

BREMEN2-L

CPU : Intel Arrandale
 Chip Set : Intel Ixex Peak(HM55)
 GFX : M92-XTX / Park-XT
 Remarks : Calpella Platform

Model Name : BREMEN2-L
 PBA Name : MAIN
 PCB Code : BA41-01285A
 BA41-01286A
 BA41-01287A
 Dev. Step : PR
 Revision : 0.9
 T.R. Date : 2010.04.25

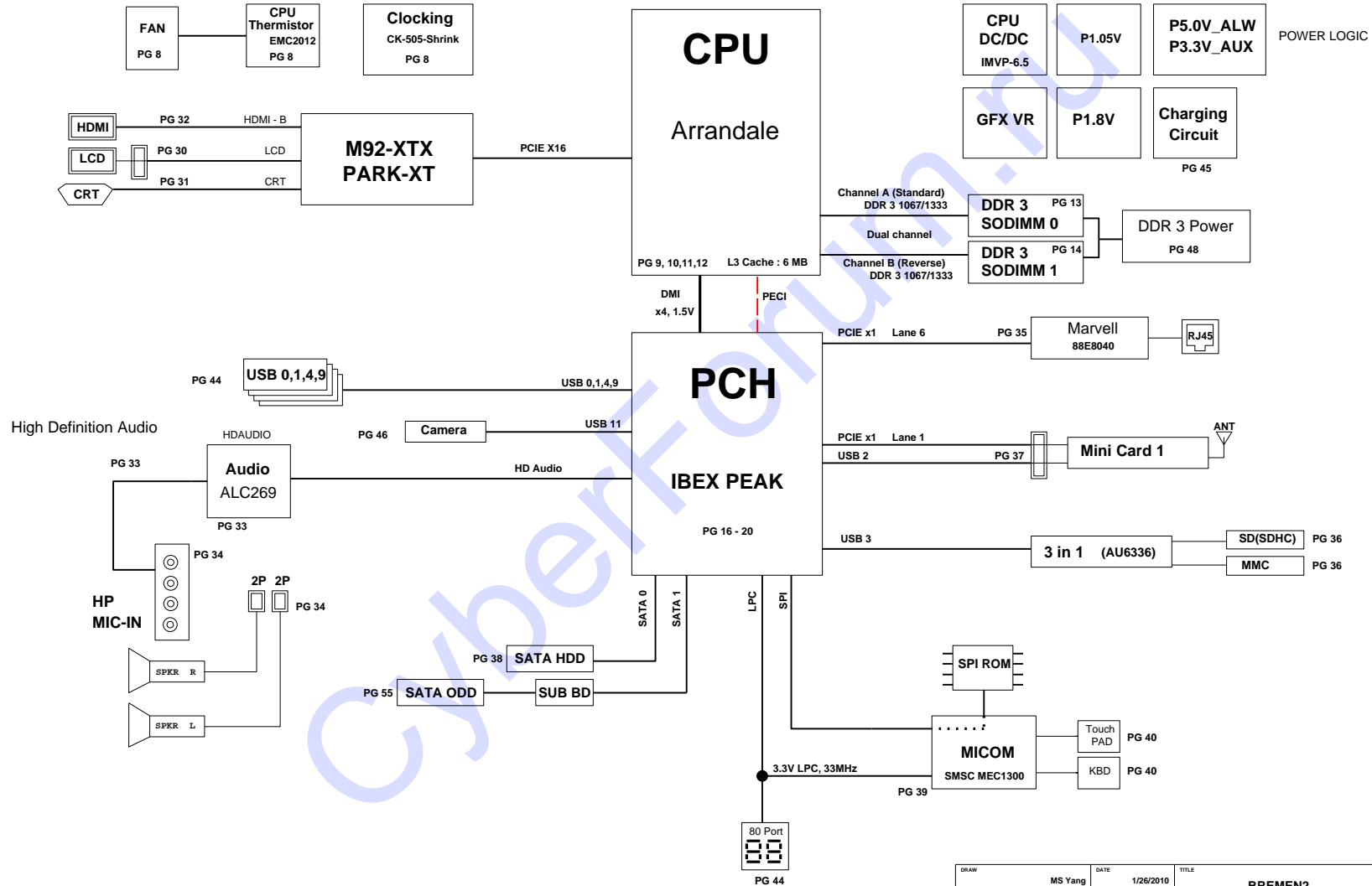
Design	CHECK	APPROVAL
MS Yang	SE Lee	MK Kim

Owner : SEC Mobile R & D Signature : X

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DRAW	MS Yang	DATE	1/26/2010	TITLE	BREMEN2	SAMSUNG ELECTRONICS
CHECK	SE Lee	DEV. STEP	ADV	MAIN		
APPROVAL	MK Kim	REV	REV 0.1	COVER	PART NO. BA41-	
MODULE CODE		LAST EDIT	March 06, 2010 17:48:35 PM		PAGE	1 OF 54

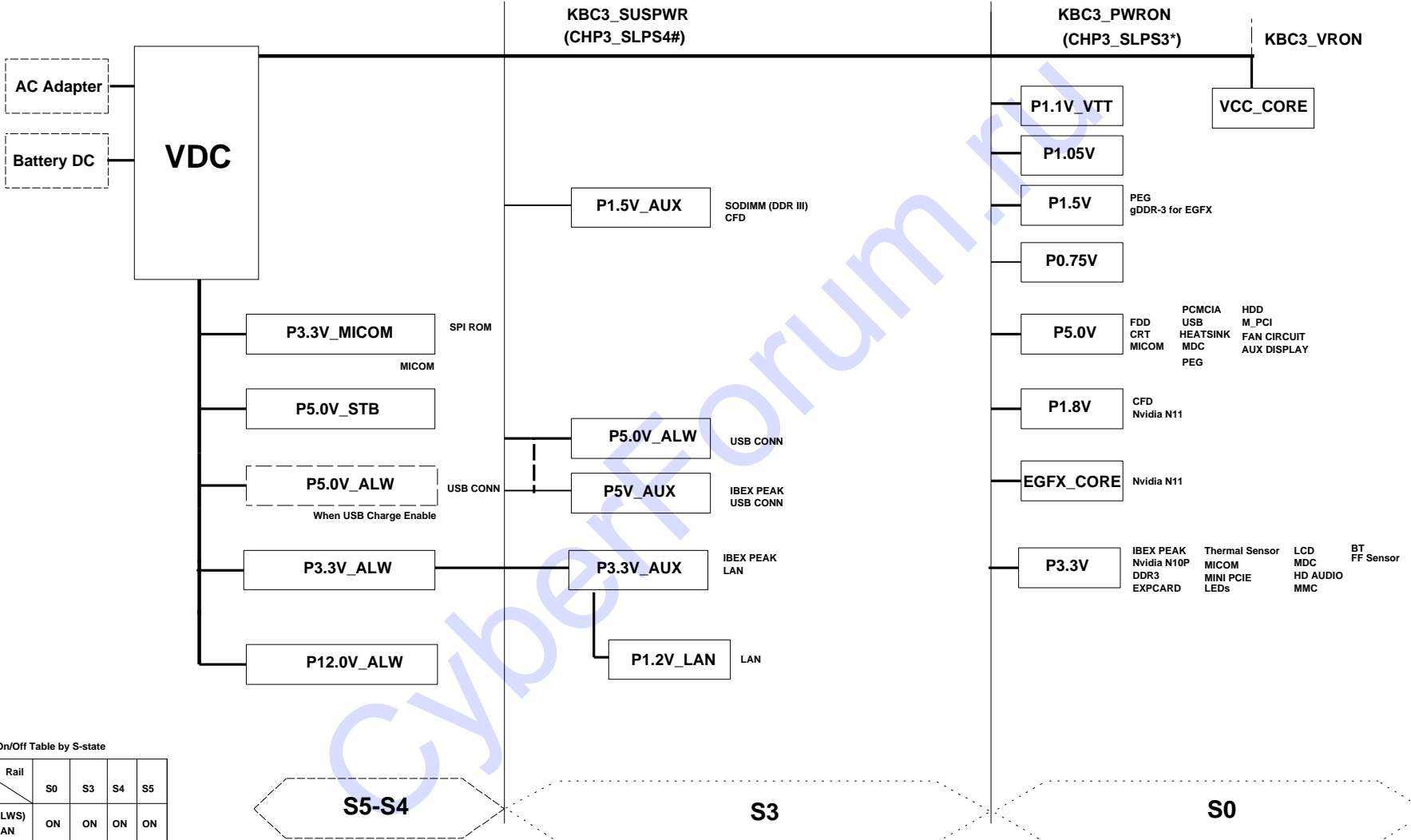
BLOCK DIAGRAM



DRAW	MS Yang	DATE	1/26/2010	TITLE	BREMEN2 MAIN	SAMSUNG ELECTRONICS
CHECK	SE Lee	DEV. STEP	ADV			
APPROVAL	MK Kim	REV	REV 0.1		BLOCK DIAGRAM	PART NO.
MODULE CODE	undefined	LAST EDIT				BA41-
				March 06, 2010 17:48:35 PM	PAGE	2 OF 54

POWER DIAGRAM

Rev 0.1



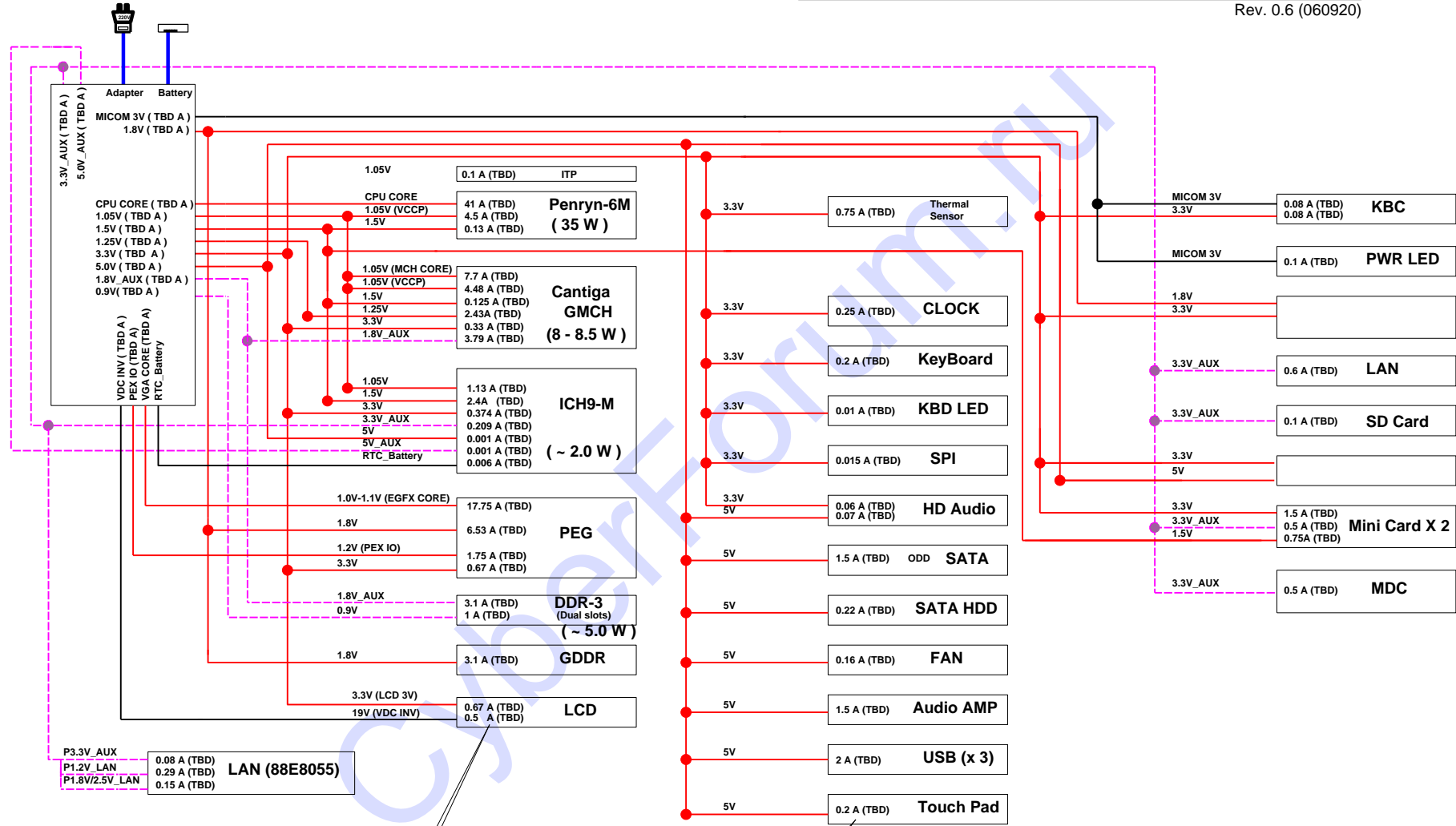
Power On/Off Table by S-state

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

DRAWN	MS Yang	DATE	1/26/2010	TITLE	BREMEN2 MAIN	SAMSUNG ELECTRONICS
CHECK	SE Lee	DEV. STEP	ADV	POWER DIAGRAM		
APPROVAL	MK Kim	REV	REV 0.1	PART NO.		BA41-
MODULE CODE	undefined	LAST EDIT	March 06, 2010 17:48:35 PM	PAGE	3	OF 54

POWER RAILS ANALYSIS

Rev. 0.6 (060920)

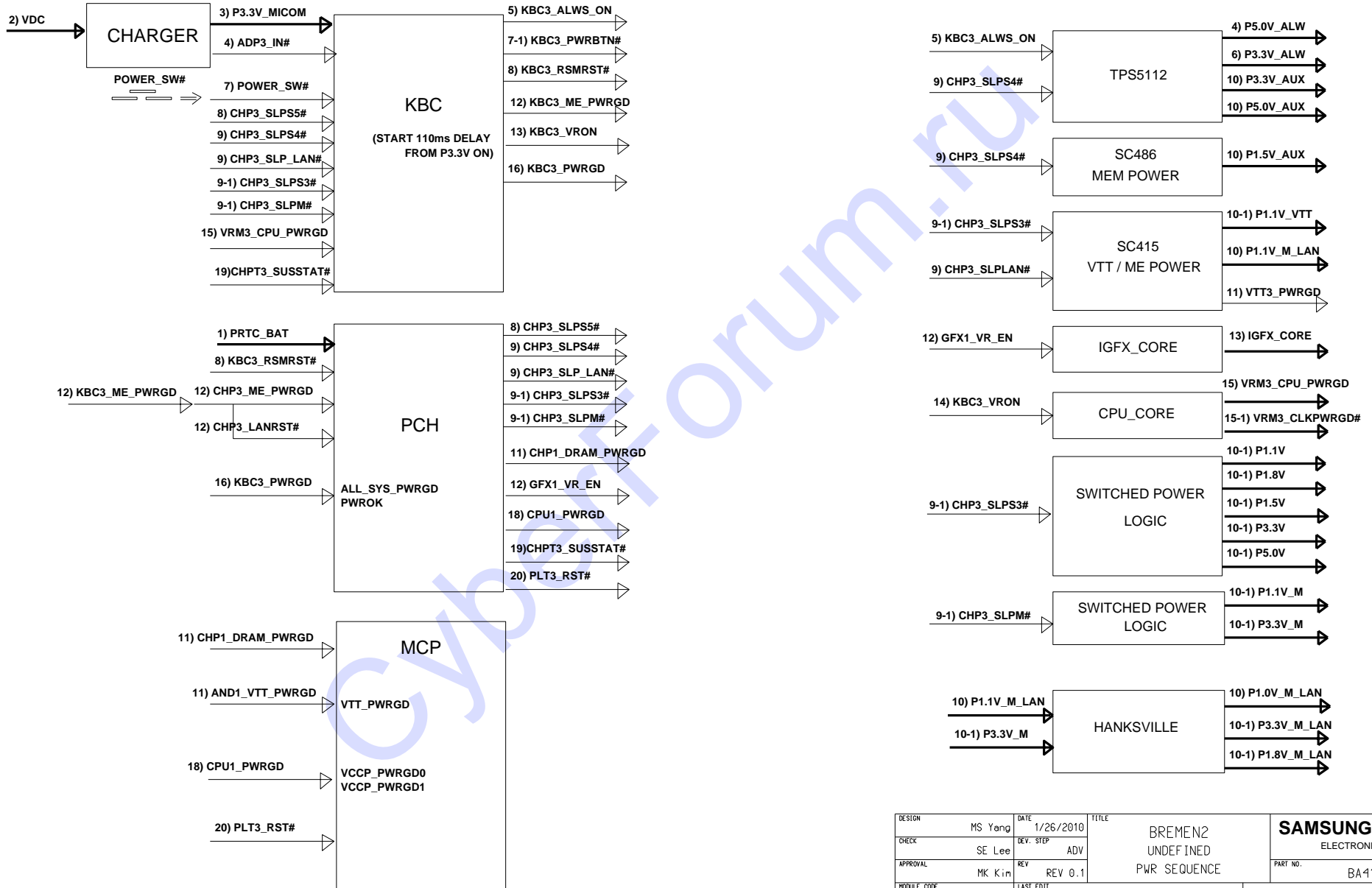


Value by Datasheet/Application notes (Value by measurement)

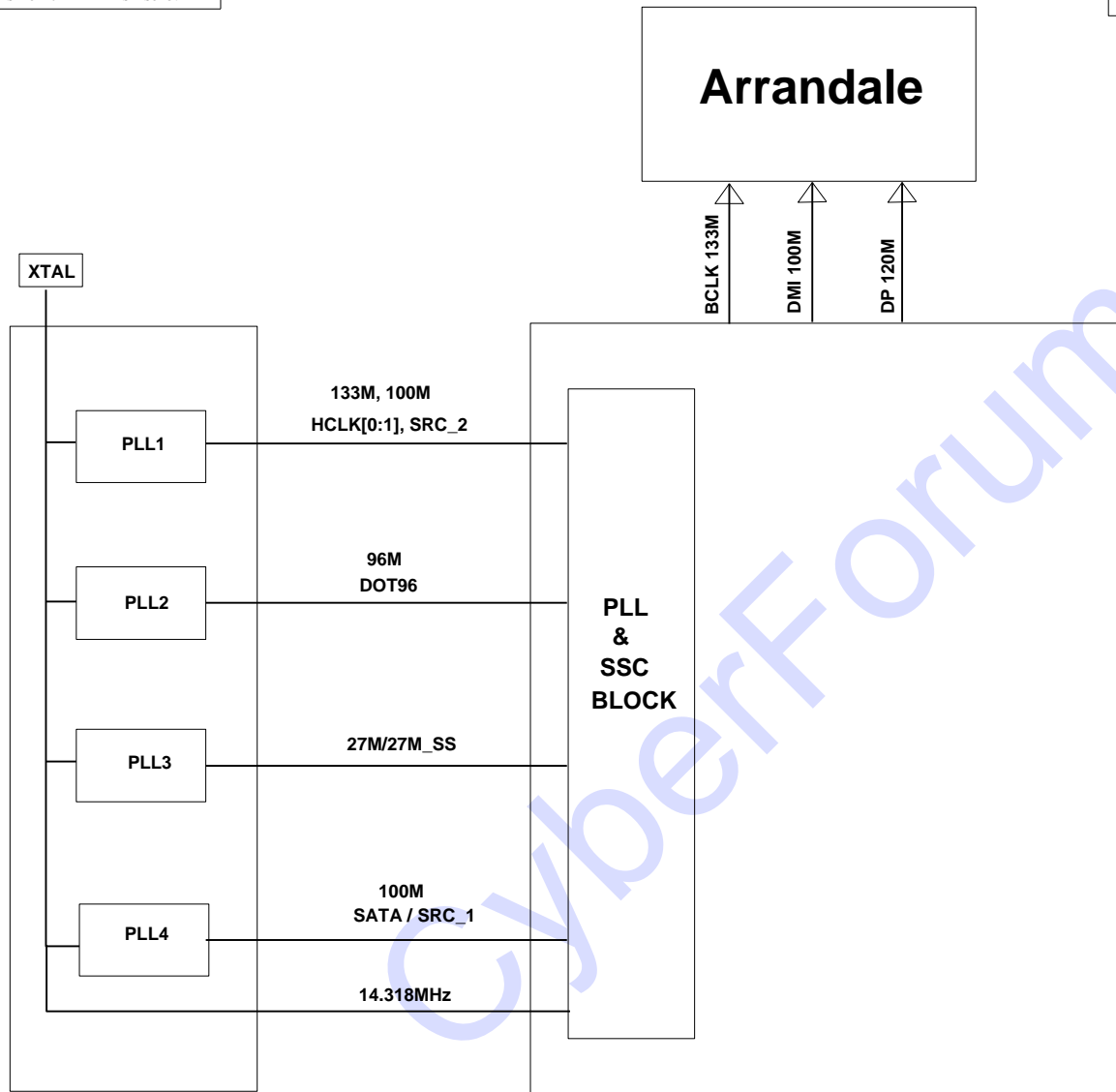
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CHECK	SE Lee	DEV. STEP	ADV			
APPROVAL	MK Kim	REV	REV 0.1			PART NO. BA41-
MODULE CODE	undefined	LAST EDIT		March 06, 2010 17:48:35 PM	PAGE	4 OF 54

PRELIMINARY

POWER SEQUENCE Rev. 0.5



DESIGN	MS Yang	DATE	1/26/2010	TITLE	BREMEN2 UNDEFINED PWR SEQUENCE	SAMSUNG ELECTRONICS PART NO. BA41-
CHECK	SE Lee	REV. STEP	ADV			
APPROVAL	MK Kin	REV	REV 0.1			
MODULE CODE	undefined	LAST EDIT	March 06, 2010 17:48:35 PM	PAGE	5 OF 54	

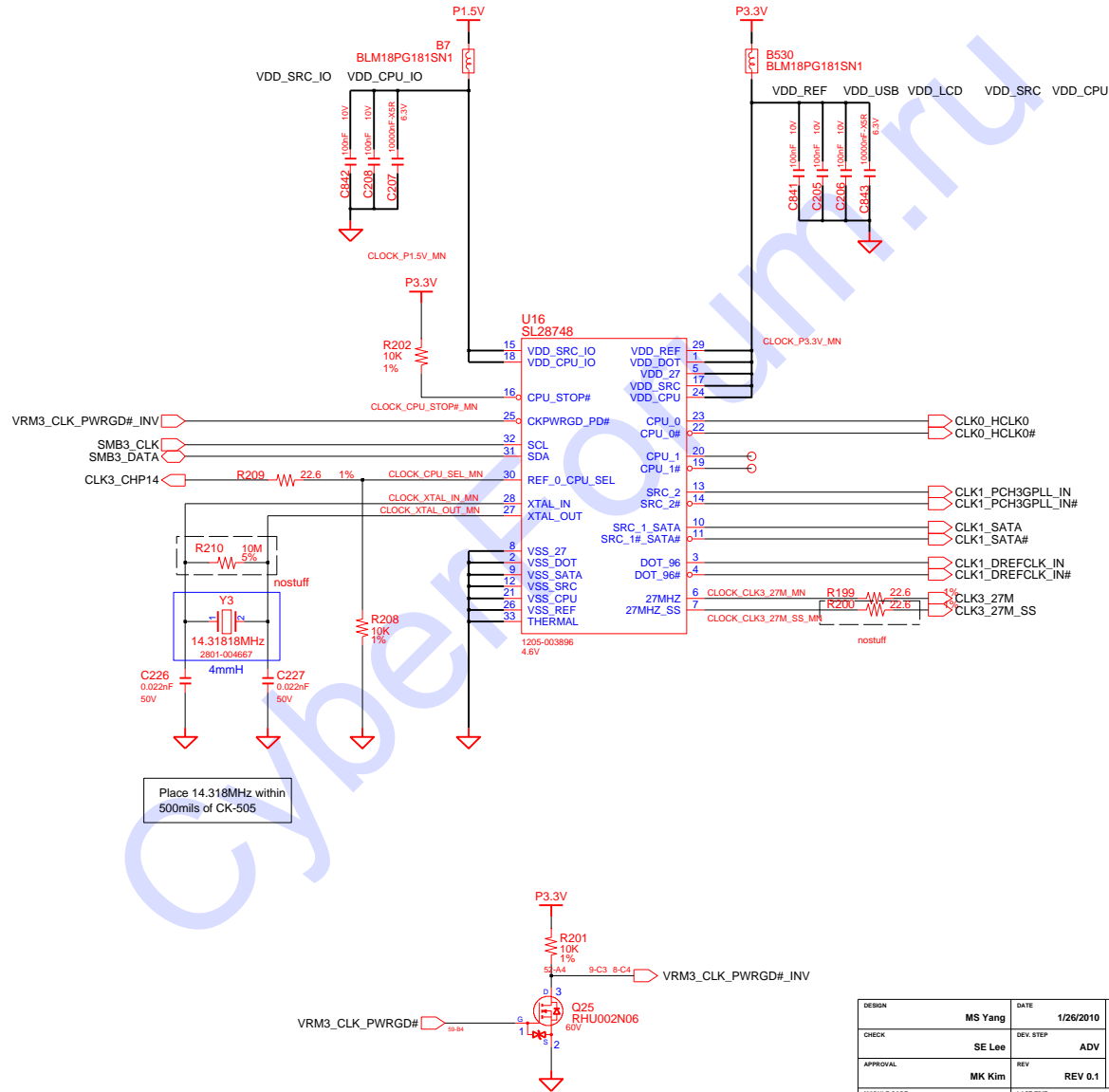


DRAW	MS Yang	DATE	1/26/2010	TITLE	BREMEN2 MAIN CLOCK DIAGRAM	SAMSUNG ELECTRONICS
CHECK	SE Lee	DEV. STEP	ADV			
APPROVAL	MK Kim	REV	REV 0.1			PART NO. BA41-
MODULE CODE	undefined	LAST EDIT	March 06, 2010 17:48:35 PM	PAGE	6	OF 54

CK505M SHRINK VERSION

CPU_MODE SEL

Pin 30	CPU_0	CPU_1
CPU_SEL = 0	133MHz	133MHz

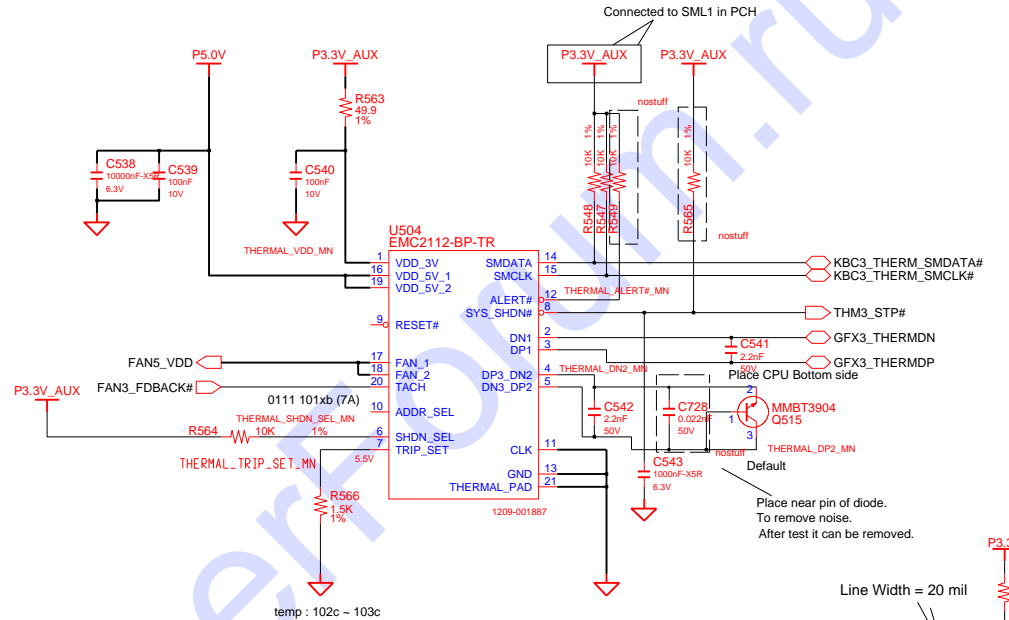


DESIGN	MS Yang	DATE	1/26/2010	TITLE	BREMEN2 CLOCK	SAMSUNG ELECTRONICS
CHECK	SE Lee	DEV. STEP	ADV			
APPROVAL	MK Kim	REV	REV 0.1		CK505-SHRINK	PART NO. BA41-
MODULE CODE	undefined	LAST EDIT			March 06, 2010 17:48:35 PM	PAGE 7 OF 54

THERMAL SENSOR & FAN CONTROL

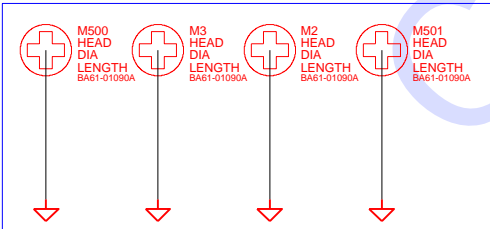
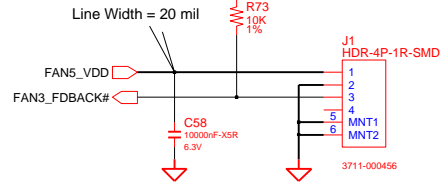
ADDRESSSEL MODE	
0	0101 111xb
✓ HIGH Z	0111 101xb (7A)
1	0101 110xb

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



temp : 102c - 103c

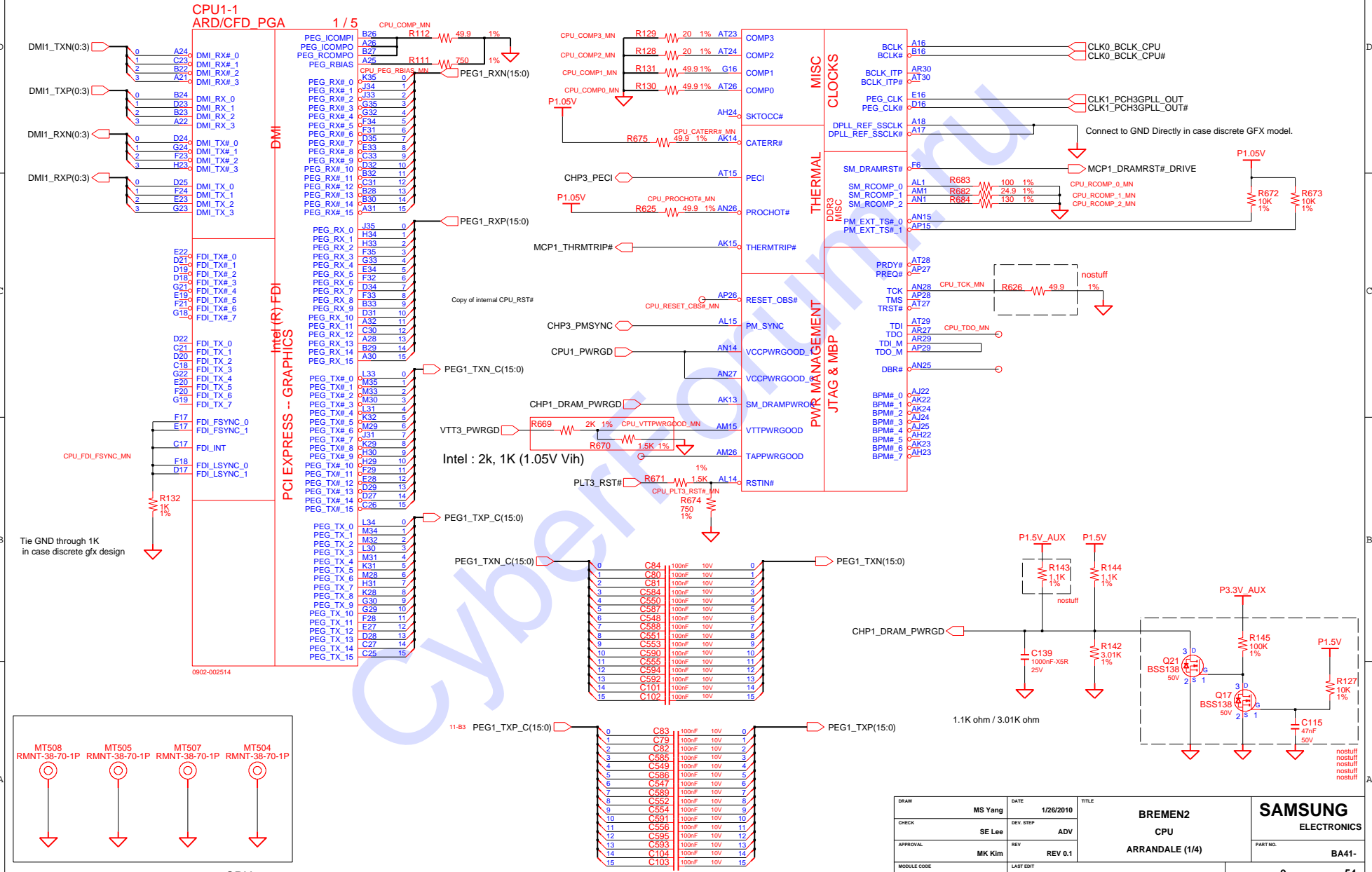
Place CPU Bottom side
Place near pin of diode. To remove noise. After test it can be removed.



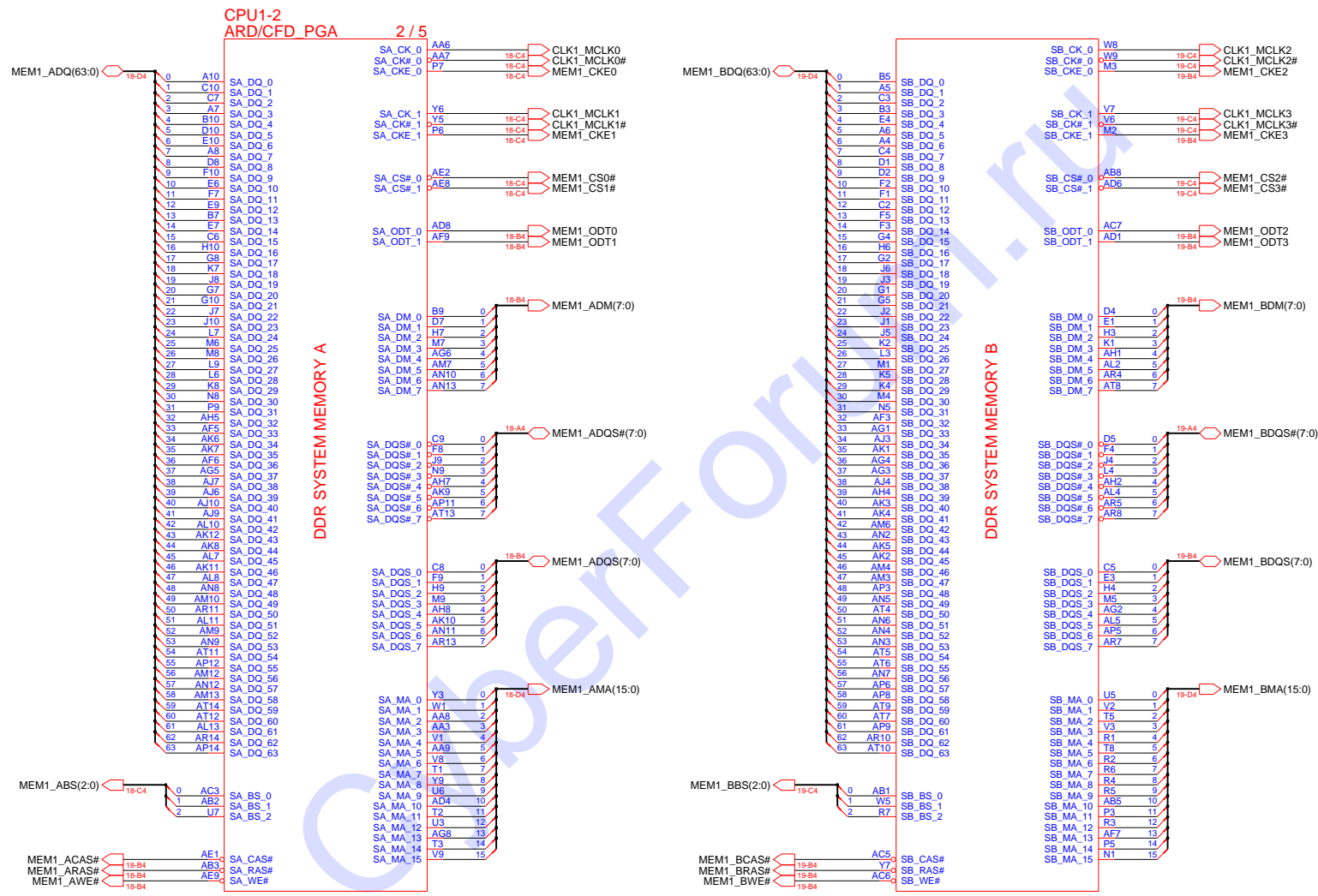
To support heatsink

DESIGN	MS Yang	DATE	1/26/2010	TITLE	BREMEN2 THERMAL SENSOR	SAMSUNG ELECTRONICS
CHECK	SE Lee	REV. STEP	ADV		THERMAL SENSOR G7923	
APPROVAL	MK Kim	REV	REV 0.1			PART NO. BA41-
MODULE CODE	undefined	LAST EDIT			March 06, 2010 17:48:35 PM	PAGE 8 OF 54

ARRANDALE PROCESSOR (DMI, PEG, FDI)



DRAWN	MS Yang	DATE	1/26/2010	TITLE	BREMEN2 CPU ARRANDALE (1/4)	SAMSUNG ELECTRONICS
CHECK	SE Lee	DEV. STEP	ADV	PART NO.		
APPROVAL	MK Kim	REV	REV 0.1	BA41-		
MODULE CODE	undefined	LAST EDIT		March 06, 2010 17:48:35 PM	PAGE	9 OF 54



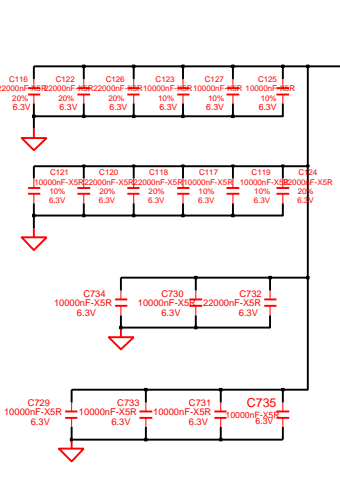
0902-002514

DRAW	MS Yang	DATE	1/26/2010	TITLE	BREMEN2 CPU ARRANDALE (2/4)	SAMSUNG ELECTRONICS	
CHECK	SE Lee	REV. STEP	ADV	PART NO.			BA41-
APPROVAL	MK Kim	REV	REV 0.1	DATE			March 06, 2010 17:48:35 PM
MODULE CODE	undefined	LAST EDIT		PAGE	10	OF 54	

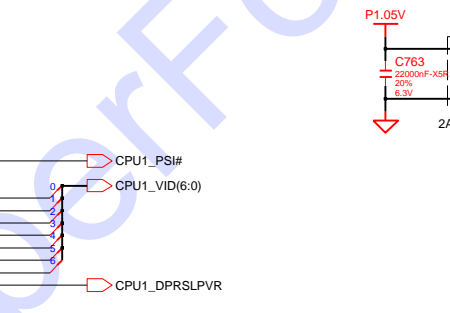
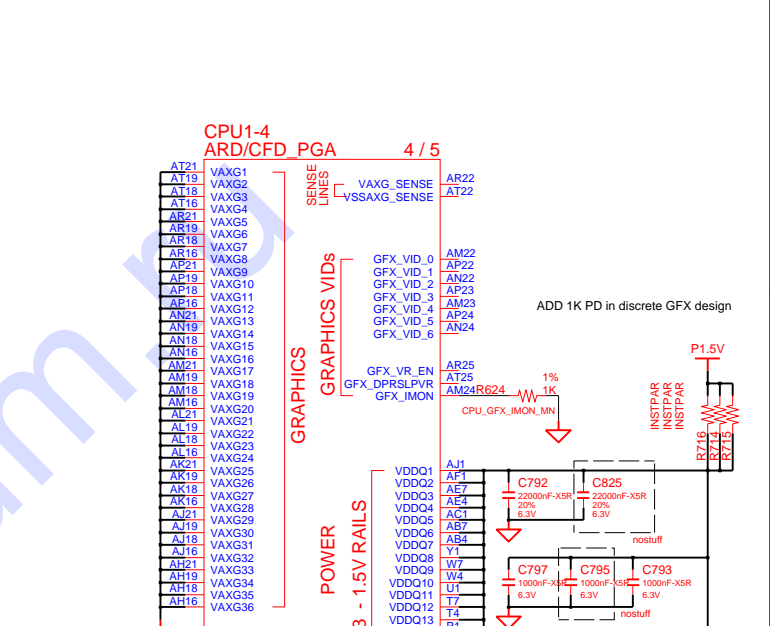
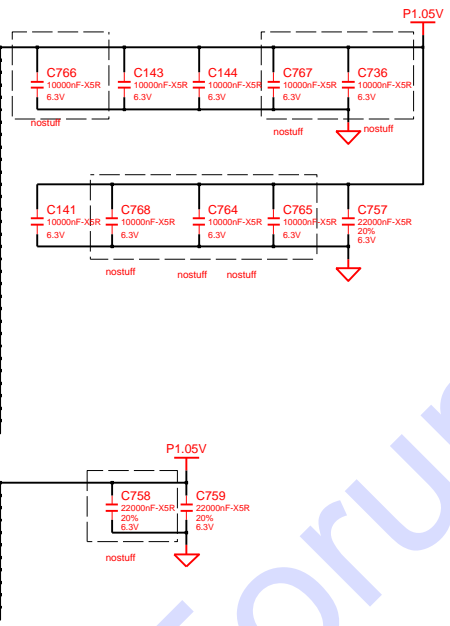
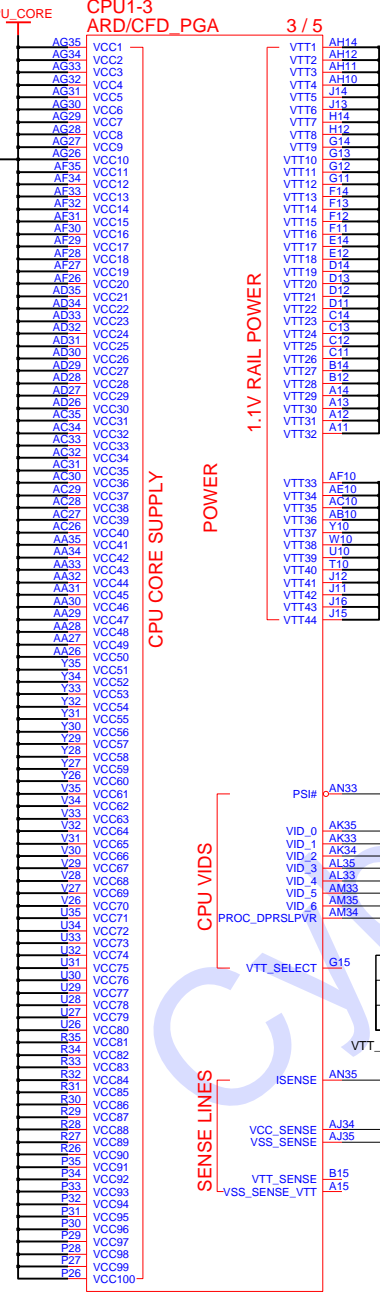
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ALL VTT DECAP IS SHARED

4x 470 uF : CPU VR side

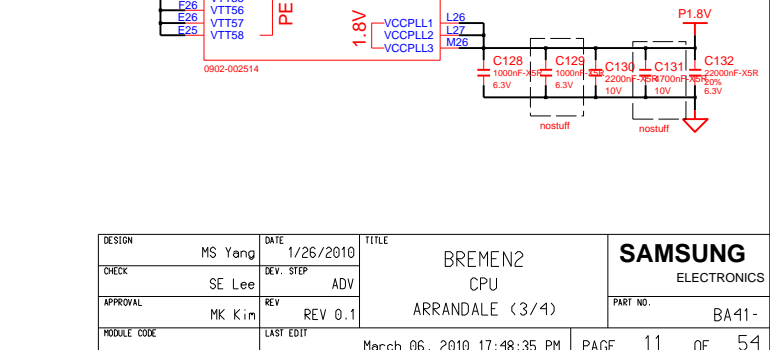
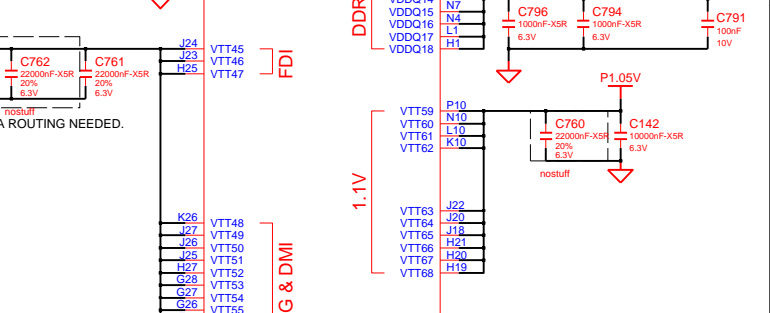


Stuff/NoStuff Check ?
(depends on placement)



VTT_SEL	VOLTAGE	CPU
1	P1.05V	ARRANDALE
0	P1.1V	CLARKS FIELD

VTT_SEL signal (for CFD/ARD shared)



DESIGN	MS Yang	DATE	1/26/2010	TITLE	BREMEN2 CPU ARRANDALE (3/4)	SAMSUNG ELECTRONICS PART NO. BA41-
CHECK	SE Lee	REV. STEP	ADV			
APPROVAL	MK K in	REV	REV 0.1			
MODULE CODE		LAST EDIT				

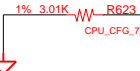
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CPU1-5
ARD/CFD_PG#5 / 5

AT20	VSS1	VSS81	AE34
AT17	VSS2	VSS82	AE32
AR31	VSS3	VSS83	AE33
AR28	VSS4	VSS84	AE31
AR26	VSS5	VSS85	AE30
AR24	VSS6	VSS86	AE29
AR23	VSS7	VSS87	AE28
AR20	VSS8	VSS88	AE27
AR17	VSS9	VSS89	AE26
AR15	VSS10	VSS90	AE6
AR9	VSS11	VSS91	AD10
AR6	VSS12	VSS92	AC8
AR3	VSS13	VSS93	AC4
AP20	VSS14	VSS94	AC2
AP17	VSS15	VSS95	AB34
AP13	VSS16	VSS96	AB33
AP10	VSS17	VSS97	AB32
AP7	VSS18	VSS98	AB31
AP4	VSS19	VSS99	AB30
AP2	VSS20	VSS100	AB29
AN34	VSS21	VSS101	AB28
AN31	VSS22	VSS102	AB27
AN23	VSS23	VSS103	AB26
AN20	VSS24	VSS104	AB6
AN17	VSS25	VSS105	AA10
AM29	VSS26	VSS106	Y8
AM27	VSS27	VSS107	Y4
AM25	VSS28	VSS108	Y2
AM20	VSS29	VSS109	W35
AM17	VSS30	VSS110	W34
AM14	VSS31	VSS111	W33
AM11	VSS32	VSS112	W32
AM8	VSS33	VSS113	W31
AM5	VSS34	VSS114	W30
AM2	VSS35	VSS115	W29
AL34	VSS37	VSS117	W28
AL31	VSS38	VSS118	W27
AL23	VSS39	VSS119	W26
AL20	VSS40	VSS120	W6
AL17	VSS41	VSS121	V10
AL12	VSS42	VSS122	U8
AL9	VSS43	VSS123	U2
AL6	VSS44	VSS124	T35
AL3	VSS45	VSS125	T34
AK29	VSS46	VSS126	T33
AK27	VSS47	VSS127	T32
AK25	VSS48	VSS128	T31
AK20	VSS49	VSS129	T30
AK17	VSS50	VSS130	T29
AJ31	VSS51	VSS131	T28
AJ23	VSS52	VSS132	T27
AJ20	VSS53	VSS133	T26
AJ14	VSS54	VSS134	T6
AJ11	VSS55	VSS135	R10
AJ8	VSS56	VSS136	P6
AJ5	VSS57	VSS137	P4
AJ2	VSS58	VSS138	P2
AH35	VSS59	VSS139	N35
AH34	VSS60	VSS140	N34
AH33	VSS61	VSS141	N33
AH32	VSS62	VSS142	N32
AH31	VSS63	VSS143	N31
AH30	VSS64	VSS144	N30
AH29	VSS65	VSS145	N29
AH28	VSS66	VSS146	N28
AH27	VSS67	VSS147	N27
AH26	VSS68	VSS148	N26
AH25	VSS69	VSS149	N25
AH20	VSS70	VSS150	N6
AH17	VSS71	VSS151	M10
AH13	VSS72	VSS152	L32
AH9	VSS73	VSS153	L29
AH6	VSS74	VSS154	L29
AH3	VSS75	VSS155	L8
AG10	VSS76	VSS156	L2
AF8	VSS77	VSS157	K34
AF4	VSS78	VSS158	K33
AF2	VSS79	VSS159	K30
AE35	VSS80	VSS160	K30

K27	VSS161
K9	VSS162
K6	VSS163
K3	VSS164
J32	VSS165
J30	VSS166
J21	VSS167
J19	VSS168
H35	VSS169
H28	VSS170
H26	VSS171
H24	VSS172
H22	VSS173
H18	VSS174
H15	VSS175
H13	VSS176
H11	VSS177
H8	VSS178
H5	VSS179
H2	VSS180
G34	VSS181
G31	VSS182
G20	VSS183
G9	VSS184
G6	VSS185
G3	VSS186
F30	VSS187
F27	VSS188
F25	VSS189
F22	VSS190
F19	VSS191
F16	VSS192
F15	VSS193
E35	VSS194
E32	VSS195
E29	VSS196
E24	VSS197
E21	VSS198
E16	VSS199
E13	VSS200
E11	VSS201
E8	VSS202
E5	VSS203
E2	VSS204
D33	VSS205
D30	VSS206
D26	VSS207
D9	VSS208
D6	VSS209
D3	VSS210
C34	VSS211
C32	VSS212
C29	VSS213
C28	VSS214
C24	VSS215
C22	VSS216
C20	VSS217
C19	VSS218
C16	VSS219
B31	VSS220
B25	VSS221
B21	VSS222
B16	VSS223
B17	VSS224
B13	VSS225
B11	VSS226
B8	VSS227
B6	VSS228
B4	VSS229
A29	VSS230
A27	VSS231
A23	VSS232
A9	VSS233

AP26	RSVD1	RSVD32	AJ13
AL25	RSVD2	RSVD33	AJ12
AL24	RSVD3	RSVD34	AH25
AL22	RSVD4	RSVD35	AK26
AJ33	RSVD5	RSVD36	AL26
AG9	RSVD6	RSVD_NCTF_37	AR2
M27	RSVD7	RSVD38	AJ26
L29	RSVD8	RSVD39	AJ27
J17	SA_DIMM_VREFDQ		
H17	SB_DIMM_VREFDQ		
G25	RSVD11		
G17	RSVD12	RSVD_NCTF_40	AP1
E31	RSVD13	RSVD_NCTF_41	AT2
E30	RSVD14	RSVD_NCTF_42	AT3
		RSVD_NCTF_43	AR1
AM30	CFG_0	RSVD45	AL28
AM28	CFG_1	RSVD46	AL29
AP31	CFG_2	RSVD47	AP30
AL32	CFG_3	RSVD48	AP32
AL30	CFG_4	RSVD49	AL27
AM31	CFG_5	RSVD50	AT32
AN29	CFG_6	RSVD51	AP33
AM32	CFG_7	RSVD52	AR33
AK32	CFG_8	RSVD_NCTF_54	AT33
AK31	CFG_9	RSVD_NCTF_55	AT34
AK28	CFG_10	RSVD_NCTF_56	AP35
AJ28	CFG_11	RSVD_NCTF_57	AR35
AN30	CFG_12	RSVD58	AR32
AJ32	CFG_13		
AJ29	CFG_14	RSVD_TP_59	E15
AJ30	CFG_15	RSVD_TP_60	F15
AK30	CFG_16	KEY	A2
H16	RSVD_TP_86	U4	D15
		RSVD62	C15
B19	RSVD15	RSVD63	AJ15
A19	RSVD16	RSVD64	AH15
B20	RSVD17	RSVD65	
A20	RSVD18		
U9	RSVD19	RSVD_TP_66	AA5
T9	RSVD20	RSVD_TP_67	AA4
AC9	RSVD21	RSVD_TP_68	R8
AB9	RSVD22	RSVD_TP_69	AD3
		RSVD_TP_70	AD2
		RSVD_TP_71	AA2
		RSVD_TP_72	AA1
		RSVD_TP_73	R9
		RSVD_TP_74	AG7
		RSVD_TP_75	AE3
C1	RSVD_NCTF_23	V4	
A3	RSVD_NCTF_24	V5	
		RSVD_TP_76	N2
		RSVD_TP_77	AD5
J29	RSVD26	RSVD_TP_78	AD7
J28	RSVD27	RSVD_TP_79	W3
		RSVD_TP_80	W2
A34	RSVD_NCTF_28	RSVD_TP_81	N3
A33	RSVD_NCTF_29	RSVD_TP_82	AE5
		RSVD_TP_83	AD9
C35	RSVD_NCTF_30	RSVD_TP_84	
B35	RSVD_NCTF_31	RSVD_TP_85	



RESERVED

CFG Straps for Processor

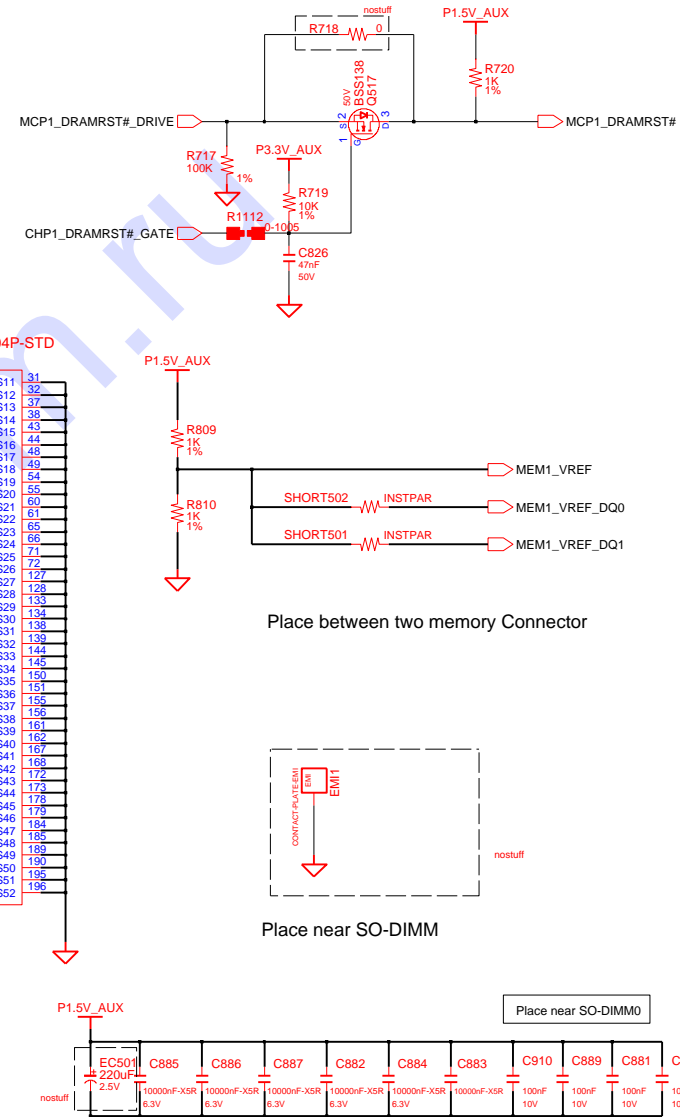
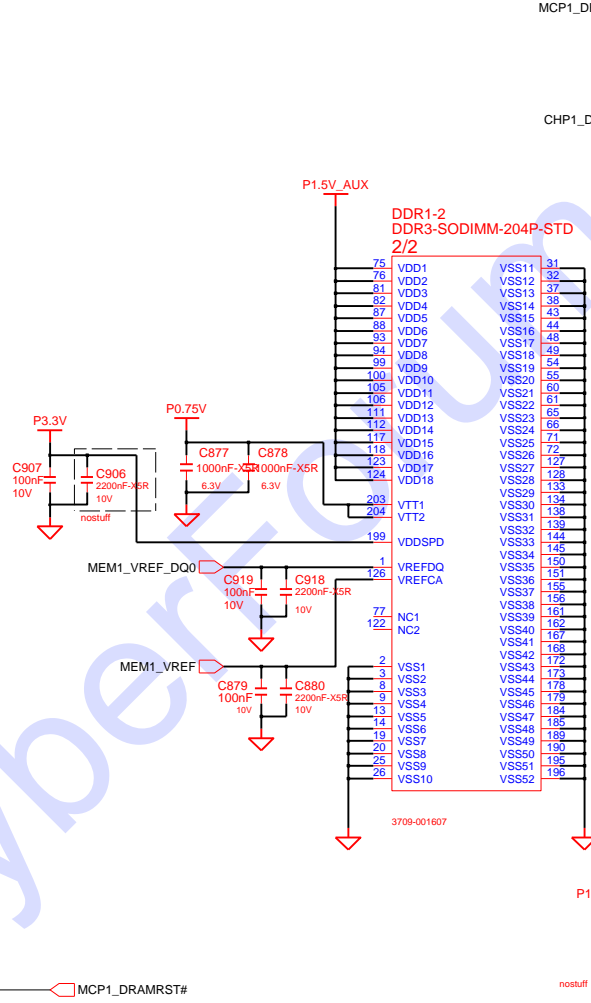
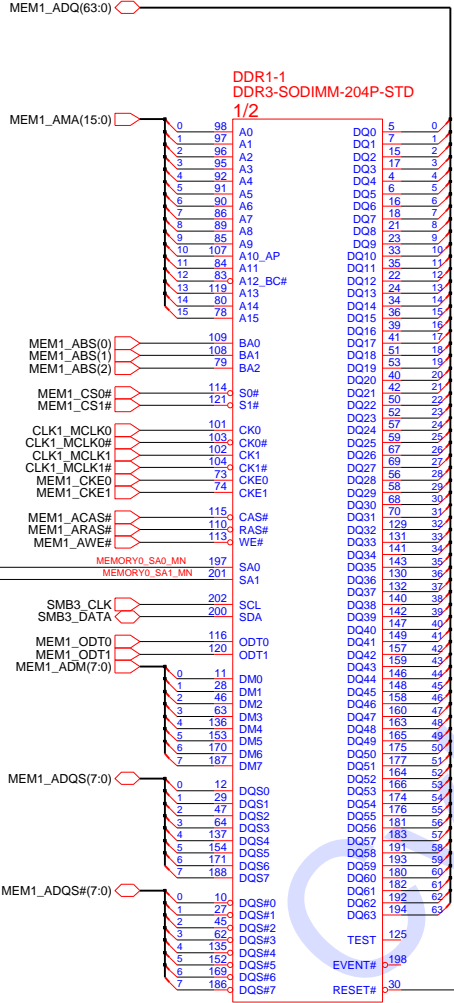
PCI Express Configuration Select	
CFG0	1 : Single PEG 0 : Bifunction enabled
PCI Express Static Lane Reversal	
CFG3	1 : Normal operation 0 : Lane Reversed
Display Port Presence	
CFG4	1 : Disabled 0 : No DP device is connected to eDP - : Enabled - (DP device is connected to eDP)
PCIe 2.0 SUPPORT	
CFG7	1 : Normal operation 0 : PCIe2.0 Jitter support

CRB is NC
EDS/DG is GND recommend

DRAW	MS Yang	DATE	1/26/2010	TITLE	BREMEN2 CPU	SAMSUNG ELECTRONICS
CHECK	SE Lee	REV. STEP	ADV		ARRANDALE (4/4)	PART NO. BA41-
APPROVAL	MK Kim	REV	REV 0.1			
MODULE CODE	undefined	LAST EDIT		March 06, 2010 17:48:35 PM	PAGE 12	OF 54

DDR SO-DIMM #0

Height : 4 mm (STANDARD)
 P/N : 3709-001532 (Molex)
 P/N : 3709-001560 (Foxconn)

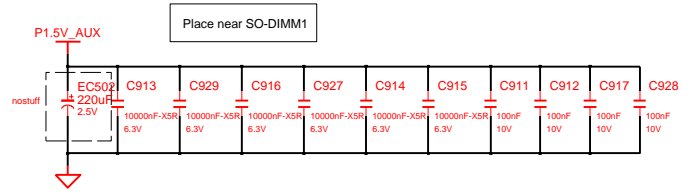
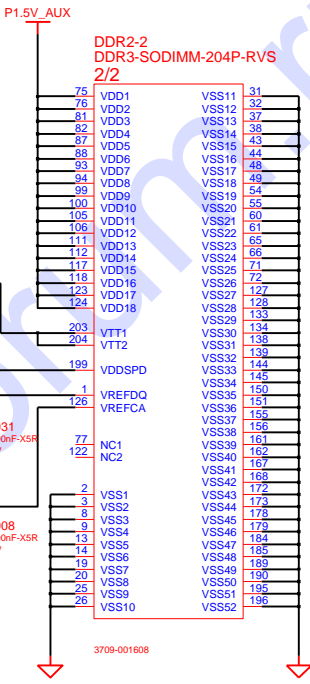
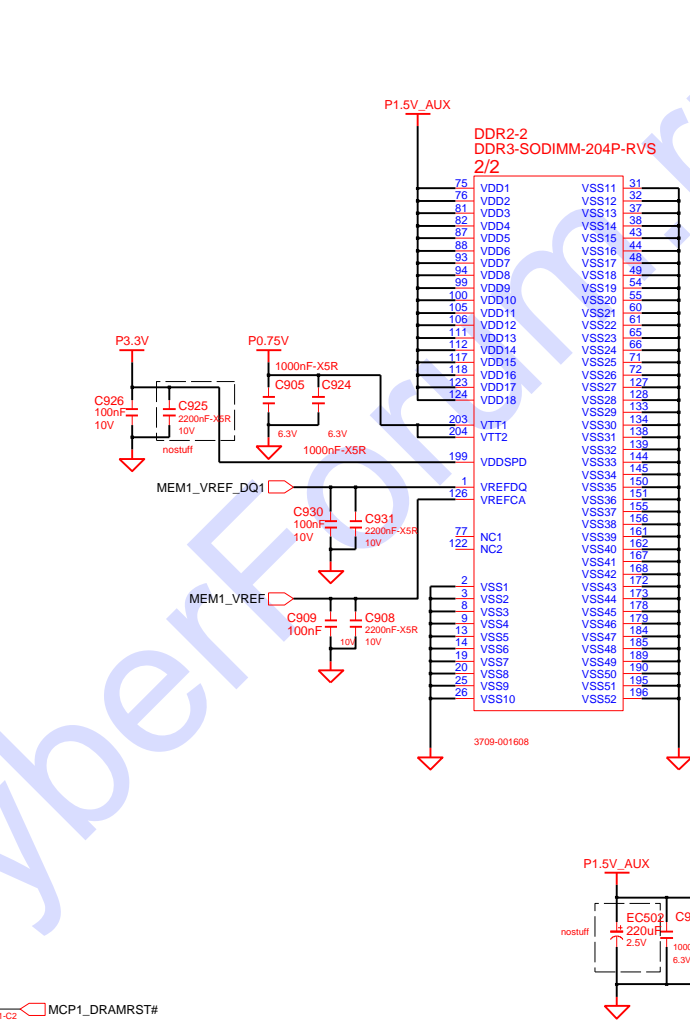
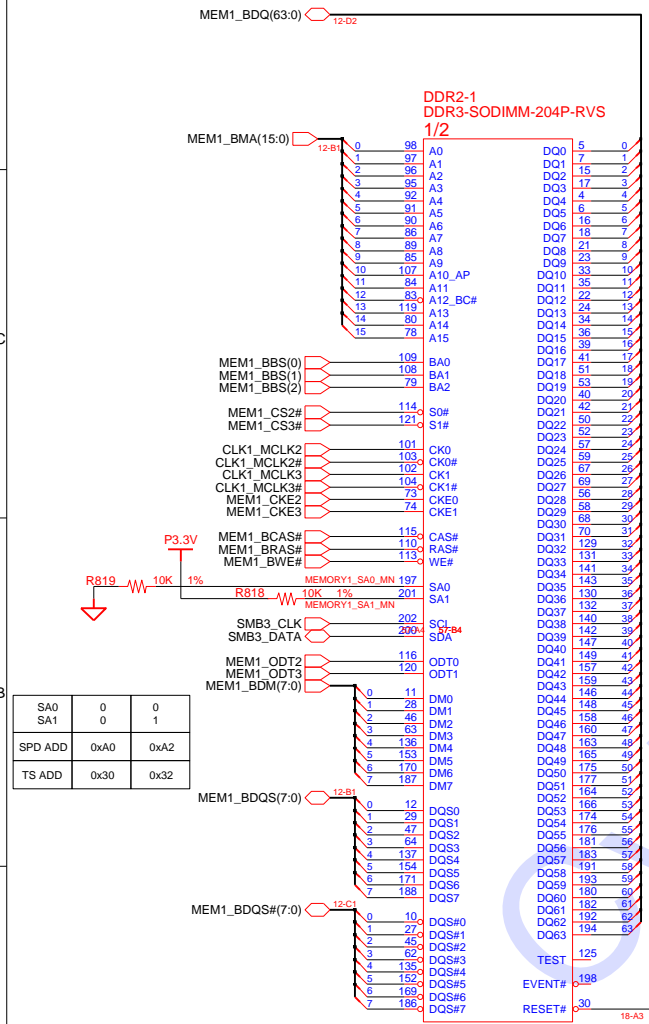


SA0	0	0
SA1	0	1
SPD ADD	0xA0	0xA2
TS ADD	0x30	0x32

DRAW	MS Yang	DATE	1/26/2010	TITLE	BREMEN2 SODIMM A	SAMSUNG ELECTRONICS PART NO. BA41-
CHECK	SE Lee	DEV. STEP	ADV			
APPROVAL	MK Kim	REV	REV 0.1			
MODULE CODE	undefined	LAST EDIT				
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DDR SO-DIMM #1

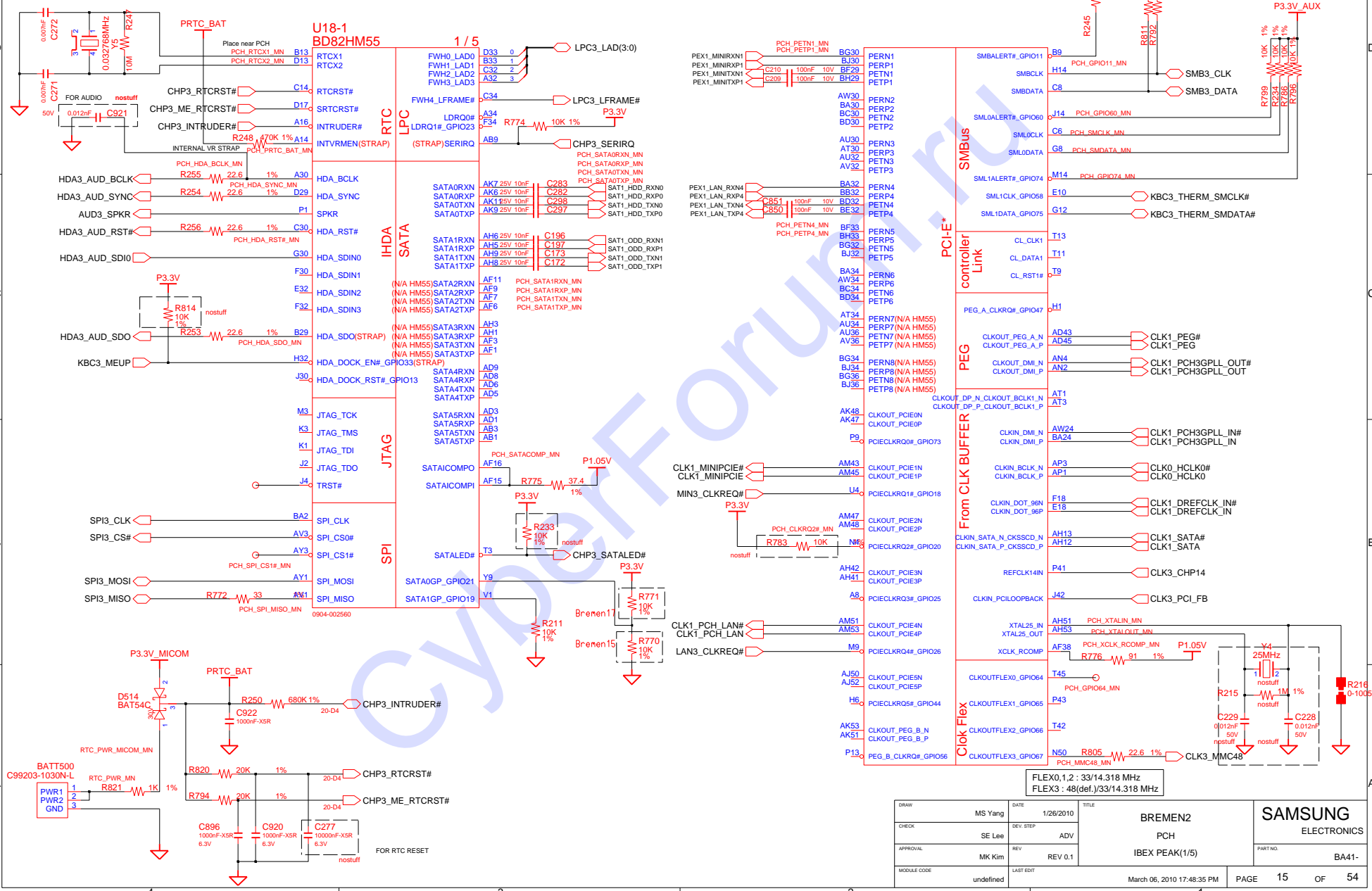
Height : 4 mm (REVERSE)
 P/N : 3709-001533 (Molex)
 P/N : 3709-001559 (Foxconn)



SA0	0	0
SA1	0	1
SPD ADD	0xA0	0xA2
TS ADD	0x30	0x32

DRAW	MS Yang	DATE	1/26/2010	TITLE	BREMEN2 SODIMM B	SAMSUNG ELECTRONICS
CHECK	SE Lee	DEV. STEP	ADV			
APPROVAL	MK Kim	REV	REV 0.1		DDR3	PART NO. BA41-
MODULE CODE	undefined	LAST EDIT		March 06, 2010 17:48:35 PM	PAGE	14 OF 54

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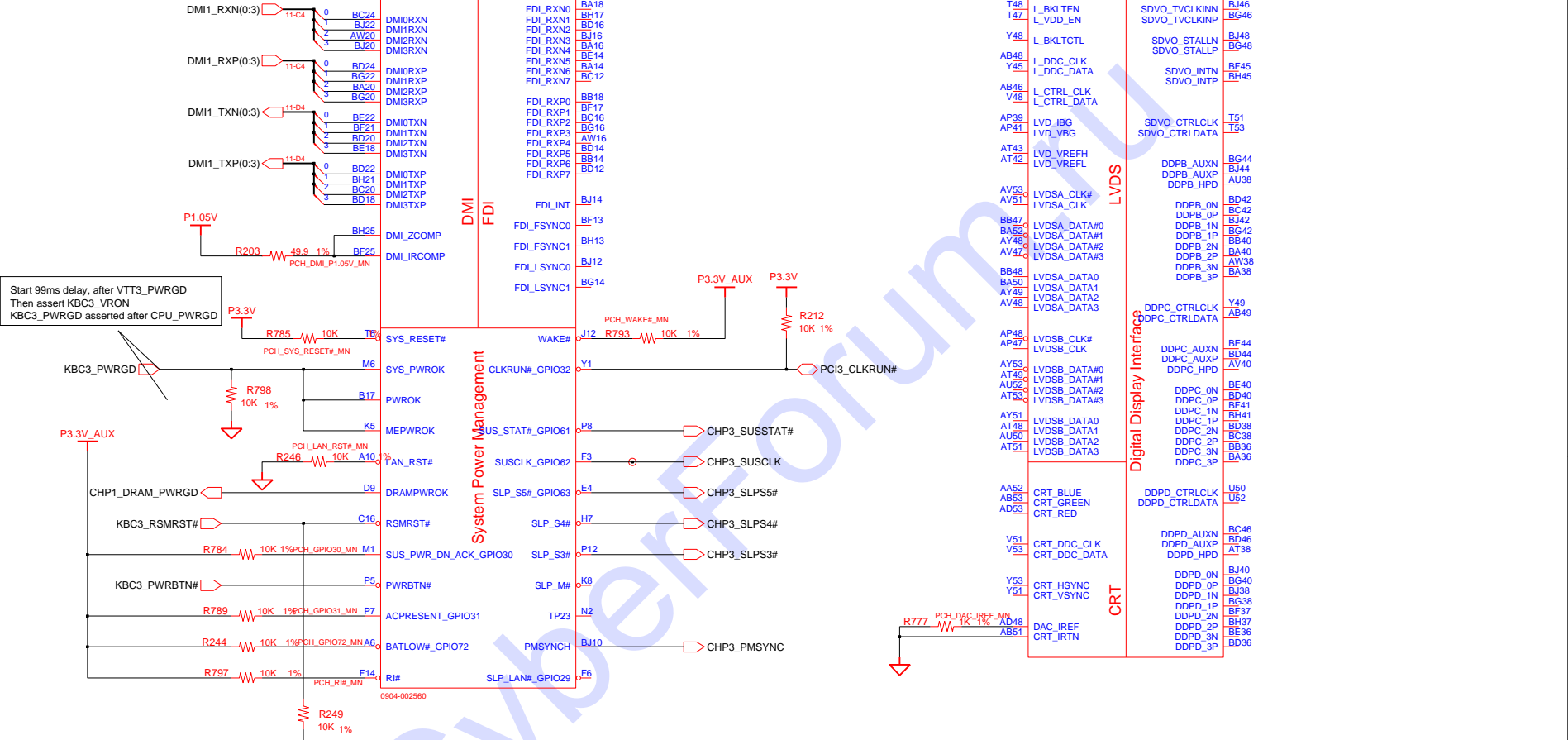


DESIGN	MS Yang	DATE	1/26/2010	TITLE	BREMEN2	SAMSUNG ELECTRONICS	
CHECK	SE Lee	DEV. STEP	ADV		PCH		
APPROVAL	REV	REV	REV 0.1		IBEX PEAK(1/5)	PART NO.	
MODULE CODE	undefined	LAST EDIT				BA41-	
						March 06, 2010 17:48:35 PM	PAGE 15 OF 54

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BD82HM55

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Start 99ms delay, after VTT3_PWRGD
 Then assert KBC3_VRON
 KBC3_PWRGD asserted after CPU_PWRGD

System Power Management

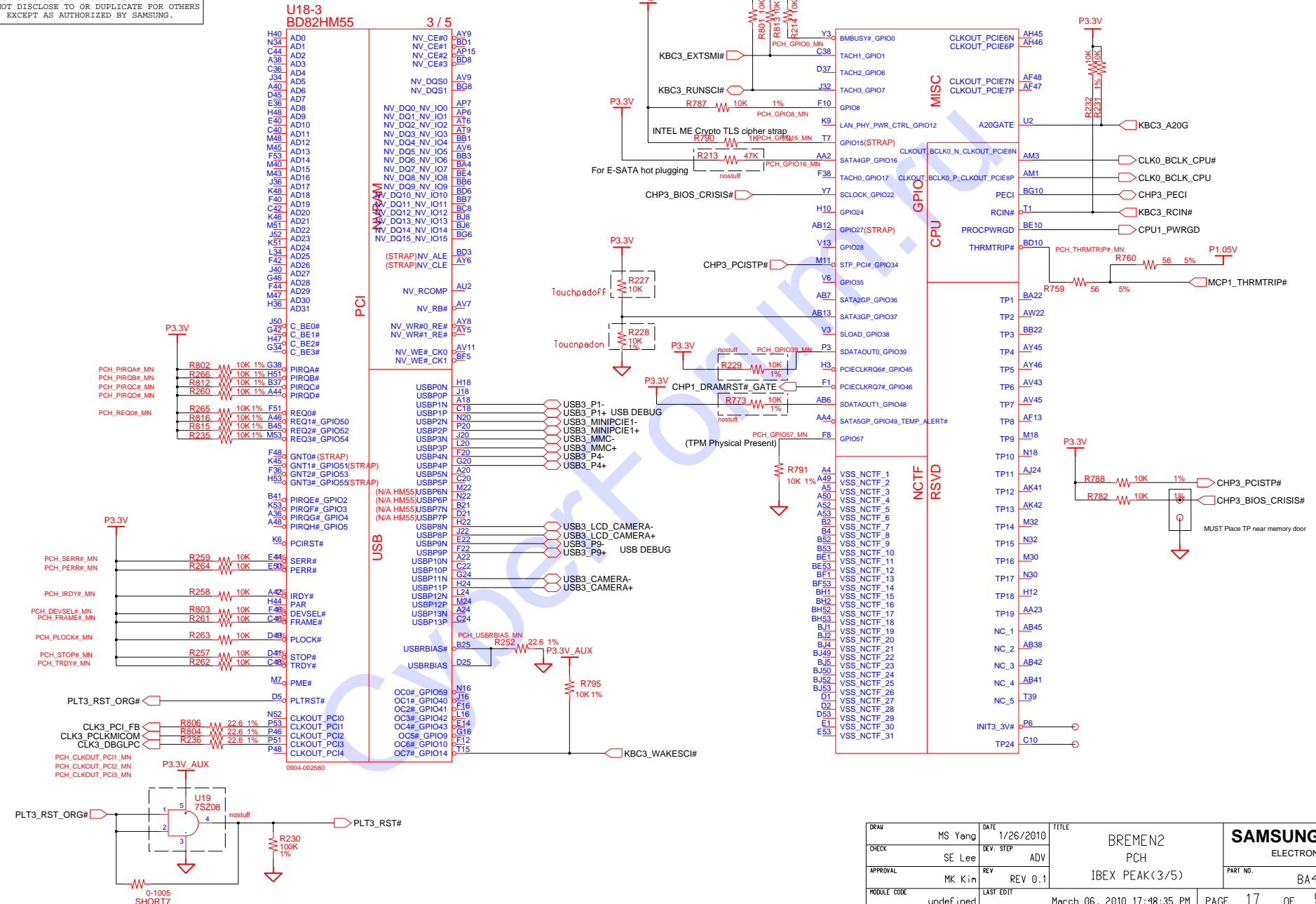
Digital Display Interface

LVDS

CRT

DRAW MS Yang	DATE 1/26/2010	TITLE BREMEN2 PCH IBEX PEAK(2/5)	SAMSUNG ELECTRONICS
CHECK SE Lee	DEV. STEP ADV	PART NO. BA41-	
APPROVAL MK Kim	REV REV 0.1	March 06, 2010 17:48:35 PM	PAGE 16 OF 54

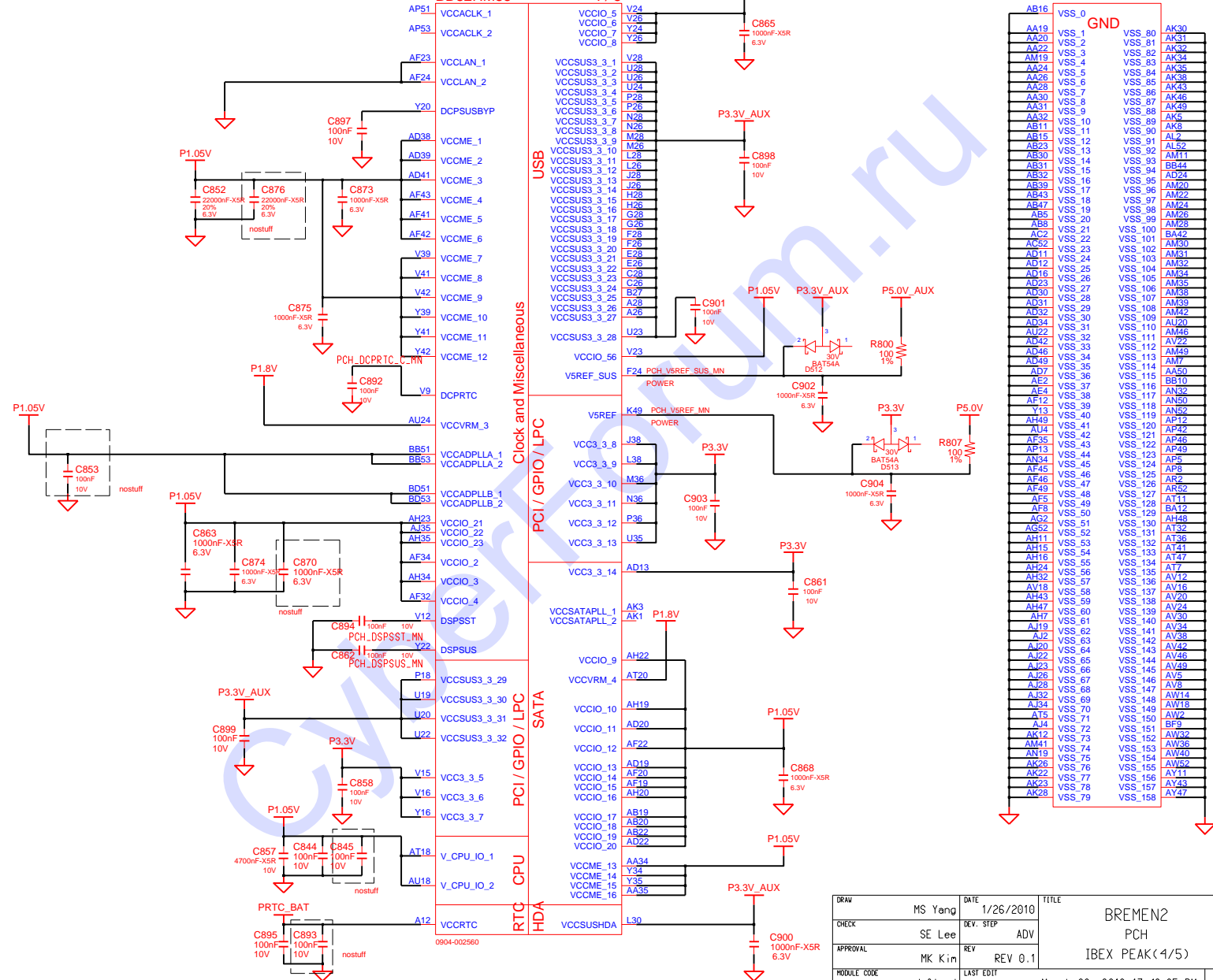
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DRWN	MS Yang	DATE	1/26/2010	TITLE	BREMEN2 PCH IBEX PEAK(3/5)		SAMSUNG ELECTRONICS
CHECK	SE Lee	REV. STEP	ADV			PART NO.	
APPROVAL	MK K in	REV	REV 0.1			BA41-	
MODULE CODE	undefined	LAST EDIT		March 06, 2010 17:48:35 PM	PAGE	17 OF 54	

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BD82HM55

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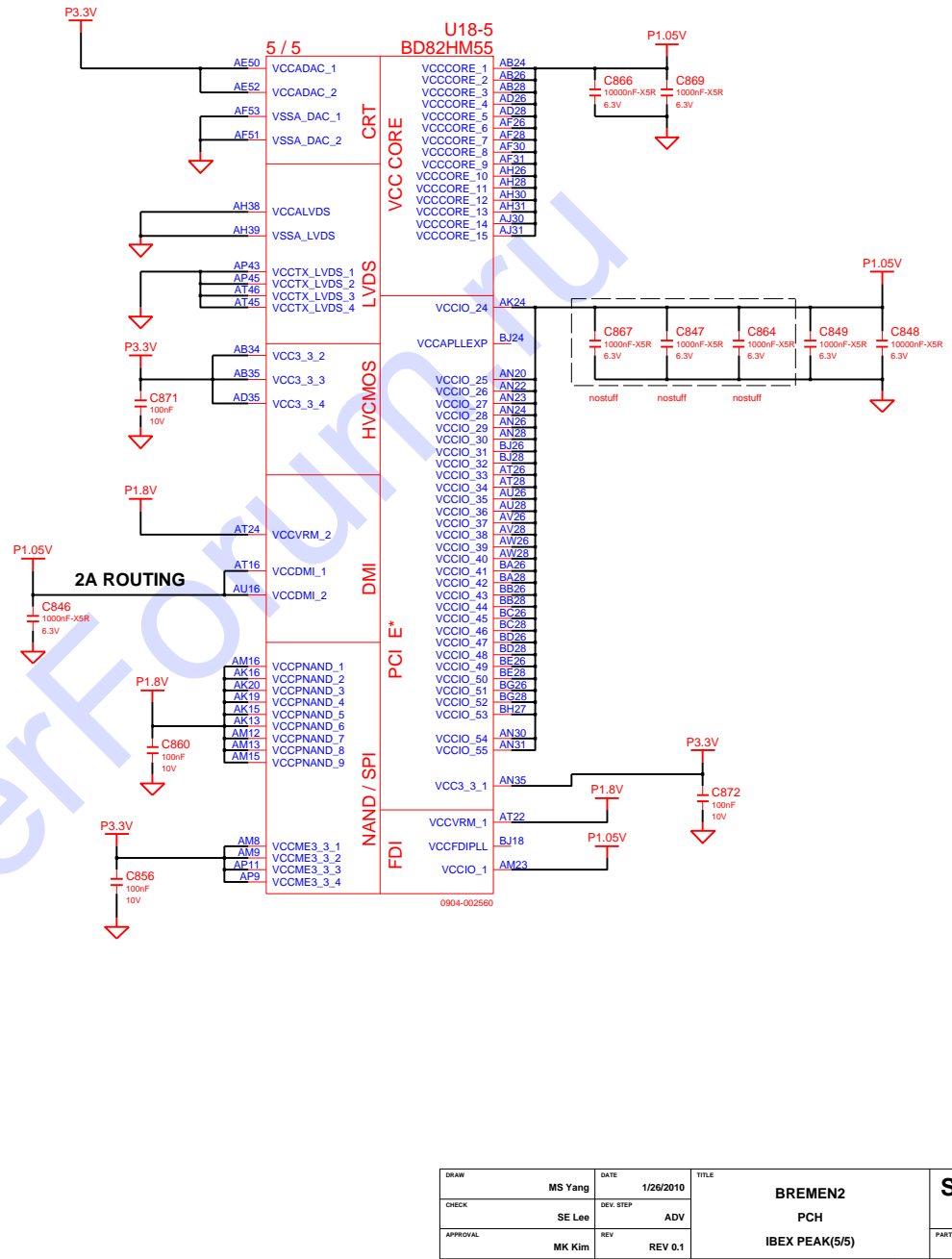
USB
 Clock and Miscellaneous
 PCI / GPIO / LPC
 SATA
 PCI / GPIO / LPC
 CPU
 RTC
 HDA

AB16	VSS_0	AK30
AA19	VSS_1	AK31
AA20	VSS_2	AK32
AA22	VSS_3	AK33
AM19	VSS_4	AK34
AA24	VSS_5	AK35
AA26	VSS_6	AK36
AA28	VSS_7	AK37
AA30	VSS_8	AK38
AA31	VSS_9	AK39
AA32	VSS_10	AK40
AB11	VSS_11	AK41
AB15	VSS_12	AK42
AB23	VSS_13	AK43
AB29	VSS_14	AK44
AB31	VSS_15	AK45
AB32	VSS_16	AK46
AB39	VSS_17	AK47
AB43	VSS_18	AK48
AB47	VSS_19	AK49
AB51	VSS_20	AK50
AB52	VSS_21	AK51
AC2	VSS_22	AK52
AC52	VSS_23	AK53
AD11	VSS_24	AK54
AD12	VSS_25	AK55
AD16	VSS_26	AK56
AD23	VSS_27	AK57
AD30	VSS_28	AK58
AD31	VSS_29	AK59
AD32	VSS_30	AK60
AD42	VSS_31	AK61
AU22	VSS_32	AK62
AD46	VSS_33	AK63
AD49	VSS_34	AK64
AE4	VSS_35	AK65
AD7	VSS_36	AK66
AE2	VSS_37	AK67
AE4	VSS_38	AK68
AF12	VSS_39	AK69
Y13	VSS_40	AK70
AH49	VSS_41	AK71
AU4	VSS_42	AK72
AE5	VSS_43	AK73
AP13	VSS_44	AK74
AN34	VSS_45	AK75
AF45	VSS_46	AK76
AF46	VSS_47	AK77
AF49	VSS_48	AK78
AF5	VSS_49	AK79
AF8	VSS_50	AK80
AG2	VSS_51	AK81
AS52	VSS_52	AK82
AH14	VSS_53	AK83
AH15	VSS_54	AK84
AH16	VSS_55	AK85
AH24	VSS_56	AK86
AH32	VSS_57	AK87
AV18	VSS_58	AK88
AH43	VSS_59	AK89
AH47	VSS_60	AK90
AH7	VSS_61	AK91
AH9	VSS_62	AK92
AJ2	VSS_63	AK93
AJ20	VSS_64	AK94
AJ22	VSS_65	AK95
AJ26	VSS_66	AK96
AJ28	VSS_67	AK97
AJ32	VSS_68	AK98
AJ34	VSS_69	AK99
AJ3	VSS_70	AK100
AK1	VSS_71	AK101
AK12	VSS_72	AK102
AK13	VSS_73	AK103
AK41	VSS_74	AK104
AN19	VSS_75	AK105
AK26	VSS_76	AK106
AK22	VSS_77	AK107
AK23	VSS_78	AK108
AK28	VSS_79	AK109

DRN	MS Yang	DATE	1/26/2010	TITLE	BREMEN2	SAMSUNG ELECTRONICS
CHECK	SE Lee	DEV. STEP	ADV	REV	PCH	PART NO.
APPROVAL	MK K in	REV	REV 0.1		IBEX PEAK(4/5)	BA41-
MODULE CODE	undef in ed	LAST EDIT				
					March 06, 2010 17:48:35 PM	PAGE 18 OF 601

This power share with thermal sensor

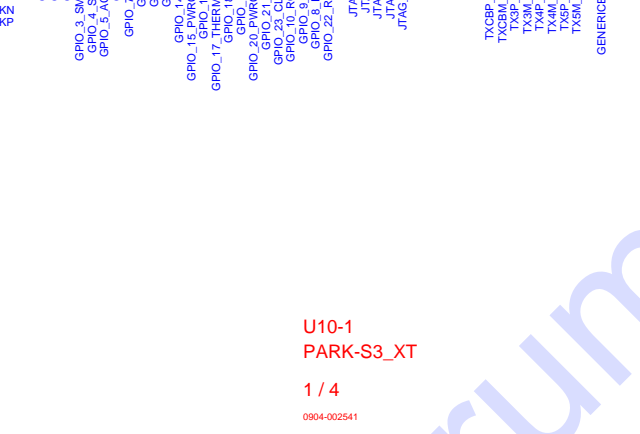
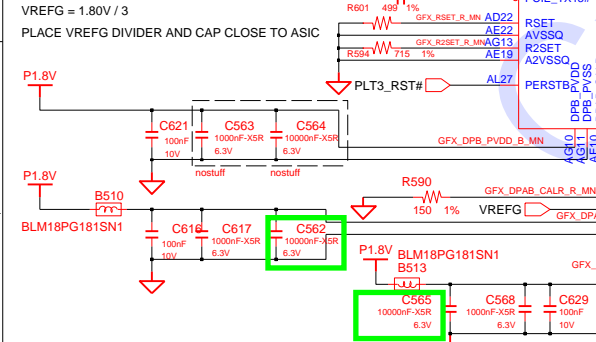
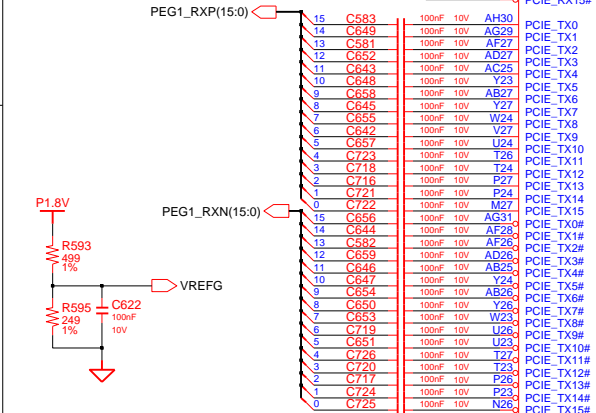
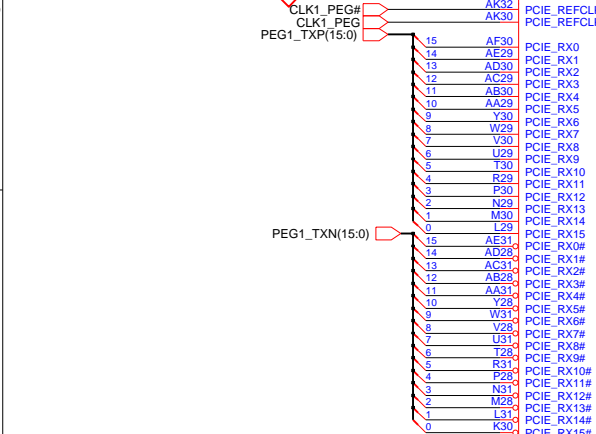
H49	VSS 259	VSS 159	AY7
H5	VSS 260	VSS 160	B11
J24	VSS 261	VSS 161	B15
K11	VSS 262	VSS 162	B19
K43	VSS 262	VSS 162	B23
K47	VSS 263	VSS 163	B31
K7	VSS 264	VSS 164	B35
L14	VSS 266	VSS 166	B39
L18	VSS 267	VSS 167	B43
L2	VSS 267	VSS 167	B47
L22	VSS 268	VSS 168	B7
L32	VSS 269	VSS 169	BG12
L36	VSS 271	VSS 171	BH12
L40	VSS 272	VSS 172	BH16
L52	VSS 272	VSS 172	BB20
M12	VSS 273	VSS 173	BB24
M20	VSS 274	VSS 174	BB28
M16	VSS 275	VSS 175	BB30
M30	VSS 276	VSS 176	BB38
M34	VSS 277	VSS 177	BB42
M38	VSS 278	VSS 178	BB48
M42	VSS 279	VSS 179	BB50
M46	VSS 280	VSS 180	BC10
M49	VSS 281	VSS 181	BC14
M5	VSS 282	VSS 182	BC18
M5	VSS 283	VSS 183	BC22
M8	VSS 284	VSS 184	BC22
N24	VSS 285	VSS 185	BC22
P11	VSS 286	VSS 186	BC38
AD15	VSS 286	VSS 186	BC38
P22	VSS 287	VSS 187	BC40
P30	VSS 288	VSS 188	BC44
P32	VSS 289	VSS 189	BC52
P34	VSS 290	VSS 190	BH9
P42	VSS 291	VSS 191	Bd48
P45	VSS 292	VSS 192	Bd49
P47	VSS 293	VSS 193	Bd50
R2	VSS 294	VSS 194	BE12
R52	VSS 295	VSS 195	BE16
T12	VSS 296	VSS 196	BE20
T41	VSS 297	VSS 197	BE24
T46	VSS 298	VSS 198	BE30
T49	VSS 299	VSS 199	BE34
T5	VSS 300	VSS 200	BE38
T8	VSS 301	VSS 201	BE42
U30	VSS 302	VSS 202	BE46
U31	VSS 303	VSS 203	BE48
U32	VSS 304	VSS 204	BE50
U34	VSS 305	VSS 205	BE6
P38	VSS 306	VSS 206	BE6
V11	VSS 307	VSS 207	BF3
P16	VSS 308	VSS 208	BF3
V19	VSS 309	VSS 209	BF50
V20	VSS 310	VSS 210	BG18
V22	VSS 311	VSS 211	BG24
V30	VSS 312	VSS 212	BG4
V31	VSS 313	VSS 213	BG50
V32	VSS 314	VSS 214	BH11
V34	VSS 315	VSS 215	BH15
V35	VSS 316	VSS 216	BH19
V38	VSS 317	VSS 217	BH23
V43	VSS 318	VSS 218	BH31
V45	VSS 319	VSS 219	BH35
V46	VSS 320	VSS 220	BH39
V47	VSS 321	VSS 221	BH43
V49	VSS 322	VSS 222	BH47
V5	VSS 323	VSS 223	BH7
V7	VSS 324	VSS 224	C12
V8	VSS 325	VSS 225	C50
V8	VSS 326	VSS 226	C50
W2	VSS 327	VSS 227	D61
W52	VSS 328	VSS 228	E12
Y11	VSS 329	VSS 229	E16
Y12	VSS 330	VSS 230	E20
Y15	VSS 331	VSS 231	E24
Y19	VSS 332	VSS 232	E30
Y23	VSS 333	VSS 233	E38
Y30	VSS 334	VSS 234	E42
Y31	VSS 335	VSS 235	E46
Y32	VSS 336	VSS 236	E48
Y36	VSS 337	VSS 237	E6
Y43	VSS 338	VSS 238	E8
Y46	VSS 339	VSS 239	F49
P49	VSS 340	VSS 240	F5
Y5	VSS 341	VSS 241	F5
Y6	VSS 342	VSS 242	G10
Y8	VSS 343	VSS 243	G14
Y8	VSS 344	VSS 244	G18
P24	VSS 345	VSS 245	G2
T43	VSS 346	VSS 246	G22
AD51	VSS 347	VSS 247	G32
AD7	VSS 348	VSS 248	G36
AD47	VSS 349	VSS 249	G40
Y47	VSS 350	VSS 250	G44
AM6	VSS 351	VSS 251	G52
AT13	VSS 352	VSS 252	H16
AM5	VSS 353	VSS 253	H20
AK45	VSS 354	VSS 254	H30
AK39	VSS 355	VSS 255	H34
AV14	VSS 356	VSS 256	H38
	VSS 366	VSS 257	H42
		VSS 258	



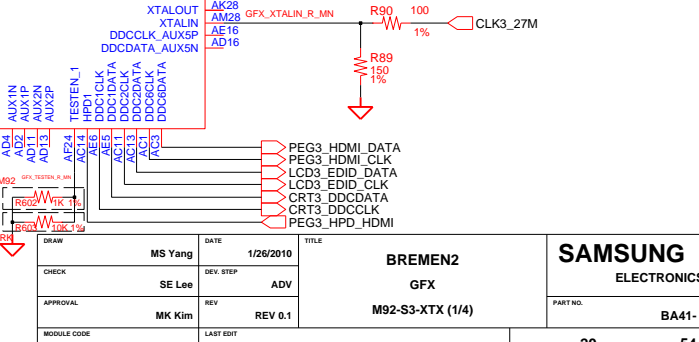
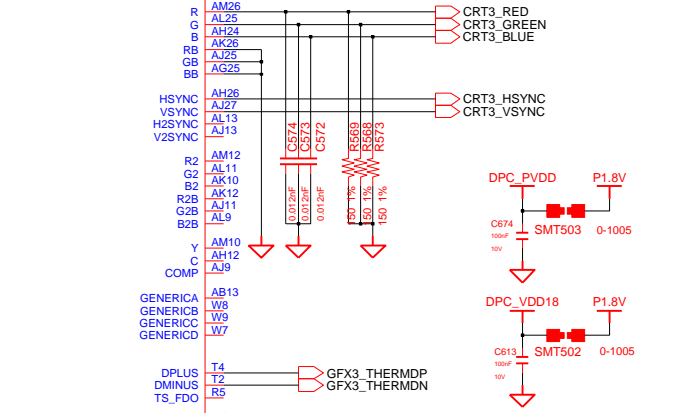
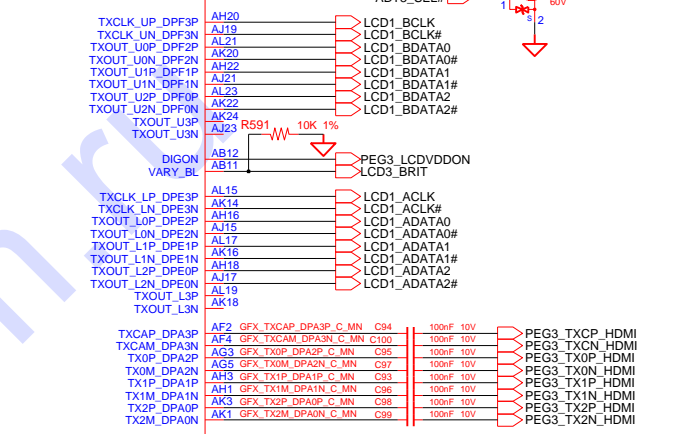
DRAW	MS Yang	DATE	1/26/2010	TITLE	BREMEN2 PCH		SAMSUNG ELECTRONICS
CHECK	SE Lee	REV. STEP	ADV	IBEX PEAK(5/5)		PART NO.	
APPROVAL	MK Kim	REV	REV 0.1			BA41-	
MODULE CODE	undefined	LAST EDIT		March 06, 2010 17:48:35 PM		PAGE	19 OF 54

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Park : P1.0V
M92-XTX : P1.1V

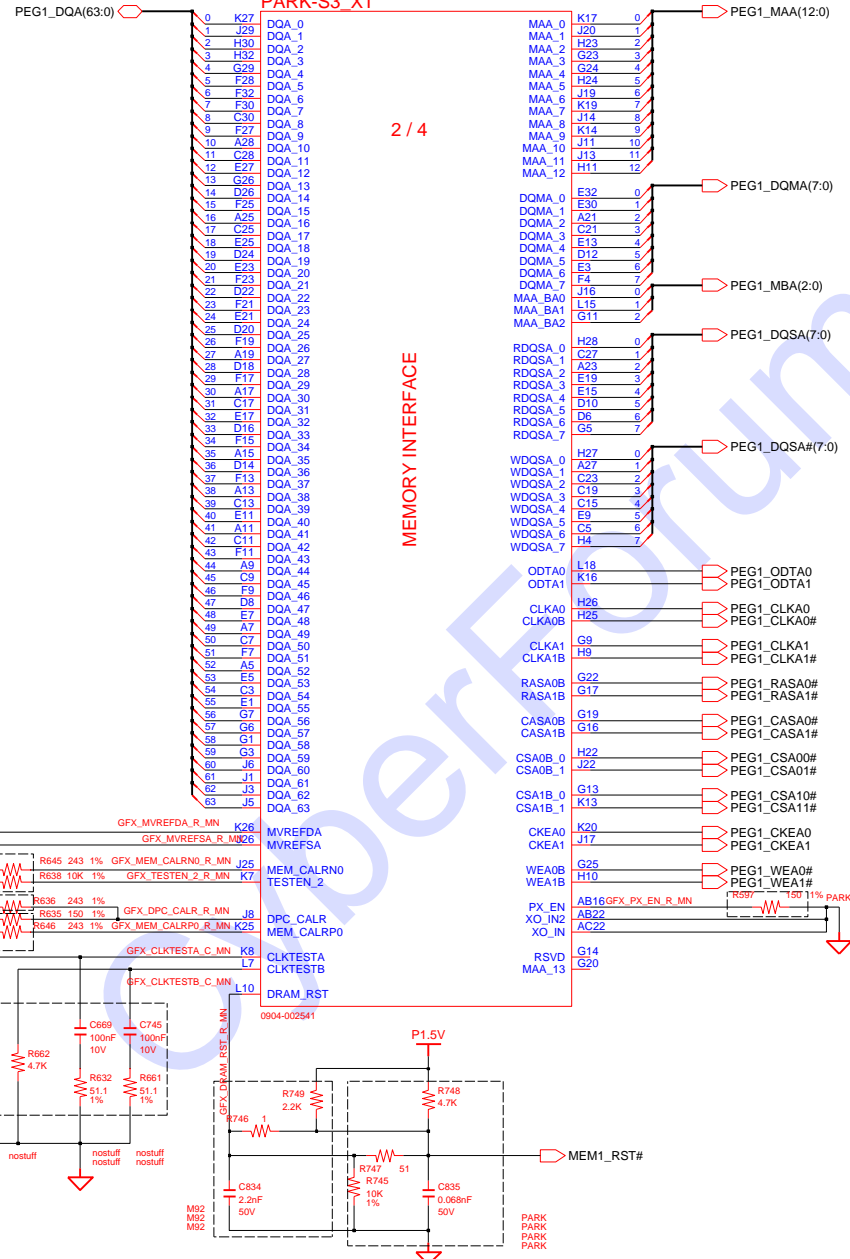


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PARK-S3_XT
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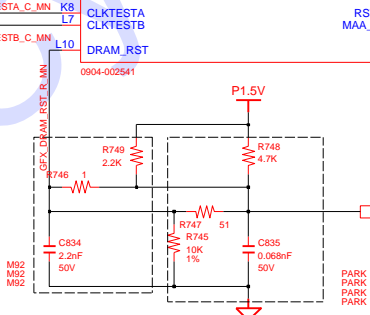
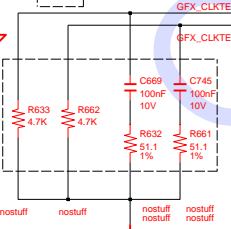
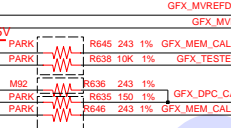
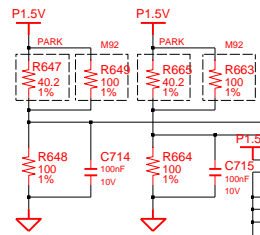
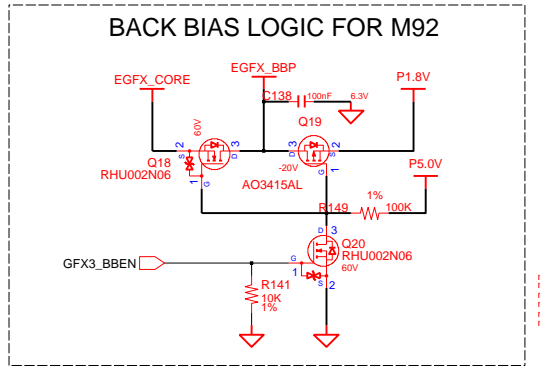
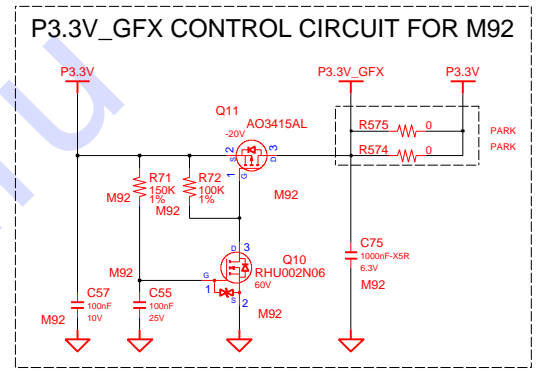


DESIGN	MS Yang	DATE	1/26/2010	TITLE	BREMEN2 GFX
CHECK	SE Lee	REV. STEP	ADV		SAMSUNG ELECTRONICS
APPROVAL	MK Kim	REV	REV 0.1		PART NO. BA41-
MODULE CODE		LAST EDIT			March 06, 2010 17:48:35 PM
					PAGE 20 OF 54

**U10-2
 PARK-S3_XT**



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 MEMORY INTERFACE

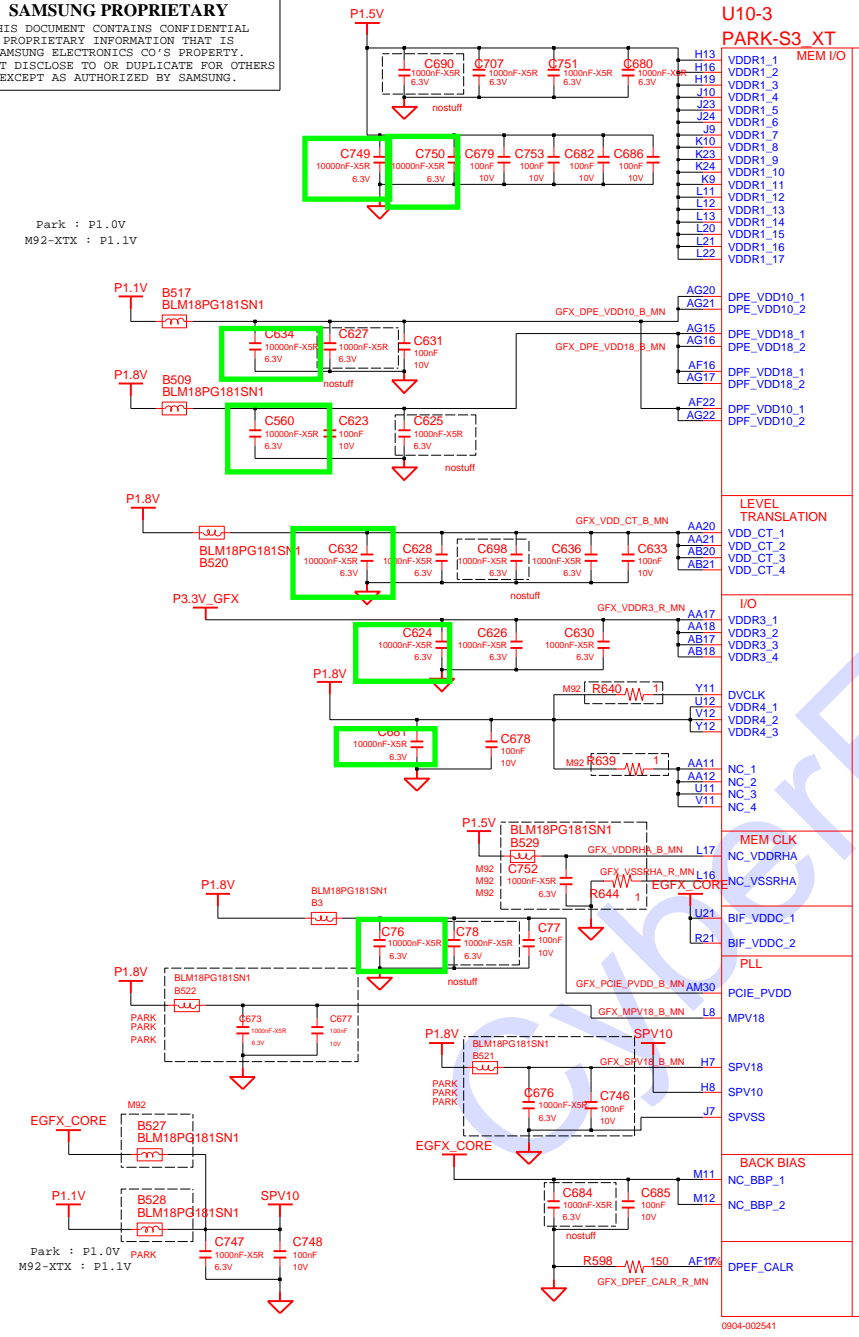


DRAW	MS Yang	DATE	1/26/2010	TITLE	BREMEN2 GFX	SAMSUNG ELECTRONICS
CHECK	SE Lee	REV. STEP	ADV	M92-S3-XTX (2/4)		
APPROVAL	MK Kim	REV	REV 0.1		PART NO.	BA41-
MODULE CODE		LAST EDIT				
				March 06, 2010 17:48:35 PM	PAGE	21
					OF	54

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**U10-3
 PARK-S3_XT**

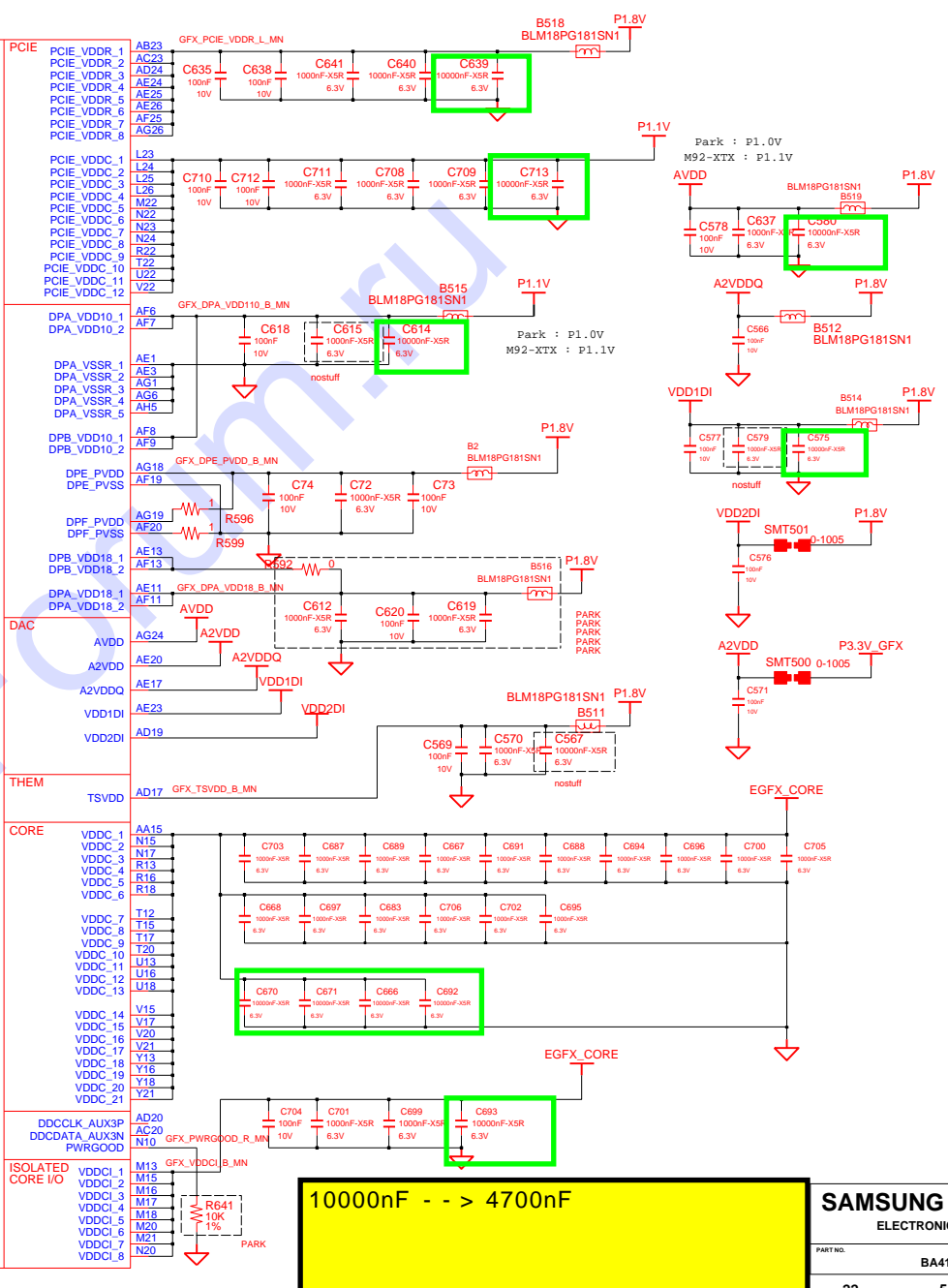
Park : P1.0V
 M92-XTX : P1.1V



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POWER

- MEM I/O
 - H13 VDDR1_1
 - H16 VDDR1_2
 - H19 VDDR1_3
 - J10 VDDR1_4
 - J24 VDDR1_5
 - J9 VDDR1_6
 - K10 VDDR1_7
 - K23 VDDR1_8
 - K24 VDDR1_9
 - K29 VDDR1_10
 - L11 VDDR1_11
 - L12 VDDR1_12
 - L13 VDDR1_13
 - L20 VDDR1_14
 - L21 VDDR1_15
 - L22 VDDR1_16
 - L23 VDDR1_17
- PCIE
 - AB23 PCIE_VDDR_1
 - AC23 PCIE_VDDR_2
 - AD24 PCIE_VDDR_3
 - AE24 PCIE_VDDR_4
 - AE25 PCIE_VDDR_5
 - AE26 PCIE_VDDR_6
 - AF25 PCIE_VDDR_7
 - AG26 PCIE_VDDR_8
- LEVEL TRANSITION
 - AA20 VDD_CT_1
 - AA21 VDD_CT_2
 - AA22 VDD_CT_3
 - AB21 VDD_CT_4
- I/O
 - AA17 VDDR3_1
 - AA18 VDDR3_2
 - AB17 VDDR3_3
 - AB18 VDDR3_4
 - Y11 DVCCLK
 - Y12 VDDR4_1
 - Y12 VDDR4_2
 - Y12 VDDR4_3
 - AA11 NC_1
 - AA12 NC_2
 - U11 NC_3
 - V11 NC_4
- MEM CLK
 - N15 N_VDDRHA
 - N17 N_VSSRHA
- BIF_VDDC
 - BIF_VDDC_1
 - BIF_VDDC_2
- PLL
 - U21
 - R21
- PCIE_PVDD
 - L8
- MPV18
 - H7
 - H8
 - J7
- SPV18
 - M11
 - M12
- SPV10
 - H7
 - H8
 - J7
- SPVSS
 - M11
 - M12
- BACK BIAS
 - NC_BBP_1
 - NC_BBP_2
- DPEF_CALR
 - R598



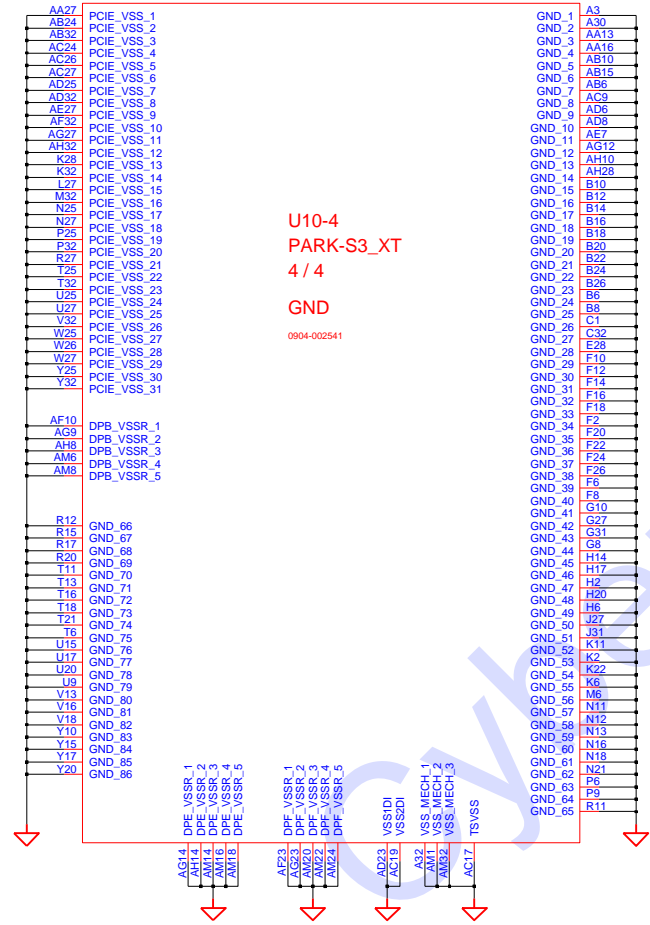
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POWER

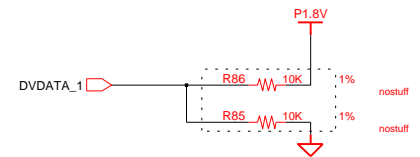
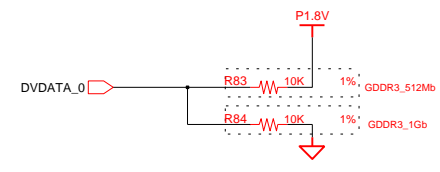
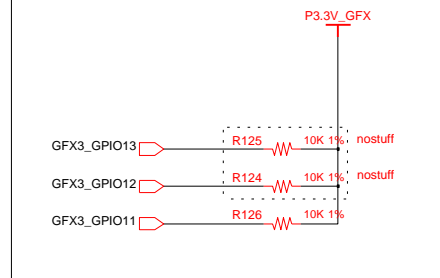
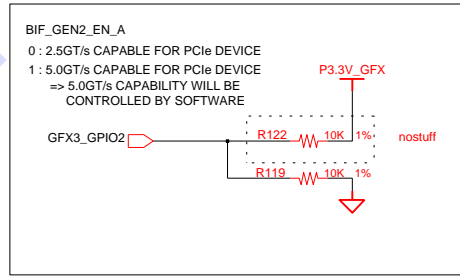
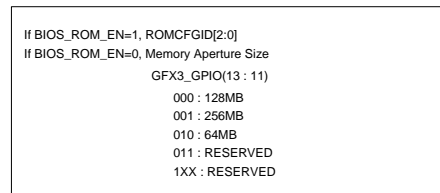
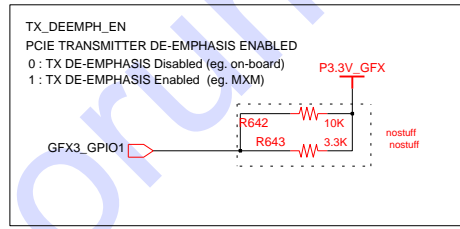
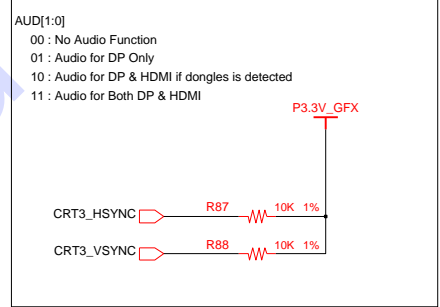
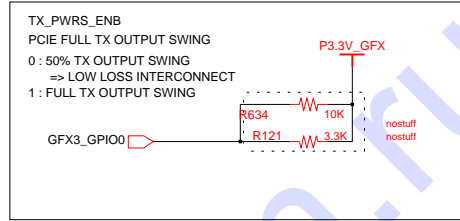
- PCIE
 - AB23 PCIE_VDDR_L_MN
 - AB23 PCIE_VDDR_1
 - AC23 PCIE_VDDR_2
 - AD24 PCIE_VDDR_3
 - AE24 PCIE_VDDR_4
 - AE25 PCIE_VDDR_5
 - AE26 PCIE_VDDR_6
 - AF25 PCIE_VDDR_7
 - AG26 PCIE_VDDR_8
- MEM I/O
 - L24 VDDR_1
 - L25 VDDR_2
 - L26 VDDR_3
 - M22 VDDR_4
 - N22 VDDR_5
 - N23 VDDR_6
 - N24 VDDR_7
 - R22 VDDR_8
 - T22 VDDR_9
 - V22 VDDR_10
- AVDD
 - AE1 DPA_VSSR_1
 - AE3 DPA_VSSR_2
 - AG1 DPA_VSSR_3
 - AG2 DPA_VSSR_4
 - AH5 DPA_VSSR_5
 - AF8 DPB_VDD10_1
 - AF9 DPB_VDD10_2
- DPA_VDD10
 - AF6 DPA_VDD10_1
 - AF7 DPA_VDD10_2
- DPA_VSSR
 - AE1 DPA_VSSR_1
 - AE3 DPA_VSSR_2
 - AG1 DPA_VSSR_3
 - AG2 DPA_VSSR_4
 - AH5 DPA_VSSR_5
- DPB_VDD10
 - AF8 DPB_VDD10_1
 - AF9 DPB_VDD10_2
- DPE_PVDD
 - AG18 DPE_PVDD_B_MN
 - AG19 DPE_PVDD
 - AF19 DPE_PVDD
- DPF_PVDD
 - AG19 DPF_PVDD
 - AF20 DPF_PVDD
- DPB_VDD18
 - AE13 DPB_VDD18_1
 - AF13 DPB_VDD18_2
- DPA_VDD18
 - AE11 DPA_VDD18_1
 - AF11 DPA_VDD18_2
- DPA_VSSR
 - AG24 A2VDD
 - AE20 A2VDDQ
 - AE17 A2VDDQ
- VDD1DI
 - AE23 VDD1DI
- VDD2DI
 - AD19 VDD2DI
- THEM
 - AD17 GFX_TSVDD_B_MN
- CORE
 - VDDC_1 N15
 - VDDC_2 N17
 - VDDC_3 R13
 - VDDC_4 R16
 - VDDC_5 R18
 - VDDC_6 R18
 - VDDC_7 T12
 - VDDC_8 T15
 - VDDC_9 T17
 - VDDC_10 T20
 - VDDC_11 U13
 - VDDC_12 U18
 - VDDC_13 U18
 - VDDC_14 V15
 - VDDC_15 V17
 - VDDC_16 V20
 - VDDC_17 V21
 - VDDC_18 Y13
 - VDDC_19 Y16
 - VDDC_20 Y18
 - VDDC_21 Y21
- ISOLATED CORE I/O
 - AD20 DDCLK_AUX3P
 - AC20 DDCDATA_AUX3P
 - N10 PWRGOOD
 - M13 GFX_VDDCI_B_MN
 - M15
 - M16
 - M17
 - M18
 - M20
 - M21
 - N20

1000nF - -> 4700nF

PARK-S3 Straps

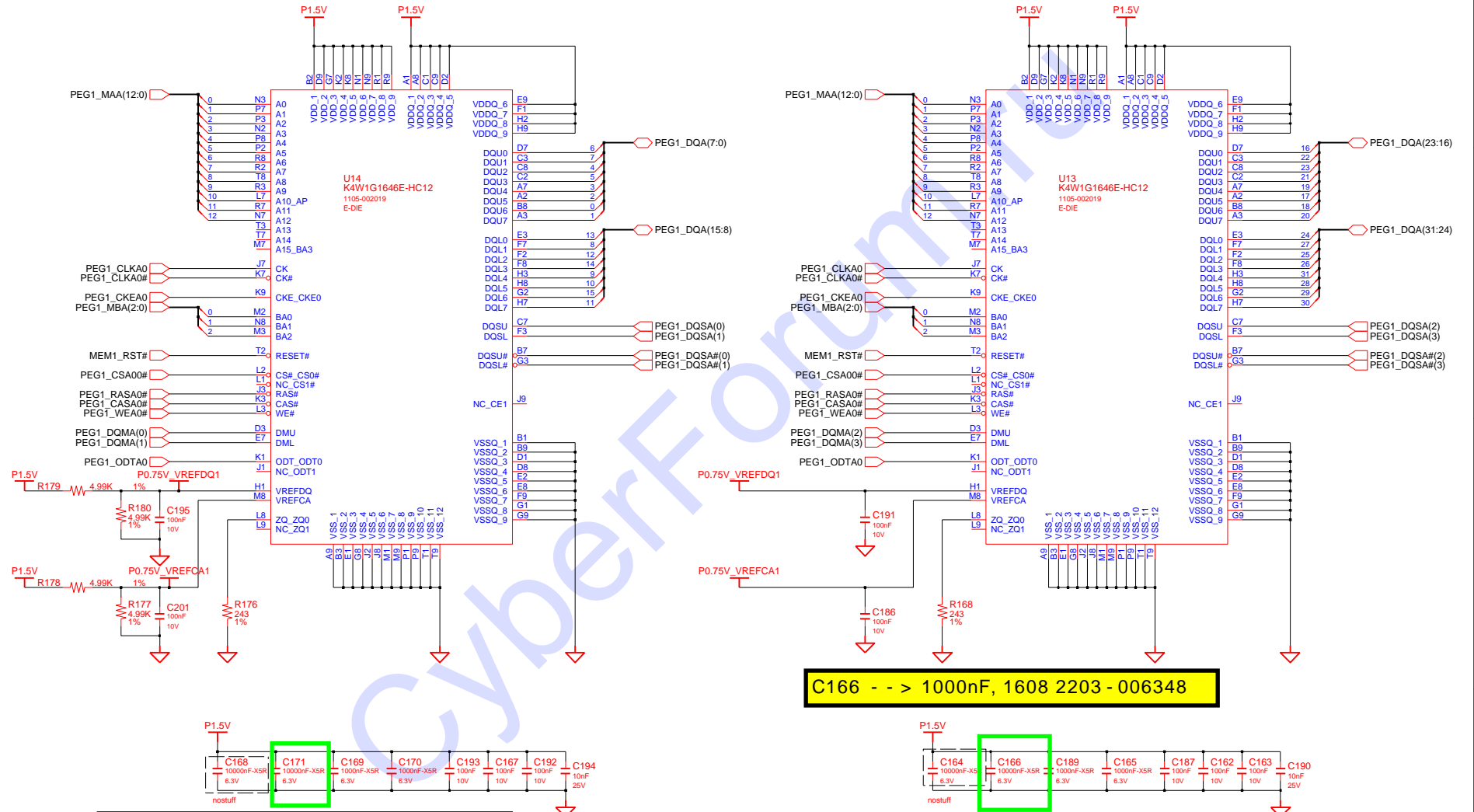


U10-4
PARK-S3_XT
4 / 4
GND
0904-002541



DRAW	MS Yang	DATE	1/26/2010	TITLE	BREMEN2 GFX M92-S3-XTX (4/4)	SAMSUNG ELECTRONICS
CHECK	SE Lee	DEV. STEP	ADV			
APPROVAL	MK Kim	REV	REV 0.1			
MODULE CODE		LAST EDIT			PART NO.	BA41-
				March 06, 2010 17:48:35 PM	PAGE	23 OF 54

RANK0 Lower Data



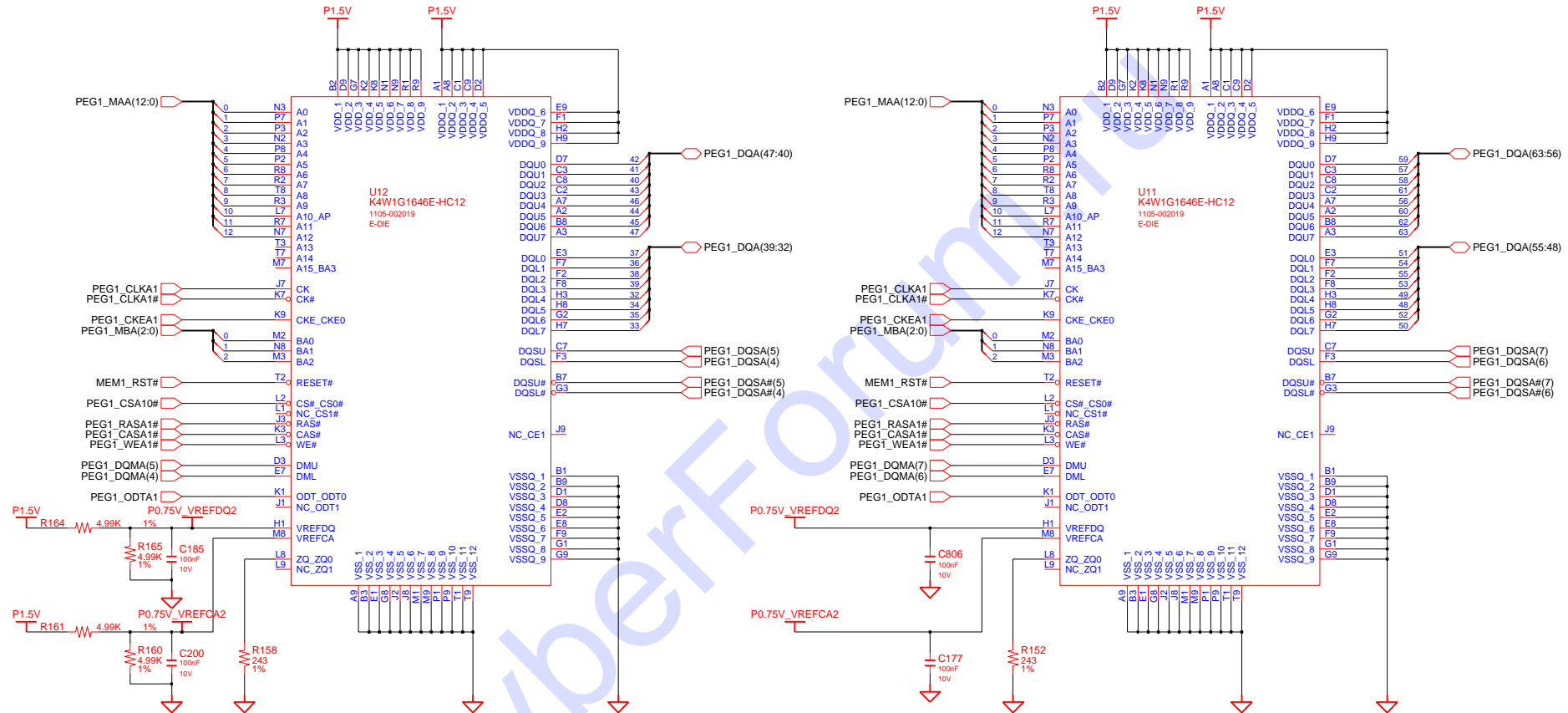
C166 - - > 1000nF, 1608 2203 - 006348

C171 - - > 1000nF, 1608 2203 - 006348

Place near memory component

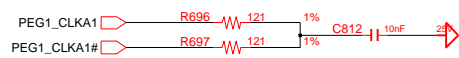
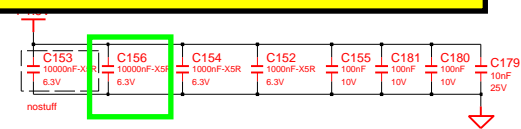
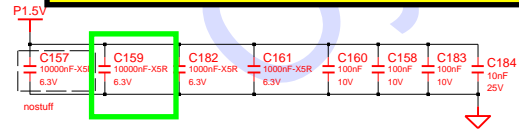
DESIGN	MS Yang	DATE	1/26/2010	TITLE	BREMEN2 EXT_GFX	SAMSUNG ELECTRONICS
CHECK	SE Lee	DEV. STEP	ADV	REV	GDDR3 (1/4)	
APPROVAL	MK Kin	REV	0.1	PART NO.		BA41-
MODULE CODE	LAST EDIT		March 06, 2010 17:48:35 PM		PAGE	24 OF 54

RANK0 Upper Data



C159 - - > 1000nF, 1608 2203 - 006348

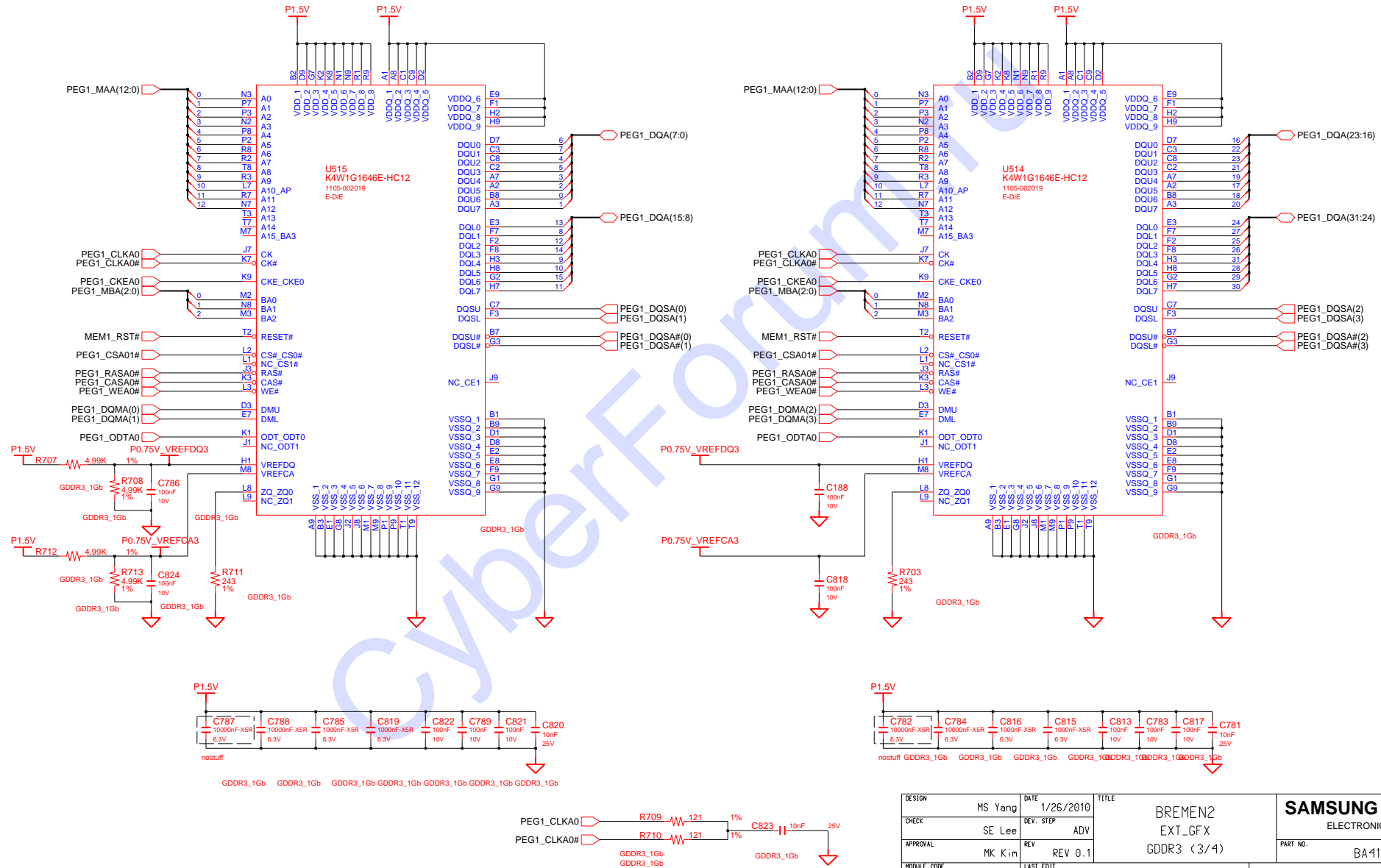
C156 - - > 1000nF, 1608 2203 - 006348



DESIGN	MS Yang	DATE	1/26/2010	TITLE	BREMEN2 EXT_GFX	SAMSUNG ELECTRONICS
CHECK	SE Lee	DEV. STEP	ADV	REV	GDDR3 (2/4)	
APPROVAL	MK Kin	REV	REV 0.1	LAST EDIT		PART NO. BA41-
MODULE CODE						PAGE 25 OF 54

March 06, 2010 17:48:35 PM

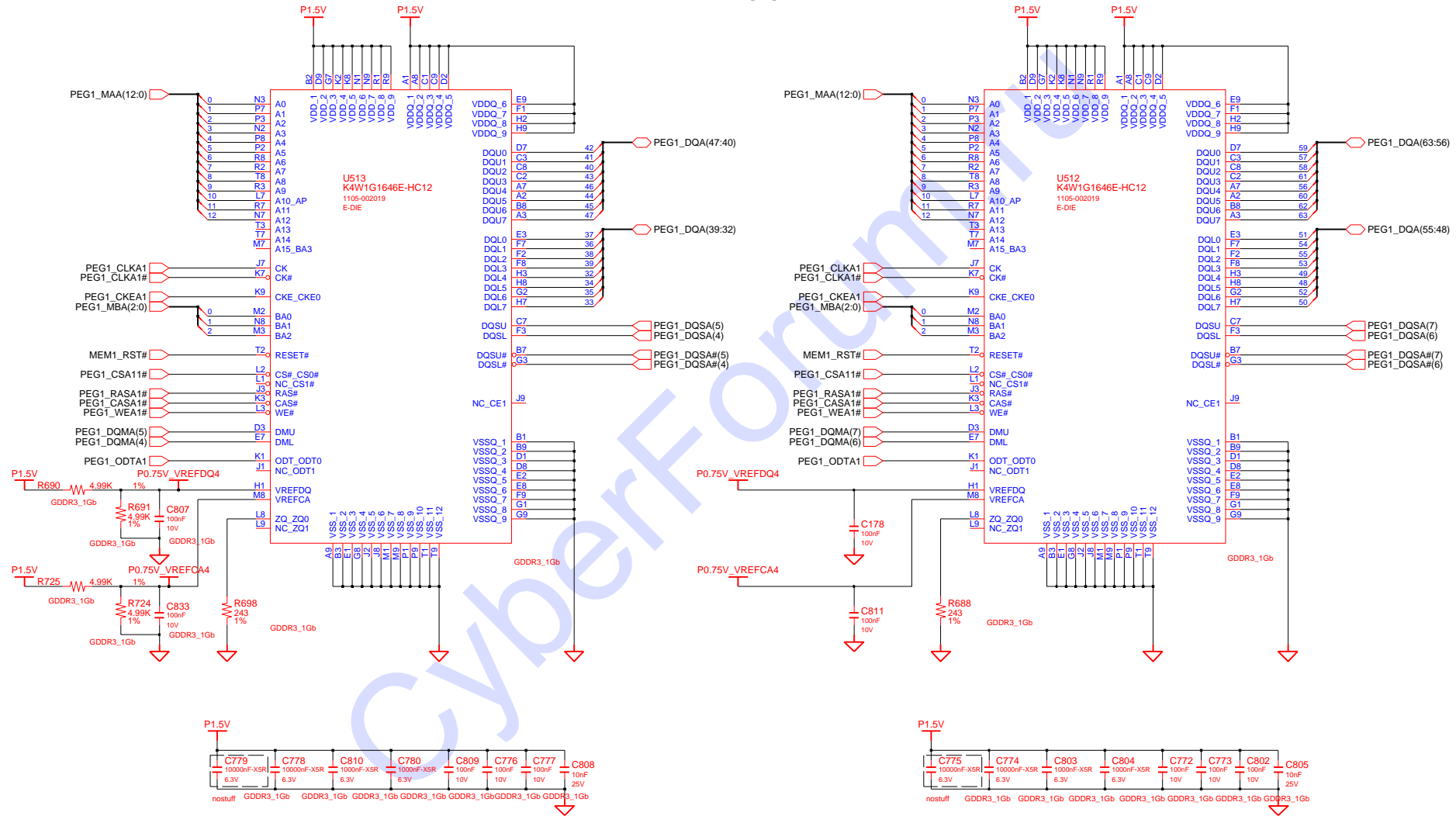
RANK1 Lower Data



DESIGN	MS Yang	DATE	1/26/2010	TITLE	BREMEN2 EXT_GFX	SAMSUNG ELECTRONICS
CHECK	SE Lee	REV. STEP	ADV	REV	GDDR3 (3/4)	
APPROVAL	MK Kin	REV	REV 0.1	LAST EDIT		PART NO. BA41-
MODULE CODE						

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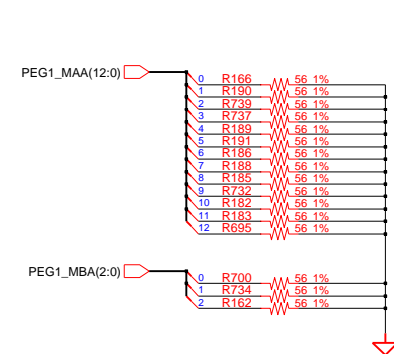
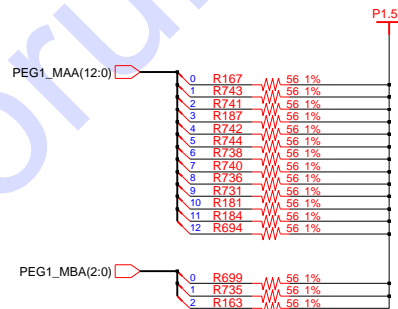
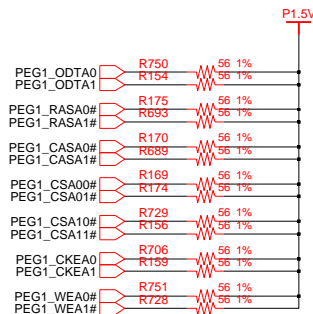
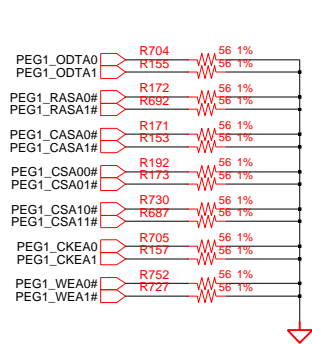
RANK1 Upper Data



DESIGN	MS Yang	DATE	1/26/2010	TITLE	BREMEN2 EXT_GFX	SAMSUNG ELECTRONICS
CHECK	SE Lee	DEV. STEP	ADV	REV	GDDR3 (4/4)	
APPROVAL	MK Kin	REV	REV 0.1	LAST EDIT		PART NO. BA41-
MODULE CODE						

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DUAL RANK Terminations

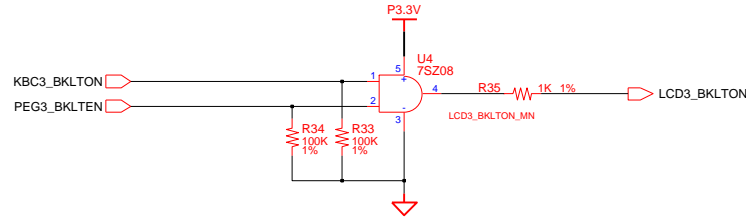


CyberForum.ru

DRAW	MS Yang	DATE	1/26/2010	TITLE	BREMEN2 GFX Dual Strap	SAMSUNG ELECTRONICS
CHECK	SE Lee	DEV. STEP	ADV			
APPROVAL	MK Kim	REV	REV 0.1			
MODULE CODE		LAST EDIT		March 06, 2010 17:48:35 PM	PAGE	28 OF 54
					PART NO.	BA41-

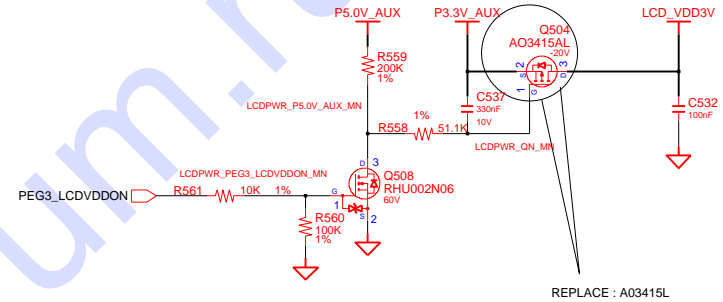
LVDS

Backlight On

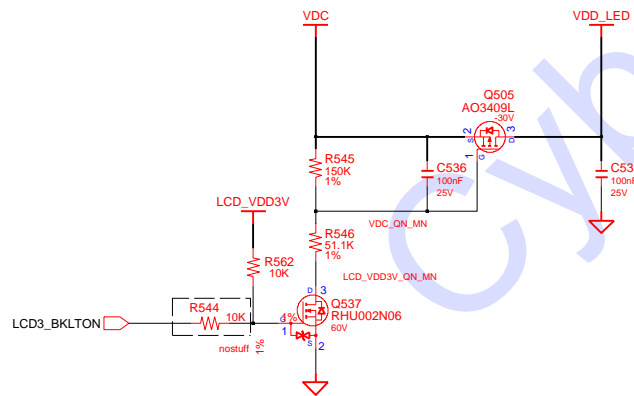


LCD Power

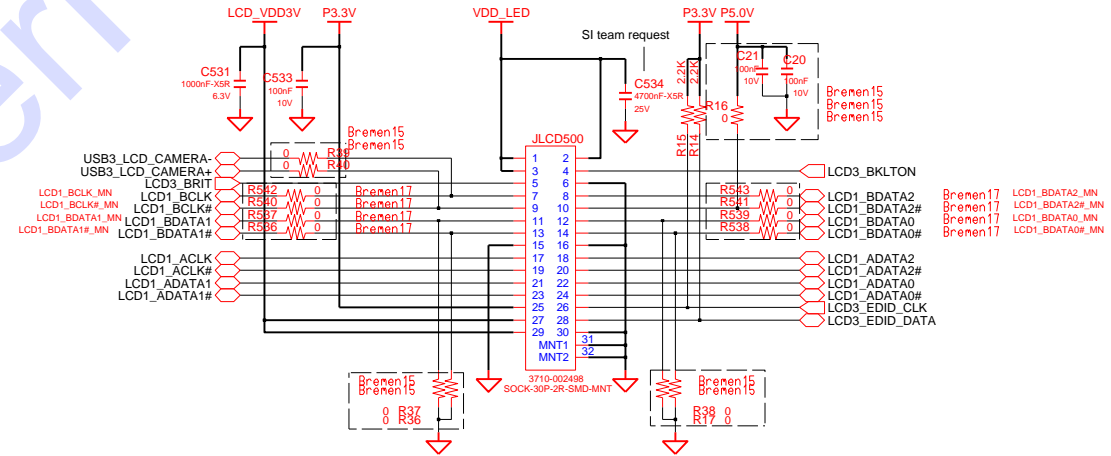
EBL Purpose



LED Power



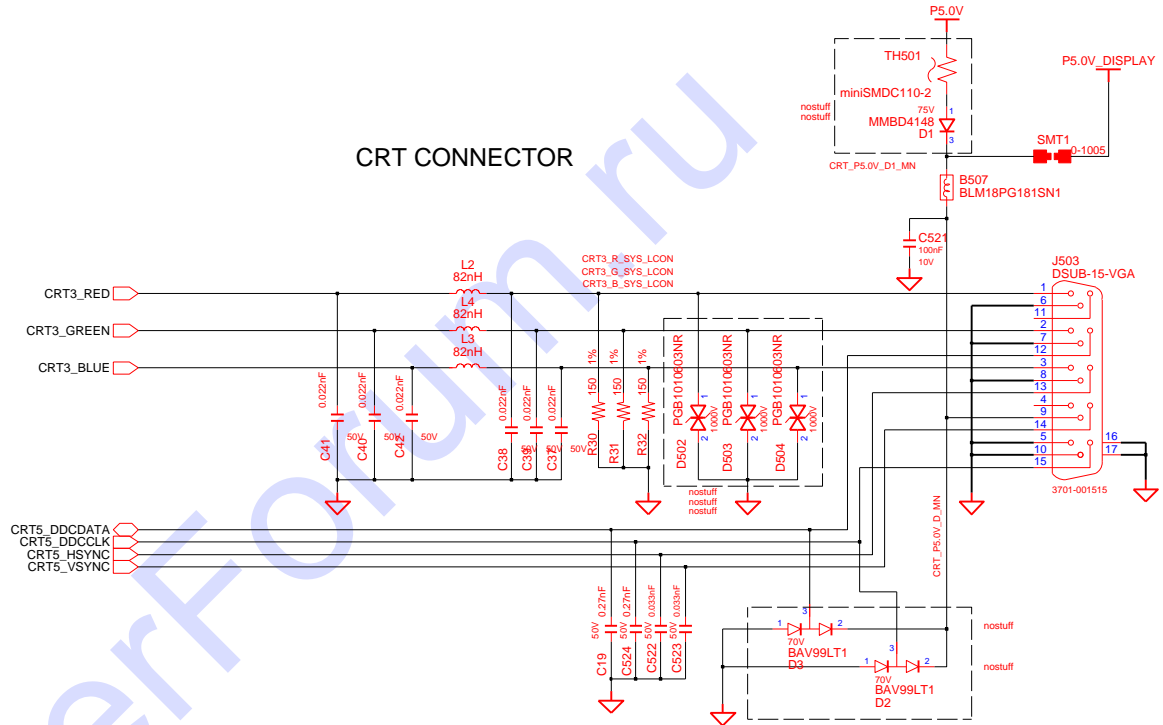
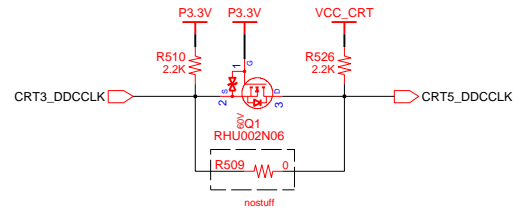
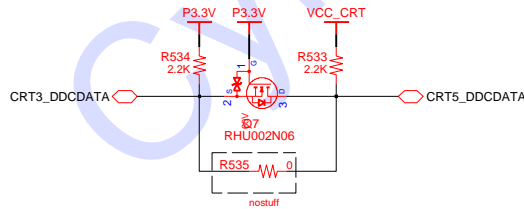
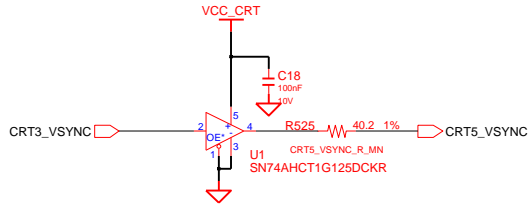
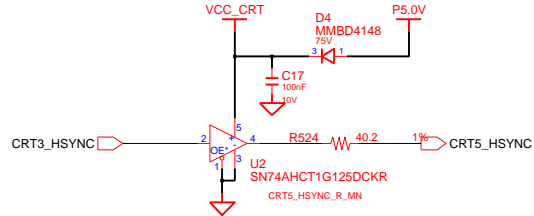
Camera + LCD Connector



DESIGN	MS Yang	DATE	1/26/2010	TITLE	BREMEN2 GRAPHICS_IF	SAMSUNG ELECTRONICS
CHECK	SE Lee	REV. STEP	ADV			
APPROVAL	MK Kim	REV	REV 0.1		LVDS	PART NO.
MODULE CODE	undefined	LAST EDIT				BA41-
				March 06, 2010 17:48:35 PM	PAGE	29 OF 54

CRT

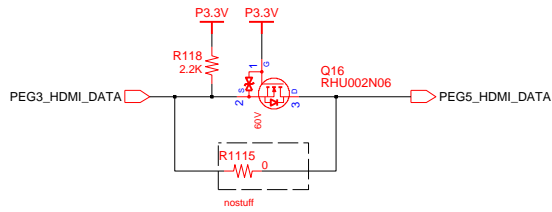
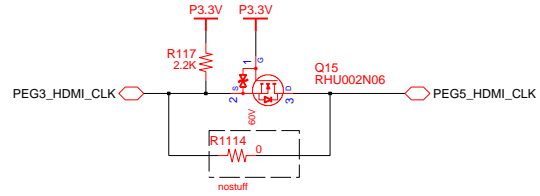
CRT CONNECTOR



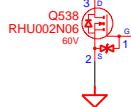
DESIGN	MS Yang	DATE	1/26/2010	TITLE	BREMEN2 GRAPHICS_IF	SAMSUNG ELECTRONICS
CHECK	SE Lee	DEV. STEP	ADV			
APPROVAL	MK Kim	REV	REV 0.1		CRT	PART NO. BA41-
MODULE CODE		LAST EDIT				

HDMI

FOR HDMI VERIFICATION TEST

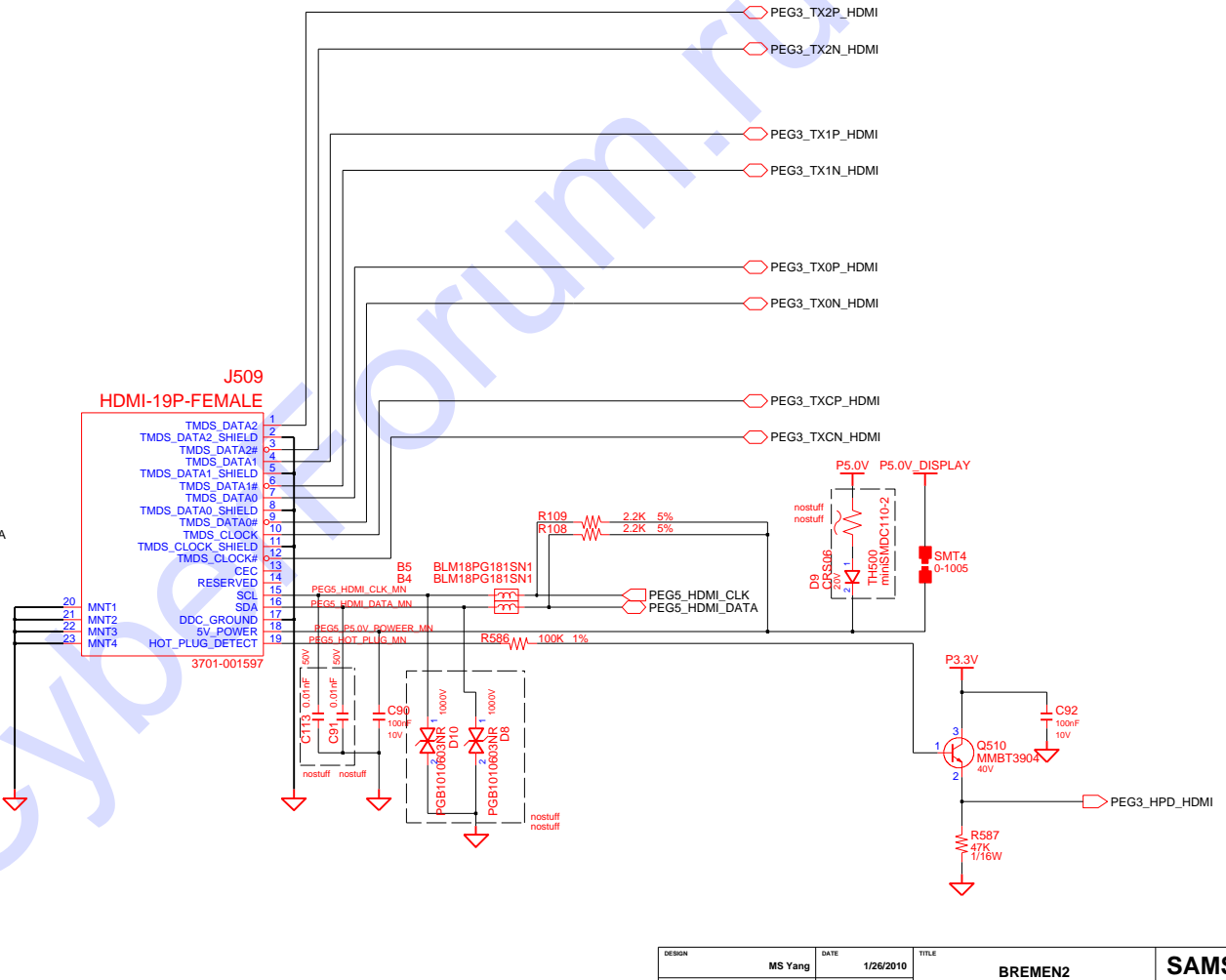


PEG3_TX2P_HDMI	R1101	499	1%
PEG3_TX2N_HDMI	R1102	499	1%
PEG3_TX1P_HDMI	R1103	499	1%
PEG3_TX1N_HDMI	R1104	499	1%
PEG3_TX0P_HDMI	R1105	499	1%
PEG3_TX0N_HDMI	R1106	499	1%
PEG3_TXCP_HDMI	R1107	499	1%
PEG3_TXCN_HDMI	R1108	499	1%



J509
HDMI-19P-FEMALE

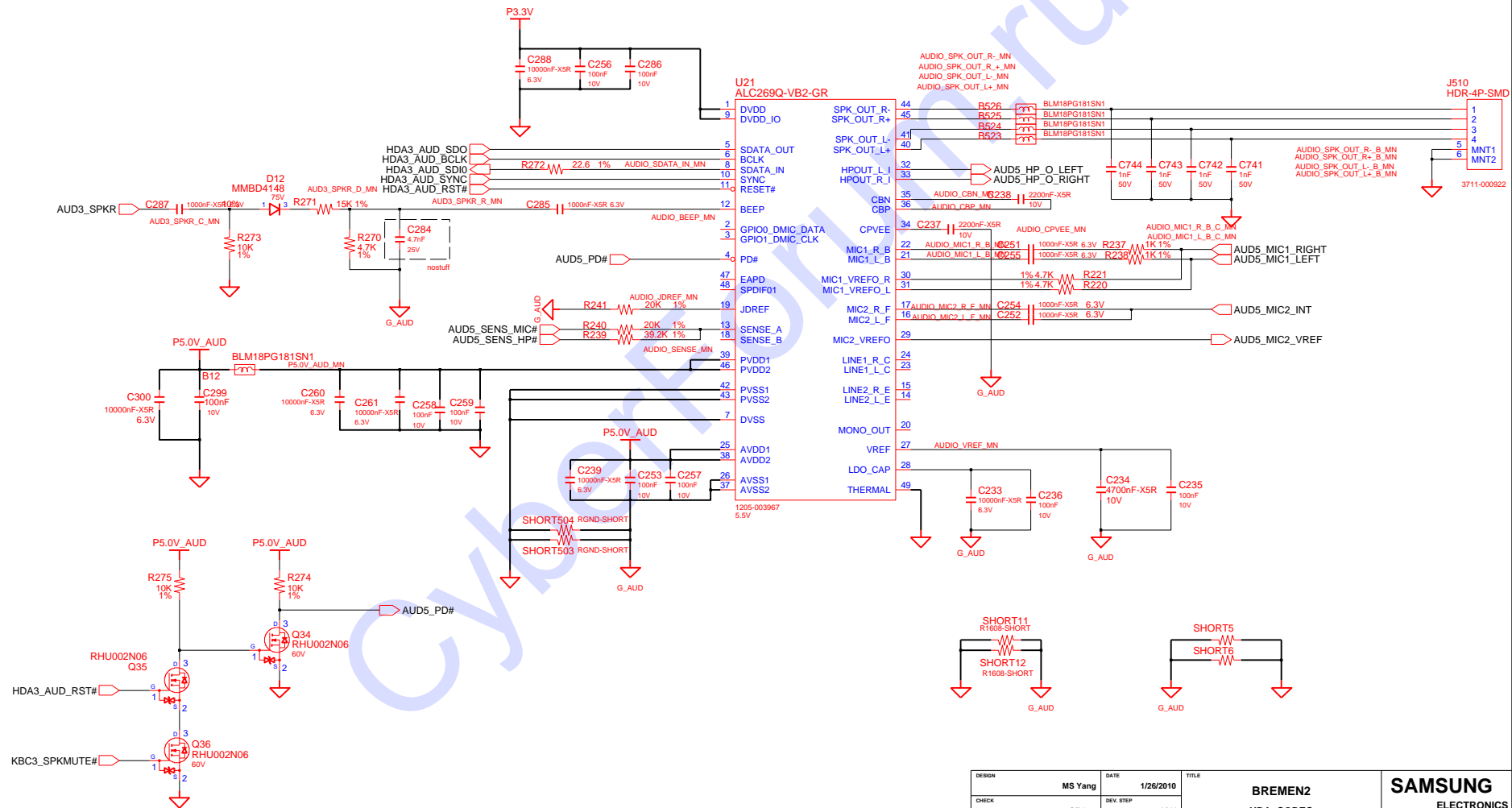
1	TMDS_DATA2
2	TMDS_DATA2_SHIELD
3	TMDS_DATA2#
4	TMDS_DATA1
5	TMDS_DATA1_SHIELD
6	TMDS_DATA1#
7	TMDS_DATA0
8	TMDS_DATA0_SHIELD
9	TMDS_DATA0#
10	TMDS_CLOCK
11	TMDS_CLOCK_SHIELD
12	TMDS_CLOCK#
13	CEC
14	RESERVED
15	SCL
16	SDA
17	DDC_GROUND
18	5V_POWER
19	HOT_PLUG_DETECT



DESIGN	MS Yang	DATE	1/26/2010	TITLE	BREMEN2 GRAPHICS_IF HDMI	SAMSUNG ELECTRONICS
CHECK	SE Lee	DEV. STEP	ADV	PART NO.		
APPROVAL	MK Kim	REV	REV 0.1	BA41-		
MODULE CODE		LAST EDIT		March 06, 2010 17:48:35 PM	PAGE	31 OF 54

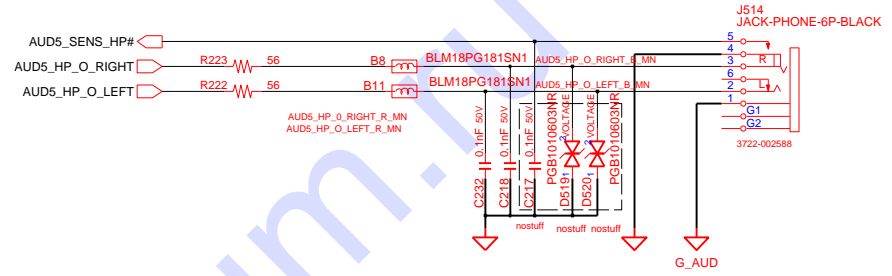
HD AUDIO

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

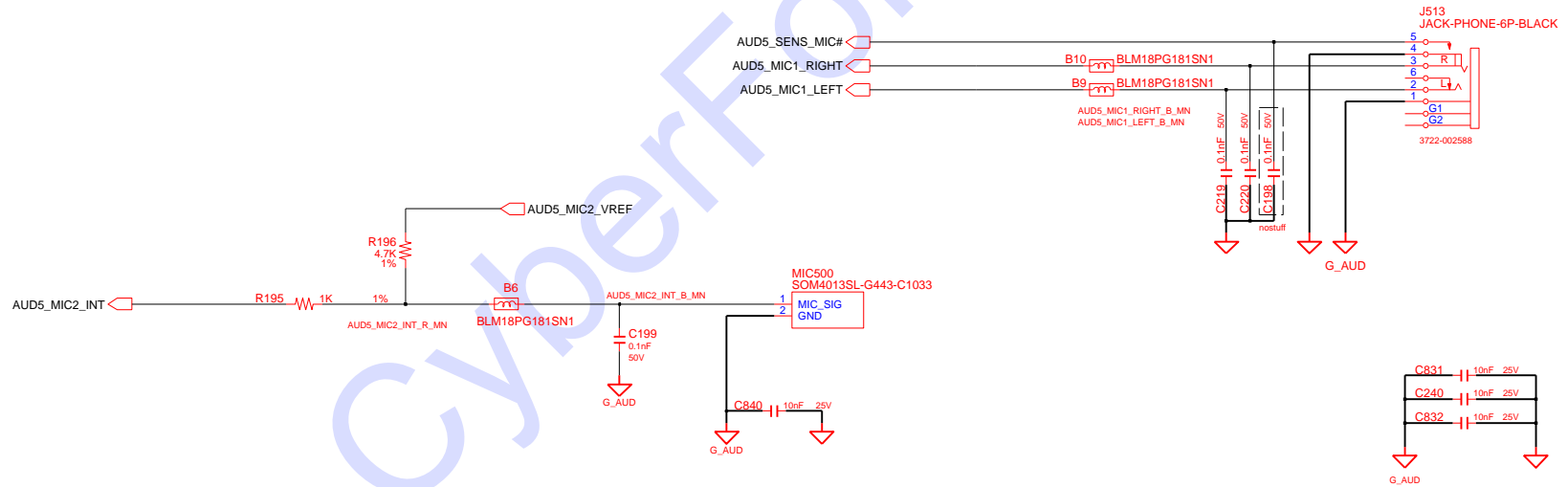


DESIGN	MS Yang	DATE	1/26/2010	TITLE	BREMEN2 HDA_CODEC	SAMSUNG ELECTRONICS
CHECK	SE Lee	DEV. STEP	ADV	REV	AUDIO CODEC ALC269	
APPROVAL	MK Kim	REV	REV 0.1	LAST EDIT	March 06, 2010 17:48:35 PM	PART NO. BA41-
MODULE CODE	undefined	PAGE 32 OF 54				

HEADPHONE(BLACK)

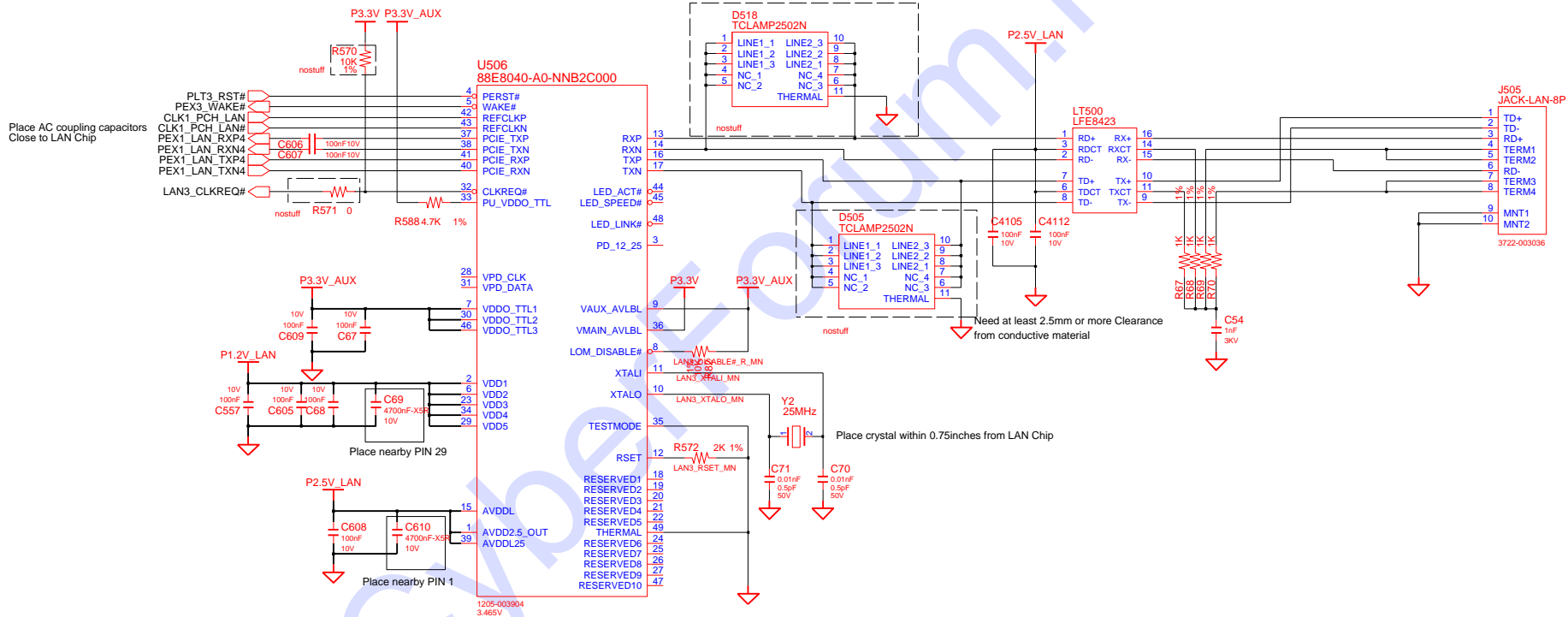


MIC JACK(BLACK)



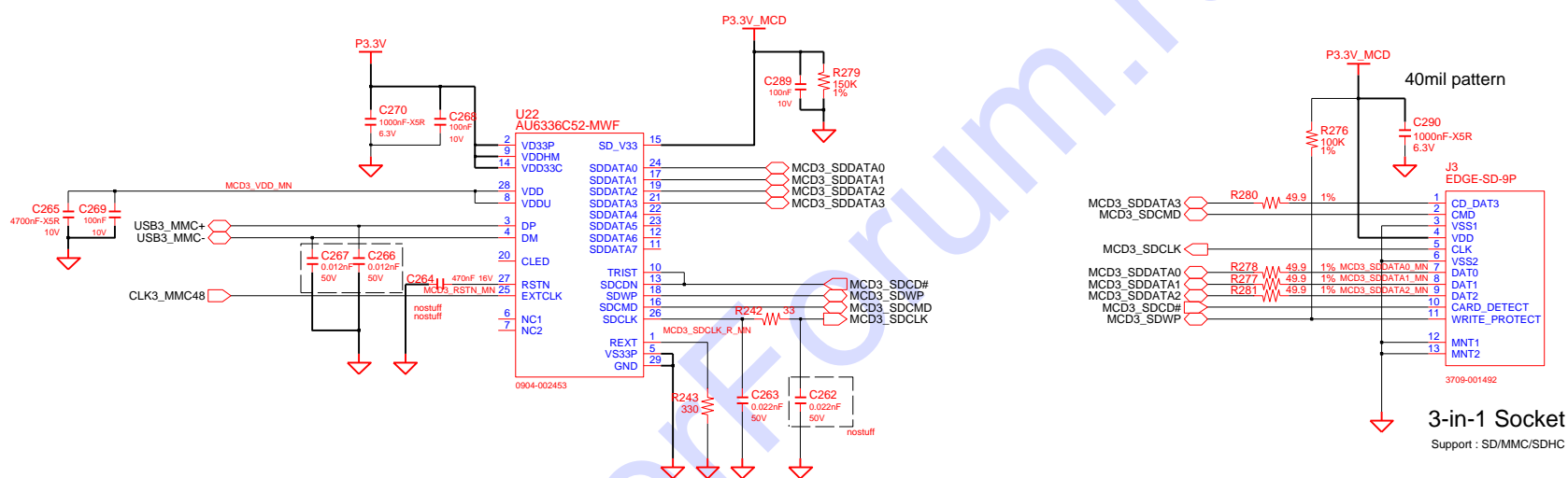
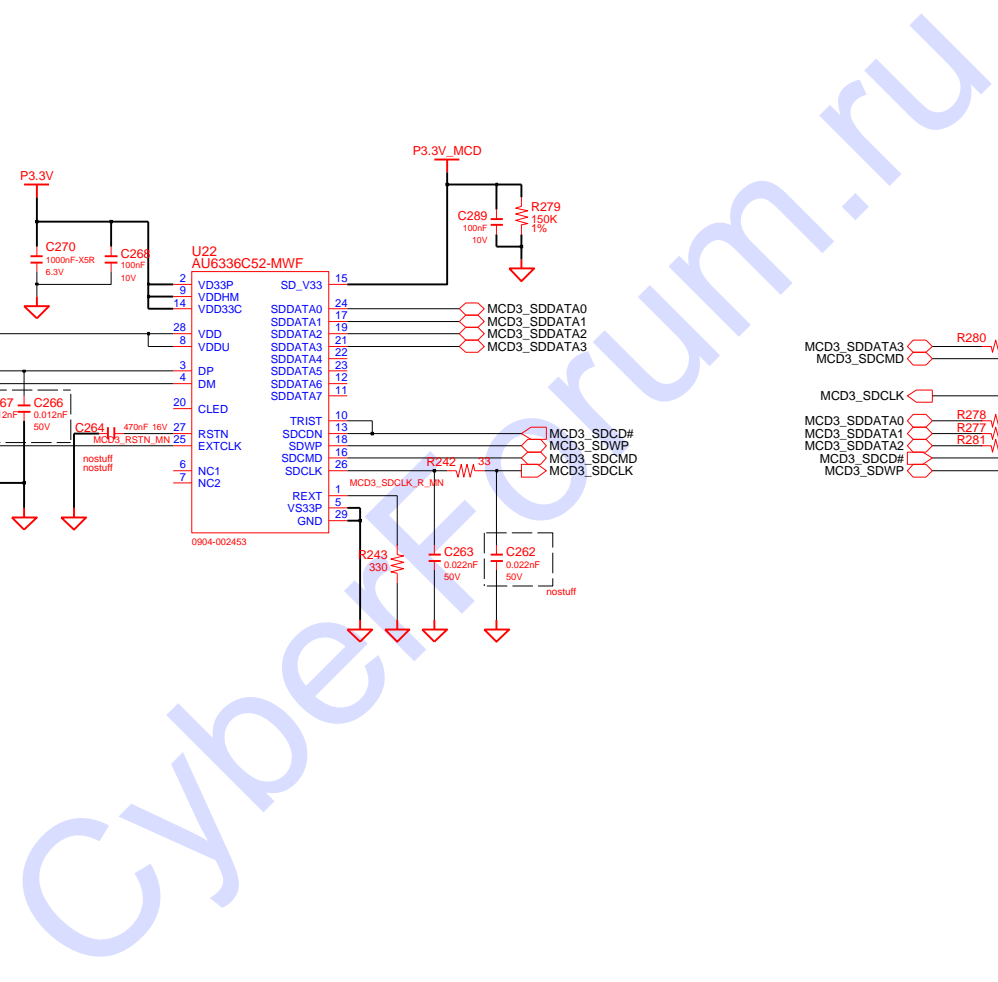
DESIGN	MS Yang	DATE	1/26/2010	TITLE	BREMEN2 HDA_CODEC AUDIO JACK	SAMSUNG ELECTRONICS
CHECK	SE Lee	REV. STEP	ADV			
APPROVAL	MK Kim	REV	REV 0.1			
MODULE CODE	undefined	LAST EDIT	March 06, 2010 17:48:35 PM	PAGE	33	OF 54
					PART NO.	BA41-

LAN Controller (88E8040)



DESIGN	MS Yang	DATE	1/26/2010	TITLE	BREMEN2 LAN	SAMSUNG ELECTRONICS
CHECK	SE Lee	DEV. STEP	ADV	REV	LAN_Marvell_88E8040	
APPROVAL	MK Kim	REV	REV 0.1	REV		PART NO. BA41-
MODULE CODE	undefined	LAST EDIT				
				March 06, 2010 17:48:35 PM	PAGE	34 OF 54

3 IN 1 CARD (AU6336)

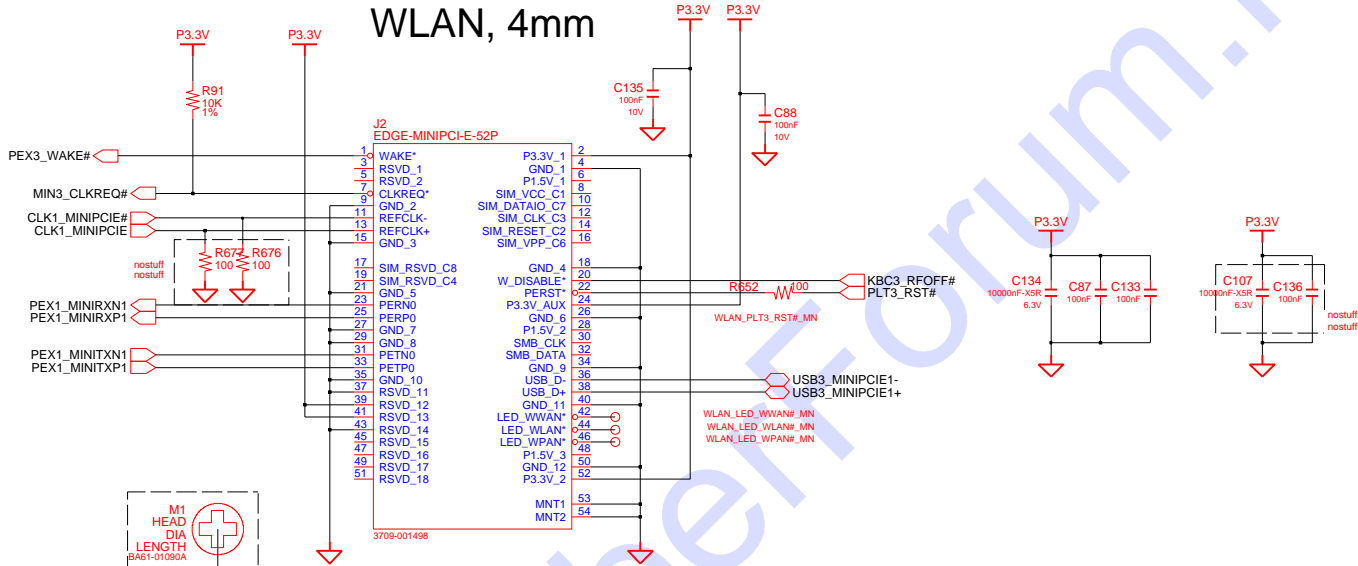


3-in-1 Socket
Support : SD/MMC/SDHC

DESIGN	MS Yang	DATE	8/11/2009	TITLE	BREMEN2 MULTICARD 3 IN 1 CARD(GL827S)	SAMSUNG ELECTRONICS
CHECK	SE Lee	DEV. STEP	ADV	APPROVAL	MK Kim	
MODULE CODE		LAST EDIT		REV	REV 0.1	
				March 06, 2010 17:48:35 PM	PAGE	35 OF 54

WLAN, 4mm

AMT 6.0 : P3.3V = P3.3V_ALW (Check?)
 wakeup pull-up power rail ?
 Puma Peak -WiFi (AMT 6.0)
 Kilmer Peak - WiFi/WiMax

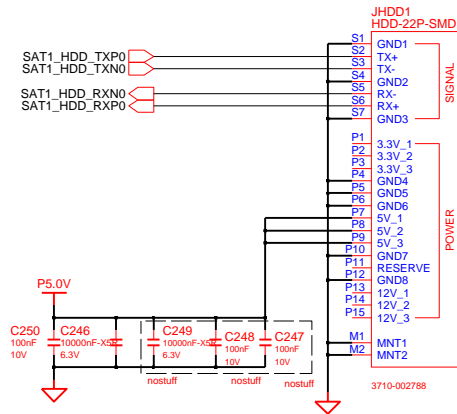


PEM : WLAN minicard (half type only)

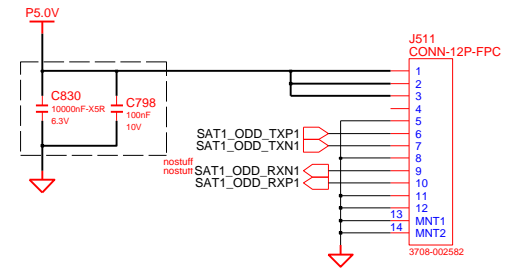
DESIGN	MS Yang	DATE	1/26/2010	TITLE	BREMEN2 MINI_PCIE_CONN	SAMSUNG ELECTRONICS
CHECK	SE Lee	DEV. STEP	ADV			
APPROVAL	MK Kim	REV	REV 0.1		WLAN	PART NO. BA41-
MODULE CODE	undefined	LAST EDIT		March 06, 2010 17:48:35 PM	PAGE	36 OF 54

SATA I/F CONN

SATA HDD CONN



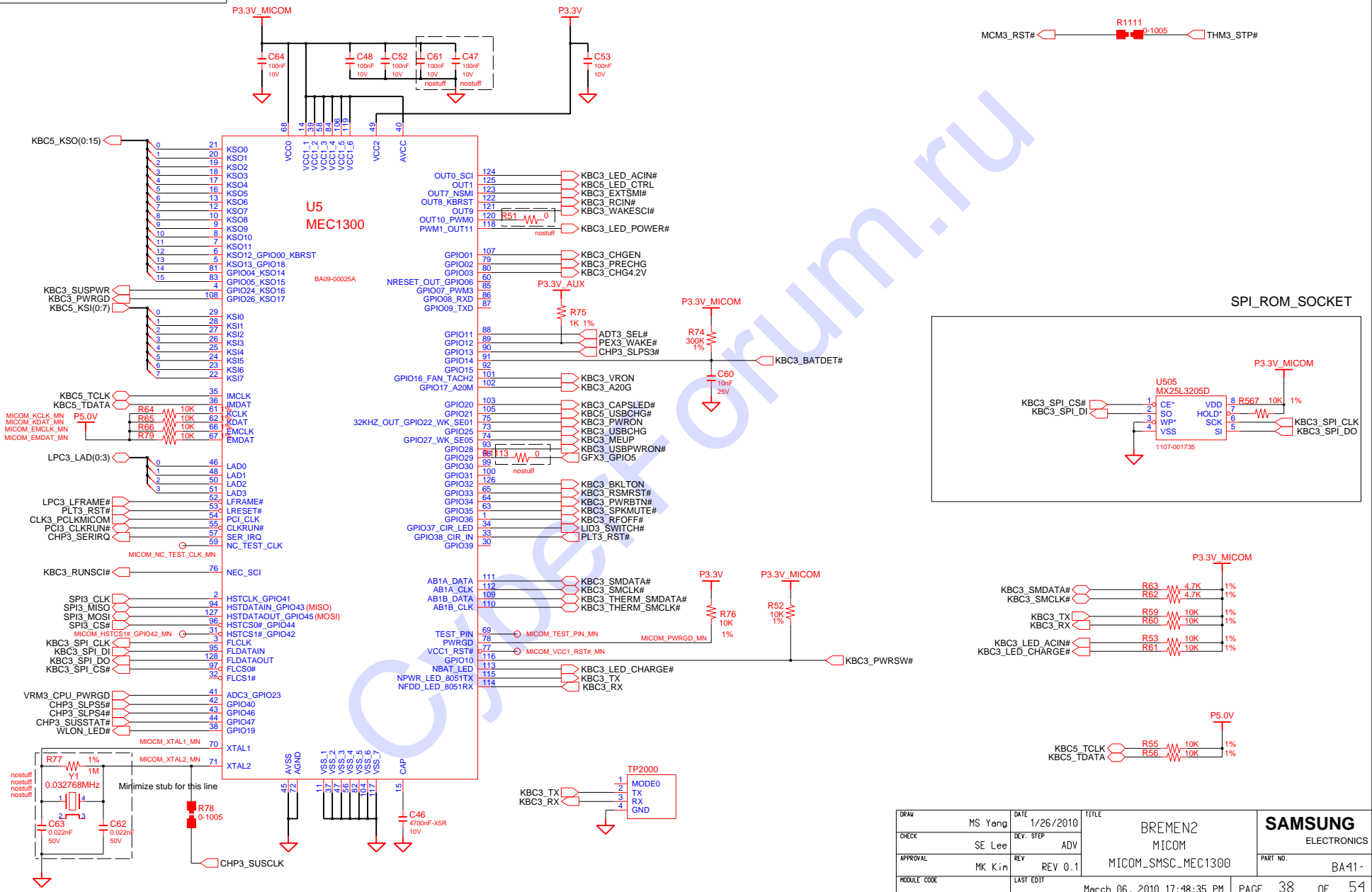
MAIN TO SUB SATA ODD CONN



DESIGN	MS Yang	DATE	1/26/2010	TITLE	BREMEN2 SATA_DEVICES HDD & ODD SUB CONNECTOR	SAMSUNG ELECTRONICS
CHECK	SE Lee	DEV. STEP	ADV	PART NO.		
APPROVAL	MK Kim	REV	REV 0.1	March 06, 2010 17:48:35 PM		PAGE 37 OF 54
MODULE CODE	undefined	LAST EDIT				

MAIN BOARD (MICOM)

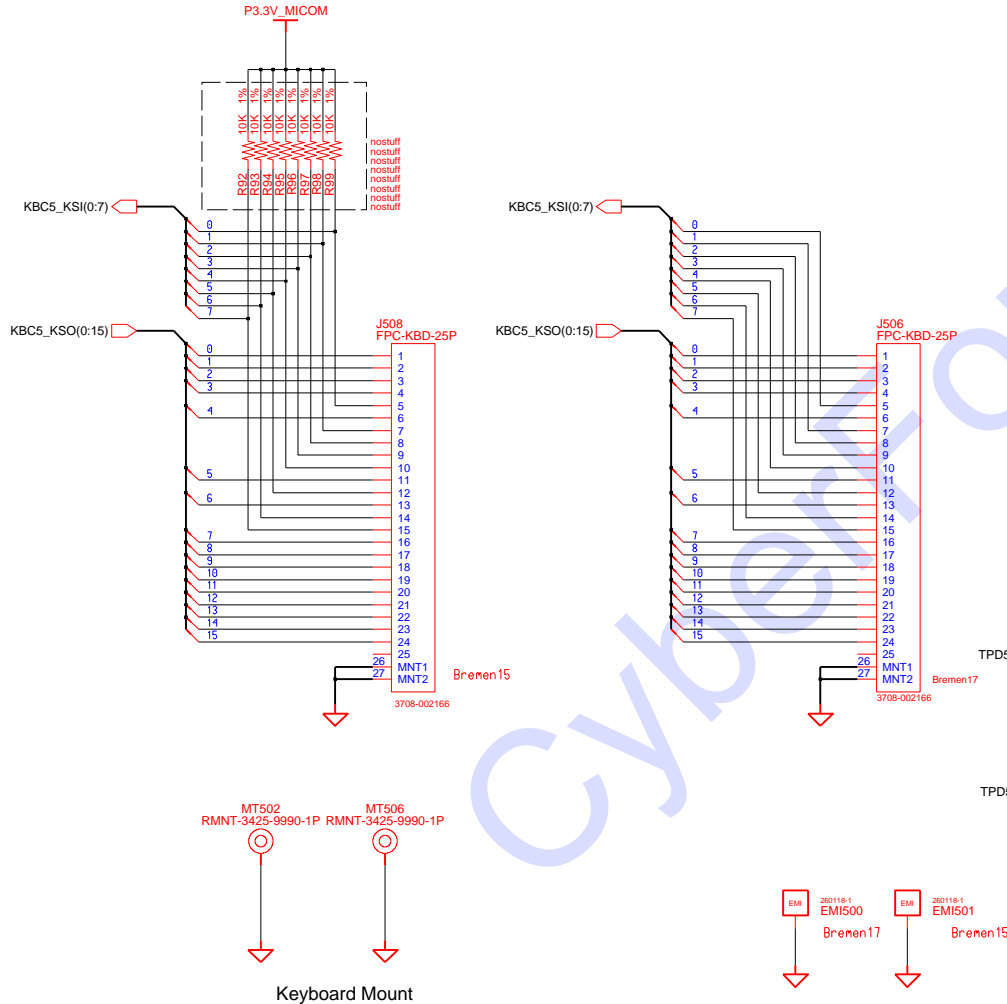
Power off logic



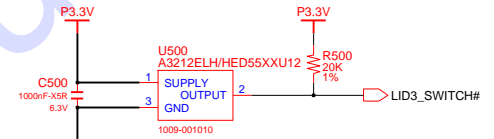
DRWN	MS Yang	DATE	1/26/2010	TITLE	BREMEN2 MICOM	SAMSUNG ELECTRONICS
CHECK	SE Lee	DEV. STEP	ADV	MICOM_SMSC_MEC1300		PART NO. BA41-
APPROVAL	MK Kin	REV	REV 0.1	March 06, 2010 17:48:35 PM		PAGE 38 OF 54
MODULE CODE		LAST EDIT		PAGE 38 OF 54		

Micom Glue Logic

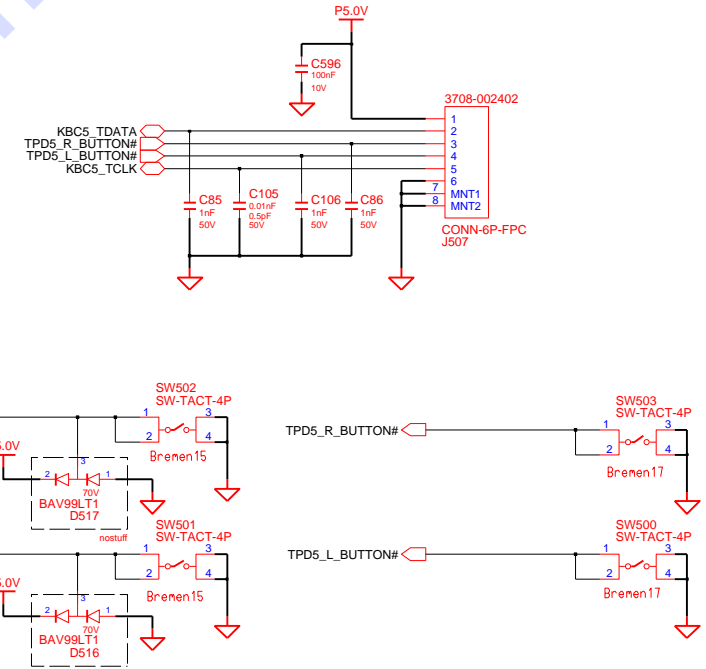
KEYBOARD



LID_SWITCH

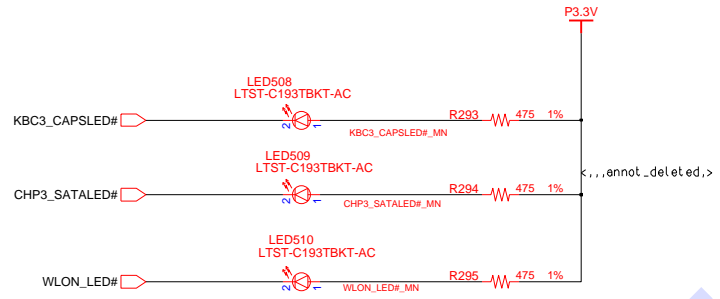


TOUCHPAD

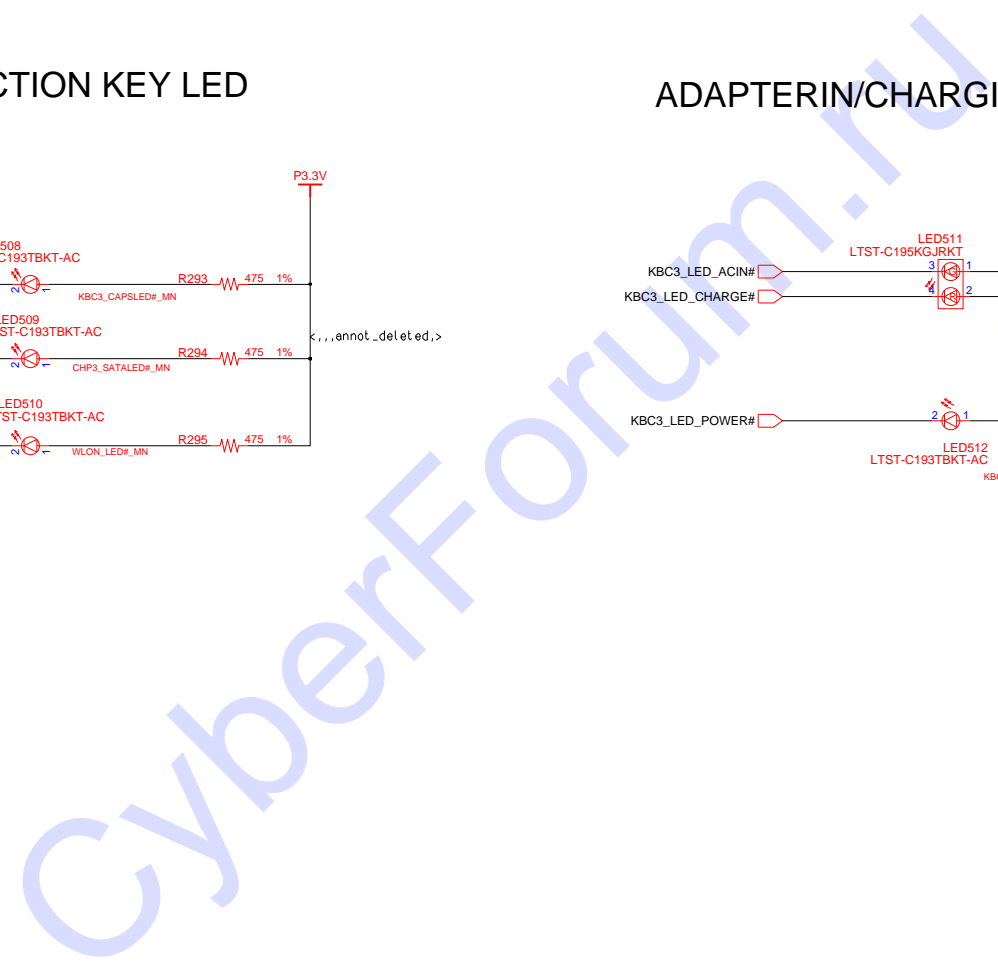
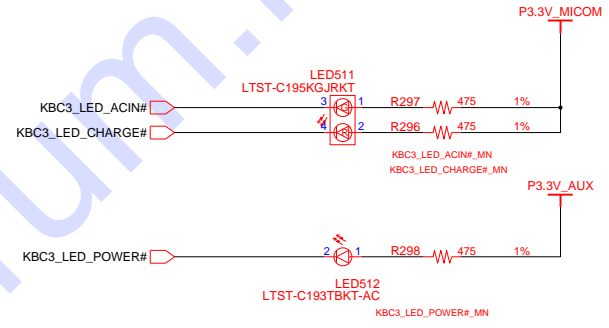


DESIGN	MS Yang	DATE	1/26/2010	TITLE	BREMEN2 MICOM GLUE LOGIC	SAMSUNG ELECTRONICS
CHECK	SE Lee	REV. STEP	ADV			
APPROVAL	MK Kim	REV	REV 0.1		KETBOARD & TOUCHPAD	PART NO.
MODULE CODE	undefined	LAST EDIT				BA41-
				March 06, 2010 17:48:35 PM	PAGE	39 OF 54

FUNCTION KEY LED

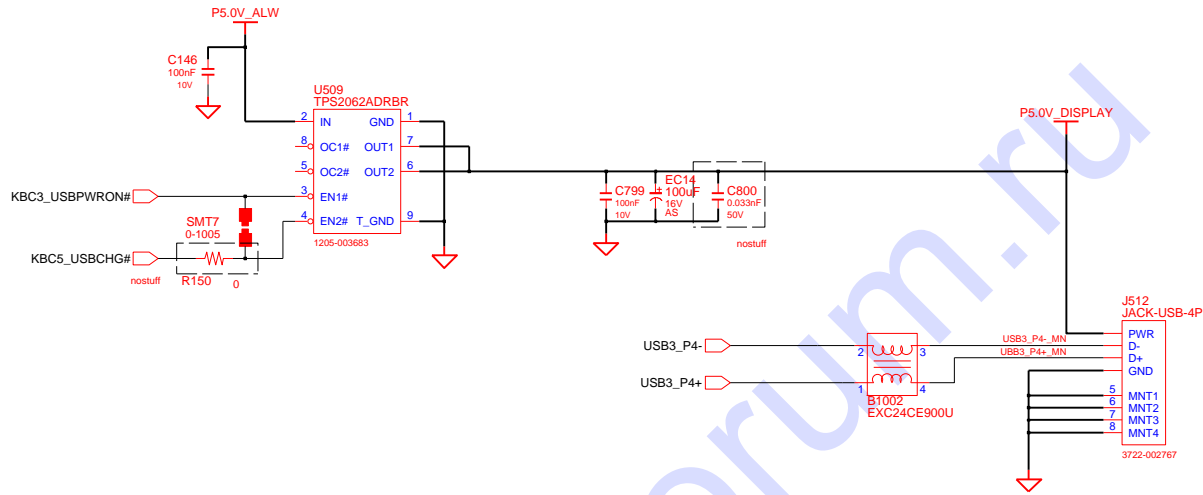


ADAPTERIN/CHARGING LED

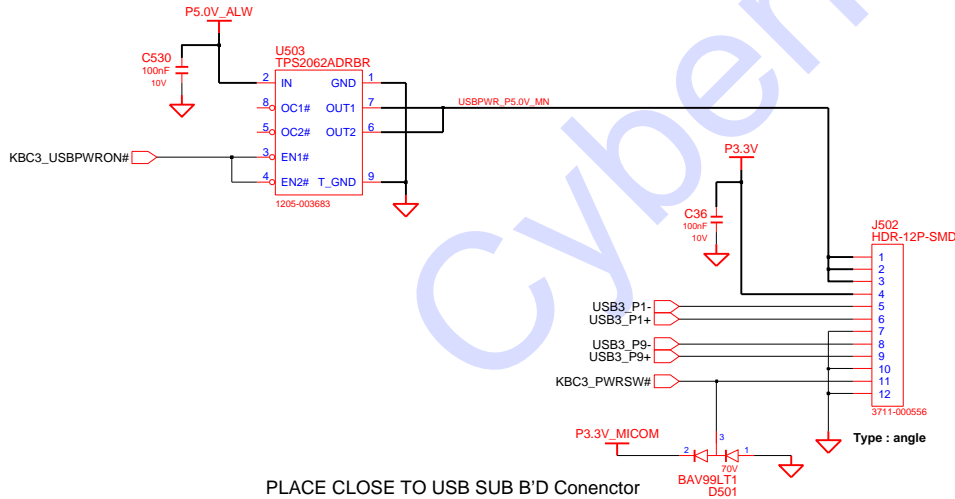


DRAW	MS Yang	DATE	1/26/2010	TITLE	BREMEN2 LED_SWITCH LED_SWITCH	SAMSUNG ELECTRONICS
CHECK	SE Lee	DEV STEP	ADV			
APPROVAL	MK Kim	REV	REV 0.1			
MODULE CODE		LAST EDIT	March 06, 2010 17:48:35 PM		PAGE 40 OF 54	PART NO. BA41-

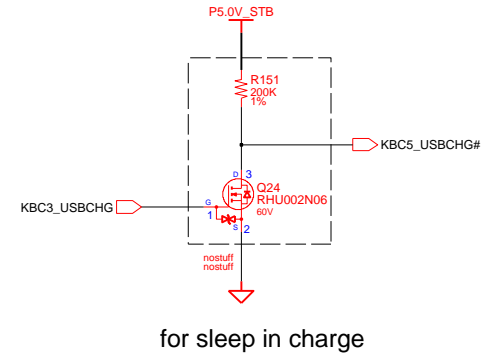
USB Single connector



USB SUB B'D CONNECTOR



PLACE CLOSE TO USB SUB B'D Conenctor

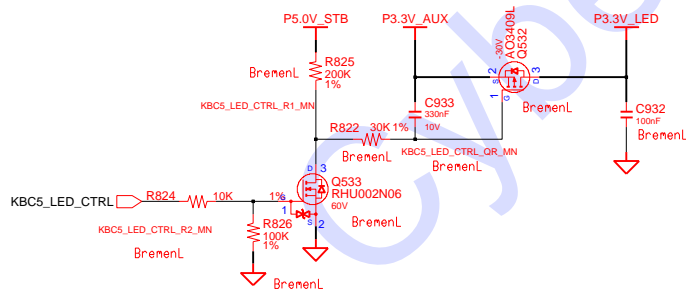
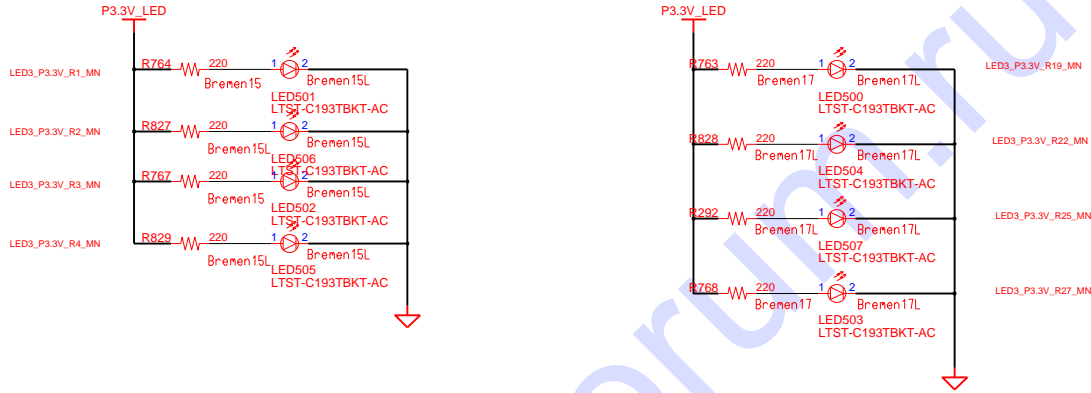


DESIGN	MS Yang	DATE	1/26/2010	TITLE	BREMEN2 USB_CONN Single USB	SAMSUNG ELECTRONICS
CHECK	SE Lee	DEV. STEP	ADV			
APPROVAL	MK Kim	REV	REV 0.1			PART NO. BA41-
MODULE CODE	undefined	LAST EDIT		March 06, 2010 17:48:35 PM	PAGE	41 OF 54

Touchpad LED

SAMSUNG PROPRIETARY

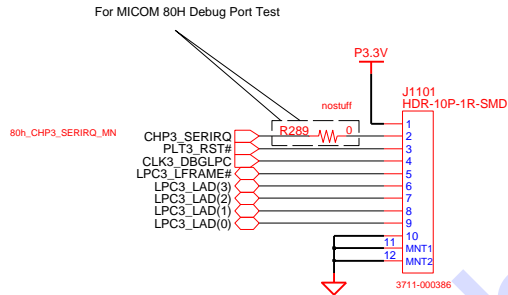
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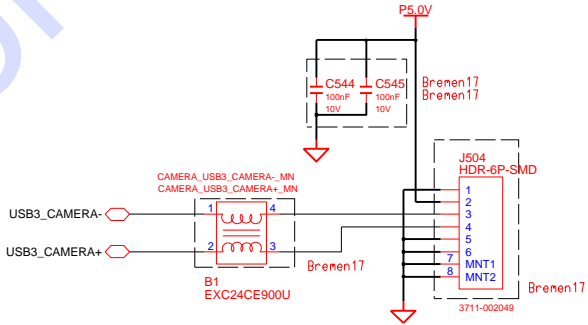
DESIGN	MS Yang	DATE	1/26/2010	TITLE	BREMEN2 TOUCHPAD LED TOUCHPAD LED	SAMSUNG ELECTRONICS PART NO. BA41-
CHECK	SE Lee	DEV. STEP	ADV			
APPROVAL	MK Kim	REV	REV 0.1			
MODULE CODE		LAST EDIT		March 06, 2010 17:48:35 PM	PAGE 42	OF 54

USB I/F Devices

80h PORT DEBUG



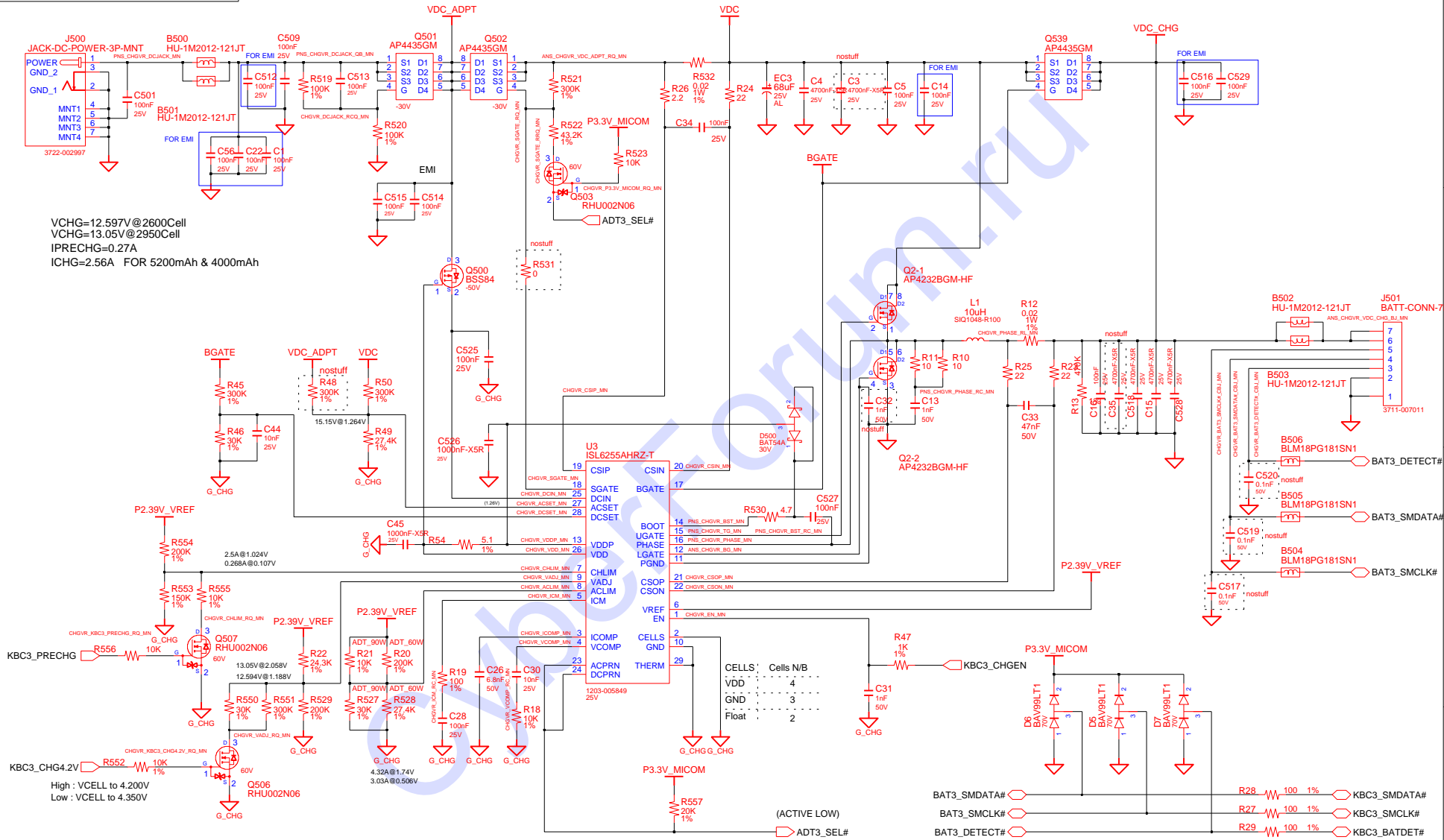
CAMERA (17Inch)



DESIGN	MS Yang	DATE	1/26/2010	TITLE	BREMEN2 USB_DEVICES	SAMSUNG ELECTRONICS
CHECK	SE Lee	DEV. STEP	ADV			
APPROVAL	MK Kim	REV	REV 0.1		CAMERA	PART NO.
MODULE CODE	undefined	LAST EDIT		March 06, 2010 17:48:35 PM	PAGE	43 OF 54
						BA41-

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CHARGER & POWER MANAGEMENT

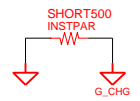


VCHG=12.597V@2600Cell
 VCHG=13.05V@2950Cell
 IPRECHG=0.27A
 ICHG=2.56A FOR 5200mAh & 4000mAh

2.5A@1.024V
 0.268A@0.107V

High : VCELL to 4.200V
 Low : VCELL to 4.350V

Adapter configuration				
60W / 3.03A / 96%		90W / 4.32A / 91.2%		
Value	SEC Code	Value	SEC Code	Value
Rtop	200K	2007-007334	10K	2007-007142
Rbot	27.4K	2007-007274	30K	2007-008275



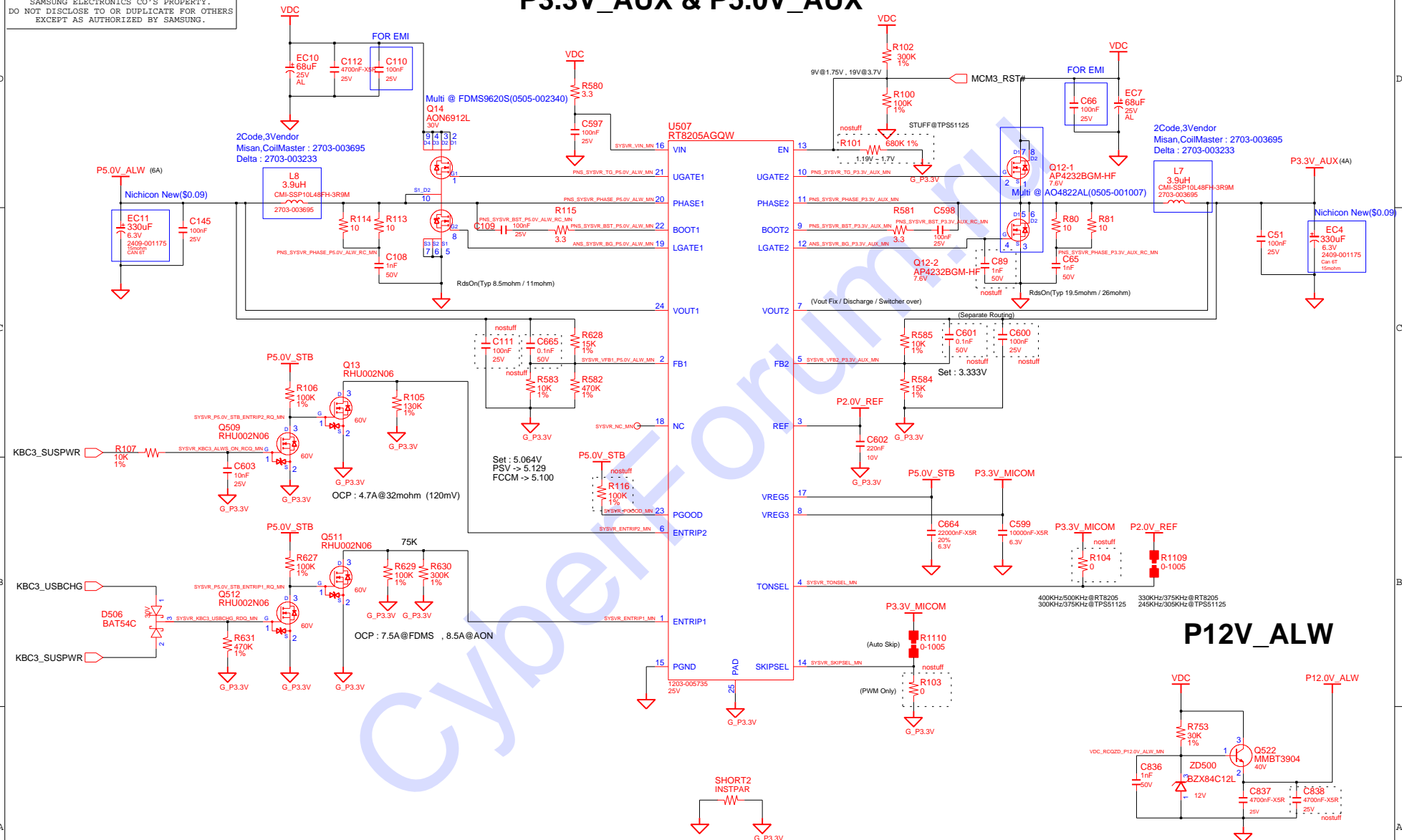
(ACTIVE LOW)
 ADT3_SEL#

DRAW	DATE	TITLE
MS Yang	1/26/2010	BREMEN2
CHECK	DEV. STEP	
SE Lee	ADV	CHARGER
APPROVAL	REV	
MK Kim	REV 0.1	Charger
MIDDLE CODE	LAST EDIT	
undefined		

PART NO.		SAMSUNG ELECTRONICS	
BA41-			
March 06, 2010 17:48:35 PM	PAGE 44	OF 54	

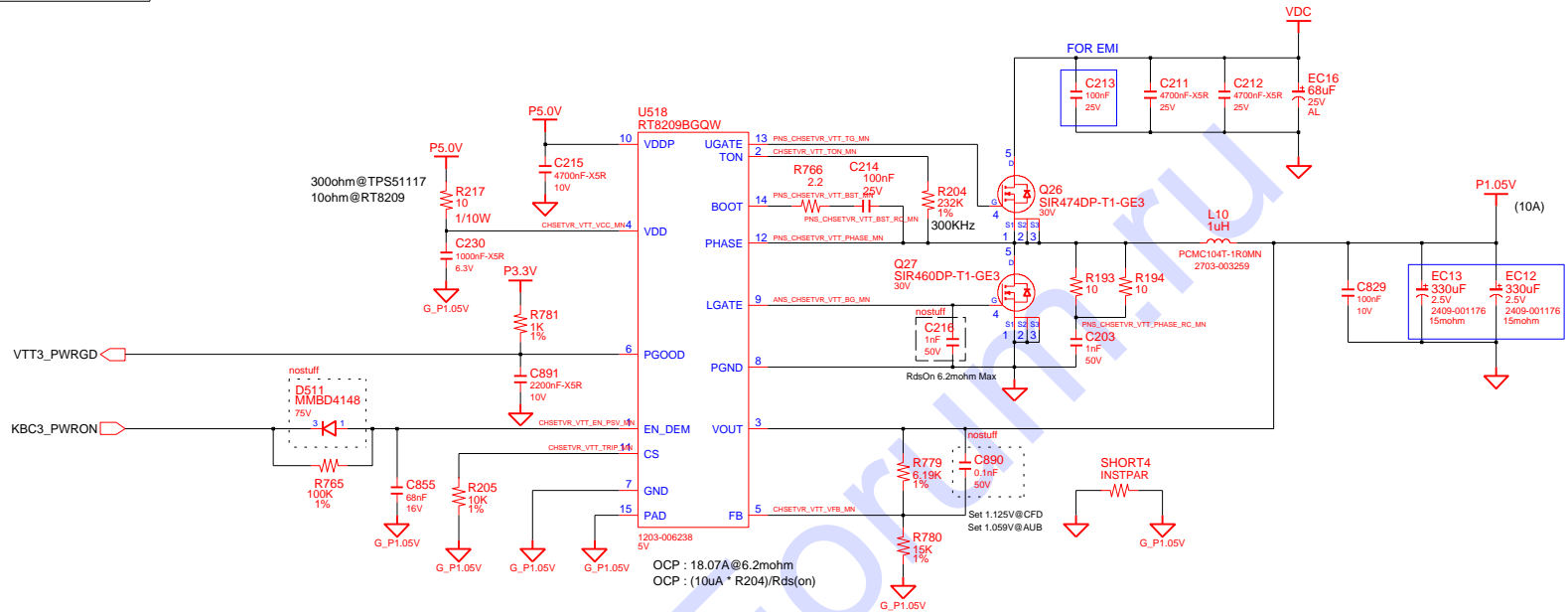
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P3.3V_AUX & P5.0V_AUX



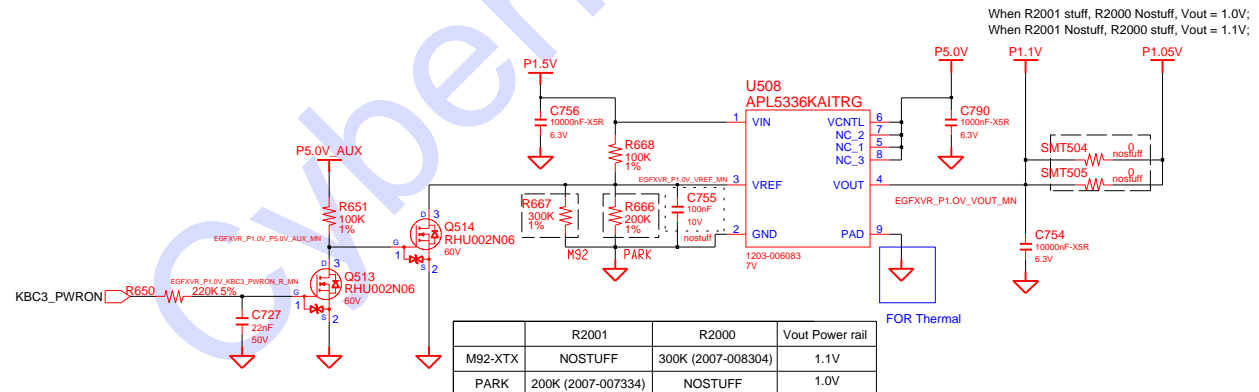
DESIGN	MS Yang	DATE	1/26/2010	TITLE	BREMEN2	SAMSUNG ELECTRONICS
CHECK	SE Lee	DEV. STEP	ADV	P3.3V_ALW / P5.0V_ALW P3.3V_AUX & P5.0V_AUX		
APPROVAL	MK Kin	REV	REV 0.1	PART NO.		BA41-
MODULE CODE	undefined	LAST EDIT		March 06, 2010 17:48:35 PM		
				PAGE	45	OF 54

CHIPSET POWER(P1.05V)



OCp : 18.07A@6.2mohm
 OCp : (10uA * R204)/Rds(on)

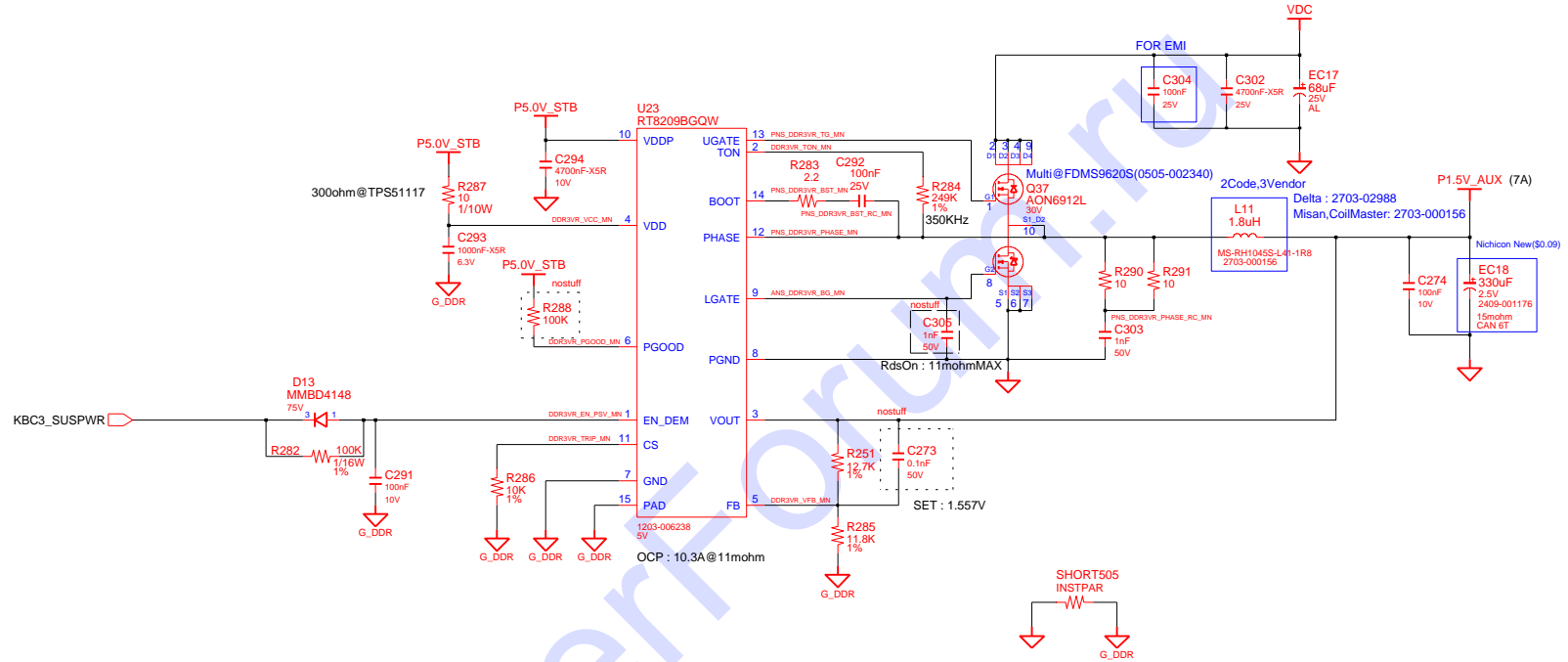
P1.1V



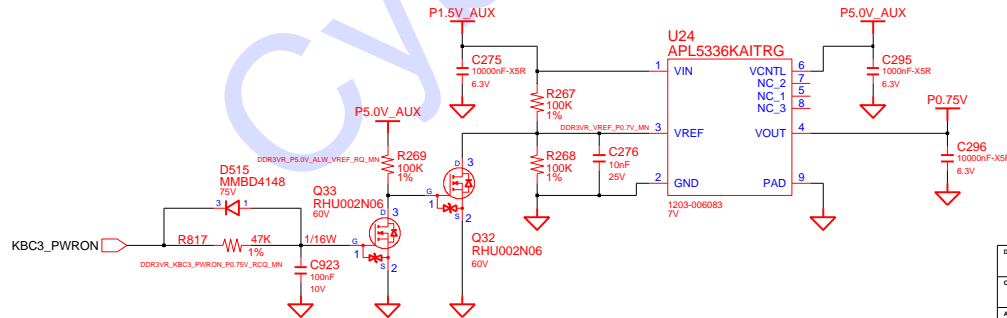
	R2001	R2000	Vout Power rail
M92-XTX	NOSTUFF	300K (2007-008304)	1.1V
PARK	200K (2007-007334)	NOSTUFF	1.0V

DRAN	MS Yang	DATE	1/26/2010	TITLE	BREMEN2 Chipset Power	SAMSUNG ELECTRONICS
CHECK	SE Lee	DEV. STEP	ADV	Chipset Power (P1.05VTT)		
APPROVAL	MK Kin	REV	REV 0.1	PART NO.		BA41-
MODULE CODE	undefined	LAST EDIT		March 06, 2010 17:48:35 PM	PAGE	46 OF 54

DDR3 Power

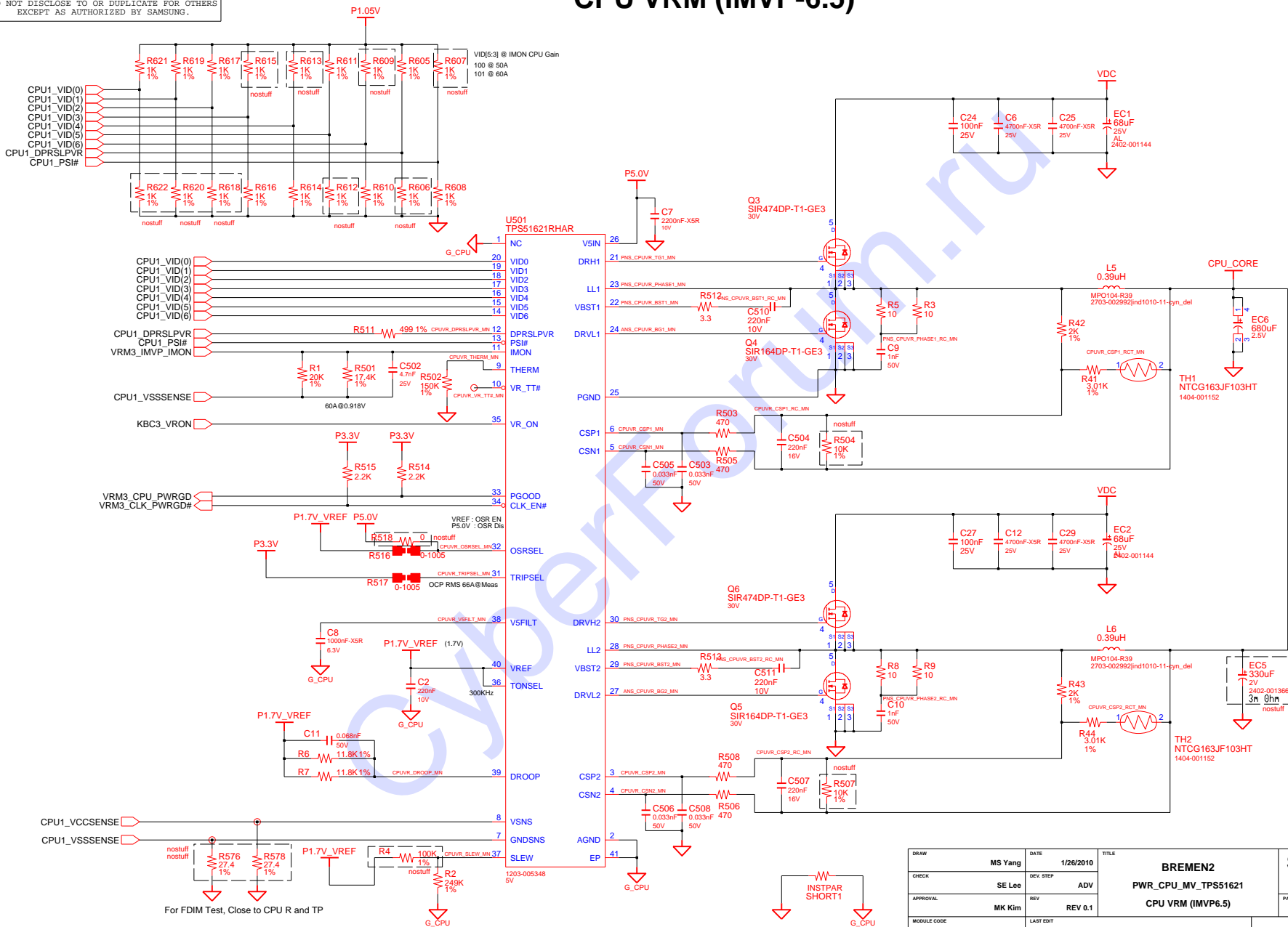


DDR3 VTT(0.75V)



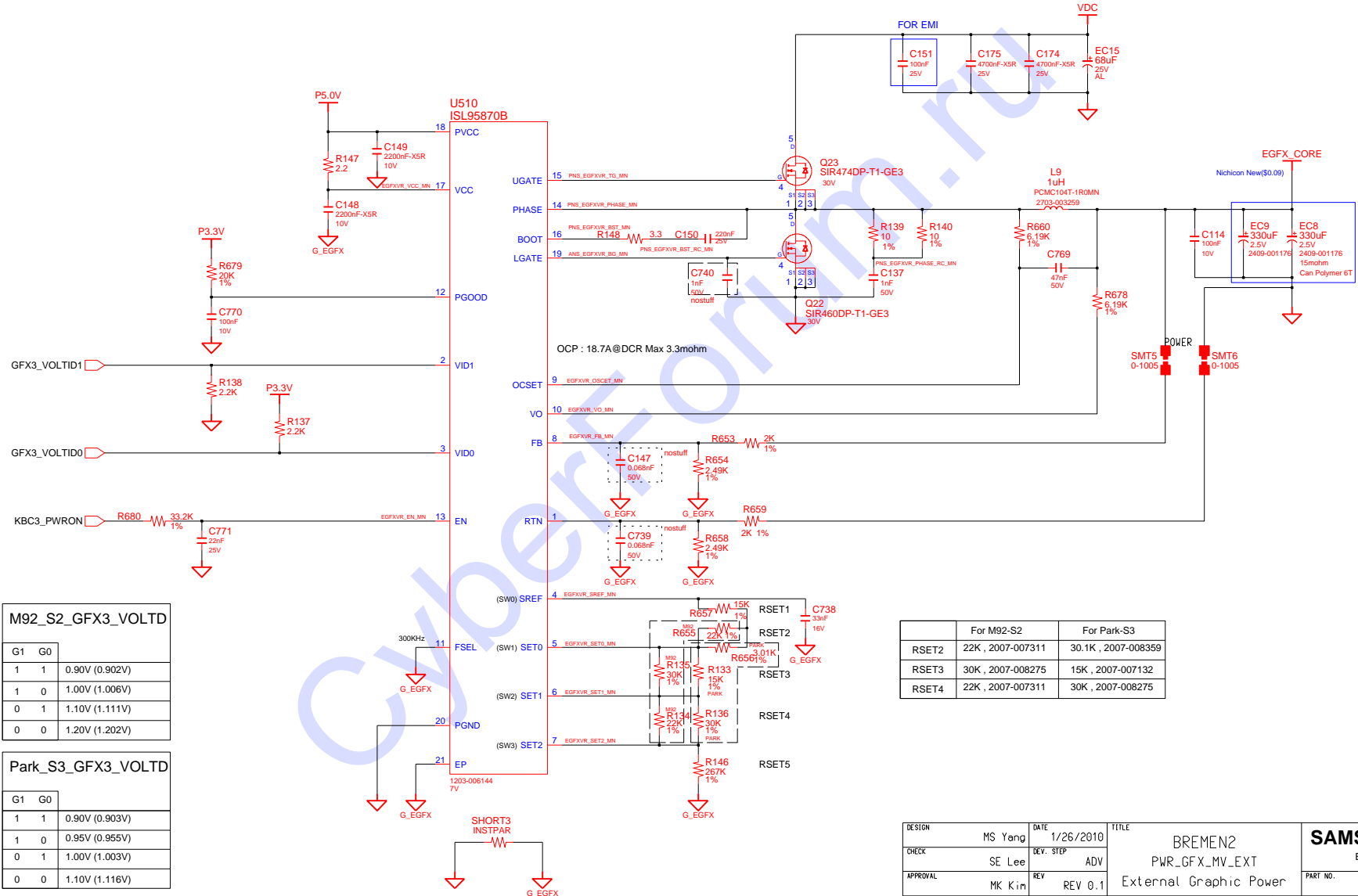
DRAW	MS Yang	DATE	1/26/2010	TITLE	BREMEN2 PWR_MEMORY DDR3 POWER	SAMSUNG ELECTRONICS
CHECK	SE Lee	REV. STEP	ADV			
APPROVAL	MK Kim	REV	REV 0.1			
MODULE CODE	undefined	LAST EDIT				PART NO. BA41-
					March 06, 2010 17:48:35 PM	PAGE 47 OF 54

CPU VRM (IMVP-6.5)



DRAWN	MS Yang	DATE	1/26/2010	TITLE	BREMEN2 PWR_CPU_MV_TPSS1621 CPU VRM (IMVP6.5)		SAMSUNG ELECTRONICS
CHECK	SE Lee	DEV. STEP	ADV	REV	REV 0.1	PART NO.	
APPROVAL	MK Kim	LAST EDIT		MODULE CODE	undefined	March 06, 2010 17:48:35 PM	PAGE 48 OF 54

Graphic Core Power



M92_S2_GFX3_VOLTD

G1	G0	Voltage
1	1	0.90V (0.902V)
1	0	1.00V (1.006V)
0	1	1.10V (1.111V)
0	0	1.20V (1.202V)

Park_S3_GFX3_VOLTD

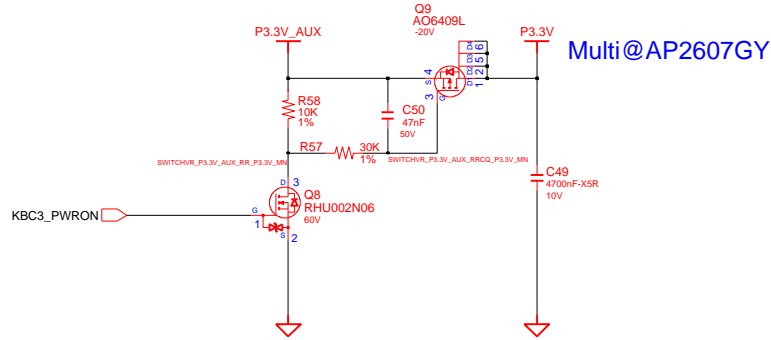
G1	G0	Voltage
1	1	0.90V (0.903V)
1	0	0.95V (0.955V)
0	1	1.00V (1.003V)
0	0	1.10V (1.116V)

	For M92-S2	For Park-S3
RSET2	22K, 2007-007311	30.1K, 2007-008359
RSET3	30K, 2007-008275	15K, 2007-007132
RSET4	22K, 2007-007311	30K, 2007-008275

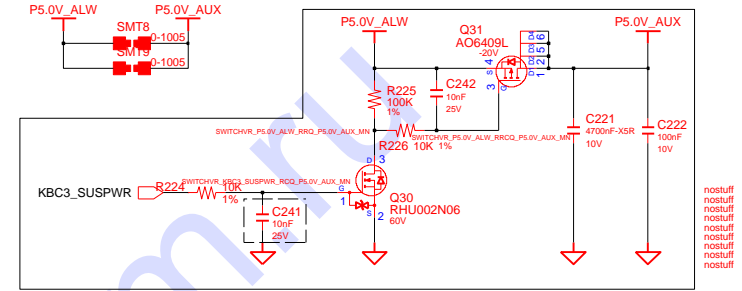
DESIGN	MS Yang	DATE	1/26/2010	TITLE	BREMEN2 PWR_GFX_MV_EXT	SAMSUNG ELECTRONICS
CHECK	SE Lee	DEV. STEP	ADV	REV	External Graphic Power	
APPROVAL	MK Kin	REV	REV 0.1	LAST EDIT		PART NO.
MODULE CODE	undefined				March 06, 2010 17:48:35 PM	BA41-
					PAGE 49	OF 54

Switched Power

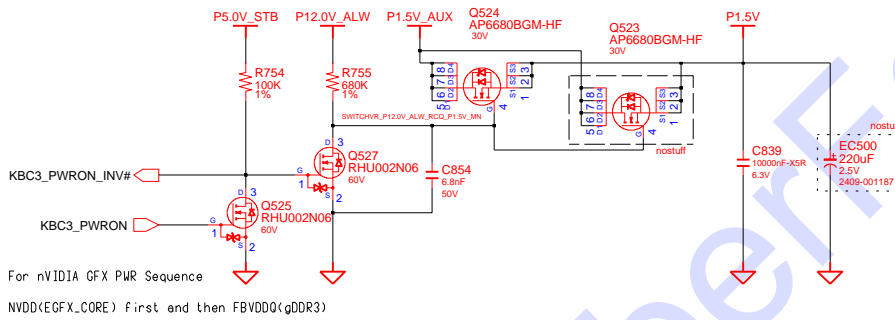
Switched Power On (P3.3V)



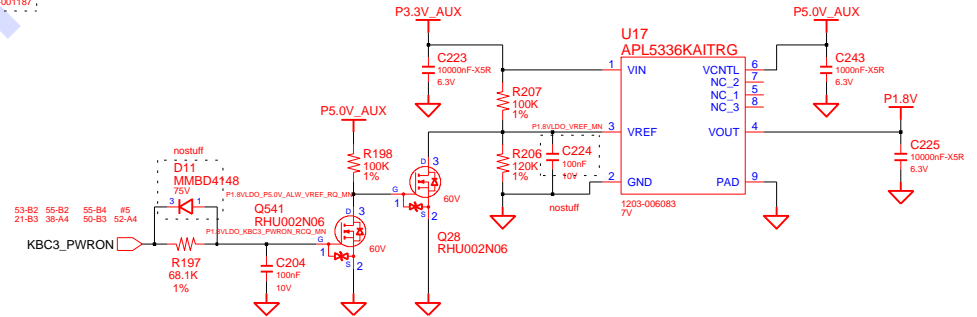
Sleep'n Charger



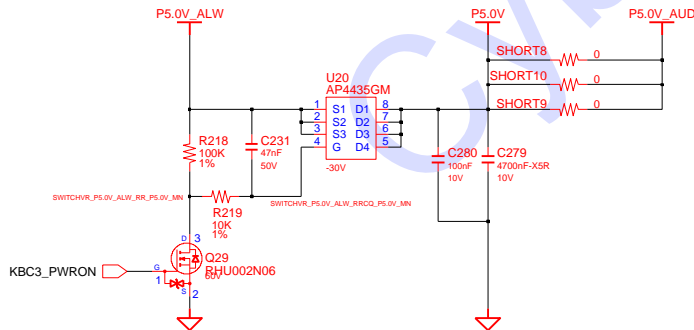
Switched Power On (P1.5V) Multi@AO4476L



P1.8V(LDO)

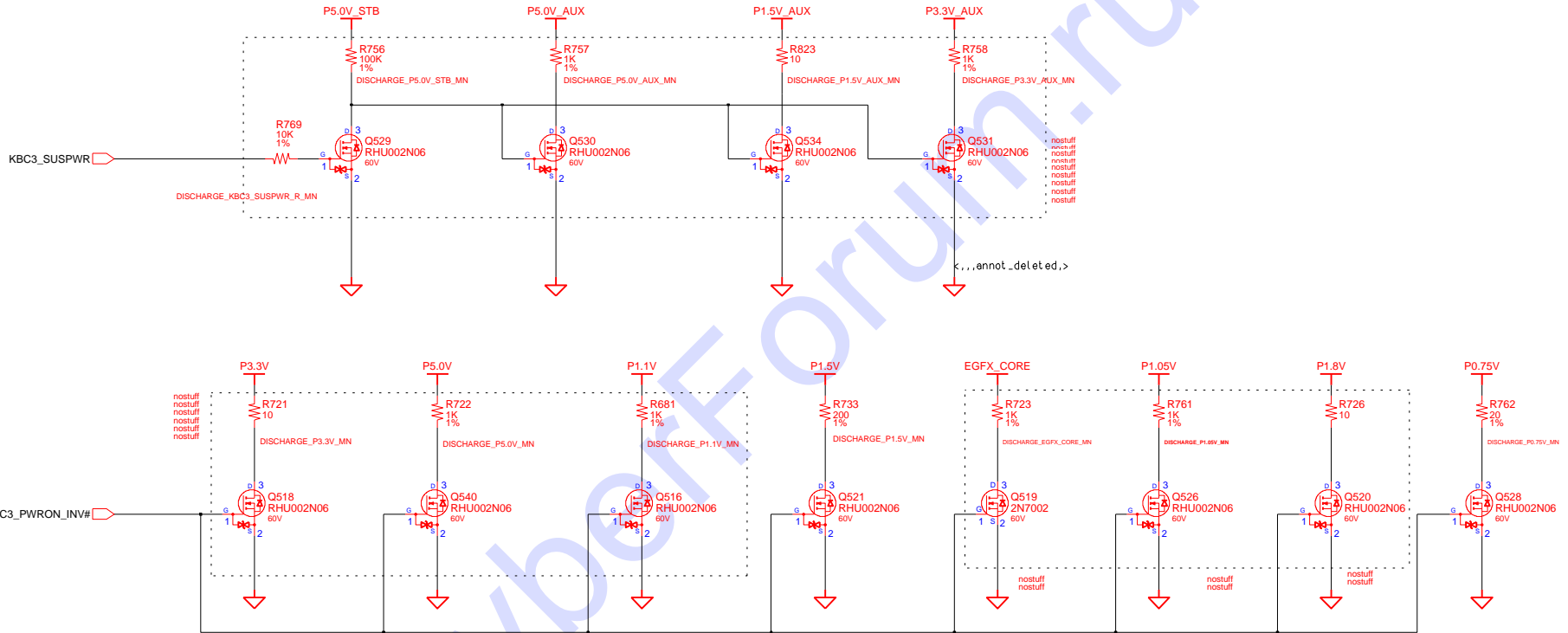


Switched Power On (P5.0V) Multi@Si4435DDY



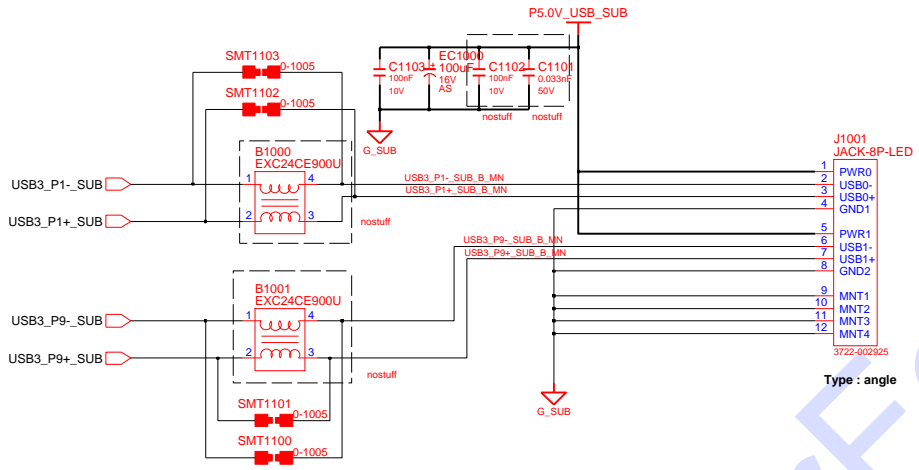
DRAW	MS Yang	DATE	1/26/2010	TITLE	BREMEN2 PWR_MV_SWITCHED	SAMSUNG ELECTRONICS
CHECK	SE Lee	DEV. STEP	ADV	SWITCHED POWER		
APPROVAL	MK Kim	REV	REV 0.1		PART NO.	BA41-
MODULE CODE	undefined	LAST EDIT		March 06, 2010 17:48:35 PM	PAGE	50 OF 54

POWER DISCHARGER

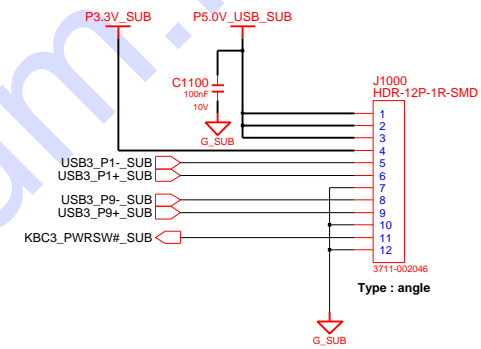


DRAW	MS Yang	DATE	1/26/2010	TITLE	BREMEN2 PWR_MV_DISCHARGER DISCHARGING LOGIC	SAMSUNG ELECTRONICS
CHECK	SE Lee	DEV. STEP	ADV	PART NO.		
APPROVAL	MK Kim	REV	REV 0.1	BA41-		
MODULE CODE	undefined	LAST EDIT	March 06, 2010 17:48:35 PM	PAGE	51	OF 54

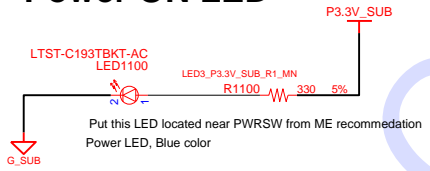
2 USB PORT & POWER S/W SUB B'D



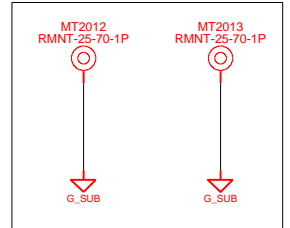
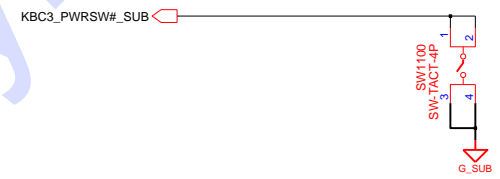
SUB TO MAIN USB CONN



Power ON LED



Power Button



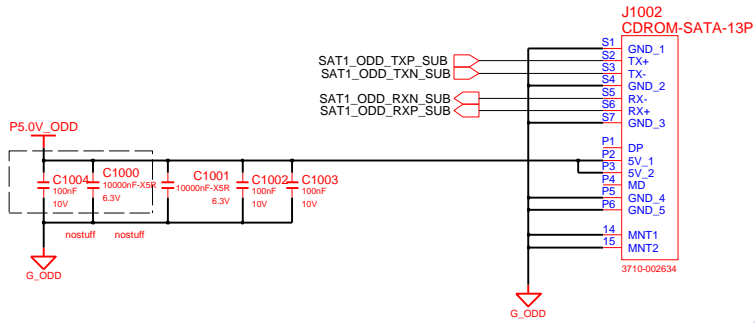
USB sub board mount hole

DESIGN	MS Yang	DATE	1/26/2010	TITLE	BREMEN2 SUB BOARD1 2 USB & POWER SW	SAMSUNG ELECTRONICS
CHECK	SE Lee	DEV. STEP	ADV			
APPROVAL	MK Kim	REV	REV 0.1			PART NO. BA41-
MODULE CODE	undefined	LAST EDIT	March 06, 2010 17:48:35 PM	PAGE	52	OF 54

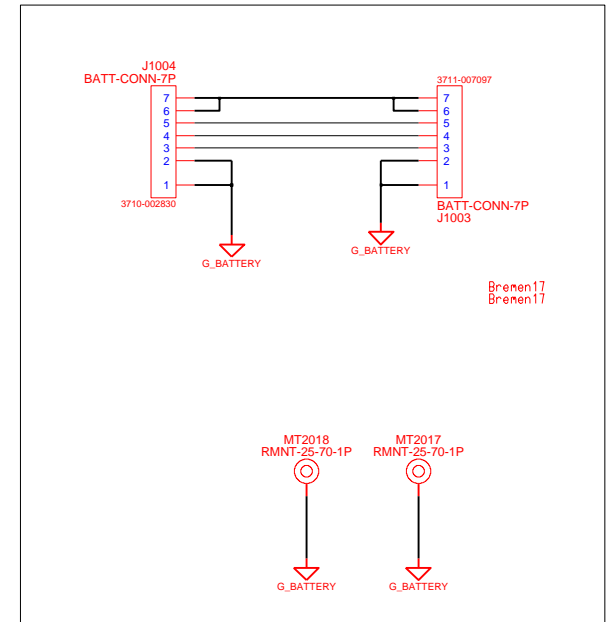
SATA ODD SUB BOARD

SATA ODD SUB BOARD

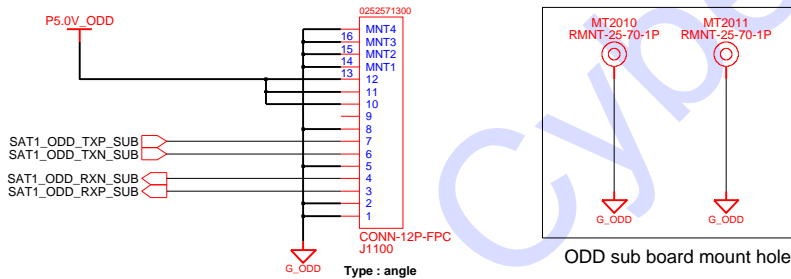
SATA ODD CONN



17" BATTERY SUBBOARD

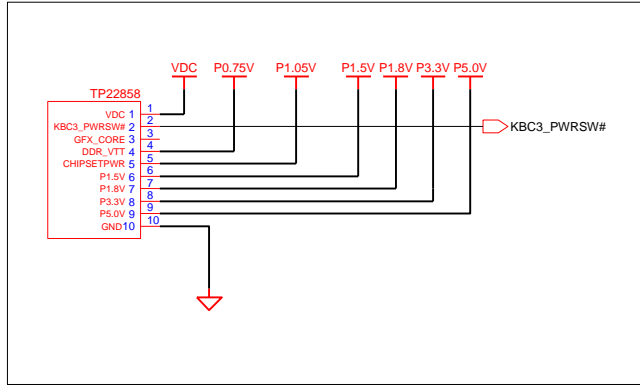


SUB TO MAIN SATA ODD CONN

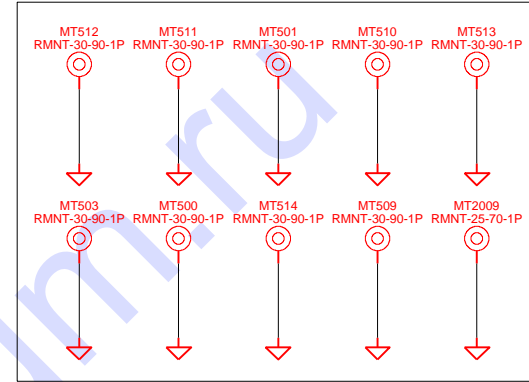


DRAW	MS Yang	DATE	1/26/2010	TITLE	BREMEN2 SUB BOARD2 SATA ODD SUB BOARD	SAMSUNG ELECTRONICS
CHECK	SE Lee	DEV. STEP	ADV			
APPROVAL	MK Kim	REV	REV 0.1			PART NO. BA41-
MODULE CODE	undefined	LAST EDIT		March 06, 2010 17:48:35 PM	PAGE	53 OF 54

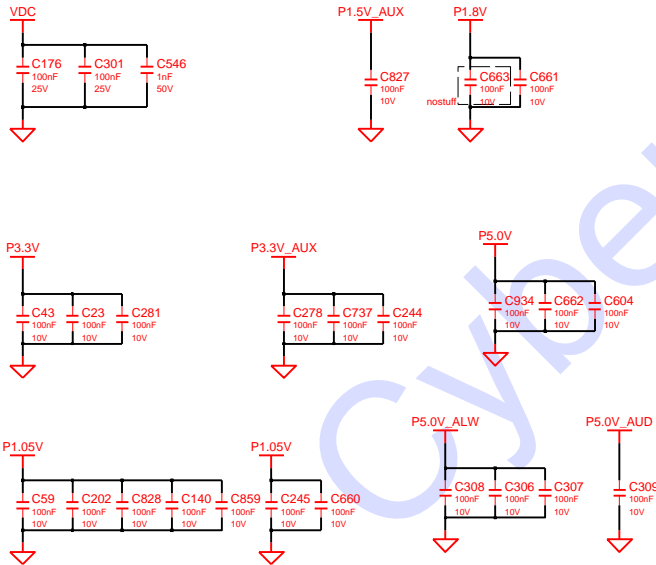
ICT PORT



Mainboard Mount ((30,80)x9), (30,90)x9), (25,70)x1)



Top : (30,80) x 9
Bot : (30,90) x 9



DRAW	MS Yang	DATE	1/26/2010	TITLE	BREMEN2 ICT PORT	SAMSUNG ELECTRONICS
CHECK	SE Lee	DEV. STEP	ADV	ICT PORT		
APPROVAL	MK Kim	REV	REV 0.1	ICT PORT	PART NO.	BA41-
MODULE CODE		LAST EDIT			March 06, 2010 17:48:35 PM	PAGE 54 OF 54

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