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BONN-E/BONN-C

CPU : Intel Penryn
Chip Set : PM45 & ICH9M
Graphic : M96/M92/gDDR3 1g bit
Remarks : Montevina Platform

Model Name : BONN-E/BONN-C
PBA Name : MAIN
PCB Code : GCE : BA41-01060A
NAN : BA41-01061A
HAN : BA41-01062A
Dev. Step : MP
Revision : 1.0
T.R. Date : 2009.04.11

Design	CHECK	APPROVAL

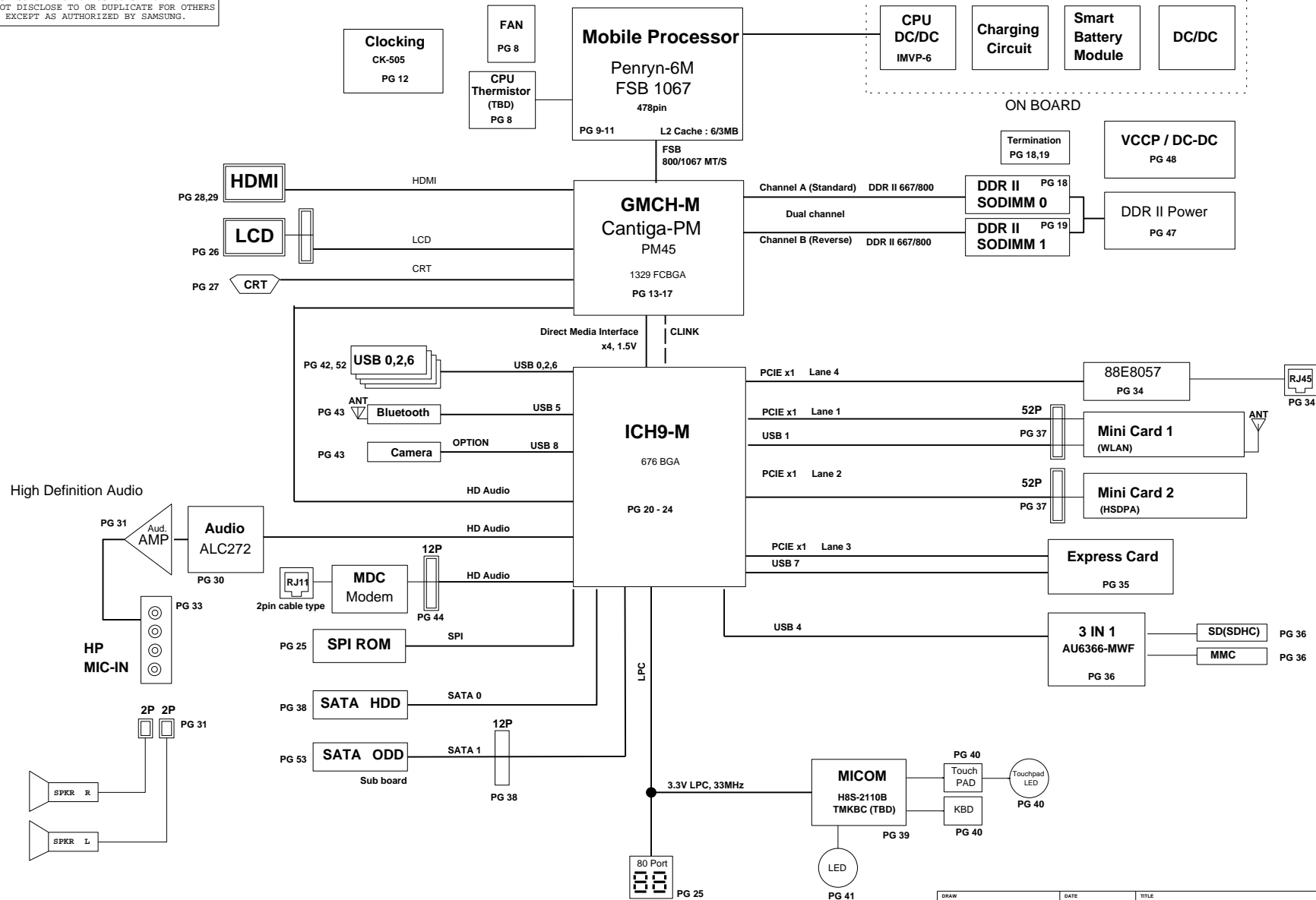
Owner : SEC Mobile R & D Signature : X

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DRAW	MS Yang	DATE	12/05/2008	TITLE	BONN-E	SAMSUNG ELECTRONICS
CHECK	MK Kim	DEV. STEP	MP	MAIN		
APPROVAL	BL Lee	REV	REV 1.0	COVER	PART NO. BA41-01060A	
MODULE CODE		LAST EDIT	April 11, 2009 10:05:58 AM	PAGE	1	OF 67

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CHECK	MK Kim	REV. STEP	MP			
APPROVAL	BL Lee	REV	REV 1.0			
MODULE CODE	undefined	LAST EDIT	April 11, 2009 10:05:58 AM			
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BOARD INFORMATION

SCHEMATIC ANNOTATIONS AND BOARD INFORMATION

PCI Devices

Devices	IDSEL#	REQ/GNT#	Interrupts
Cardbus	AD25	3	A,B,C
USB	AD29(internal)	-	USB2.0 #0 (USB0) : A USB2.0 #1 (USB1) : D USB2.0 #2 (USB4) : C USB2.0 #3 (USB5) : E USB2.0 #4 (EHCI) : H
Hub to PCI	AD30(internal)	-	-
LPC bridge/IDE/AC97/SMBUS	AD31(internal)	-	B
Internal MAC	AD24(internal)	-	E
AC Link	-	-	B
GLAN	-	-	F

Voltage Rails

VDC	Primary DC system power supply (7 to 21V)
VCC_CORE	Core Voltage for CPU
GFX_CORE	Core Voltage for GPU
P1.05V (VCCP)	VTT for CPU, Crestline & ICH8-M
P3.3V_MICOM	3.3V always power rail (for Micom)
P1.5V	1.5V switched power rail (off in S3-S5)
P1.8V	1.8V switched power rail (off in S3-S5)
P1.8V_AUX	1.8V power rail for DDR (off in S4-S5)
P0.9V	0.9V power rail for DDR (off in S3-S5)
P3.3V	3.3V switched power rail (off in S3-S5)
P3.3V_AUX	3.3V switched on power rail (off in S4-S5)
P5.0V	5.0V switched power rail (off in S3-S5)
P5.0V_AUX	5.0V switched on power rail (off in S4-S5)
P5.0V_ALW	5.0V always power rail

Crystal / Oscillator

TYPE	FREQUENCY	DEVICE	USAGE
Crystal	32.768KHz	ICH8-M	Real Time Clock
Crystal	10MHz	MICOM	HD64F2169/2160
Crystal	14.318MHz	CLOCK-Generator	CK-505
Crystal	25MHz	LAN	Intel LAN

LCD Pannel Detect (TBD)

Devices	Resolution	PANNEL_DETECT_0

I²C / SMB Address

Devices	Address	Hex	Bus
ICH8-m	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	-
CK-505M (Clock Generator)	1101 001x	D2h	Clock, Unused Clock Output Disable

REVISION HISTORY

See rev notes for more information.

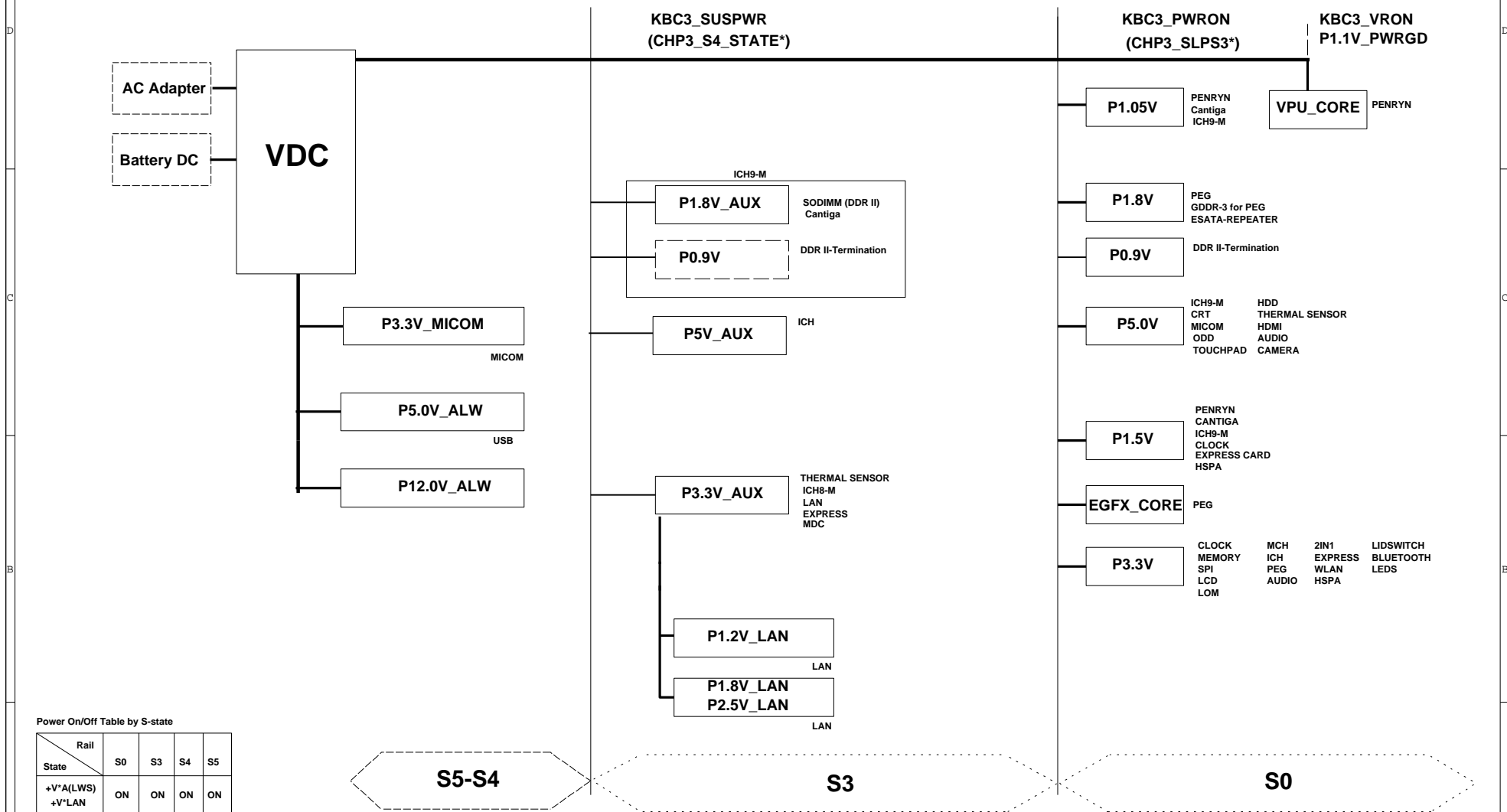
USB PORT Assign		PCI Express Assign	
PORT #	ASSIGNED TO	PORT #	ASSIGNED TO
0	SYSTEM PORT 0	0	NC
1	SYSTEM PORT 1	1	Mini Card 1 (WLAN)
2	SYSTEM PORT 2	2	NC
3	NC	3	LOM
4	NC	4	Mini Card 2 (ROBSON or DVB-T)
5	Bluetooth	5	NC
6	Mini PCI Express 2		
7	Camera		
8	NC		
9	NC		

DRAW	MS Yang	DATE	12/05/2008	BONN-E MAIN BOARD INFO	SAMSUNG ELECTRONICS PART NO. BA41-01060A
CHECK	MK Kim	DEV. STEP	MP		
APPROVAL	BL Lee	REV	REV 1.0		
MODULE CODE	undefined	LAST EDIT	April 11, 2009 10:05:58 AM	PAGE	3 OF 67

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POWER DIAGRAM

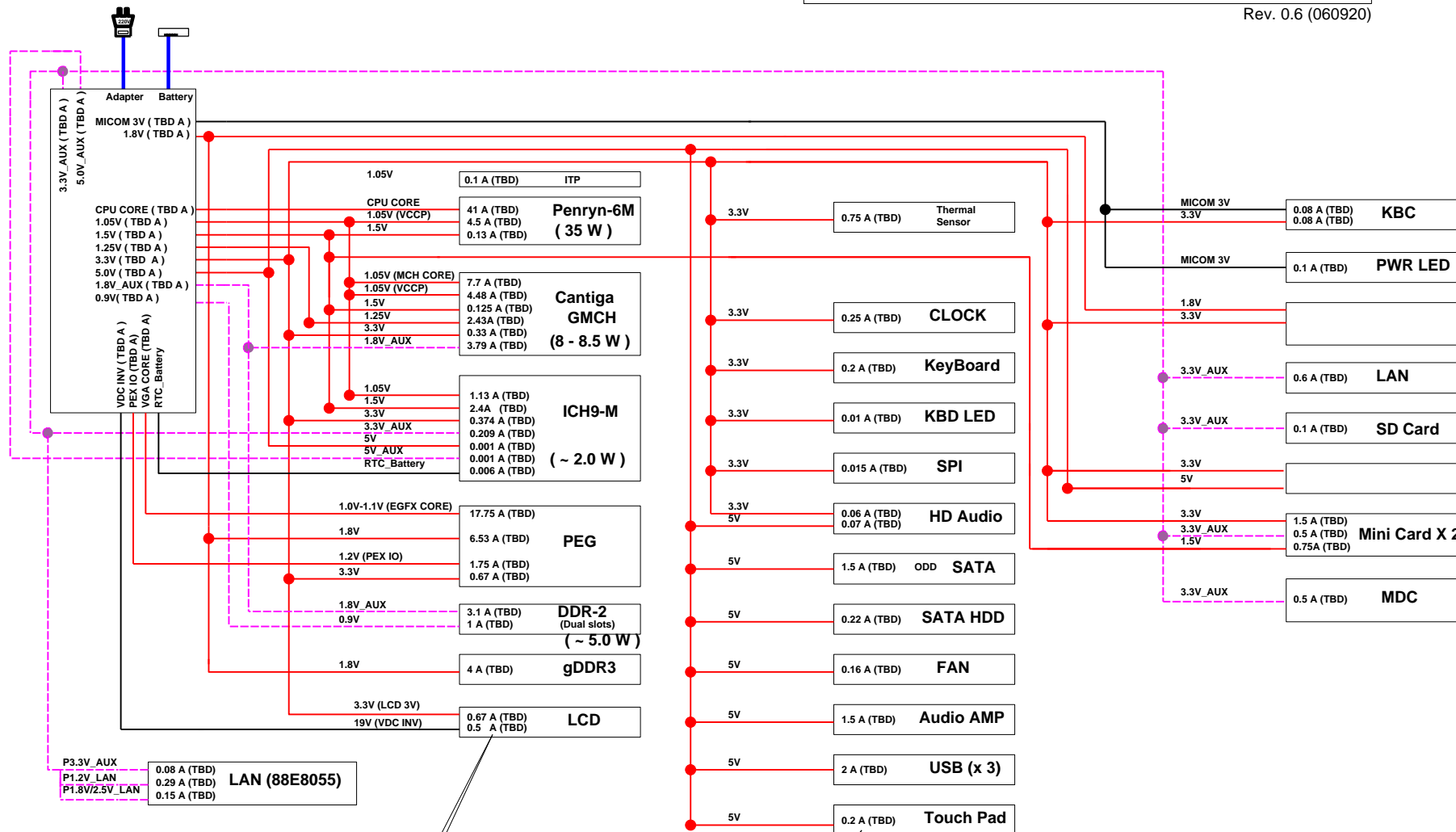


Power On/Off Table by S-state

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

DRAW	MS Yang	DATE	12/05/2008	TITLE	BONN-E MAIN	SAMSUNG ELECTRONICS
CHECK	MK Kim	REV. STEP	MP			
APPROVAL	BL Lee	REV	REV 1.0		POWER DIAGRAM	PART NO. BA41-01060A
MODULE CODE	undefined	LAST EDIT	April 11, 2009 10:05:58 AM	PAGE	4	OF 67

Rev. 0.6 (060920)



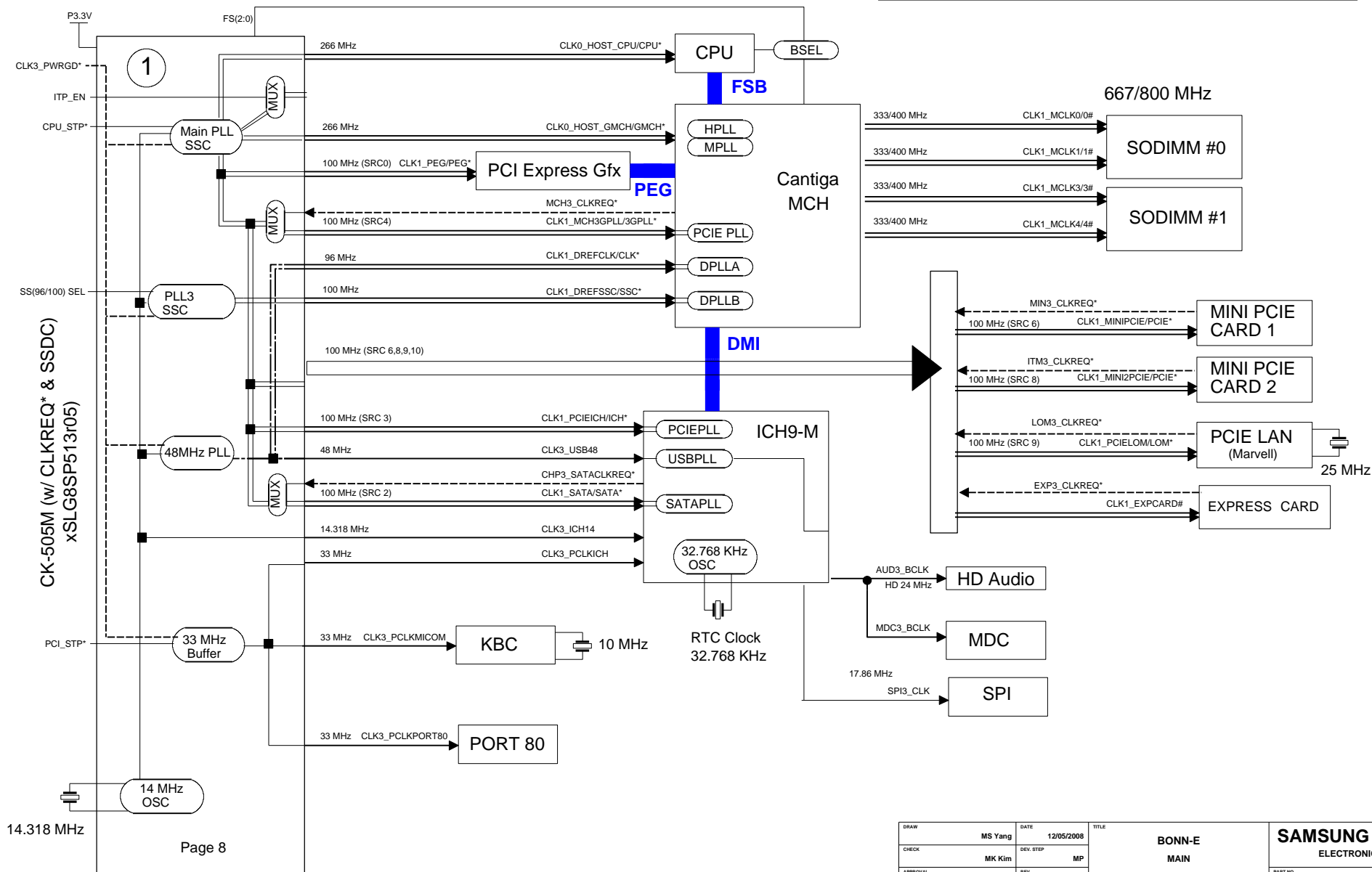
Value by Datasheet/Application notes (Value by measurement)

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APPROVAL	BL Lee	REV	REV 1.0		
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CLOCK DISTRIBUTION Rev. 0.1



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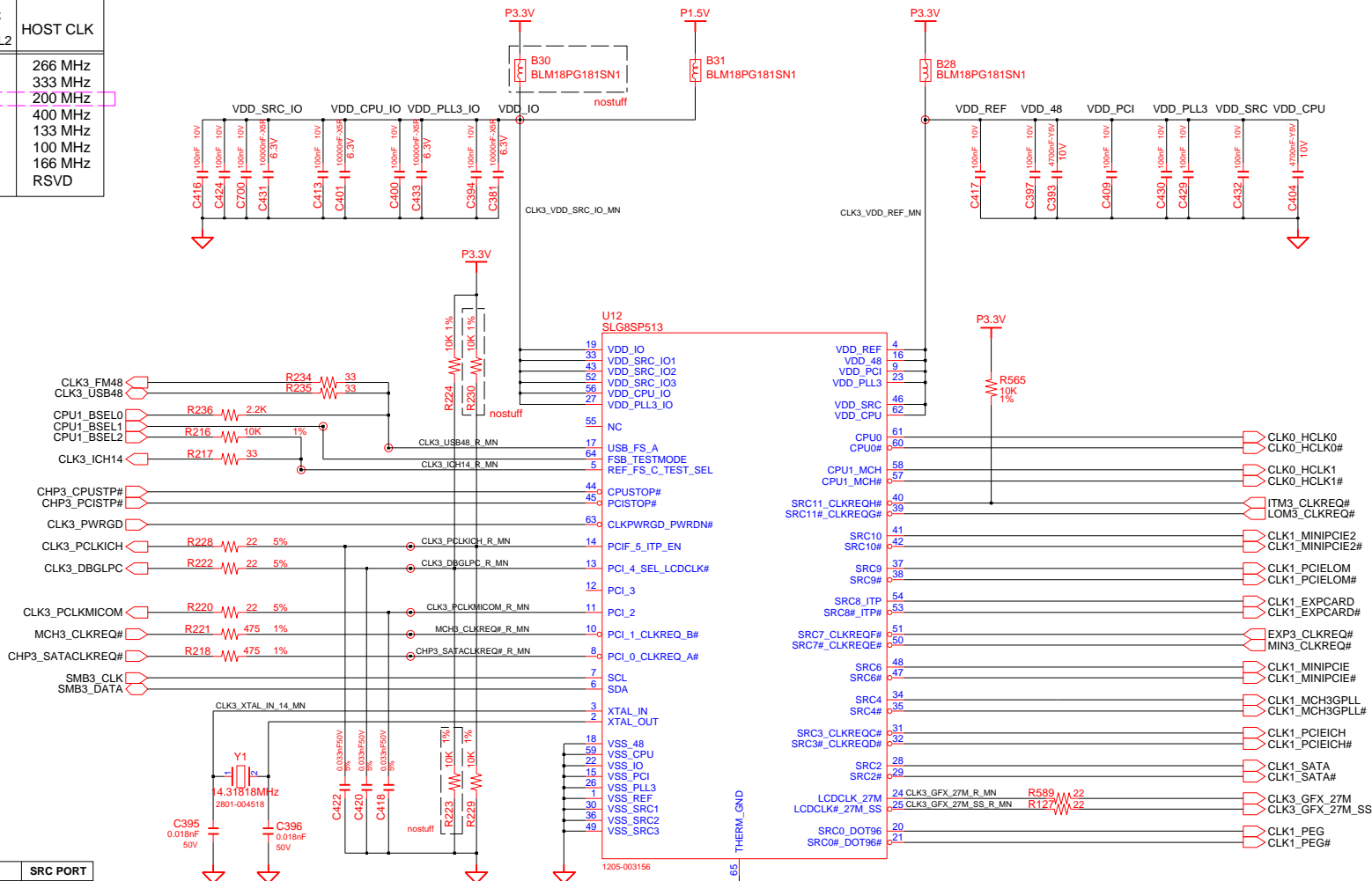
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MODULE CODE	undefined	LAST EDIT		April 11, 2009 10:05:58 AM	PAGE	7 OF 67

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CK505M

FSA BSEL0	FSB BSEL1	FSC BSEL2	HOST CLK
0	0	0	266 MHz
0	0	1	333 MHz
0	1	0	200 MHz
0	1	1	400 MHz
1	0	0	133 MHz
1	0	1	100 MHz
1	1	0	166 MHz
1	1	1	RSVD



CLK REQ	DEVICE	SRC PORT
CLK REQ A	SATA	SRC2
CLK REQ B	GMCH	SRC4
CLK REQ E	MINI CARD	SRC6
CLK REQ F	EXP3_CLKREQ#	SRC8

SEL_LCDCLK*	Pin 20/21	Pin 24/25
LOW	DOT_96/DOT_96#	PEG_CLK/PEG_CLK#
HIGH	SRC_0/SRC_0#	27M & 27M_SS

Place 14.31818MHz within
500mils of CK-505

This part is 64pin QFN package.

IDT : 1205-003159
SL : 1205-003533

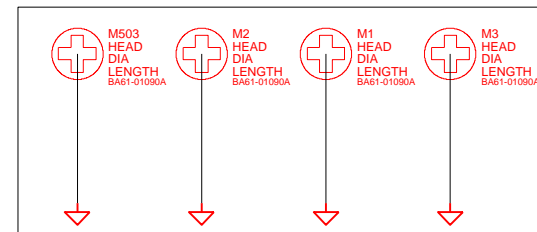
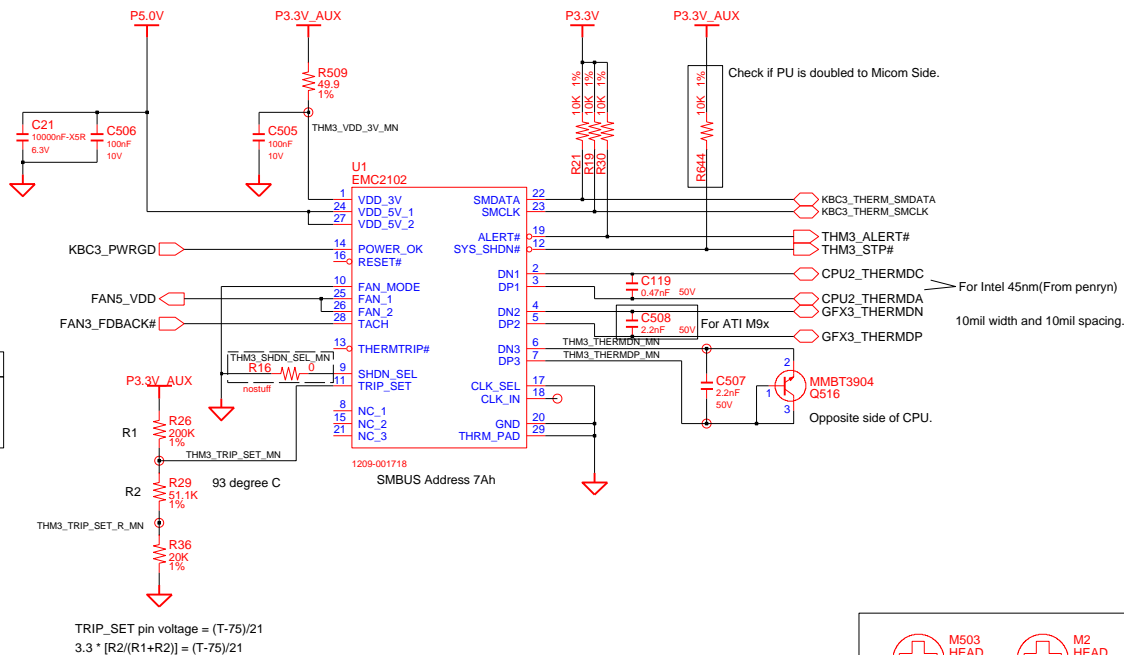
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APPROVAL	BL Lee	REV	REV 1.0	CK_Clock_505M	PART NO.	BA41-01060A
MODULE CODE	undefined	LAST EDIT	April 11, 2009 10:05:58 AM	PAGE	8	OF 67

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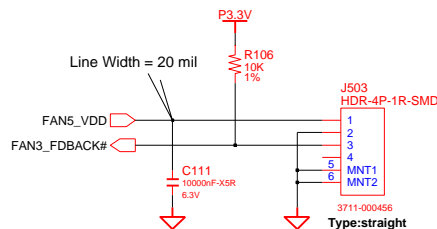
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THERMAL SENSOR & FAN CONTROL

SHDN_SEL MODE	
0	CH1 (INTEL MODE)
HIGH Z	CH3 (DIODE MODE)
1	N/A (SHDN# NOT USED)



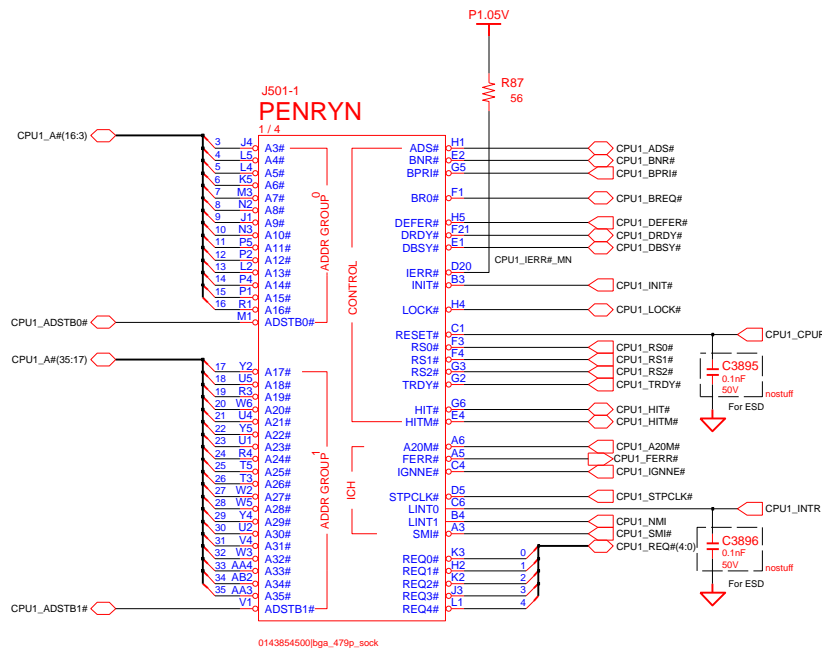
To support heatsink



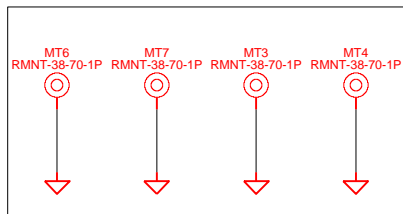
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CHECK	MK Kim	REV. STEP	MP	THERMAL SENSOR	ELECTRONICS	
APPROVAL	BL Lee	REV	REV 1.0	THERMAL SENSOR EMC2102	PART NO.	BA41-01060A
MODULE CODE		LAST EDIT				
				April 11, 2009 10:05:58 AM	PAGE	9 OF 67

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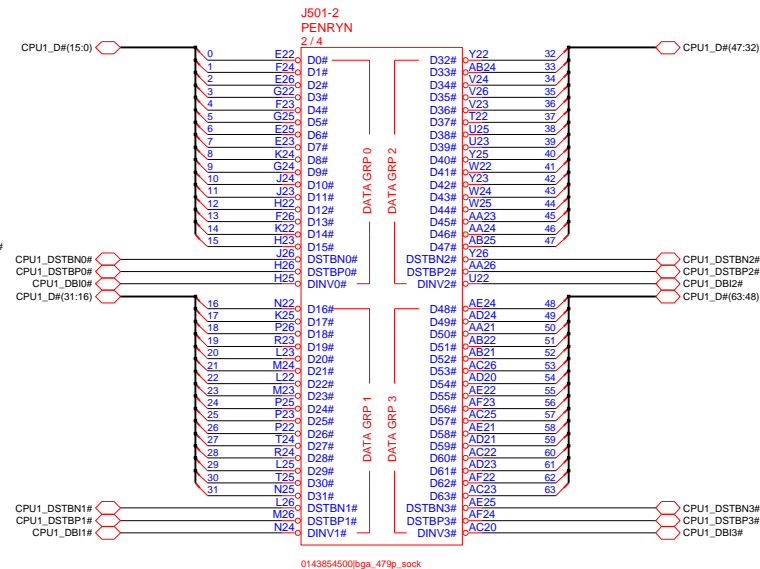
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CPU Socket : 3704-001153

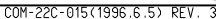


CPU mount



0143854500bga_479p_sock

DRAW	MS Yang	DATE	12/05/2008	TITLE	BONN-E	SAMSUNG
CHECK	REV. STEP	MP		CPU	ELECTRONICS	
APPROVAL	BL Lee	REV 1.0		PENRYN (1/3)	PART NO.	BA41-01060A
MODULE CODE	undefined	LAST EDIT	April 11, 2009 10:05:58 AM	PAGE	10	OF 67



IMVP-6

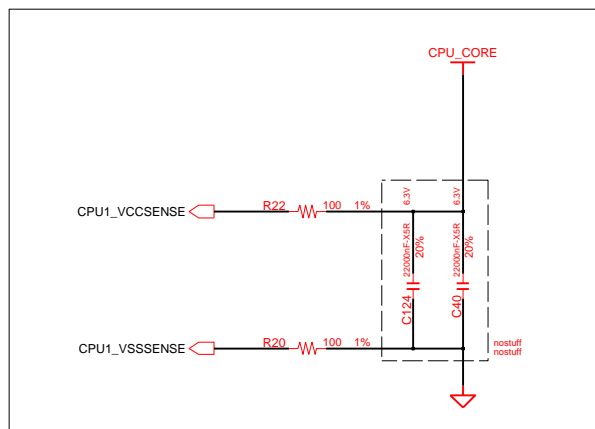
*Yonah Processor (2.33 GHz / 800 MHz : TBD)

GND test points within 100mil of the VCC/VSSsense at the end of the line. Route the VCC/VSSsense as a $Z_0=55\text{ohm}$ traces with equal length. Observe 3:1 spacing b/w VCC/VSSsense lines and 25mil away (preferred 50mil) from any other signal. And GND via 100mil away from each of the VCC/VSS test point vias.

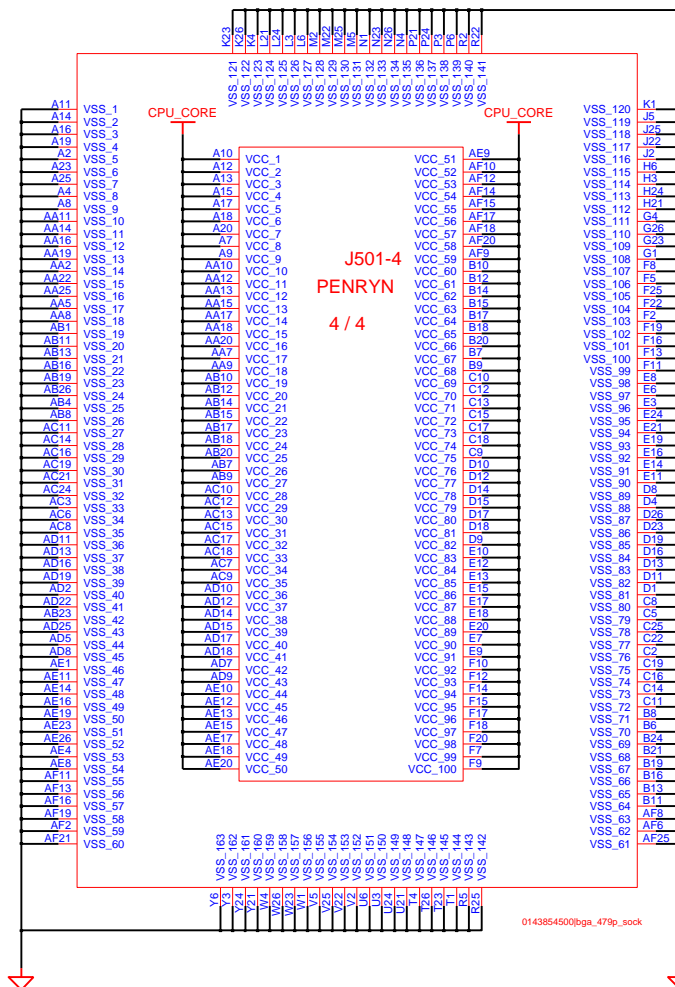
D:/Users/mobile39/mentor/BONN-E/BONN-E mp10

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Prodizer used

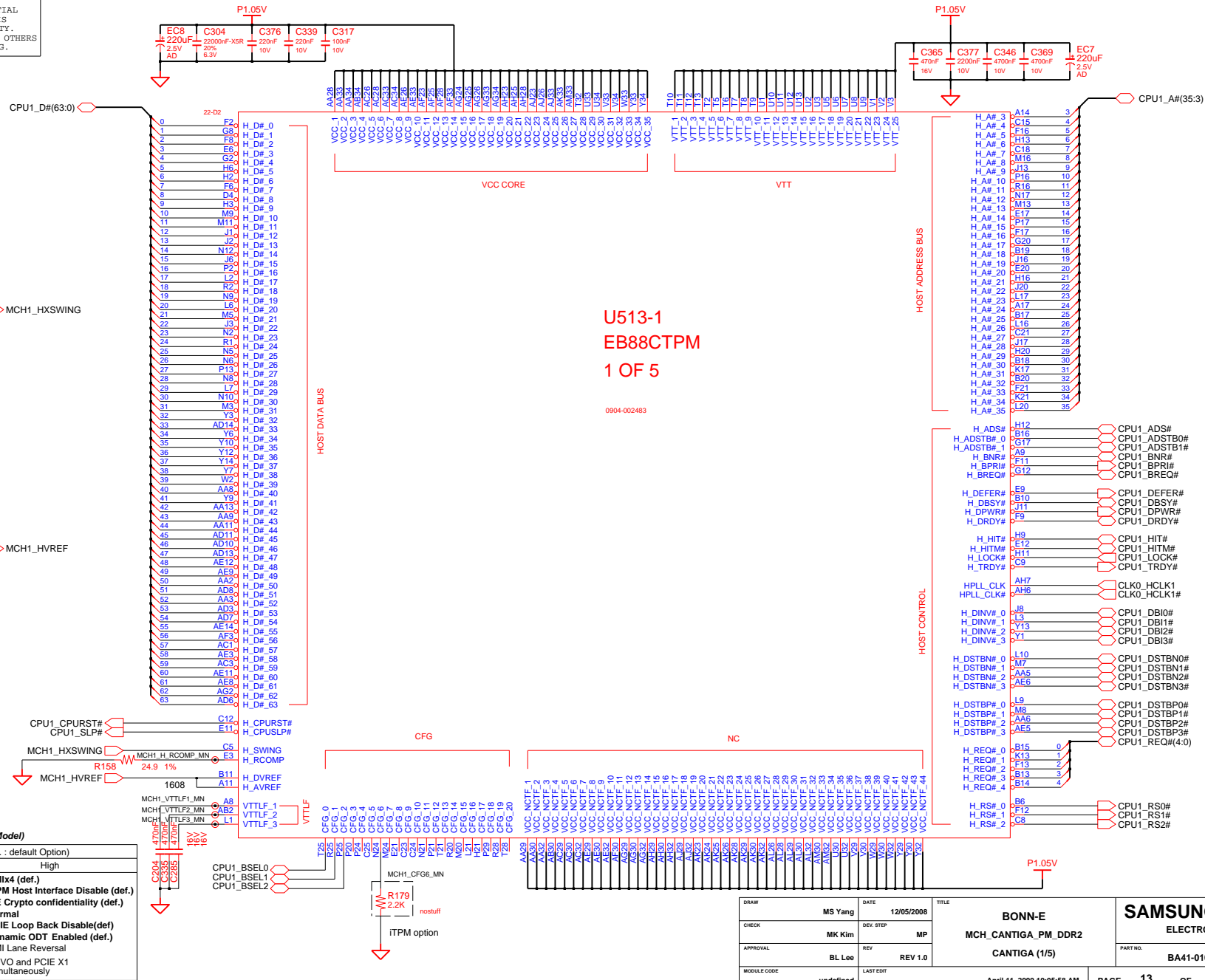


0143854500/bga_479p_sock

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CHECK	MK Kim	REV. STEP	MP	CPU	ELECTRONICS	
APPROVAL	BL Lee	REV	REV 1.0	PENRYN (3/3)	PART NO.	BA41-01060A
MODULE CODE	undefined	LAST EDIT	April 11, 2009 10:05:58 AM	PAGE	12	OF 67

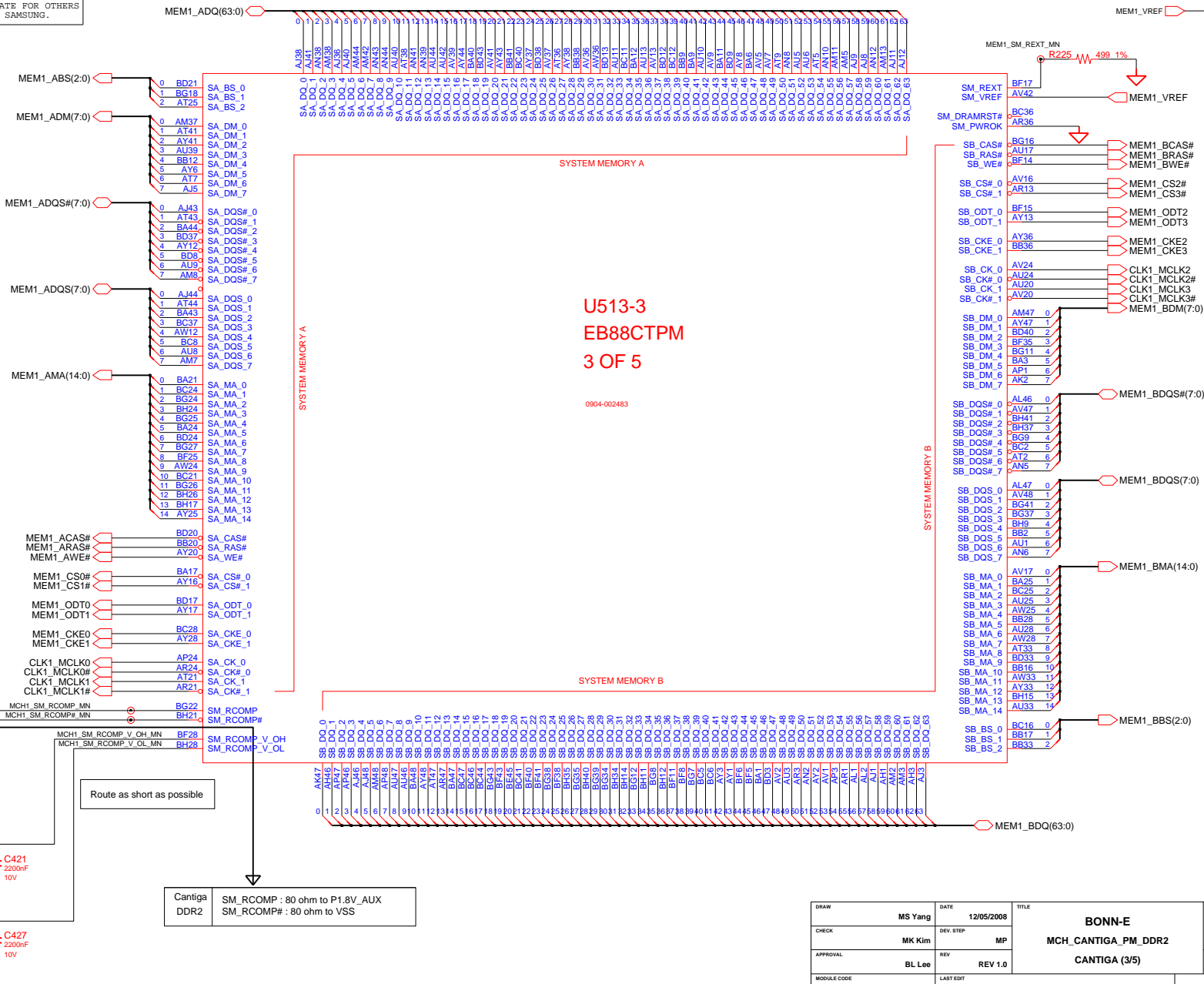
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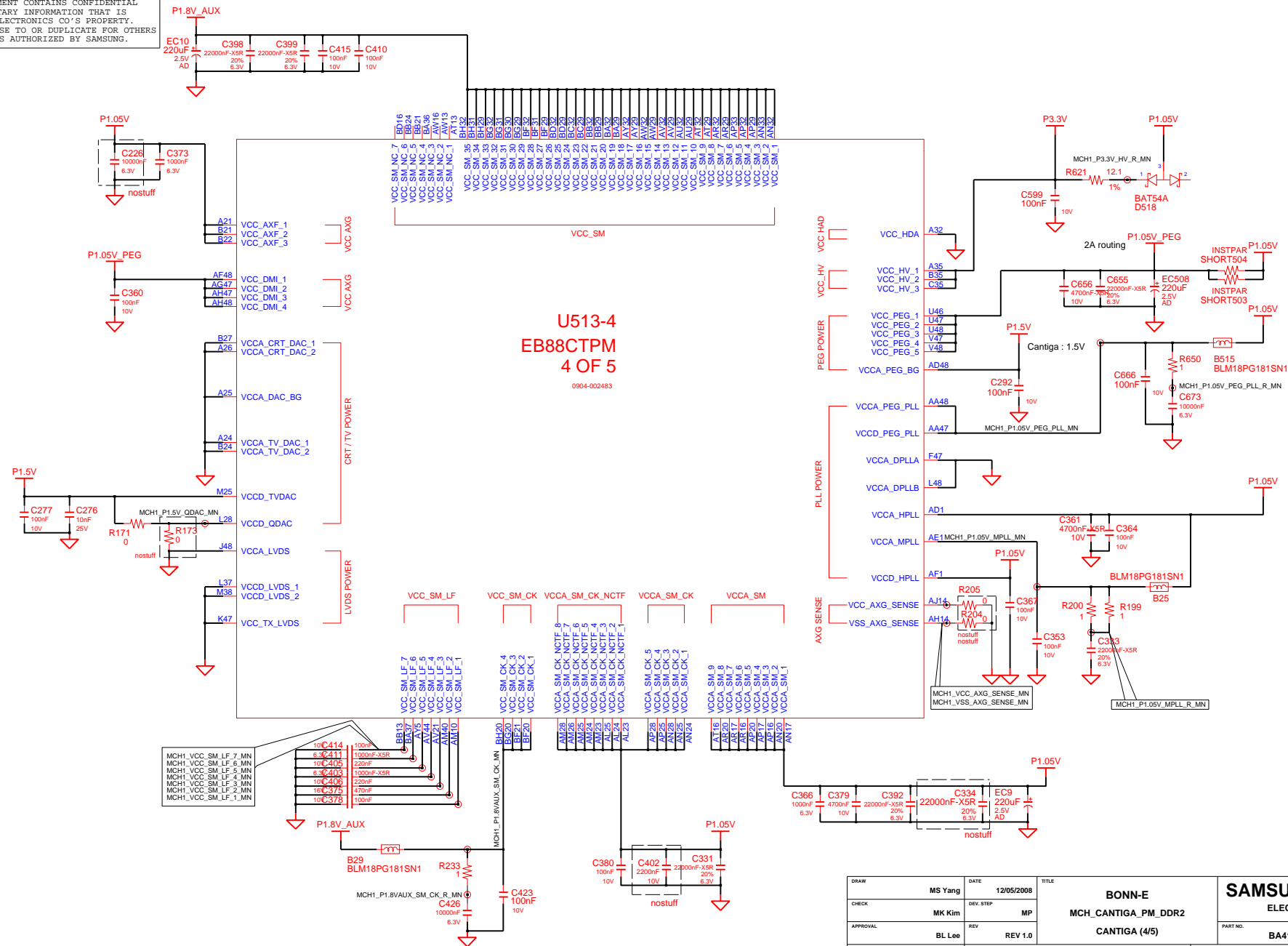


D:/Users/mobile39/mentor/BONN-E/BONN-E mp10

SM_PWROK
DDR2 : GND
DDR3 : Connect to VRM.

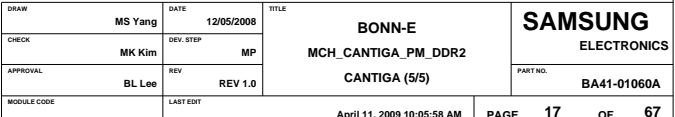


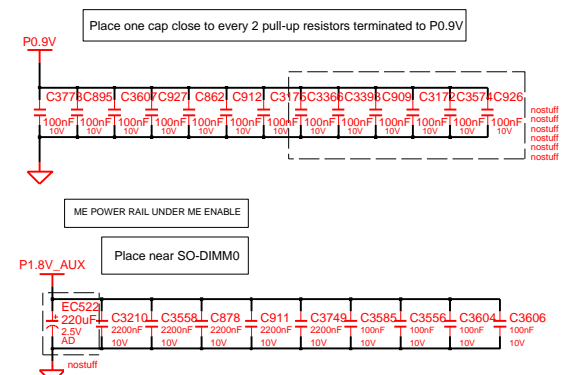
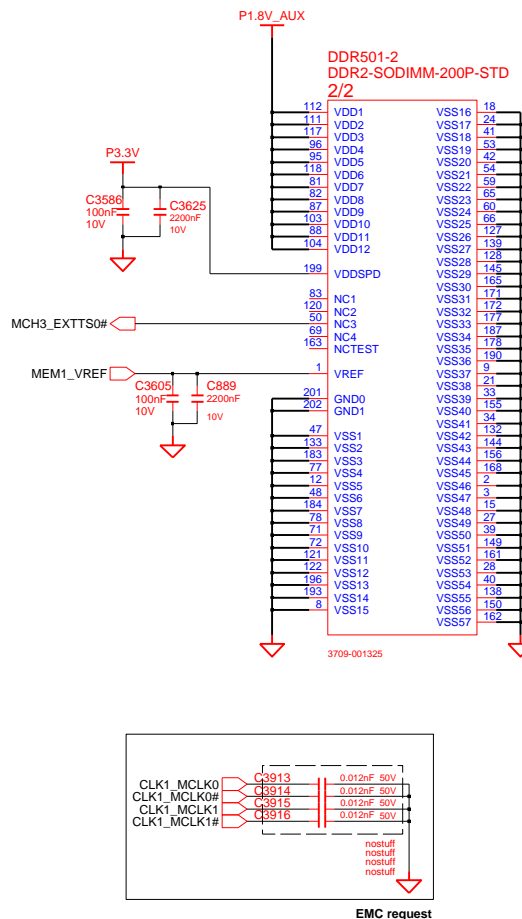
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CHECK	MP Kim	DEV. STEP	MP			
APPROVAL	BL Lee	REV	REV 1.0		PART NO.	BA41-01060A
MODULE CODE	LAST EDIT				<div style="text-align: center;"> April 11, 2009 10:05:58 AM </div>	<div style="text-align: center;"> PAGE 15 OF 67 </div>



DRAW	MS Yang	DATE	12/05/2008	BONN-E MCH_CANTIGA_PM_DDR2 CANTIGA (4/5)	SAMSUNG ELECTRONICS
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APPROVAL	BL Lee	REV	REV 1.0		
MODULE CODE	LAST EDIT				
April 11, 2009 10:05:58 AM					PAGE 16 OF 67

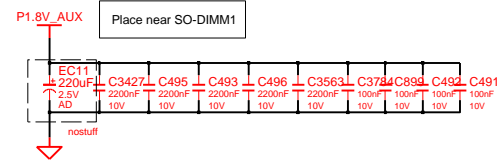
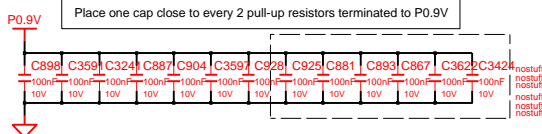
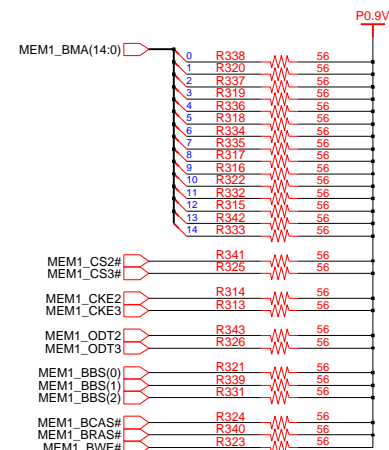
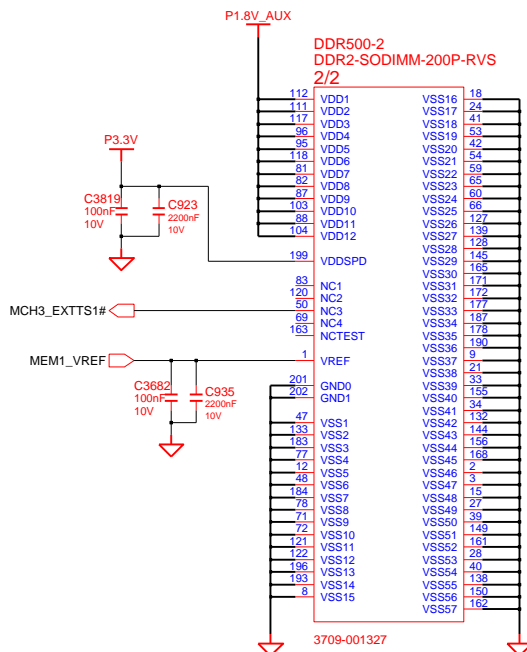
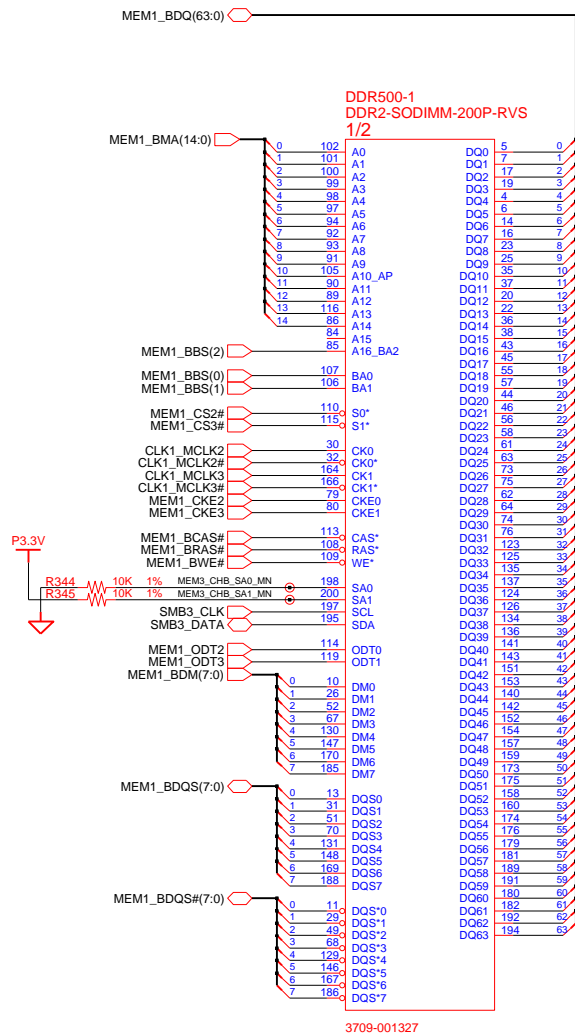
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DRAW	MS Yang	DATE	12/05/2008	BONN-E SODIMM_DDR2 SODIMM_DDR2 #1	SAMSUNG ELECTRONICS
CHECK	MK Kim	DEX STEP	MP		
APPROVAL	BL Lee	REV	REV 1.0		
MODULE CODE	LAST EDIT				
					PAGE 18 OF 67

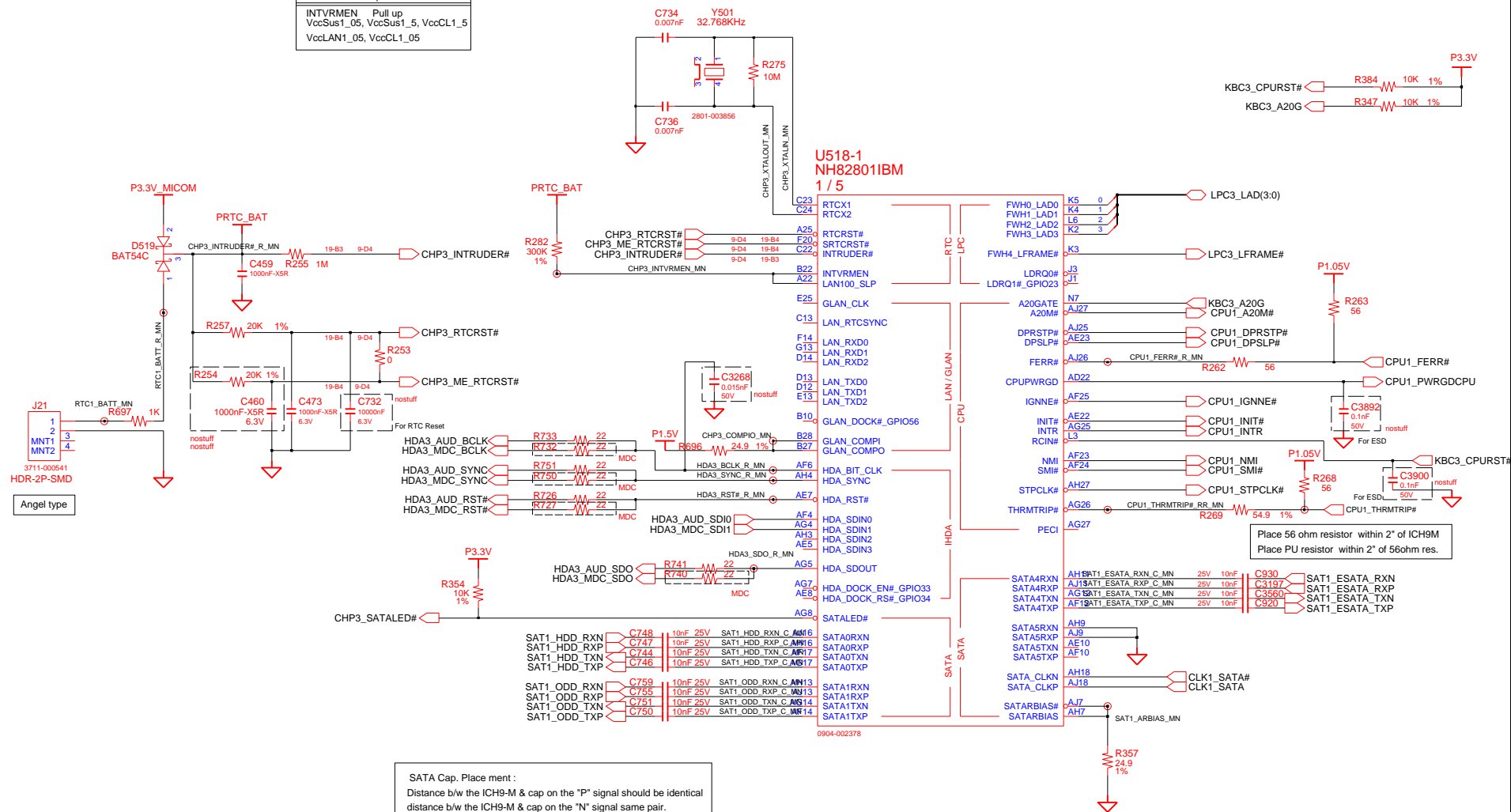
DDR SO-DIMM #1



EMC request

DRAW	MS Yang	DATE	12/05/2008	BONN-E SODIMM_DDR2 SODIMM_DDR2 #2	SAMSUNG ELECTRONICS	
CHECK	MK Kim	DEV. STEP	MP			
APPROVAL	BL Lee	REV	REV 1.0		PART NO.	BA41-01060A
MODULE CODE		LAST EDIT			April 11, 2009 10:05:58 AM	PAGE 19 OF 67

Internal VR Strap
INTVRMEN Pull up VccSus1_05, VccSus1_5, VccCL1_5 VccLAN1_05, VccCL1_05

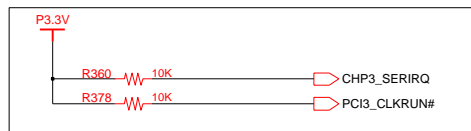


SATA Cap. Place ment :
Distance b/w the ICH9-M & cap on the "P" signal should be identical
distance b/w the ICH9-M & cap on the "N" signal same pair.

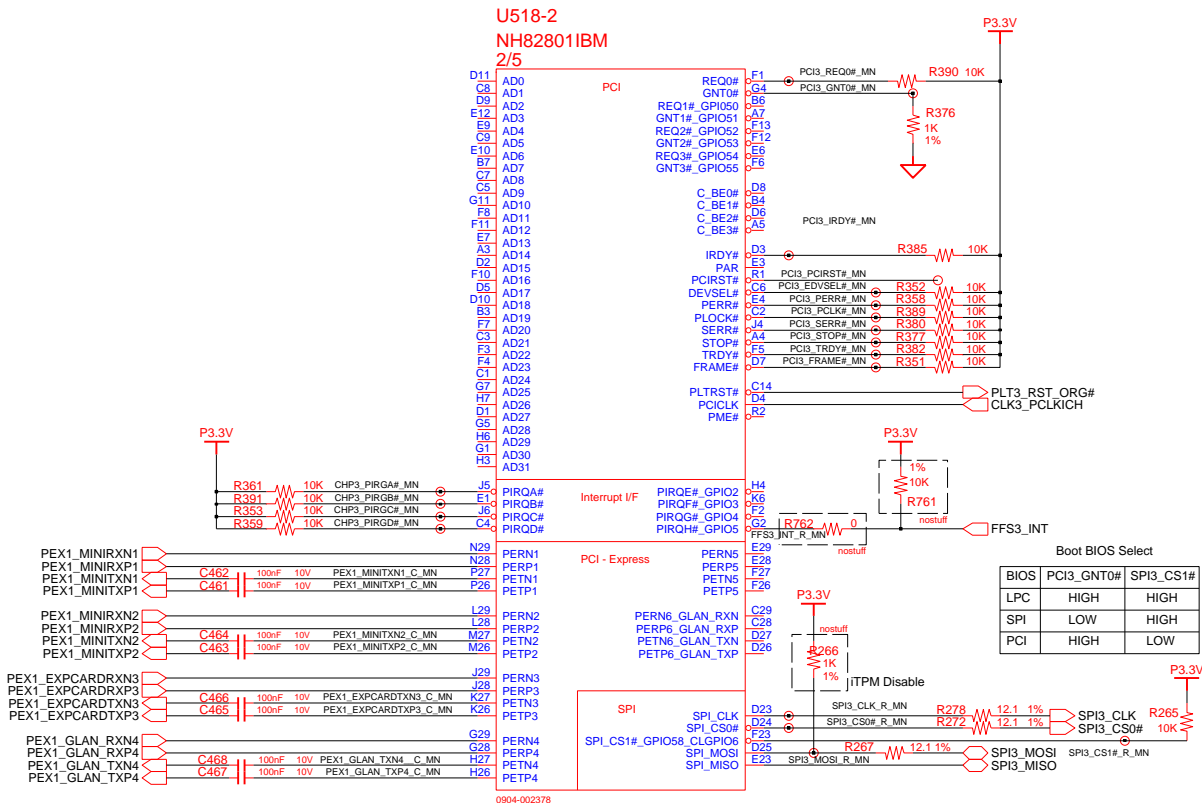
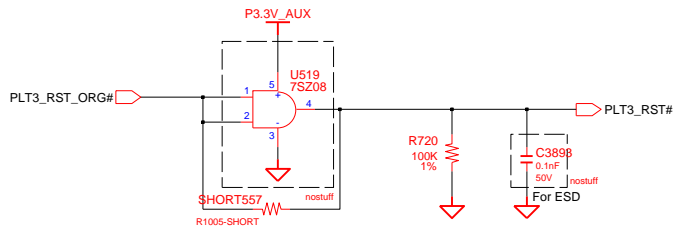
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CHECK	MP Kim	DEV. STEP	MP		
APPROVAL	BL Lee	REV	REV 1.0		
MODULE CODE		LAST EDIT			
				April 11, 2009 10:05:58 AM	PAGE 20 OF 67

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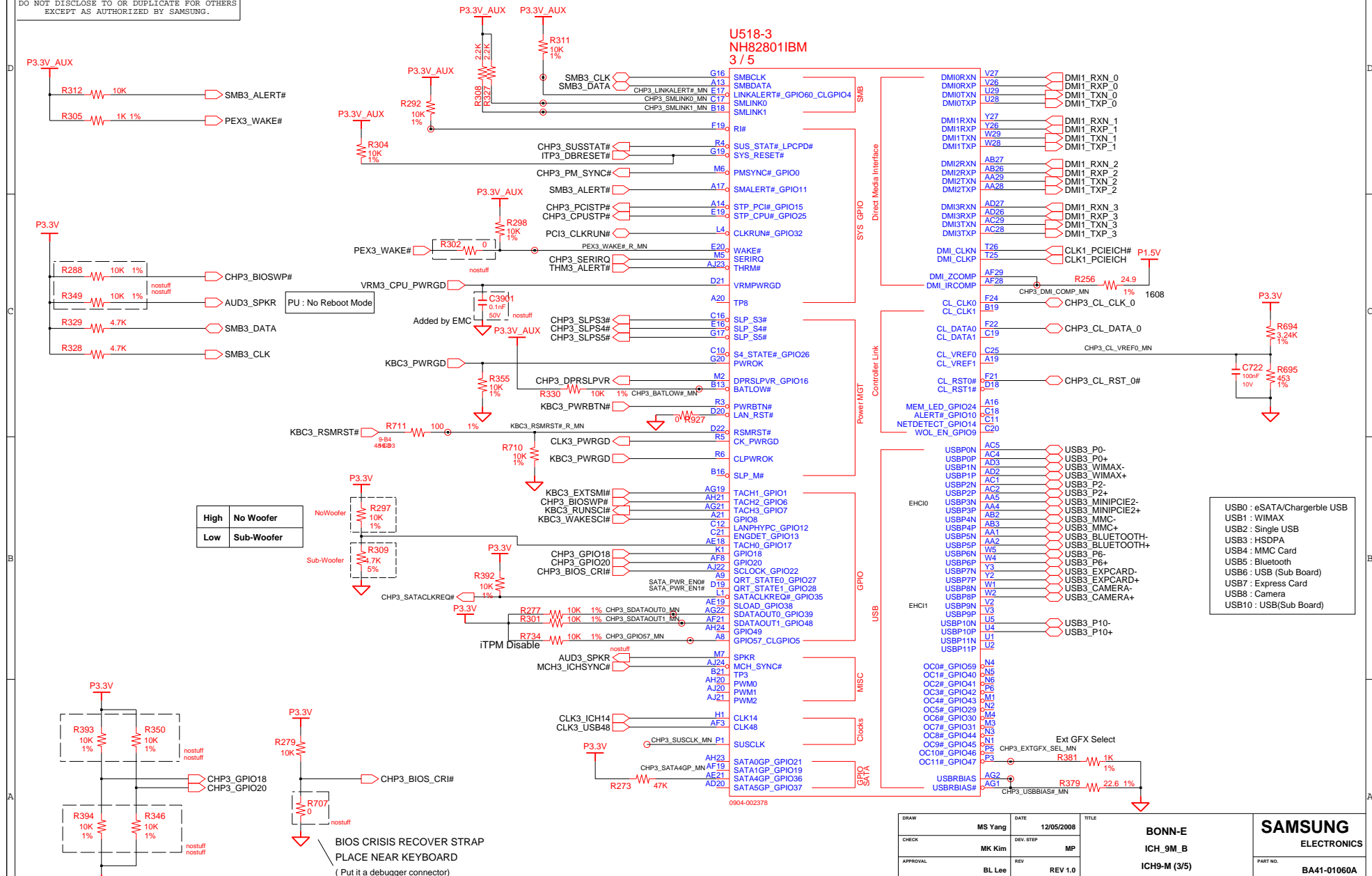
LPC option ; These are used with LPC



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CHECK	DEV. STEP	MP	ICH_9M_B	ICH9-M (2/5)	PART NO.	
APPROVAL	REV	REV 1.0			BA41-01060A	
MODULE CODE	LAST EDIT	undefined	April 11, 2009 10:05:58 AM	PAGE	21 OF 67	

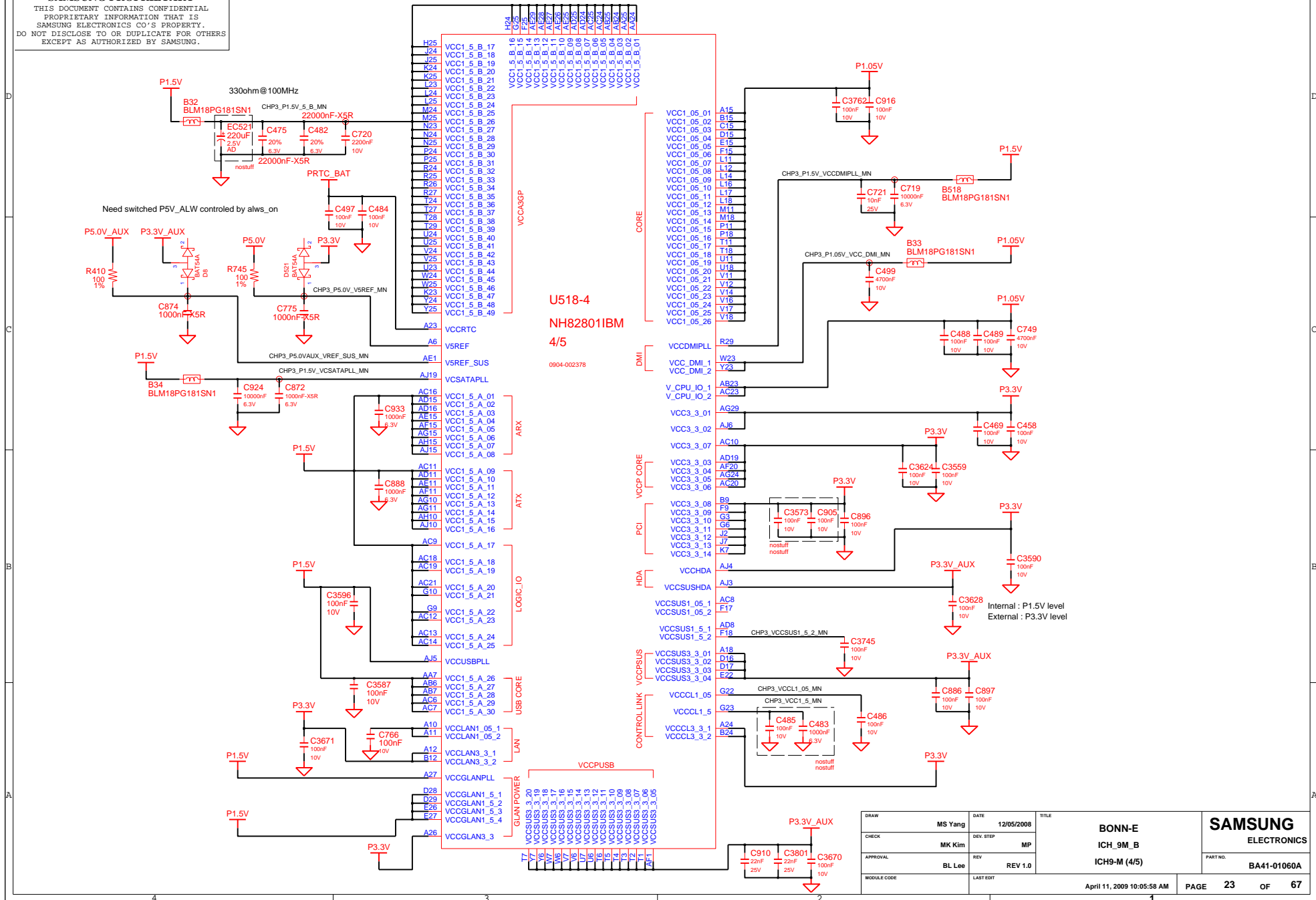
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DRAW	MS Yang	DATE	12/05/2008	TITLE	BONN-E
CHECK	REV. STEP	MP			ICH_9M_B
APPROVAL	BL Lee	REV 1.0			ICH9-M (3/5)
MODULE CODE	LAST EDIT				
				April 11, 2009 10:05:58 AM	PAGE 22 OF 67

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PART NO. BA41-01060A



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AA26	VSS_001	VSS_106	N14
AA27	VSS_002	VSS_107	N15
AA3	VSS_003	VSS_108	N16
AA6	VSS_004	VSS_109	N17
AB1	VSS_005	VSS_110	N18
AA23	VSS_006	VSS_111	N26
AB28	VSS_007	VSS_112	N27
AB29	VSS_008	VSS_113	N28
AB4	VSS_009	VSS_114	N29
AB5	VSS_010	VSS_115	N30
AC17	VSS_011	VSS_116	N31
AC26	VSS_012	VSS_117	N32
AC27	VSS_013	VSS_118	N33
AC3	VSS_014	VSS_119	N34
AD1	VSS_015	VSS_120	N35
AD10	VSS_016	VSS_121	N36
AD12	VSS_017	VSS_122	N37
AD13	VSS_018	VSS_123	N38
AD14	VSS_019	VSS_124	N39
AD17	VSS_020	VSS_125	N40
AD18	VSS_021	VSS_126	N41
AD21	VSS_022	VSS_127	N42
AD28	VSS_023	VSS_128	N43
AD29	VSS_024	VSS_129	N44
AD4	VSS_025	VSS_130	N45
AD5	VSS_026	VSS_131	N46
AD6	VSS_027	VSS_132	N47
AD7	VSS_028	VSS_133	N48
AD9	VSS_029	VSS_134	N49
AE12	VSS_030	VSS_135	N50
AE13	VSS_031	VSS_136	N51
AE14	VSS_032	VSS_137	N52
AE16	VSS_033	VSS_138	N53
AE17	VSS_034	VSS_139	N54
AE2	VSS_035	VSS_140	N55
AE20	VSS_036	VSS_141	N56
AE24	VSS_037	VSS_142	N57
AE3	VSS_038	VSS_143	N58
AE4	VSS_039	VSS_144	N59
AE6	VSS_040	VSS_145	N60
AE9	VSS_041	VSS_146	N61
AF13	VSS_042	VSS_147	N62
AF16	VSS_043	VSS_148	N63
AF18	VSS_044	VSS_149	N64
AF22	VSS_045	VSS_150	N65
AF26	VSS_046	VSS_151	N66
AF27	VSS_047	VSS_152	N67
AF5	VSS_048	VSS_153	N68
AF7	VSS_049	VSS_154	N69
AF9	VSS_050	VSS_155	N70
AG13	VSS_051	VSS_156	N71
AG16	VSS_052	VSS_157	N72
AG18	VSS_053	VSS_158	N73
AG20	VSS_054	VSS_159	N74
AG23	VSS_055	VSS_160	N75
AG3	VSS_056	VSS_161	N76
AG6	VSS_057	VSS_162	N77
AG9	VSS_058	VSS_163	N78
AH12	VSS_059	VSS_164	N79
AH14	VSS_060	VSS_165	N80
AH17	VSS_061	VSS_166	N81
AH19	VSS_062	VSS_167	N82
AH2	VSS_063	VSS_168	N83
AH22	VSS_064	VSS_169	N84
AH25	VSS_065	VSS_170	N85
AH28	VSS_066	VSS_171	N86
AH5	VSS_067	VSS_172	N87
AH8	VSS_068	VSS_173	N88
AJ2	VSS_069	VSS_174	N89
AJ14	VSS_070	VSS_175	N90
AJ17	VSS_071	VSS_176	N91
AJ8	VSS_072	VSS_177	N92
B11	VSS_073	VSS_178	N93
B14	VSS_074	VSS_179	N94
B17	VSS_075	VSS_180	N95
B2	VSS_076	VSS_181	N96
B20	VSS_077	VSS_182	N97
VSS_078	VSS_078	VSS_183	N98
VSS_079	VSS_079	VSS_184	N99
VSS_080	VSS_080	VSS_185	N100
VSS_081	VSS_081	VSS_186	N101
VSS_082	VSS_082	VSS_187	N102
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VSS_084	VSS_084	VSS_189	N104
VSS_085	VSS_085	VSS_190	N105
VSS_086	VSS_086	VSS_191	N106
VSS_087	VSS_087	VSS_192	N107
VSS_088	VSS_088	VSS_193	N108
VSS_089	VSS_089	VSS_194	N109
VSS_090	VSS_090	VSS_195	N110
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VSS_092	VSS_092	VSS_197	N112
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VSS_097	VSS_097	VSS_202	N117
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VSS_105	VSS_105	VSS_210	N125
VSS_106	VSS_106	VSS_211	N126
VSS_107	VSS_107	VSS_212	N127
VSS_108	VSS_108	VSS_213	N128
VSS_109	VSS_109	VSS_214	N129
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VSS_117	VSS_117	VSS_222	N137
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VSS_121	VSS_121	VSS_226	N141
VSS_122	VSS_122	VSS_227	N142
VSS_123	VSS_123	VSS_228	N143
VSS_124	VSS_124	VSS_229	N144
VSS_125	VSS_125	VSS_230	N145
VSS_126	VSS_126	VSS_231	N146
VSS_127	VSS_127	VSS_232	N147
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VSS_129	VSS_129	VSS_234	N149
VSS_130	VSS_130	VSS_235	N150
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VSS_139	VSS_139	VSS_244	N159
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VSS_141	VSS_141	VSS_246	N161
VSS_142	VSS_142	VSS_247	N162
VSS_143	VSS_143	VSS_248	N163
VSS_144	VSS_144	VSS_249	N164
VSS_145	VSS_145	VSS_250	N165
VSS_146	VSS_146	VSS_251	N166
VSS_147	VSS_147	VSS_252	N167
VSS_148	VSS_148	VSS_253	N168
VSS_149	VSS_149	VSS_254	N169
VSS_150	VSS_150	VSS_255	N170
VSS_151	VSS_151	VSS_256	N171
VSS_152	VSS_152	VSS_257	N172
VSS_153	VSS_153	VSS_258	N173
VSS_154	VSS_154	VSS_259	N174
VSS_155	VSS_155	VSS_260	N175
VSS_156	VSS_156	VSS_261	N176
VSS_157	VSS_157	VSS_262	N177
VSS_158	VSS_158	VSS_263	N178
VSS_159	VSS_159	VSS_264	N179
VSS_160	VSS_160	VSS_265	N180
VSS_161	VSS_161	VSS_266	N181
VSS_162	VSS_162	VSS_267	N182
VSS_163	VSS_163	VSS_268	N183
VSS_164	VSS_164	VSS_269	N184
VSS_165	VSS_165	VSS_270	N185
VSS_166	VSS_166	VSS_271	N186
VSS_167	VSS_167	VSS_272	N187
VSS_168	VSS_168	VSS_273	N188
VSS_169	VSS_169	VSS_274	N189
VSS_170	VSS_170	VSS_275	N190
VSS_171	VSS_171	VSS_276	N191
VSS_172	VSS_172	VSS_277	N192
VSS_173	VSS_173	VSS_278	N193
VSS_174	VSS_174	VSS_279	N194
VSS_175	VSS_175	VSS_280	N195
VSS_176	VSS_176	VSS_281	N196
VSS_177	VSS_177	VSS_282	N197
VSS_178	VSS_178	VSS_283	N198
VSS_179	VSS_179	VSS_284	N199
VSS_180	VSS_180	VSS_285	N200
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VSS_182	VSS_182	VSS_287	N202
VSS_183	VSS_183	VSS_288	N203
VSS_184	VSS_184	VSS_289	N204
VSS_185	VSS_185	VSS_290	N205
VSS_186	VSS_186	VSS_291	N206
VSS_187	VSS_187	VSS_292	N207
VSS_188	VSS_188	VSS_293	N208
VSS_189	VSS_189	VSS_294	N209
VSS_190	VSS_190	VSS_295	N210
VSS_191	VSS_191	VSS_296	N211
VSS_192	VSS_192	VSS_297	N212
VSS_193	VSS_193	VSS_298	N213
VSS_194	VSS_194	VSS_299	N214
VSS_195	VSS_195	VSS_300	N215
VSS_196	VSS_196	VSS_301	N216
VSS_197	VSS_197	VSS_302	N217
VSS_198	VSS_198	VSS_303	N218
VSS_NCTF_01	VSS_NCTF_01	VSS_304	N219
VSS_NCTF_02	VSS_NCTF_02	VSS_305	N220
VSS_NCTF_03	VSS_NCTF_03	VSS_306	N221
VSS_NCTF_04	VSS_NCTF_04	VSS_307	N222
VSS_NCTF_05	VSS_NCTF_05	VSS_308	N223
VSS_NCTF_06	VSS_NCTF_06	VSS_309	N224
VSS_NCTF_07	VSS_NCTF_07	VSS_310	N225
VSS_NCTF_08	VSS_NCTF_08	VSS_311	N226
VSS_NCTF_09	VSS_NCTF_09	VSS_312	N227
VSS_NCTF_10	VSS_NCTF_10	VSS_313	N228
VSS_NCTF_11	VSS_NCTF_11	VSS_314	N229
VSS_NCTF_12	VSS_NCTF_12	VSS_315	N230

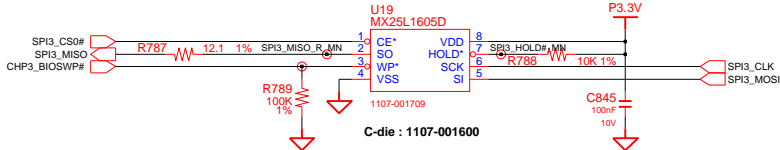
GND

U518-5
NH82801IBM
5/5
0904-002378

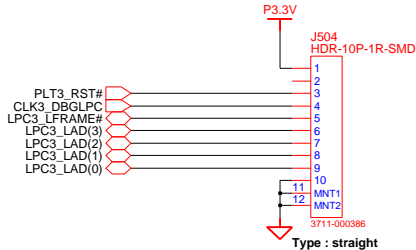
DRAW	MS Yang	DATE	12/05/2008	TITLE	BONN-E	SAMSUNG
CHECK	MK Kim	REV. STEP	MP	ICH_9M_B	ELECTRONICS	
APPROVAL	BL Lee	REV	REV 1.0	ICH9-M (5/5)	PART NO.	BA41-01060A
MODULE CODE		LAST EDIT				
				April 11, 2009 10:05:58 AM	PAGE	24 OF 67

SPI_BIOS_ROM

16MBit

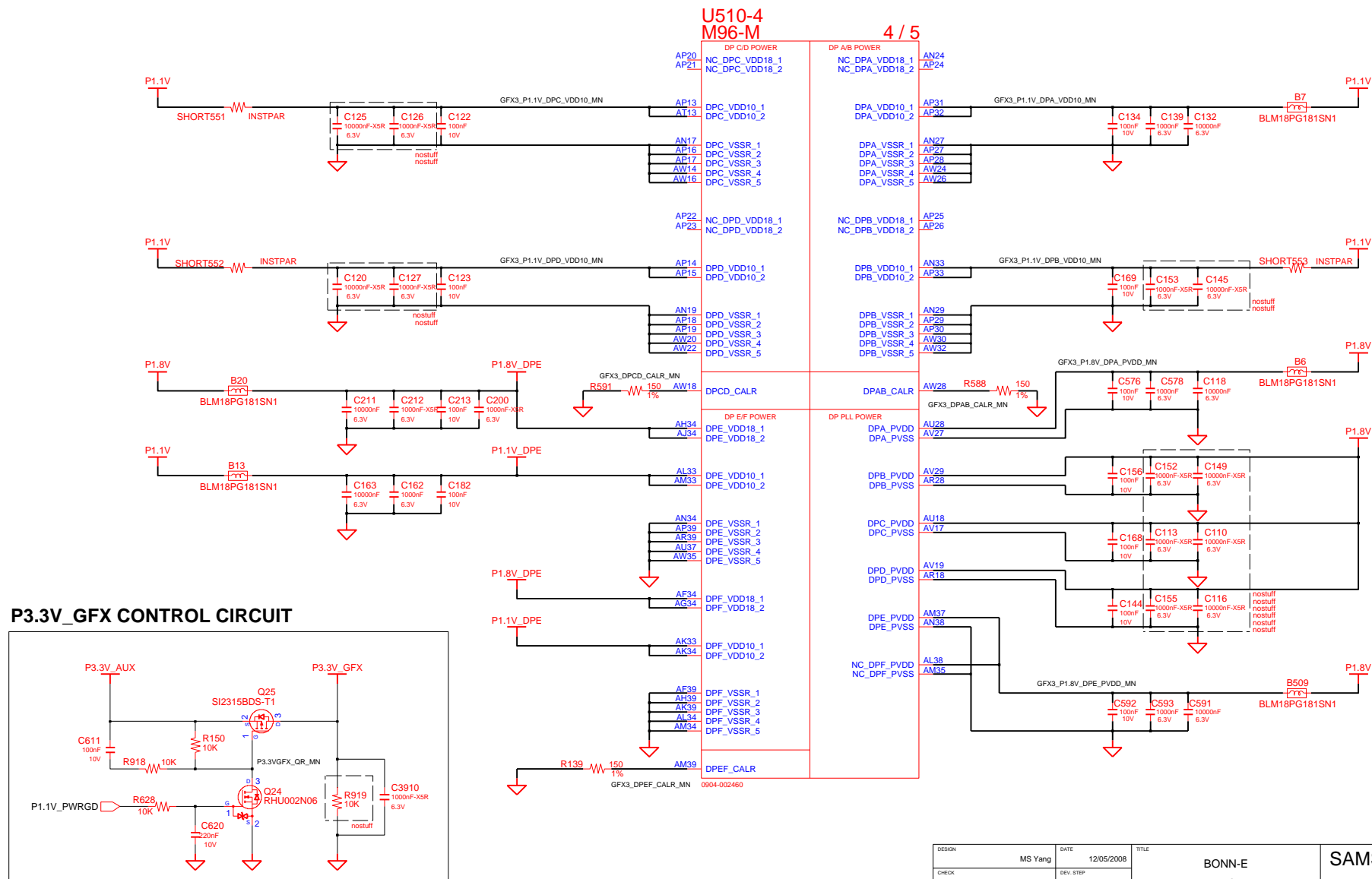


80H DECODER CONNECTOR



02	VERIFY REAL MODE	66	CONFIGURE ADVANCE CACHE REG.
03	DISABLE NMI	6A	DISPLAY EXTERNAL CACHE SIZE
04	GET CPU TYPE	6C	DISPLAY SHADOW MESSAGE
06	INIT. SYSTEM H/W	6E	DISPLAY NON-DISPOSABLE SEGMENT
08	INIT. CHIPSET REG.	70	DISPLAY ERROR MESSAGE
09	SET IN POST FLAG	72	CHECK FOR CONFIGURATION ERROR
0A	INIT CPU REG	74	TEST REAL-TIME CLOCK
0B	CPU CACHE ON	76	CHECK FOR KEYBOARD ERROR
0C	INIT.CACHE TO POST	7C	SETUP HARDWARE INTERRUPT VECTOR
0E	INIT. I/O VALUE	7E	TEST COPROCESSOR IF PRESENT
0F	ENABLE THE L-BUS IDE	80	DISABLE ON-BOARD I/O PORT
10	INIT. POWER MANAGER	82	DETECT AND INSTALL EXT RS232C
11	LOAD ALTERNATE REG.	84	DETECT AND INSTALL EXT PARALLEL
13	PCI BUS MASTER RESET	86	RE-INIT. ON-BOARD I/O PORT
		88	INIT. BIOS DATA ROM
	WITH INITIAL POST VALUE	8A	INIT.EXTENDED BIOS DATA AREA
14	INIT. KEYBOARD CONTROLLER	8C	INIT. FDD CONTROLLER
16	CHECK CHECKSUM	9A	SHADOW OPTION ROMS
18	8254 TIMER INIT.	9C	SETUP POWER MANAGEMENT
1A	8237 DMA CONTROLLER INIT.	9E	ENABLE HW INTERRUPT
1C	RESET INTERRUPT CONTROLLER	A0	SET TIME OF DAY
20	TEST DRAM REFRESH	A4	INIT. TYPEMATIC RATE
22	TEST 8742 KEYBOARD CONTROLLER	A8	ERASE F2 PROMPT
24	SET ES SEGMENT REG. TO 4GB	AA	SCAN FOR F2 KEY STROKE
26	ENABLE A20	AC	ENTER SETUP
28	AUTO SIZING DRAM	AE	CLEAR IN POST FLAG
32	COMPUTE THE CPU SPEED	B0	CHECK FOR ERRORS
34	TEST CMOS RAM	B2	POST DONE-PREPARE TO BOOT O/S
38	SHADOW SYSTEM BIOS ROM	B4	ONE BEEP
3A	AUTO SIZING CACHE	B6	CHECK PASSWORD (OPTION)
3C	CONFIGURE ADVANCED CHIPSET REG.	B7	ACPI INIT
3D	LOAD ALTER REG. WITH CMOS VALUE	BA	DMI INIT
42	INIT. INTERRUPT VECTOR	BE	CLEAR SCREEN
44	INIT. BIOS INTERRUPT	C0	TRY BOOT WITH INT19
46	CHECK ROM COPYRIGHT NOTICE	D0	INTERRUPT HANDLER ERROR
47	INIT. I20 SUPPORT IF INSTALLED	D2	UNKNOWN INTERRUPT ERROR
48	CHECK VIDEO CONFIGURE AGAINST CMOS	D4	PENDING INTERRUPT ERROR
49	INIT. PCI BUS AND DEVICE	D6	SHUTDOWN 5
4A	INIT. ALL VIDEO BIOS ROM	D8	SHUTDOWN ERROR
4C	SHADOW VIDEO BIOS ROM	DA	EXTENDED BLOCK MOVE
50	DISPLAY CPU TYPE AND SPEED	DC	SHUTDOWN 10
52	TEST KEYBOARD	89	ENABLE NMI
54	SET KEYCLICK IF ENABLED	90	INIT. HDD CONTROLLER
56	ENABLE KEYBOARD	91	INIT. LOCAL BUS HDD CONTROLLER
58	TEST FOR UNEXPECTED INTERRUPTS	92	JUMP TO USER PATCH 2
5A	DISPLAY * PRESS * SETUP *	94	DISABLE A20 ADDRESS LINE
5C	TEST RAM BETWEEN 512K AND 640K	96	CLEAR HUGE ES SEGMENT REG.
60	TEST EXTENDED MEMORY	98	SEARCH FOR OPTION ROMS
62	TEST EXTENDED MEMORY ADDRESS LINE		
64	JUMP TO USER PATCH 1		



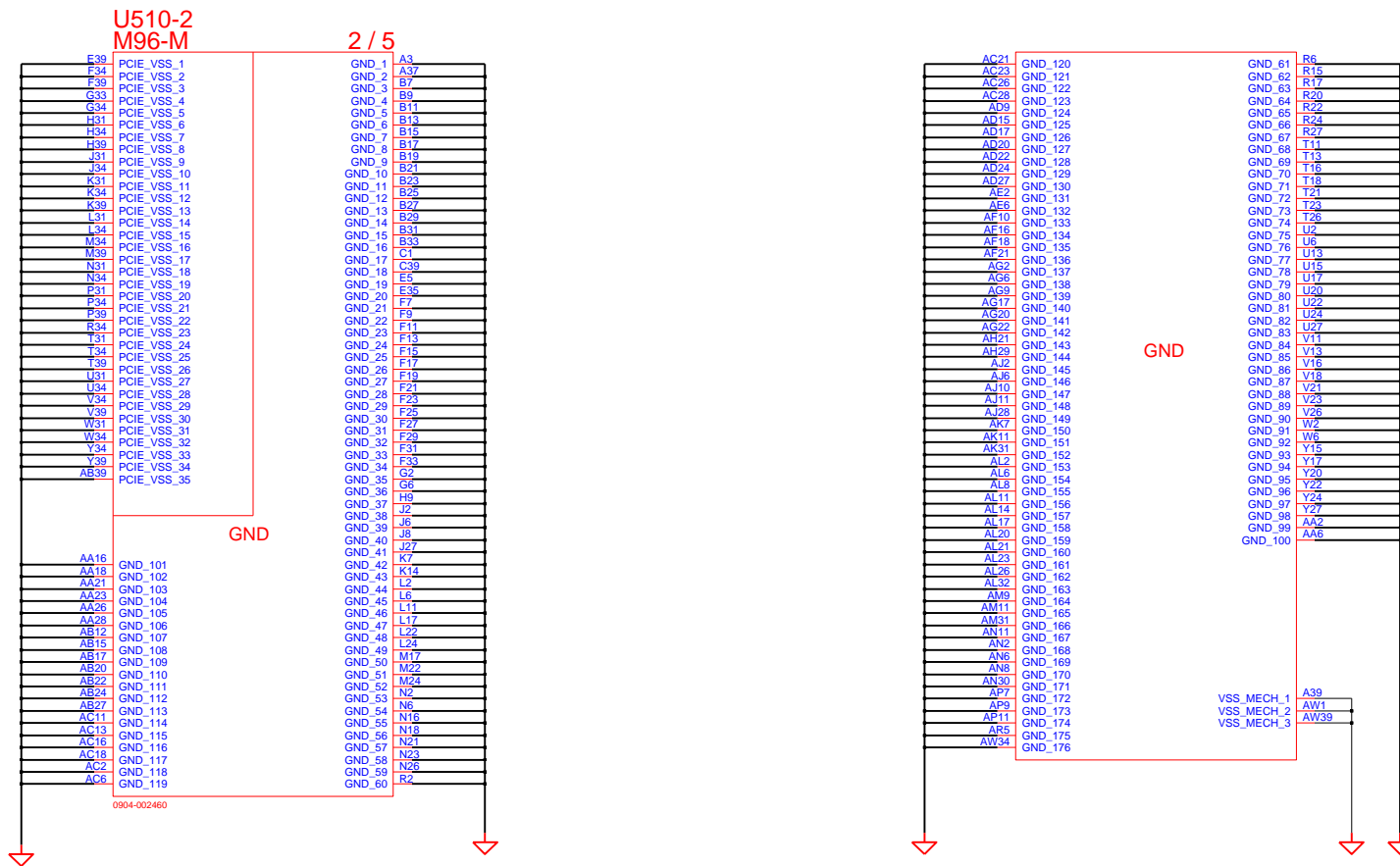


DESIGN	MS Yang	DATE	12/05/2008	BONN-E EXT_GFX M9x (3/5)	SAMSUNG ELECTRONICS
CHECK	MK Kim	DEV. STEP	MP		
APPROVAL	BL Lee	REV	REV 1.0		
MODULE CODE	LAST EDIT				
				April 11, 2009 10:05:58 AM	PAGE 28 OF 67



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DRAW	MS Yang	DATE	12/05/2008	TITLE	BONN-E	SAMSUNG ELECTRONICS
CHECK	MK Kim	REV. STEP	MP	EXT_GFX	PART NO.	
APPROVAL	BL Lee	REV	REV 1.0	M9x (5/5)	BA41-01060A	
MODULE CODE		LAST EDIT		April 11, 2009 10:05:58 AM	PAGE 30 OF 67	

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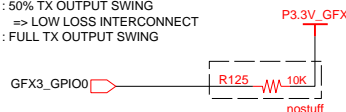
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M9X STRAPS

TX_PWRS_ENB

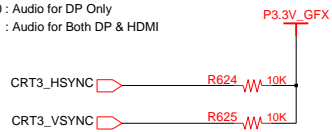
PCIE FULL TX OUTPUT SWING

0 : 50% TX OUTPUT SWING
=> LOW LOSS INTERCONNECT
1 : FULL TX OUTPUT SWING



AUD[1:0]

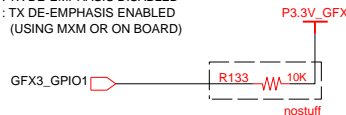
00 : No Audio Function
01 : Audio for DP & HDMI if adapter is detected
10 : Audio for DP Only
11 : Audio for Both DP & HDMI



TX_DEEMPH_EN

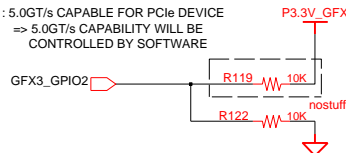
PCIE TRANSMITTER DE-EMPHASIS ENABLED

0 : TX DE-EMPHASIS DISABLED
1 : TX DE-EMPHASIS ENABLED
(USING MXM OR ON BOARD)



BIF_GEN2_EN_A

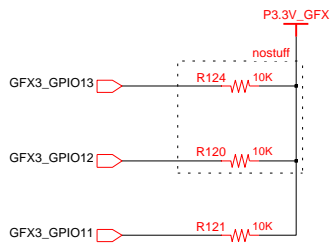
0 : 2.5GT/s CAPABLE FOR PCIe DEVICE
1 : 5.0GT/s CAPABLE FOR PCIe DEVICE
=> 5.0GT/s CAPABILITY WILL BE
CONTROLLED BY SOFTWARE



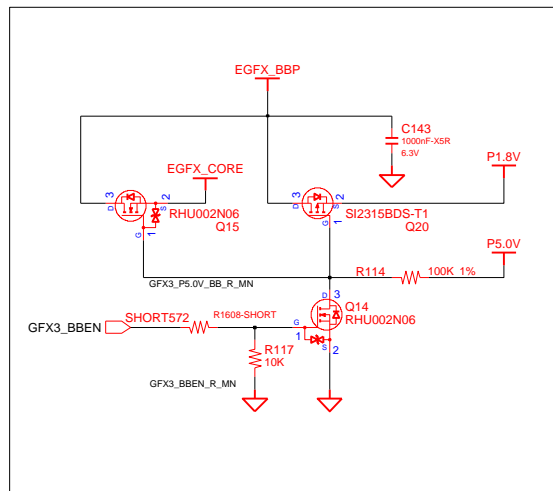
If BIOS_ROM_EN=1, ROMCFGID[2:0] (INTERNAL PULL DOWN)
If BIOS_ROM_EN=0, Memory Aperture Size

GFX3_GPIO(13 : 11)

000 : 128MB
001 : 256MB
010 : 64MB
011 : RESERVED
1XX : RESERVED



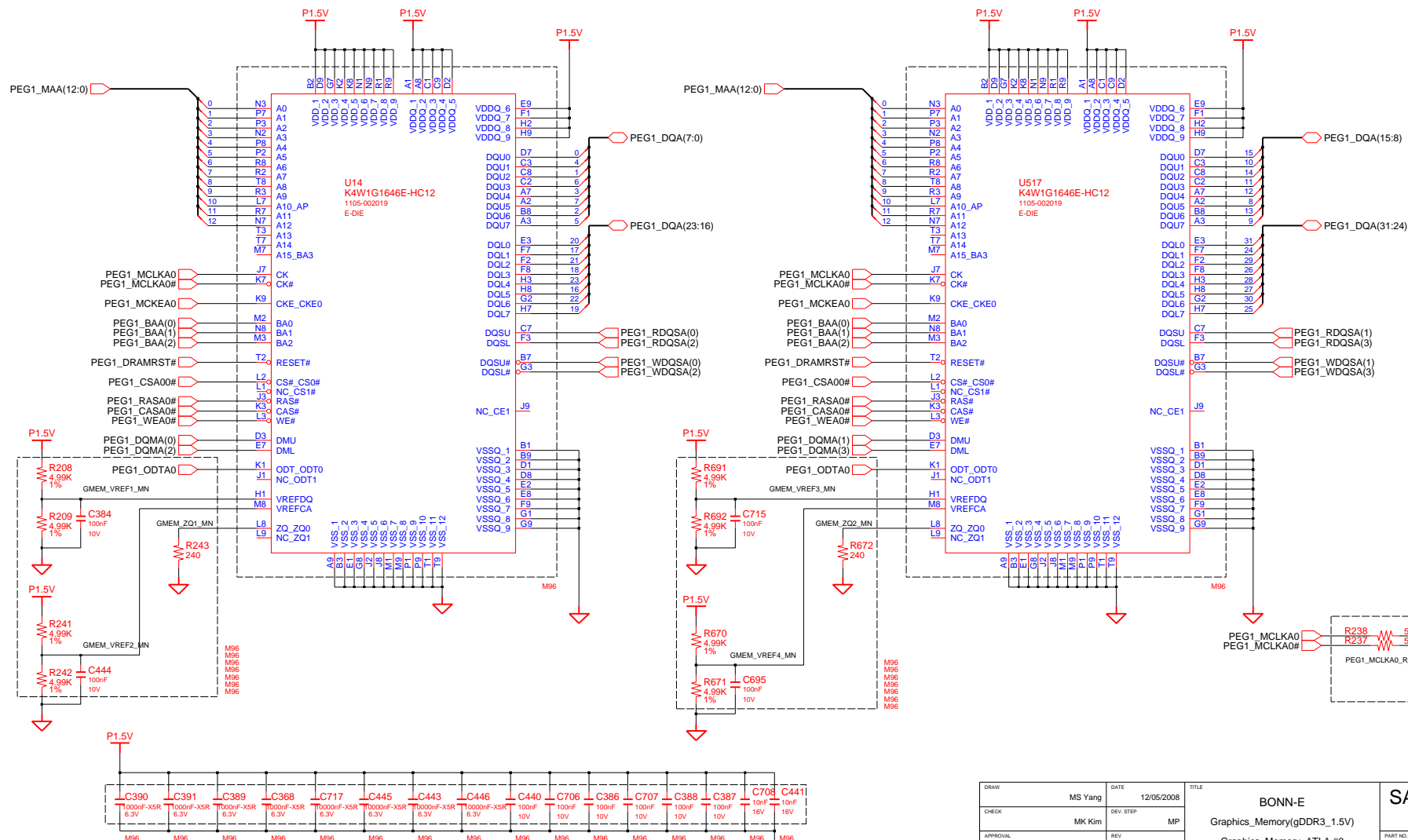
BACK BIAS LOGIC



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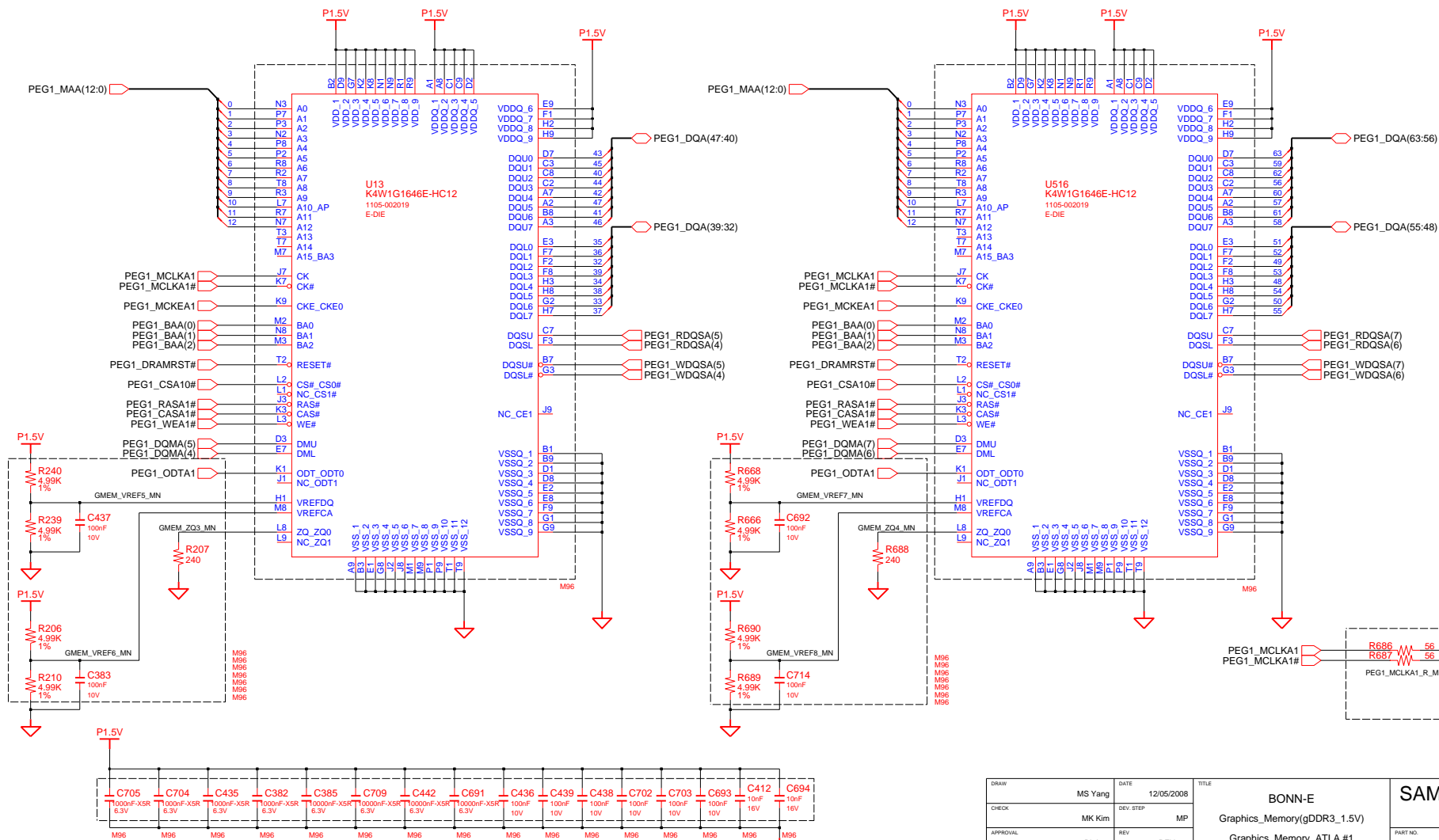
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A-Channel #0



DRAWN	MS Yang	DATE	12/05/2008	TITLE	BONN-E	SAMSUNG ELECTRONICS
CHECK	MK Kim	REV. STEP	MP	Graphics_Memory(gDDR3_1.5V)	PART NO.	BA41-01060A
APPROVAL	BL Lee	REV	REV 1.0	Graphics_Memory_ATI A #0	DATE	April 11, 2009 10:05:58 AM
MODULE CODE		LAST EDIT			PAGE	32 OF 67

A-Channel #1

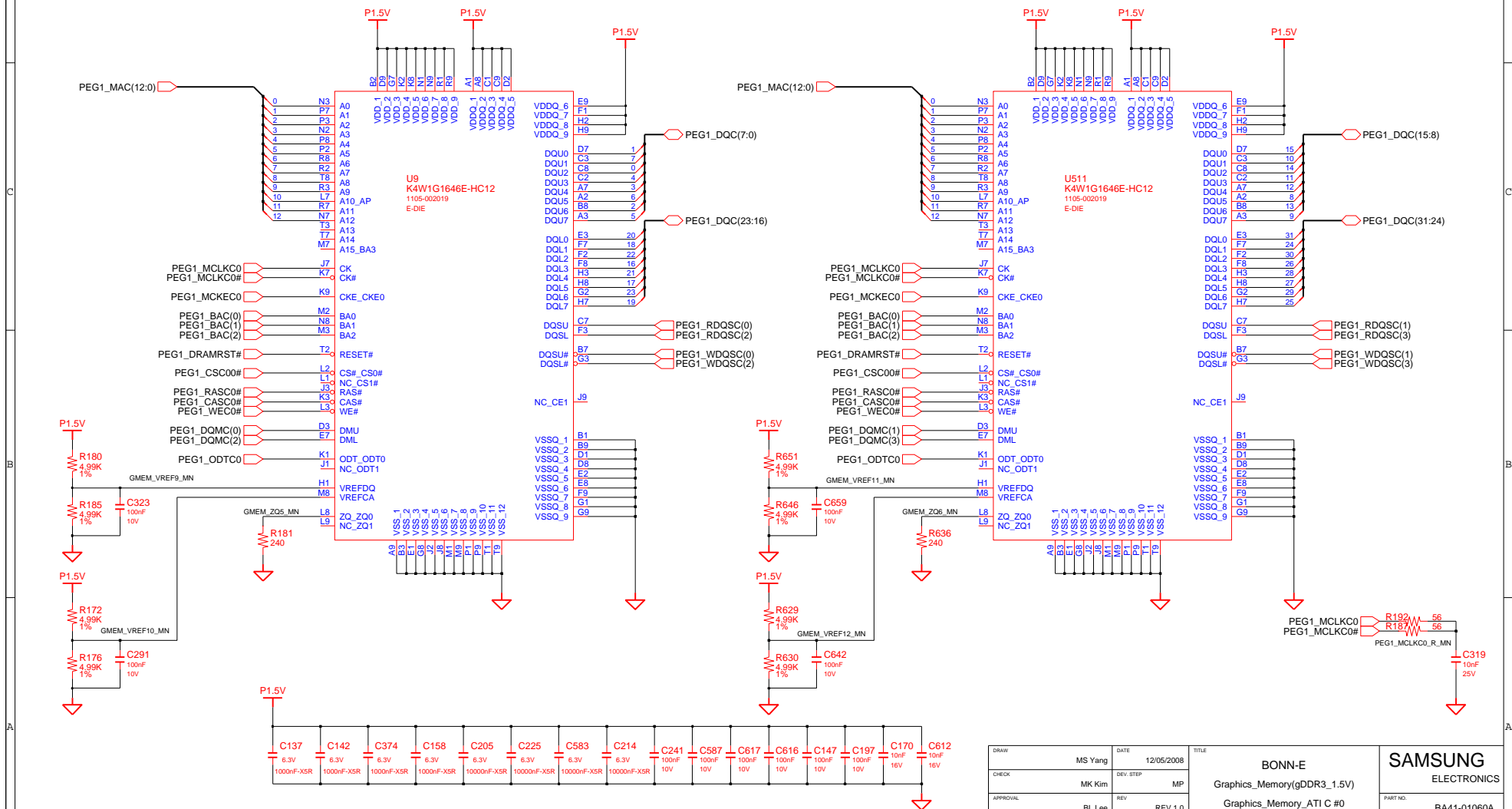


DRAW	MS Yang	DATE	12/05/2008	BONN-E Graphics_Memory(gDDR3_1.5V) Graphics_Memory_ATI A #1	SAMSUNG ELECTRONICS			
CHECK	MK Kim	DEV. STEP	MP					
APPROVAL	BL Lee	REV	REV 1.0					
MODULE CODE	LAST EDIT							
				April 11, 2009 10:05:58 AM	PAGE	33	OF	67

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B-Channel #0

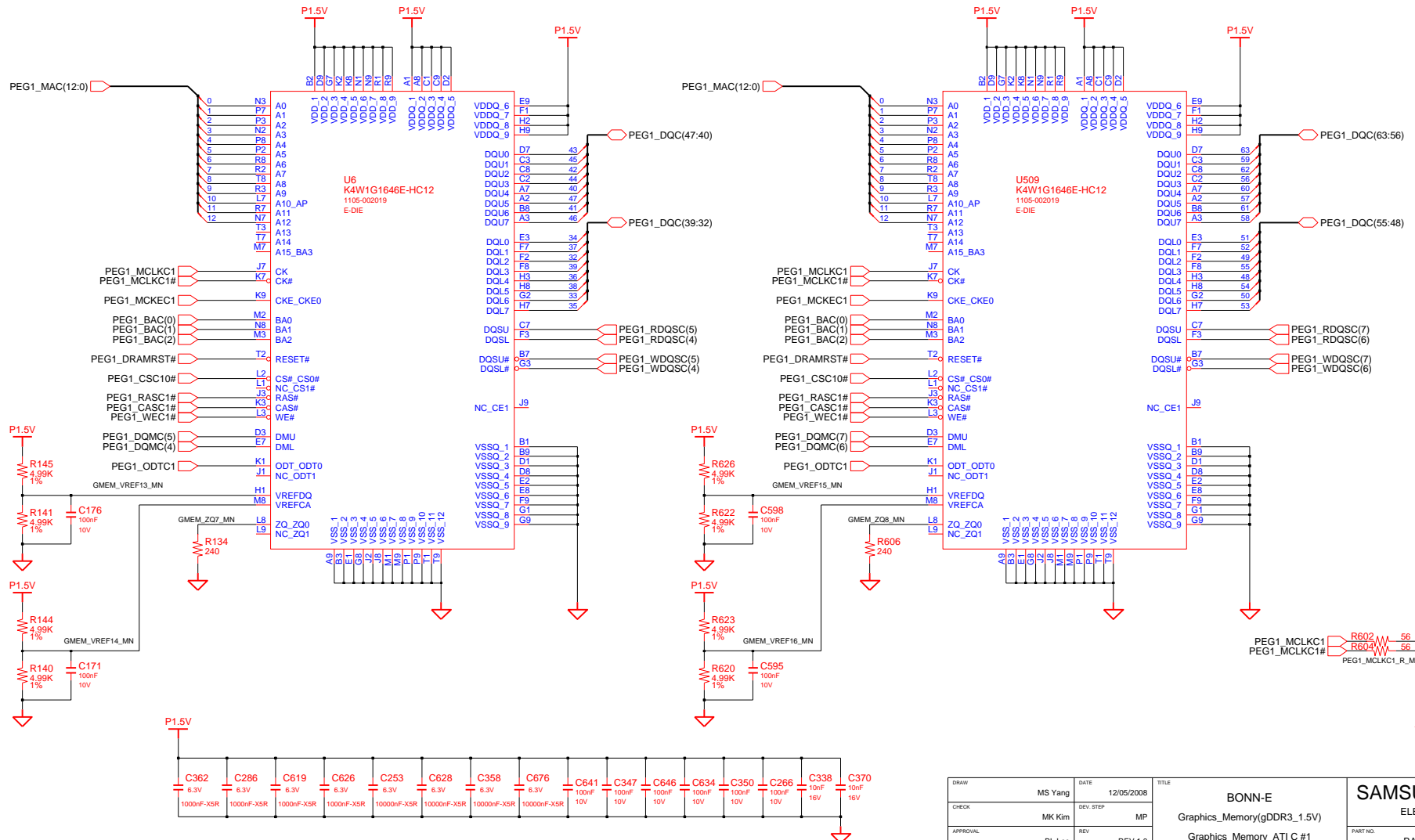


DRAW	MS Yang	DATE	12/05/2008	TITLE	BONN-E	SAMSUNG ELECTRONICS
CHECK	MK Kim	REV. STEP	MP	Graphics_Memory(gDDR3_1.5V)	PART NO.	BA41-01060A
APPROVAL	BL Lee	REV	REV 1.0	Graphics_Memory_ATI C #0	April 11, 2009 10:05:58 AM	PAGE 34 OF 67
MODULE CODE		LAST EDIT				

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B-Channel #1



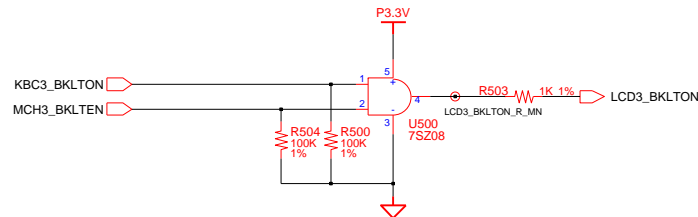
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CHECK	MK Kim	REV. STEP	MP	Graphics_Memory(gDDR3_1.5V)	ELECTRONICS	
APPROVAL	BL Lee	REV	REV 1.0	Graphics_Memory_ATI C #1	PART NO.	BA41-01060A
MODULE CODE		LAST EDIT			DATE	April 11, 2009 10:05:58 AM
					PAGE	35 OF 67

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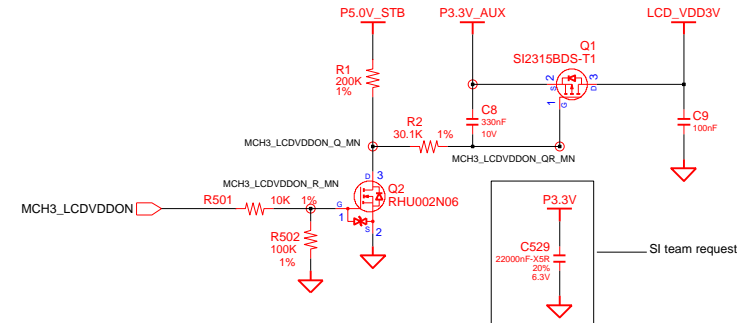
LVDS

Backlight On

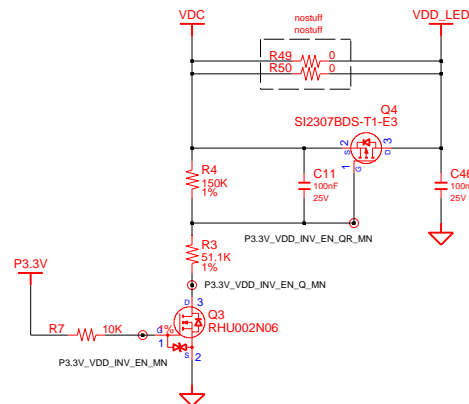


LCD Power

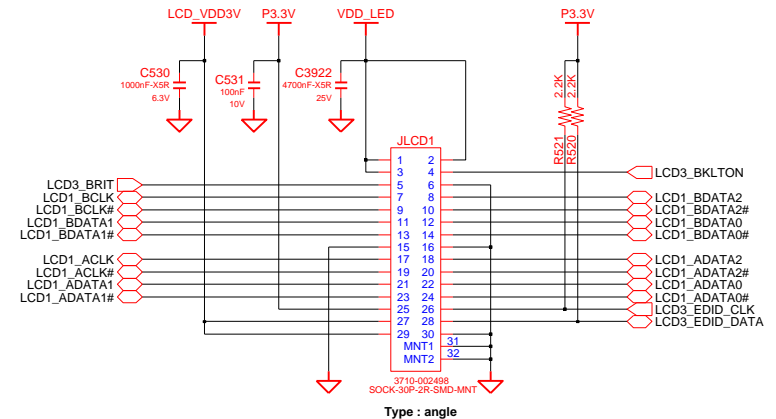
EBL Purpose



LED Power



2Ch. LCD Connector



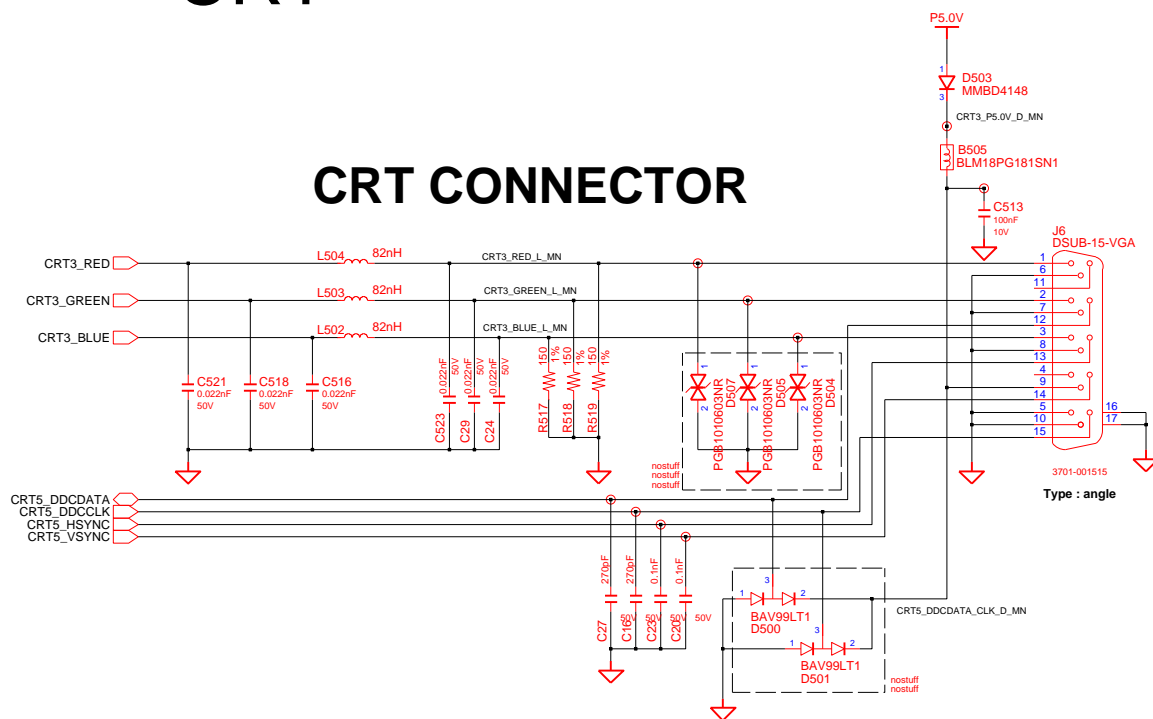
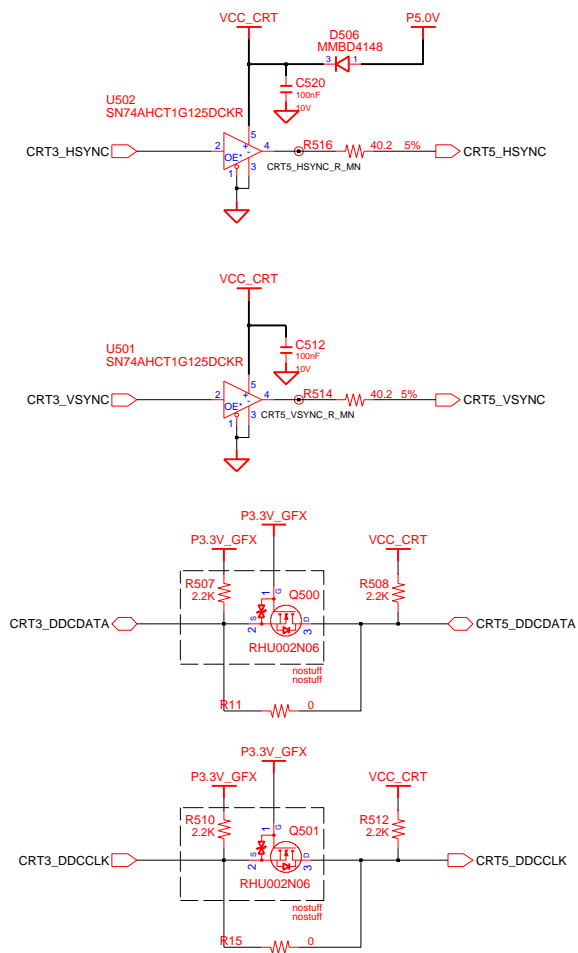
DESIGN	MS Yang	DATE	12/05/2008	TITLE	BONN-E	SAMSUNG
CHECK	MK Kim	REV. STEP	MP	GRAPHICS_IF	ELECTRONICS	
APPROVAL	BL Lee	REV	REV 1.0	LVDS	PART NO.	BA41-01060A
MODULE CODE		LAST EDIT		April 11, 2009 10:05:58 AM	PAGE	36 OF 67

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CRT

CRT CONNECTOR



Type : angle

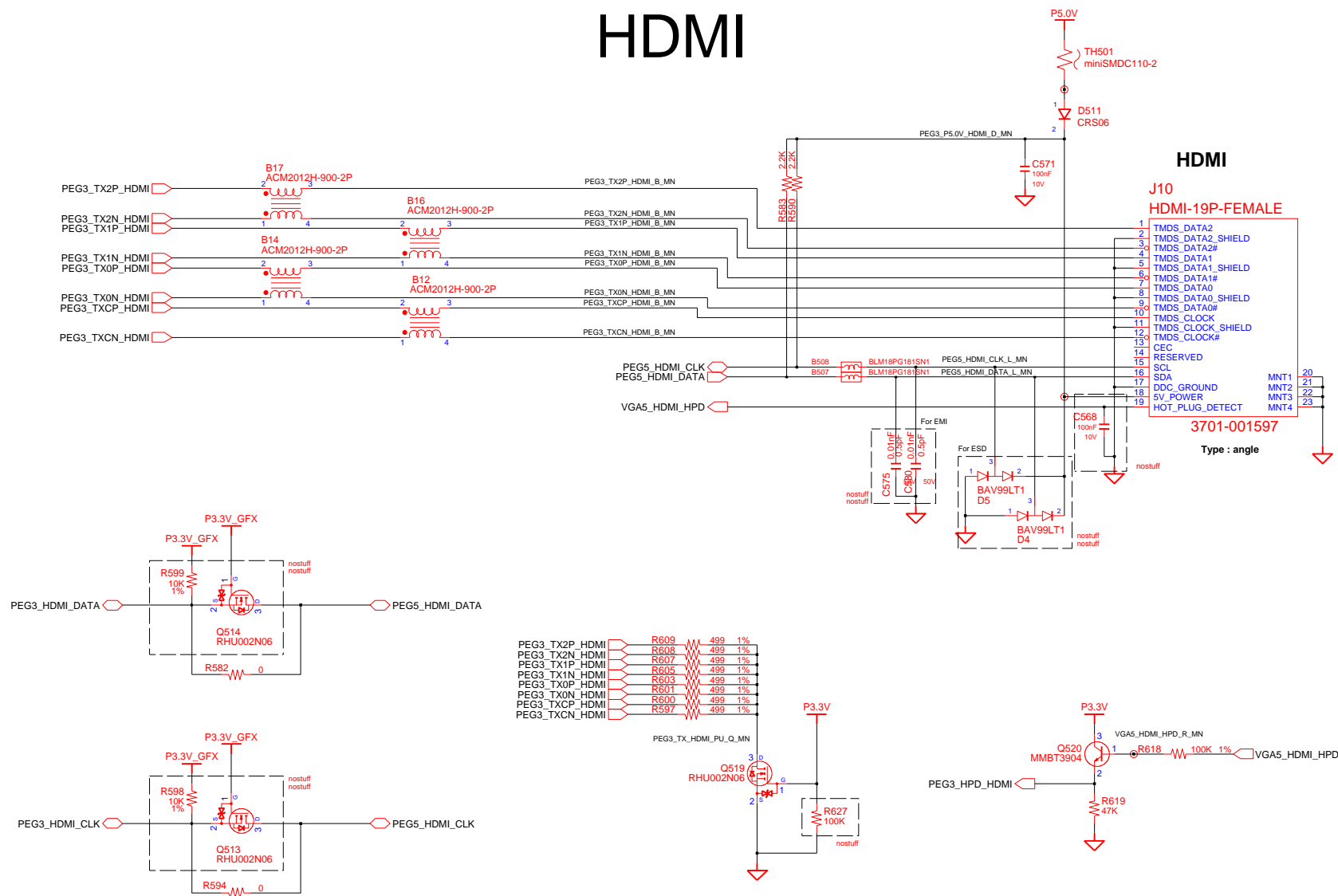
Check "CRT3_DDCCLK/DATA" Voltage Level
2N06 Can be replaced with SM6K2

DESIGN	MS Yang	DATE	12/05/2008	TITLE	BONN-E GRAPHICS_IF CRT	SAMSUNG ELECTRONICS
CHECK	MK Kim	REV. STEP	MP			PART NO. BA41-01060A
APPROVAL	BL Lee	REV	REV 1.0			
MODULE CODE		LAST EDIT				
April 11, 2009 10:05:58 AM						PAGE 37 OF 67

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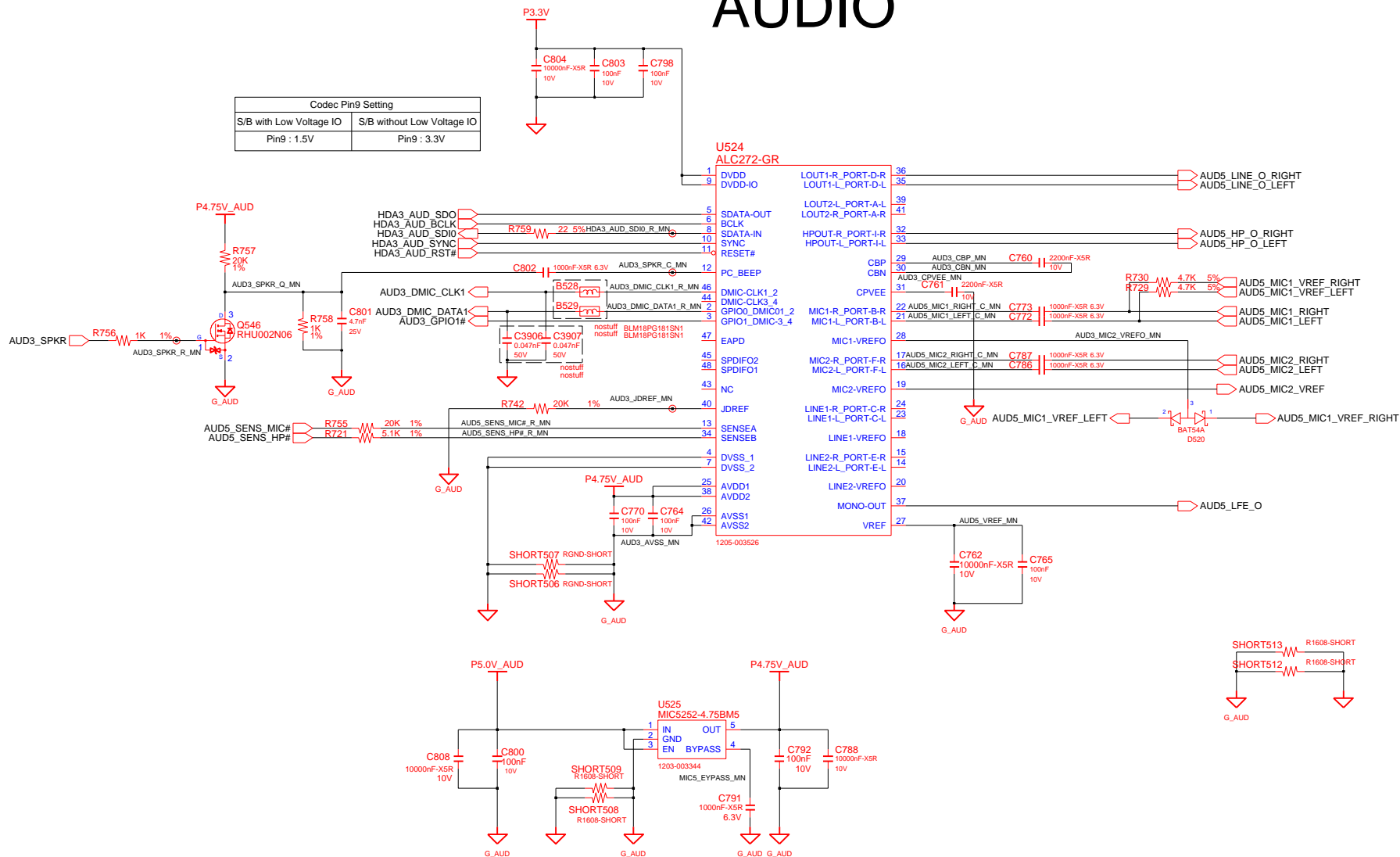
HDMI



DESIGN	MS Yang	DATE	12/05/2008	TITLE	BONN-E	SAMSUNG ELECTRONICS
CHECK	MK Kim	REV. STEP	MP	GRAPHICS_IF		
APPROVAL	BL Lee	REV	REV 1.0	HDMI		
MODULE CODE		LAST EDIT				
April 11, 2009 10:05:58 AM						PAGE 38 OF 67

U524
ALC272-GR

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

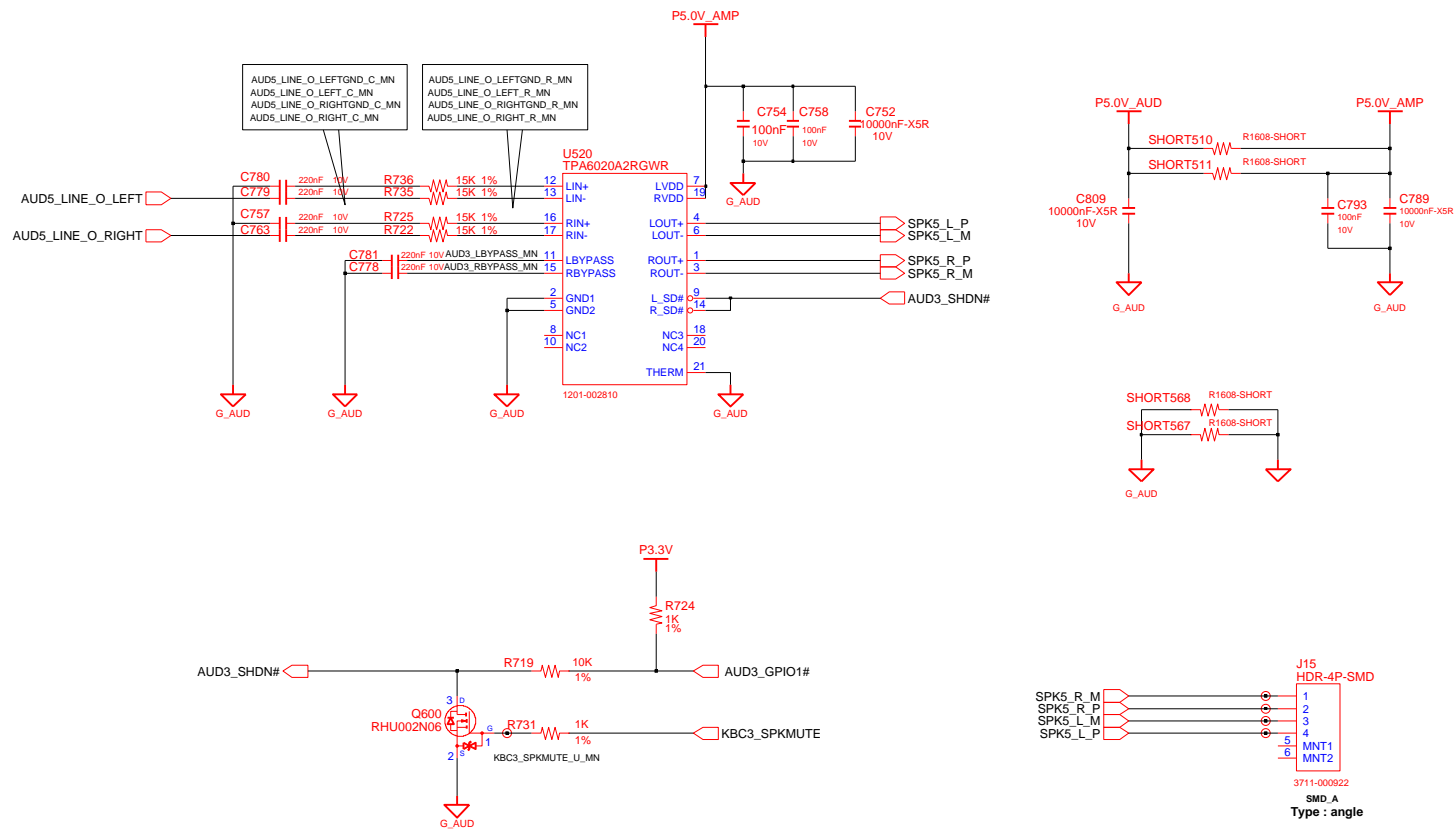


GMT : 1203-005579

DESIGN	MS Yang	DATE	12/05/2008	BONN-E HDA CODEC AUDIO CODEC ALC272	SAMSUNG ELECTRONICS
CHECK	MP Kim	DEV. STEP	MP		
APPROVAL	BL Lee	REV	REV 1.0		
MODULE CODE	LAST EDIT				
April 11, 2009 10:05:58 AM					PAGE 39 OF 67
					PART NO. BA41-01060A

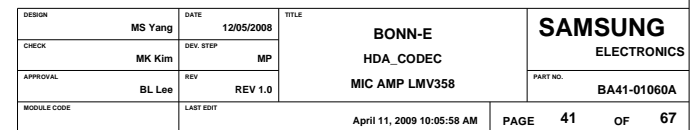
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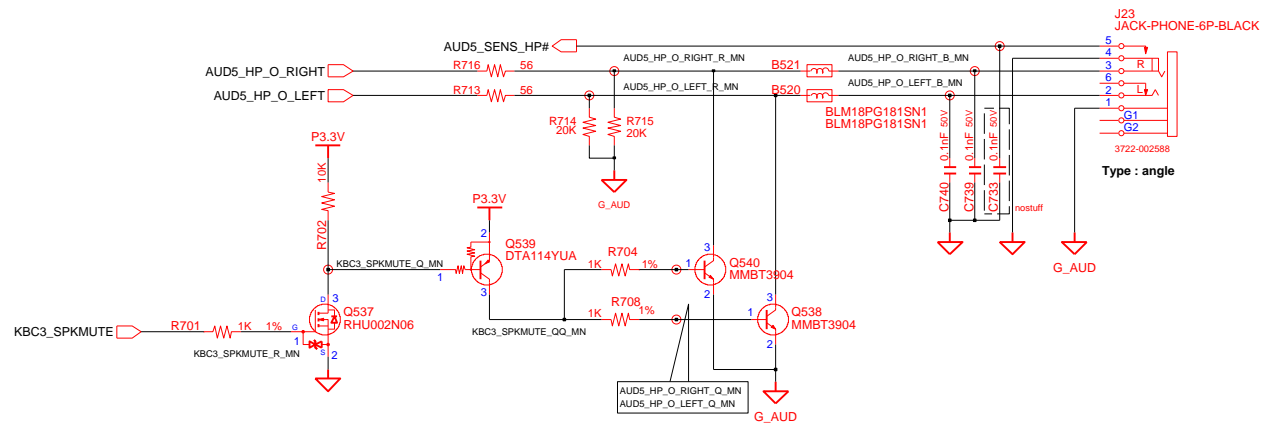
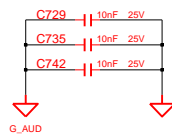
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CHECK	MK Kim	REV. STEP	MP	HDA_CODEC	ELECTRONICS	
APPROVAL	BL Lee	REV	REV 1.0	SPK AMP TPA6017	PART NO.	BA41-01060A
MODULE CODE		LAST EDIT	April 11, 2009 10:05:58 AM	PAGE	40	OF 67

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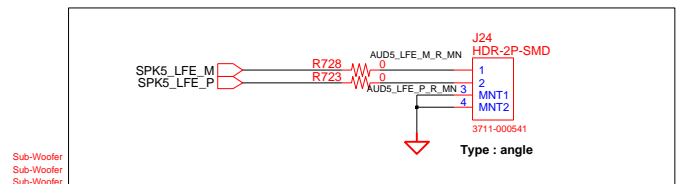
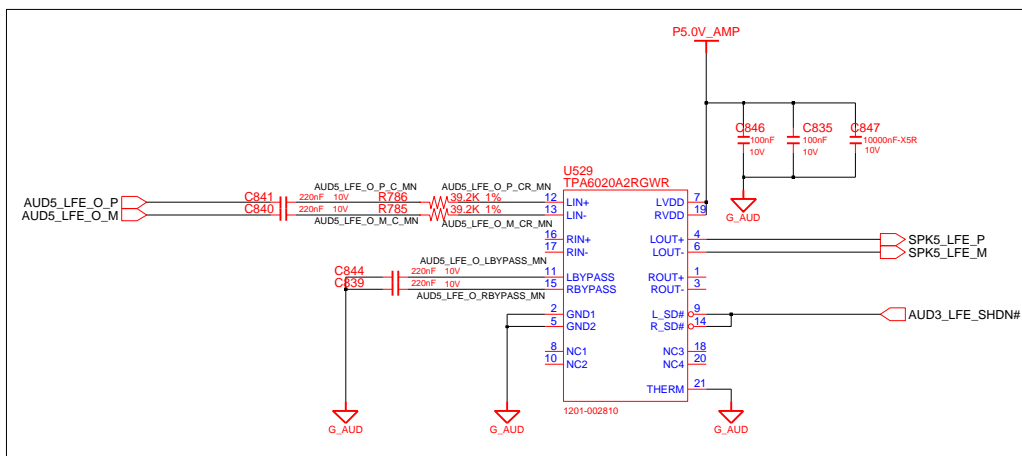
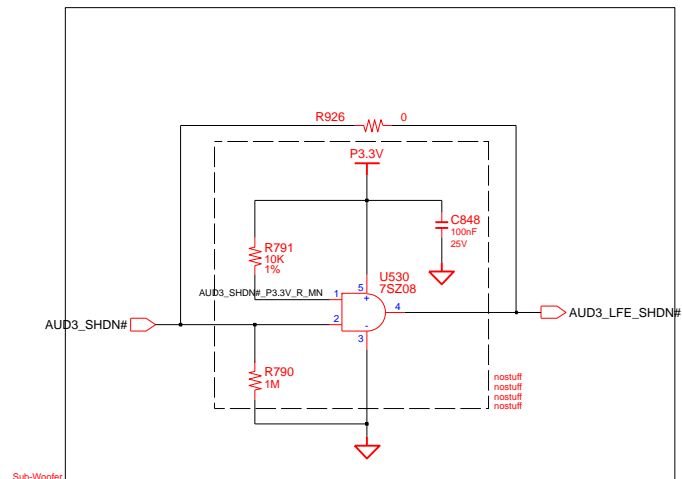
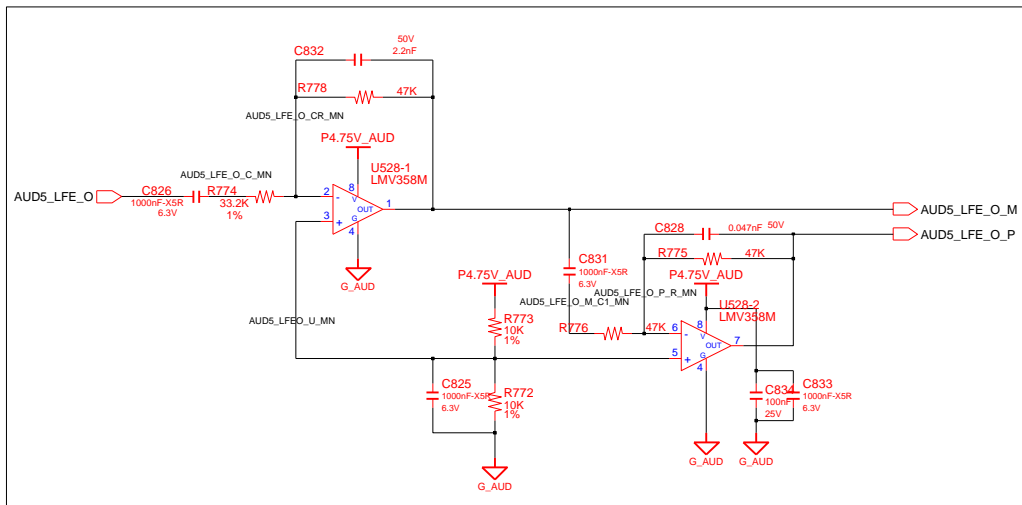
HEADPHONE(BLACK)**MIC JACK(BLACK)**

DESIGN	MS Yang	DATE	12/05/2008	TITLE	BONN-E	SAMSUNG
CHECK	MK Kim	REV. STEP	MP	HDA_CODEC	ELECTRONICS	
APPROVAL	BL Lee	REV	REV 1.0	H/P JACK AND MIC JACK	PART NO.	BA41-01060A
MODULE CODE	LAST EDIT		April 11, 2009 10:05:58 AM		PAGE	42 OF 67

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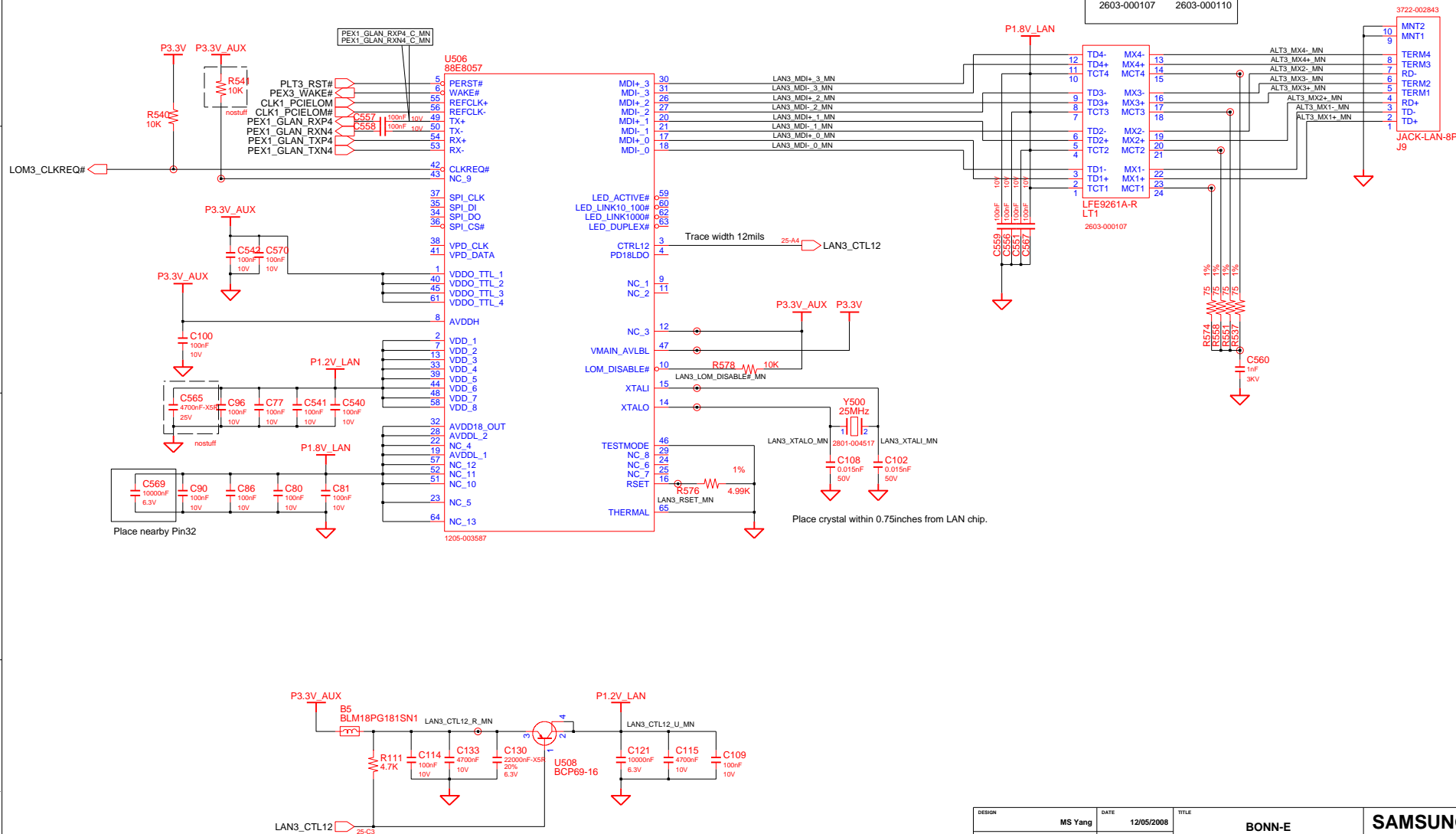
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SUB-WOOFER



DESIGN	MS Yang	DATE	12/05/2008	TITLE	BONN-E	SAMSUNG
CHECK	MK Kim	REV. STEP	MP	HDA_CODEC	ELECTRONICS	
APPROVAL	BL Lee	REV	REV 1.0	SUB-WOOFER	PART NO.	BA41-01060A
MODULE CODE		LAST EDIT			April 11, 2009 10:05:58 AM	PAGE 43 OF 67

LFE9261A-R	LAN3214-50
2603-000107	2603-000110



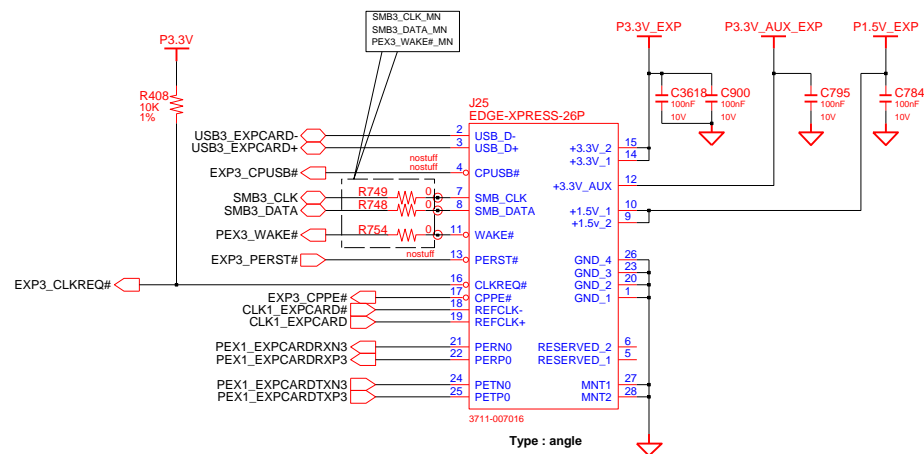
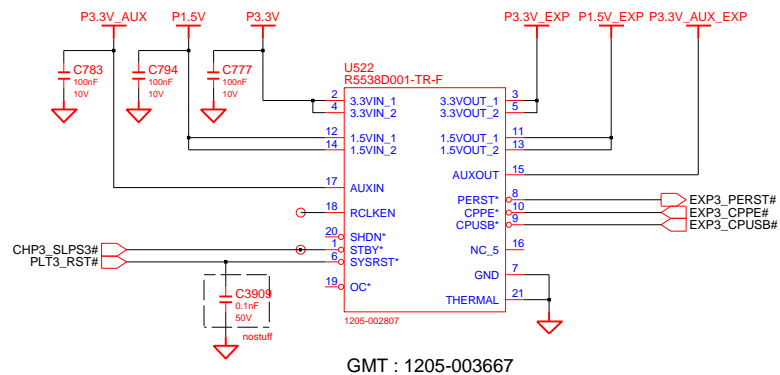
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CHECK	MK Kim	DEV. STEP	MP			
APPROVAL	BL Lee	REV	REV 1.0			
PART NO.						BA41-01060A
MODULE CODE	LAST EDIT				April 11, 2009 10:05:58 AM	PAGE 44 OF 67

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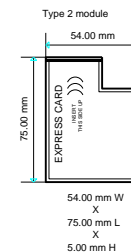
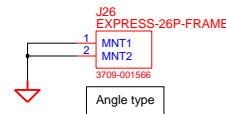
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Express Card

Express Card Power Switch



TYPE - II

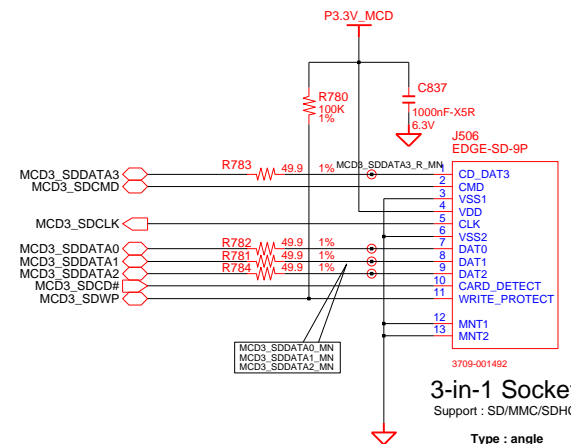
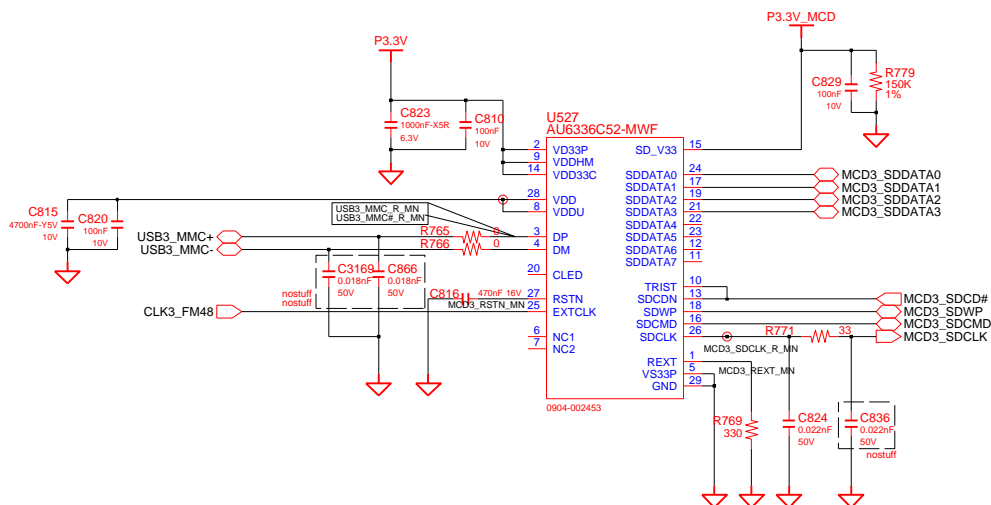


DESIGN	MS Yang	DATE	12/05/2008	TITLE	BONN-E EXPRESS CARD EXPRESS CARD	SAMSUNG ELECTRONICS
CHECK	MK Kim	REV. STEP	MP			PART NO.
APPROVAL	BL Lee	REV	REV 1.0			BA41-01060A
MODULE CODE		LAST EDIT		April 11, 2009 10:05:58 AM	PAGE 45 OF 67	

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3 IN 1 CARD (AU6336)

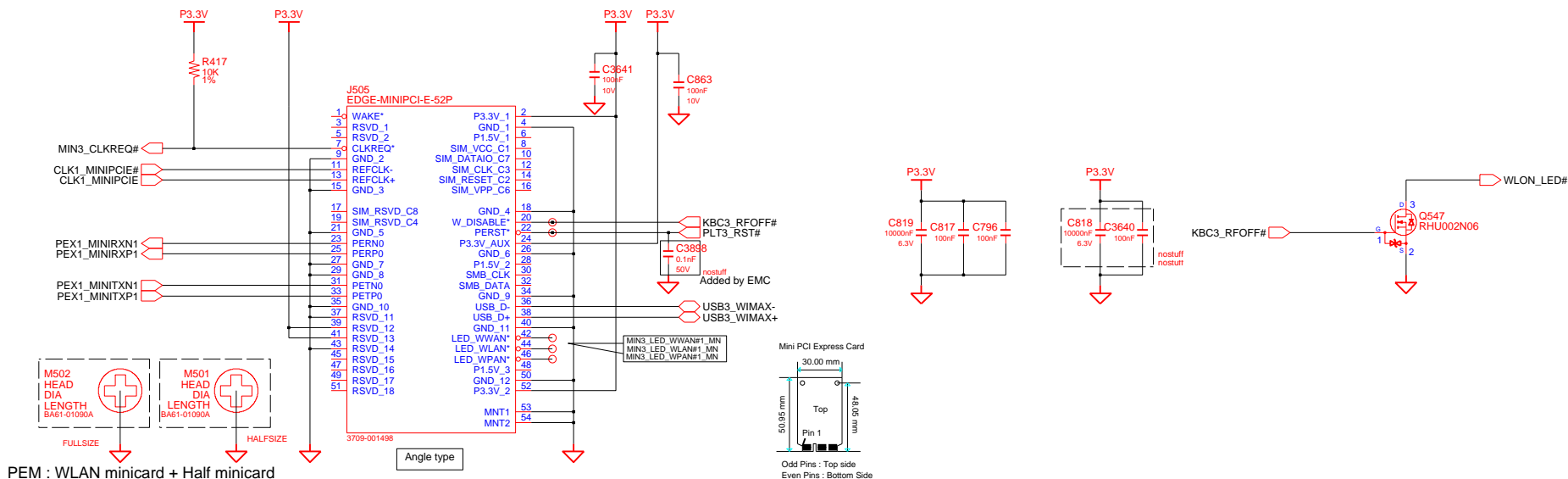


DESIGN	MS Yang	DATE	12/05/2008	TITLE	BONN-E	SAMSUNG
CHECK	MK Kim	REV. STEP	MP	MULTICARD	ELECTRONICS	
APPROVAL	BL Lee	REV	REV 1.0	2 IN 1 CARD	PART NO.	BA41-01060A
MODULE CODE		LAST EDIT	April 11, 2009 10:05:58 AM	PAGE	46	OF 67

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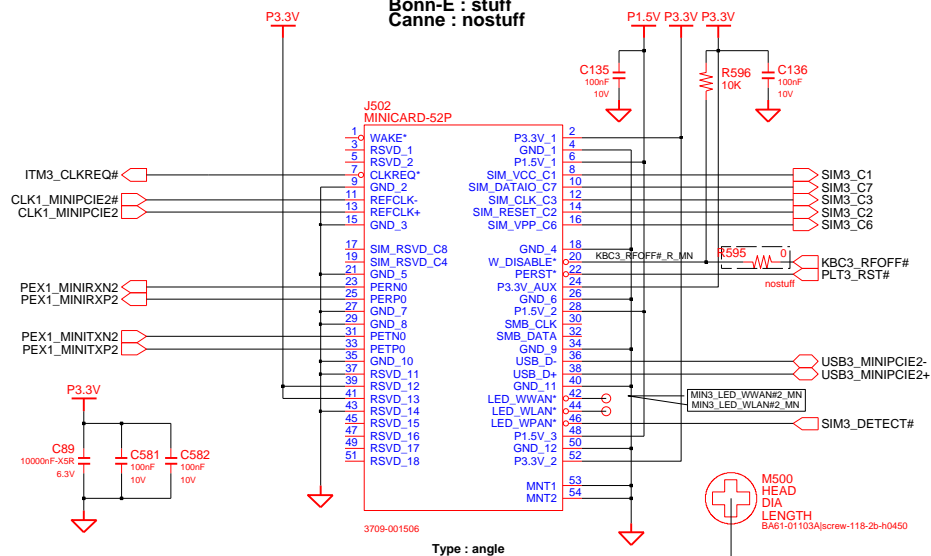
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WLAN, 4mm



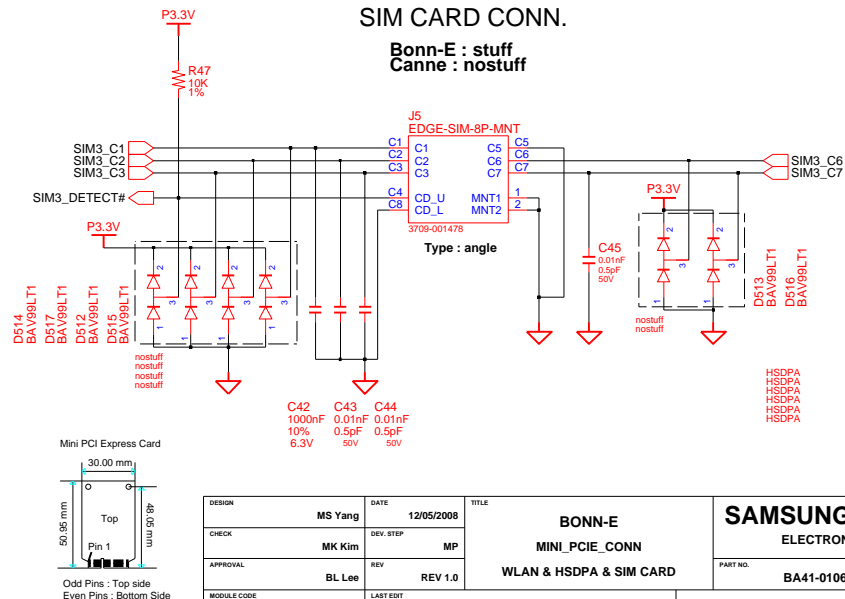
HSDPA, 7mm

Bonn-E : stuff
Canne : nostuff



SIM CARD CONN.

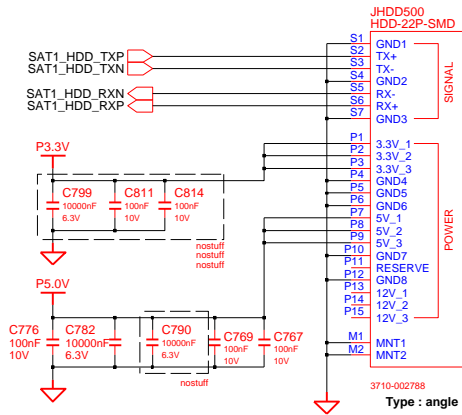
Bonn-E : stuff
Canne : nostuff



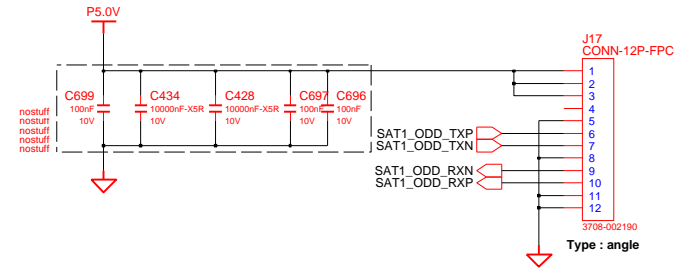
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CHECK	MK Kim	REV. STEP	MP	MINI_PCIE_CONN	
APPROVAL	BL Lee	REV	REV 1.0	WLAN & HSDPA & SIM CARD	
MODULE CODE		LAST EDIT			
				April 11, 2009 10:05:58 AM	PAGE 47 OF 67
					SAMSUNG ELECTRONICS
					PART NO. BA41-01060A

SATA I/F CONN

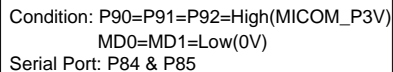
SATA HDD CONN



MAIN TO SUB SATA ODD CONN



DESIGN	MS Yang	DATE	12/05/2008	TITLE	BONN-E SATA_DEVICES HDD & ODD SUB CONNECTOR	PART NO.	BA41-01060A
CHECK	MK Kim	REV. STEP	MP				
APPROVAL	BL Lee	REV	REV 1.0				
MODULE CODE		LAST EDIT					
				April 11, 2009 10:05:58 AM	PAGE	48	OF 67



DRAW	MS Yang	DATE	12/05/2008	BONN-E MICOM MICOM_Renesas2110_100p	SAMSUNG ELECTRONICS		
CHECK	MK Kim	DEV. STEP	MP				
APPROVAL	BL Lee	REV	REV 1.0		PART NO.	BA41-01060A	
MODULE CODE	LAST EDIT				April 11, 2009 10:05:58 AM	PAGE	49 OF 67

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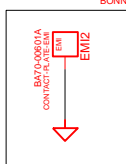
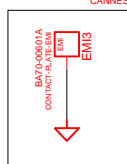
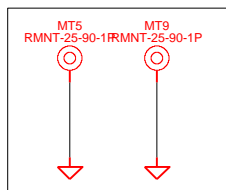
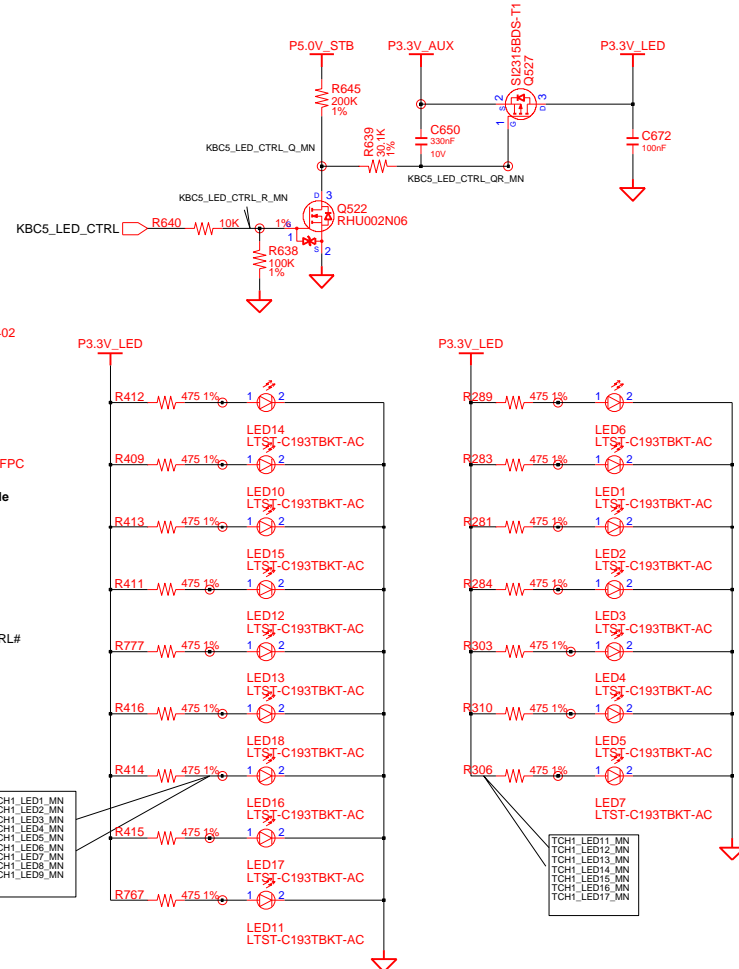
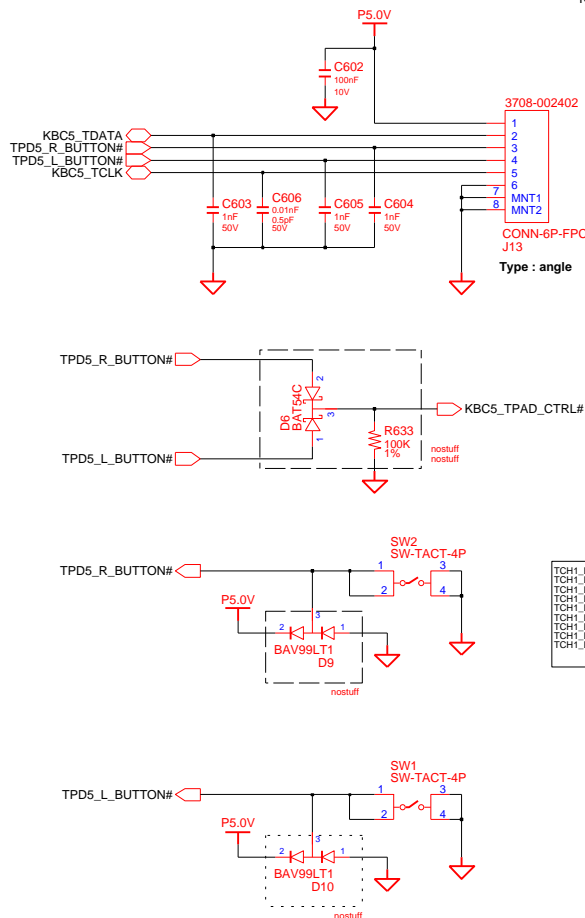
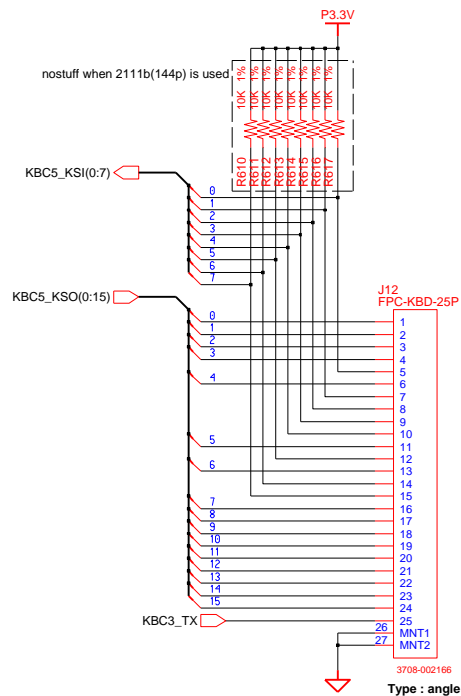
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Micom Glue Logic

TOUCHPAD LED

KEYBOARD

TOUCHPAD

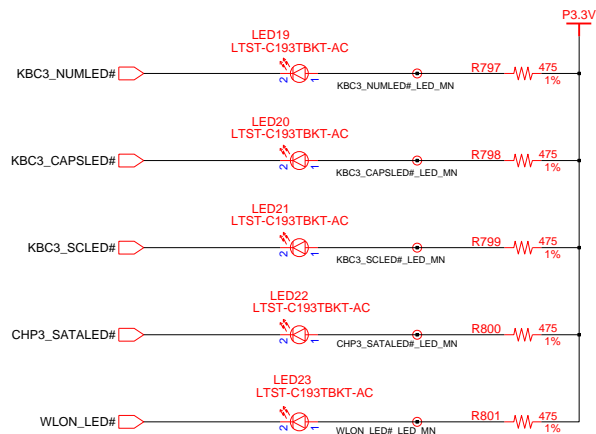


DESIGN	MS Yang	DATE	12/05/2008	TITLE	BONN-E	SAMSUNG
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APPROVAL	BL Lee	REV	REV 1.0	KEYBOARD & TOUCHPAD	PART NO.	BA41-01060A
MODULE CODE		LAST EDIT			DATE	April 11, 2009 10:05:58 AM
					PAGE	50 OF 67

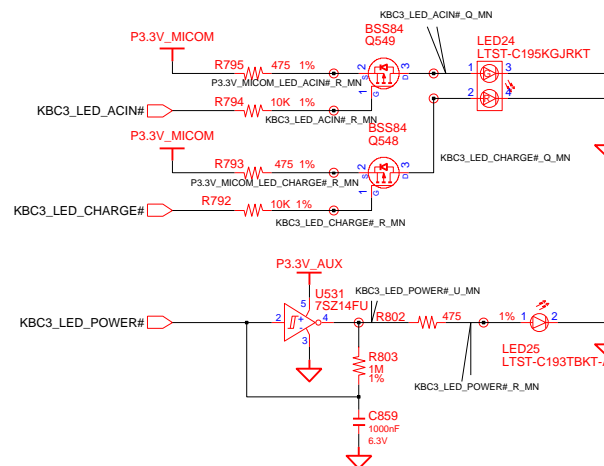
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FUNCTION KEY LED



ADAPTERIN/CHARGING LED

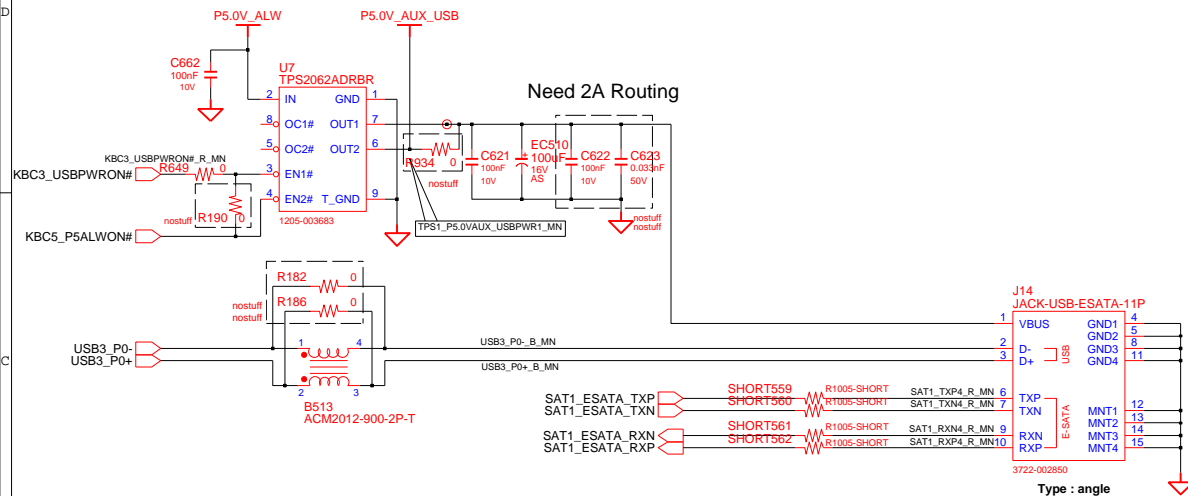


DRAW	MS Yang	DATE	12/05/2008	TITLE	BONN-E	SAMSUNG
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APPROVAL	BL Lee	REV	REV 1.0	LED_SWITCH		
MODULE CODE		LAST EDIT	April 11, 2009 10:05:58 AM	PAGE	51	OF 67

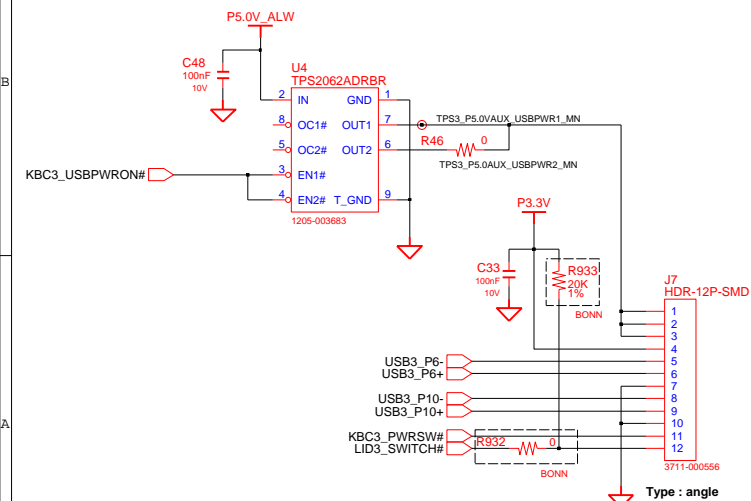
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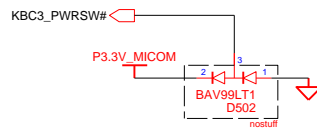
USB + eSATA CONNECTOR



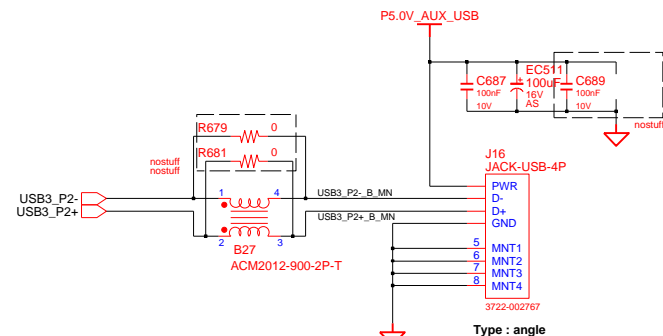
USB SUB B'D CONNECTOR



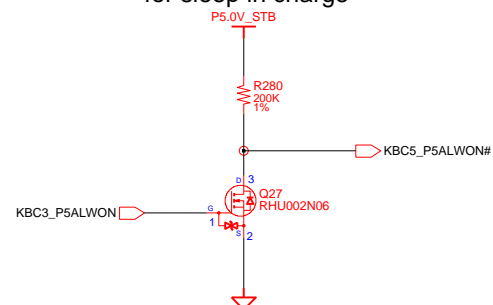
PLACE CLOSE TO USB SUB B'D Conenctor



USB Single connector

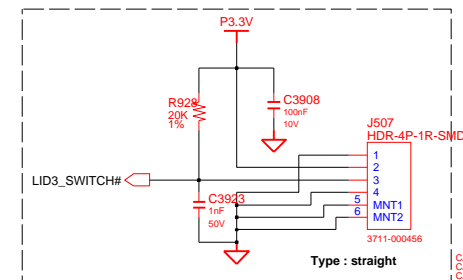


for sleep in charge



LID SWITCH for Canne

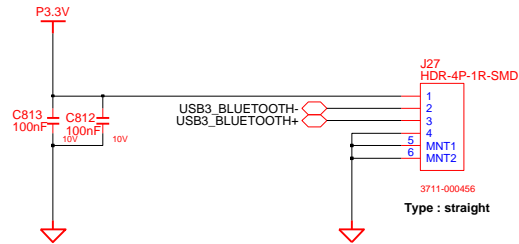
Bonn : nostuff
Canne : stuff



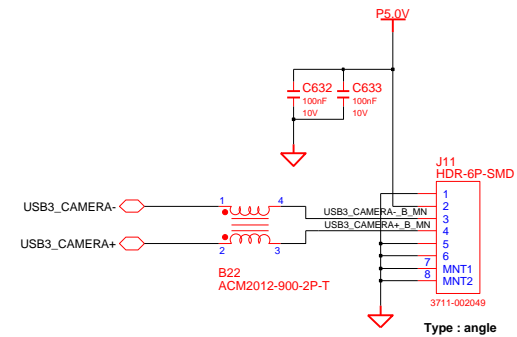
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CHECK	MK Kim	REV. STEP	MP			
APPROVAL	BL Lee	REV	REV 1.0		USB & eSATA	PART NO. BA41-01060A
MODULE CODE		LAST EDIT				
				April 11, 2009 10:05:58 AM	PAGE	52 OF 67

USB I/F Devices

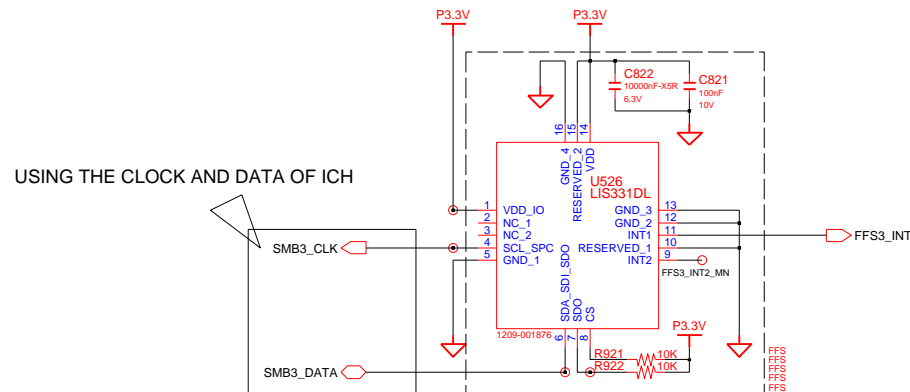
Bluetooth Interface



CAMERA



Free Fall Sensor

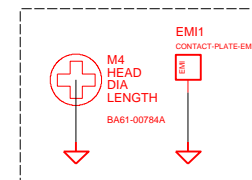
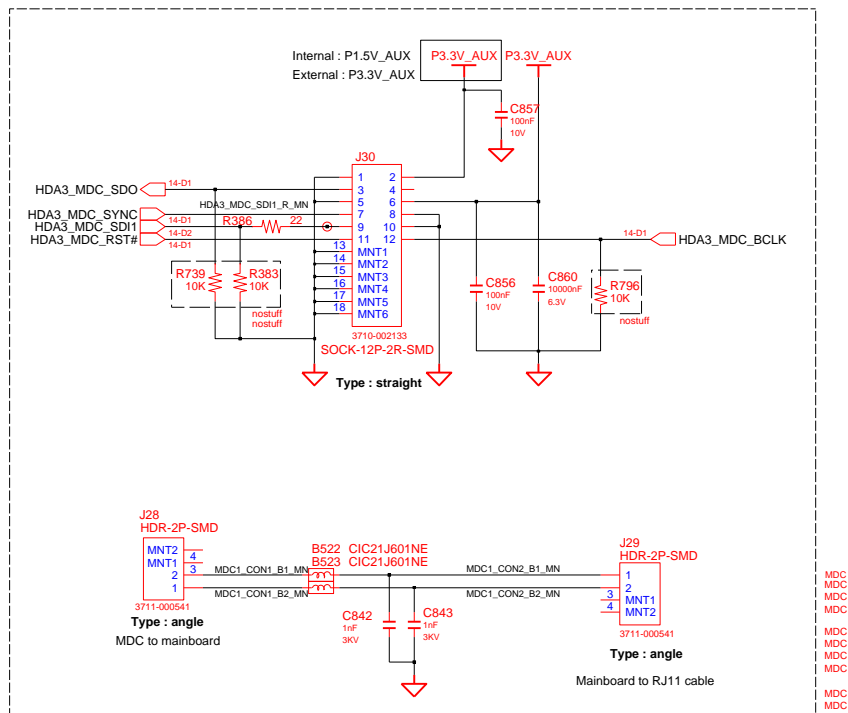


DESIGN	MS Yang	DATE	12/05/2008	TITLE	BONN-E USB_DEVICES BLUETOOTH & CAMERA	SAMSUNG ELECTRONICS
CHECK	MK Kim	REV. STEP	MP			PART NO. BA41-01060A
APPROVAL	BL Lee	REV	REV 1.0			
MODULE CODE		LAST EDIT		April 11, 2009 10:05:58 AM	PAGE 53 OF 67	

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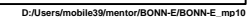
MDC connector



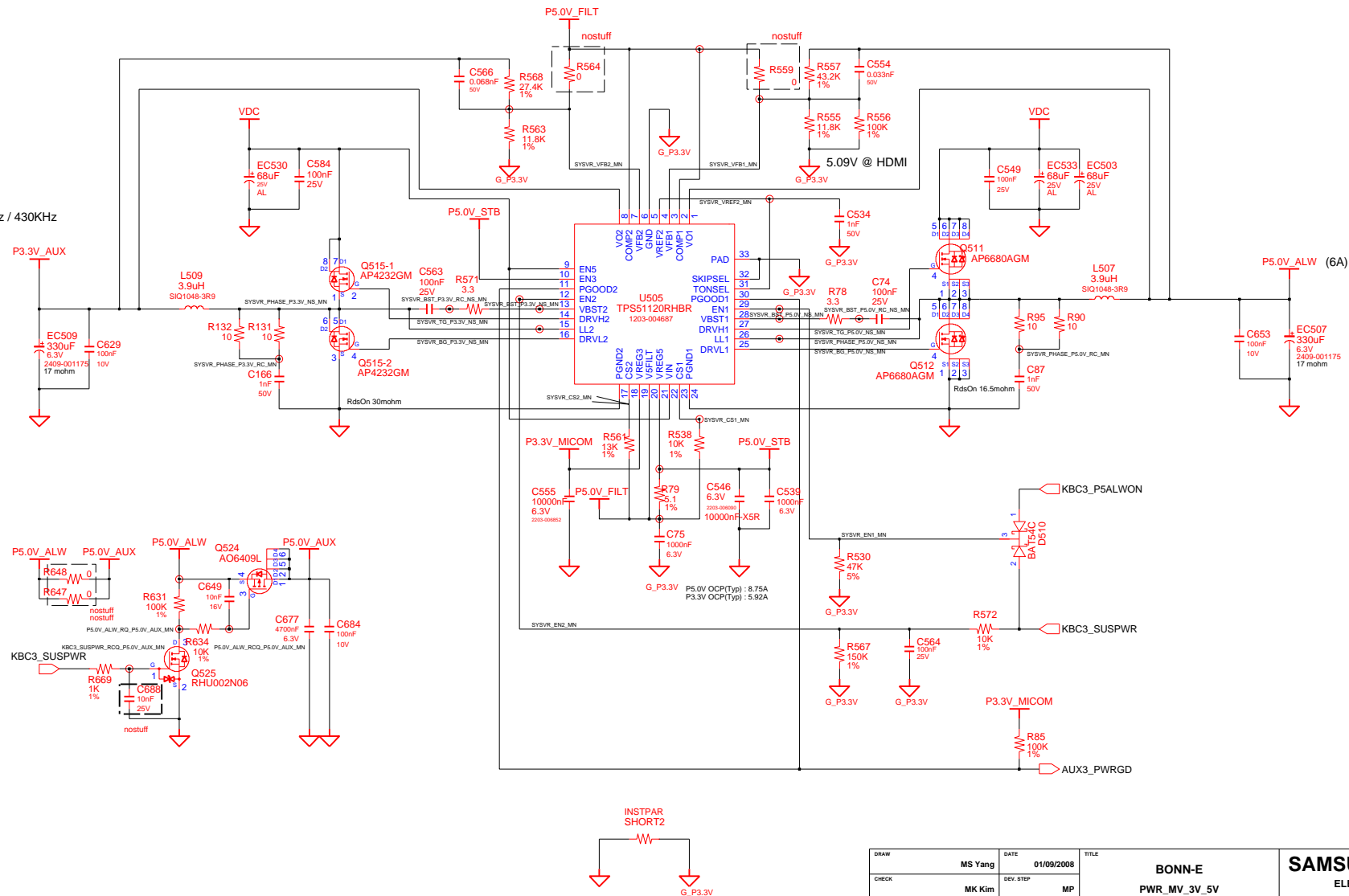
MDC

MDC
MDC
MDC
MDC
MDC
MDC
MDC
MDC
MDC
MDC

DRAW	MS Yang	DATE	12/05/2008	TITLE	BONN-E	SAMSUNG
CHECK	MK Kim	DEV. STEP	MP	MDC CONNECTOR	MDC CONNECTOR	ELECTRONICS
APPROVAL	BL Lee	REV	REV 1.0			PART NO. BA41-01060A
MODULE CODE	undefined	LAST EDIT	April 11, 2009 10:05:58 AM	PAGE	54	OF 67



TONSEL VREF2
5V / 3.3V : 280KHz / 430KHz
(4A)

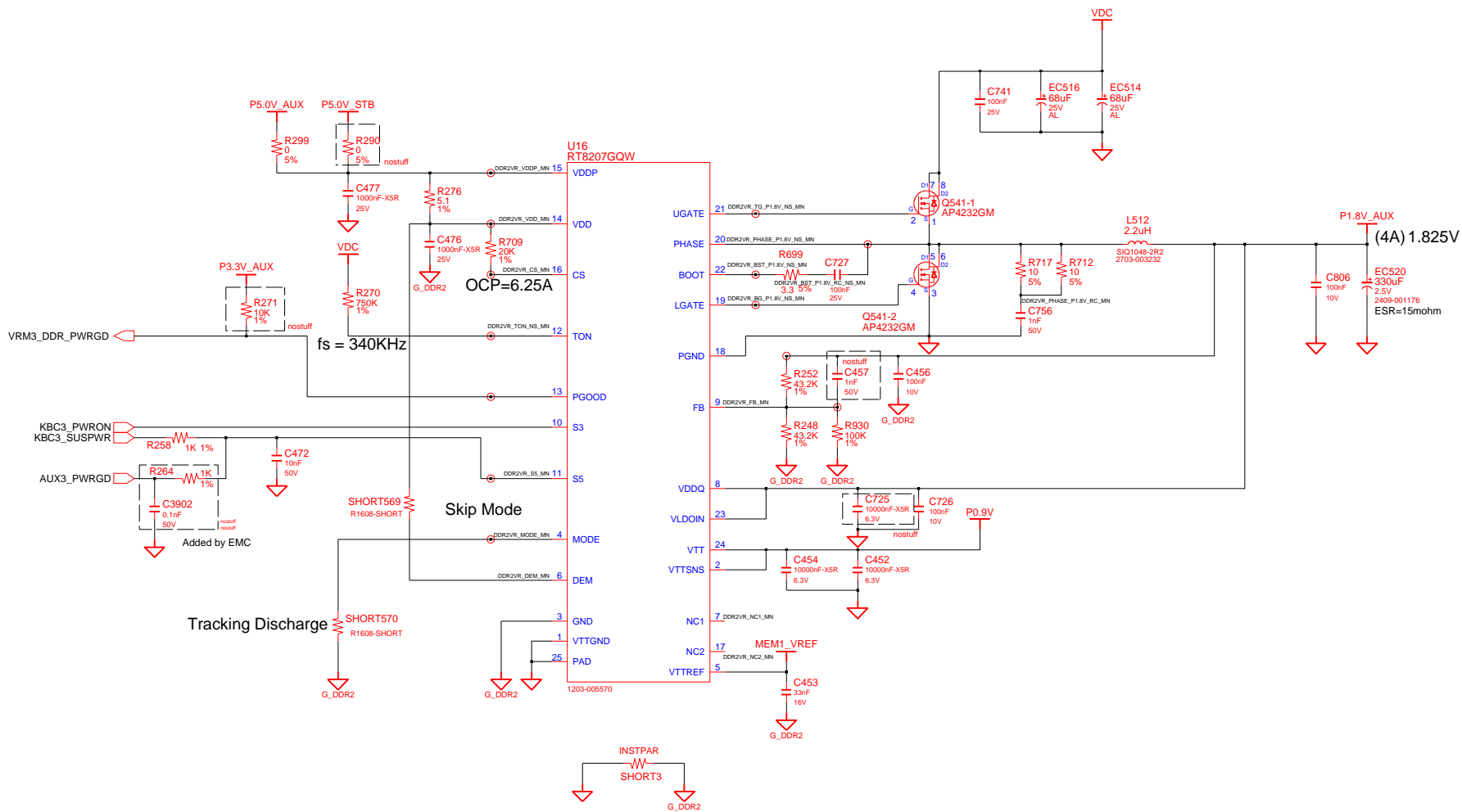


DRAW	MS Yang	DATE	01/09/2008	BONN-E PWR_MV_3V_5V P3.3V_AUX / P5.0V_AUX	SAMSUNG ELECTRONICS	
CHECK	MK Kim	DEV. STEP	MP			
APPROVAL	BL Lee	REV	REV 1.0		PART NO.	BA41-01060A
MODULE CODE	undefined	LAST EDIT			April 11, 2009 10:05:58 AM	PAGE 56 OF 67

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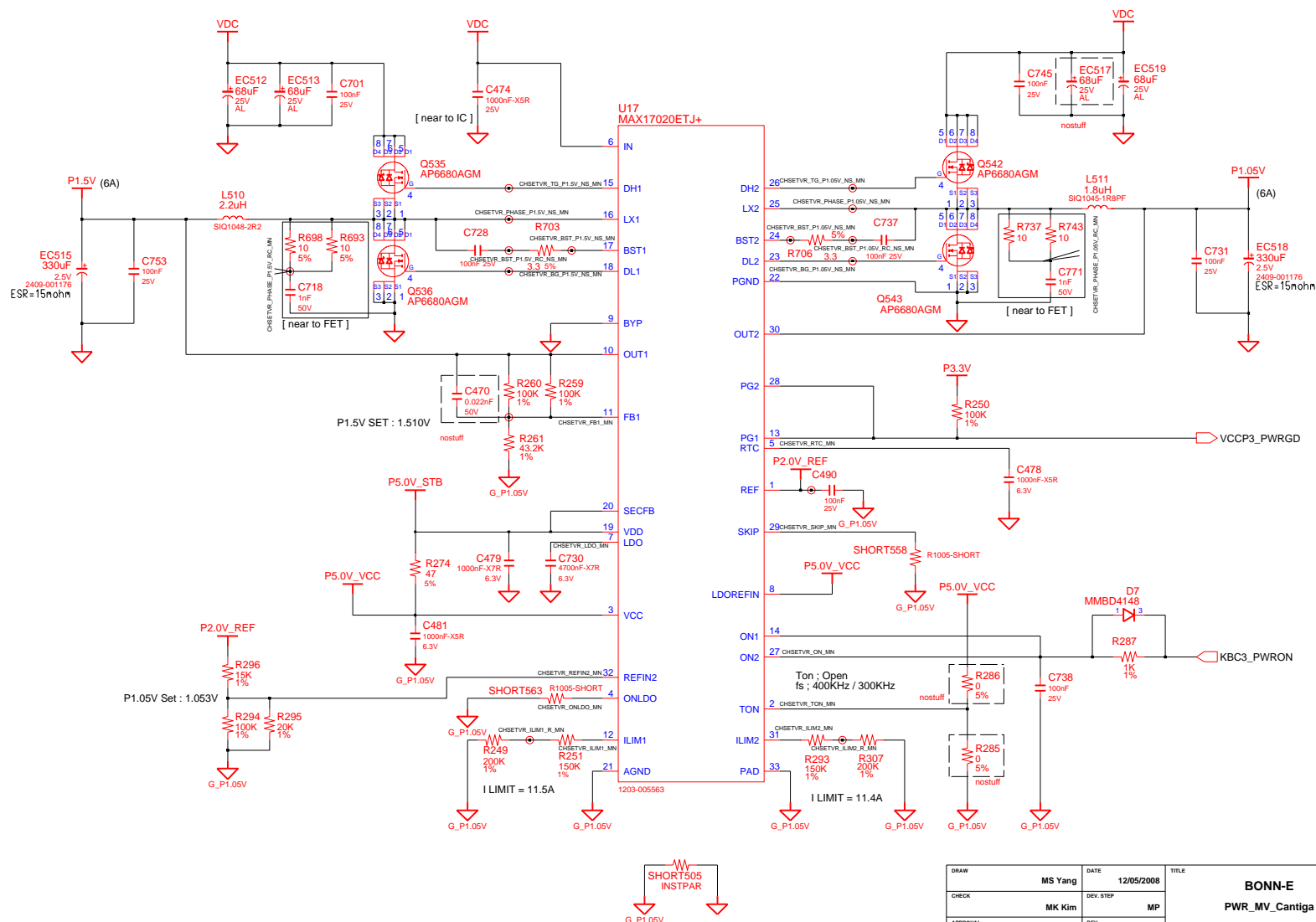
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DDR2 Power



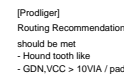
DESIGN	MS Yang	DATE	12/05/2008	TITLE	BONN-E PWR_MEMORY DDR2 POWER	SAMSUNG ELECTRONICS
CHECK	MK Kim	REV. STEP	MP			PART NO. BA41-01060A
APPROVAL	BL Lee	REV	REV 1.0			
MODULE CODE	undefined	LAST EDIT	April 11, 2009 10:05:58 AM	PAGE	57	OF 67

CHIPSET POWER(P1.5V & P1.05V)



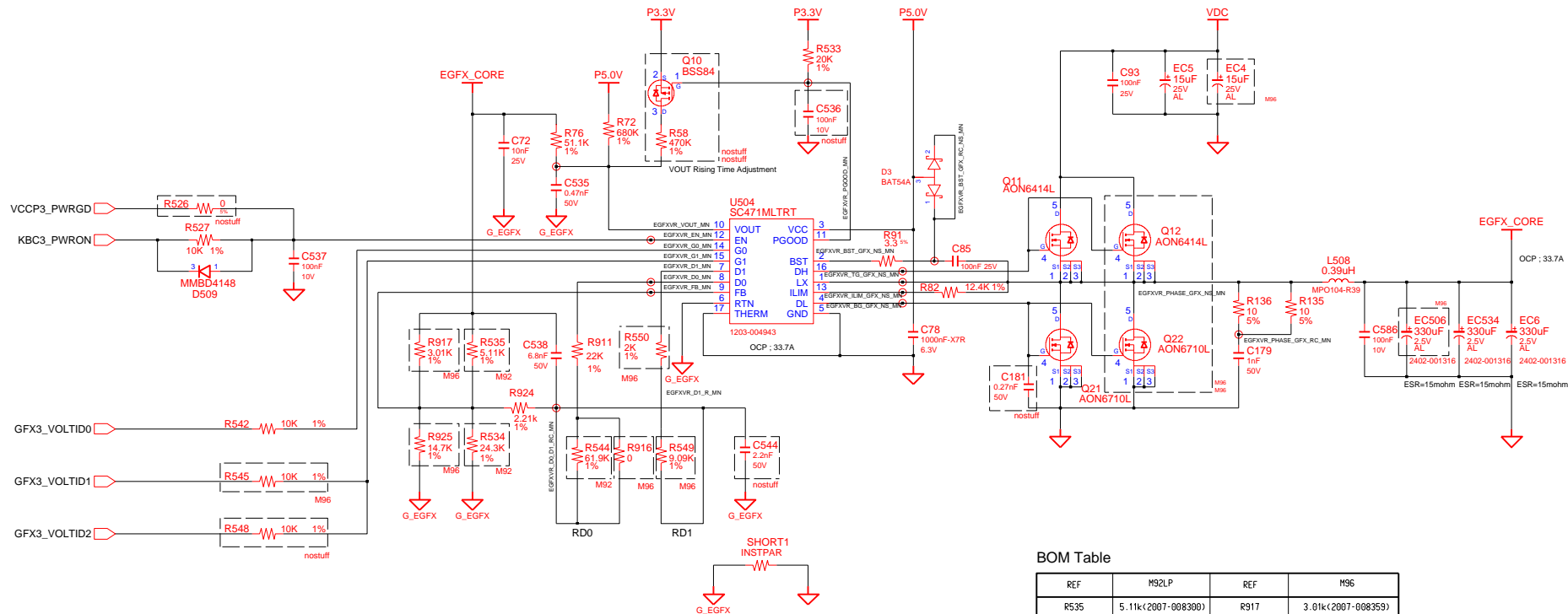
DRAW	MS Yang	DATE	12/05/2008	BONN-E PWR_MV_Cantiga P1.5V_AUX, P1.05V	SAMSUNG ELECTRONICS	
CHECK	MP Kim	DEV. STOP	MP			
APPROVAL	BL Lee	REV	REV 1.0		PART NO.	BA41-01060A
MODULE CODE	undefined	LAST EDIT	April 11, 2009 10:05:58 AM		PAGE	58 OF 67

CPU VRM [INTERSIL]



DESIGN	MS Yang	DATE	12/05/2008	TITLE	BONN-E PWR_CPU_MV_ISL6266 CPUI VRM (IMVP6+)	SAMSUNG ELECTRONICS
CHECK	MK Kim	DEV. STEP	MP			
APPROVAL	BL Lee	REV	REV 1.0			BA41-01060A
MODULE CODE	undefined	LAST EDIT	April 11, 2009 10:05:58 AM			PAGE 59 OF 67

Ext. GFX Core Power [Semtech]



Power Table (by AMD Power Play)

Condition	GFX3_VOLTID2	GFX3_VOLTID1	GFX3_VOLTID0	M92-M2 LP		GFX3_VOLTID2	GFX3_VOLTID1	GFX3_VOLTID0	M96		
				Spec	Calculated				Spec	Calculated	Measured
High Performance	Reserved	Reserved	1	0.95V	0.953V	Reserved	1	1	1.15V	1.139V	1.1543V
UVD	Reserved	Reserved	1	0.95V	0.953V	Reserved	1	0	1.10V	1.073V	1.0865V
Battery - Dual Display	Reserved	Reserved	1	0.95V	0.953V	Reserved	0	1	1.00V	0.987V	1.0085V
Battery - Single Display	Reserved	Reserved	0	0.90V	0.908V	Reserved	0	0	0.90V	0.904V	0.9133V

BOM Table

REF	M92LP	REF	M96
R535	5.11k(2007-008300)	R917	3.01k(2007-008359)
R534	24.3k(2007-007237)	R925	14.7k(2007-007521)
R544	61.9k(2007-002951)	R916	0 (2007-0000670)
R550	nostuff	R550	2k(2007-000663)
R549	nostuff	R549	9.09k(2007-007445)
R545	nostuff	R545	10k(2007-007142)
Q12	nostuff	Q12	A0N6114 (0505-000280)
EC506	nostuff	EC506	330kF(2402-001316)

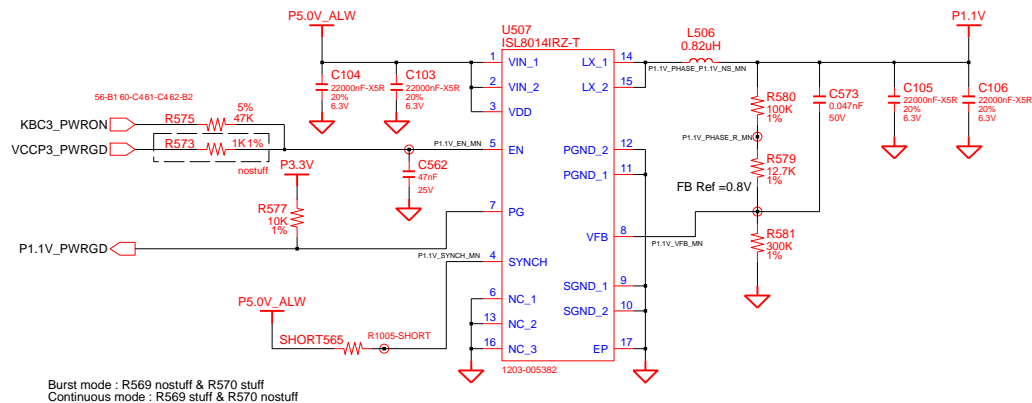
DESIGN	MS Yang	DATE	12/05/2008	BONN-E GFX_POWER EXT. GFX VDDC (SC471M)	SAMSUNG ELECTRONICS	
CHECK	MK Kim	DEV. STEP	MP			
APPROVAL	BL Lee	REV	REV 1.0			
PART NO.						BA41-01060A
MODULE CODE		LAST EDIT			April 11, 2009 10:05:58 AM	PAGE 60 OF 67

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P1.1V

P1.1V(External Gfx)



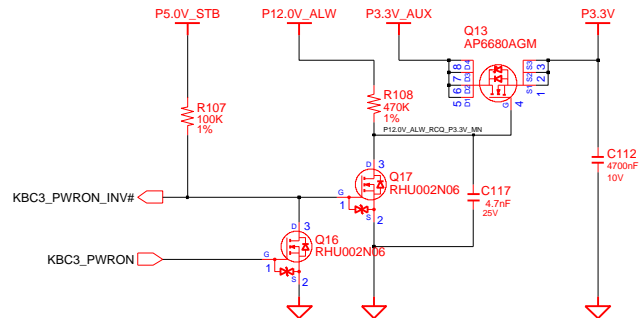
DRAW	MS Yang	DATE	12/05/2008	TITLE	BONN-E	SAMSUNG
CHECK	MK Kim	REV. STEP	MP	PWR_MV_Switched	PART NO.	ELECTRONICS
APPROVAL	BL Lee	REV	REV 1.0	P1.1V	BA41-01060A	
MODULE CODE		LAST EDIT	April 11, 2009 10:05:58 AM	PAGE	61	OF 67

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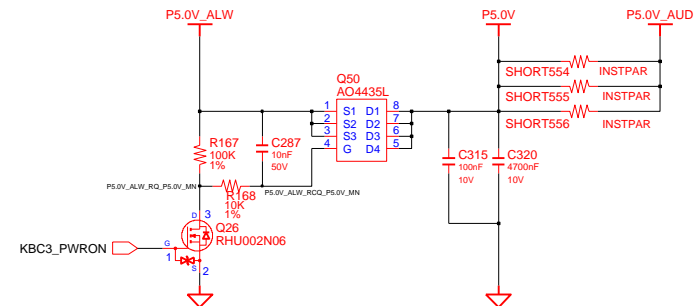
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Switched Power

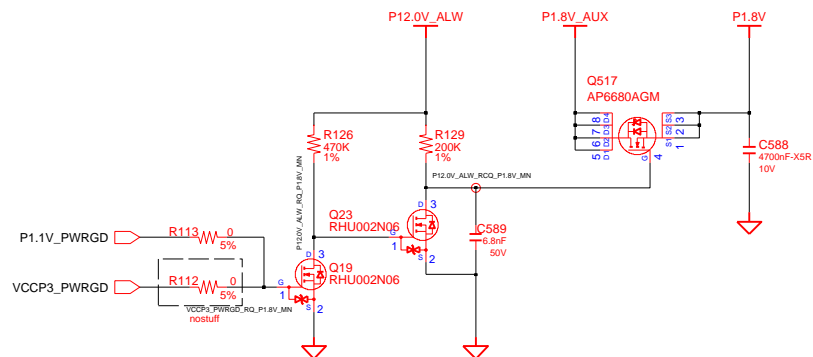
Switched Power On (P3.3V)



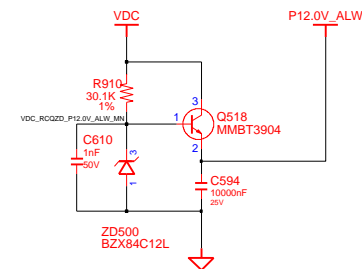
Switched Power On (P5.0V)



Switched Power On (P1.8V)



P12.0V_ALW

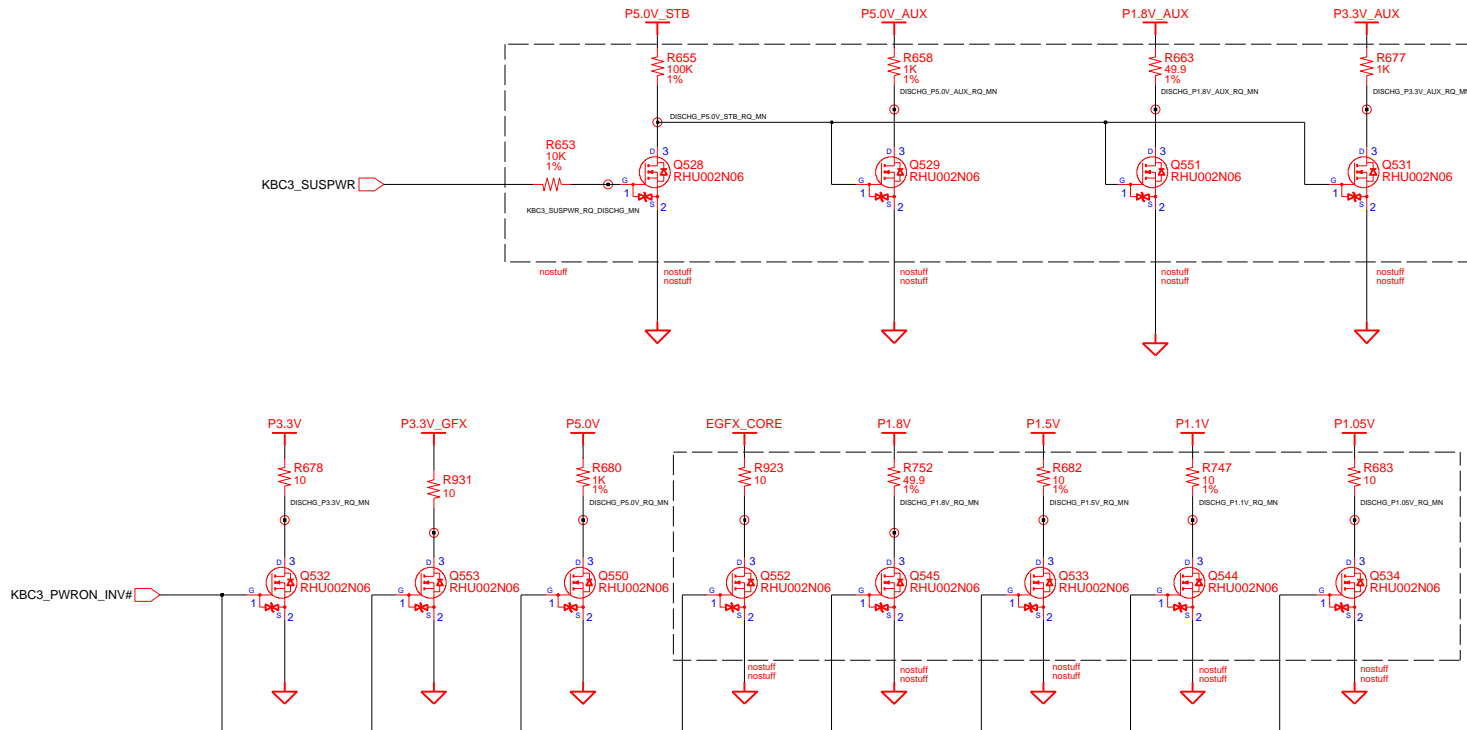


DRAWN	MS Yang	DATE	12/05/2008	TITLE	BONN-E	SAMSUNG
CHECK	MK Kim	REV. STEP	MP	PWR_MV_SWITCHED	ELECTRONICS	
APPROVAL	BL Lee	REV	REV 1.0	SWITCHED POWER	PART NO.	BA41-01060A
MODULE CODE		LAST EDIT			April 11, 2009 10:05:58 AM	PAGE 62 OF 67

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POWER DISCHARGER

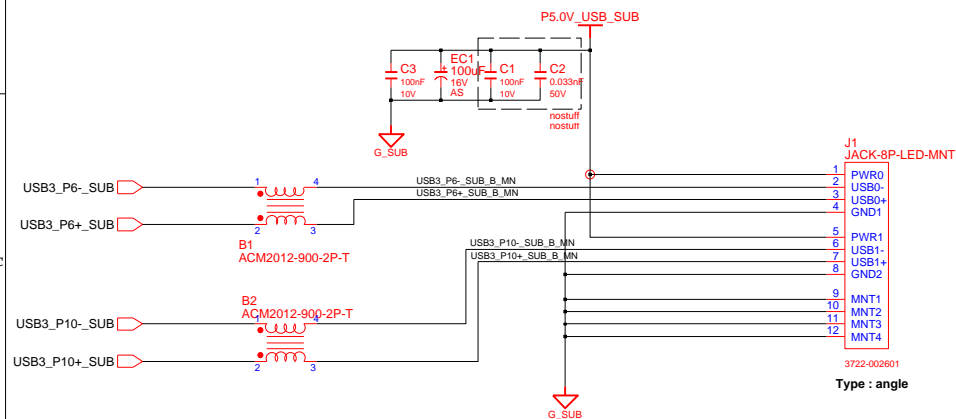


DRAW	MS Yang	DATE	12/05/2008	TITLE	BONN-E	SAMSUNG
CHECK	MK Kim	REV. STEP	MP	PWR_MV_DISCHARGER	ELECTRONICS	
APPROVAL	BL Lee	REV	REV 1.0	DISCHARGING LOGIC	PART NO.	BA41-01060A
MODULE CODE	undefined	LAST EDIT	April 11, 2009 10:05:58 AM	PAGE	63	OF 67

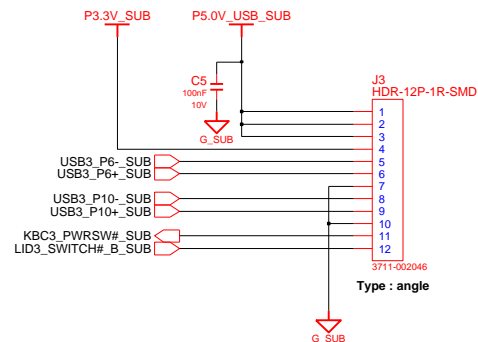
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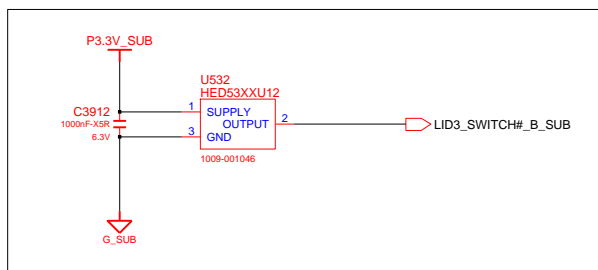
2 USB PORT & POWER S/W SUB B'D



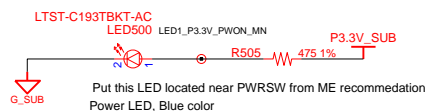
SUB TO MAIN USB CONN



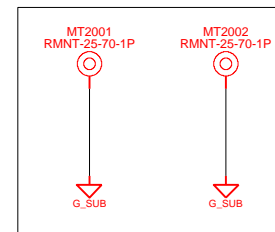
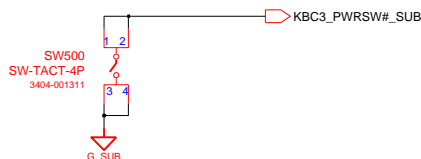
LID_SWITCH (Bonn only)



Power ON LED



Power Switch Button



USB sub board mount hole

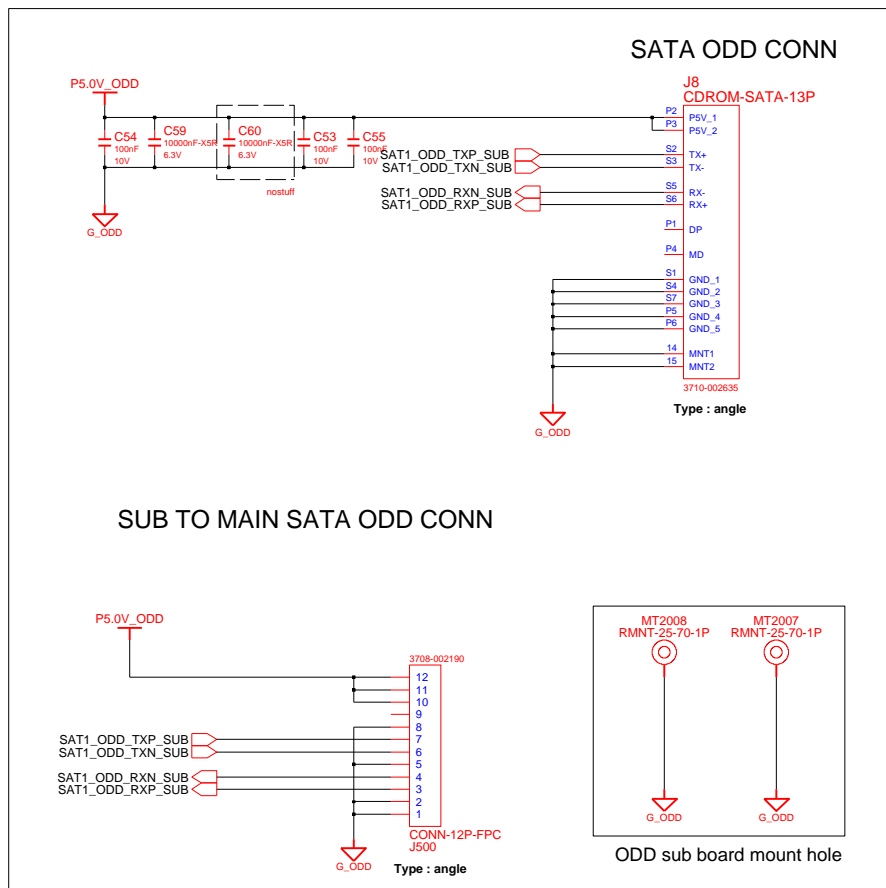
DESIGN	MS Yang	DATE	12/05/2008	TITLE	BONN-E	SAMSUNG
CHECK	MK Kim	REV. STEP	MP	SUB BOARD1	ELECTRONICS	
APPROVAL	BL Lee	REV	REV 1.0	2 USB & POWER SW	PART NO.	BA41-01060A
MODULE CODE		LAST EDIT		April 11, 2009 10:05:58 AM	PAGE	64 OF 67

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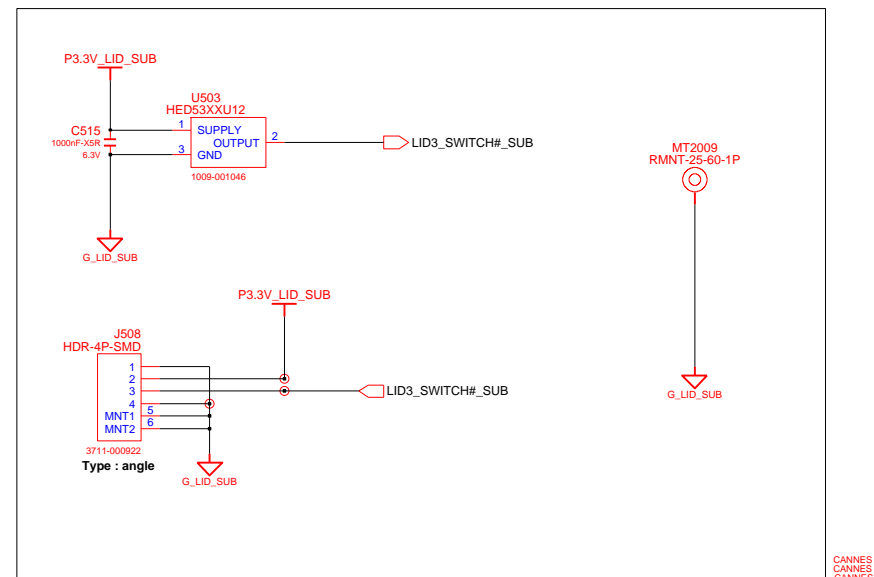
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SATA ODD & LID SW SUB BOARD

SATA ODD SUB BOARD



LID SWITCH SUB BOARD (Canne only)

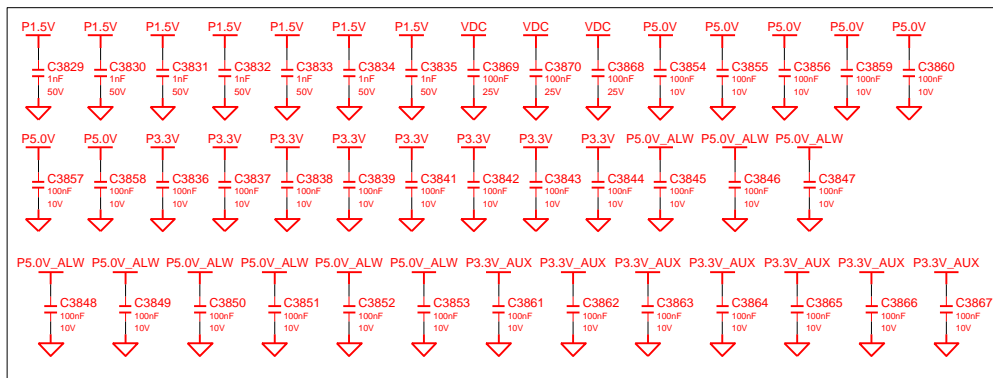


Bonn : nostuff
Cannes : stuff

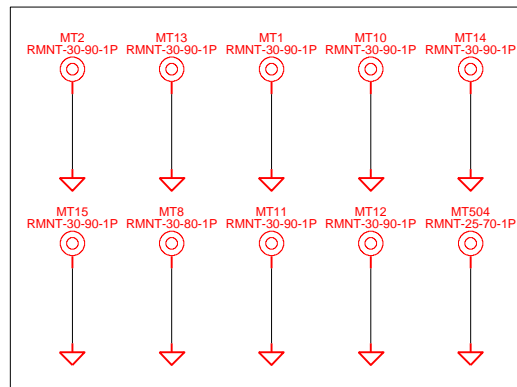
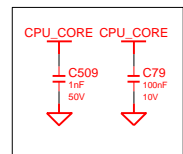
DRAW	MS Yang	DATE	12/05/2008	TITLE	BONN-E SUB BOARD2 SATA ODD SUB BOARD	SAMSUNG ELECTRONICS
CHECK	MK Kim	REV. STEP	MP			PART NO. BA41-01060A
APPROVAL	BL Lee	REV	REV 1.0			
MODULE CODE	undefined	LAST EDIT	April 11, 2009 10:05:58 AM	PAGE	65	OF 67

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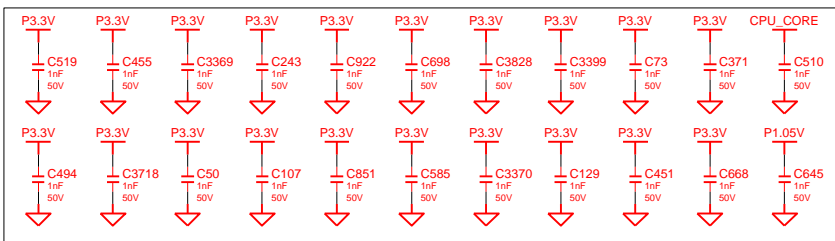
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Mainboard Mount ((30,80)x9), (30,90)x9), (25,70)x1))

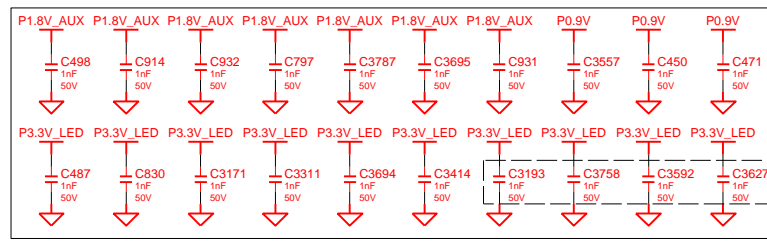
Add for EMC , 2009.01.06

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

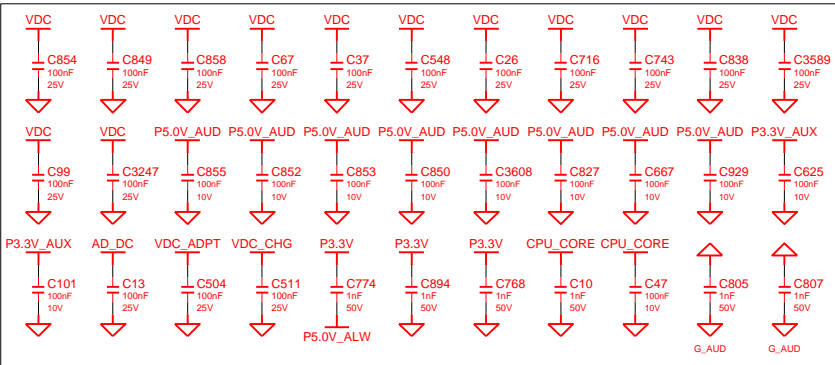
Add for EMC (Top), 2008.11.19



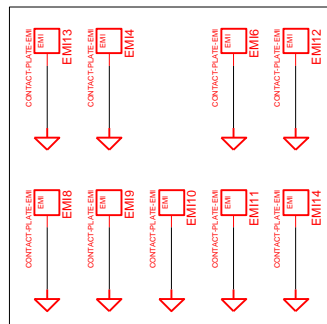
Add for EMC (5th Layer), 2008.11.19



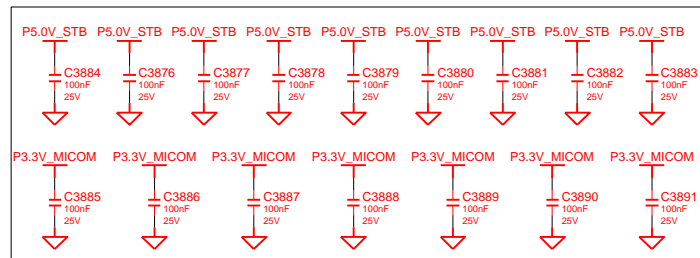
Add for EMC (Bottom), 2008.11.19

nostuff
nostuff
nostuff
nostuff

Add for EMC (Bottom), 2008.11.19



Add for EMC , 2009.01.07



Add for EMC , 2009.02.02

nostuff
nostuff
nostuff
nostuff
nostuff
nostuff

DRAW	MS Yang	DATE	12/05/2008	TITLE	BONN-E	SAMSUNG
CHECK	MK Kim	REV. STEP	MP	ICT PORT	ICT PORT	ELECTRONICS
APPROVAL	BL Lee	REV	REV 1.0	ICT PORT	PART NO.	BA41-01060A
MODULE CODE	LAST EDIT	DATE	April 11, 2009 10:05:58 AM	PAGE	66	OF 67

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- KBCD3_TCLK
- MCD03_SDWP
- SM0B3_DATA
- SPI3_C50#
- SPI3_MISO
- SPI3_MOSI
- THM33_STP#
- VRM1_SEN1
- VRM1_SEN2
- WLON_LED#
- AUD3_SHDN#
- AUX3_PWRGD
- PLT3_RST#
- CLK3_PWRGD
- CLK3_USB48
- CPU1_A20M#
- CPU1_BPR1#
- CPU1_BREQ#
- CPU1_BSEL0
- CPU1_BSEL1
- CPU1_BSEL2
- CPU1_D#(0)
- CPU1_DBSY#
- CPU1_DRDY#
- CPU1_FERR#
- CPU1_HITM#
- CPU1_INIT#
- CPU1_LOCK#
- CPU1_TRDY#
- CPU1_TRST#
- CRT3_GREEN
- CRT3_HSYNC
- CRT3_VSYNC
- EXP3_CPEP#
- KBC3_CHGEN
- KBC3_PWRGD
- KBC3_PWRON
- KBCD3_TDATA
- LAN3_CT12
- MCD03_SDCD0#
- MCD03_SCLK
- MCD03_SDCMD
- MCH1_HVREF
- PEX3_WAKE#
- AUD3_GP10#

[illegible]

KBDC3_RSMRST#
 KBDC3_RUNCIN#
 KBDC3_SMDATA#
 KBDC3_SPMUTE#
 KBDC3_SPMUTE#
 KBDC3_KSOI(1)
 KBDC3_KSOI(2)
 KBDC3_KSOI(3)
 KBDC3_KSOI(4)
 KBDC3_KSOI(5)
 LDC3_SWITCH#
 LPD3_LFRAME#
 MCD3_SDDATA0
 MCD3_SDDATA1
 MCD3_SDDATA2
 MCD3_HSXWING
 MCCH3_CLKREQ#
 MCCH3_EXTROS#
 MCCH3_EXTSTA#
 MIN3_CLKREQ#
 MCH3_CLKRUN#
 SIM3_DETECT#
 HDQA3_SENS_HP#
 HDQA3_CLK_0
 HDQA3_DPRPV#
 CHP3_PN_PVNC#
 CHP3_SATALED#
 CHP3_SUSTAT#
 HDQA3_AUD_CLK#
 HDQA3_AUD_RST#
 HDQA3_AUD_SDIO
 HDQA3_AUD_SDM
 HDQA3_HDMI_SDC
 HDQA3_MDC_BCLK
 HDQA3_MDC_RST#
 HDQA3_MDC_SD1
 HDQA3_MDC_SYNC
 ITP3_DBRESE#
 KBDC3_CAPSLED#

 KBDC3_WAKESCIF#
 KBDC3_PSALWON#
 LCDC3_EDP_CLK
 MCCH3_HDMI_CLK#
 MCCH3_HDMI_SYNC#
 MCCH3_LCDDVDON#
 PEGS_HDMI_CLK#
 PLT3_RST_ORP#
 AUD3_DSD_VREF#
 AUD3_DP_0_LEFT1
 AUD3_HP_0_LEFT1
 AUD3_MIC1_LEFT
 AUD3_MIC2_LEFT
 AUD3_MIC3_VREF#
 AUD3_MIC#
 CHP3_BIOS_CRIR#
 CHP3_CL_DATA_0
 CHP3_CL_RST_#
 CHP3_INTRUDER#
 AUD3_MIC1_VREF#
 CPU3_THMRTRIP#
 HDQA3_HDMI_BCLK
 HDQA3_HDMI_RST#
 HDQA3_HDMI_SDC#
 HDQA3_HDMI_SYNC#
 KBDC3_CHKPWRSPIN#
 KBDC3_LED_ANC#
 KBDC3_USBPWROFN#
 LCDC3_EDP_DATA#
 PEGS_HDMI_DATA#
 TPDS_L_BUTTON#
 TPDS_R_BUTTON#
 VGAI1_HDM_PWR#
 VGAI2_HDM_PWR#
 YRMS_DP_HPD#
 YRMS_DP_PWRGD#

[illegible][illegible]

@P1.05V_PEG
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 @VDC
 @VDC
 @VDC
 @VCC_CRT
 @VCC_CRT
 @VCC_CRT
 @VCC_CRT
 @VDC_CHG
 @VDC_CHG
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 @VDD_LED
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 @VDD_ADPOT
 @VDD_ADPOT
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 @VDD_ADPOT

- ☒ EGFX_BB
- ☒ EGFX_CORE
- ☒ G_EGFX
- ☒ G_P3.3V
- ☒ P1.05V
- ☒ P1.1V
- ☒ P1.1V_DPE
- ☒ P1.8V
- ☒ P1.8V_A2VDD
- ☒ P1.8V_AVDD
- ☒ P1.8V_VDD
- ☒ P1.8V_VDDD
- ☒ P3.3V_GFX

DESIGN	MS Yang	DATE	12/05/2008	<div style="text-align: center;"> BONN-E TEST POINT TEST POINT </div>	<div style="text-align: center;"> SAMSUNG ELECTRONICS </div>	
CHECK	MK Kim	DEV. STEP	MP			
APPROVAL	BL Lee	REV	REV 1.0		PART NO.	BA41-01060A
MODULE CODE	LAST EDIT			April 11, 2009 10:05:58 AM	PAGE 67	OF 67