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Petronas-14 DC

CPU : Sandy Bridge PGA
 Chip Set : Intel Cougar Point
 GFX : NVIDIA N12P-GVR
 Remarks : Huron River Platform

Model Name : Petronas-14
 PBA Name : MAIN_Dual
 PCB Code : BA41-01666A

Dev. Step : MP
 Revision : 1.2
 T.R. Date : 2011.08.12

Design	CHECK	APPROVAL
MS YANG	MK KIM	BL LEE

Owner : SEC Mobile R & D Signature : X

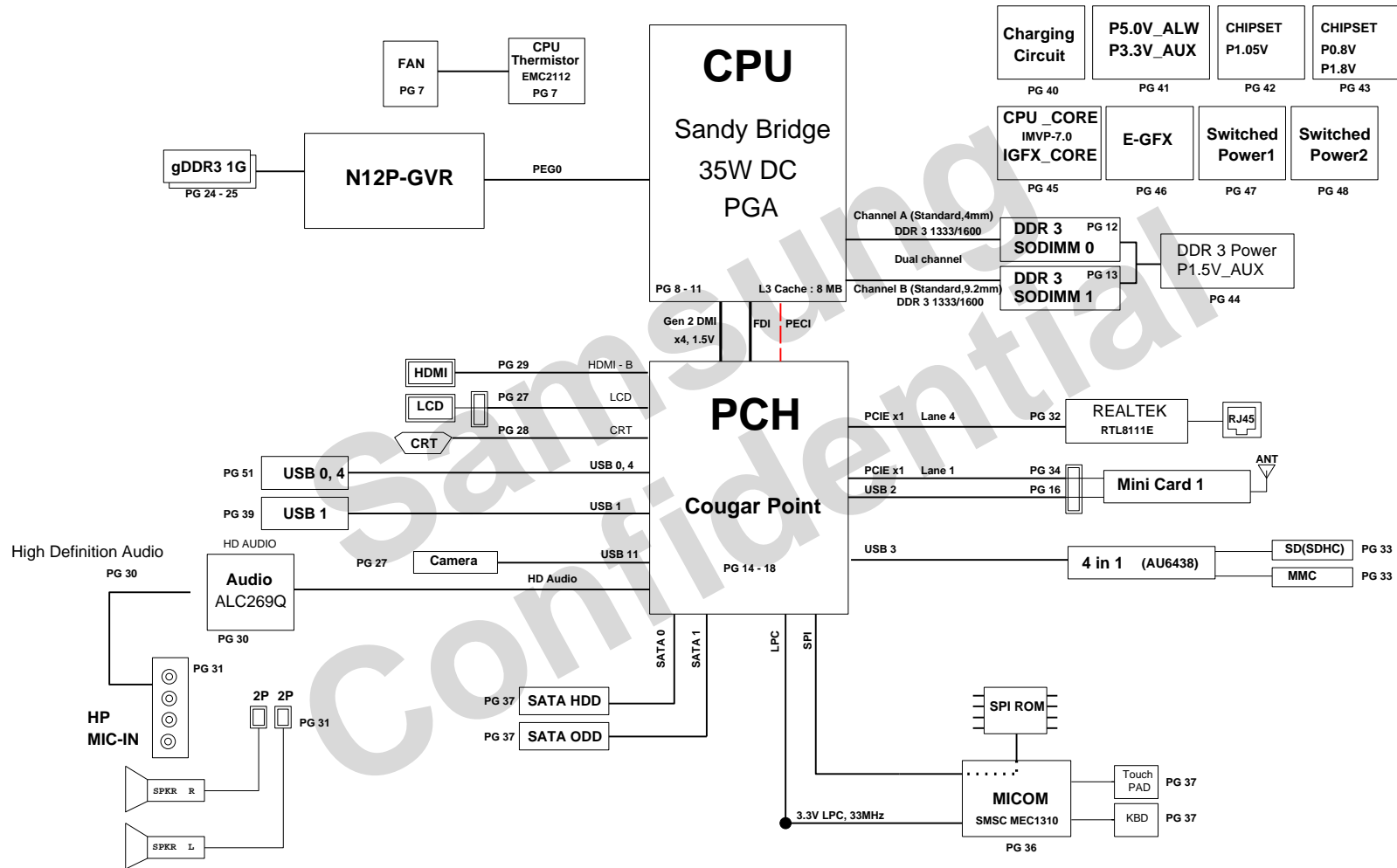
- sheet01 : Cover
- sheet02 : BLOCK DIAGRAM
- sheet03 : BOARD INFORMATION
- sheet04 : POWER DIAGRAM
- sheet05 : CLOCK DISTRIBUTION
- sheet06 : Green Clock
- sheet07 : Thermal Sensor
- sheet08 : CPU
- sheet09 : CPU
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- sheet11 : CPU
- sheet12 : DDR3 SODIMM #0
- sheet13 : DDR3 SODIMM #1
- sheet14 : PCH-CougarPoint
- sheet15 : PCH-CougarPoint
- sheet16 : PCH-CougarPoint
- sheet17 : PCH-CougarPoint
- sheet18 : PCH-CougarPoint
- sheet19 : N12P-GVR
- sheet20 : N12P-GVR
- sheet21 : N12P-GVR
- sheet22 : N12P-GVR
- sheet23 : N12P-GVR
- sheet24 : GFX memory
- sheet25 : GFX memory
- sheet26 : STRAP
- sheet27 : LVDS/CAMERA
- sheet28 : CRT
- sheet29 : HDMI
- sheet30 : Audio - ALC269
- sheet31 : Audio - HP/MIC
- sheet32 : LAN (Realtek RTL8111E)
- sheet33 : 4-in-1 card (AU6437)
- sheet34 : WLAN
- sheet35 : SATA interface
- sheet36 : MICOM / BIOS
- sheet37 : MICOM Glue Logic (KBD / TP)
- sheet38 : LED for 14" & for 15"
- sheet39 : USB connector
- sheet40 : Power - charger
- sheet41 : Power - P3.3V_AUX / P5.0V_AUX
- sheet42 : Power - P1.05V (Chipset Power)
- sheet43 : Power - P0.8V (Chipset Power)
- sheet44 : Power - DDR3
- sheet45 : Power - CPU VRM
- sheet46 : Power - EGF_X_CORE
- sheet47 : Power - Switched Power 1
- sheet48 : Power - Switched Power 2
- sheet49 : Power - Power Discharge
- sheet50 : Mount Hole / Thermal Hole
- sheet51 : USB Sub B'D

DRAW	MS YANG	DATE	3/11/2011	TITLE	PETRONAS-14DC	SAMSUNG ELECTRONICS
CHECK	MK KIM	DEV. STEP	MP	MAIN		
APPROVAL	BL LEE	REV	REV 1.2	COVER		PART NO. BA41-01666A
MODULE CODE		LAST EDIT				
				August 15, 2011 11:04:51 AM	PAGE	1 OF 51

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BLOCK DIAGRAM



DRAW	MS YANG	DATE	3/11/2011	TITLE	PETRONAS-14DC MAIN BLOCK DIAGRAM	SAMSUNG ELECTRONICS PART NO. BA41-01666A
CHECK	MK KIM	DEV. STEP	MP			
APPROVAL	BL LEE	REV	REV 1.2			
MODULE CODE	undefined	LAST EDIT	August 15, 2011 11:04:51 AM	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_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
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

Crystal / Oscillator			
TYPE	FREQUENCY	DEVICE	USAGE
Crystal	32.768KHz	HM65	Real Time Clock
Crystal	25MHz	LAN	Intel LAN
Crystal	25MHz	GREENCLK	GREENCLK
Crystal	25MHz	HM65	INTEL
Crystal	27MHz	N12P-GVR	NVIDIA

LCD Pannel Detect (TBD)		
Devices	Resolution	PANNEL_DETECT_0

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

I ² C / SMB Address			
Devices	Address	Hex	Bus
HM65	Master	-	SMBUS Master
CPU Thermal Sensor	0111 101x	7Ah	Thermal Sensor
SODIMM0	1010 000x	A0h	-
SODIMM1	1010 010x	A4h	-
Thermal Sensor on SODIMM0	0011 000x	30h	-
Thermal Sensor on SODIMM1	0011 010x	34h	-
Thermal Sensor on board	1101 100x	98h	-
Power thermal management TS	1101 011x	96h	-

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

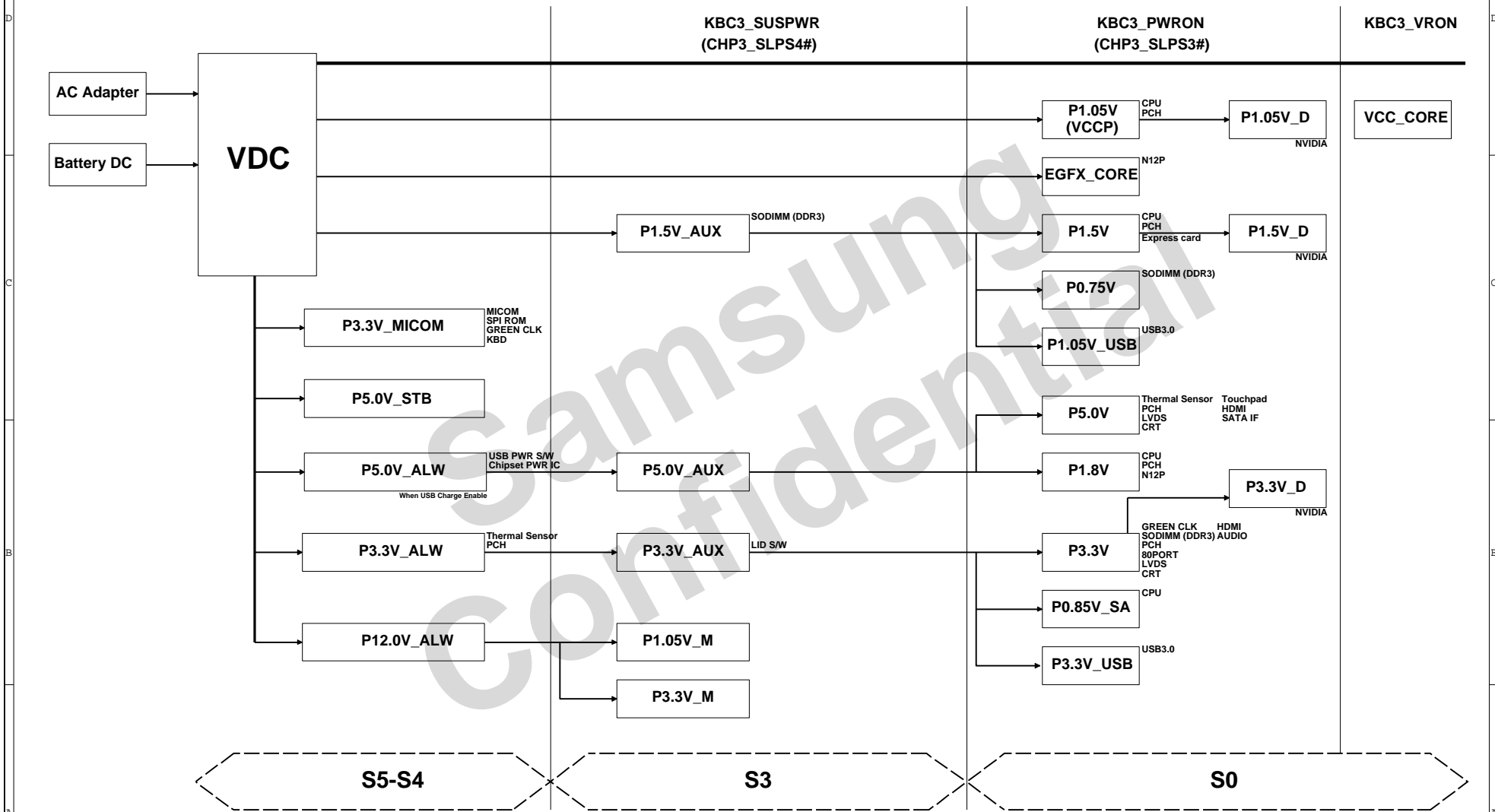
DRAW	MS YANG	DATE	3/11/2011	TITLE	PETRONAS-14DC MAIN BOARD INFO	SAMSUNG ELECTRONICS PART NO. BA41-01666A
CHECK	MK KIM	DEV. STEP	MP			
APPROVAL	BL LEE	REV	REV 1.2			
MODULE CODE	undefined	LAST EDIT	August 15, 2011 11:04:51 AM			
PAGE			3	OF	51	

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POWER DIAGRAM

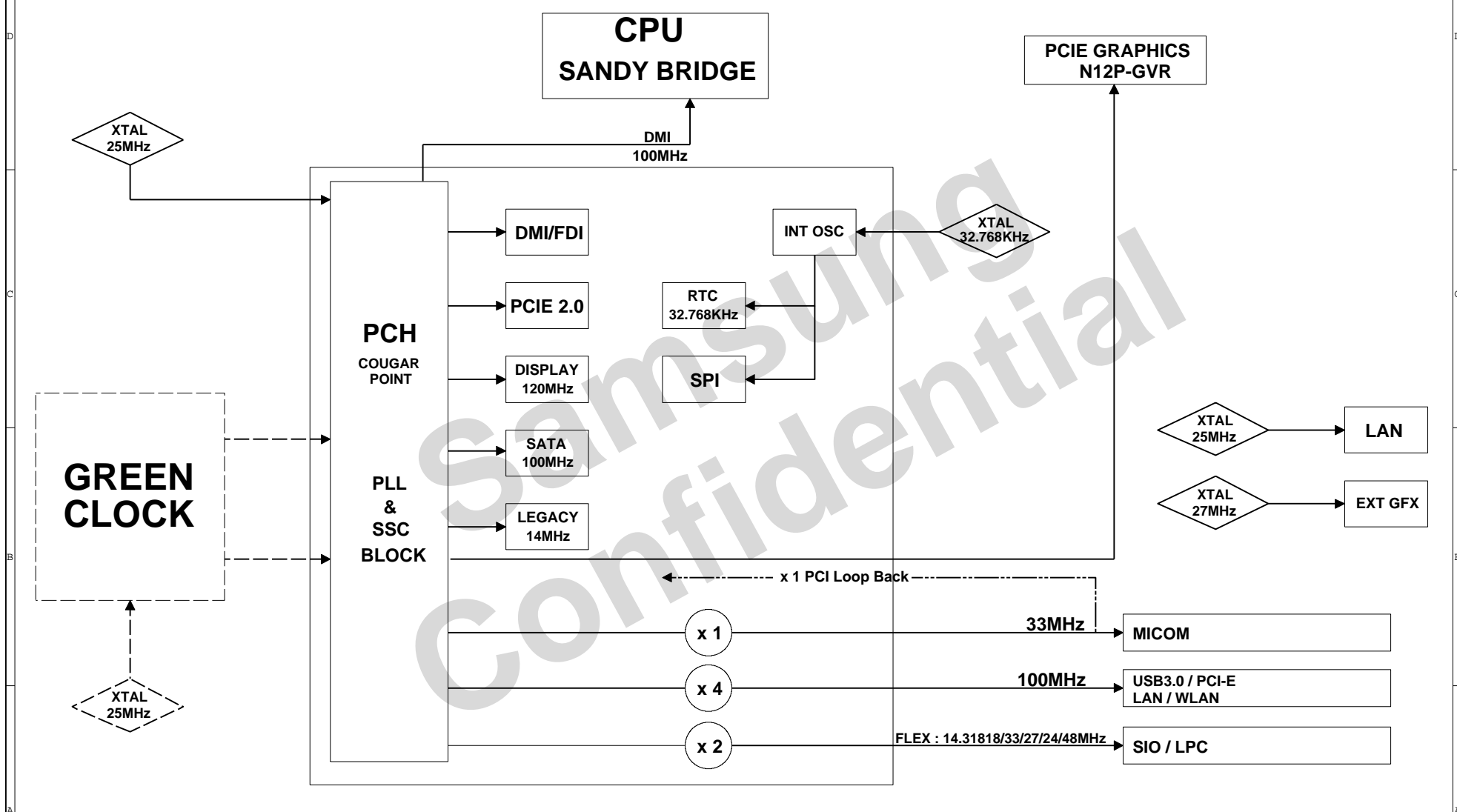
Rev 0.8



DRAW	MS YANG	DATE	3/11/2011	TITLE	PETRONAS-14DC	SAMSUNG ELECTRONICS
CHECK	MK KIM	DEV. STEP	MP	MAIN	MAIN	
APPROVAL	BL LEE	REV	REV 1.2	POWER DIAGRAM	PART NO.	BA41-01666A
MODULE CODE	undefined	LAST EDIT	August 15, 2011 11:04:51 AM	PAGE	4	OF 51

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CLOCK DISTRIBUTION Rev. 0.8

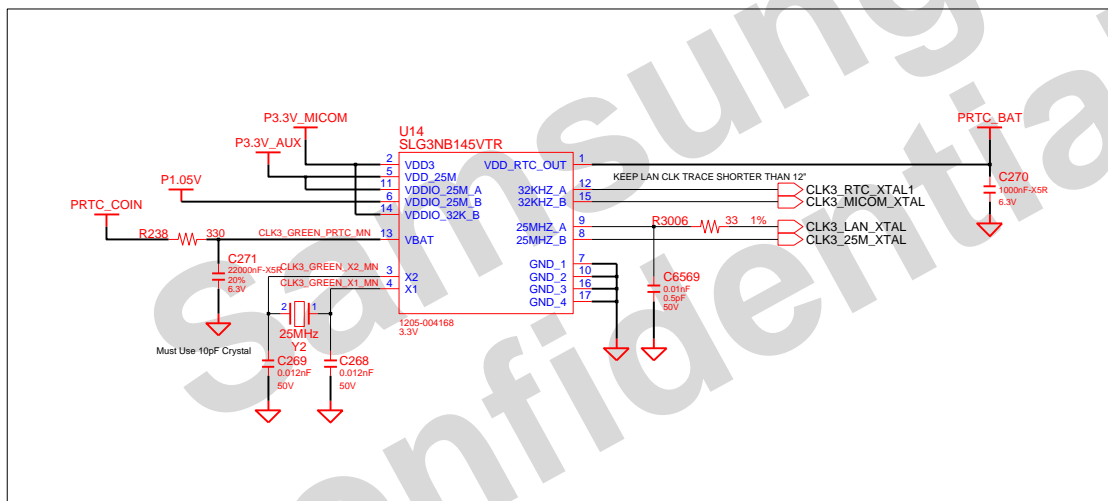


DRAW	MS YANG	DATE	3/11/2011	TITLE	PETRONAS-14DC	SAMSUNG ELECTRONICS
CHECK	MK KIM	DEV. STEP	MP	MAIN	MAIN	
APPROVAL	BL LEE	REV	REV 1.2	CLOCK DIAGRAM	PART NO.	BA41-01666A
MODULE CODE	undefined	LAST EDIT	August 15, 2011 11:04:51 AM	PAGE	5	OF 51

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CLOCK DISTRIBUTOR



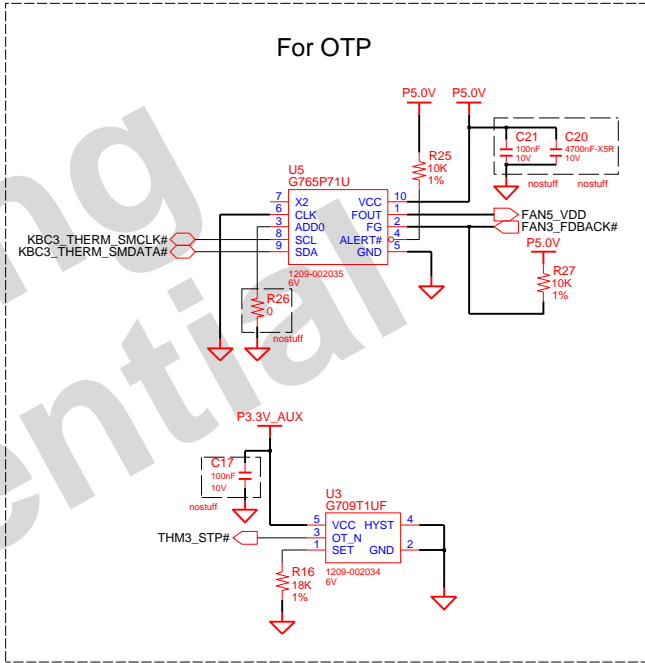
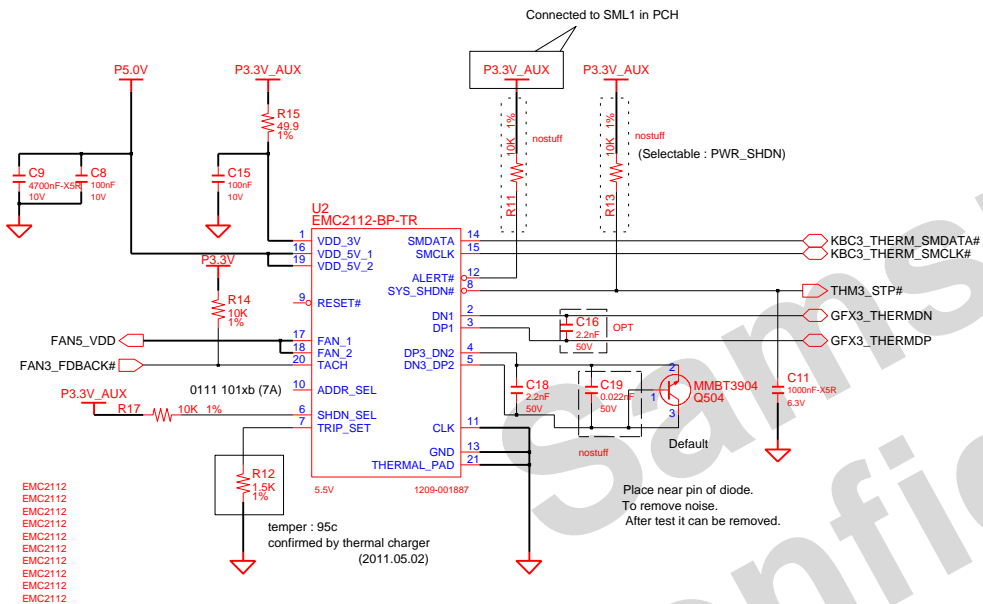
GREENCLK
GREENCLK
GREENCLK
GREENCLK
GREENCLK
GREENCLK
GREENCLK
GREENCLK

DRAW	MS YANG	DATE	3/11/2011	TITLE	PETRONAS-14DC CLOCK CLOCK DISTRIBUTION	SAMSUNG ELECTRONICS
CHECK	MK KIM	DEV. STEP	MP			
APPROVAL	BL LEE	REV	REV 1.2		PART NO.	BA41-01666A
MODULE CODE	undefined	LAST EDIT	August 15, 2011 11:04:51 AM	PAGE	6	OF 51

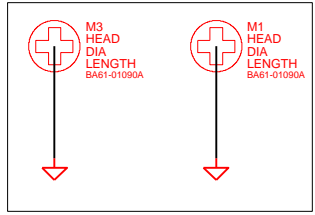
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THERMAL SENSOR & FAN CONTROL

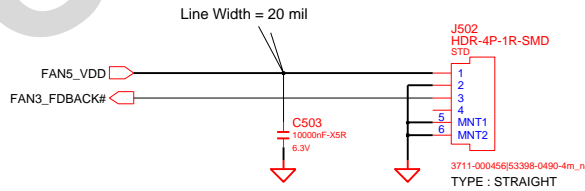


FAN PEM



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

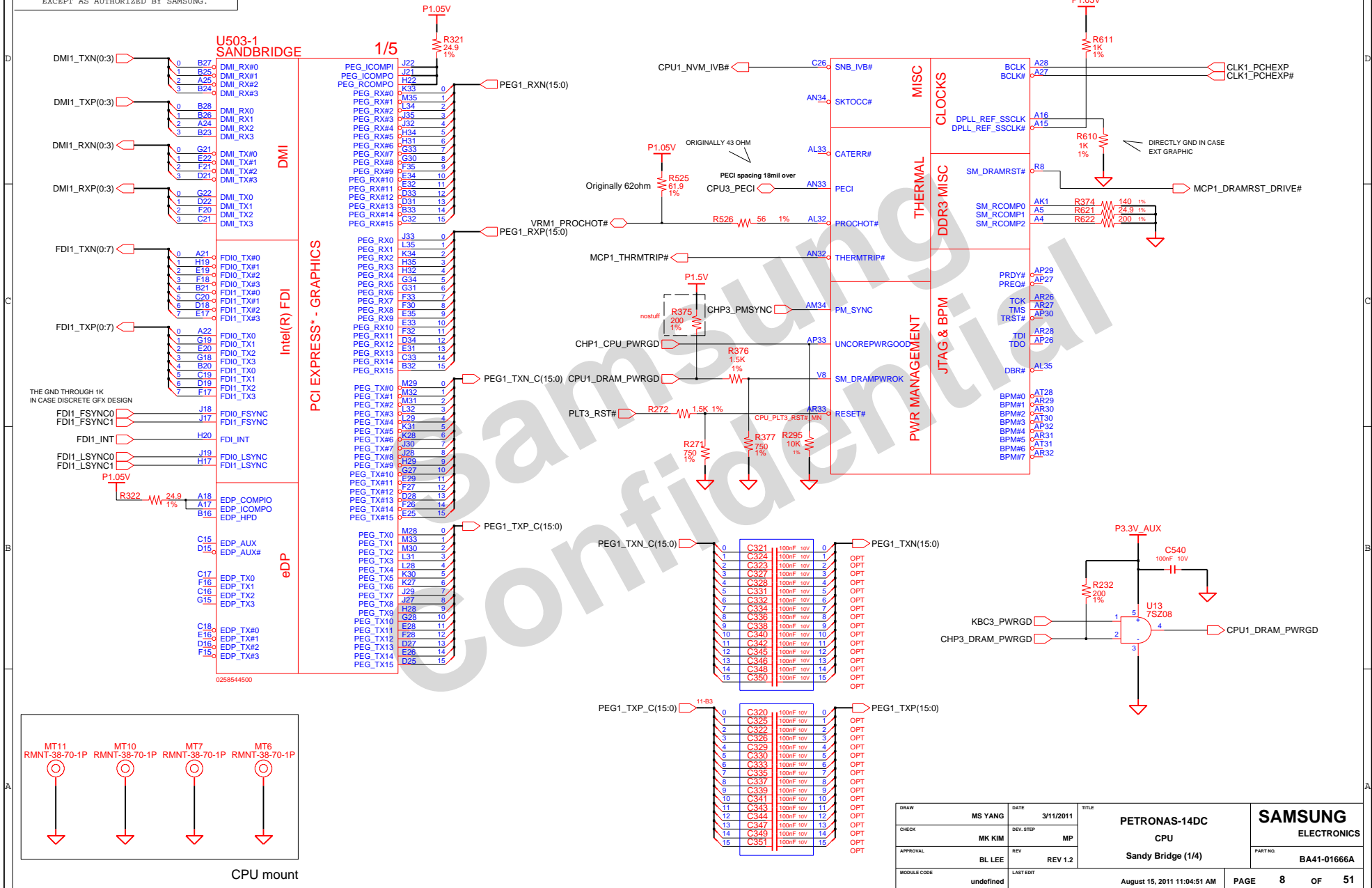


DESIGN	MS YANG	DATE	3/11/2011	TITLE	PETRONAS-14DC THERMAL SENSOR	SAMSUNG ELECTRONICS
CHECK	MK KIM	DEV.STEP	MP	REV	THERMAL SENSOR EMC2112	
APPROVAL	BL LEE	REV	REV 1.2	MODULE CODE		PART NO. BA41-01666A
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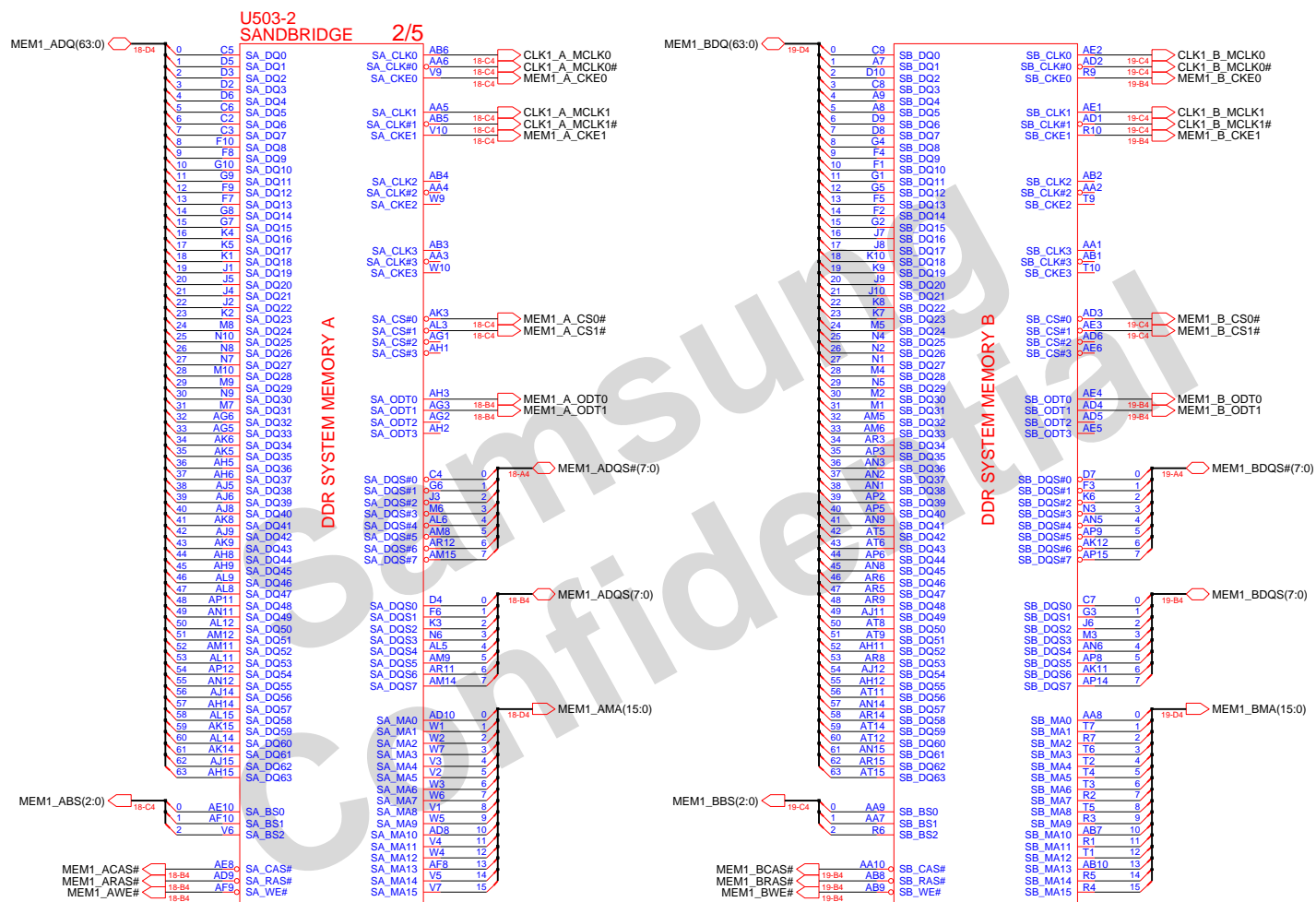
SANDYBRIDGE PROCESSOR (DMI, PEG, FDI)



DRAW	MS YANG	DATE	3/11/2011	TITLE	PETRONAS-14DC CPU	SAMSUNG ELECTRONICS
CHECK	MK KIM	DEV. STEP	MP			
APPROVAL	BL LEE	REV	REV 1.2		Sandy Bridge (1/4)	PART NO. BA41-01666A
MODULE CODE	undefined	LAST EDIT		August 15, 2011 11:04:51 AM	PAGE 8 OF 51	

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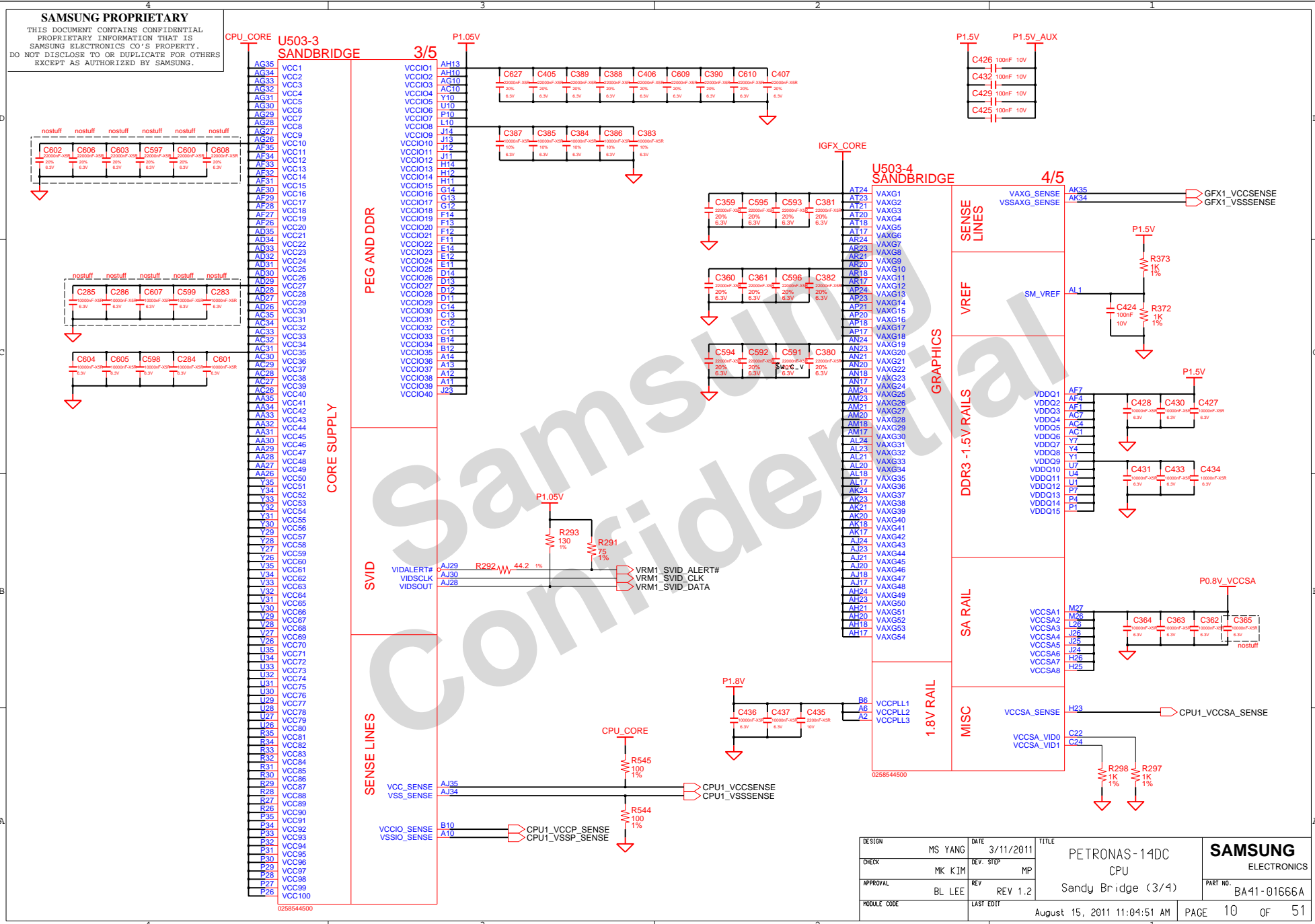


0258544500

DRAW	MS YANG	DATE	3/11/2011	TITLE
CHECK	MK KIM	DEV.STEP	MP	PETRONAS-14DC CPU
APPROVAL	BL LEE	REV	REV 1.2	Sandy Bridge (2/4)
MODULE CODE	undefined	LAST EDIT	August 15, 2011 11:04:51 AM	PAGE 9 OF 51

SAMSUNG ELECTRONICS

PART NO: BA41-01666A



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DESIGN	MS YANG	DATE	3/11/2011	TITLE	PETRONAS-14DC	SAMSUNG ELECTRONICS
CHECK	MK KIM	DEV. STEP	MP		CPU	
APPROVAL	BL LEE	REV	REV 1.2		Sandy Bridge (3/4)	PART NO. BA41-01666A
MODULE CODE		LAST EDIT		August 15, 2011 11:04:51 AM	PAGE	10 OF 51

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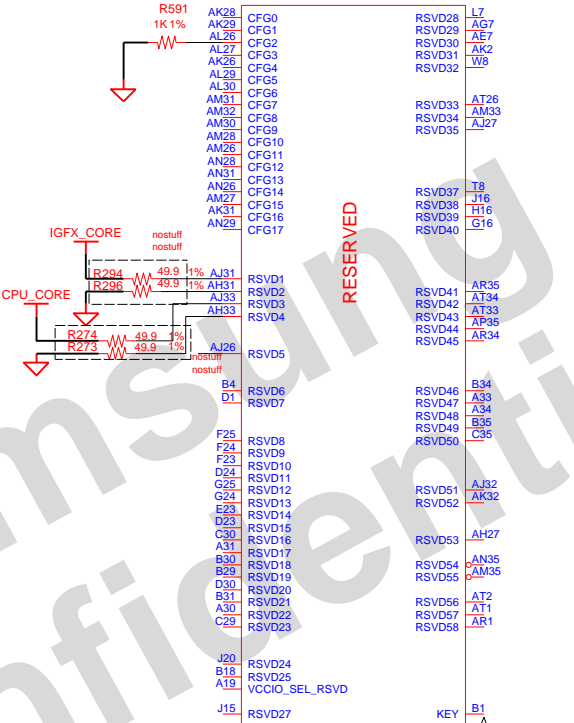
**U503-5
SANDBRIDGE 5/5**

AT35	VSS1	VSS81	AJ22
AT34	VSS2	VSS82	AJ19
AT29	VSS3	VSS83	AJ16
AT27	VSS4	VSS84	AJ13
AT25	VSS5	VSS85	AJ10
AT22	VSS6	VSS86	AJ7
AT19	VSS7	VSS87	AJ3
AT16	VSS8	VSS88	AJ2
AT13	VSS9	VSS89	AJ1
AT10	VSS10	VSS90	AH35
AT7	VSS11	VSS91	AH34
AT4	VSS12	VSS92	AH32
AT3	VSS13	VSS93	AH30
AR25	VSS14	VSS94	AH29
AR22	VSS15	VSS95	AH28
AR19	VSS16	VSS96	AH26
AR16	VSS17	VSS97	AH25
AR13	VSS18	VSS98	AH22
AR10	VSS19	VSS99	AH19
AR7	VSS20	VSS100	AH18
AR4	VSS21	VSS101	AH7
AR2	VSS22	VSS102	AH4
AP34	VSS23	VSS103	AH4
AP31	VSS24	VSS104	AG9
AP28	VSS25	VSS105	AG8
AP25	VSS26	VSS106	AG4
AP22	VSS27	VSS107	AF6
AP19	VSS28	VSS108	AF5
AP16	VSS29	VSS109	AF2
AP13	VSS30	VSS110	AE35
AP10	VSS31	VSS111	AE34
AP7	VSS32	VSS112	AE33
AP4	VSS33	VSS113	AE31
AP1	VSS34	VSS114	AE29
AN30	VSS35	VSS115	AE30
AN27	VSS36	VSS116	AE28
AN25	VSS37	VSS117	AE28
AN22	VSS38	VSS118	AE26
AN19	VSS39	VSS119	AE26
AN16	VSS40	VSS120	AE9
AN13	VSS41	VSS121	AD7
AN10	VSS42	VSS122	AC8
AN7	VSS43	VSS123	AC6
AN4	VSS44	VSS124	AC5
AM29	VSS45	VSS125	AC3
AM26	VSS46	VSS126	AC2
AM22	VSS47	VSS127	AC3
AM19	VSS48	VSS128	AB35
AM16	VSS49	VSS129	AB34
AM13	VSS50	VSS130	AB33
AM10	VSS51	VSS131	AB33
AM7	VSS52	VSS132	AB32
AM4	VSS53	VSS133	AB31
AM3	VSS54	VSS134	AB30
AM2	VSS55	VSS135	AB29
AM1	VSS56	VSS136	AB28
AL34	VSS57	VSS137	AB27
AL31	VSS58	VSS138	AB26
AL28	VSS59	VSS139	Y9
AL25	VSS60	VSS140	Y8
AL22	VSS61	VSS141	Y6
AL19	VSS62	VSS142	Y3
AL16	VSS63	VSS143	Y2
AL13	VSS64	VSS144	Y2
AL10	VSS65	VSS145	W35
AL7	VSS66	VSS146	W34
AL4	VSS67	VSS147	W33
AL2	VSS68	VSS148	W32
AK33	VSS69	VSS149	W31
AK30	VSS70	VSS150	W30
AK27	VSS71	VSS151	W28
AK25	VSS72	VSS152	W27
AK22	VSS73	VSS153	W27
AK19	VSS74	VSS154	W26
AK16	VSS75	VSS155	U9
AK13	VSS76	VSS156	U6
AK10	VSS77	VSS157	U5
AK7	VSS78	VSS158	U3
AK4	VSS79	VSS159	U2
AJ25	VSS80	VSS160	U2

VSS

T35	VSS161	VSS234	F22
T34	VSS162	VSS235	F19
T33	VSS163	VSS236	E30
T32	VSS164	VSS237	E27
T31	VSS165	VSS238	E24
T30	VSS166	VSS239	E21
T29	VSS167	VSS240	E15
T28	VSS168	VSS241	E13
T27	VSS169	VSS242	E10
T26	VSS170	VSS243	E9
T25	VSS171	VSS244	E8
T24	VSS172	VSS245	E7
T23	VSS173	VSS246	E6
T22	VSS174	VSS247	E6
T21	VSS175	VSS248	E5
T20	VSS176	VSS249	E4
T19	VSS177	VSS250	E3
T18	VSS178	VSS251	E2
T17	VSS179	VSS252	E1
T16	VSS180	VSS253	D35
T15	VSS181	VSS254	D32
T14	VSS182	VSS255	D29
T13	VSS183	VSS256	D26
T12	VSS184	VSS257	D20
T11	VSS185	VSS258	D17
T10	VSS186	VSS259	C34
T9	VSS187	VSS260	C31
T8	VSS188	VSS261	C28
T7	VSS189	VSS262	C25
T6	VSS190	VSS263	C23
T5	VSS191	VSS264	C10
T4	VSS192	VSS265	C1
T3	VSS193	VSS266	B22
T2	VSS194	VSS267	B15
T1	VSS195	VSS268	B17
L3	VSS196	VSS269	B15
L2	VSS197	VSS270	B13
L1	VSS198	VSS271	B11
K35	VSS199	VSS272	B9
K32	VSS200	VSS273	B8
K29	VSS201	VSS274	B7
K26	VSS202	VSS275	B5
K23	VSS203	VSS276	B3
K21	VSS204	VSS277	B2
K18	VSS205	VSS278	B2
K15	VSS206	VSS279	B3
K12	VSS207	VSS280	A32
K9	VSS208	VSS281	A29
K6	VSS209	VSS282	A26
K3	VSS210	VSS283	A23
H34	VSS211	VSS284	A20
H31	VSS212	VSS285	A3
H28	VSS213		
H25	VSS214		
H22	VSS215		
H19	VSS216		
H16	VSS217		
H13	VSS218		
H10	VSS219		
H7	VSS220		
H4	VSS221		
H1	VSS222		
G35	VSS223		
G32	VSS224		
G29	VSS225		
G26	VSS226		
G23	VSS227		
G20	VSS228		
G17	VSS229		
G14	VSS230		
G11	VSS231		
F34	VSS232		
F31	VSS233		
F29	VSS233		

VSS



CFG Straps for Processor

PEG STATIC LANE REVERSAL - CFG2 IS FOR THE 16X	
CFG2	1: (DEFAULT) NORMAL OPERATION 0: LANE REVERSED
PCIe PORT BIFURCATION STRAPS	
CFG6[5]	11: (DEFAULT) X16 - DEVICE 1 FUNCTIONS 1 AND 2 DISABLED 10: X8, X8 - DEVICE 1 FUNCTION 1 ENABLED; FUNCTION 2 DISABLED 01: RESERVED - (DEVICE 1 FUNCTION 1 DISABLED; FUNCTION 2 ENABLED) 00: X8, X4, X4 - DEVICE 1 FUNCTIONS 1 AND 2 ENABLED
Display Port Presence	
CFG4	1: Disabled - No DP device is connected to eDP 0: Enabled - (DP device is connected to eDP)
PEG DEFER TRAINING	
CFG7	1: (DEFAULT) PEG TRAIN IMMEDIATELY FOLLOWING XXRESETB DEASSERTION 0: PEG WAIT FOR BIOS FOR TRAINING

FOR RPGA SOCKET
RSVD65 PIN SHOULD BE LEFT NC

DESIGN	MS YANG	DATE	3/11/2011	TITLE	PETRONAS-14DC CPU	SAMSUNG ELECTRONICS
CHECK	MK KIM	DEV. STEP	MP	Sandy Bridge (4/4)		
APPROVAL	BL LEE	REV	REV 1.2			PART NO. BA41-01666A
MODULE CODE	LAST EDIT		August 15, 2011 11:04:51 AM		PAGE	11 OF 51

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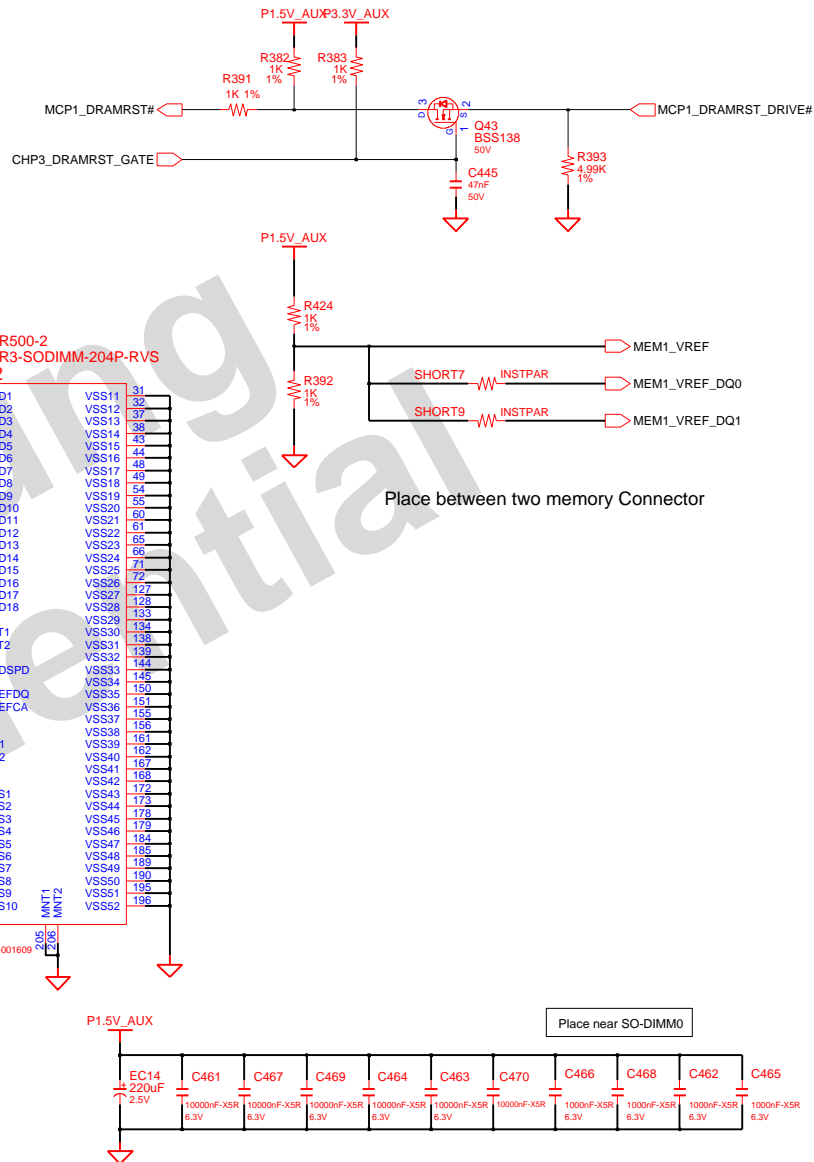
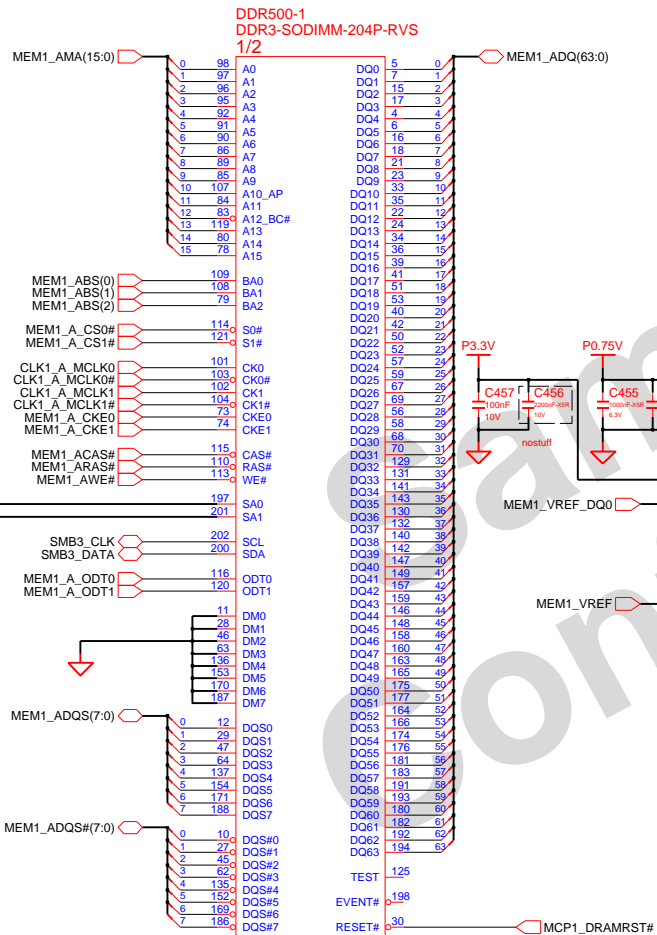
SO-DIMM#0 : 2nd SO-DIMM

DDR SO-DIMM #0

Height : 9.2 mm (REVERSE)

P/N : 3709-001656 (Foxconn)

P/N : 3709-001609 (Concraft)

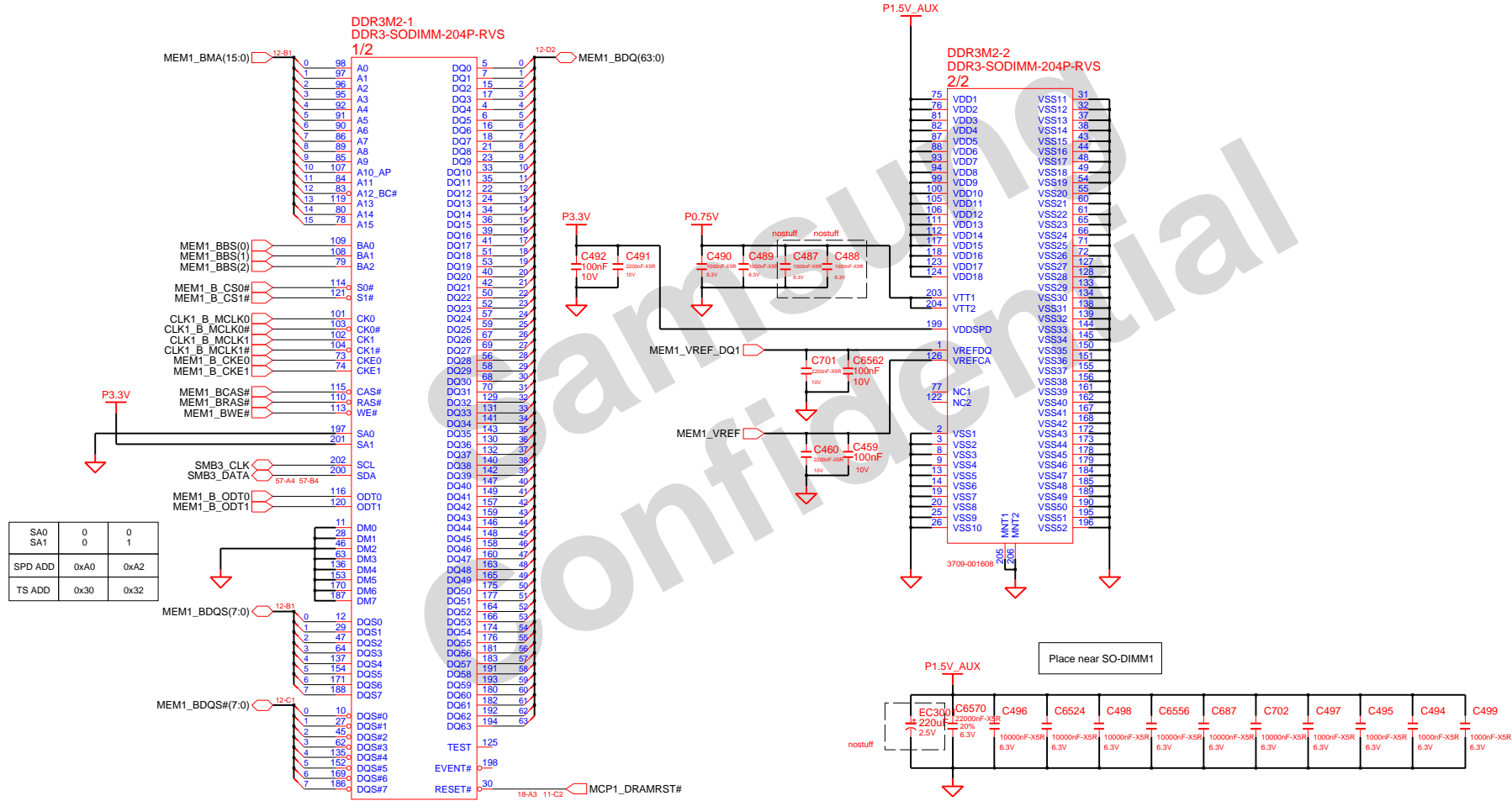


DRAW	MS YANG	DATE	3/11/2011	TITLE	PETRONAS-14DC	SAMSUNG ELECTRONICS
CHECK	MK KIM	DEV. STEP	MP	SODIMM A		
APPROVAL	BL LEE	REV	REV 1.2	DDR3		PART NO. BA41-01666A
MODULE CODE	undefined	LAST EDIT	August 15, 2011 11:04:51 AM	PAGE	12	OF 51

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SO-DIMM#1 : 1st SO-DIMM
DDR SO-DIMM #1

Height : 4.0 mm (REVERSE)
 P/N : 3709-001654 (Foxconn)
 P/N : 3709-001608 (Concraft)

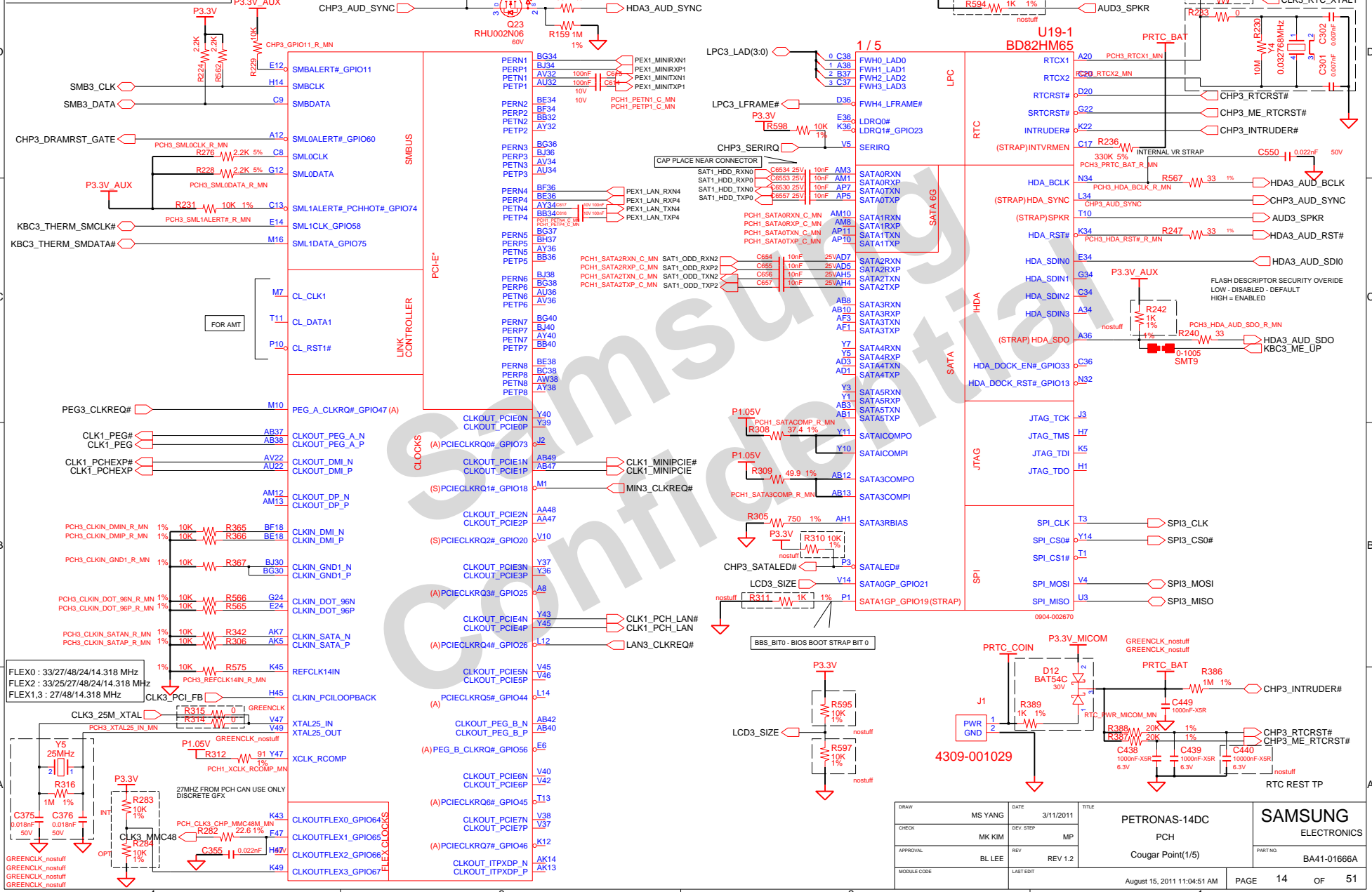


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SA1	0	0	1
SPD ADD	0xA0	0xA2	
TS ADD	0x30	0x32	

DRAW	MS YANG	DATE	3/11/2011	TITLE	PETRONAS-14DC	SAMSUNG ELECTRONICS
CHECK	MK KIM	DEV. STEP	MP	SODIMM B		
APPROVAL	BL LEE	REV	REV 1.2	DDR3		PART NO. BA41-01666A
MODULE CODE		LAST ENT		August 15, 2011 11:04:51 AM	PAGE	13 OF 51

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NO REBOOT STRAP



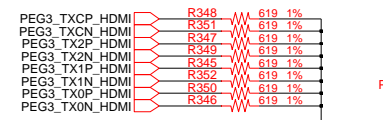
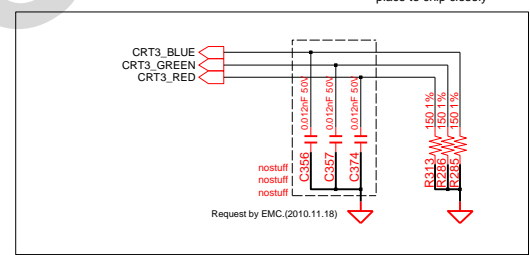
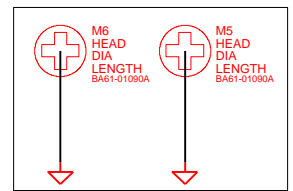
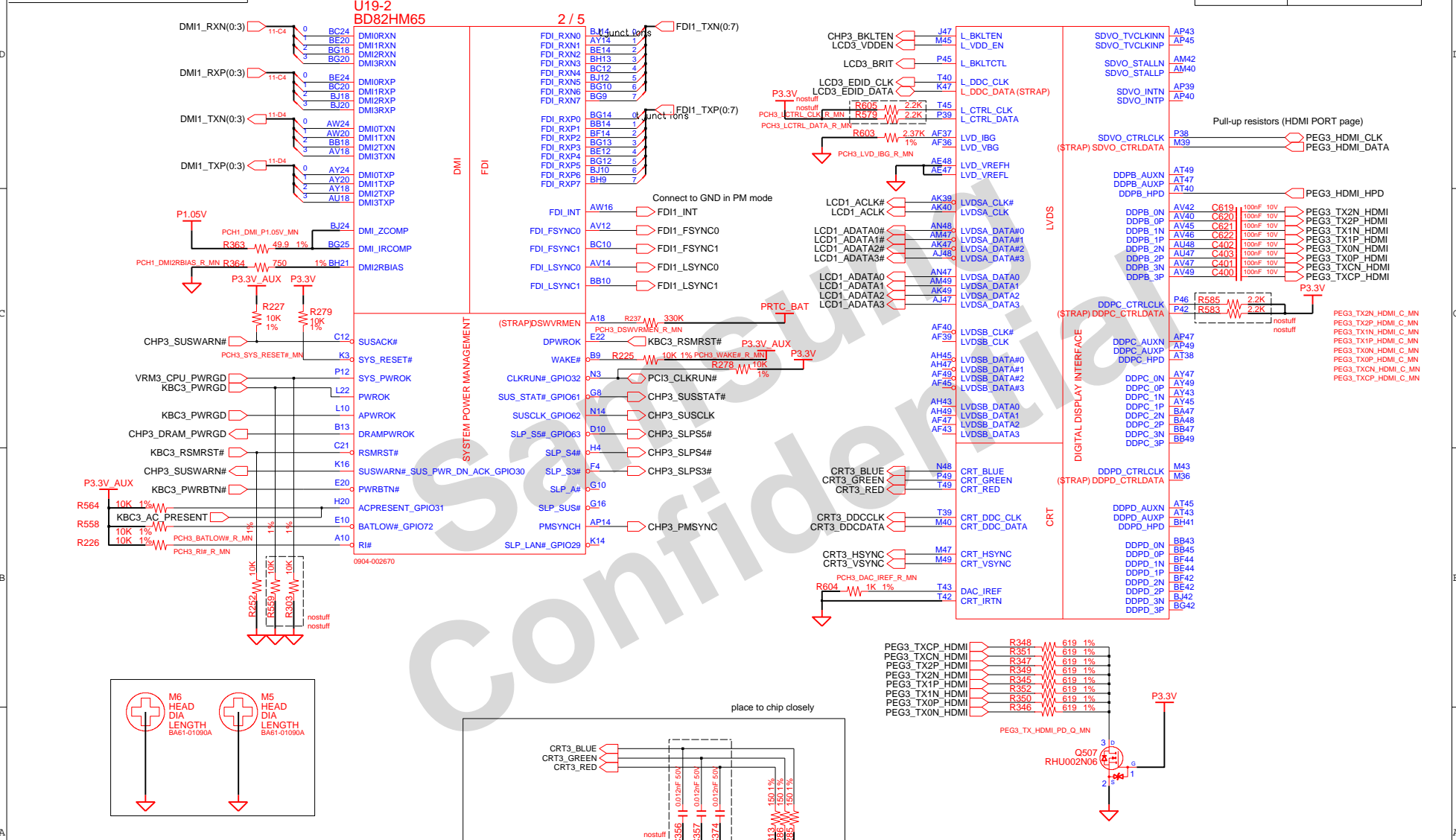
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CHECK	MK KIM	DEV. STEP	MP		PCH
APPROVAL	BL LEE	REV	REV 1.2		Cougar Point(1/5)
MODULE CODE		LAST ENT			
			August 15, 2011 11:04:51 AM	PAGE	14 OF 51

SAMSUNG
 ELECTRONICS
 PART NO. BA41-01666A

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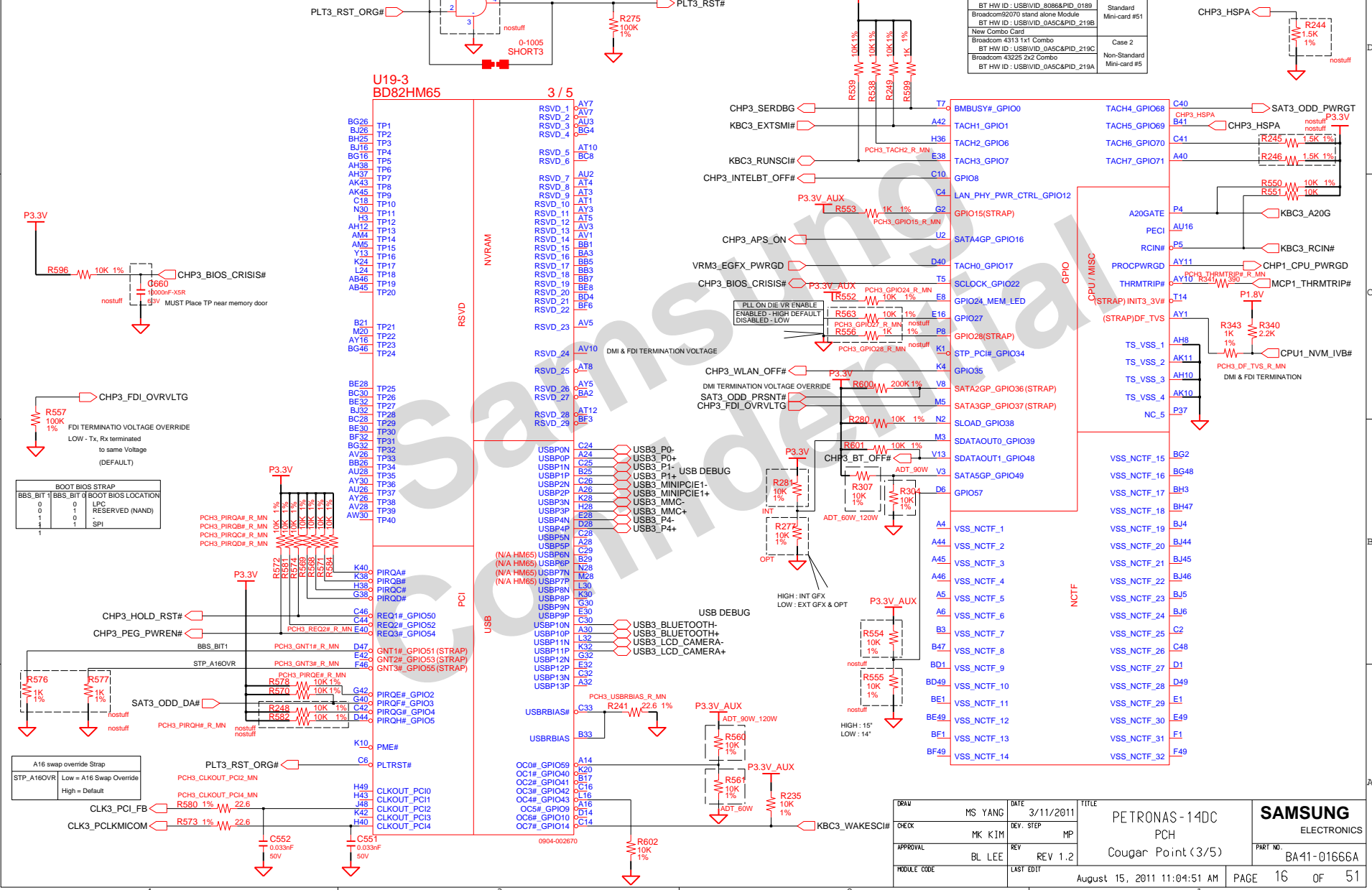
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DDI PORT B DETECT	
SDVO_CTRL_DATA	1 PORT B DETECTED 0 PORT B NOT DETECTED



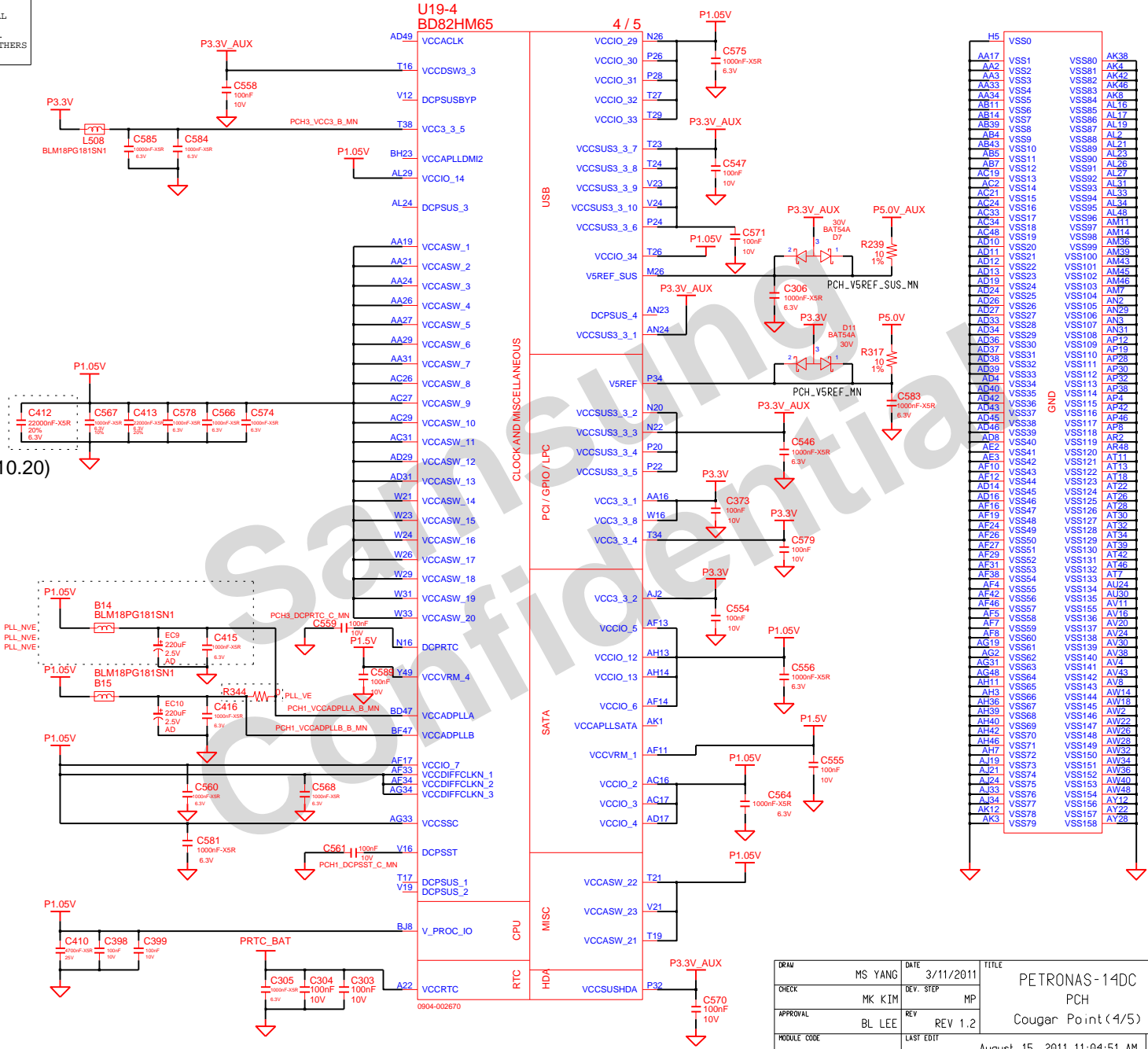
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APPROVAL	BL LEE	REV	REV 1.2		Cougar Point(2/5)	PART NO. BA41-01666A
MODULE CODE		LAST EDIT			August 15, 2011 11:04:51 AM	PAGE 15 OF 51

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PI Request (2010.10.20)

DRAW	MS YANG	DATE	3/11/2011	TITLE	PETRONAS-14DC
CHECK	MK KIM	DEV. STEP	MP		PCH
APPROVAL	BL LEE	REV	REV 1.2		Cougar Point (4/5)
MODULE CODE		LAST EDIT			

SAMSUNG	
ELECTRONICS	
PART NO.	BA41-01666A

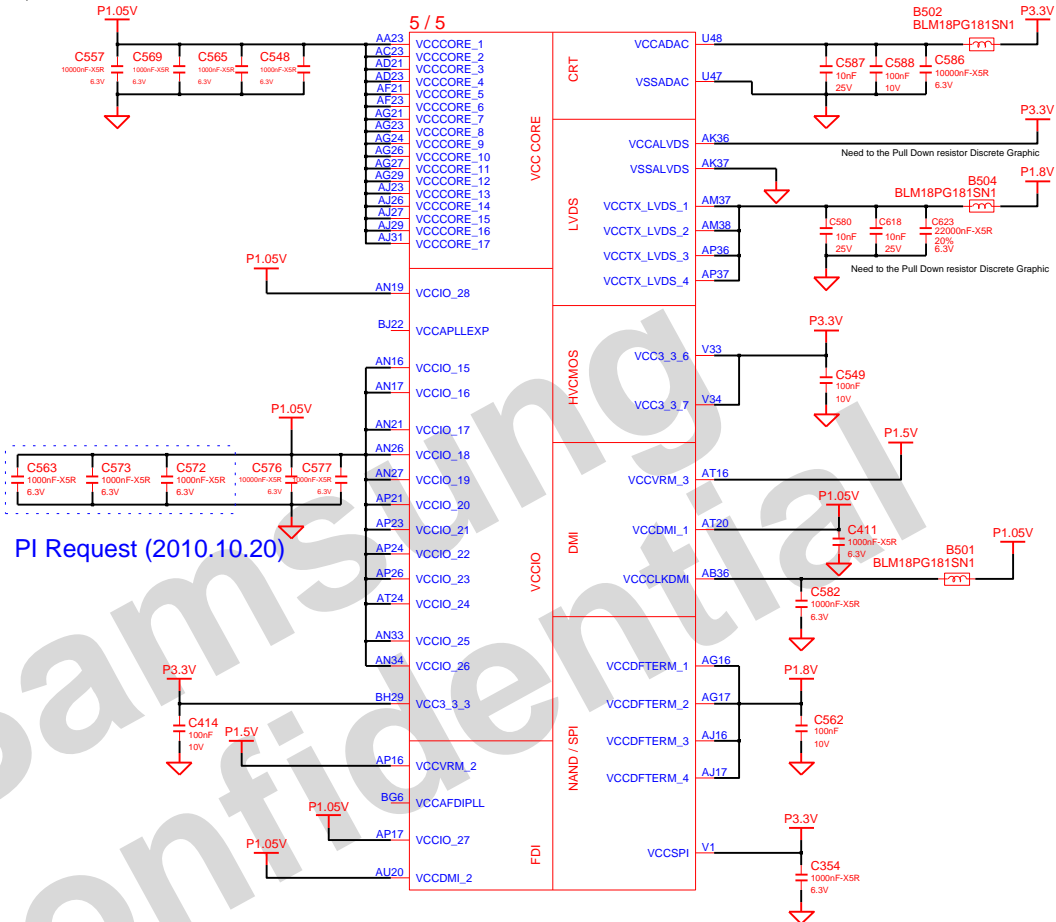
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**U19-5
BD82HM65**

This power share with thermal sensor

AY4	VSS159	VSS259	H46
AY42	VSS160	VSS260	K18
AY46	VSS161	VSS261	K26
AY8	VSS162	VSS262	K30
B11	VSS163	VSS263	K46
B15	VSS164	VSS264	K7
B19	VSS165	VSS265	L2
B23	VSS166	VSS266	L20
B27	VSS167	VSS267	L26
B31	VSS168	VSS268	L26
B35	VSS169	VSS269	L28
B39	VSS170	VSS270	L48
B7	VSS171	VSS271	M12
F45	VSS172	VSS272	P16
BB12	VSS173	VSS273	P16
BB16	VSS174	VSS274	M18
BB20	VSS175	VSS275	M24
BB22	VSS176	VSS276	M30
BB24	VSS177	VSS277	M32
BB28	VSS178	VSS278	M34
BB30	VSS179	VSS279	M36
BB38	VSS180	VSS280	M4
BB4	VSS181	VSS281	M42
BB46	VSS182	VSS282	M46
BC14	VSS183	VSS283	N18
BC18	VSS184	VSS284	N18
BC2	VSS185	VSS285	P30
BC22	VSS186	VSS286	P47
BC26	VSS187	VSS287	N47
BC32	VSS188	VSS288	P16
BC34	VSS189	VSS289	T33
BC36	VSS190	VSS290	P40
BC40	VSS191	VSS291	P47
BC42	VSS192	VSS292	P47
BC48	VSS193	VSS293	F7
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	W34
BF16	VSS201	VSS301	T46
BF20	VSS202	VSS302	T47
BF22	VSS203	VSS303	T8
BF24	VSS204	VSS304	V26
BF26	VSS205	VSS305	V27
BF28	VSS206	VSS306	V26
BF3	VSS207	VSS307	V27
BF38	VSS208	VSS308	V29
BF40	VSS209	VSS309	V29
BF44	VSS210	VSS310	V31
BF9	VSS211	VSS311	V36
BG17	VSS212	VSS312	V38
BG21	VSS213	VSS313	V43
BG33	VSS214	VSS314	V7
BG44	VSS215	VSS315	W17
BG9	VSS216	VSS316	W2
BH11	VSS217	VSS317	W27
BH15	VSS218	VSS318	W48
BH17	VSS219	VSS319	W48
BH19	VSS220	VSS320	Y12
H10	VSS221	VSS321	Y36
BH27	VSS222	VSS322	Y4
BH31	VSS223	VSS323	Y42
BH33	VSS224	VSS324	Y46
BH35	VSS225	VSS325	Y8
BH39	VSS226	VSS326	BG29
BH43	VSS227	VSS327	N24
BH7	VSS228	VSS328	AJ3
D3	VSS229	VSS329	AD47
D12	VSS230	VSS330	E43
D16	VSS231	VSS331	BE10
D18	VSS232	VSS332	BG41
D22	VSS233	VSS333	BG41
D24	VSS234	VSS334	G14
D26	VSS235	VSS335	H16
D30	VSS236	VSS336	T36
D32	VSS237	VSS337	BG22
D34	VSS238	VSS338	BG24
D38	VSS239	VSS339	C22
D42	VSS240	VSS340	M14
D8	VSS241	VSS341	AP13
E18	VSS242	VSS342	AP3
E26	VSS243	VSS343	AP1
E16	VSS244	VSS344	BE16
G20	VSS245	VSS345	BE16
G26	VSS246	VSS346	BG28
G28	VSS247	VSS347	BJ28
G36	VSS248	VSS348	
G48	VSS249	VSS349	
H12	VSS250	VSS350	
H18	VSS251	VSS351	
H24	VSS252	VSS352	
H26	VSS253		
H30	VSS254		
H32	VSS255		
H34	VSS256		
F3	VSS257		
F3	VSS258		

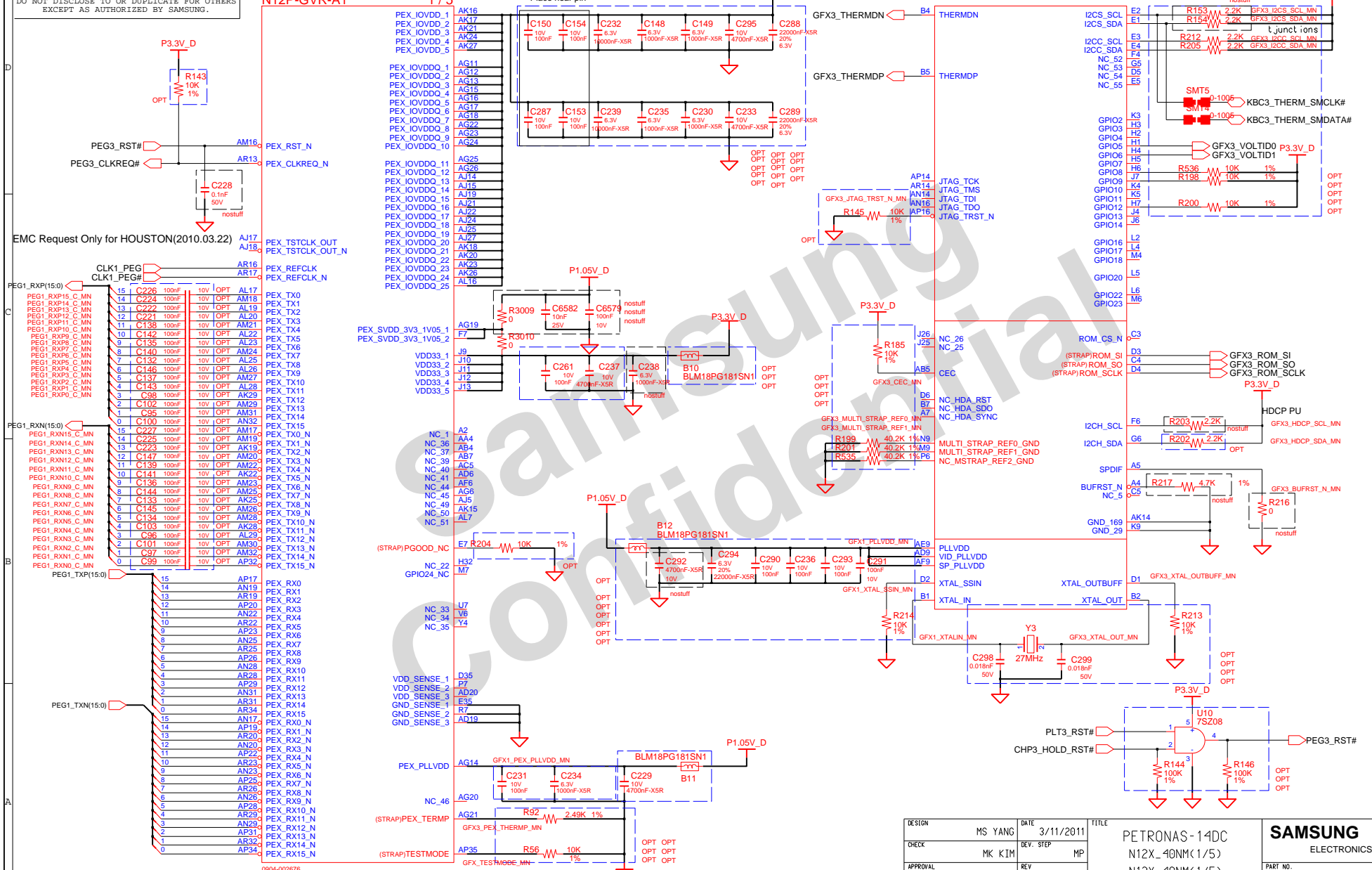


DRAW	MS YANG	DATE	3/11/2011	TITLE	PETRONAS-14DC	SAMSUNG ELECTRONICS
CHECK	MK KIM	DEV. STEP	MP		PCH	
APPROVAL	BL LEE	REV	REV 1.2		Cougar Point(5/5)	PART NO. BA41-01666A
MODULE CODE	undefined	LAST EDIT	August 15, 2011 11:04:51 AM	PAGE	18	OF 51

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U502-1
N12P-GVR-A1
1 / 5



DESIGN	MS YANG	DATE	3/11/2011	TITLE	PETRONAS-14DC	SAMSUNG
CHECK	MK KIM	DEV. STEP	MP		N12X_40NM(1/5)	ELECTRONICS
APPROVAL	BL LEE	REV	REV 1.2		N12X_40NM(1/5)	PART NO. BA-91-01666A
MODULE CODE		LAST EDIT		August 15, 2011 11:04:51 AM	PAGE	19 OF 51

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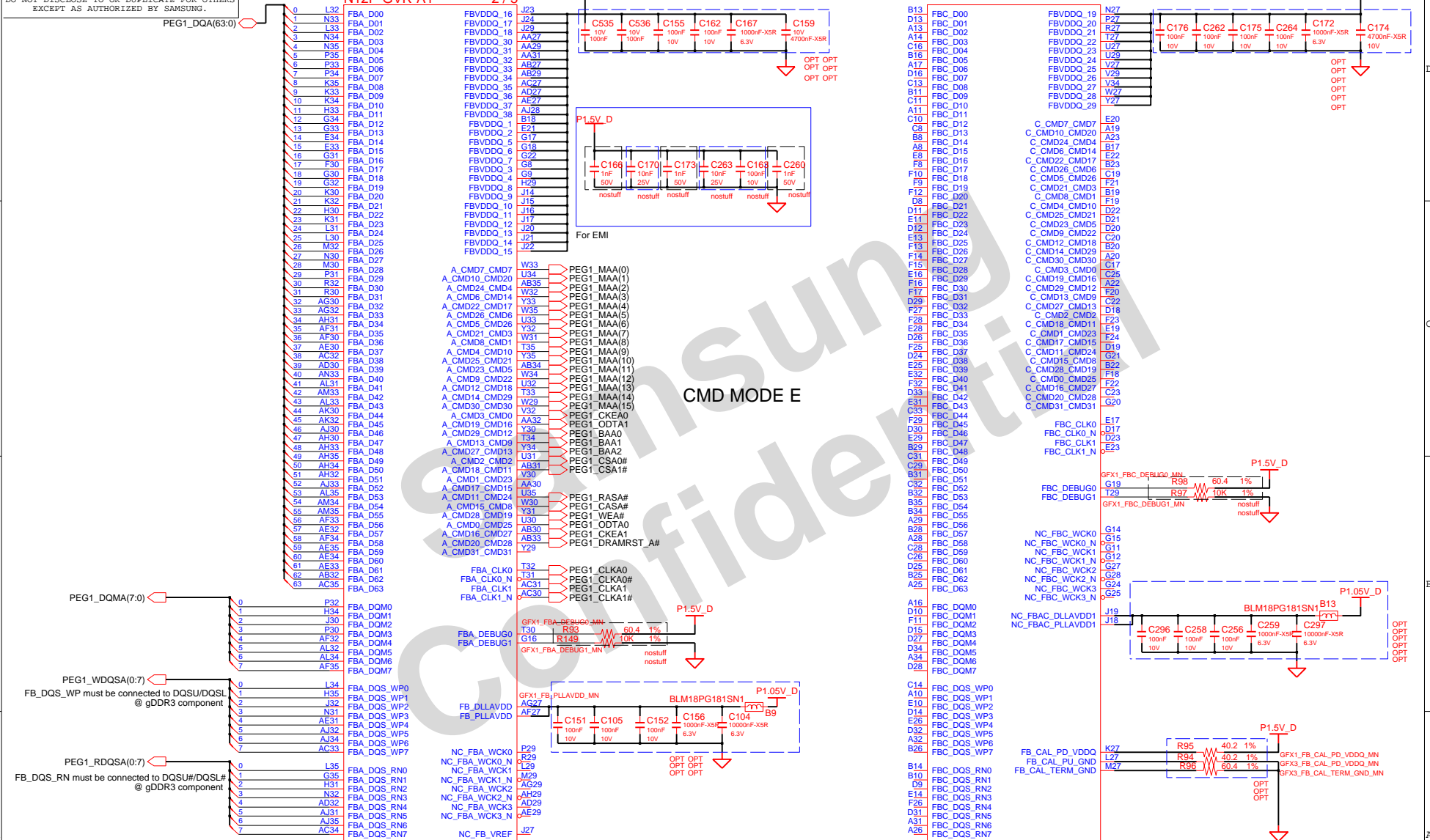
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**U502-2
N12P-GVR-A1**

2 / 5

P1.5V_D

P1.5V_D



CMD MODE E

0904-002676
OPT

DESIGN	MS YANG	DATE	3/11/2011	TITLE	PETRONAS-14DC	SAMSUNG ELECTRONICS PART NO. BA41-01666A
CHECK	MK KIM	DEV. STEP	MP		N12X_40NM(2/5)	
APPROVAL	BL LEE	REV	REV 1.2		N12X_40NM(2/5)	
MODULE CODE		LAST EDIT		August 15, 2011 11:04:51 AM	PAGE 20 OF 51	

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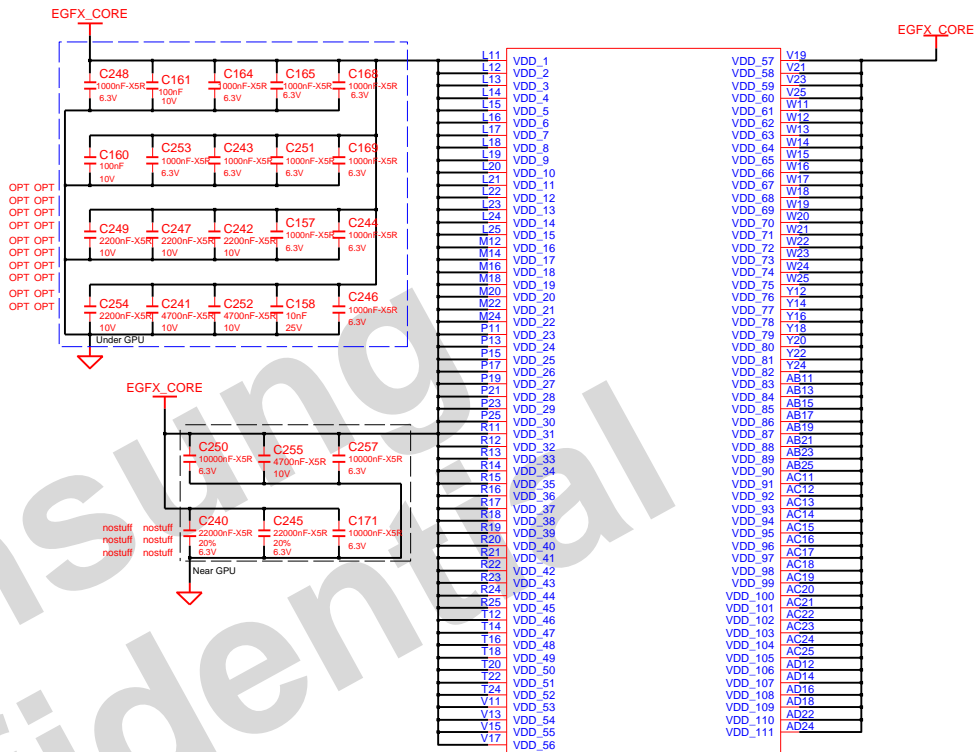
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**U502-3
N12P-GVR-A1 3/5**

B3	GND_1	GND_97	V16
B6	GND_2	GND_98	V18
B9	GND_3	GND_99	V20
B12	GND_4	GND_100	V22
B15	GND_5	GND_101	V31
B21	GND_6	GND_102	V27
B24	GND_7	GND_103	Y11
B27	GND_8	GND_104	Y13
B30	GND_9	GND_105	Y15
B33	GND_10	GND_106	Y17
C2	GND_11	GND_107	Y19
C34	GND_12	GND_108	Y21
E6	GND_13	GND_109	Y23
E9	GND_14	GND_110	Y25
E12	GND_15	GND_111	AA2
E15	GND_16	GND_112	AA5
E18	GND_17	GND_113	AA11
E24	GND_18	GND_114	AA12
E27	GND_19	GND_115	AA13
E30	GND_20	GND_116	AA14
F2	GND_21	GND_117	AA15
F5	GND_22	GND_118	AA16
F31	GND_23	GND_119	AA17
F34	GND_24	GND_120	AA18
J2	GND_25	GND_121	AA19
J5	GND_26	GND_122	AA20
J31	GND_27	GND_123	AA22
J34	GND_28	GND_124	AA23
L9	GND_29	GND_125	AA24
M2	GND_30	GND_126	AA25
M5	GND_31	GND_127	AA34
M11	GND_32	GND_128	AB12
M13	GND_33	GND_129	AB14
M15	GND_34	GND_130	AB16
M17	GND_35	GND_131	AB18
M19	GND_36	GND_132	AB20
M21	GND_37	GND_133	AB22
M23	GND_38	GND_134	AB24
M25	GND_39	GND_135	AC9
M31	GND_40	GND_136	AD2
M34	GND_41	GND_137	AD5
N11	GND_42	GND_138	AD11
N12	GND_43	GND_139	AD13
N13	GND_44	GND_140	AD15
N14	GND_45	GND_141	AD17
N15	GND_46	GND_142	AD21
N16	GND_47	GND_143	AD23
N17	GND_48	GND_144	AD25
N18	GND_49	GND_145	AD34
N19	GND_50	GND_146	AE11
N20	GND_51	GND_147	AE12
N21	GND_52	GND_148	AE13
N22	GND_53	GND_149	AE15
N23	GND_54	GND_150	AE16
N24	GND_55	GND_151	AE17
N25	GND_56	GND_152	AE18
P12	GND_57	GND_153	AE19
P14	GND_58	GND_154	AE20
P16	GND_59	GND_155	AE21
P18	GND_60	GND_156	AE22
P20	GND_61	GND_157	AE23
P22	GND_62	GND_158	AE24
P24	GND_63	GND_159	AE25
R2	GND_64	GND_160	AG2
R5	GND_65	GND_161	AG5
R31	GND_66	GND_162	AG31
R34	GND_67	GND_163	AG34
T11	GND_68	GND_164	AK2
T13	GND_69	GND_165	AK5
T15	GND_70	GND_166	AK31
T17	GND_71	GND_167	AK34
T19	GND_72	GND_168	AL9
T21	GND_73	GND_169	AL12
T23	GND_74	GND_170	AL15
T25	GND_75	GND_171	AL18
U11	GND_76	GND_172	AL21
U12	GND_77	GND_173	AL24
U13	GND_78	GND_174	AL27
U14	GND_79	GND_175	AL30
U15	GND_80	GND_176	AN2
U16	GND_81	GND_177	AN34
U17	GND_82	GND_178	AP3
U18	GND_83	GND_179	AP6
U19	GND_84	GND_180	AP9
U20	GND_85	GND_181	AP12
U21	GND_86	GND_182	AP15
U22	GND_87	GND_183	AP18
U23	GND_88	GND_184	AP21
U24	GND_89	GND_185	AP27
U25	GND_90	GND_186	AP30
V2	GND_91	GND_187	AP33
V5	GND_92	GND_188	
V9	GND_93	GND_189	
V12	GND_94	GND_190	
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		GND_193	

0904-002676

OPT



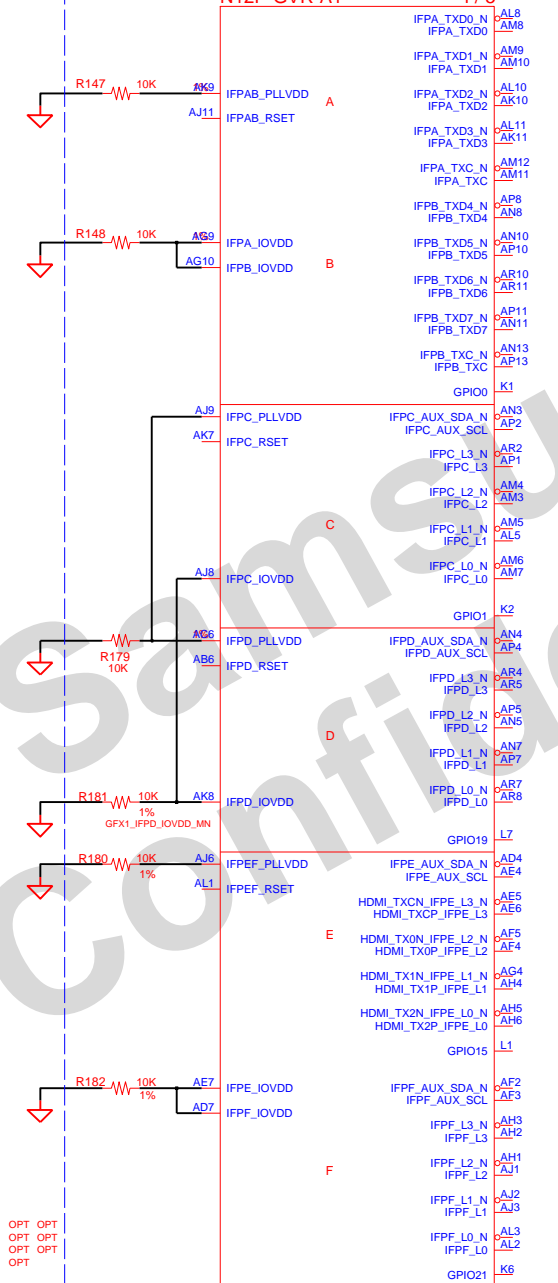
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APPROVAL	BL LEE	REV	REV 1.2		N12X_40NM(3/5)	PART NO. BA41-01666A
MODULE CODE		LAST EDIT	August 15, 2011 11:04:51 AM	PAGE	21	OF 51

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**U502-4
N12P-GVR-A1**

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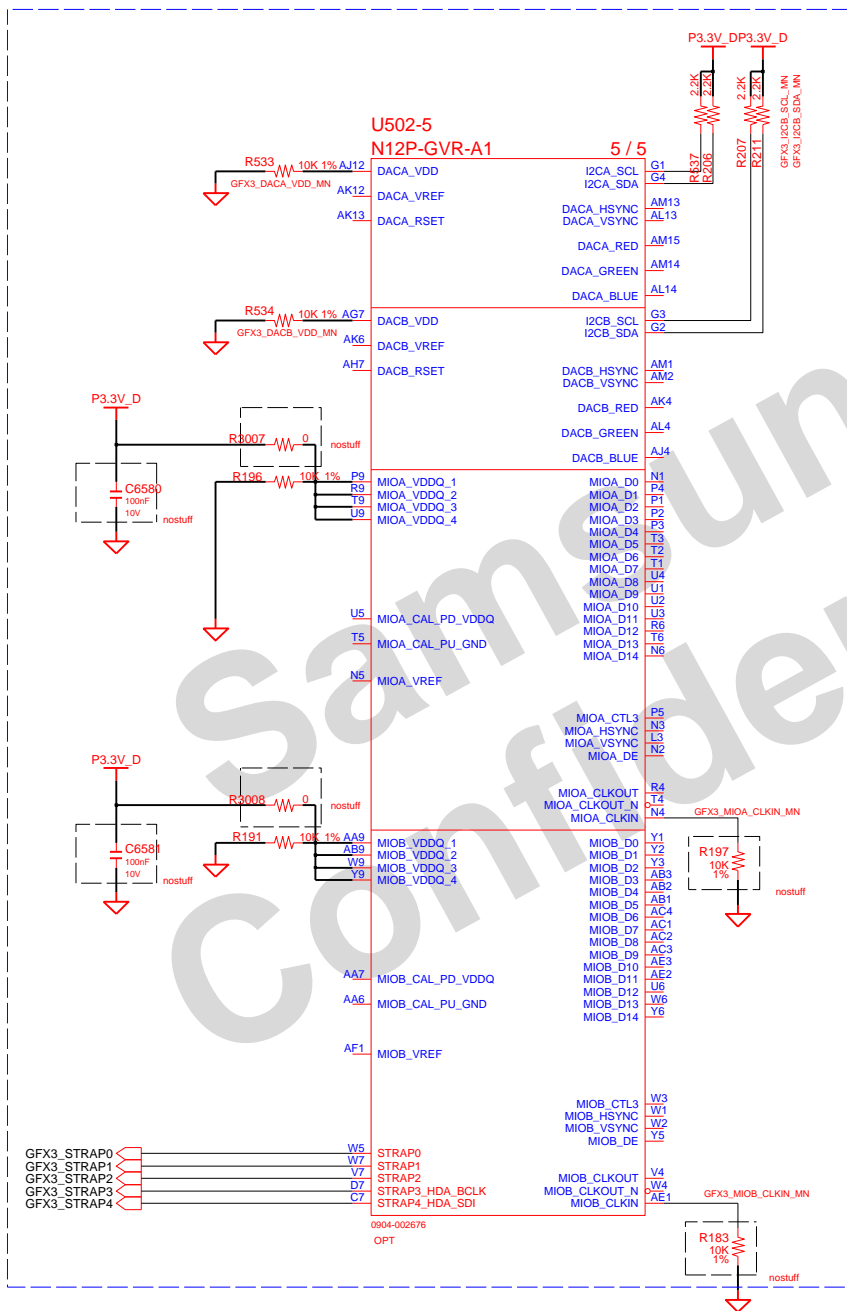
- IFPA_TXD0_N AL8
- IFPA_TXD0 AM8
- IFPA_TXD1_N AM9
- IFPA_TXD1 AM10
- IFPA_TXD2_N AL10
- IFPA_TXD2 AK10
- IFPA_TXD3_N AL11
- IFPA_TXD3 AK11
- IFPA_TXC_N AM12
- IFPA_TXC AM11
- IFPB_TXD4_N AP8
- IFPB_TXD4 AN8
- IFPB_TXD5_N AN10
- IFPB_TXD5 AP10
- IFPB_TXD6_N AR10
- IFPB_TXD6 AR11
- IFPB_TXD7_N AP11
- IFPB_TXD7 AN11
- IFPB_TXC_N AN13
- IFPB_TXC AP13
- GPIO0 K1
- IFPC_AUX_SDA_N AN3
- IFPC_AUX_SCL AP2
- IFPC_L3_N AR2
- IFPC_L3 AP1
- IFPC_L2_N AM4
- IFPC_L2 AM3
- IFPC_L1_N AM5
- IFPC_L1 AL5
- IFPC_L0_N AM6
- IFPC_L0 AM7
- GPIO1 K2
- IFPD_AUX_SDA_N AN4
- IFPD_AUX_SCL AP4
- IFPD_L3_N AR4
- IFPD_L3 AR5
- IFPD_L2_N AP5
- IFPD_L2 AN5
- IFPD_L1_N AN7
- IFPD_L1 AP7
- IFPD_L0_N AR7
- IFPD_L0 AR8
- GPIO19 L7
- IFPE_AUX_SDA_N AD4
- IFPE_AUX_SCL AE4
- HDMI_TXCN_IFPE_L3_N AE5
- HDMI_TX0P_IFPE_L3 AE6
- HDMI_TX0N_IFPE_L2_N AF5
- HDMI_TX0P_IFPE_L2 AF4
- HDMI_TX1N_IFPE_L1_N AG4
- HDMI_TX1P_IFPE_L1 AH4
- HDMI_TX2N_IFPE_L0_N AH5
- HDMI_TX2P_IFPE_L0 AH6
- GPIO15 L1
- IFPF_AUX_SDA_N AF2
- IFPF_AUX_SCL AF3
- IFPF_L3_N AH3
- IFPF_L3 AH2
- IFPF_L2_N AH1
- IFPF_L2 AJ1
- IFPF_L1_N AJ2
- IFPF_L1 AJ3
- IFPF_L0_N AL3
- IFPF_L0 AL2
- GPIO21 K6

OPT OPT
OPT OPT
OPT OPT
OPT OPT

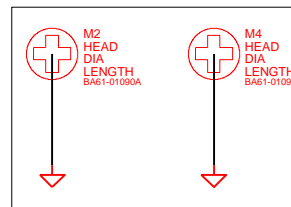
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CHECK	MK KIM	DEV. STEP	MP	N12X_40NM(4/5)	PART NO.	
APPROVAL	BL LEE	REV	REV 1.2	N12X_40NM(4/5)	BA41-01666A	
MODULE CODE		LAST EDIT	August 15, 2011 11:04:51 AM	PAGE	22	OF 51

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GPU Thermal



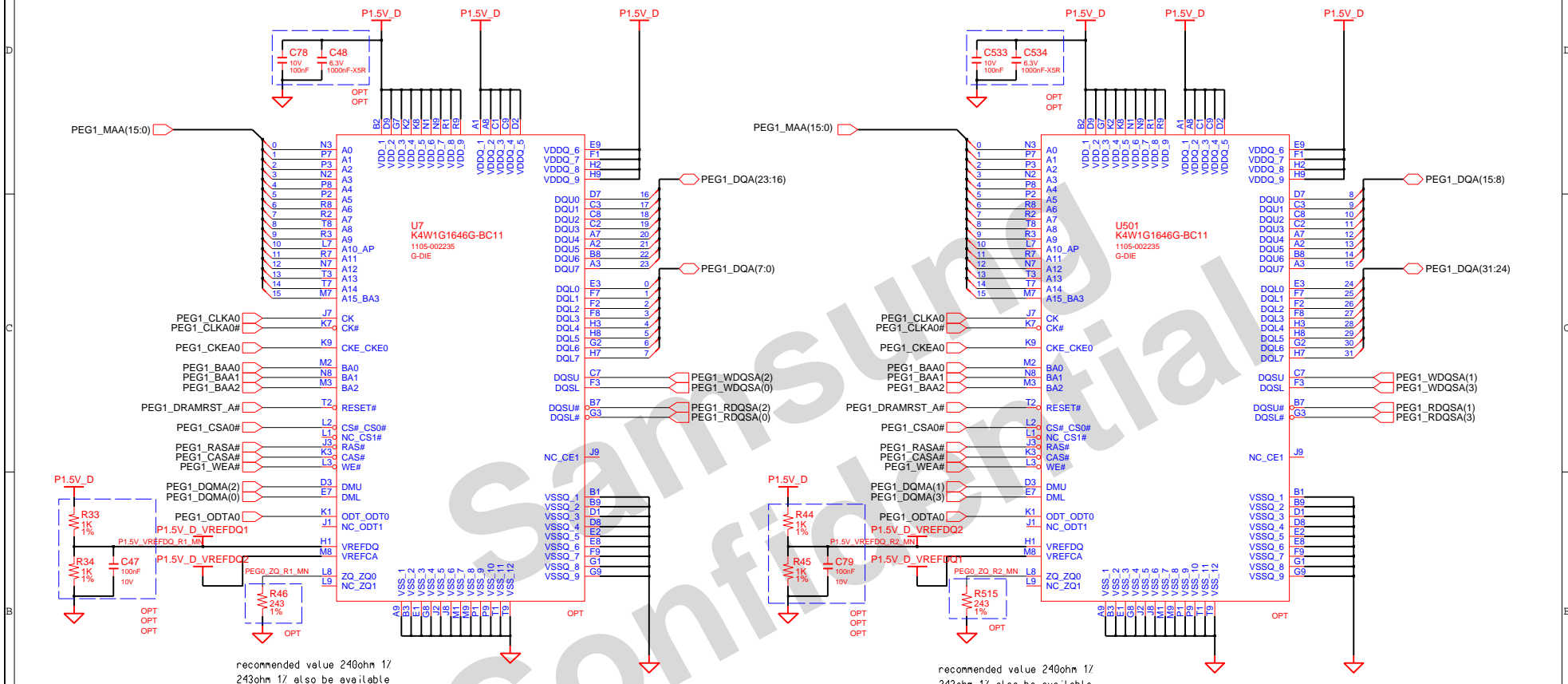
INT GFX and OPT GFX model need.

DESIGN	MS YANG	DATE	3/11/2011	TITLE	PETRONAS-14DC	SAMSUNG ELECTRONICS
CHECK	MK KIM	DEV. STEP	MP		N12X_40NM(5/5)	
APPROVAL	BL LEE	REV	REV 1.2		N12X_40NM(5/5)	PART NO. BA41-01666A
MODULE CODE		LAST EDIT		August 15, 2011 11:04:51 AM	PAGE	23 OF 51

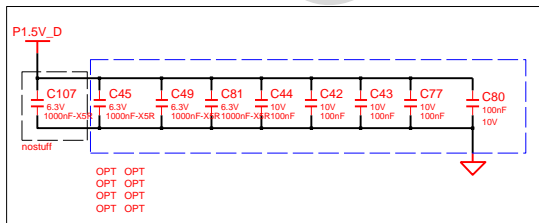
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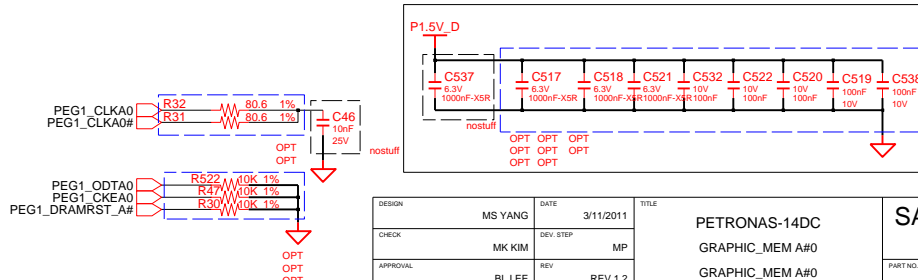
A-Channel #0 (E-mode)



Place near to VDDQ



Place near to VDDQ

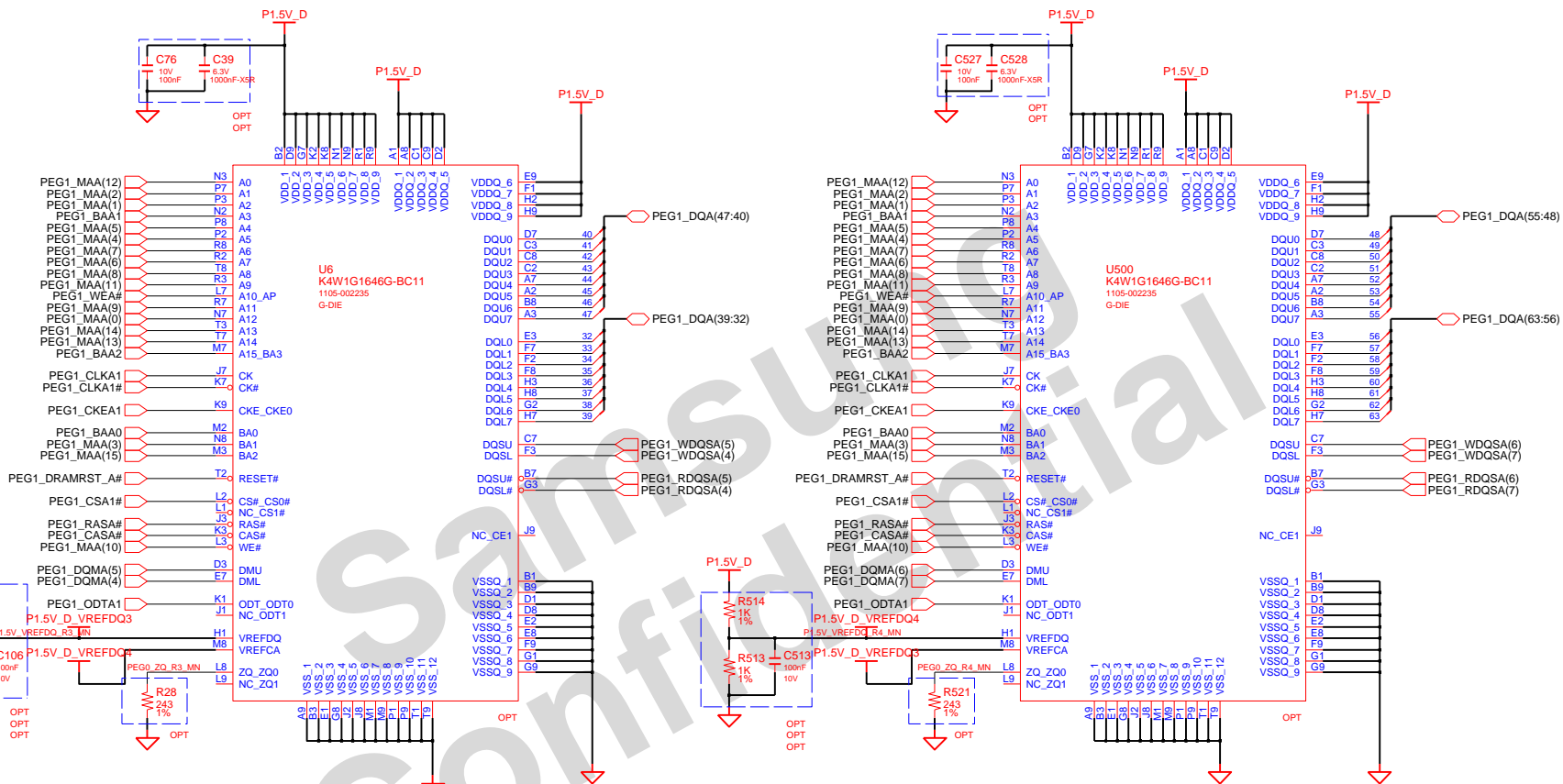


DESIGN	MS YANG	DATE	3/11/2011	TITLE	PETRONAS-14DC	SAMSUNG ELECTRONICS
CHECK	MK KIM	DEV. STEP	MP		GRAPHIC_MEM A#0	
APPROVAL	BL LEE	REV	REV 1.2		GRAPHIC_MEM A#0	PART NO. BA41-01666A
MODULE CODE		LAST EDIT		August 15, 2011 11:04:51 AM	PAGE	24 OF 51

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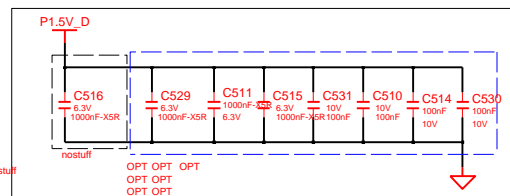
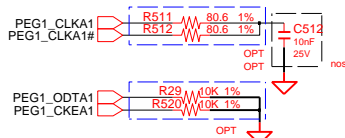
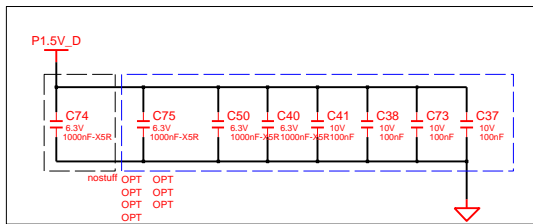
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A-Channel #1 (E-mode)



Place near to VDDQ

Place near to VDDQ



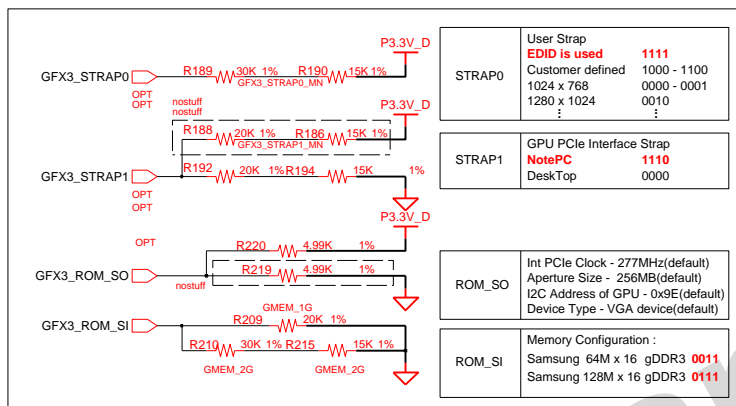
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CHECK	MK KIM	DEV. STEP	MP	GRAPHIC_MEM A#1	PART NO.	
APPROVAL	BL LEE	REV	REV 1.2	GRAPHIC_MEM A#1	BA41-01666A	
MODULE CODE		LAST EDIT				
				August 15, 2011 11:04:51 AM	PAGE 25 OF 51	

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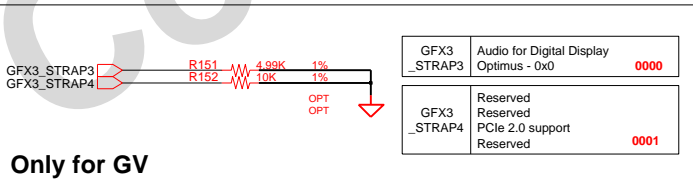
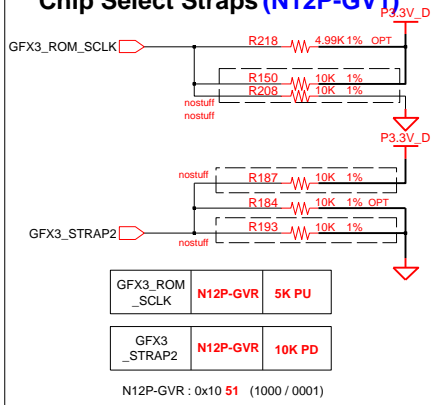
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N12x_40nm STRAP

Function Straps



Chip Select Straps (N12P-GV1)



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

STRAP PIN	BIT 3	BIT 2	BIT 1	BIT 0
STRAP0	USER[3]	USER[2]	USER[1]	USER[0]
STRAP1	3GIO_PADCFG[3]	3GIO_PADCFG[2]	3GIO_PADCFG[1]	3GIO_PADCFG[0]
ROM_SO	XCLK_417	FB_0_BAR_SIZE	SMB_ALT_ADDR	VGA_DEVICE
ROM_SI	RAMCFG[3]	RAMCFG[2]	RAMCFG[1]	RAMCFG[0]
STRAP2	PCI_DEVID[3]	PCI_DEVID[2]	PCI_DEVID[1]	PCI_DEVID[0]
ROM_SCLK	PCI_DEVID[4]	SUB_VENDOR	SLOT_CLK_CFG	PEX_PLL_EN_TERM

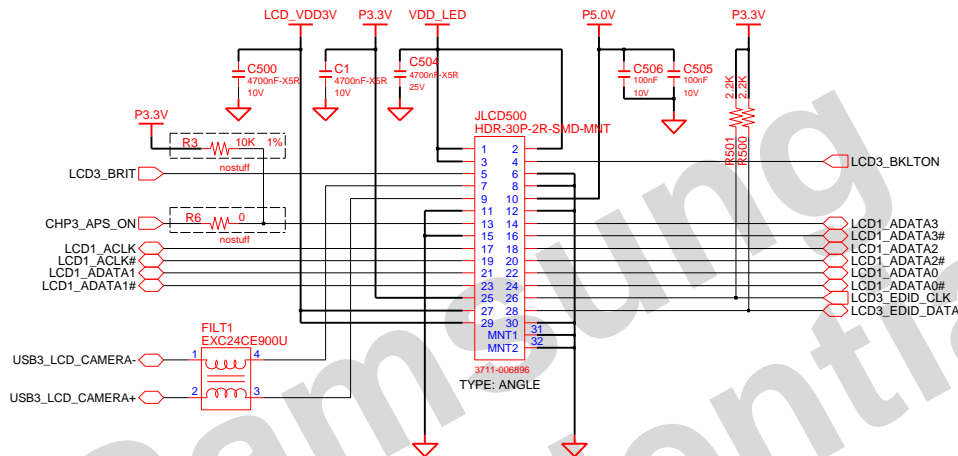
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CHECK	MK KIM	DEV. STEP	MP			
APPROVAL	BL LEE	REV	REV 1.2			
MODULE CODE		LAST EDIT		August 15, 2011 11:04:51 AM	PAGE	26 OF 51

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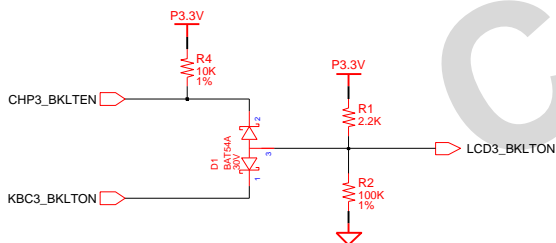
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LVDS LOGIC

1Ch. LCD Connector + CAMERA

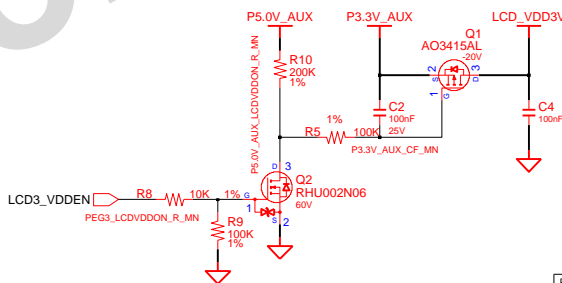


Backlight On

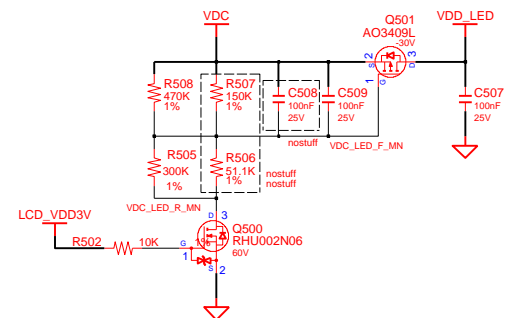


LCD Power

EBL Purpose



LED Power

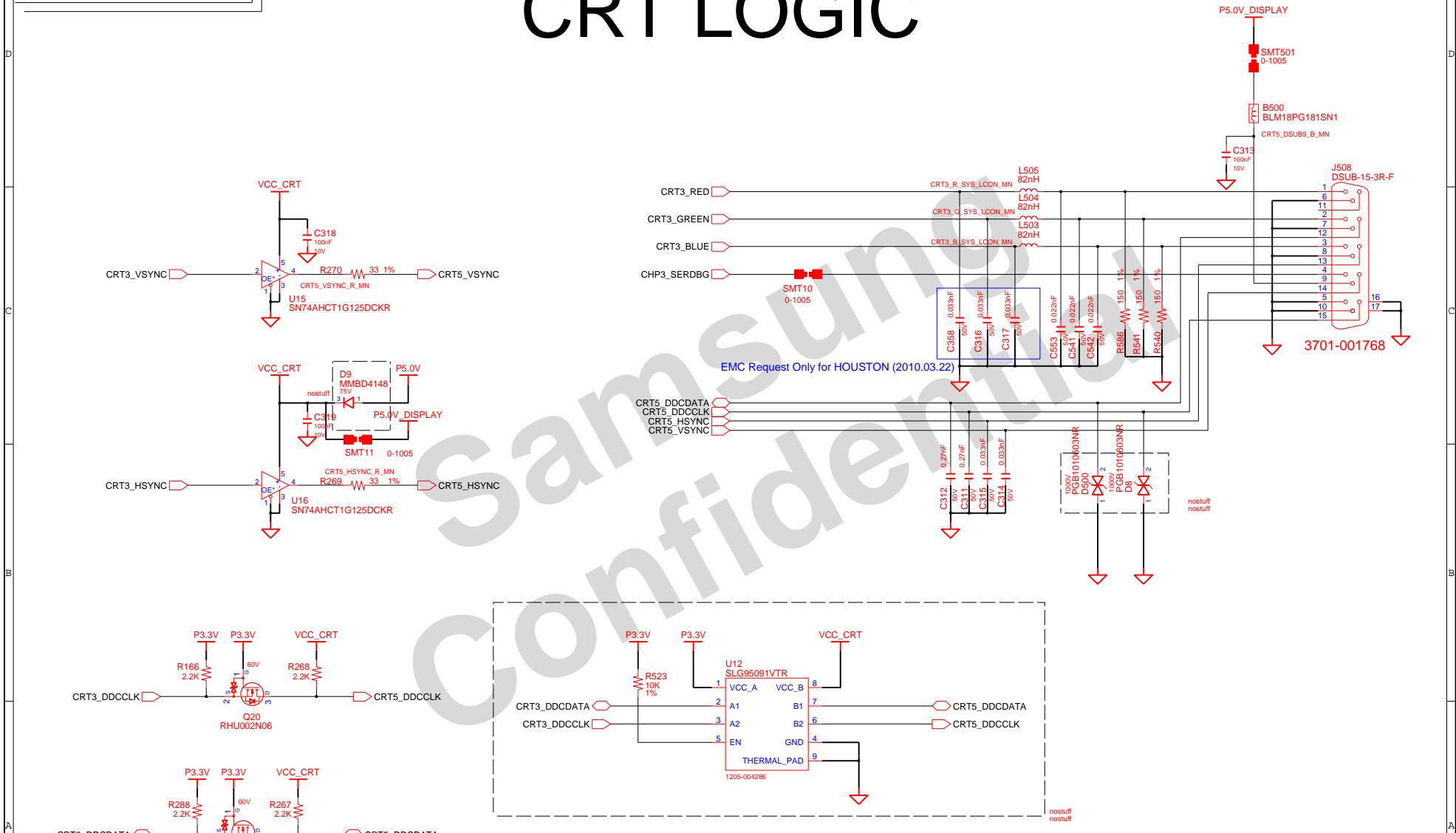


DESIGN	MS YANG	DATE	3/11/2011	TITLE	PETRONAS-14DC GRAPHICS_IF LVDS	SAMSUNG ELECTRONICS PART NO: BA41-01666A
CHECK	MK KIM	DEV. STEP	MP			
APPROVAL	BL LEE	REV	REV 1.2			
MODULE CODE		LAST EDIT				
				August 15, 2011 11:04:51 AM	PAGE	27 OF 51

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CRT LOGIC



DESIGN	MS YANG	DATE	3/11/2011	TITLE	PETRONAS-14DC	SAMSUNG ELECTRONICS
CHECK	MK KIM	DEV. STEP	MP		GRAPHICS_IF	
APPROVAL	BL LEE	REV	REV 1.2		CRT	PART NO.
MODULE CODE		LAST EDIT				BA41-01666A
				August 15, 2011 11:04:51 AM	PAGE	28 OF 51

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HDMI Graphic

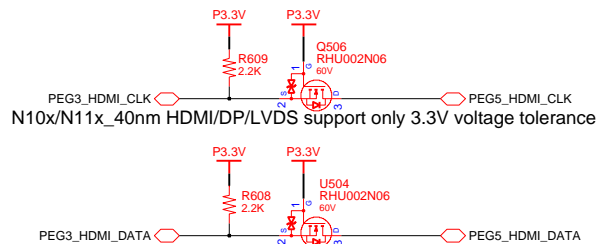
After checking, Houston need to use CMC for each signal.

(EMC request at 2010.04.15)

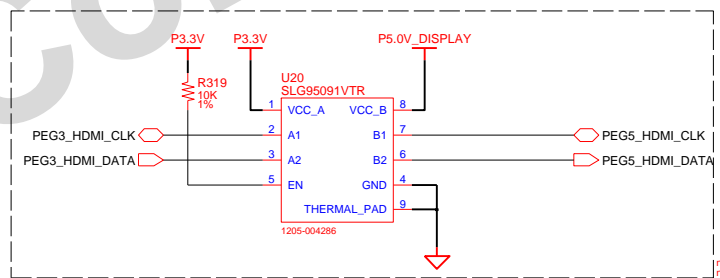
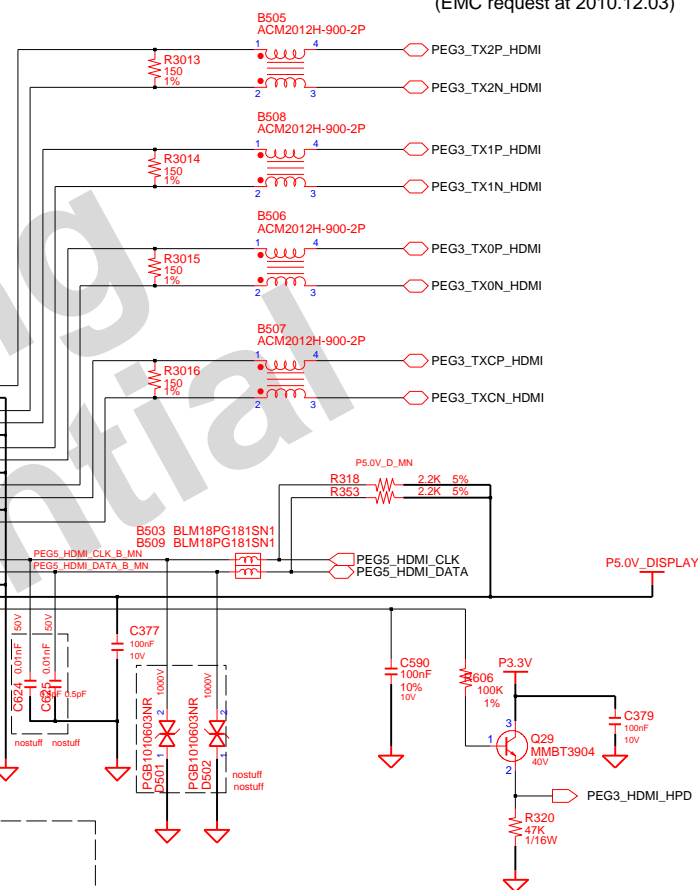
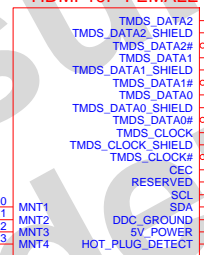
After checking, Veyron_R don't need to use CMC for each signal.

(EMC request at 2010.12.03)

FOR HDMI VERIFICATION TEST



J509 HDMI-19P-FEMALE



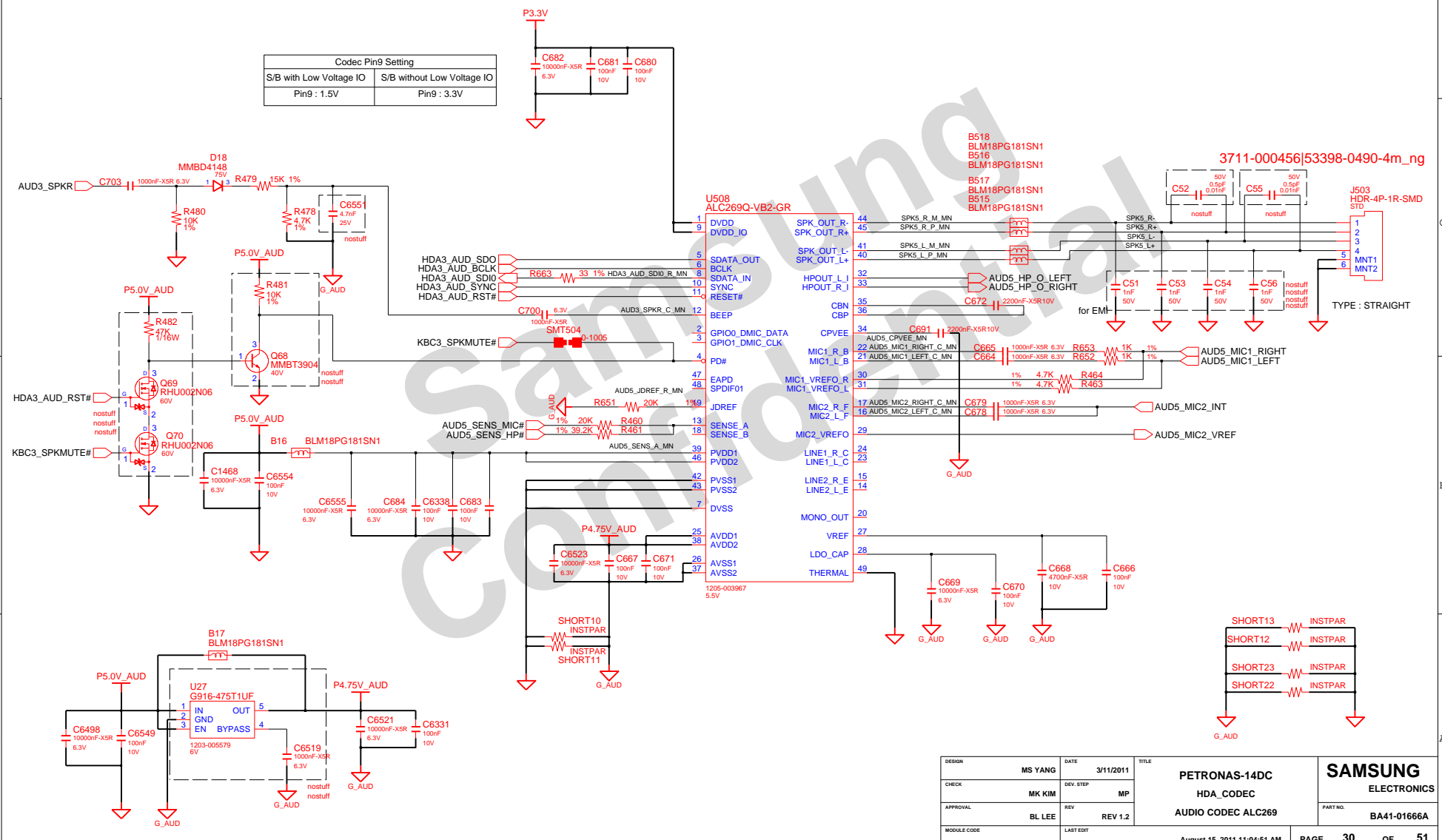
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CHECK	MK KIM	DEV.STEP	MP	GRAPHICS_IF	PART NO.	
APPROVAL	BL LEE	REV	REV 1.2	HDMI	BA41-01666A	
MODULE CODE		LAST EDIT			August 15, 2011 11:04:51 AM	PAGE 29 OF 51

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HD AUDIO

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

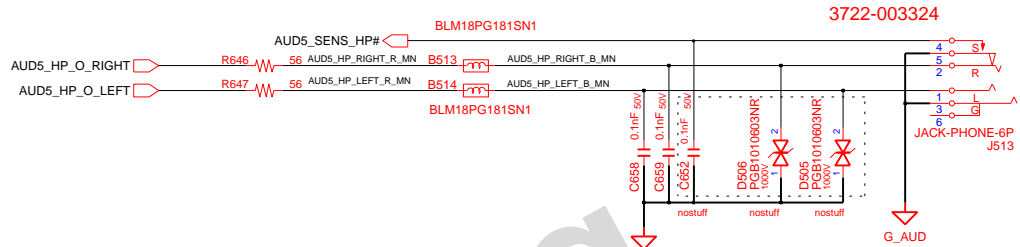


DESIGN	MS YANG	DATE	3/11/2011	TITLE	PETRONAS-14DC	SAMSUNG
CHECK	MK KIM	DEV. STEP	MP		HDA_CODEC	ELECTRONICS
APPROVAL	BL LEE	REV	REV 1.2		AUDIO CODEC ALC269	PART NO. BA41-01666A
MODULE CODE		LAST EDIT			August 15, 2011 11:04:51 AM	PAGE 30 OF 51

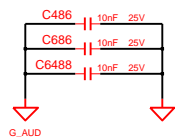
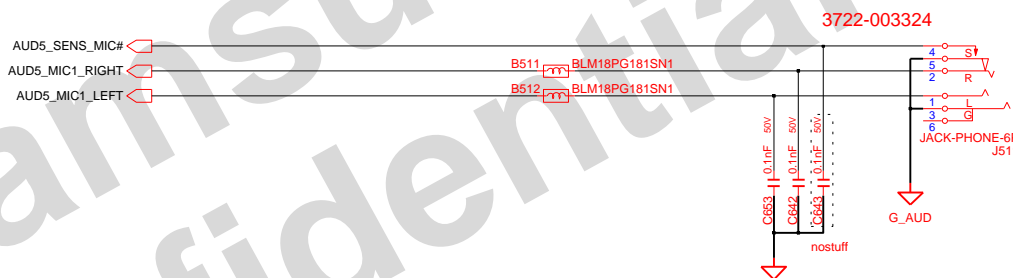
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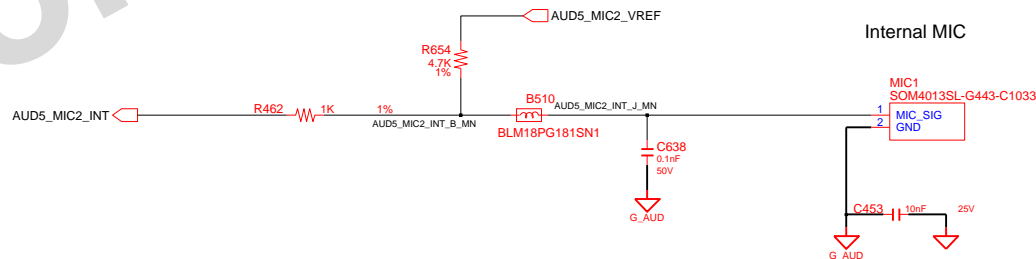
HEADPHONE



MIC JACK



Internal MIC

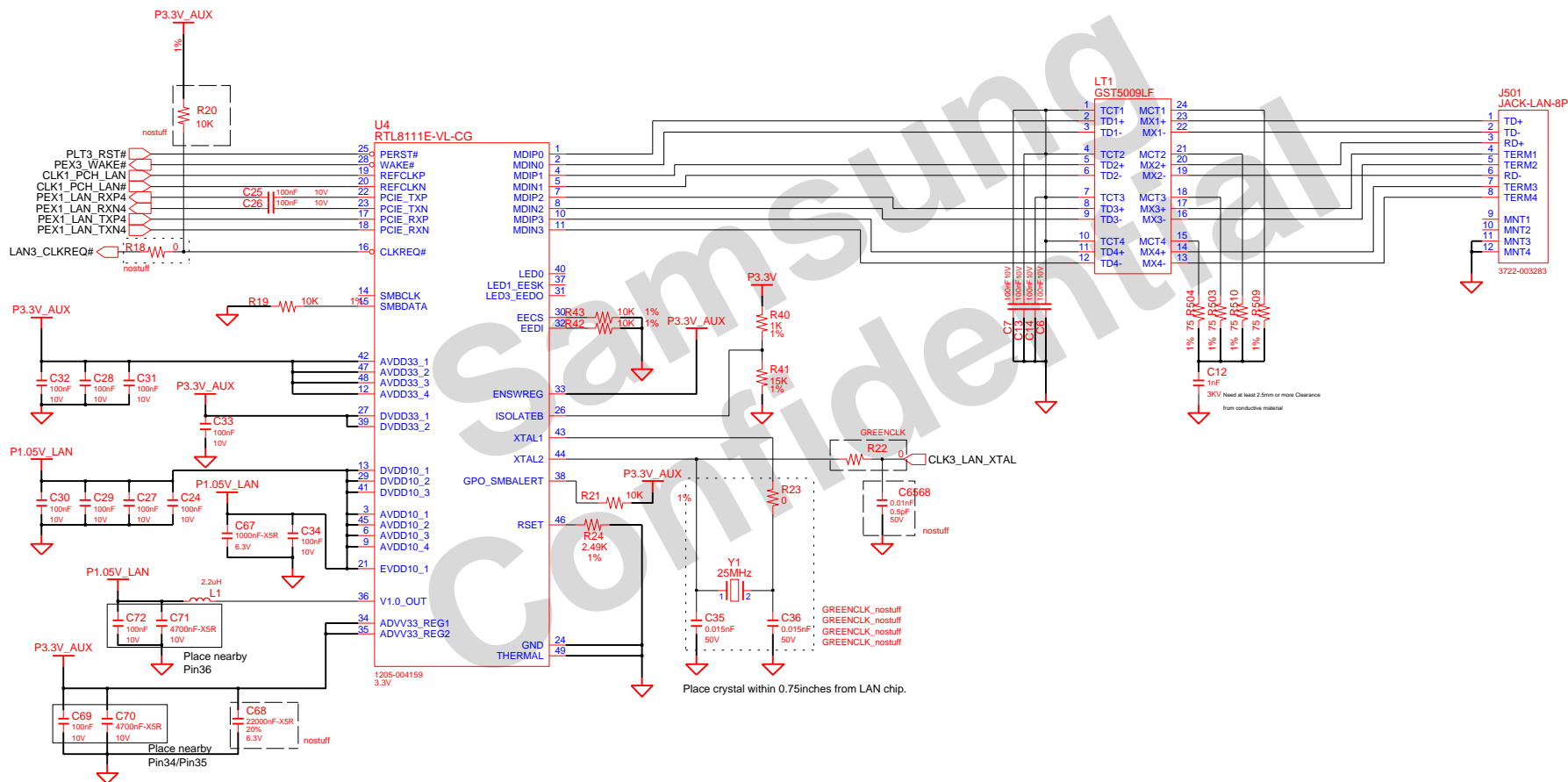


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CHECK	MK KIM	DEV.STEP	MP			
APPROVAL	BL LEE	REV	REV 1.2			
MODULE CODE		LAST EDIT				
				August 15, 2011 11:04:51 AM	PAGE	31 OF 51

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Reatek RTL8111E

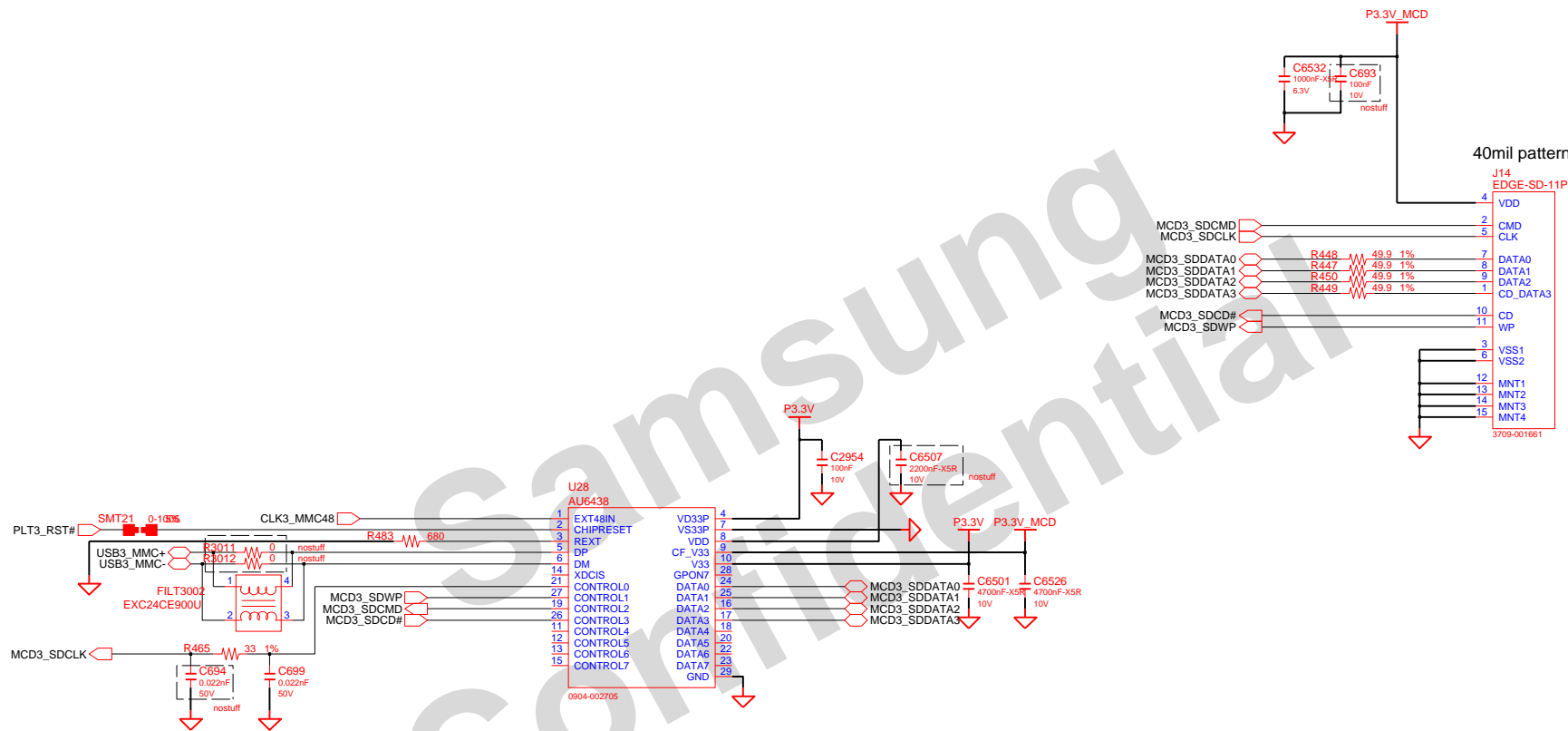


DESIGN	MS YANG	DATE	3/11/2011	TITLE	PETRONAS-14DC LAN LAN_Reatek_RTL8111E	SAMSUNG ELECTRONICS PART NO: BA41-01666A
CHECK	MK KIM	DEV. STEP	MP			
APPROVAL	BL LEE	REV	REV 1.2			
MODULE CODE		LAST EDIT				
				August 15, 2011 11:04:51 AM	PAGE	32 OF 51

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4 IN 1 CARD

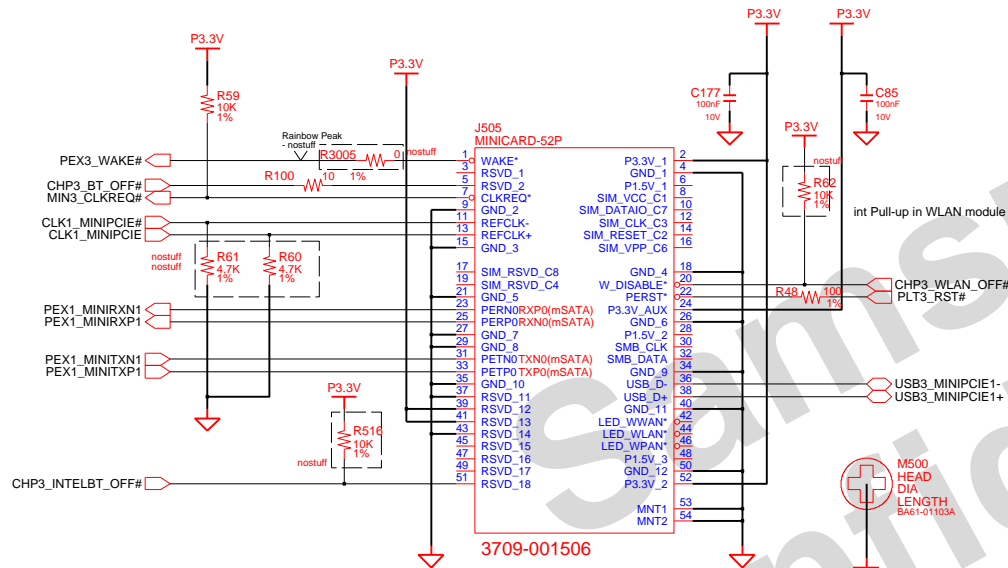


DESIGN	MS YANG	DATE	3/11/2011	TITLE	PETRONAS-14DC MULTICARD 4 IN 1 CARD(AU6438)	SAMSUNG ELECTRONICS PART NO. BA41-01666A
CHECK	MK KIM	DEV. STEP	MP			
APPROVAL	BL LEE	REV	REV 1.2			
MODULE CODE		LAST EDIT				
				August 15, 2011 11:04:51 AM	PAGE	33 OF 51

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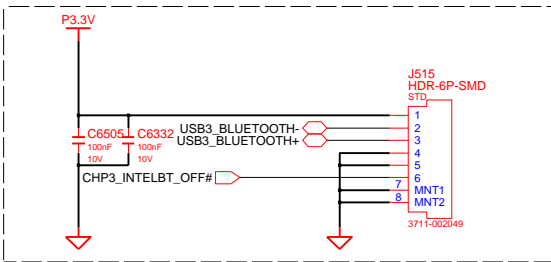
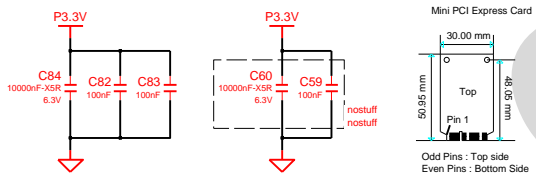
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WLAN, 7mm



3709-001506

Bluetooth Interface



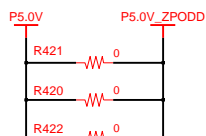
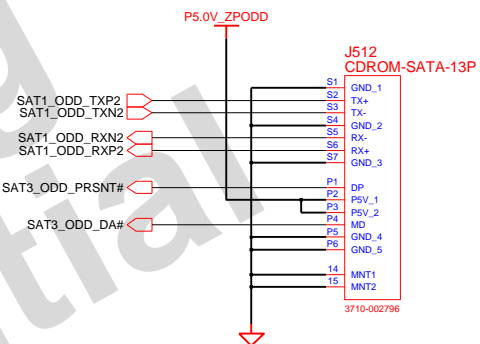
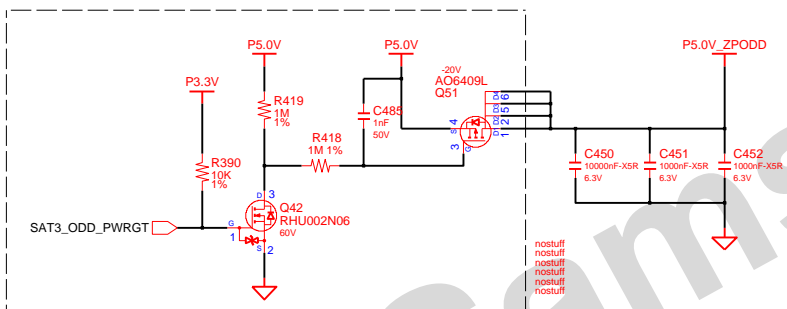
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APPROVAL	BL LEE	REV	REV 1.2	WLAN	BA41-01666A	
MODULE CODE	LAST EDIT	August 15, 2011 11:04:51 AM		PAGE	34	OF 51

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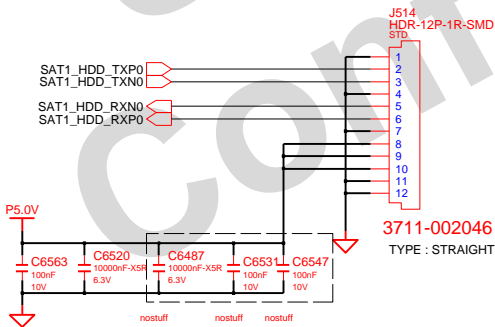
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SATA I/F CONN

SATA ODD CONN 14"



SATA HDD CONN



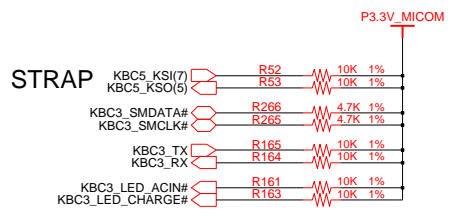
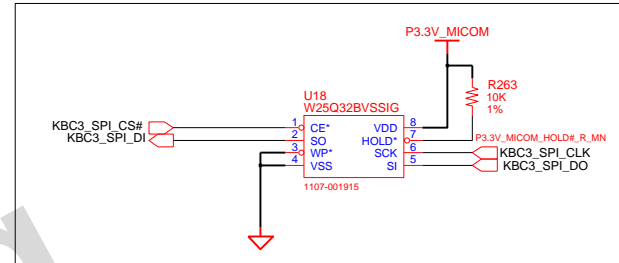
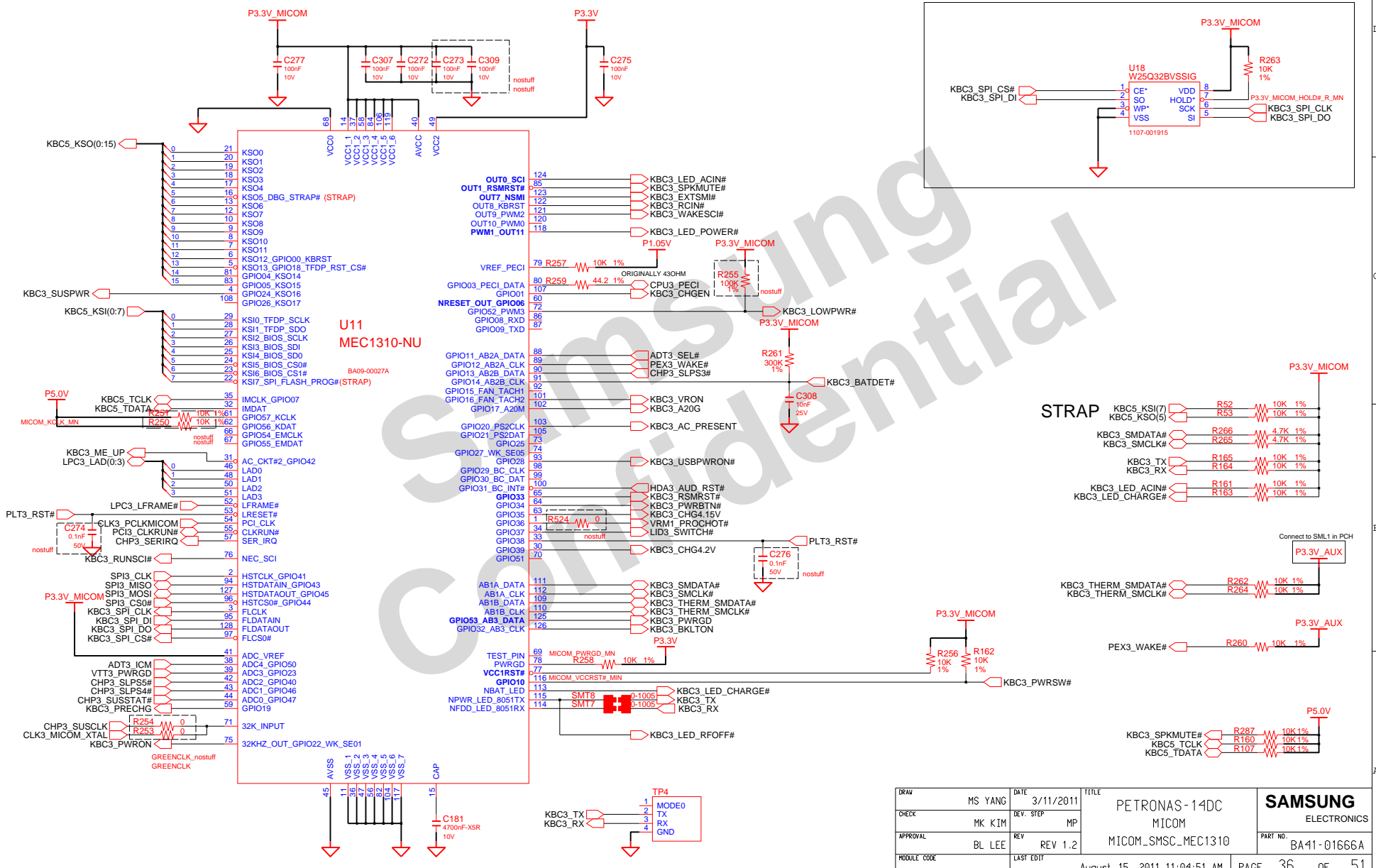
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CHECK	MK KIM	DEV. STEP	MP	SATA_DEVICES	PART NO.	
APPROVAL	BL LEE	REV	REV 1.2	HDD & ODD SUB CONNECTOR	BA41-01666A	
MODULE CODE		LAST EDIT		August 15, 2011 11:04:51 AM	PAGE	35 OF 51

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MAIN BOARD (MICOM)

BE CAUTION SPI ROM SIZE!!



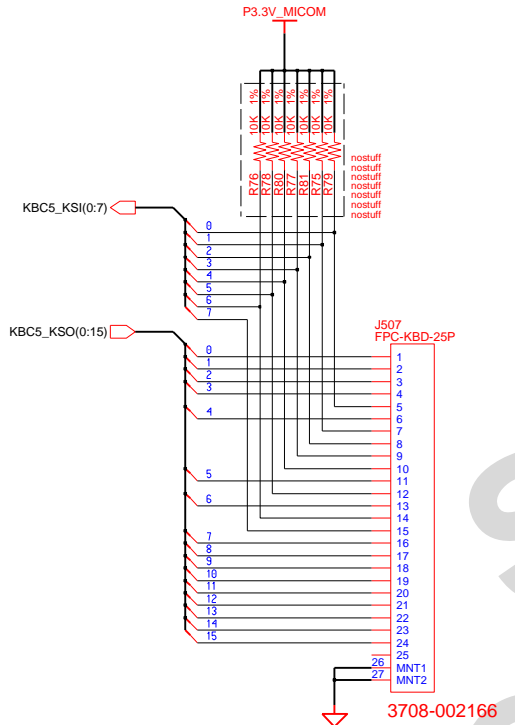
DRAW	MS YANG	DATE	3/11/2011	TITLE	PETRONAS-14DC	SAMSUNG ELECTRONICS
CHECK	MK KIM	DEV. STEP	MP		MICOM	
APPROVAL	BL LEE	REV	REV 1.2		MICOM_SMSC_MEC1310	PART NO. BA41-01666A
MODULE CODE		LAST EDIT	August 15, 2011 11:04:51 AM	PAGE	36	OF 51

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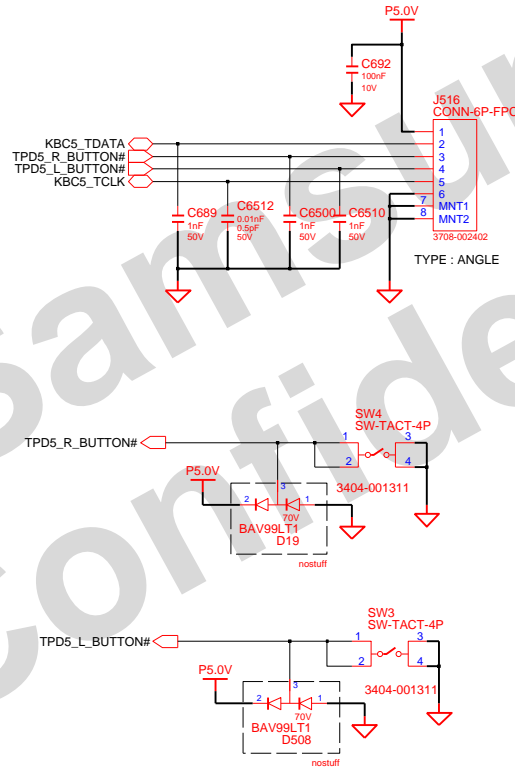
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Micom Glue Logic

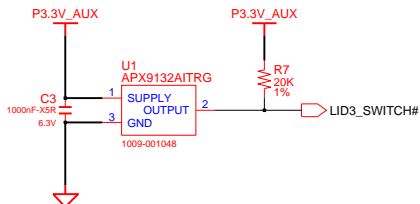
KEYBOARD



TOUCHPAD



LID_SWITCH

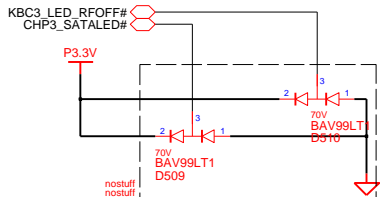
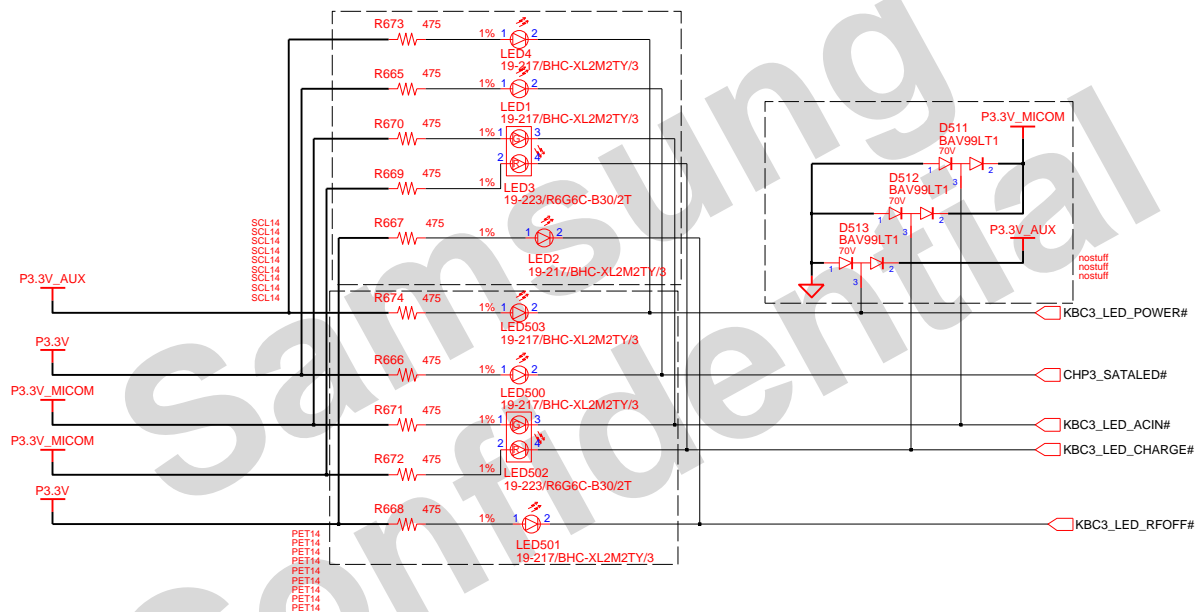


DESIGN	MS YANG	DATE	3/11/2011	TITLE	PETRONAS-14DC	SAMSUNG
CHECK	MK KIM	DEV.STEP	MP	MICOM GLUE LOGIC	MICOM GLUE LOGIC	ELECTRONICS
APPROVAL	BL LEE	REV	REV 1.2	KEYBOARD & TOUCHPAD	PART NO.	BA41-01666A
MODULE CODE		LAST EDIT		August 15, 2011 11:04:51 AM	PAGE	37 OF 51

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LED for 14"

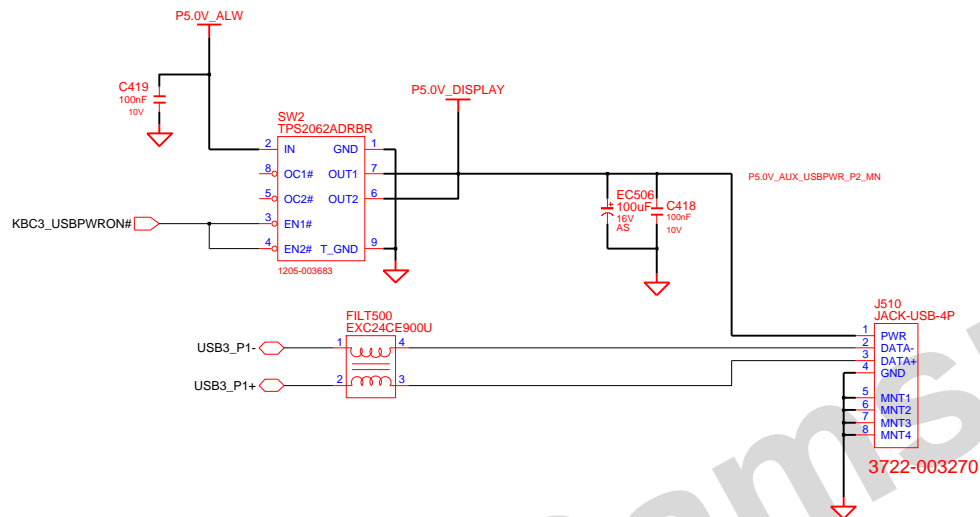


DRAW	MS YANG	DATE	3/11/2011	TITLE	PETRONAS-14DC LED_SWITCH LED_SWITCH	SAMSUNG ELECTRONICS PART NO. BA41-01666A
CHECK	MK KIM	DEV. STEP	MP			
APPROVAL	BL LEE	REV	REV 1.2			
MODULE CODE		LAST EDIT	August 15, 2011 11:04:51 AM	PAGE 38 OF 51		

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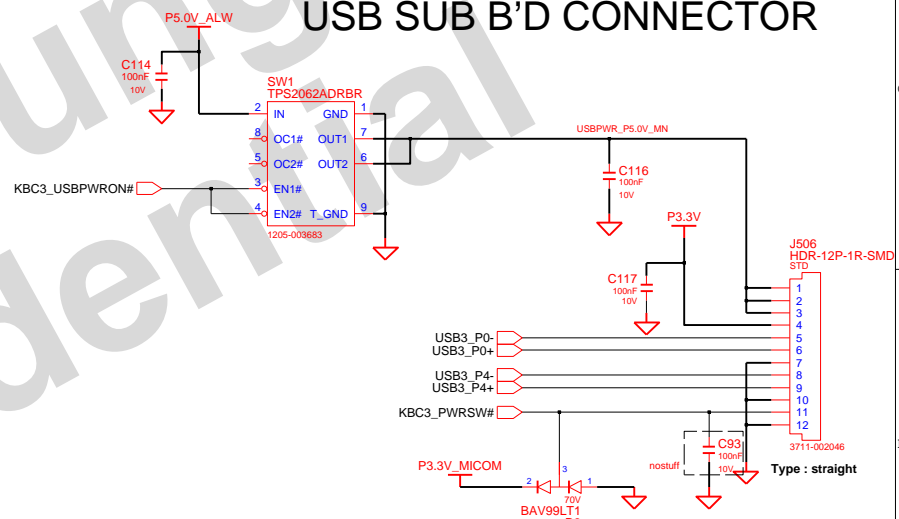
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USB Single connector

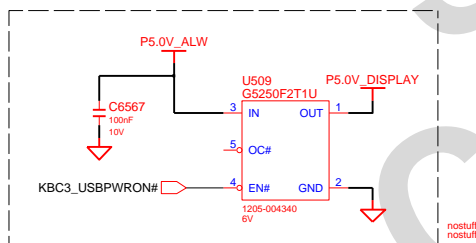


**MAIN TO SUB USB CONN
Right 2USB Port**

USB SUB B'D CONNECTOR



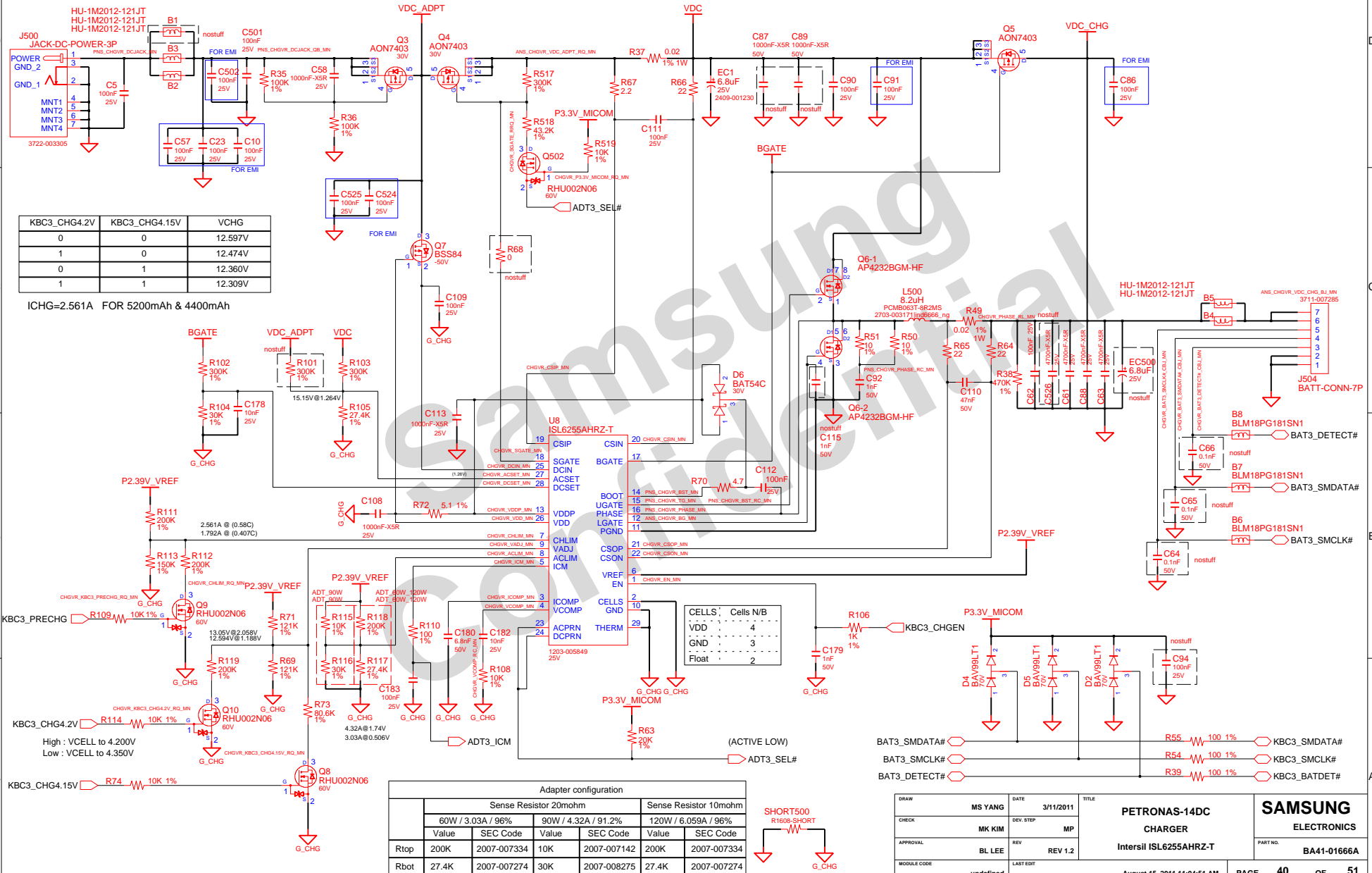
PLACE CLOSE TO USB SUB B'D Conector



DESIGN	MS YANG	DATE	3/11/2011	TITLE	PETRONAS-14DC	SAMSUNG ELECTRONICS
CHECK	MK KIM	DEV. STEP	MP	USB_CONN	USB_CONN	
APPROVAL	BL LEE	REV	REV 1.2	USB Port	USB Port	PART NO. BA41-01666A
MODULE CODE		LAST EDIT		August 15, 2011 11:04:51 AM	PAGE 39	OF 51

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CHARGER & POWER MANAGEMENT

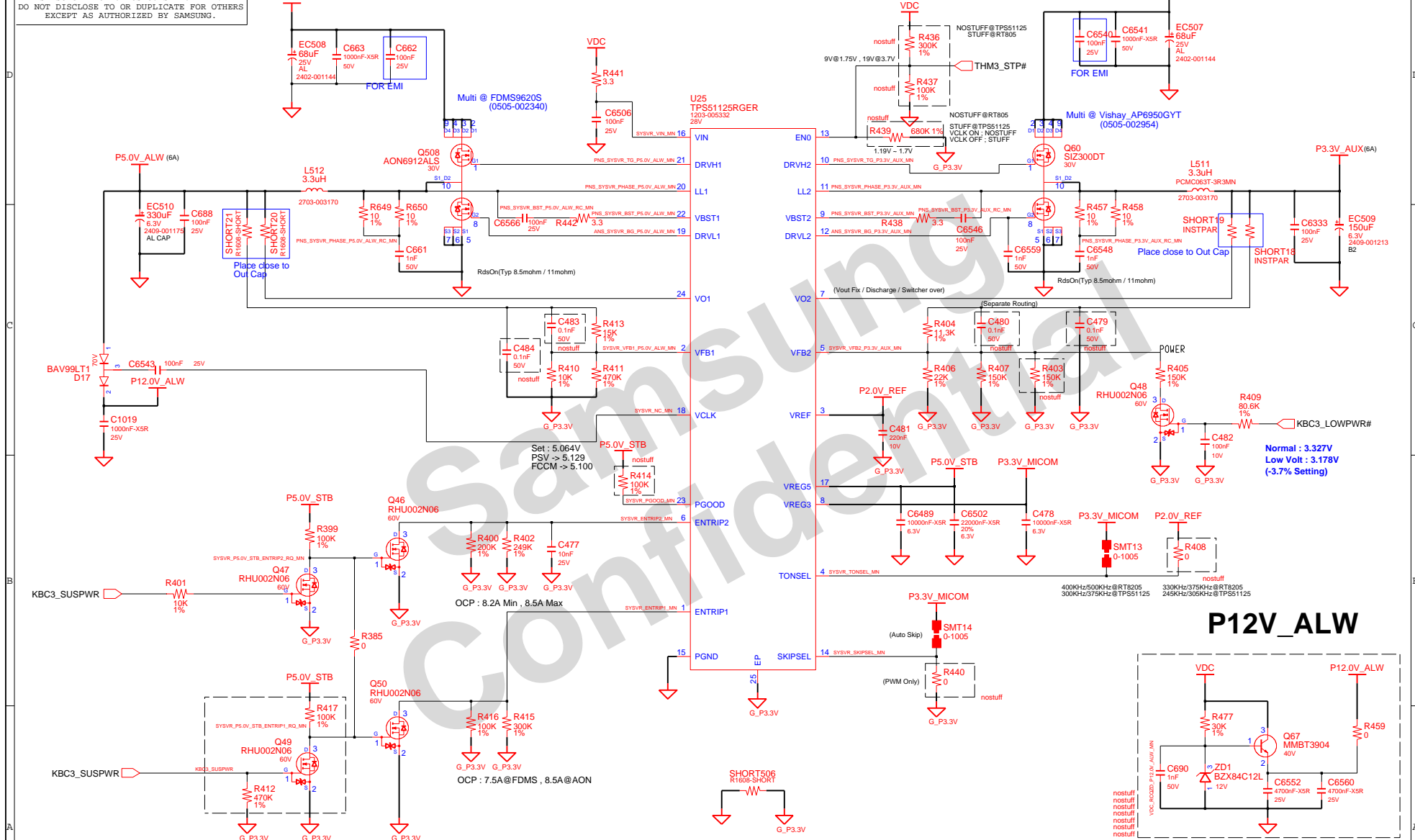


DRAW	MS YANG	DATE	3/11/2011	TITLE	PETRONAS-14DC	SAMSUNG ELECTRONICS
CHECK	MK KIM	DEV. STEP	MP		CHARGER	
APPROVAL	BL LEE	REV	REV 1.2		Intersil ISL6255AHRZ-T	PART NO. BA41-01666A
MODULE CODE	undefined	LAST EDIT	August 15, 2011 11:04:51 AM	PAGE	40	OF 51

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P3.3V_ALW & P5.0V_ALW

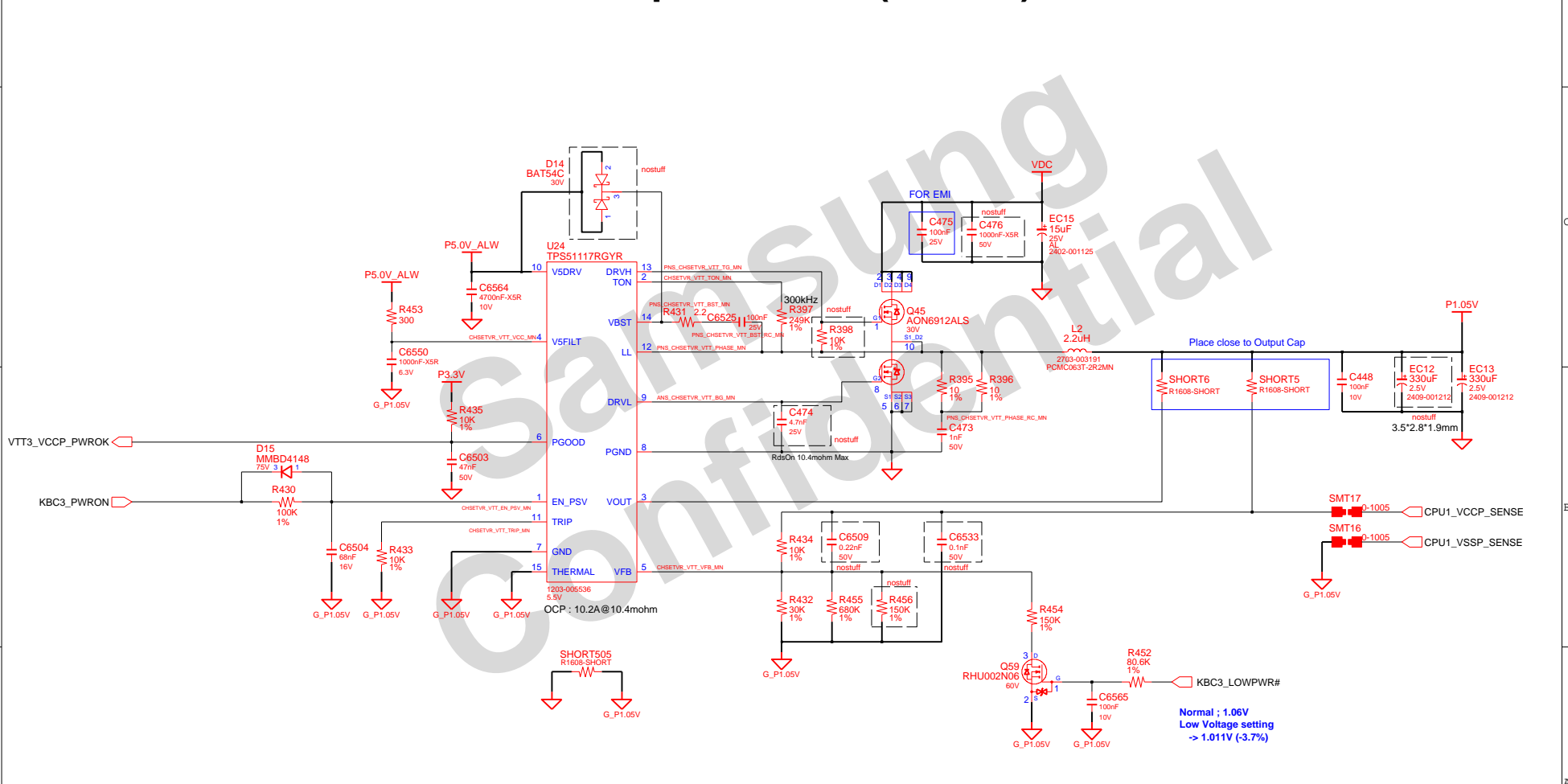


DESIGN	MS YANG	DATE	3/11/2011	TITLE	PETRONAS-14DC	SAMSUNG ELECTRONICS PART NO. BA41-01666A
CHECK	MK KIM	DEV. STEP	MP	P3.3V_AUX / P5.0V_ALW		
APPROVAL	BL LEE	REV	REV 1.2	TI TPS51125		
MODULE CODE		LAST EDIT		August 15, 2011 11:04:51 AM		
				PAGE	41 OF 51	

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Chipset Power (P1.05V)

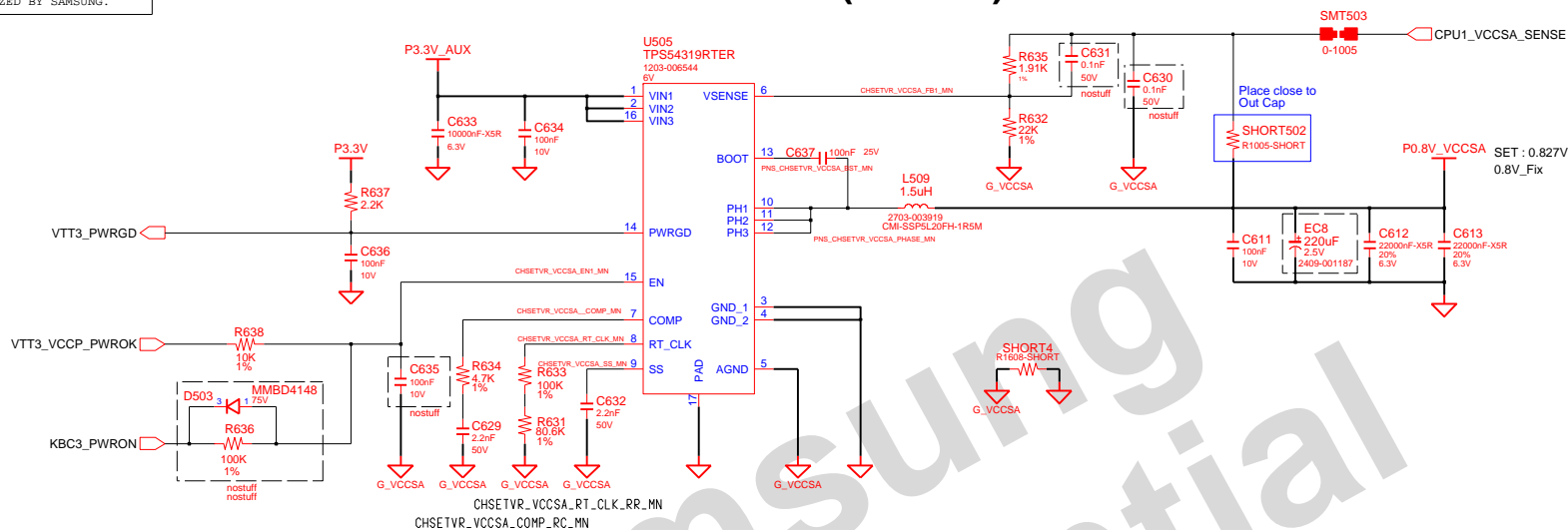


DRAW	MS YANG	DATE	3/11/2011	TITLE	PETRONAS-14DC	SAMSUNG ELECTRONICS
CHECK	MK KIM	DEV. STEP	MP		P1.05V	
APPROVAL	BL LEE	REV	REV 1.2		TI TPS51117	PART NO. BA41-01666A
MODULE CODE	undef ined	LAST EDIT	August 15, 2011 11:04:51 AM	PAGE	42	OF 51

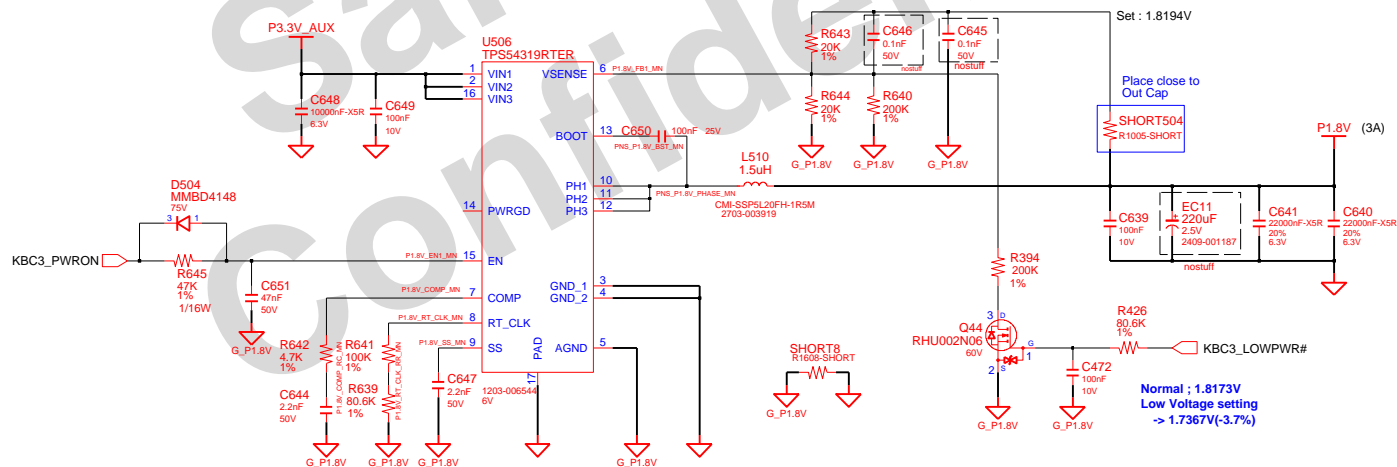
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CHIPSET POWER(VCCSA)



CHIPSET POWER(P1.8V)

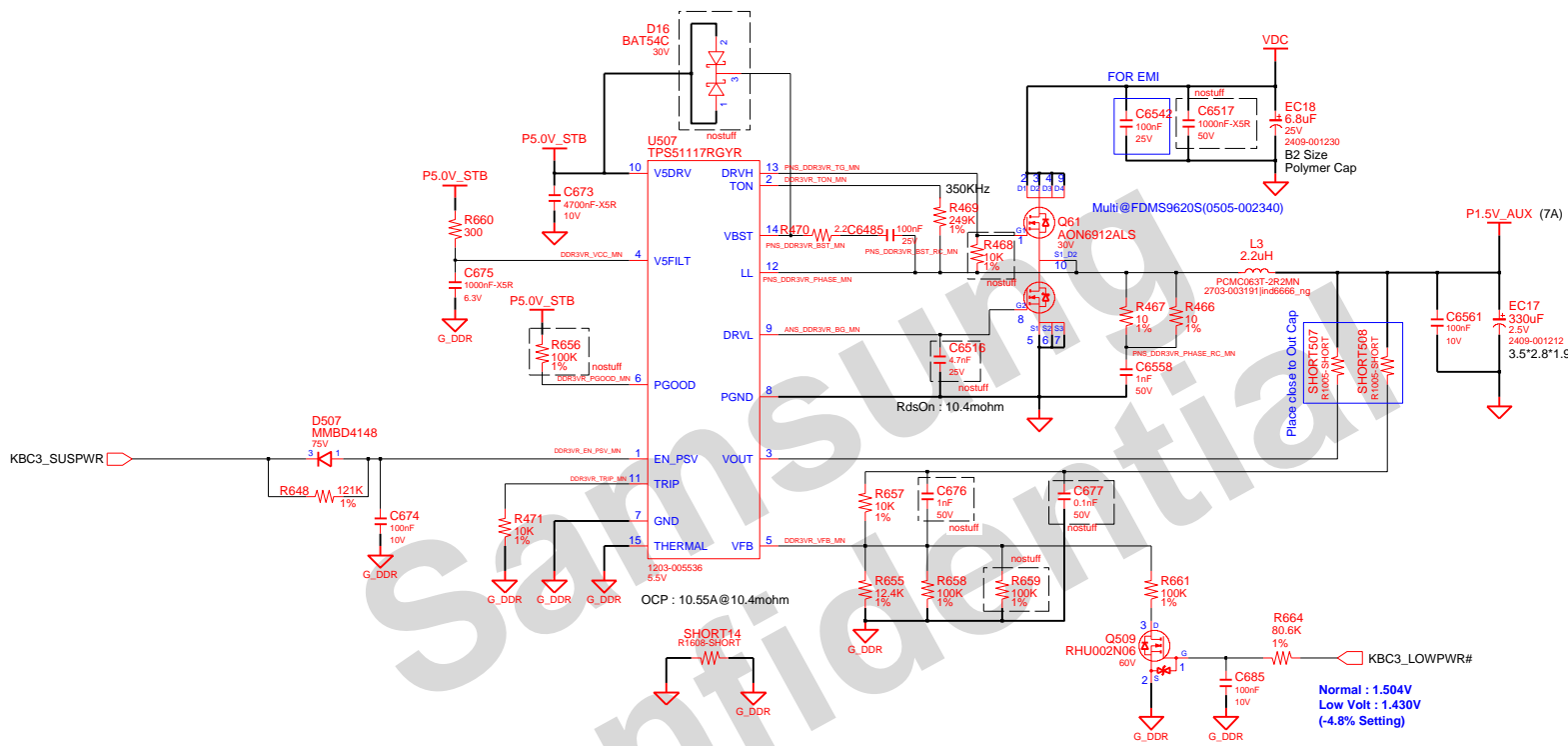


DESIGN	MS YANG	DATE	3/11/2011	TITLE	PETRONAS-14DC	SAMSUNG ELECTRONICS PART NO. BA41-01666A
CHECK	MK KIM	DEV. STEP	MP	PWR_CHIPSET		
APPROVAL	BL LEE	REV	REV 1.2	TI TPS54319		
MODULE CODE		LAST EDIT				
August 15, 2011 11:04:51 AM						PAGE 43 OF 51

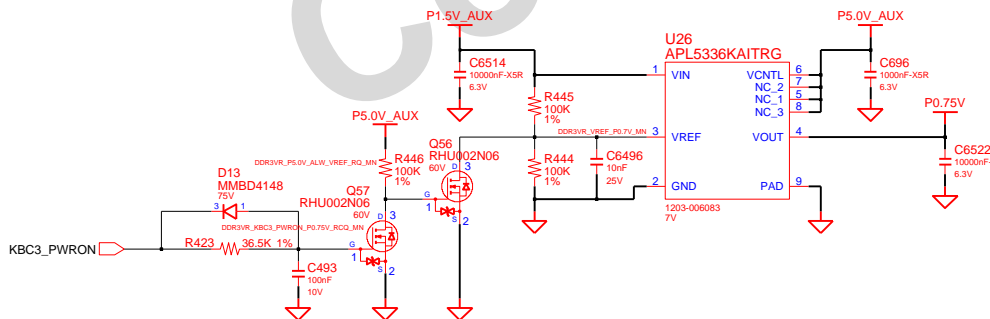
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DDR3 Power



DDR3 VTT(0.75V)



DRAW	MS YANG	DATE	3/11/2011	TITLE	PETRONAS-14DC PWR_MEMORY DDR3 POWER	SAMSUNG ELECTRONICS PART NO: BA41-01666A	
CHECK	MK KIM	DEV.STEP	MP				
APPROVAL	BL LEE	REV	REV 1.2				
MODULE CODE	undefined	LAST EDIT	August 15, 2011 11:04:51 AM	PAGE			44 OF 51

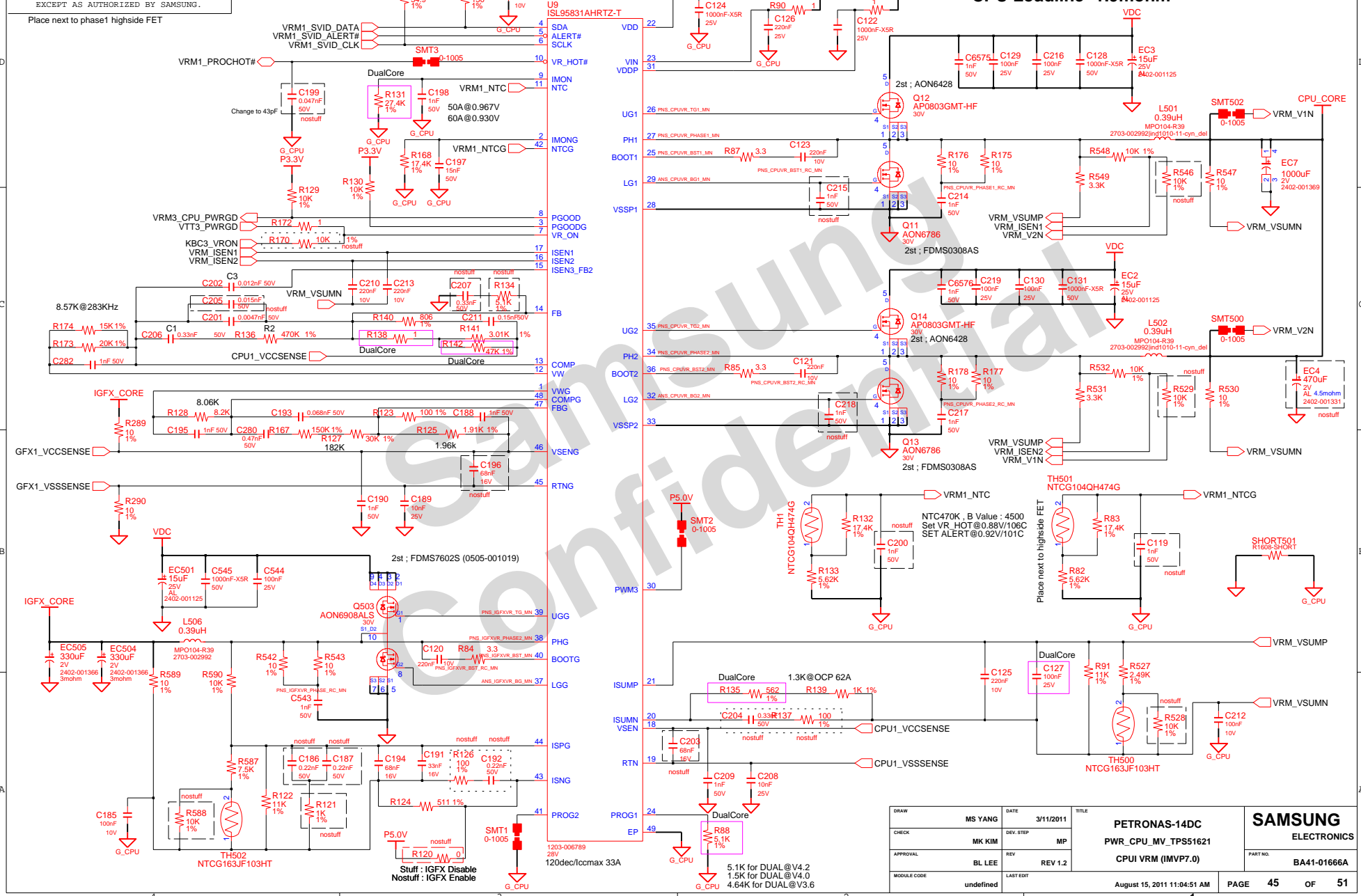
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Place next to phase1 highside FET

CPU VRM (IMVP-7)

**GFX Loadline -3.9ohm
CPU Loadline -1.9ohm**



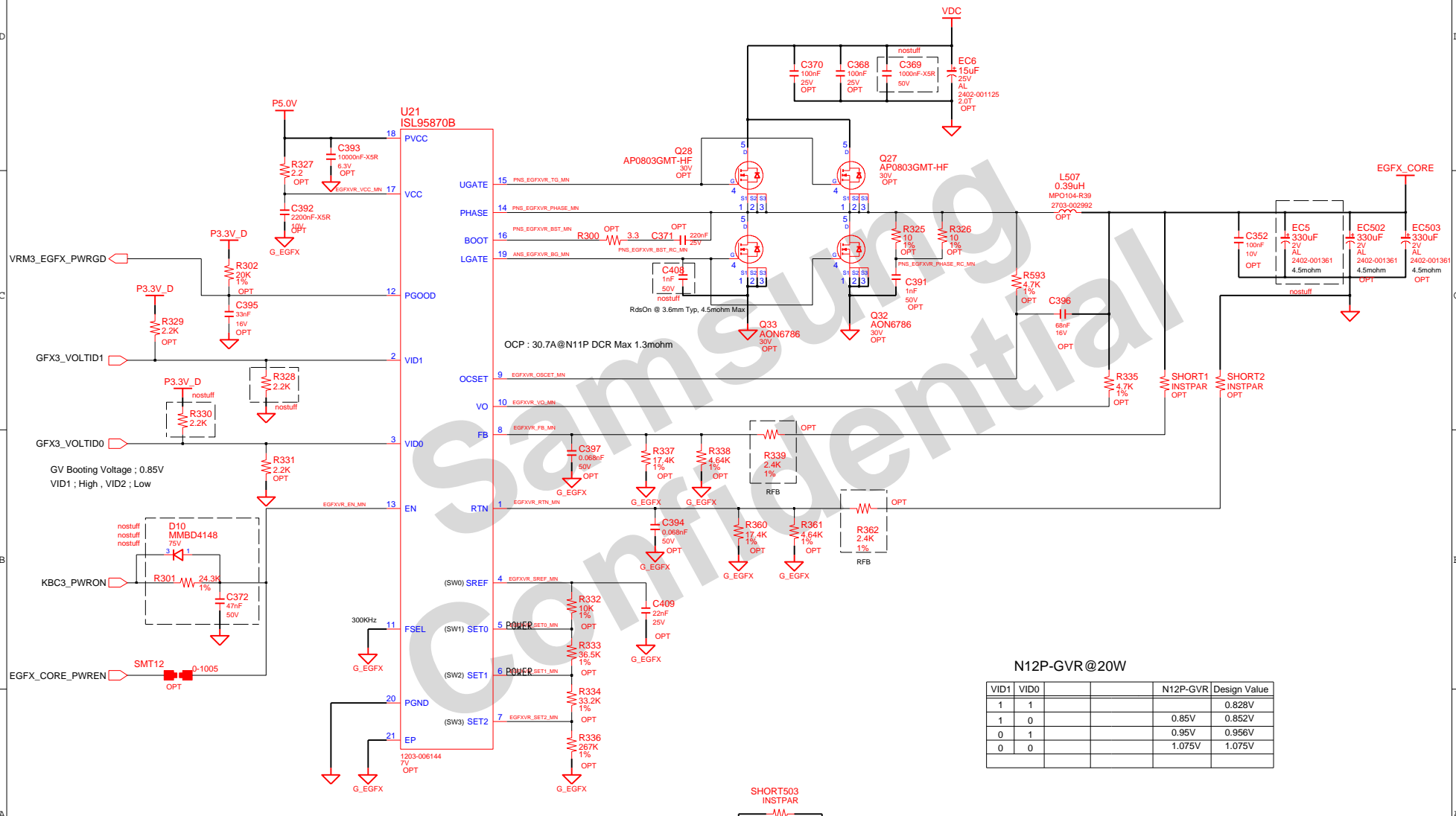
DRAW	MS YANG	DATE	3/11/2011	TITLE	PETRONAS-14DC PWR_CPU_MV_TPS51621 CPU VRM (IMVP7.0)	SAMSUNG ELECTRONICS	
CHECK	MK KIM	DEV.STEP	MP	REV		PART NO.	BA41-01666A
APPROVAL	BL LEE	REV	REV 1.2	LAST EDIT			
MODULE CODE	undefined				August 15, 2011 11:04:51 AM	PAGE 45 OF 51	



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External Graphic Core Power



N12P-GVR@20W

VID1	VID0	N12P-GVR	Design Value
1	1		0.828V
1	0	0.85V	0.852V
0	1	0.95V	0.956V
0	0	1.075V	1.075V

DRAW	MS YANG	DATE	3/11/2011	TITLE	PETRONAS-14DC	SAMSUNG ELECTRONICS
CHECK	MK KIM	DEV. STEP	MP		PWR_GRAPHIC	
APPROVAL	BL LEE	REV	REV 1.2		ISL95870	PART NO. BA41-01666A
MODULE CODE		LAST EDIT			August 15, 2011 11:04:51 AM	PAGE 46 OF 51

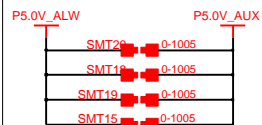
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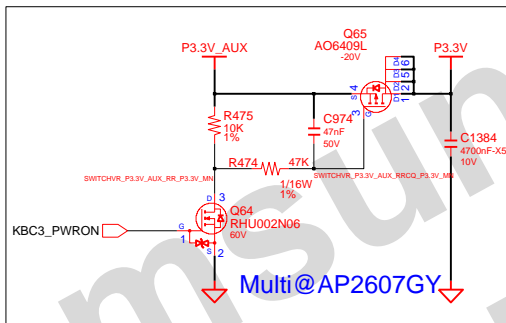
Switched Power 1

(P5.0V -> P3.3V -> EGFX_CORE -> P1.8V -> P1.5V -> P0.75V -> P1.05V -> P0.85V_SA -> CPU_CORE)

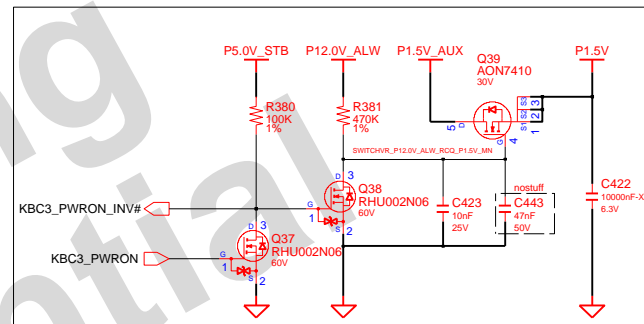
P5.0V_AUX



Switched Power On (P3.3V)

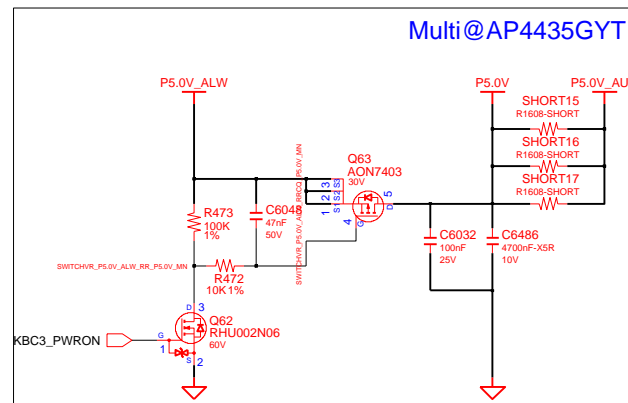


Switched Power On (P1.5V)



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

Switched Power On (P5.0V)



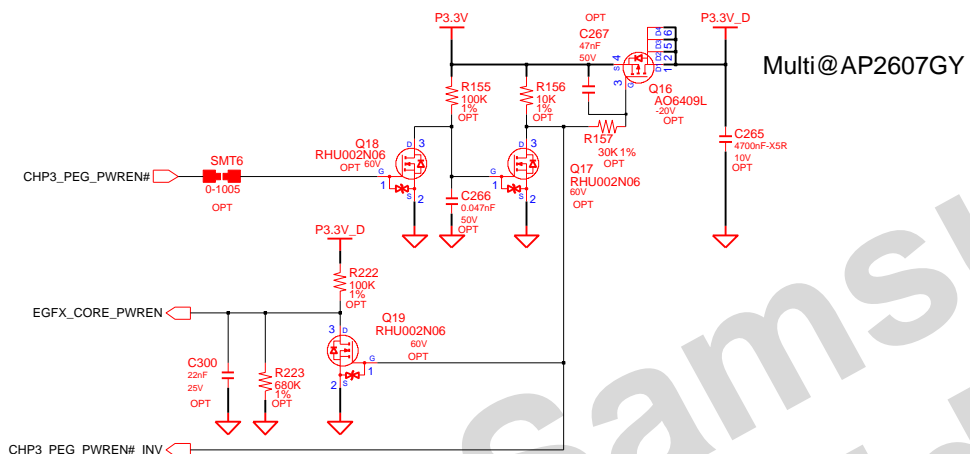
DRAW	MS YANG	DATE	3/11/2011	TITLE	PETRONAS-14DC	SAMSUNG ELECTRONICS
CHECK	MK KIM	DEV. STEP	MP	Switched PWR 2	PART NO.	
APPROVAL	BL LEE	REV	REV 1.2	Switched Power	BA41-01666A	
MODULE CODE	undefined	LAST EDIT	August 15, 2011 11:04:51 AM	PAGE	47	OF 51

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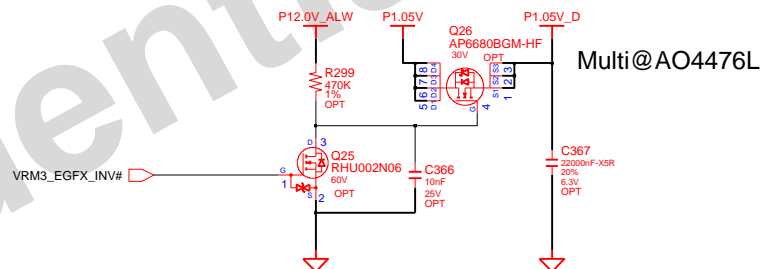
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Switched Power 2 (For nVidia GFX Power Sequence)

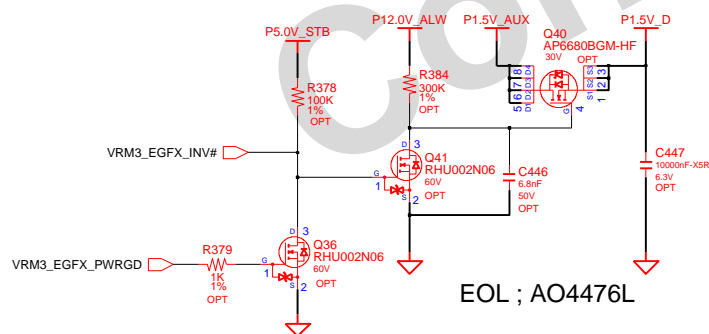
Discrete Switched Power (D3.3V : Max_1.2A)



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



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

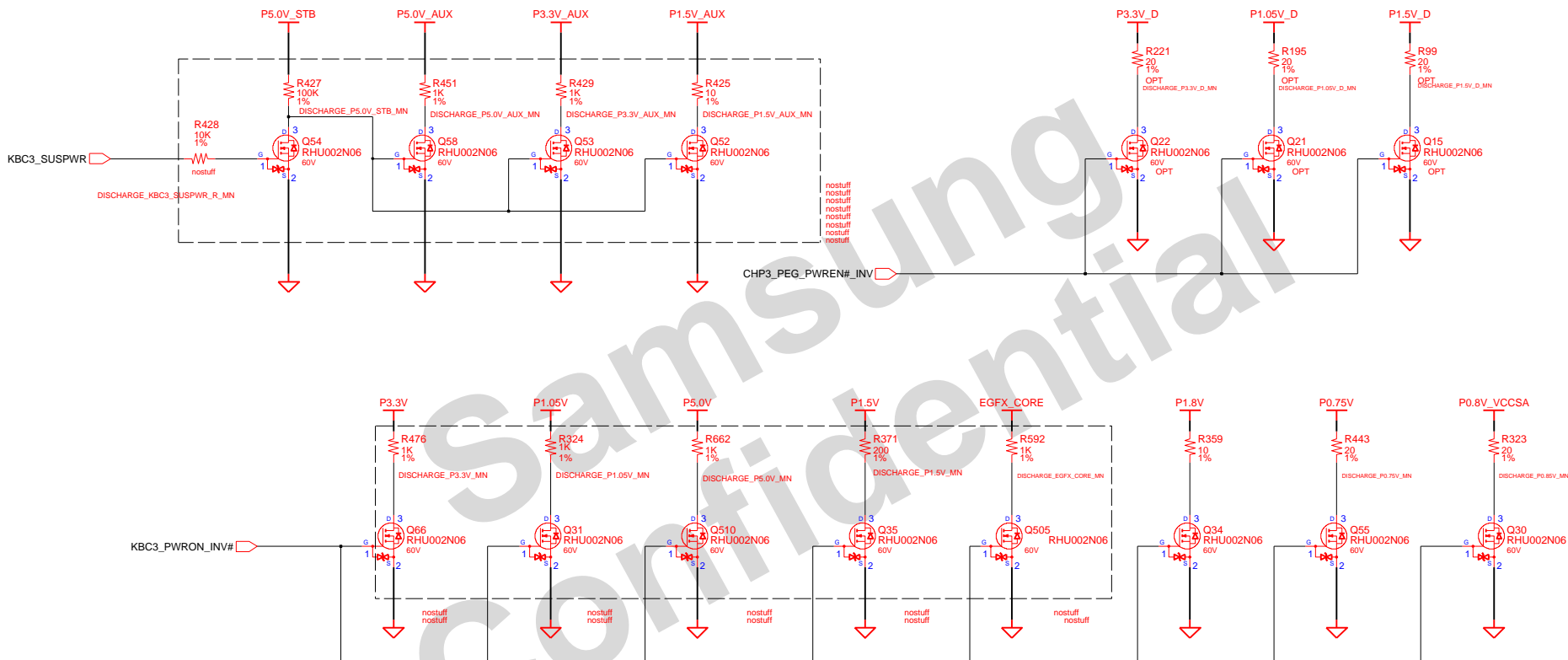


DRAW	MS YANG	DATE	3/11/2011	TITLE	PETRONAS-14DC	SAMSUNG ELECTRONICS
CHECK	MK KIM	DEV.STEP	MP	Switched PWR		
APPROVAL	BL LEE	REV	REV 1.2	FOR OPTIMUS PWR	PART NO. BA41-01666A	
MODULE CODE		LAST EDIT		August 15, 2011 11:04:51 AM	PAGE 48 OF 51	

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POWER DISCHARGER

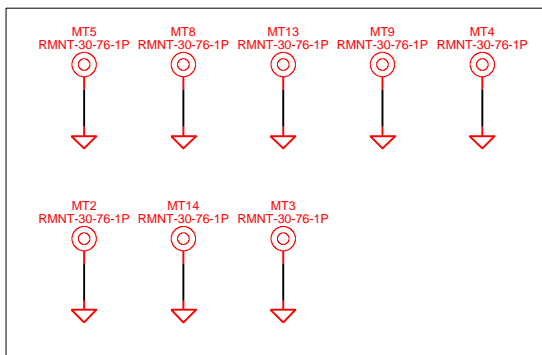


DESIGN	MS YANG	DATE	3/11/2011	TITLE	PETRONAS-14DC DISCHARGER LOGIC DISCHARGING LOGIC	SAMSUNG ELECTRONICS PART NO. BA41-01666A
CHECK	MK KIM	DEV. STEP	MP			
APPROVAL	BL LEE	REV	REV 1.2			
MODULE CODE		LAST EDIT				
				August 15, 2011 11:04:51 AM	PAGE	49 OF 51

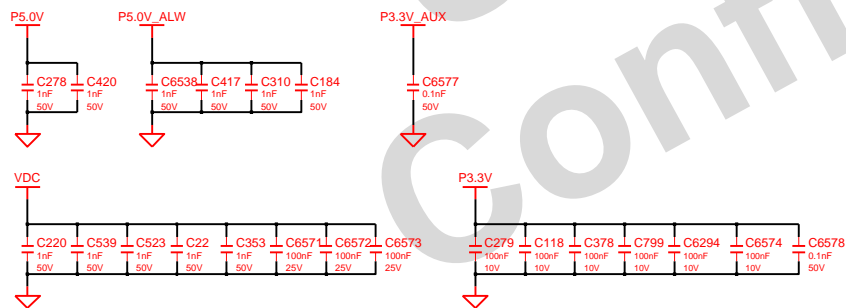
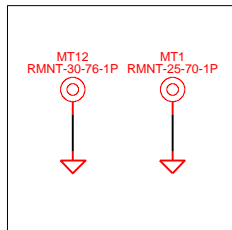
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Mainboard Mount ((30-76)X8EA)



PCB FIX

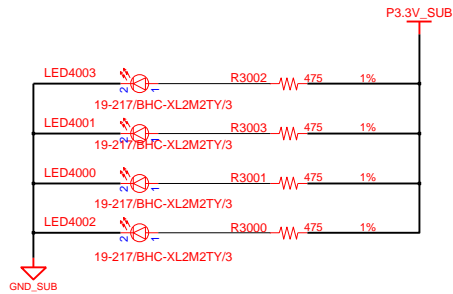


DESIGN	MS YANG	DATE	3/11/2011	TITLE	PETRONAS-14DC MT Hole MT Hole	SAMSUNG ELECTRONICS	
CHECK	MK KIM	DEV. STEP	MP	PART NO.			BA41-01666A
APPROVAL	BL LEE	REV	REV 1.2	MODULE CODE			
				LAST EDIT	August 15, 2011 11:04:51 AM	PAGE 50 OF 51	

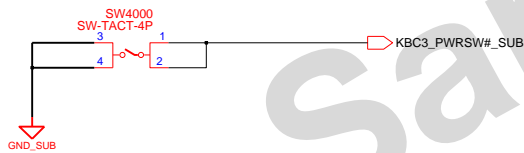
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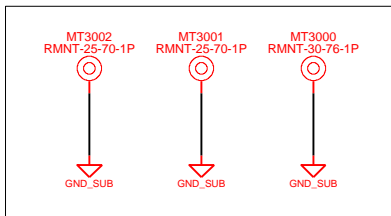
USB SUB BOARD



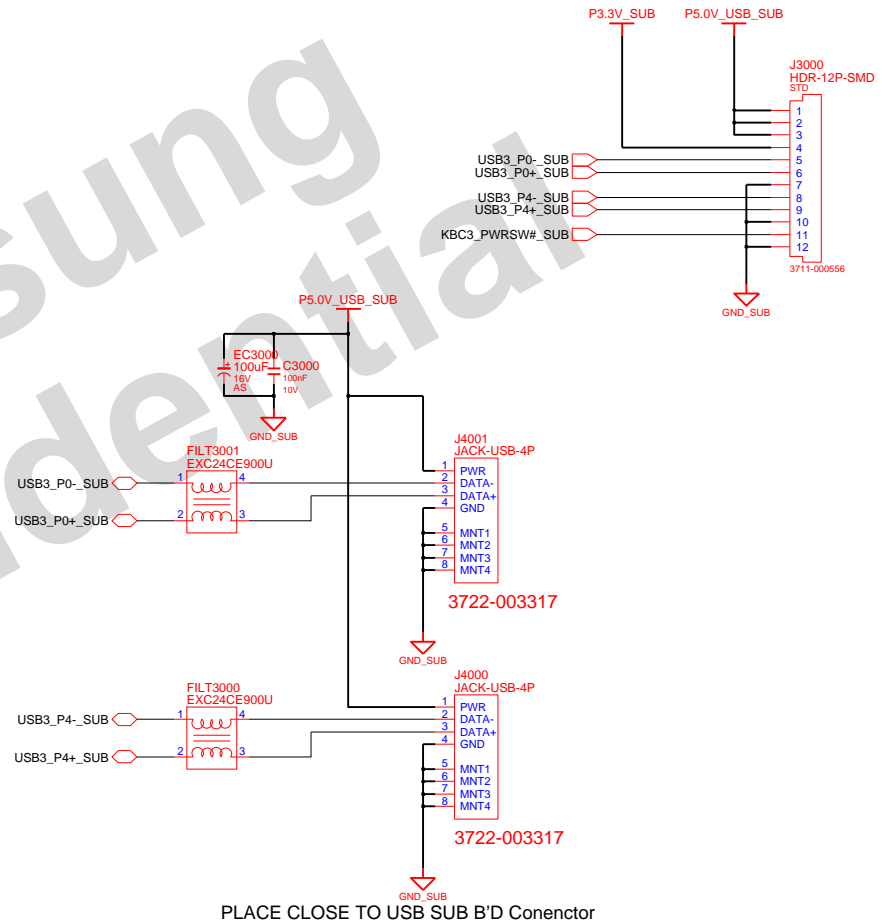
Power Switch Button



PCB Mount



SUB TO MAIN



DESIGN	MS YANG	DATE	3/11/2011	TITLE	PETRONAS-14DC	SAMSUNG ELECTRONICS PART NO. BA41-01666A
CHECK	MK KIM	DEV. STEP	MP	SUB BOARD		
APPROVAL	BL LEE	REV	REV 1.2	SUB BOARD		
MODULE CODE		LAST EDIT	August 15, 2011 11:04:51 AM	PAGE	51 OF 51	