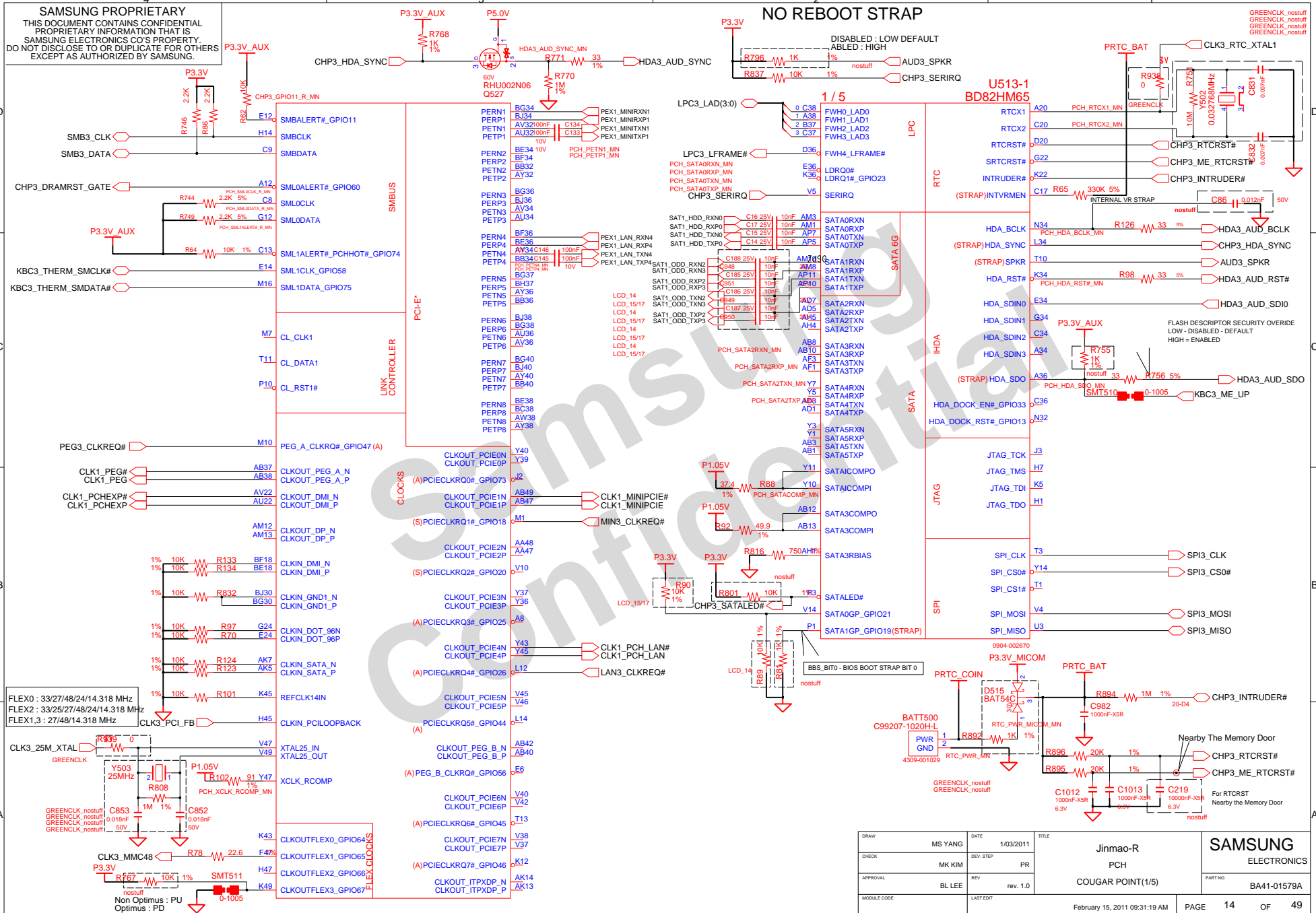
Quadcore : Stuff
Dualcore : nostuff

D:/users/mobile39/mentor/Jinmao-R/0215/Jinmao-R_MAIN

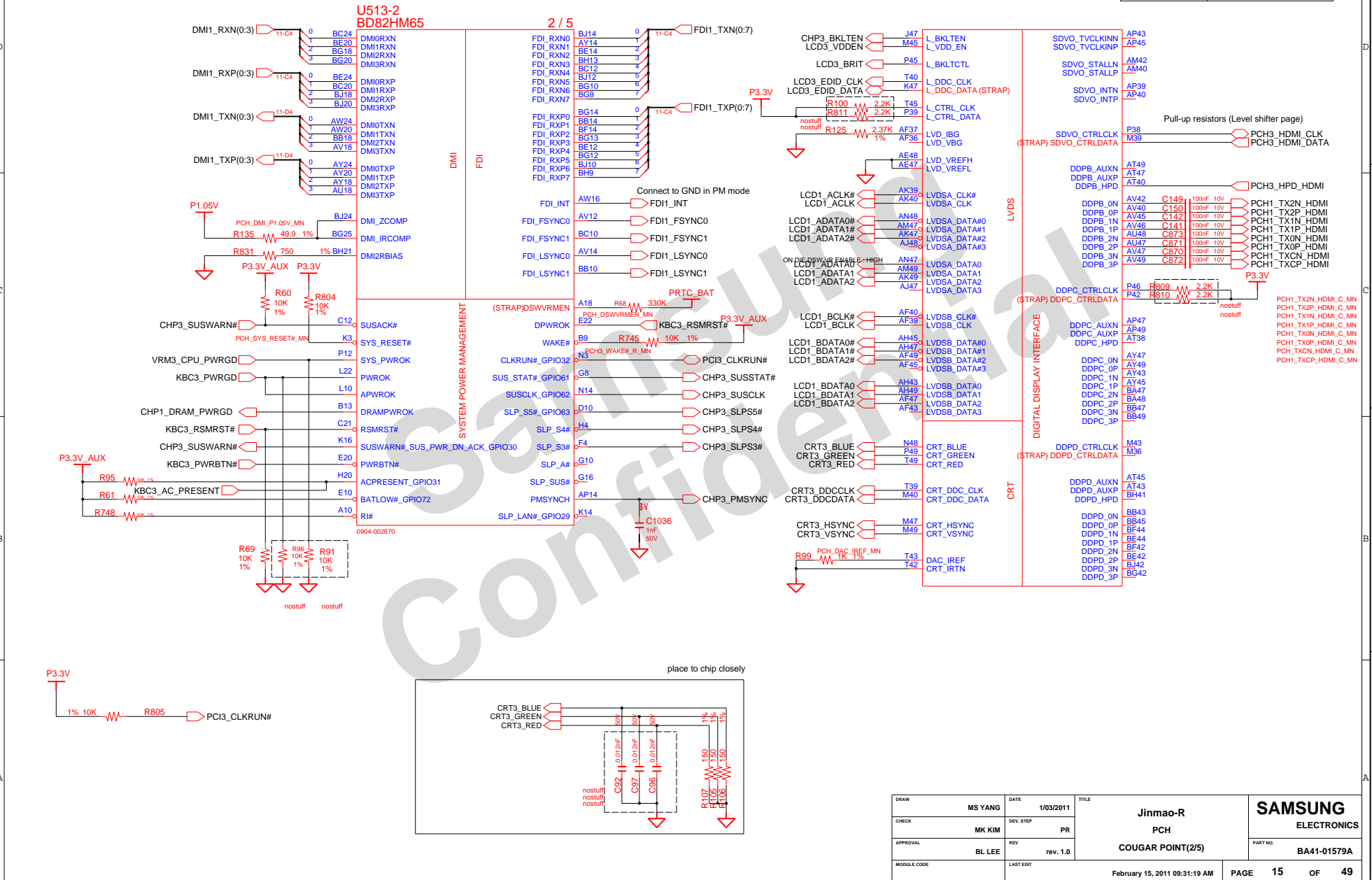
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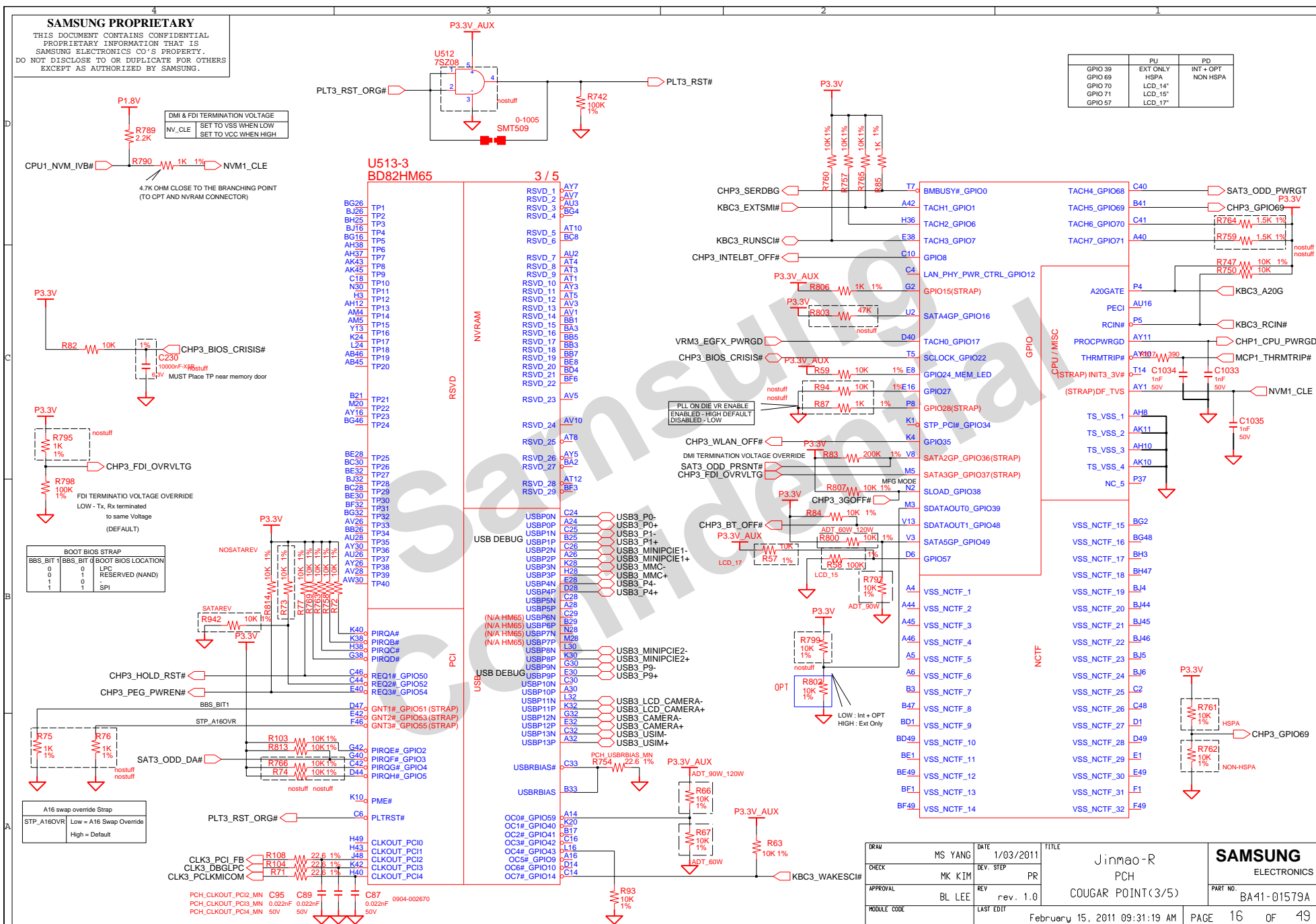


DRAWN	MS YANG	DATE	1/03/2011	TITLE Jinmao-R PCH COUGAR POINT(1/5)	SAMSUNG ELECTRONICS		
CHECK	MK KIM	DEV. STEP	PR				
APPROVAL	BL LEE	REV	rev. 1.0		PART NO. BA41-01579A		
MODULE CODE	LAST EDIT				February 15, 2011 09:31:19 AM	PAGE	14 OF 49

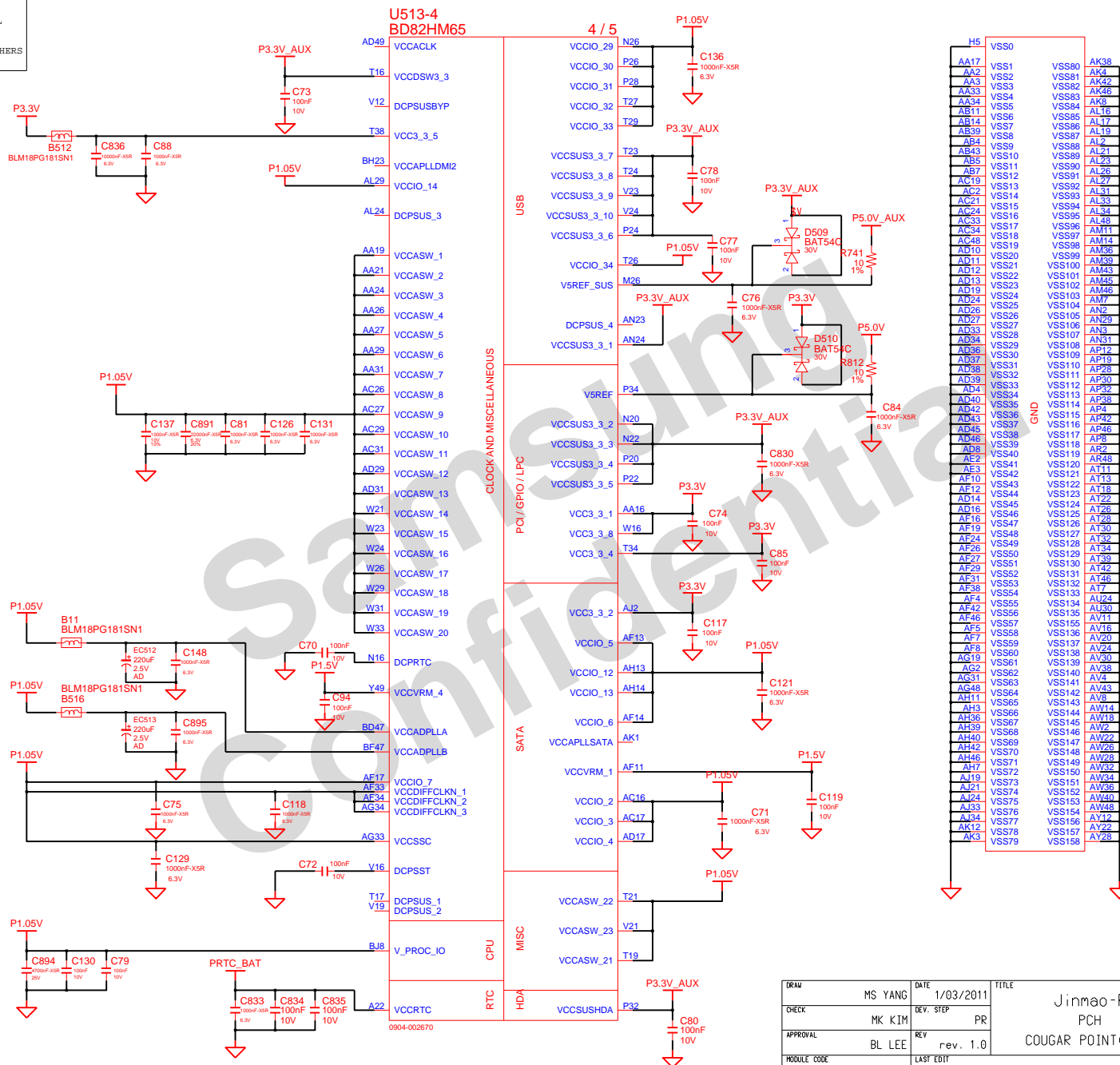



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	PU	PD
GPIO 39	EXT ONLY	INT + OPT
GPIO 69	HSPA	NON HSP
GPIO 70	LCD_14"	
GPIO 71	LCD_15"	
GPIO 57	LCD_17"	



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DRAM	MS YANG	DATE	1/03/2011	TITLE	
CHECK	MK KIM	DEV. STEP	PR	Jinmao-R PCH	
APPROVAL	BL LEE	REV	rev. 1.0	COUGAR POINT(4/5)	
MODULE CODE		LAST EDIT			

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U513-5
BD82HM65

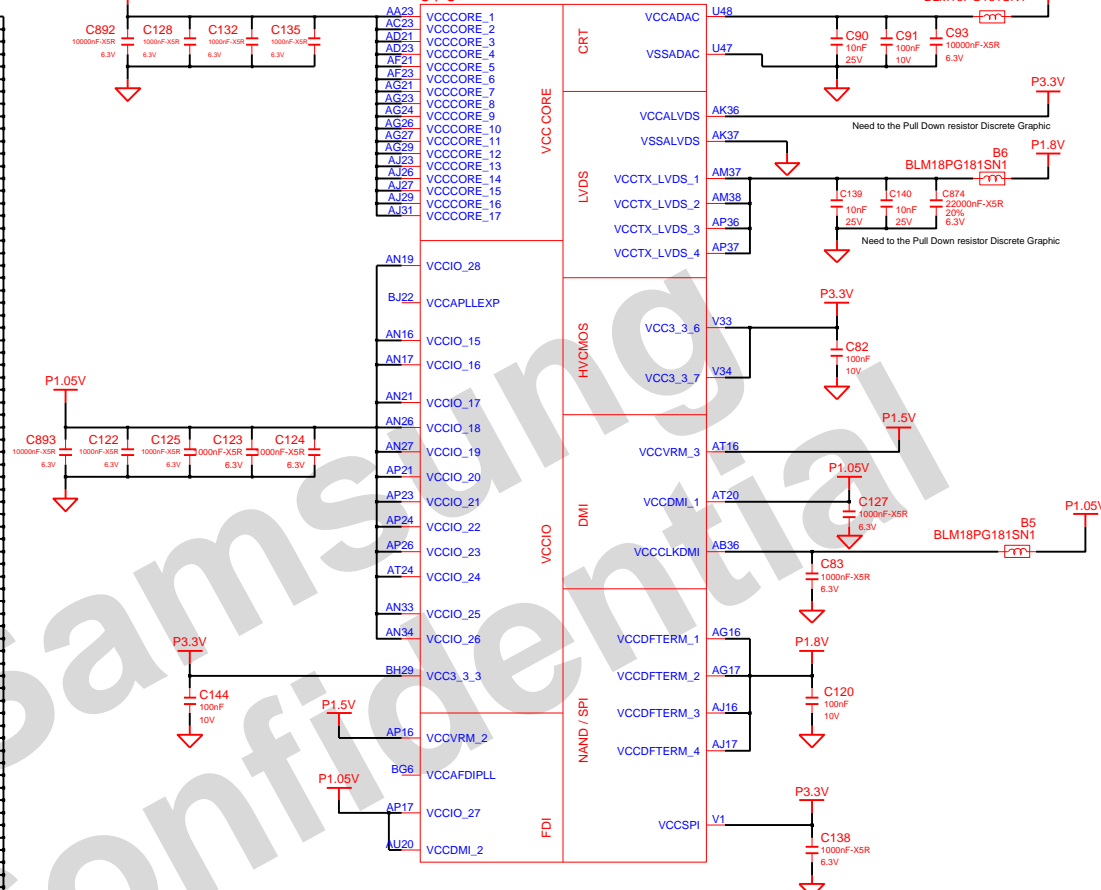
This power share with thermal sensor

5 / 5

AV4	VSS159	VSS259	H46
AV42	VSS160	VSS260	K18
AV46	VSS161	VSS261	K26
AY8	VSS162	VSS262	K39
B11	VSS163	VSS263	K46
B15	VSS164	VSS264	L7
B19	VSS165	VSS265	L18
B23	VSS166	VSS266	L2
B27	VSS167	VSS267	L20
B31	VSS168	VSS268	L28
B35	VSS169	VSS269	L29
B39	VSS170	VSS270	L38
B7	VSS171	VSS271	L48
F45	VSS172	VSS272	M12
BB12	VSS173	VSS273	M18
BB16	VSS174	VSS274	M22
BB20	VSS175	VSS275	M24
BB22	VSS176	VSS276	M30
BB24	VSS177	VSS277	M32
BB28	VSS178	VSS278	M34
BB30	VSS179	VSS279	M38
BB38	VSS180	VSS280	M4
BB4	VSS181	VSS281	M42
BB46	VSS182	VSS282	M46
BC14	VSS183	VSS283	M8
BC18	VSS184	VSS284	N18
BC2	VSS185	VSS285	P30
BC22	VSS186	VSS286	N47
BC26	VSS187	VSS287	P11
BC32	VSS188	VSS288	P18
BC34	VSS189	VSS289	T33
BC36	VSS190	VSS290	P40
BC40	VSS191	VSS291	P43
BC42	VSS192	VSS292	P47
BC48	VSS193	VSS293	P7
BD46	VSS194	VSS294	R2
BD5	VSS195	VSS295	R48
BE22	VSS196	VSS296	T12
BE26	VSS197	VSS297	T31
BE40	VSS198	VSS298	T37
BF10	VSS199	VSS299	T4
BF12	VSS200	VSS300	T46
BF16	VSS201	VSS301	T47
BF20	VSS202	VSS302	V17
BF22	VSS203	VSS303	V26
BF24	VSS204	VSS304	V27
BF26	VSS205	VSS305	V29
BF28	VSS206	VSS306	V31
BD3	VSS207	VSS307	V36
BF30	VSS208	VSS308	V39
BF38	VSS209	VSS309	V43
BF40	VSS210	VSS310	V7
BF8	VSS211	VSS311	W19
BG17	VSS212	VSS312	W2
BG21	VSS213	VSS313	W27
BG33	VSS214	VSS314	W48
BG44	VSS215	VSS315	Y12
BG8	VSS216	VSS316	Y38
BH11	VSS217	VSS317	Y46
BH15	VSS218	VSS318	Y8
BH17	VSS219	VSS319	Y29
BH19	VSS220	VSS320	N24
BH27	VSS221	VSS321	AJ3
BH31	VSS222	VSS322	AD47
BH33	VSS223	VSS323	B43
BH35	VSS224	VSS324	BE10
BH39	VSS225	VSS325	BG41
BH43	VSS226	VSS326	G14
BH7	VSS227	VSS327	H16
D3	VSS228	VSS328	T38
D12	VSS229	VSS329	BG22
D16	VSS230	VSS330	BG24
D18	VSS231	VSS331	C22
D22	VSS232	VSS332	AP13
D24	VSS233	VSS333	M14
D26	VSS234	VSS334	AP3
D30	VSS235	VSS335	AP1
D32	VSS236	VSS336	BE16
D34	VSS237	VSS337	BC16
D38	VSS238	VSS338	BG28
D42	VSS239	VSS339	BJ28
D44	VSS240	VSS340	
D8	VSS241	VSS341	
E18	VSS242	VSS342	
E26	VSS243	VSS343	
G18	VSS244	VSS344	
G20	VSS245	VSS345	
G26	VSS246	VSS346	
G28	VSS247	VSS347	
G36	VSS248	VSS348	
G48	VSS249	VSS349	
H12	VSS250	VSS350	
H18	VSS251	VSS351	
H22	VSS252	VSS352	
H24	VSS253		
H26	VSS254		
H30	VSS255		
H32	VSS256		
H34	VSS257		
F3	VSS258		

GND

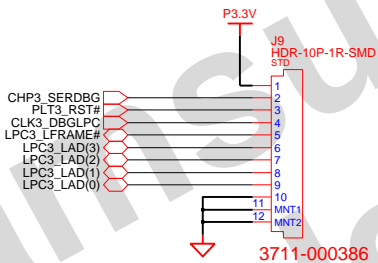
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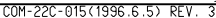
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CHECK	MK KIM	DEV. STEP	PR	PCH		
APPROVAL	BL LEE	REV	rev. 1.0	COUGAR POINT(5/5)	PART NO.	
MODULE CODE	undefined	LAST EDIT	February 15, 2011 09:31:19 AM	PAGE	18 OF 49	

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80H PORT DEBUG



DESIGN	MS YANG	DATE	1/03/2011	TITLE	Jinmao-R DEBUG PORT 80H DECODER	SAMSUNG ELECTRONICS
CHECK	MK KIM	DEV. STEP	PR			PART NO. BA41-01579A
APPROVAL	BL LEE	REV	rev. 1.0			
MODULE CODE		LAST EDIT	February 15, 2011 09:31:19 AM	PAGE	19	OF 49

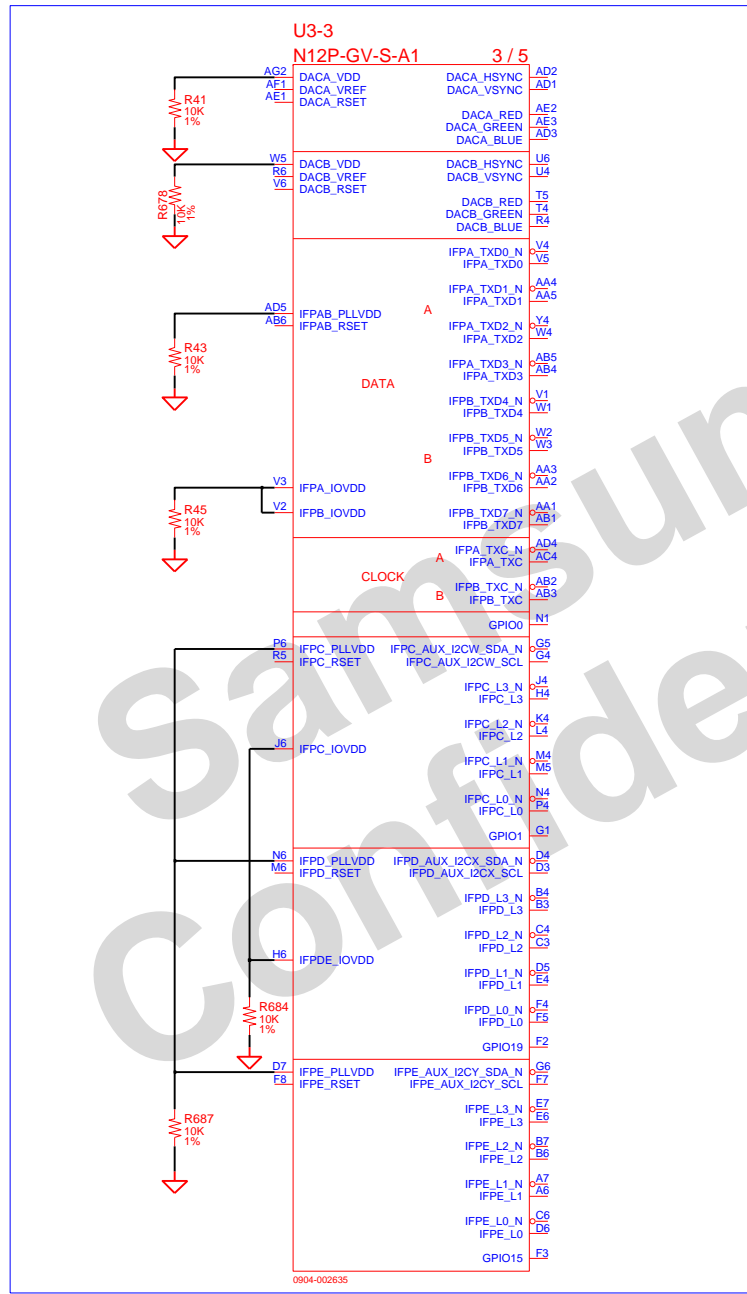


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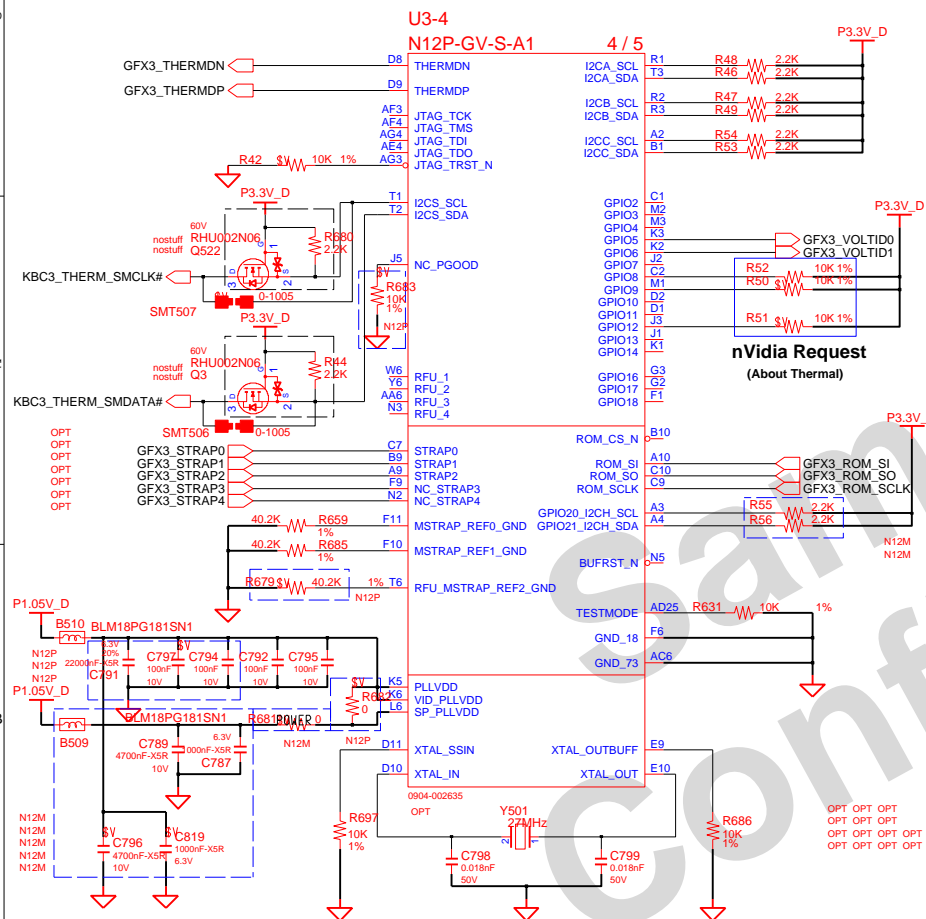
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DESIGN	MS YANG	DATE	1/03/2011	Jinmao-R N12P_40NM(2/4) N12P_40NM(2/4)	SAMSUNG ELECTRONICS
CHECK	MK KIM	DEV. STEP	PR		
APPROVAL	BL LEE	REV	REV. 1.0		
MODULE CODE	LAST EDIT				
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DESIGN	MS YANG	DATE	1/03/2011	TITLE	Jinmao-R	SAMSUNG
CHECK	MK KIM	DEV. STEP	PR	N12P_40NM(3/4)		ELECTRONICS
APPROVAL	BL LEE	REV	rev. 1.0	N12P_40NM(3/4)	PART NO.	BA41-01579A
MODULE CODE		LAST EDIT	February 15, 2011 09:31:19 AM	PAGE	22	OF 49



<p>GFX3_STRAP0</p>	<table border="1"> <tr> <td>User Strap</td> <td>EDID is used</td> <td>1111</td> </tr> <tr> <td>Customer defined</td> <td>1000 - 1100</td> <td></td> </tr> <tr> <td>1024 x 768</td> <td>0000 - 0001</td> <td></td> </tr> <tr> <td>1280 x 1024</td> <td>0010</td> <td></td> </tr> <tr> <td>⋮</td> <td>⋮</td> <td></td> </tr> </table>	User Strap	EDID is used	1111	Customer defined	1000 - 1100		1024 x 768	0000 - 0001		1280 x 1024	0010		⋮	⋮	
User Strap	EDID is used	1111														
Customer defined	1000 - 1100															
1024 x 768	0000 - 0001															
1280 x 1024	0010															
⋮	⋮															
<p>GFX3_STRAP1</p>	<table border="1"> <tr> <td>GPU PCIe Interface Strap</td> <td>N12M-GPE</td> <td>1110</td> </tr> <tr> <td></td> <td>N12P-GV</td> <td>0110</td> </tr> <tr> <td>DeskTop</td> <td></td> <td>0000</td> </tr> </table>	GPU PCIe Interface Strap	N12M-GPE	1110		N12P-GV	0110	DeskTop		0000						
GPU PCIe Interface Strap	N12M-GPE	1110														
	N12P-GV	0110														
DeskTop		0000														
<p>GFX3_ROM_SO</p>	<table border="1"> <tr> <td>Int PCIe Clock - 277MHz(default)</td> <td></td> </tr> <tr> <td>Aperture Size - 256M(default)</td> <td></td> </tr> <tr> <td>I2C Address of GPU - 0x9E(default)</td> <td></td> </tr> <tr> <td>Device Type - 3D Device(Optimus)</td> <td></td> </tr> </table>	Int PCIe Clock - 277MHz(default)		Aperture Size - 256M(default)		I2C Address of GPU - 0x9E(default)		Device Type - 3D Device(Optimus)								
Int PCIe Clock - 277MHz(default)																
Aperture Size - 256M(default)																
I2C Address of GPU - 0x9E(default)																
Device Type - 3D Device(Optimus)																
<p>GFX3_ROM_SI</p>	<table border="1"> <tr> <td>Memory Configuration :</td> <td></td> </tr> <tr> <td>Samsung 64M x 16 GDDR3</td> <td>0011</td> </tr> <tr> <td>Samsung 128M x 16 GDDR3</td> <td>0111</td> </tr> </table>	Memory Configuration :		Samsung 64M x 16 GDDR3	0011	Samsung 128M x 16 GDDR3	0111									
Memory Configuration :																
Samsung 64M x 16 GDDR3	0011															
Samsung 128M x 16 GDDR3	0111															

(N12M-GB1)

GFX3_ROM_SCLK

GFX3_STRAP2

P3.3V_D

GFX3_ROM_SCLK	N12M-GE	15K PU
---------------	---------	--------

GFX3_STRAP2	N12M-GE	15K PU
-------------	---------	--------

N12M-GE : 0x0A7A (1010 / 1010)

(N12P-GV)

GFX3_ROM_SCLK \rightarrow R691 \rightarrow 4.99K \rightarrow 1%

GFX3_STRAP2 \rightarrow R703 \rightarrow 4.99K \rightarrow 1%

GFX3_STRAP3 \rightarrow R735 \rightarrow 4.99K \rightarrow 1%

GFX3_STRAP4 \rightarrow R737 \rightarrow 4.99K \rightarrow 1%

P3.3V_D

GFX3_ROM_SCLK	N12P-GV	5K PU
---------------	---------	-------

GFX3_STRAP2	N12P-GV	5K PD
-------------	---------	-------

GFX3_STRAP3	Audio for Digital Display Optimus - 0x0	0000
-------------	---	------

GFX3_STRAP4	Reserved Reserved PCIe 2.0 support Reserved	0001
-------------	--	------

N12P-GE : 0x10 **50** (1000 / 0000)

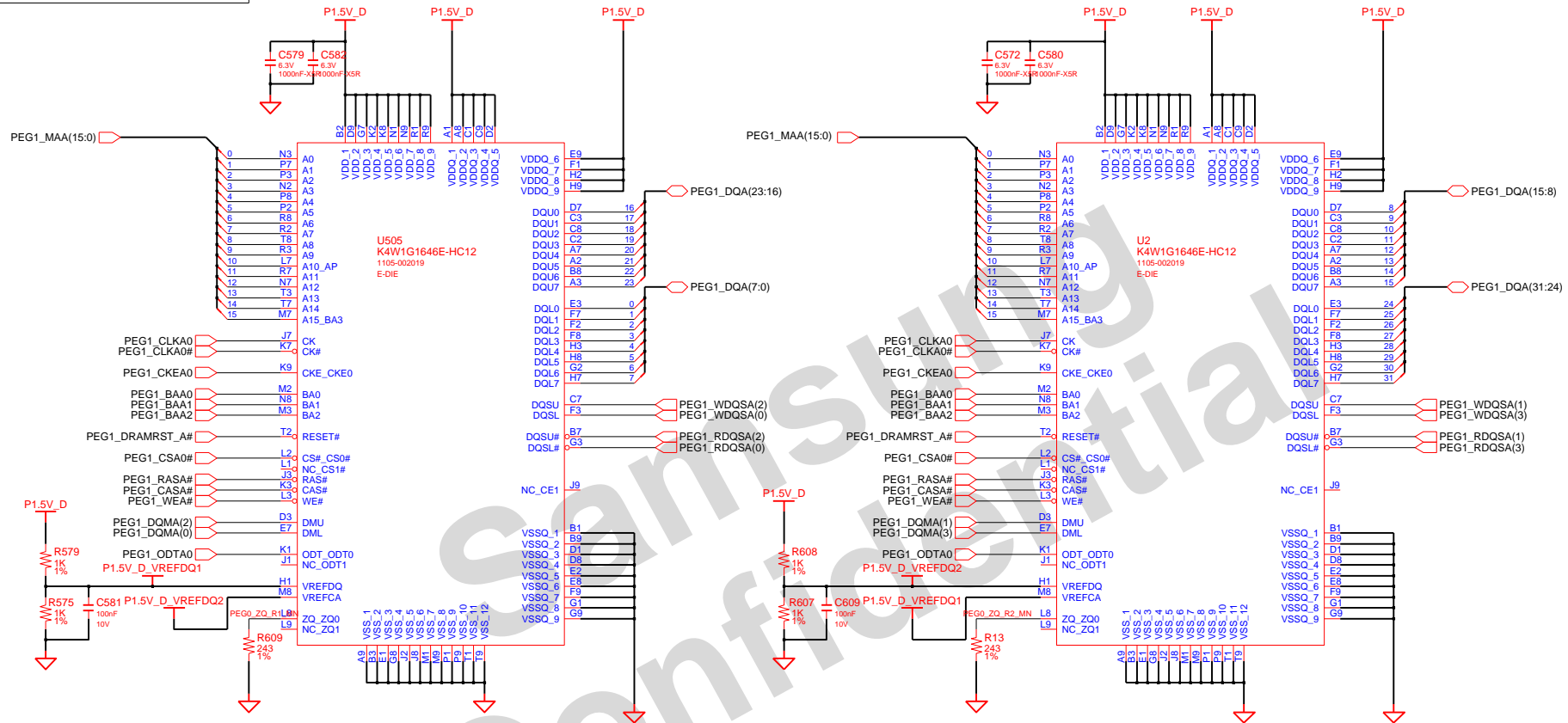
U3-5		N12P-GV-S-A1	
B2	GND. 1	NC. 1	C15
B5	GND. 2	NC. 2	D15
B8	GND. 3		
B11	GND. 4		
B14	GND. 5		
B17	GND. 6		
B20	GND. 7		
B23	GND. 8		
B26	GND. 9		
E2	GND. 10		
E5	GND. 11		
E8	GND. 12		
E11	GND. 13		
E14	GND. 14		
E20	GND. 15		
E23	GND. 16		
H2	GND. 17		
H5	GND. 19		
H6	GND. 20		
J11	GND. 21		
J14	GND. 22		
J17	GND. 23		
K9	GND. 24		
K19	GND. 25		
L2	GND. 26		
L5	GND. 27		
L11	GND. 28		
L12	GND. 29		
L13	GND. 30		
L14	GND. 31		
L15	GND. 32		
L16	GND. 33		
L17	GND. 34		
M12	GND. 35		
M13	GND. 36		
M14	GND. 38		
M16	GND. 39		
P2	GND. 40		
P5	GND. 41		
P9	GND. 42		
P19	GND. 43		
P23	GND. 44		
P26	GND. 45		
T12	GND. 46		
T13	GND. 47		
T14	GND. 48		
T15	GND. 49		
U2	GND. 50		
U5	GND. 51		
U11	GND. 52		
U12	GND. 53		
U13	GND. 54		
U15	GND. 55		
U16	GND. 56		
U17	GND. 57		
U23	GND. 58		
U26	GND. 59		
V9	GND. 60		
V19	GND. 61		
W11	GND. 62		
W14	GND. 63		
W17	GND. 64		
Y2	GND. 65		
Y5	GND. 66		
Y26	GND. 67		
Y23	GND. 68		
AC2	GND. 69		
AC5	GND. 70		
AC8	GND. 71		
AC11	GND. 72		
AC14	GND. 73		
AC17	GND. 74		
AC20	GND. 75		
AC23	GND. 76		
AC26	GND. 77		
AF2	GND. 78		
AF5	GND. 79		
AF8	GND. 80		
AF11	GND. 81		
AF14	GND. 82		
AF17	GND. 83		
AF20	GND. 84		
AF23	GND. 85		
AF26	GND. 86		
	GND. 87		
	GND. 88		
	GND. 89		

DESIGN	MS YANG	DATE	1/03/2011	Jinmao-R N12M_40NM(4/4) N12P_40NM(4/4)	SAMSUNG ELECTRONICS
CHECK	MM KIM	DEV. STEP	PR		
APPROVAL	BL LEE	REV	rev. 1.0		
MODULE CODE	LAST EDIT				
				February 15, 2011 09:31:19 AM	
				PAGE	23 OF 49

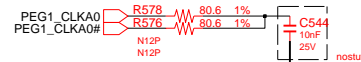
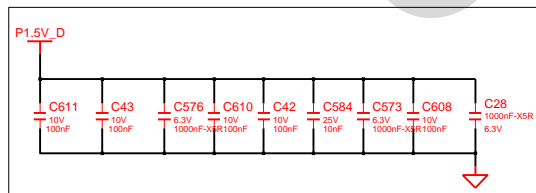
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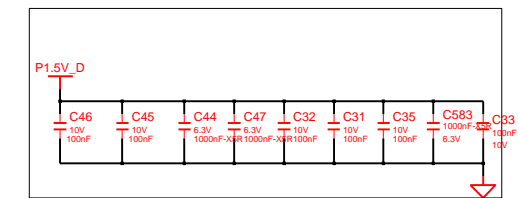
A-Channel #0



Place near to VDDQ



Place near to VDDQ



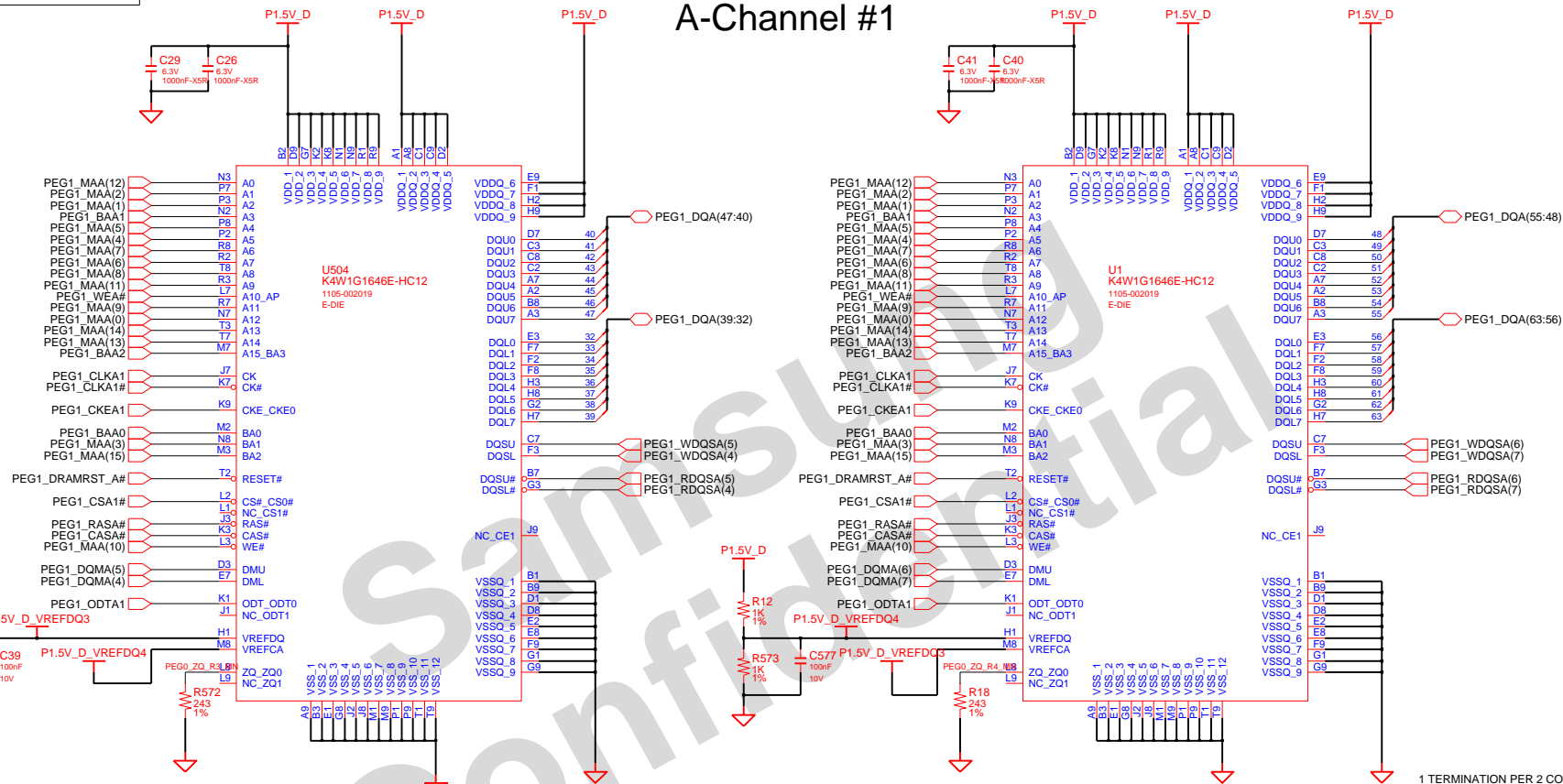
OPT OPT
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CHECK	MK KIM	DEV. STEP	PR		GRAPHIC_MEM A#0	
APPROVAL	BL LEE	REV	rev. 1.0		GRAPHIC_MEM A#0	
MODULE CODE		LAST EDIT				
February 15, 2011 09:31:19 AM						PAGE 24 OF 49

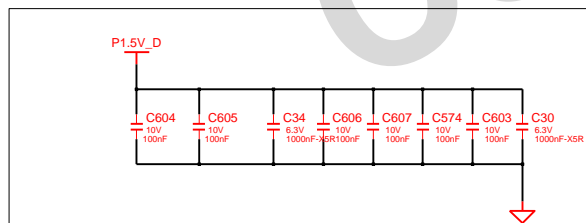
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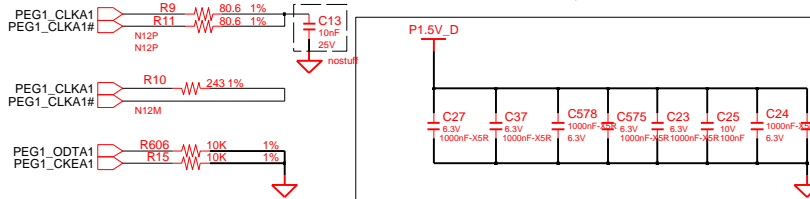
A-Channel #1



Place near to VDDQ



Place near to VDDQ



OPT OPT
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DESIGN	MS YANG	DATE	1/03/2011	TITLE	Jinmao-R	SAMSUNG ELECTRONICS
CHECK	MK KIM	DEV. STEP	PR		GRAPHIC_MEM A#1	
APPROVAL	BL LEE	REV	rev. 1.0		GRAPHIC_MEM A#1	PART NO. BA41-01579A
MODULE CODE		LAST EDIT		February 15, 2011 09:31:19 AM	PAGE	25 OF 49

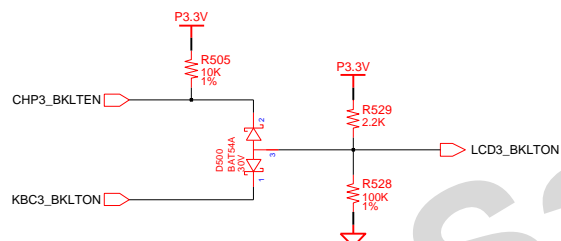
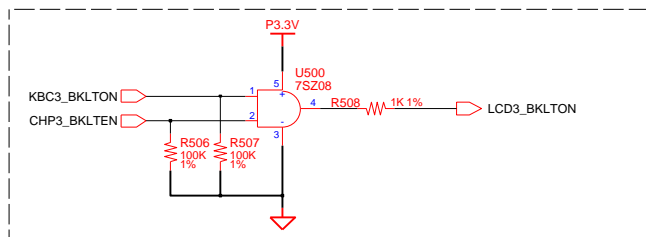
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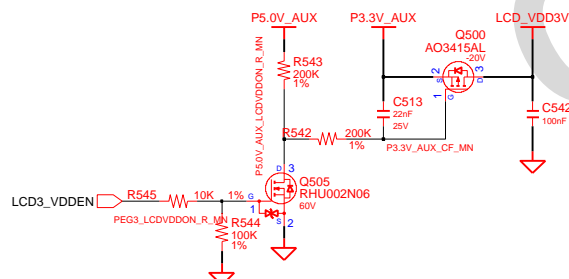
LVDS LOGIC

1Ch. LCD Connector + CAMERA

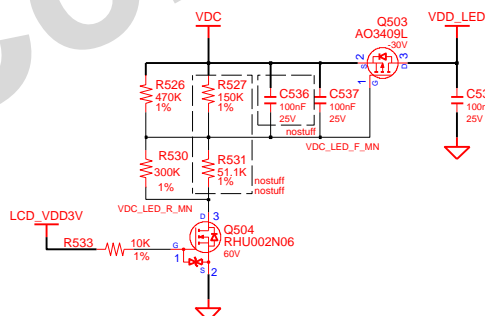
Backlight On



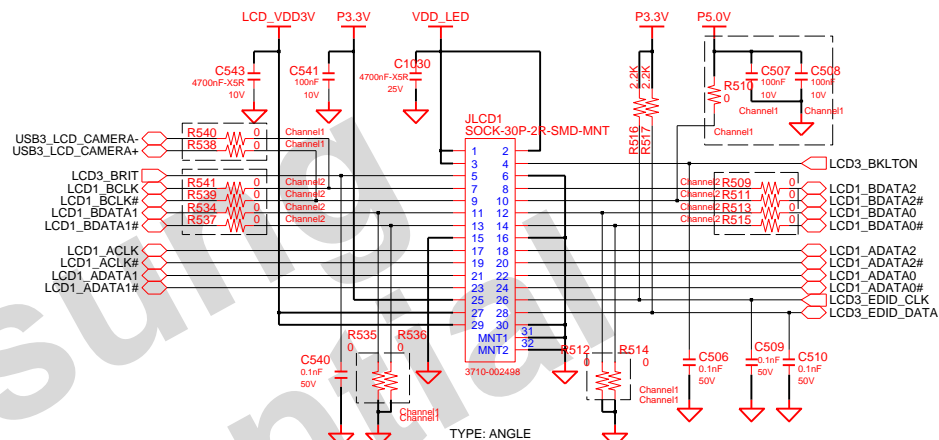
LCD Power



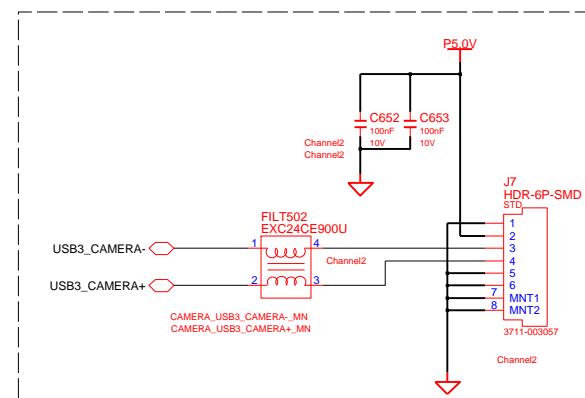
LED Power



NOTE : Place R20 close to connector to minimize stub



CAMERA CONN FOR 2ch LVDS

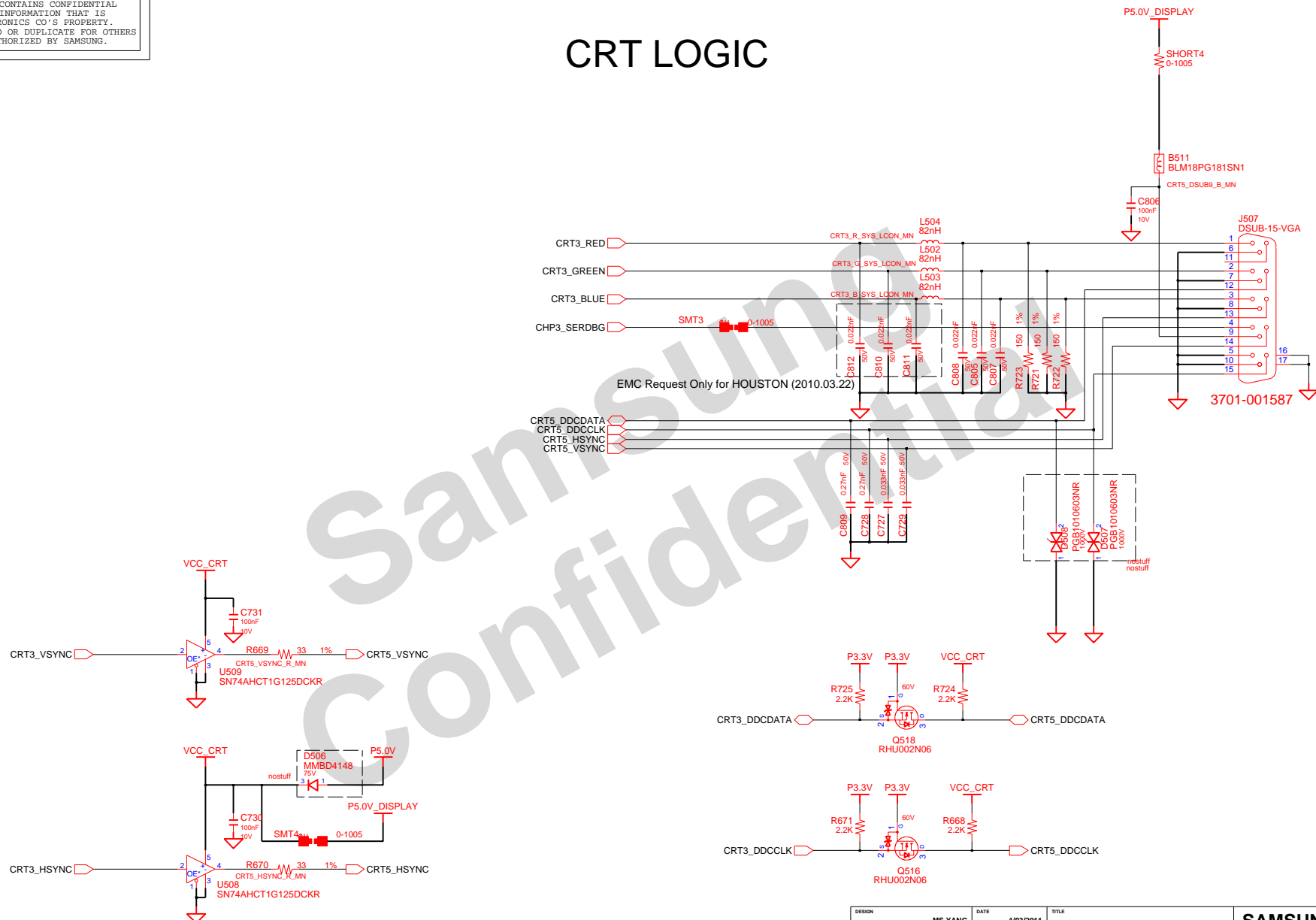


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APPROVAL	BL LEE	REV	rev. 1.0		LVDS	
MODULE CODE		LAST EDIT			February 15, 2011 09:31:19 AM	PART NO. BA41-01579A
					PAGE 26 OF 49	

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CRT LOGIC



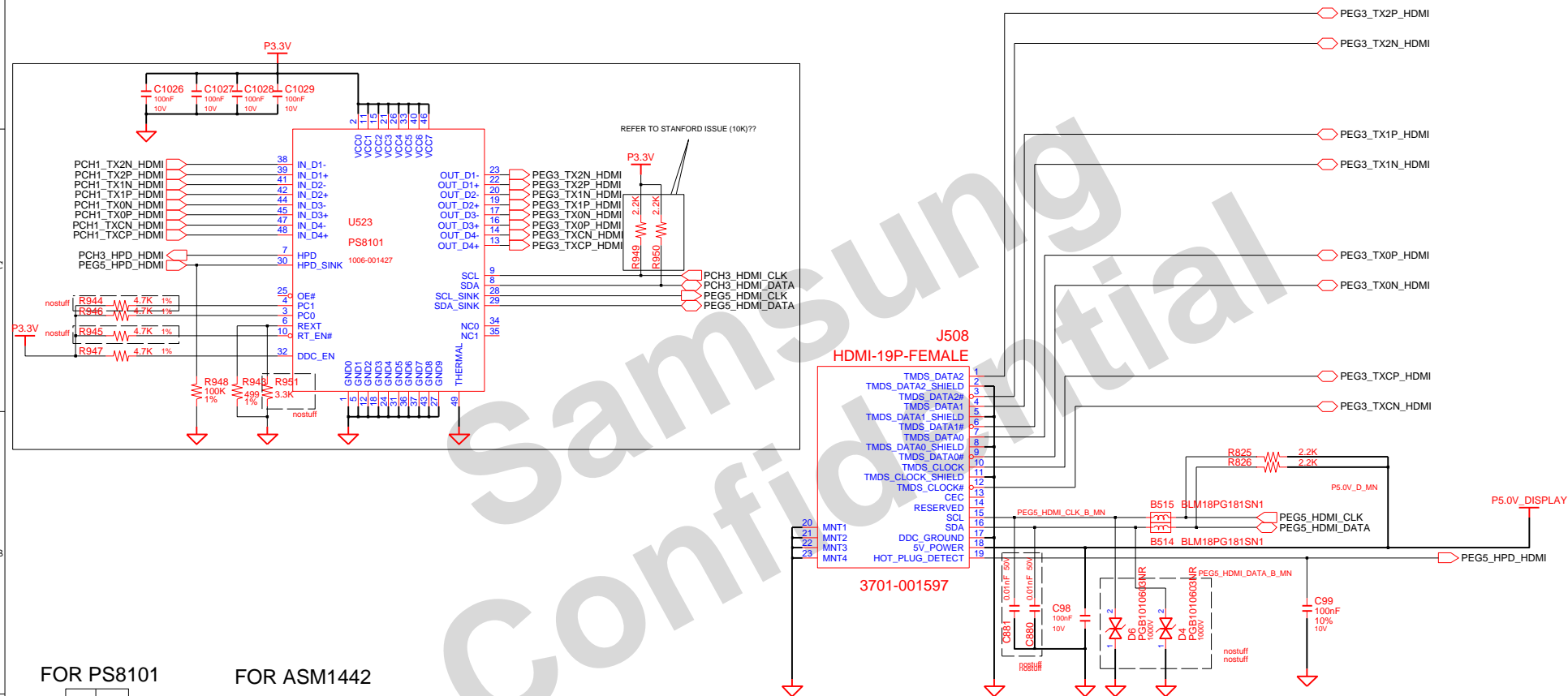
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APPROVAL	BL LEE	REV	rev. 1.0		CRT
MODULE CODE		LAST EDIT			
				February 15, 2011 09:31:19 AM	PAGE 27 OF 49

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PART NO. BA41-01579A

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HDMI Graphic



FOR PS8101

FOR ASM1442

PC1	PC0
00	8dB
01	4dB
10	12dB
11	0dB

CG_2	CG_1	CG_0	Swing	Pre-amp	Slur rate
0	0	0	450mV	0dB	0dB
0	0	1	490mV	0dB	-3dB
0	1	0	450mV	0dB	-3dB
0	1	1	460mV	0dB	-4dB
1	0	0	340mV	0dB	0dB
1	0	1	400mV	2dB	0dB
1	1	0	400mV	2dB	0dB
1	1	1	420mV	0dB	0dB

FOR ASM1442

EQ_1	EQ_0	Equalization
0	0	12dB
0	1	9dB
1	0	6dB
1	1	3dB

Internal Default Value

HDMI Level Shifter	REXT(Pin6)	PC1_CG0(Pin3)	PC1_CG1(Pin4)	RT_EN#_CG2(Pin10)	NC_EQ_0(Pin34)	NC_EQ_1(Pin35)	Note	4-6 CODE
PS8101	499 phm	stuff	nostuff	nostuff	NC	NC		1006-001427
ASM1442	3.4K(3.24~3.3K)	nostuff	nostuff	nostuff	nostuff	nostuff	Internal PU/PD exist CGs nostuff is 450mV swing	1006-001471

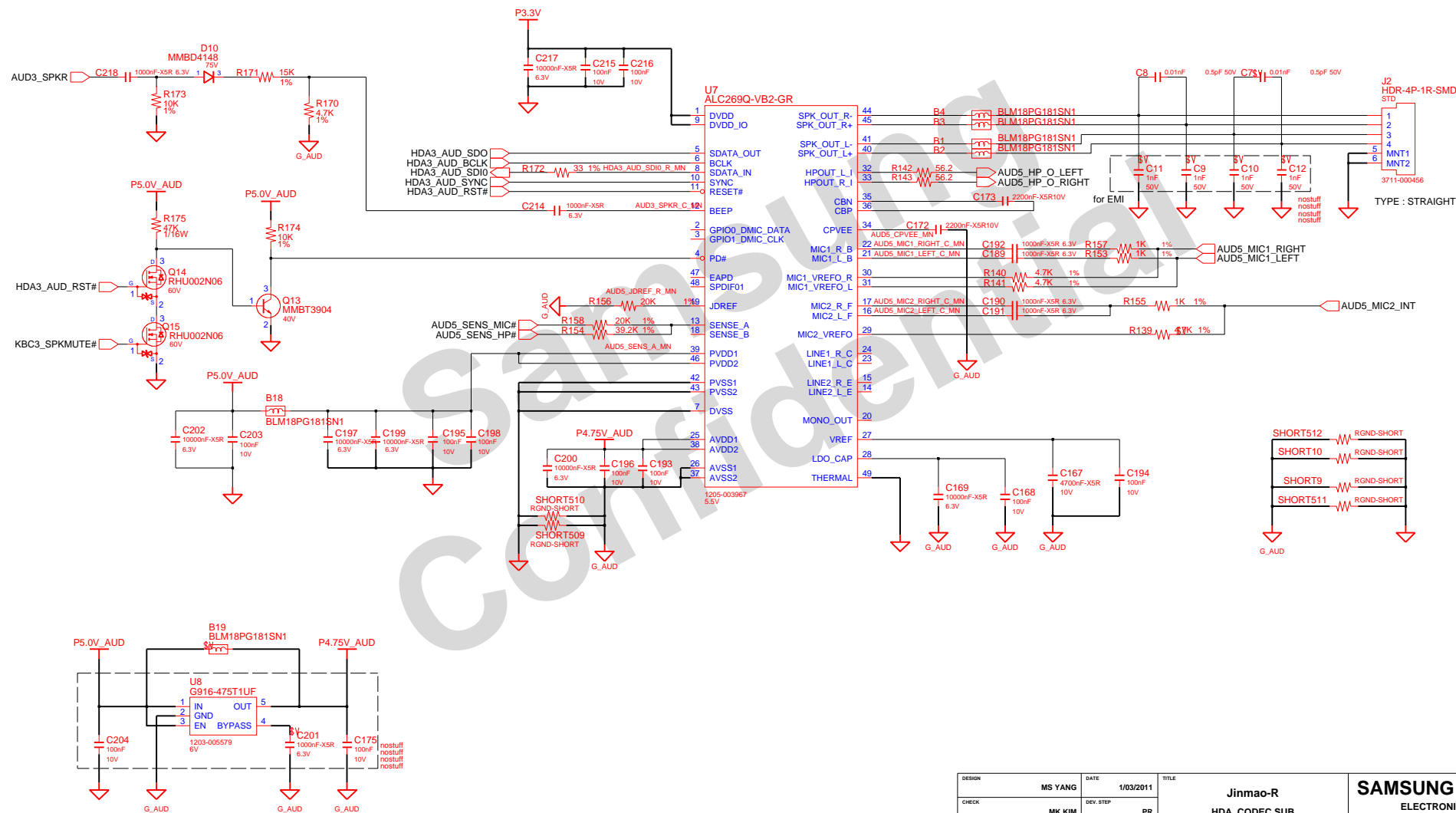
DESIGN	MS YANG	DATE	1/03/2011	TITLE	Jinmao-R GRAPHICS_IF HDMI	SAMSUNG ELECTRONICS
CHECK	MK KIM	DEV. STEP	PR			PART NO. BA41-01579A
APPROVAL	BL LEE	REV	rev. 1.0			
MODULE CODE		LAST EDIT				

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HD AUDIO

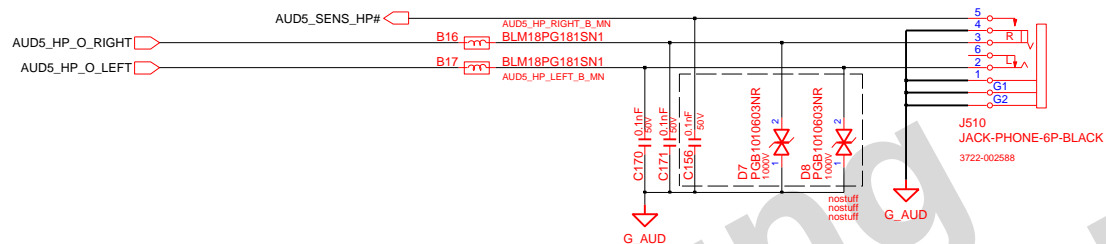


DESIGN	MS YANG	DATE	1/03/2011	TITLE	Jinmao-R	SAMSUNG ELECTRONICS
CHECK	MK KIM	DEV. STEP	PR		HDA_CODEC SUB	
APPROVAL	BL LEE	REV	rev. 1.0		AUDIO CODEC ALC269 SUB	
MODULE CODE		LAST EDIT				
February 15, 2011 09:31:19 AM						PAGE 29 OF 49

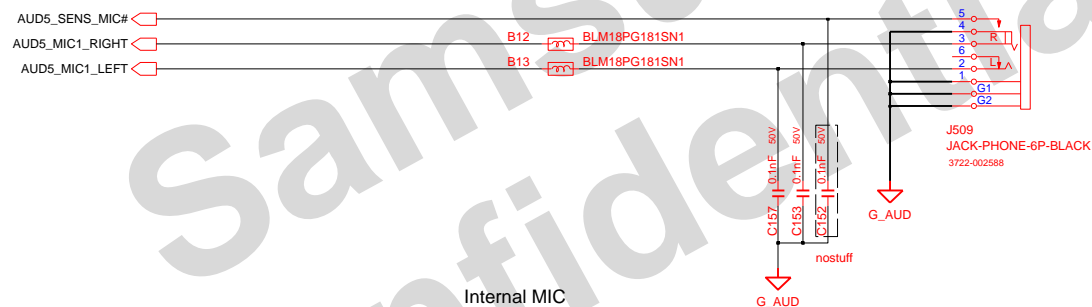
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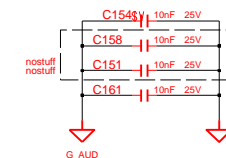
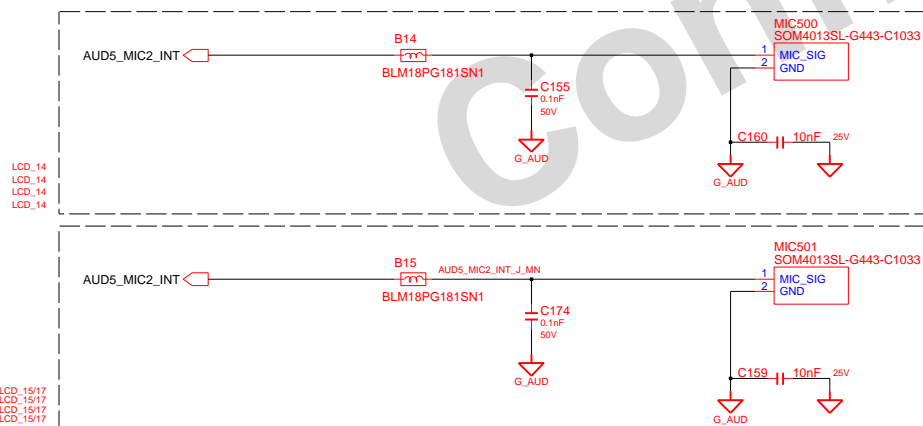
HEADPHONE



MIC JACK

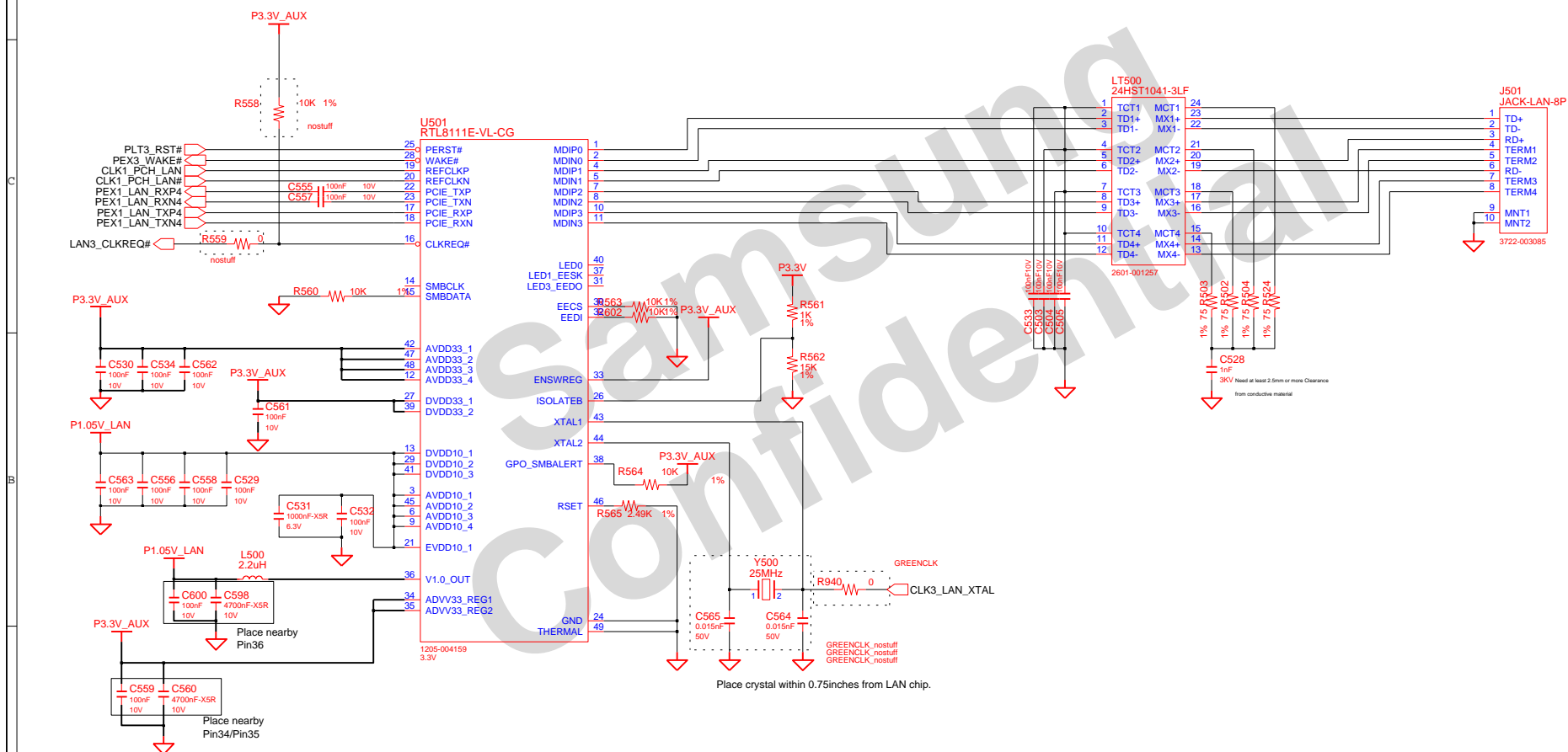


Internal MIC



DESIGN	MS YANG	DATE	1/03/2011	TITLE	Jinmao-R	SAMSUNG
CHECK	MK KIM	DEV. STEP	PR		HDA_CODEC & LED SUB	ELECTRONICS
APPROVAL	BL LEE	REV	rev. 1.0		AUDIO JACK & LED SUB	PART NO.
MODULE CODE		LAST EDIT				BA41-01579A
				February 15, 2011 09:31:19 AM	PAGE	30 OF 49

Reatek RTL8111E

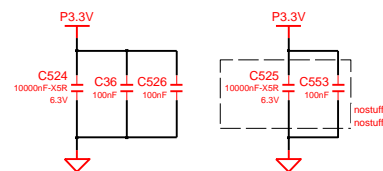
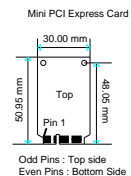
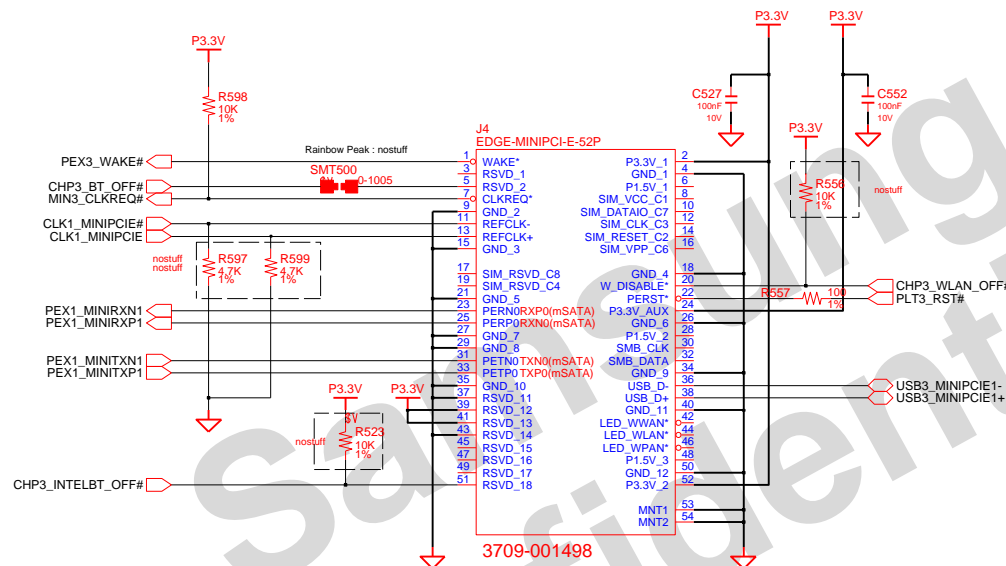


DESIGN	MS YANG	DATE	1/03/2011	TITLE Jinmao-R LAN LAN_Realtek_RTL8111	SAMSUNG ELECTRONICS	
CHECK	MK KIM	DEV. STEP	PR		PART NO.	BA41-01579A
APPROVAL	BL LEE	REV	rev. 1.0			
MODULE CODE	LAST EDIT				February 15, 2011 09:31:19 AM	PAGE 31 OF 49

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WLAN, 4mm



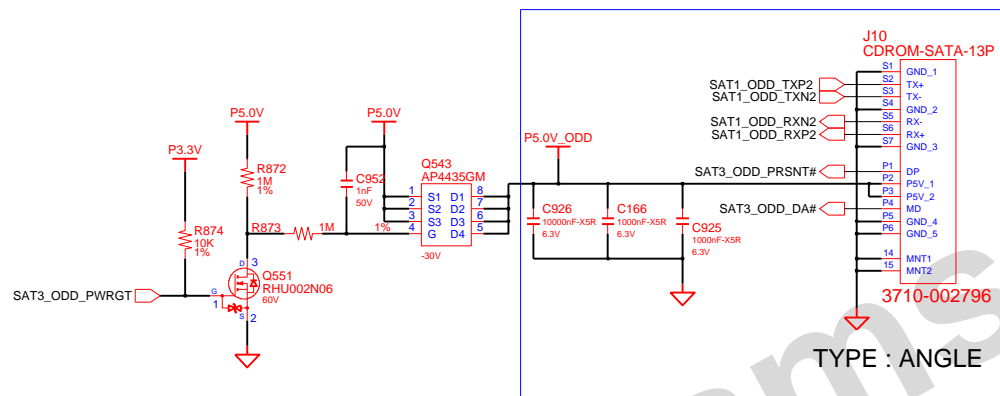
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CHECK	MK KIM	DEV. STEP	PR		MINI_PCIE_CONN	ELECTRONICS
APPROVAL	BL LEE	REV	rev. 1.0		WLAN	PART NO.
MODULE CODE		LAST EDIT				BA41-01579A
				February 15, 2011 09:31:19 AM	PAGE	32 OF 49

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SATA I/F CONN

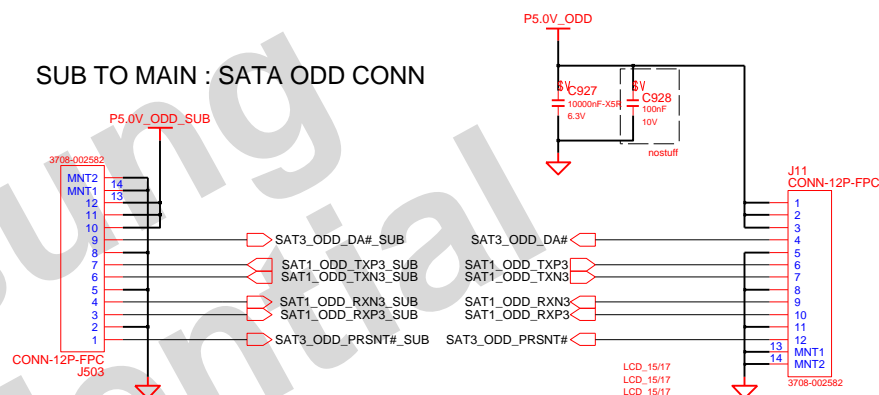
SATA ODD CONN



15.6" / 17.3"

MAIN TO SUB : SATA ODD CONN

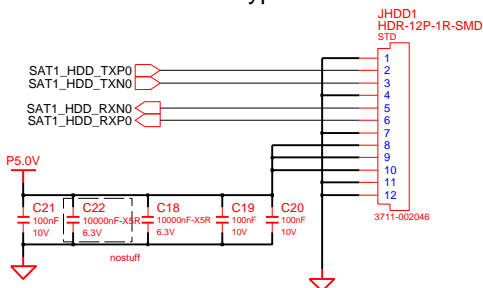
SUB TO MAIN : SATA ODD CONN



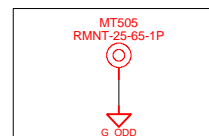
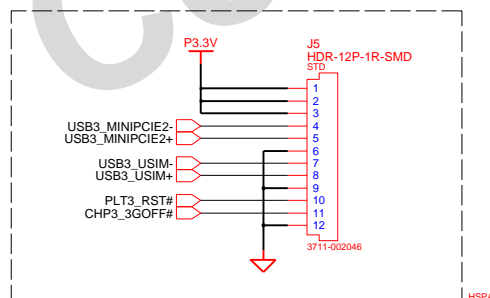
SATA ODD CONN

SATA HDD CONN

Cable Connector Type



MAIN to HSDPA SUB



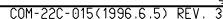
ODD sub board mount hole

DESIGN	MS YANG	DATE	1/03/2011	TITLE	Jinmao-R SATA_DEVICES SATA I/F Conn	SAMSUNG ELECTRONICS
CHECK	MK KIM	DEV. STEP	PR			PART NO. BA41-01579A
APPROVAL	BL LEE	REV	rev. 1.0			
MODULE CODE		LAST EDIT				
				February 15, 2011 09:31:19 AM	PAGE 33 OF 49	

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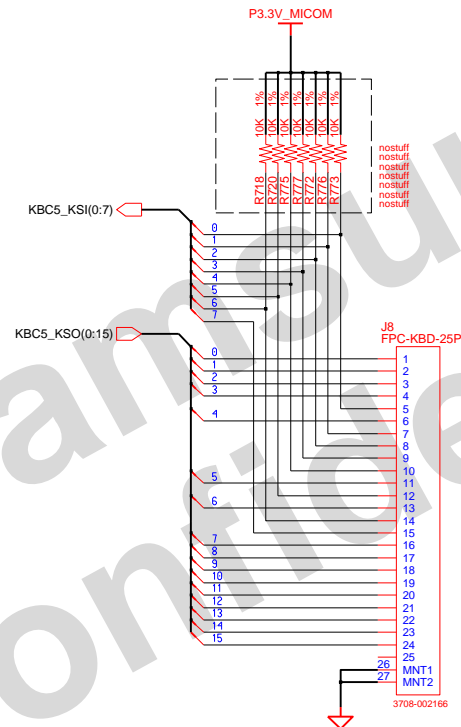
BE CAUTION SPI ROM SIZE!!

SPI ROM SOCKET



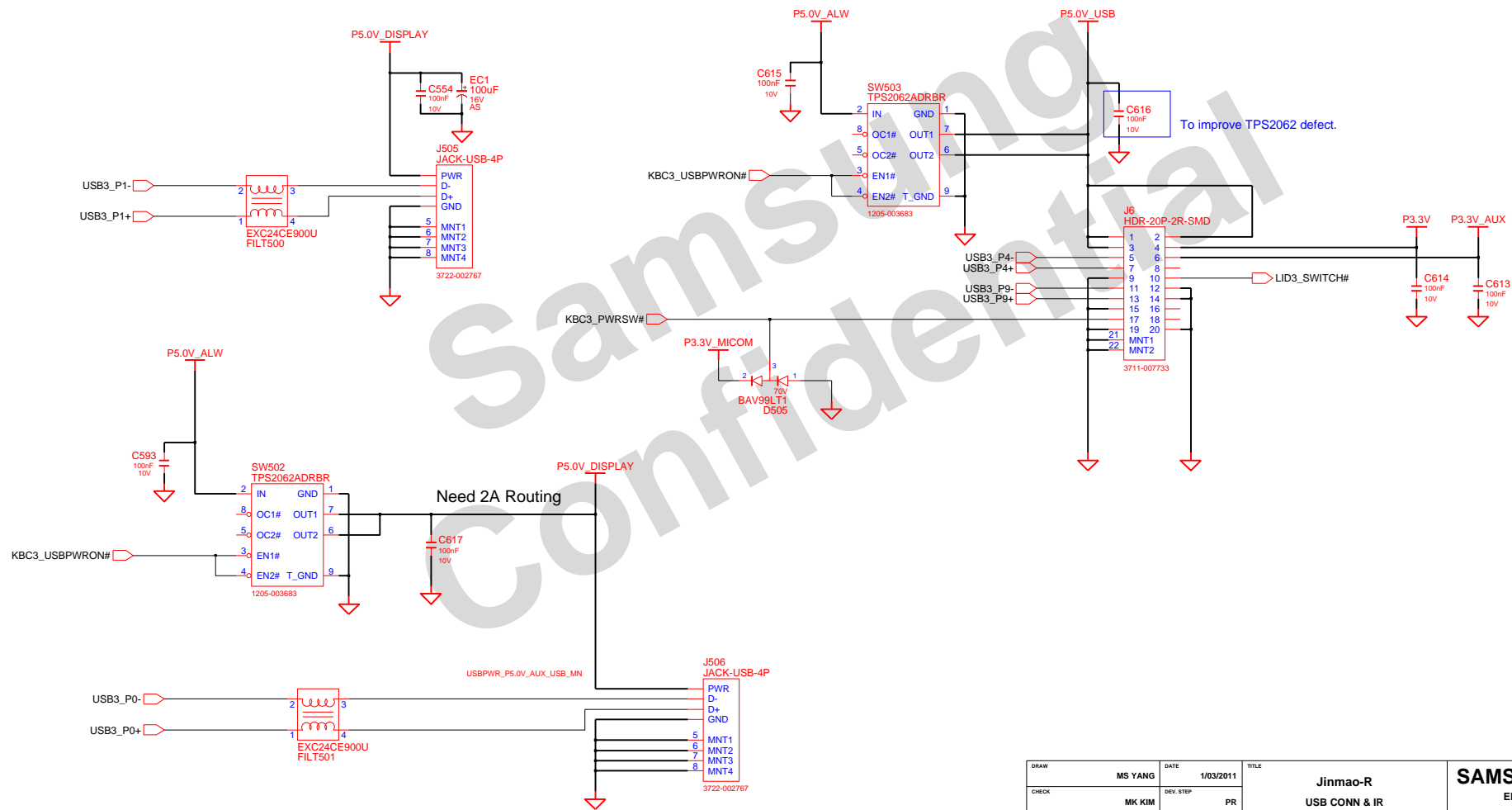
Micom Glue Logic

KEYBOARD



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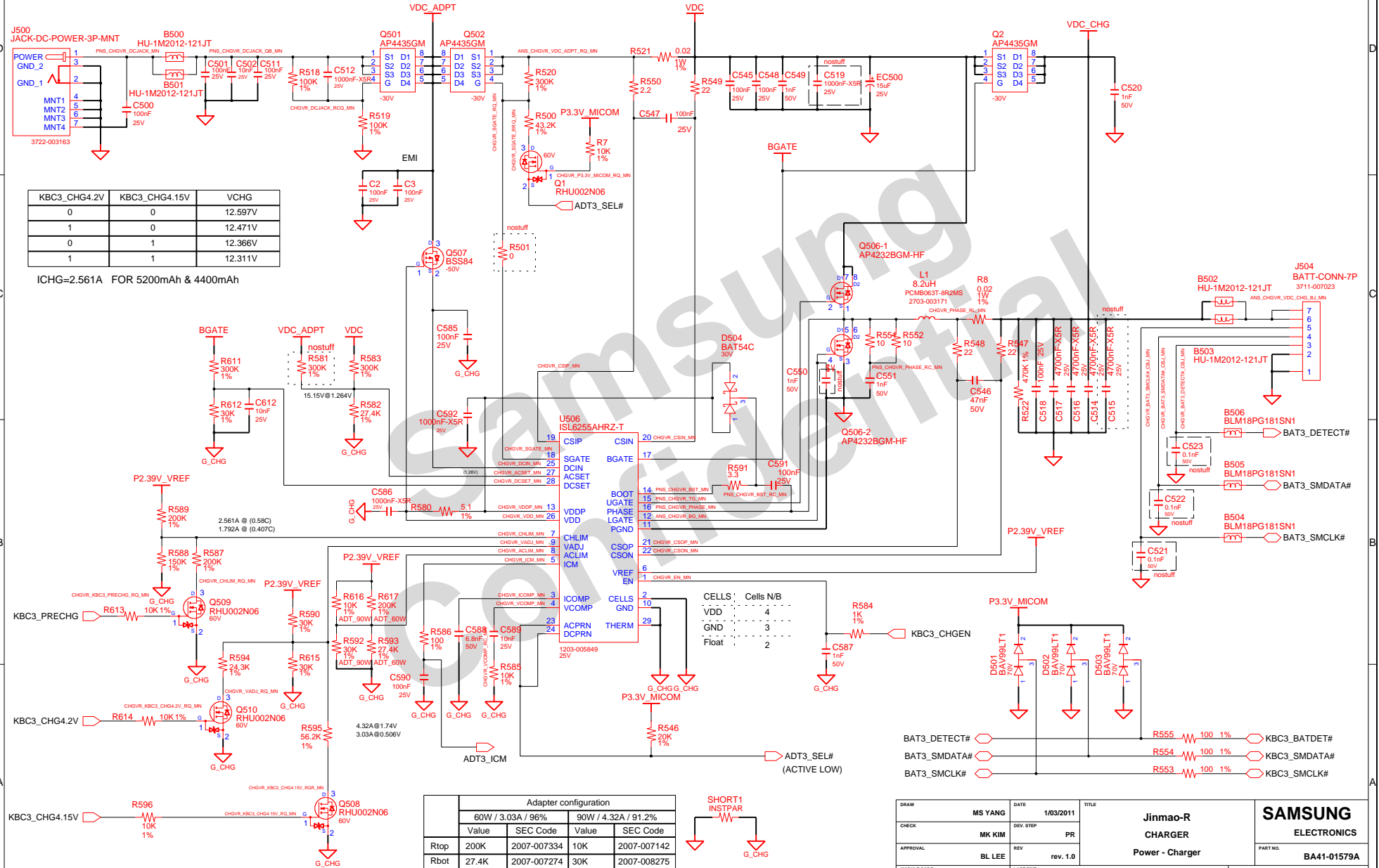
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POWER S/W SUB B'D CONNECTOR**MAIN to SUB**

DRAW	MS YANG	DATE	1/03/2011	TITLE	Jinmao-R	SAMSUNG ELECTRONICS
CHECK	MK KIM	DEV. STEP	PR	USB CONN & IR		
APPROVAL	BL LEE	REV	rev. 1.0	USB & IR	PART NO. BA41-01579A	
MODULE CODE		LAST EDIT		February 15, 2011 09:31:19 AM	PAGE 36	OF 49

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CHARGER & POWER MANAGEMENT

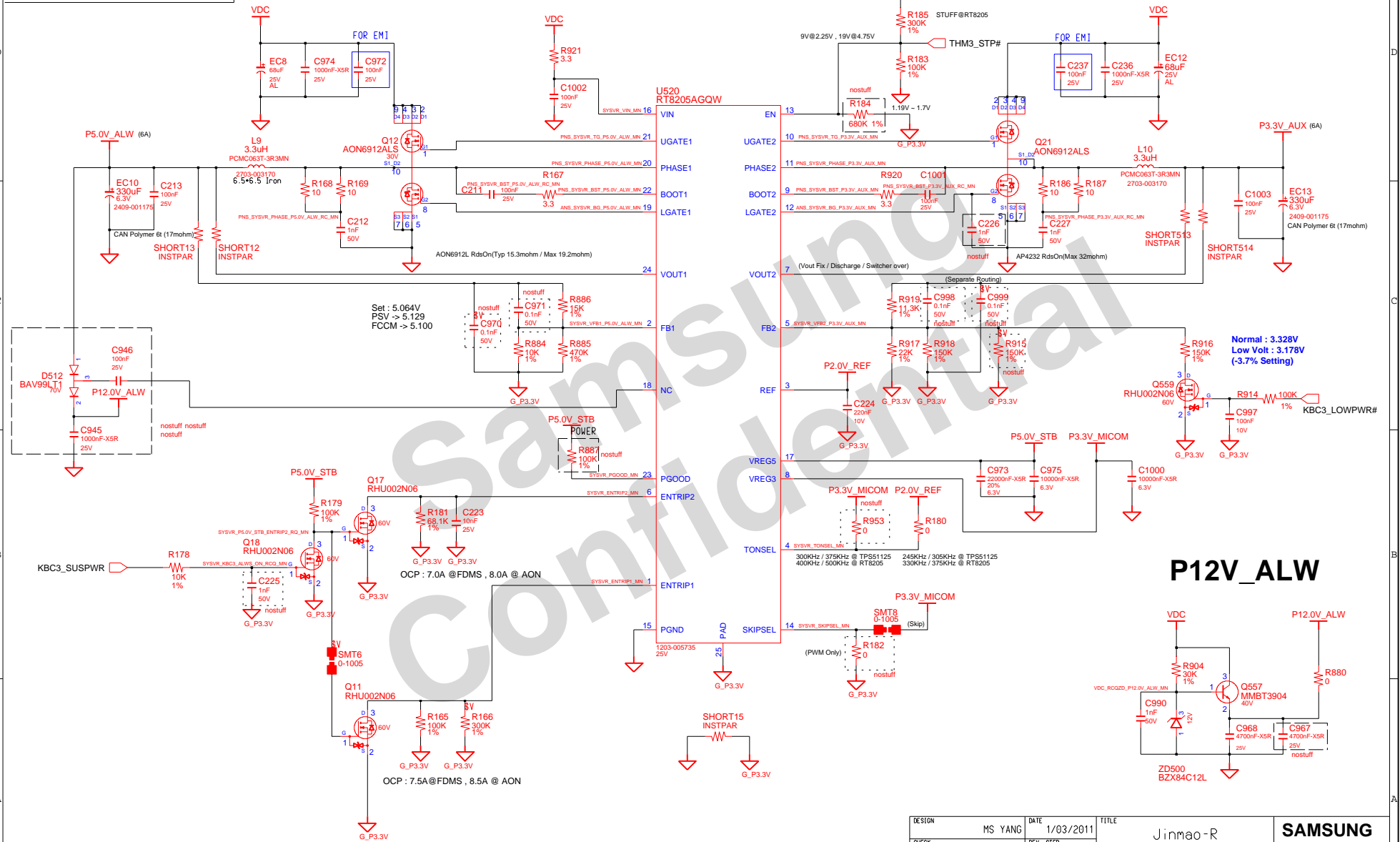


DRAW	MS YANG	DATE	1/03/2011	TITLE	Jinmao-R CHARGER	SAMSUNG ELECTRONICS
CHECK	MK KIM	DEV. STEP	PR		Power - Charger	PART NO. BA41-01579A
APPROVAL	BL LEE	REV	rev. 1.0			
MODULE CODE	undefined	LAST EDIT	February 15, 2011 09:31:19 AM	PAGE	37	OF 49

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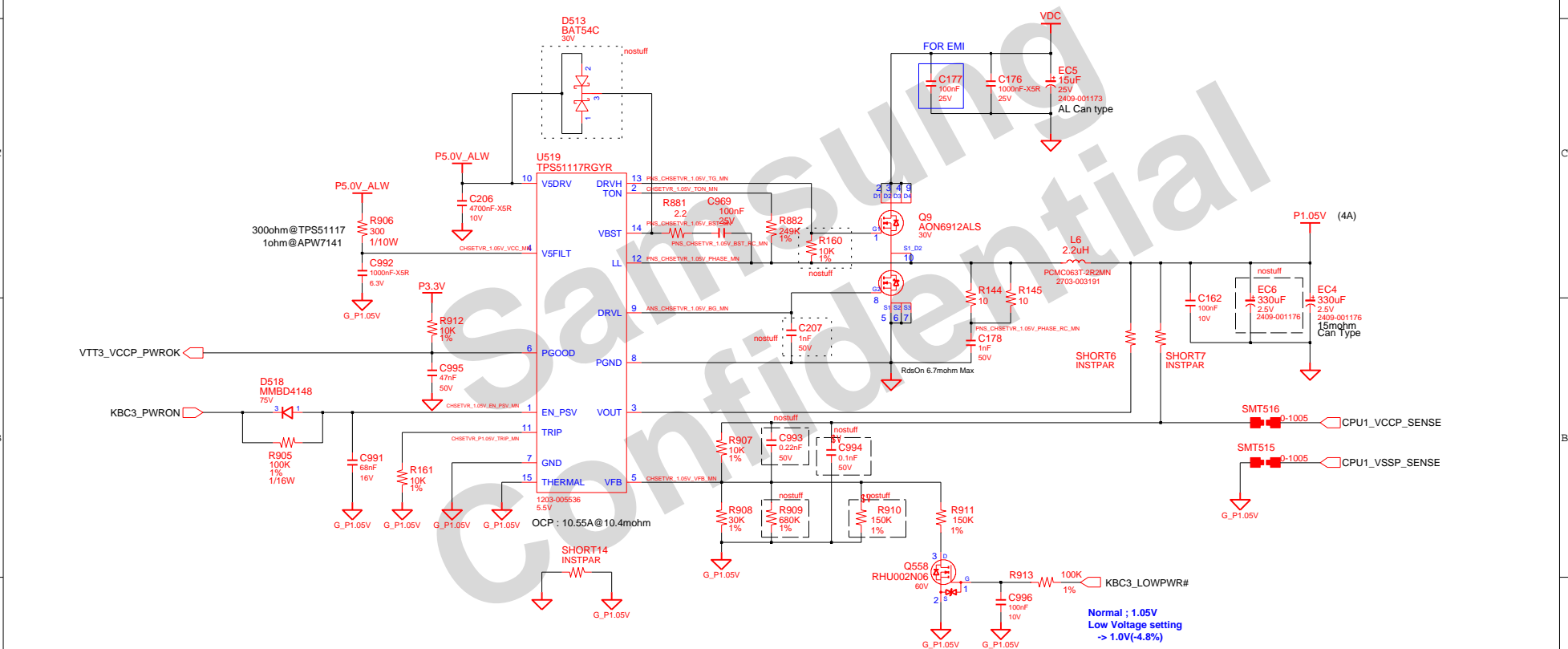
P3.3V_AUX & P5.0V_AUX



DESIGN	MS YANG	DATE	1/03/2011	TITLE	Jinmao-R	SAMSUNG ELECTRONICS PART NO. BA41-01579A
CHECK	MK KIM	DEV. STEP	PR	P3.3V_AUX / P5.0V_ALW		
APPROVAL	BL LEE	REV	rev. 1.0	P3.3V_AUX / P5.0V_AUX		
MODULE CODE		LAST EDIT	February 15, 2011 09:31:19 AM	PAGE	38 OF 49	

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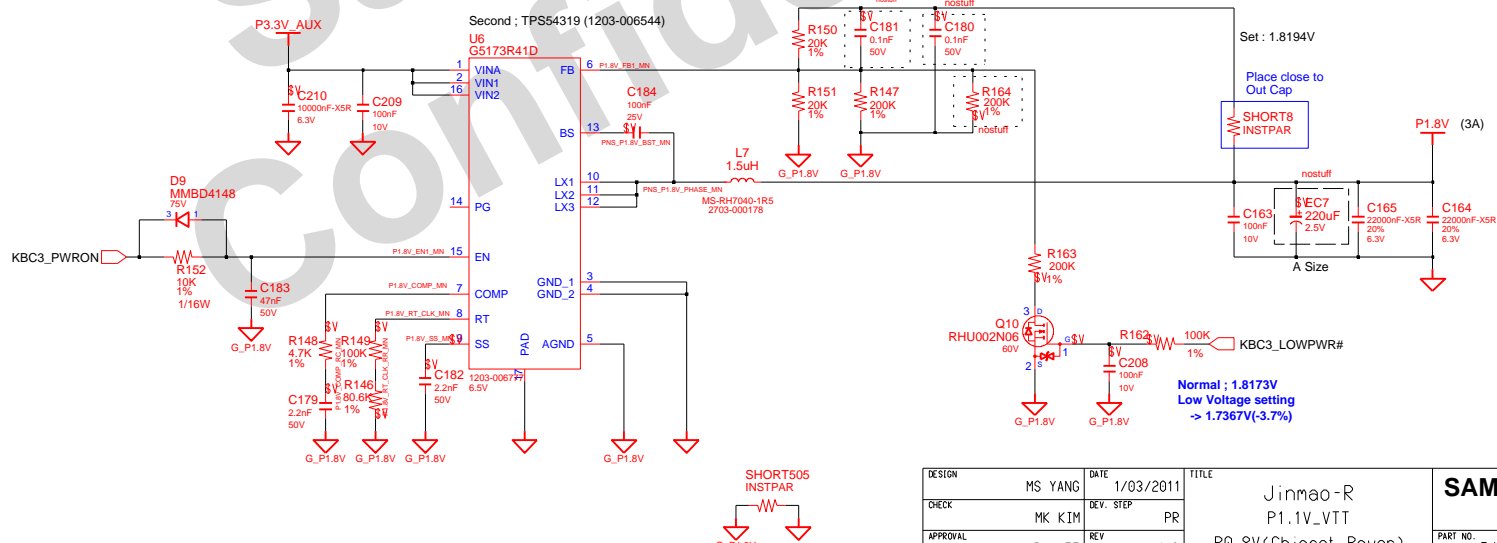
CHIPSET POWER(P1.05V)



DRWN	MS YANG	DATE	1/03/2011	TITLE	SAMSUNG ELECTRONICS PART NO. BA11-01579A
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APPROVAL	BL LEE	REV	rev. 1.0	P1.05V(Chipset Power)	
MODULE CODE	undefined	LAST EDIT	February 15, 2011 09:31:19 AM	PAGE 39 OF 49	

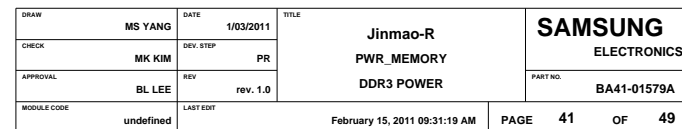
A

CHIPSET POWER(P1.8V)



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

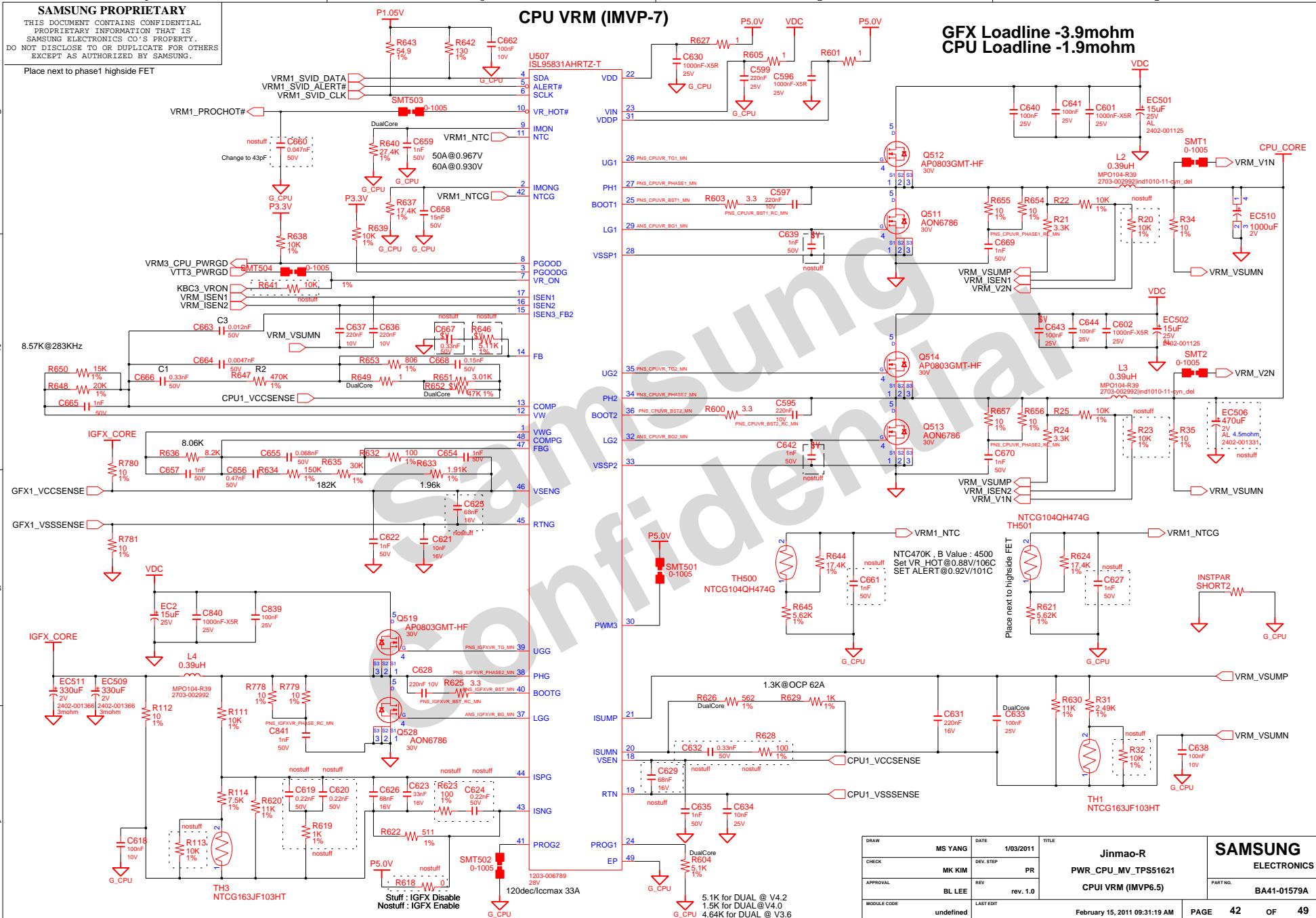
DDR3 VTT(0.75V)



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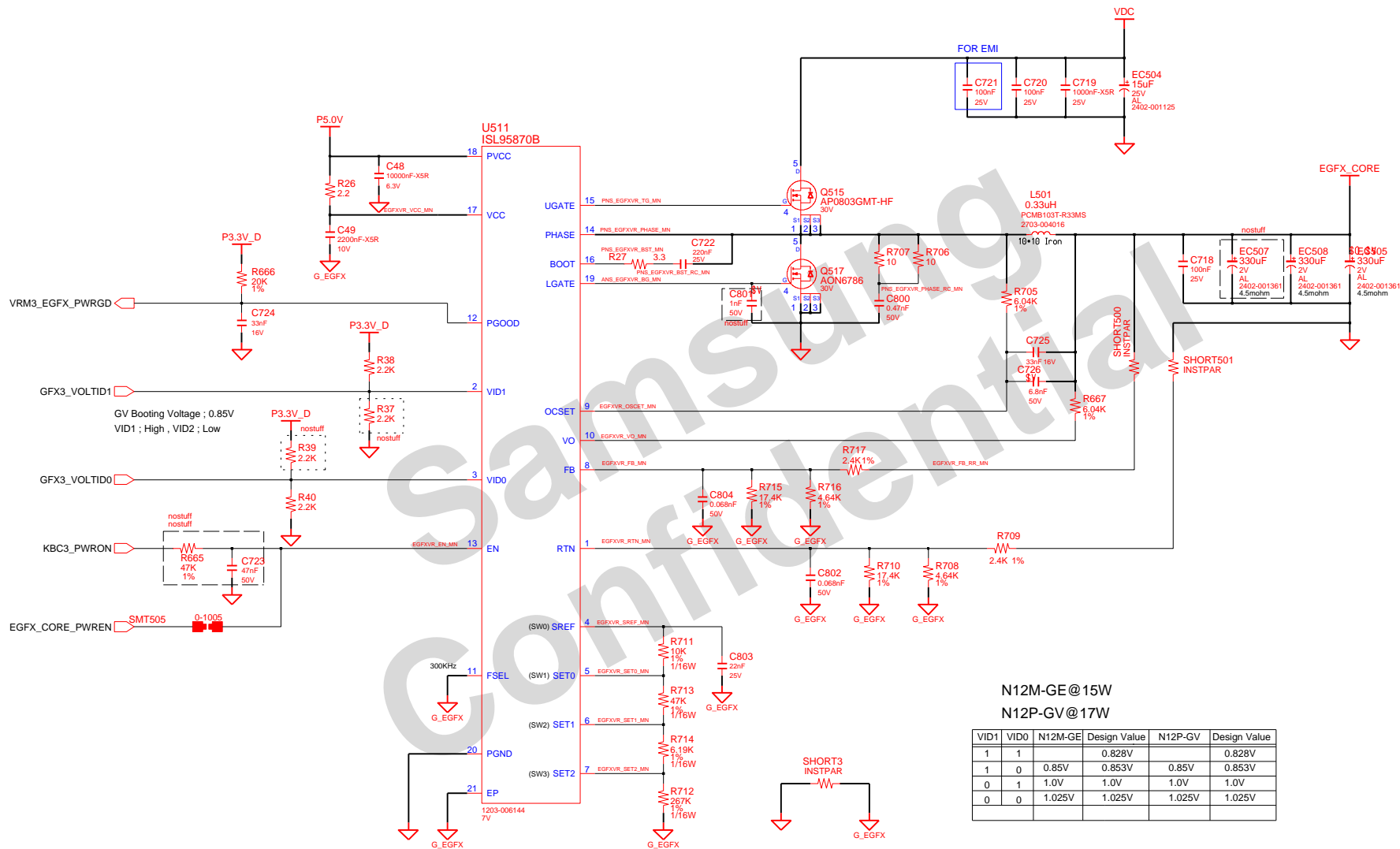
Place next to phase1 highside FET

GFX Loadline -3.9mohm
CPU Loadline -1.9mohm



DRAW	MS YANG	DATE	1/03/2011	Jinmao-R		SAMSUNG ELECTRONICS	
CHECK	MM KIM	DEV. STEP	PR				
APPROVAL	BL LEE	REV	REV. 1.0	CPU1 VRM (IMVP6.5)		PART NO.	BA41-01579A
MODULE CODE		LAST EDIT		February 15, 2011 09:31:19 AM		PAGE	42 OF 49

External GFX Core Power



N12M-GE@15W

N12P-GV@17W

VID1	VID0	N12M-GE	Design Value	N12P-GV	Design Value
1	1		0.828V		0.828V
1	0	0.85V	0.853V	0.85V	0.853V
0	1	1.0V	1.0V	1.0V	1.0V
0	0	1.025V	1.025V	1.025V	1.025V

DRAW	MS YANG	DATE	1/03/2011	TITLE Jinmao-R PWR_MV_SWITCHED Power-EGFX_CORE	SAMSUNG ELECTRONICS
CHECK	MK KIM	DEV. STEP	PR		
APPROVAL	BL LEE	REV	rev. 1.0		
PART NO.					
MODULE CODE	LAST EDIT			February 15, 2011 09:31:19 AM	PAGE 43 OF 49

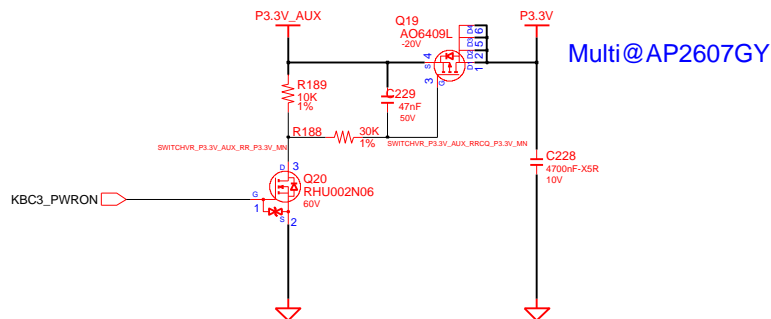
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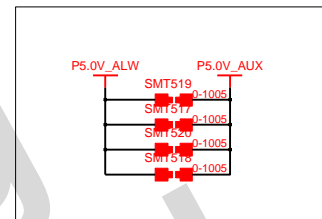
Switched Power

P5.0V -> P3.3V -> EGFX_CORE -> P1.8V -> P1.5V -> P0.75V -> P1.05V -> P0.8V_VCCSA -> CPU_CORE

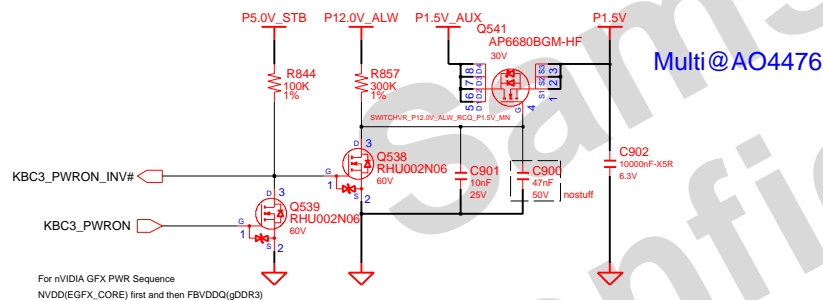
Switched Power On (P3.3V)



P5.0V_AUX

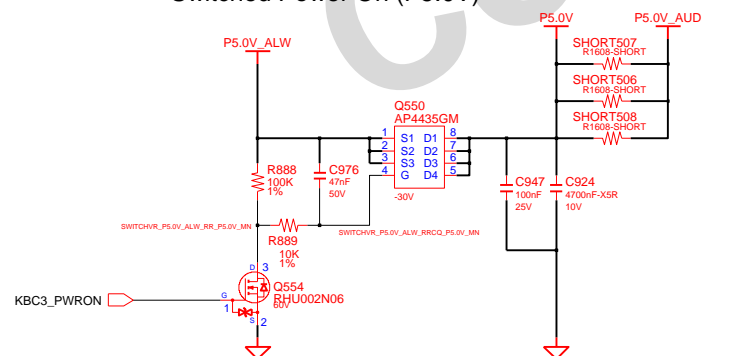


Switched Power On (P1.5V)



For nVIDIA GFX PWR Sequence
NVDD(EGFX_CORE) first and then FBVDDQ(gDDR3)

Switched Power On (P5.0V)



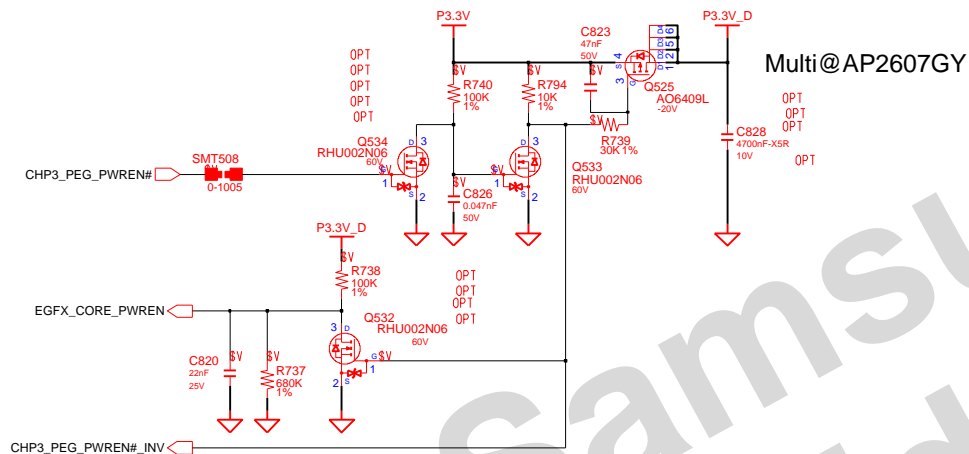
DRAW	MS YANG	DATE	1/03/2011	TITLE	Jinmao-R	SAMSUNG
CHECK	MK KIM	DEV. STEP	PR	PWR_MV_DISCHARGER		ELECTRONICS
APPROVAL	BL LEE	REV	rev. 1.0	SWITCHED POWER	PART NO.	BA41-01579A
MODULE CODE	undefined	LAST EDIT	February 15, 2011 09:31:19 AM	PAGE	44	OF 49

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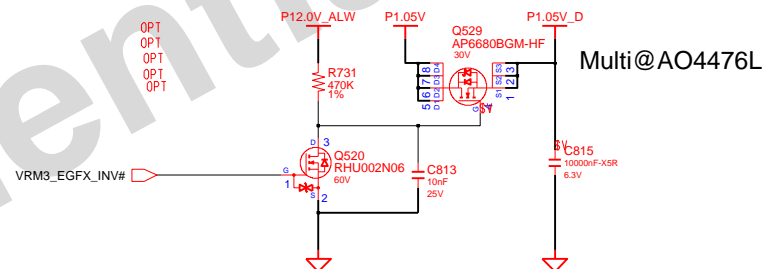
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Switched Power 2 (For nVidia GFX Power Sequence)

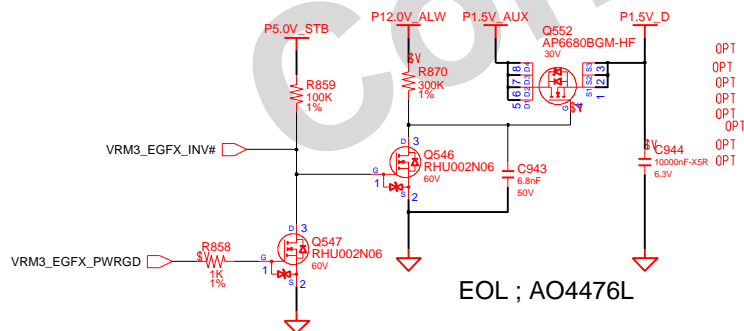
Discrete Switched Power (D3.3V : Max_1.2A)



Discrete Switched Power (D1.05V : Max 3.6A)



Discrete Switched Power (D1.5V : Max 5.0A)



DRAW	MS YANG	DATE	1/03/2011	TITLE	Jinmao-R	SAMSUNG ELECTRONICS
CHECK	MK KIM	DEV. STEP	PR	Switched PWR 2		
APPROVAL	BL LEE	REV	rev. 1.0	SWITCHED POWER2	PART NO.	BA41-01579A
MODULE CODE		LAST EDIT		February 15, 2011 09:31:19 AM	PAGE	45 OF 49

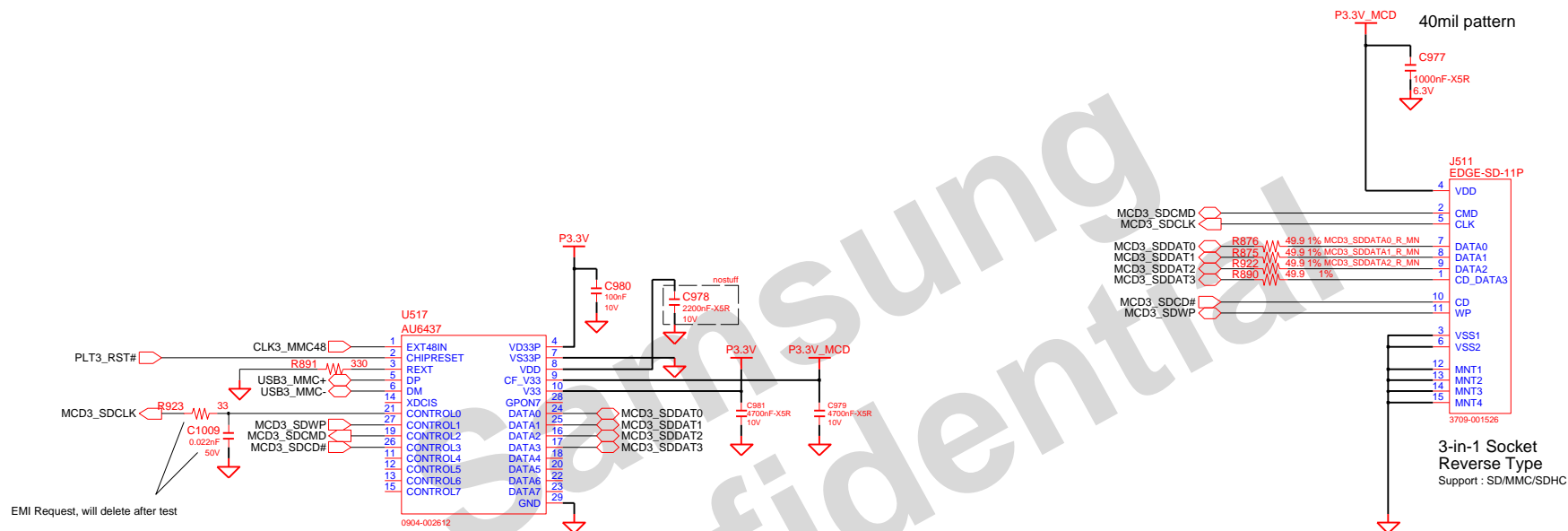
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COM-22C-015(1996.6.5) REV. 3

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AU6437 (4-in-1)

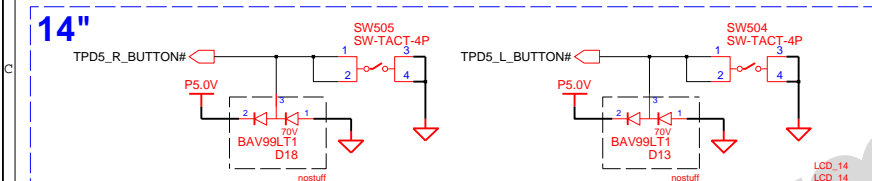
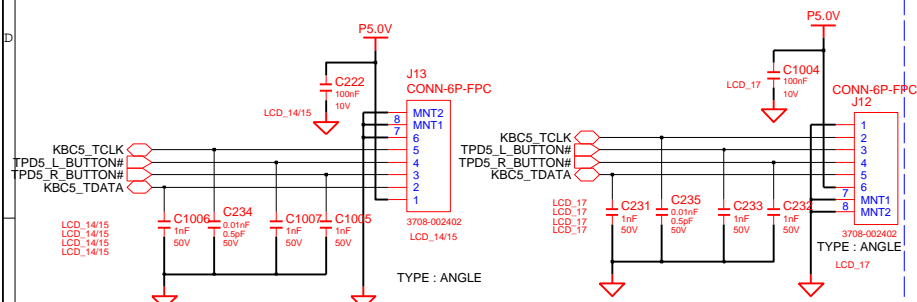


DESIGN	MS YANG	DATE	1/03/2011	TITLE	Jinmao-R	SAMSUNG ELECTRONICS
CHECK	MK KIM	DEV. STEP	PR	AU 6437	AU 6437	
APPROVAL	BL LEE	REV	rev. 1.0	AU 6437	BA41-01579A	
MODULE CODE	LAST EDIT		February 15, 2011 09:31:19 AM		PAGE	47 OF 49

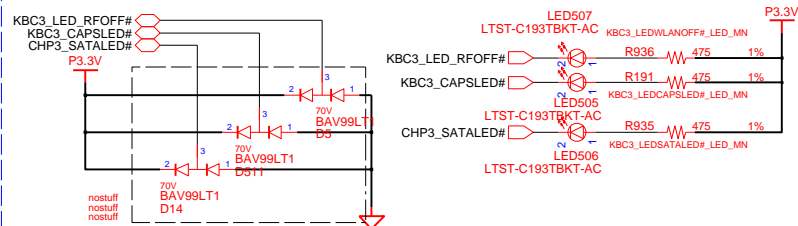
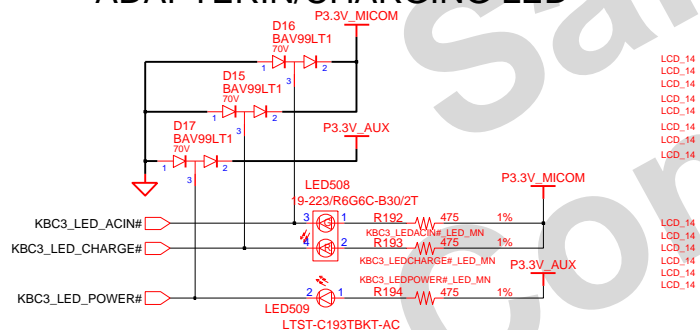
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TOUCHPAD

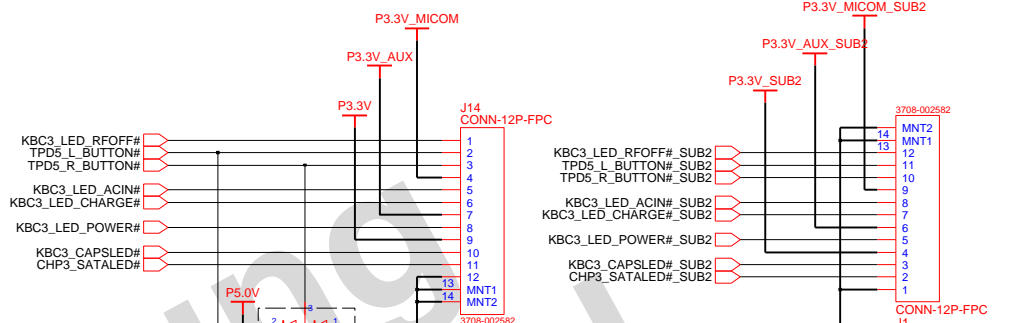


ADAPTERIN/CHARGING LED

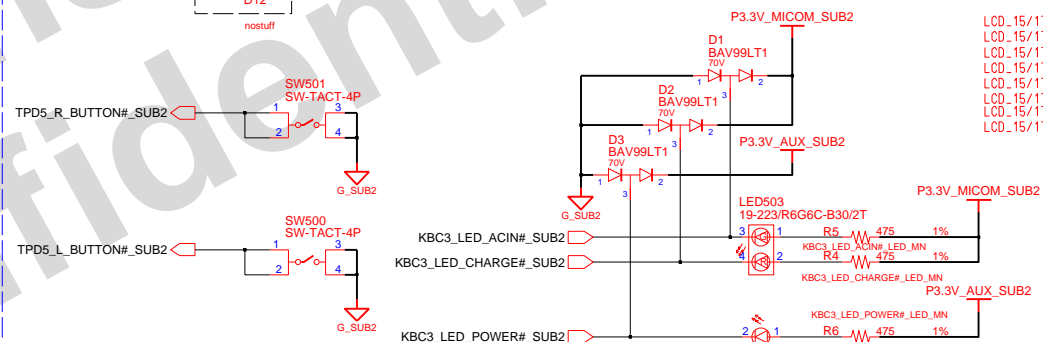


15.6" & 17.3"

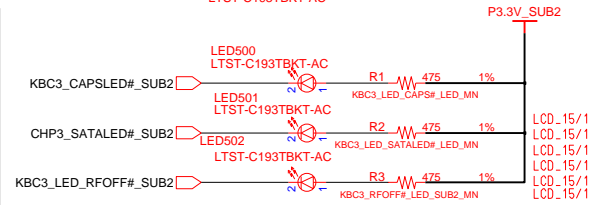
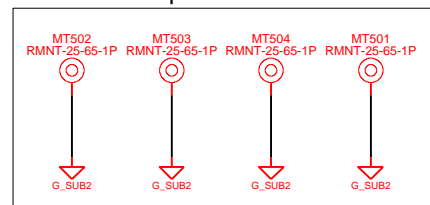
TOUCHPAD MAIN TO SUB TOUCHPAD SUB TO MAIN



ADAPTERIN/CHARGING LED



Touchpad Mount Hole



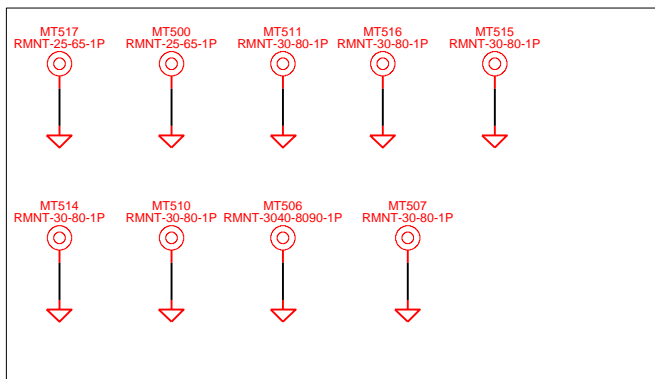
DRAW	MS YANG	DATE	1/03/2011	TITLE	Jinmao-R
CHECK	MK KIM	DEV. STEP	PR		Touchpad
APPROVAL	BL LEE	REV	rev. 1.0		Touchpad
MODULE CODE		LAST EDIT			
February 15, 2011 09:31:19 AM				PAGE	48 OF 49

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ELECTRONICS
PART NO.
BA41-01579A

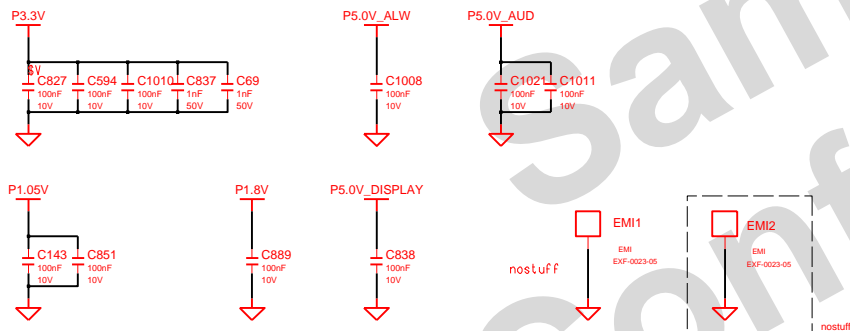
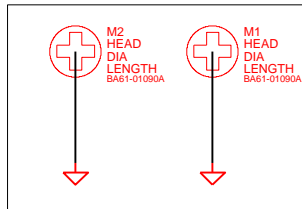
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Mainboard Mount ((25-65)X2EA, (30-80)X7EA)



PCH Thermal



DESIGN	MS YANG	DATE	1/03/2011	TITLE	Jinmao-R	SAMSUNG
CHECK	MK KIM	DEV. STEP	PR	MNT hole		ELECTRONICS
APPROVAL	BL LEE	REV	rev. 1.0	MNT hole	PART NO.	BA41-01579A
MODULE CODE	LAST EDIT			February 15, 2011 09:31:19 AM	PAGE	49 OF 49