

HOUSTON14/15_Optimus

CPU : Arrandale BGA

Chip Set : Intel Ibex Peak

GFX : N11P / N11M / INT.GFX

Remarks : Calpella Platform

Model Name : Houston14/15 Optimus

PBA Name : MAIN

PCB Code : BA41-01386A (GCE)

BA41-01387A (NY)

BA41-01388A (HST)

BA41-01389A (GBM)

Dev. Step : PV

Revision : 1.0

T.R. Date : 2010.08.13

Design	CHECK	APPROVAL

Owner : SEC Mobile R & D

Signature :

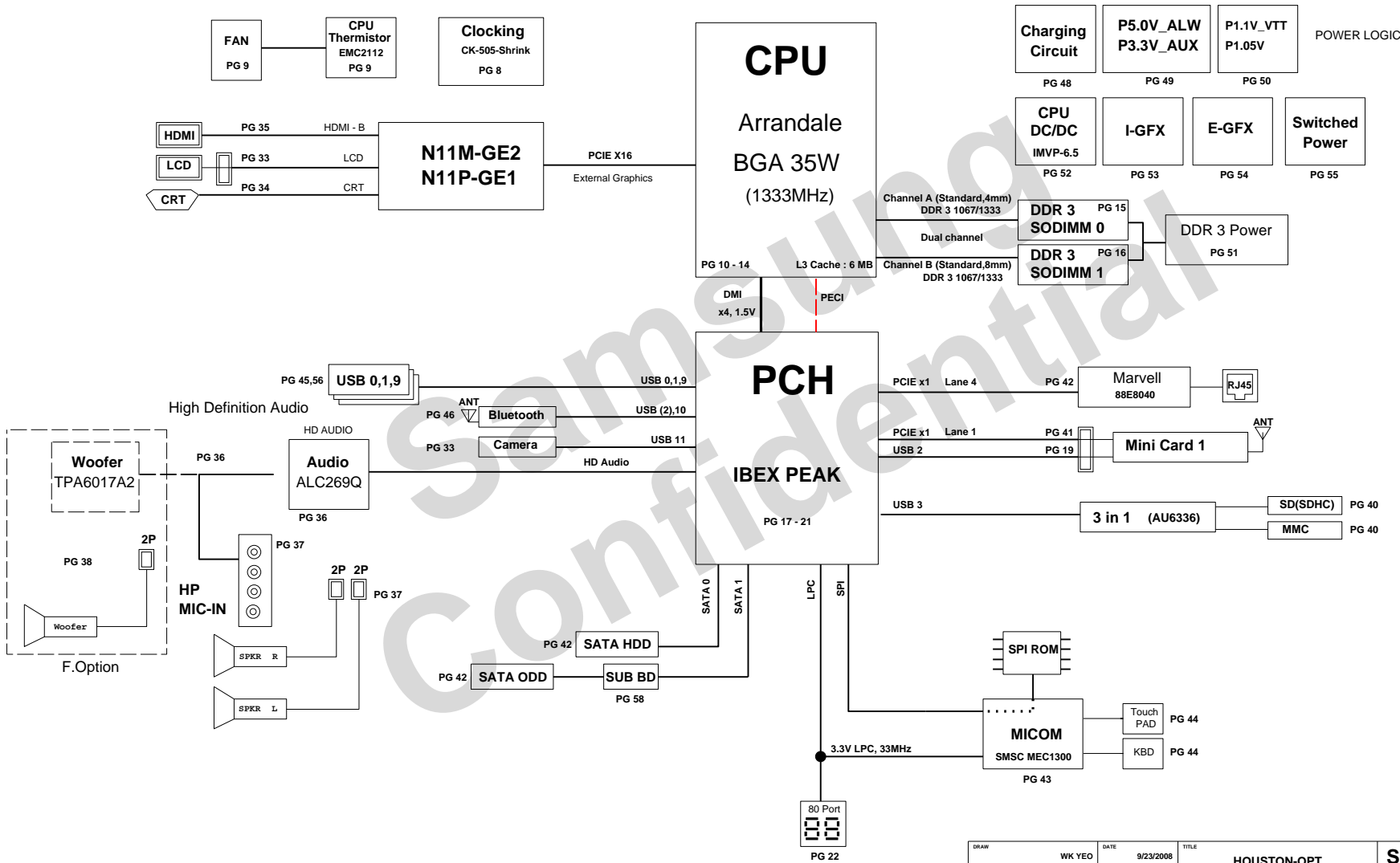
X

sheet01 : Cover
 sheet02 : BLOCK DIAGRAM
 sheet03 : BOARD INFORMATION
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 sheet06 : POWER SEQUENCE
 sheet07 : CLOCK DISTRIBUTION
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 sheet09 : Thermal Sensor
 sheet10 : CPU
 sheet11 : CPU
 sheet12 : CPU
 sheet13 : CPU
 sheet14 : CPU
 sheet15 : DDR3 SODIMM #0
 sheet16 : DDR3 SODIMM #1
 sheet17 : PCH-IbexPeak
 sheet18 : PCH-IbexPeak
 sheet19 : PCH-IbexPeak
 sheet20 : PCH-IbexPeak
 sheet21 : PCH-IbexPeak
 sheet22 : 80 port
 sheet23 : N11X-GE2/GE1
 sheet24 : N11X-GE2/GE1
 sheet25 : N11X-GE2/GE1
 sheet26 : N11X-GE2/GE1
 sheet27 : N11X-GE2/GE1
 sheet28 : GFX memory
 sheet29 : GFX memory
 sheet30 : GFX memory

sheet31 : GFX memory
 sheet32 : N11X STRAP
 sheet33 : LVDS / CAMERA
 sheet34 : CRT
 sheet35 : HDMI
 sheet36 : Audio - ALC269
 sheet37 : Audio - HP/MIC
 sheet38 : WOOFER(2.1CH)
 sheet39 : LAN (Marvell 88E8040)
 sheet40 : 3-in-1 card (AU6336)
 sheet41 : WLAN
 sheet42 : SATA interface
 sheet43 : MICOM / BIOS
 sheet44 : MICOM Glue Logic (KBD / TP)
 sheet45 : LED
 sheet46 : USB connector
 sheet47 : Bluetooth
 sheet48 : Power - charger
 sheet49 : Power - P3.3V_AUX / P5.0V_AUX
 sheet50 : Power - P1.05V (Chipset Power)
 sheet51 : Power - DDR3
 sheet52 : Power - CPU VRM
 sheet53 : Power - IGFX_CORE
 sheet54 : Power - EGFX_CORE
 sheet55 : Power - Switched Power 1
 sheet56 : Power - Switched Power 2 (for Optimus)
 sheet57 : Power - Power Discharge
 sheet58 : USB/POWER SW SUB BD
 sheet59 : ODD Sub B'd / Battery Sub B'd(for 15")
 sheet60 : ICT FREE

DRAW	WK YEO	DATE	10/10/2008	TITLE	HOUSTON-OPT	SAMSUNG
CHECK	BW YOO	DEV. STEP	PR	MAIN		ELECTRONICS
APPROVAL	SH LEE	REV	REV 1.0	COVER		PART NO.
MODULE CODE		LAST EDIT				BA41-####A
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BLOCK DIAGRAM



DRAW	WK YEO	DATE	9/23/2008	TITLE	HOUSTON-OPT MAIN BLOCK DIAGRAM	SAMSUNG ELECTRONICS
CHECK	BW YOO	DEV. STEP	PR			PART NO. BA41-####A
APPROVAL	SH LEE	REV	REV 1.0			
MODULE CODE	undefined	LAST EDIT		August 13, 2010 10:44:13 AM	PAGE 2 OF 60	

SCHEMATIC ANNOTATIONS AND BOARD INFORMATION

Crystal / Oscillator

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

LCD Pannel Detect (TBD)		
Devices	Resolution	PANNEL_DETECT_0

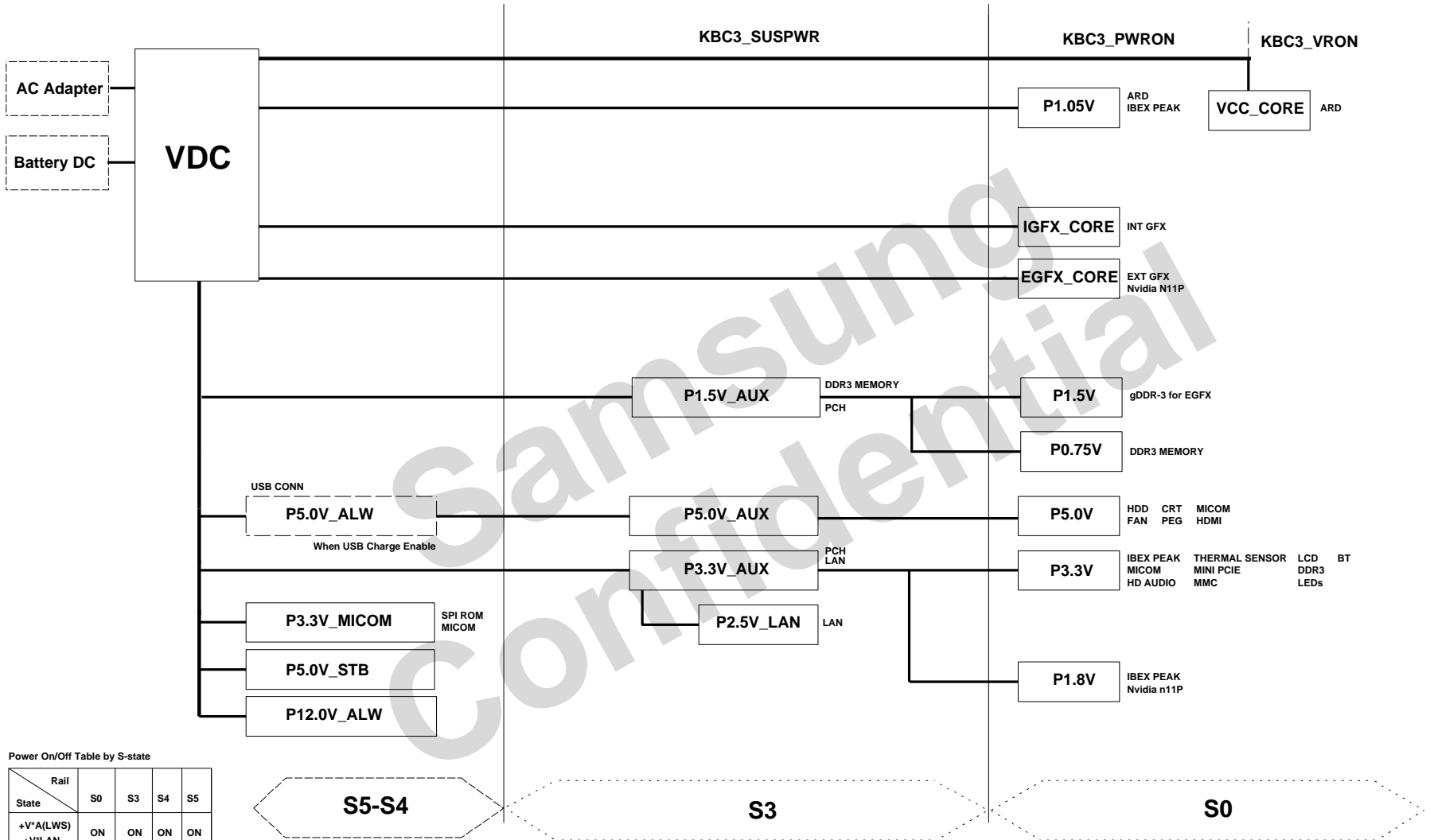
Devices	Address	Hex	Bus
IBEX PEAK	Master	-	SMBUS Master
CPU Thermal Sensor	0111 101x	7Ah	Thermal Sensor
SODIMM0	1010 000x	A0h	-
SODIMM1	1010 010x	A4h	-
Thermal Sensor on SODIMM0	0011 000x	30h	-
Thermal Sensor on SODIMM1	0011 010x	34h	-
CK-605M Shrink(Clock Generator)	1101 001x	D2h	Clock, Unused Clock Output Disable
Thermal Sensor on board	1101 100x	98h	
Power thermal management TS	1101 011x	96h	

SATA PORT Assign	
PORT #	ASSIGNED TO
0	HDD
1	ODD
2	(N/A WITH HM55)
3	(N/A WITH HM55)
4	
5	

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

POWER DIAGRAM

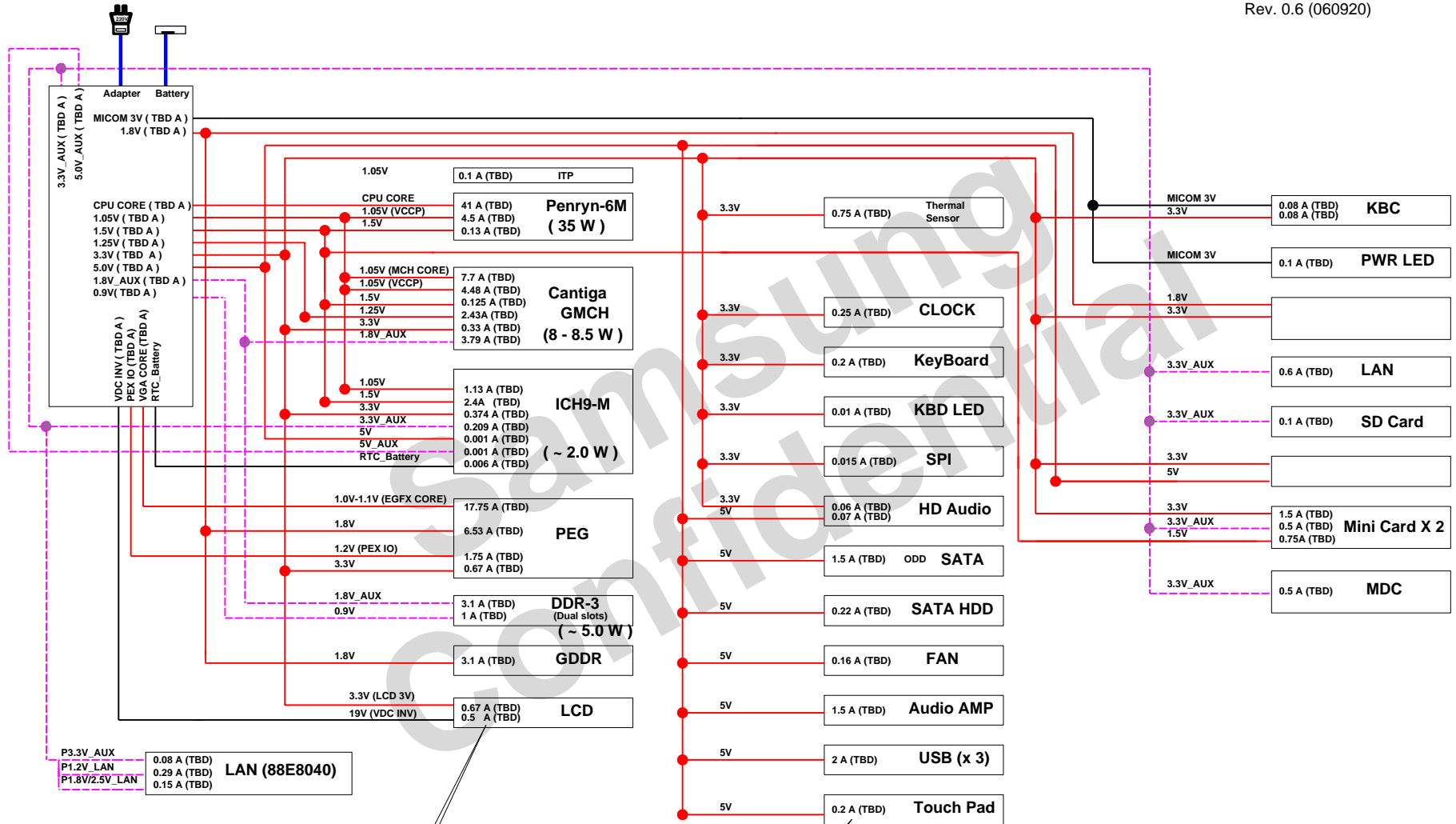
Rev 0.1



DRAW	WK YEO	DATE	9/23/2008	TITLE	HOUSTON-OPT MAIN	SAMSUNG ELECTRONICS
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MODULE CODE	undefined	LAST EDIT		August 13, 2010 10:44:13 AM	PAGE 4	OF 60

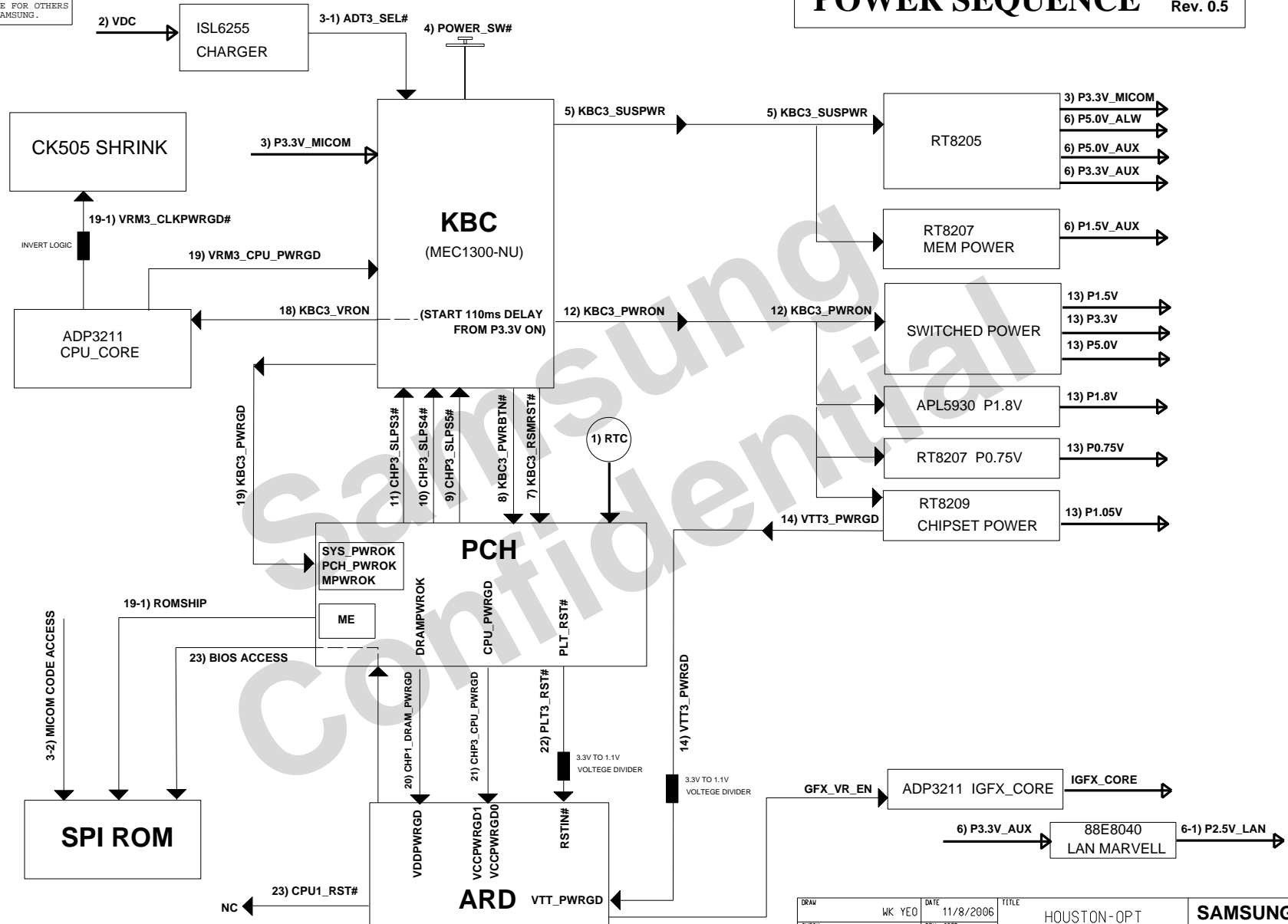
POWER RAILS ANALYSIS

Rev. 0.6 (060920)

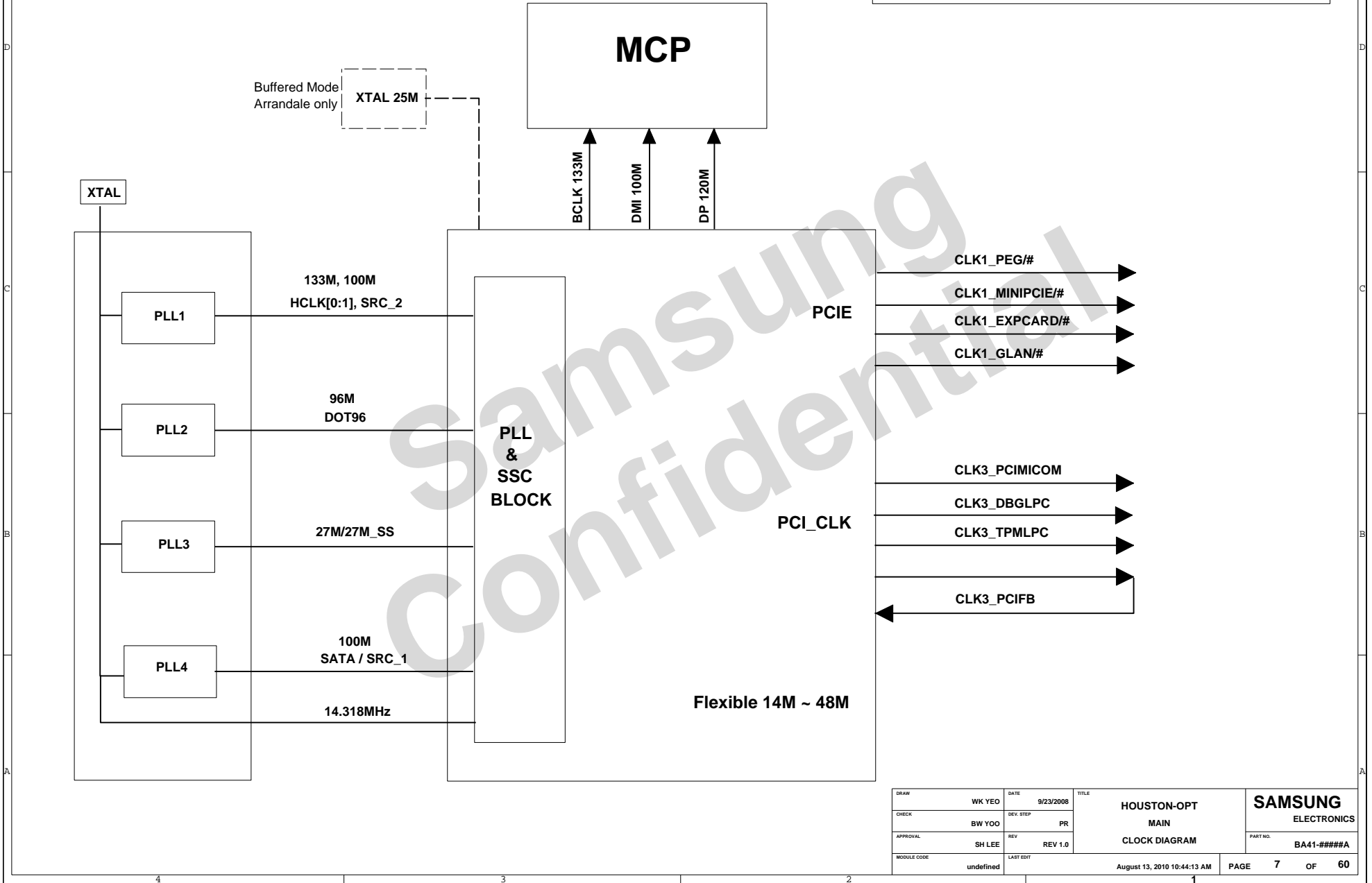


Value by Datasheet/Application notes (Value by measurement)

DRAW	WK YEO	DATE	9/23/2008	TITLE	HOUSTON-OPT MAIN POWER RAILS	SAMSUNG ELECTRONICS
CHECK	BW YOO	DEV. STEP	PR			PART NO. BA41-####A
APPROVAL	SH LEE	REV	REV 1.0			
MODULE CODE	undefined	LAST EDIT		August 13, 2010 10:44:13 AM	PAGE 5 OF 60	

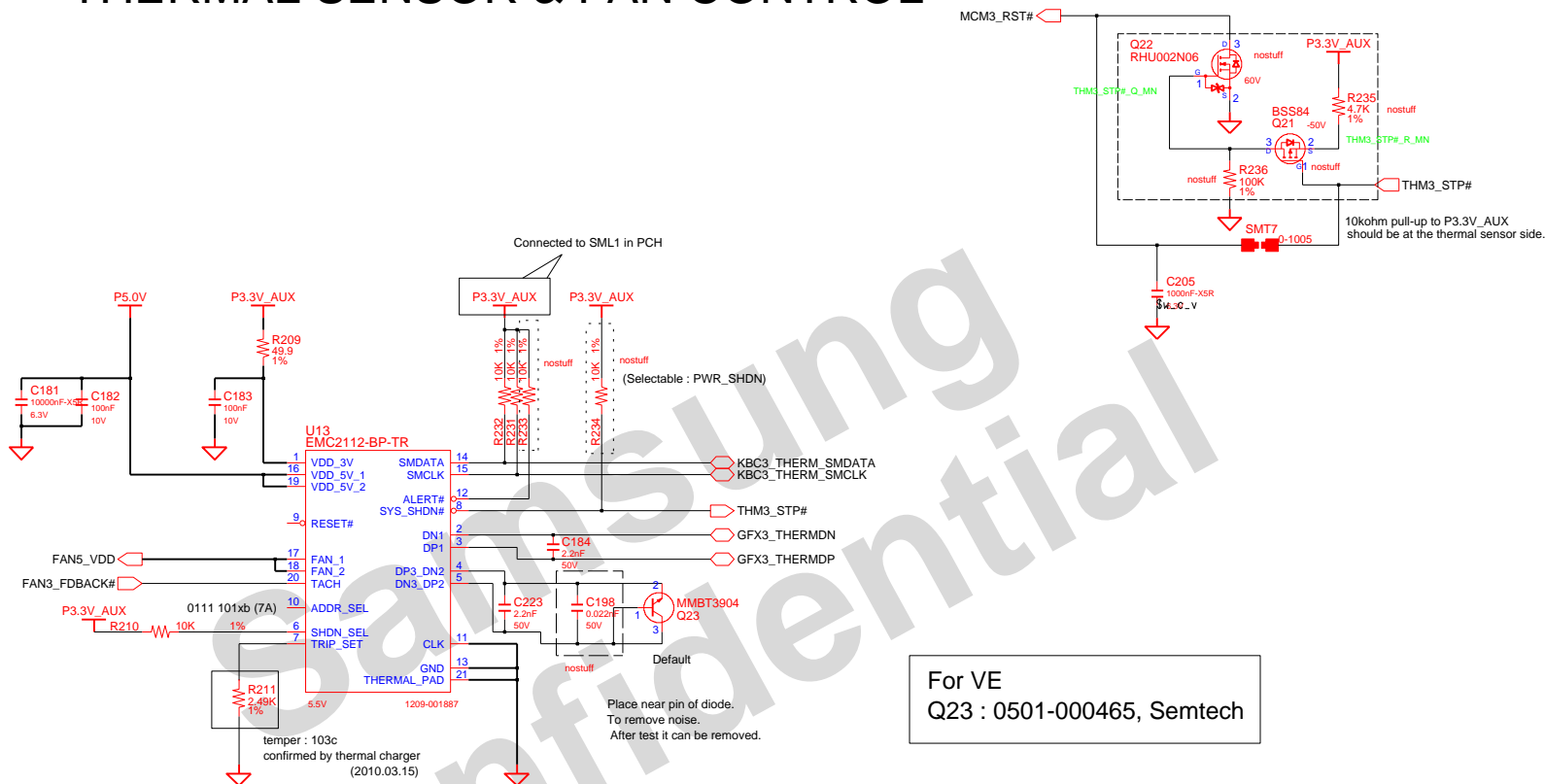


DRAW	WK YEO	DATE	11/8/2006	TITLE	HOUSTON-OPT MAIN POWER SEQUENCE	SAMSUNG ELECTRONICS
CHECK	BW YOO	DEV. STEP	PR			PART NO. BA41-#####
APPROVAL	SH LEE	REV	REV 1.0			
MODULE CODE	undefined	LAST EDIT	August 13, 2010 10:44:13 AM	PAGE	6	OF 60

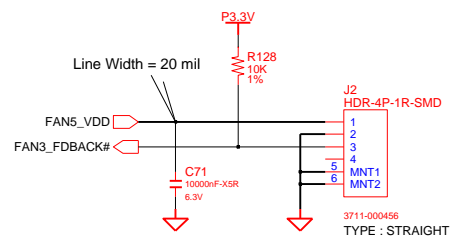


DRAW	WK YEO	DATE	9/23/2008	TITLE	HOUSTON-OPT MAIN CLOCK DIAGRAM	SAMSUNG ELECTRONICS
CHECK	BW YOO	DEV. STEP	PR			PART NO. BA41-####A
APPROVAL	SH LEE	REV	REV 1.0			
MODULE CODE	undefined	LAST EDIT		August 13, 2010 10:44:13 AM	PAGE 7 OF 60	

MICOM RESET

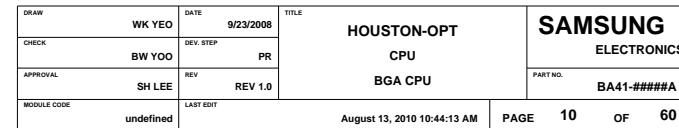


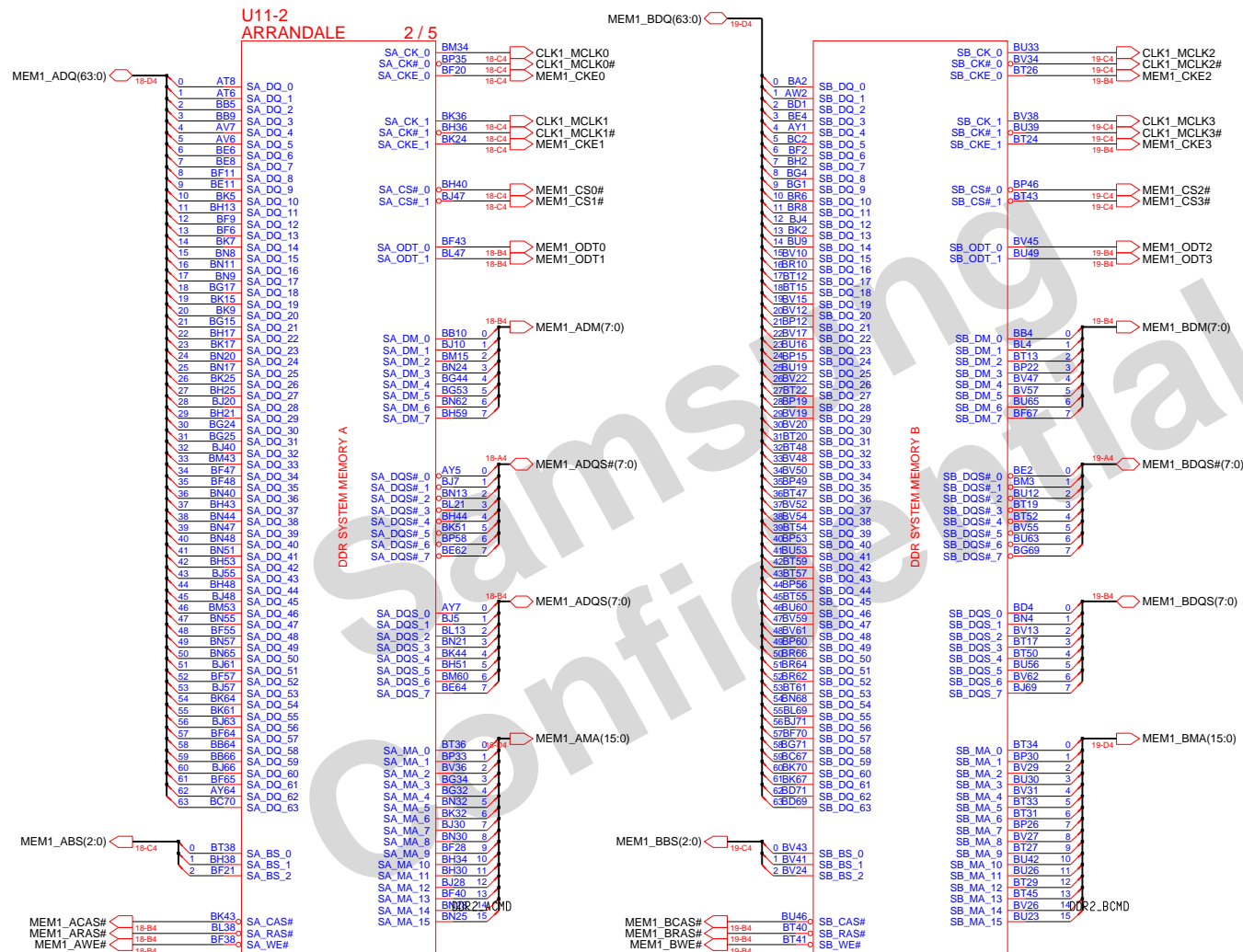
For VE
Q23 : 0501-000465, Semtech



DESIGN	WK YEO	DATE	9/23/2008	TITLE HOUSTON-OPT THERMAL SENSOR THERMAL SENSOR EMC2112	SAMSUNG ELECTRONICS
CHECK	BW YOO	DEV. STEP	PR		
APPROVAL	SH LEE	REV	REV 1.0		
PART NO. BA41-####A					
MODULE CODE	LAST EDIT			August 13, 2010 10:44:13 AM	PAGE 9 OF 60

PCIE Lane Reversal Adapted!!





0244277500

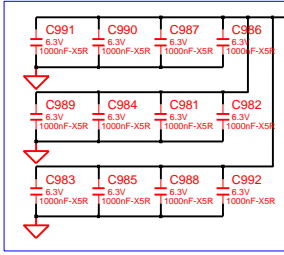
DRAW	WK YEO	DATE	9/23/2008	TITLE HOUSTON-OPT CPU BGA CPU	SAMSUNG ELECTRONICS
CHECK	BW YOO	DEV. STEP	PR		
APPROVAL	SH LEE	REV	REV 1.0		
MODULE CODE	undefined	LAST EDIT August 13, 2010 10:44:13 AM			PAGE 11 OF 60

ALL VTT DECAP IS SHARED

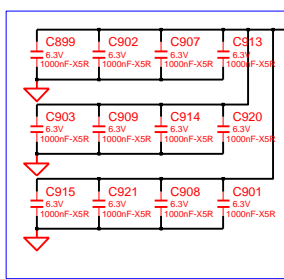
**VTT POWER SELECTION

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

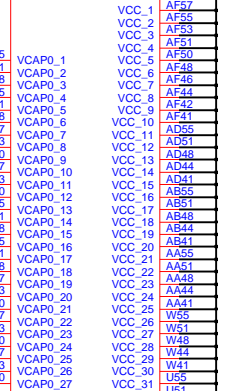
Charger : PI



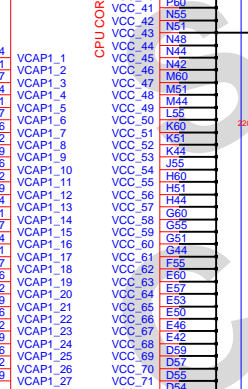
Charger : PI



U11-3
ARRANDALE3 / 5

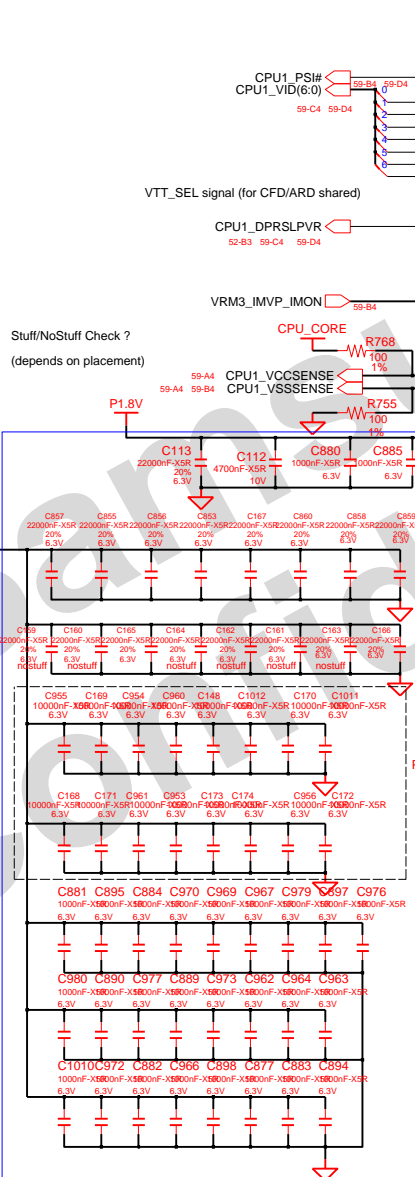


POWER

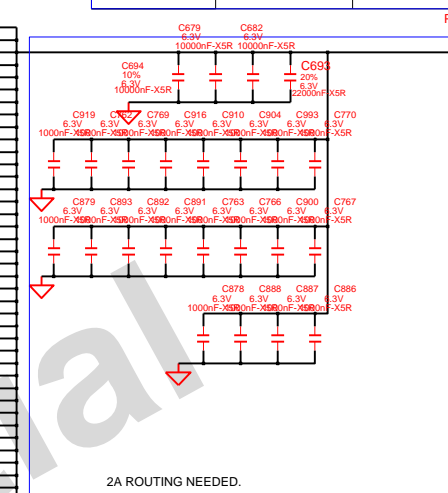
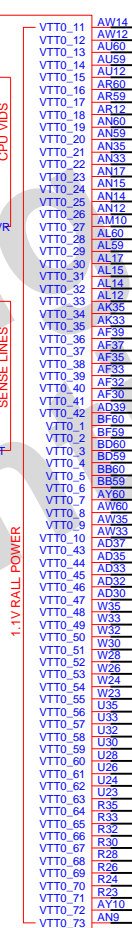


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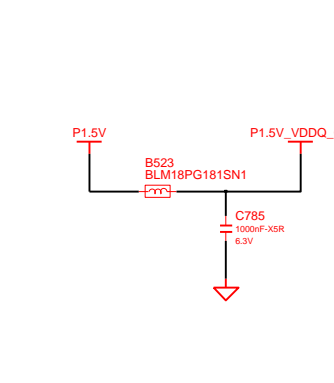
CPU CORE



Charger : PI

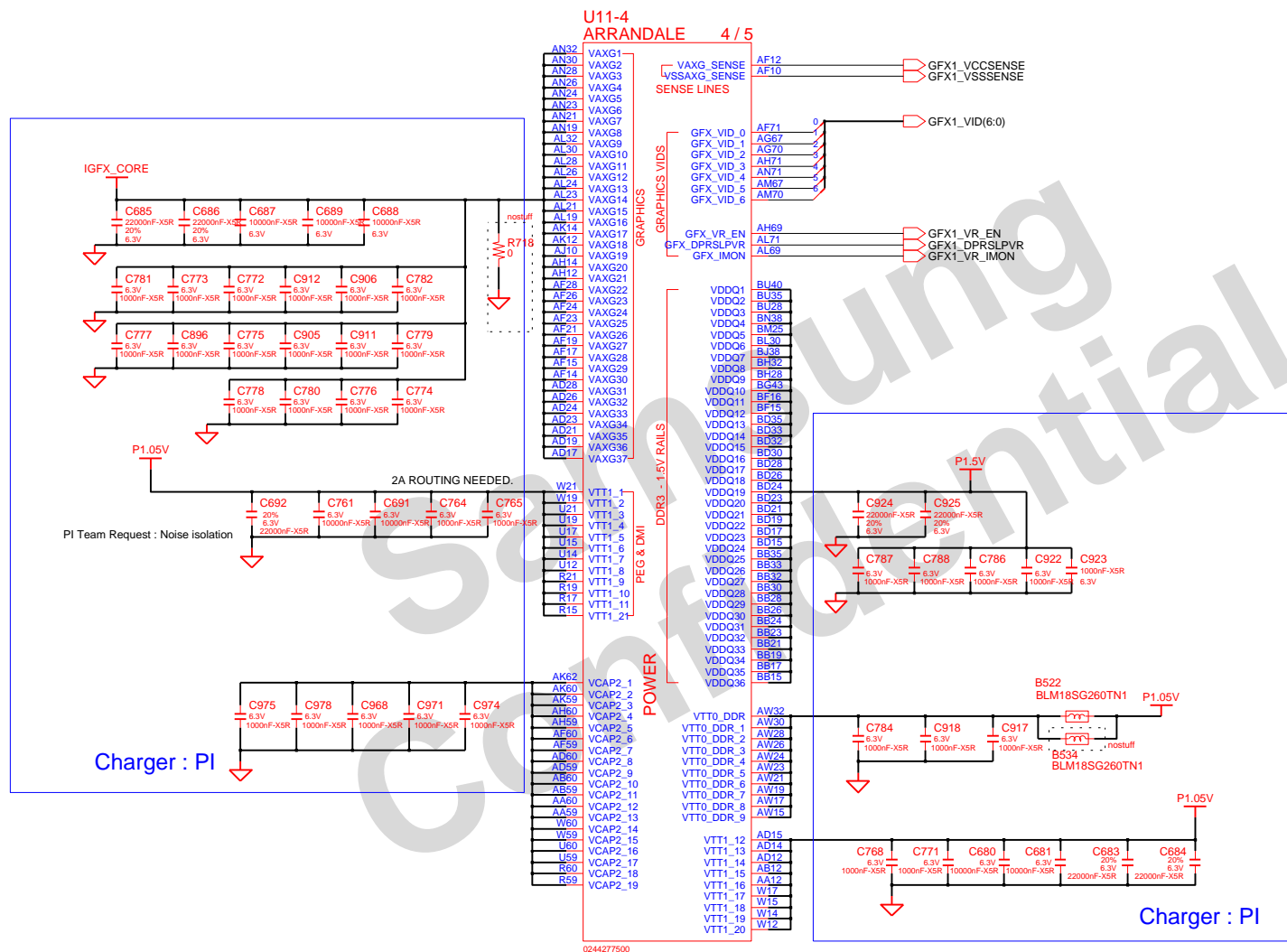


Charger : PI



	1uF	10uF	22uF	330uF
w Proddizer	25 pcs	0 pcs	16 pcs	0 pcs
w/o Proddizer	25 pcs	16 pcs	12 pcs	4 pcs

DESIGN	WK YEO	DATE	6/26/2009	TITLE	HOUSTON-OPT	SAMSUNG ELECTRONICS
CHECK	BW YOO	DEV. STEP	PR		CPU	
APPROVAL	SH LEE	REV	REV 1.0		BGA CPU	
MODULE CODE		LAST EDIT	August 13, 2010 10:44:13 AM	PAGE	12	OF 60



DESIGN	WK YEO	DATE	8/19/2009	TITLE HOUSTON-OPT CPU BGA CPU	SAMSUNG ELECTRONICS
CHECK	BW YOO	DEV. STEP	PR		
APPROVAL	SH LEE	REV	REV 1.0		
MODULE CODE		LAST EDIT		August 13, 2010 10:44:13 AM	PART NO. BA41- #####
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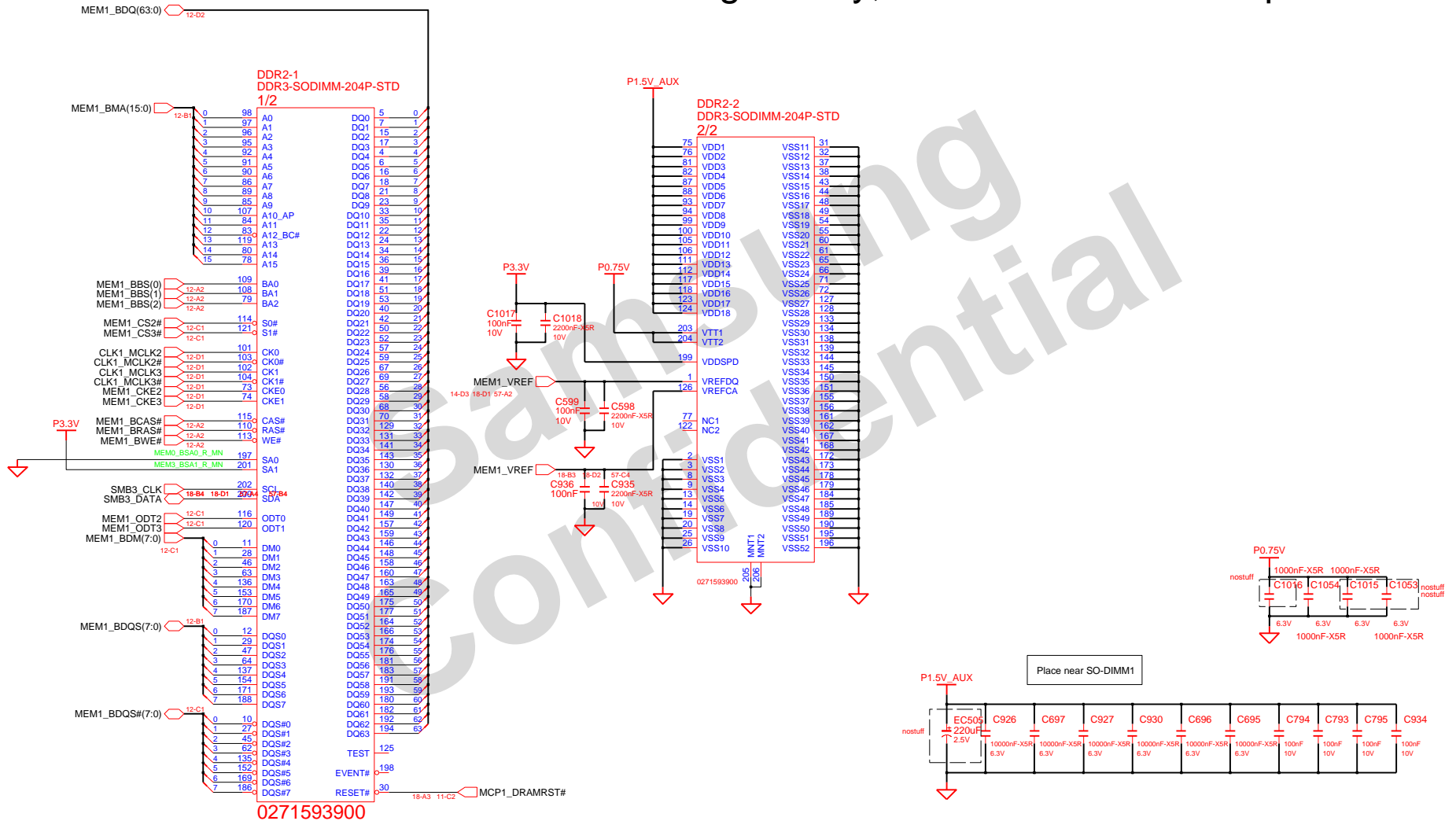
U11-5
ARRANDALE5/5

BU62	VSS1	VSS90	AY24	AH53	VSS202	VSS404	A40	BB7	VSS71	VSS182	AK55
BU68	VSS1	VSS91	AY23	AH51	VSS203	VSS405	A36	BB1	VSS72	VSS183	AK51
BU65	VSS2	VSS92	AY19	AH48	VSS204	VSS406	A33	AY21	VSS73	VSS184	AK48
BU61	VSS3	VSS93	AY17	AH46	VSS205	VSS407	A29	AY71	VSS74	VSS185	AK44
BU48	VSS4	VSS94	AY18	AH44	VSS206	VSS408	A26	AY66	VSS75	VSS186	AK41
BU44	VSS5	VSS95	AY15	AH44	VSS207	VSS409	A22	AY62	VSS76	VSS187	AK37
BU37	VSS6	VSS96	AY12	AH41	VSS208	VSS410	A19	AY59	VSS77	VSS188	AK32
BU32	VSS7	VSS97	AY8	AH39	VSS209	VSS411	A15	AY55	VSS78	VSS189	AK28
BU25	VSS8	VSS98	AY4	AH37	VSS210	VSS412	A12	AY51	VSS79	VSS190	AK26
BU21	VSS9	VSS99	AY4	AH37	VSS211	VSS413	A8	AY48	VSS80	VSS191	AK26
BU18	VSS10	VSS100	AY67	AH35	VSS212	VSS393	B62	AR42	VSS140	VSS192	AK24
BU14	VSS11	VSS101	AY59	AH32	VSS213	VSS394	B56	AR35	VSS141	VSS193	AK21
BU11	VSS12	VSS102	AY45	AH30	VSS214	VSS395	B51	AR33	VSS142	VSS194	AK21
BU7	VSS13	VSS103	AW55	AH30	VSS215	VSS396	B48	AR32	VSS143	VSS195	AK19
BP42	VSS14	VSS104	AW45	AH28	VSS216	VSS397	B44	AR30	VSS144	VSS196	AK15
BN64	VSS15	VSS105	AW44	AH24	VSS217	VSS398	A59	AR28	VSS145	VSS197	AJ70
BN6	VSS16	VSS106	AW41	AH23	VSS218	VSS399	A55	AR26	VSS146	VSS198	AH62
BM71	VSS17	VSS107	AW37	AH21	VSS219	VSS400	A52	AR24	VSS147	VSS199	AH57
BM51	VSS18	VSS108	AW37	AH21	VSS220	VSS401	A48	AR23	VSS148	VSS200	AH55
BM44	VSS19	VSS109	AW9	AH19	VSS221	VSS402	A45	AR21	VSS149	VSS201	BV86
BM32	VSS20	VSS110	AW1	AH17	VSS222	VSS403	AA17	AR19	VSS150	VSS416	BV64
BM17	VSS21	VSS111	AW1	AH17	VSS223	VSS288	AA15	AR17	VSS151	VSS417	BT68
BL57	VSS22	VSS112	ALU62	AH4	VSS224	VSS289	AA14	AR15	VSS152	VSS418	BT68
BL55	VSS23	VSS113	ALU62	AH4	VSS225	VSS290	AA14	AR14	VSS153	VSS419	BT68
BL48	VSS24	VSS114	ALU62	AH4	VSS226	VSS291	AA14	AR14	VSS154	VSS420	BR3
BL40	VSS25	VSS115	ALU62	AH4	VSS227	VSS292	AA14	AR14	VSS155	VSS421	BR3
BL38	VSS26	VSS116	ALU62	AH4	VSS228	VSS293	AA14	AR14	VSS156	VSS422	BR3
BL20	VSS27	VSS117	ALU62	AH4	VSS229	VSS294	AA14	AR14	VSS157	VSS423	BR3
BN63	VSS28	VSS118	ALU62	AH4	VSS230	VSS295	AA14	AR14	VSS158	VSS424	BR3
BN60	VSS29	VSS119	ALU62	AH4	VSS231	VSS296	AA14	AR14	VSS159	VSS425	BR3
BN53	VSS30	VSS120	ALU62	AH4	VSS232	VSS297	AA14	AR14	VSS160	VSS426	BR3
BN46	VSS31	VSS121	ALU62	AH4	VSS233	VSS298	AA14	AR14	VSS161	VSS427	BR3
BN34	VSS32	VSS122	ALU62	AH4	VSS234	VSS299	AA14	AR14	VSS162	VSS428	BR3
BN33	VSS33	VSS123	ALU62	AH4	VSS235	VSS300	AA14	AR14	VSS163	VSS429	BR3
BN26	VSS34	VSS124	ALU62	AH4	VSS236	VSS301	AA14	AR14	VSS164	VSS430	BR3
BN21	VSS35	VSS125	ALU62	AH4	VSS237	VSS302	AA14	AR14	VSS165	VSS431	BR3
BN13	VSS36	VSS126	ALU62	AH4	VSS238	VSS303	AA14	AR14	VSS166	VSS432	BR3
BN7	VSS37	VSS127	ALU62	AH4	VSS239	VSS304	AA14	AR14	VSS167	VSS433	BR3
BN70	VSS38	VSS128	ALU62	AH4	VSS240	VSS305	AA14	AR14	VSS168	VSS434	BR3
BN65	VSS39	VSS129	ALU62	AH4	VSS241	VSS306	AA14	AR14	VSS169	VSS435	BR3
BN57	VSS40	VSS130	ALU62	AH4	VSS242	VSS307	AA14	AR14	VSS170	VSS436	BR3
BN47	VSS41	VSS131	ALU62	AH4	VSS243	VSS308	AA14	AR14	VSS171	VSS437	BR3
BN42	VSS42	VSS132	ALU62	AH4	VSS244	VSS309	AA14	AR14	VSS172	VSS438	BR3
BN30	VSS43	VSS133	ALU62	AH4	VSS245	VSS310	AA14	AR14	VSS173	VSS439	BR3
BN24	VSS44	VSS134	ALU62	AH4	VSS246	VSS311	AA14	AR14	VSS174	VSS440	BR3
BN15	VSS45	VSS135	ALU62	AH4	VSS247	VSS312	AA14	AR14	VSS175	VSS441	BR3
BN9	VSS46	VSS136	ALU62	AH4	VSS248	VSS313	AA14	AR14	VSS176	VSS442	BR3
BN62	VSS47	VSS137	ALU62	AH4	VSS249	VSS314	AA14	AR14	VSS177	VSS443	BR3
BN54	VSS48	VSS138	ALU62	AH4	VSS250	VSS315	AA14	AR14	VSS178	VSS444	BR3
BN49	VSS49	VSS139	ALU62	AH4	VSS251	VSS316	AA14	AR14	VSS179	VSS445	BR3
BN41	VSS50	VSS140	ALU62	AH4	VSS252	VSS317	AA14	AR14	VSS180	VSS446	BR3
BN35	VSS51	VSS141	ALU62	AH4	VSS253	VSS318	AA14	AR14	VSS181	VSS447	BR3
BN28	VSS52	VSS142	ALU62	AH4	VSS254	VSS319	AA14	AR14	VSS182	VSS448	BR3
BN21	VSS53	VSS143	ALU62	AH4	VSS255	VSS320	AA14	AR14	VSS183	VSS449	BR3
BN14	VSS54	VSS144	ALU62	AH4	VSS256	VSS321	AA14	AR14	VSS184	VSS450	BR3
BN7	VSS55	VSS145	ALU62	AH4	VSS257	VSS322	AA14	AR14	VSS185	VSS451	BR3
BN63	VSS56	VSS146	ALU62	AH4	VSS258	VSS323	AA14	AR14	VSS186	VSS452	BR3
BN56	VSS57	VSS147	ALU62	AH4	VSS259	VSS324	AA14	AR14	VSS187	VSS453	BR3
BN48	VSS58	VSS148	ALU62	AH4	VSS260	VSS325	AA14	AR14	VSS188	VSS454	BR3
BN42	VSS59	VSS149	ALU62	AH4	VSS261	VSS326	AA14	AR14	VSS189	VSS455	BR3
BN39	VSS60	VSS150	ALU62	AH4	VSS262	VSS327	AA14	AR14	VSS190	VSS456	BR3
BN32	VSS61	VSS151	ALU62	AH4	VSS263	VSS328	AA14	AR14	VSS191	VSS457	BR3
BN24	VSS62	VSS152	ALU62	AH4	VSS264	VSS329	AA14	AR14	VSS192	VSS458	BR3
BN17	VSS63	VSS153	ALU62	AH4	VSS265	VSS330	AA14	AR14	VSS193	VSS459	BR3
BN9	VSS64	VSS154	ALU62	AH4	VSS266	VSS331	AA14	AR14	VSS194	VSS460	BR3
BN62	VSS65	VSS155	ALU62	AH4	VSS267	VSS332	AA14	AR14	VSS195	VSS461	BR3
BN54	VSS66	VSS156	ALU62	AH4	VSS268	VSS333	AA14	AR14	VSS196	VSS462	BR3
BN46	VSS67	VSS157	ALU62	AH4	VSS269	VSS334	AA14	AR14	VSS197	VSS463	BR3
BN39	VSS68	VSS158	ALU62	AH4	VSS270	VSS335	AA14	AR14	VSS198	VSS464	BR3
BN32	VSS69	VSS159	ALU62	AH4	VSS271	VSS336	AA14	AR14	VSS199	VSS465	BR3
BN24	VSS70	VSS160	ALU62	AH4	VSS272	VSS337	AA14	AR14	VSS200	VSS466	BR3
BN17	VSS71	VSS161	ALU62	AH4	VSS273	VSS338	AA14	AR14	VSS201	VSS467	BR3
BN9	VSS72	VSS162	ALU62	AH4	VSS274	VSS339	AA14	AR14	VSS202	VSS468	BR3
BN62	VSS73	VSS163	ALU62	AH4	VSS275	VSS340	AA14	AR14	VSS203	VSS469	BR3
BN54	VSS74	VSS164	ALU62	AH4	VSS276	VSS341	AA14	AR14	VSS204	VSS470	BR3
BN46	VSS75	VSS165	ALU62	AH4	VSS277	VSS342	AA14	AR14	VSS205	VSS471	BR3
BN39	VSS76	VSS166	ALU62	AH4	VSS278	VSS343	AA14	AR14	VSS206	VSS472	BR3
BN32	VSS77	VSS167	ALU62	AH4	VSS279	VSS344	AA14	AR14	VSS207	VSS473	BR3
BN24	VSS78	VSS168	ALU62	AH4	VSS280	VSS345	AA14	AR14	VSS208	VSS474	BR3
BN17	VSS79	VSS169	ALU62	AH4	VSS281	VSS346	AA14	AR14	VSS209	VSS475	BR3
BN9	VSS80	VSS170	ALU62	AH4	VSS282	VSS347	AA14	AR14	VSS210	VSS476	BR3
BN62	VSS81	VSS171	ALU62	AH4	VSS283	VSS348	AA14	AR14	VSS211	VSS477	BR3
BN54	VSS82	VSS172	ALU62	AH4	VSS284	VSS349	AA14	AR14	VSS212	VSS478	BR3
BN46	VSS83	VSS173	ALU62	AH4	VSS285	VSS350	AA14	AR14	VSS213	VSS479	BR3
BN39	VSS84	VSS174	ALU62	AH4	VSS286	VSS351	AA14	AR14	VSS214	VSS480	BR3
BN32	VSS85	VSS175	ALU62	AH4	VSS287	VSS352	AA14	AR14	VSS215	VSS481	BR3
BN24	VSS86	VSS176	ALU62	AH4	VSS288	VSS353	AA14	AR14	VSS216	VSS482	BR3
BN17	VSS87	VSS177	ALU62	AH4	VSS289	VSS354	AA14	AR14	VSS217	VSS483	BR3
BN9	VSS88	VSS178	ALU62	AH4	VSS290	VSS355	AA14	AR14	VSS218	VSS484	BR3
BN62	VSS89	VSS179	ALU62	AH4	VSS291	VSS356	AA14	AR14	VSS219	VSS485	BR3
BN54	VSS90	VSS180	ALU62	AH4	VSS292	VSS357	AA14	AR14	VSS220	VSS486	BR3
BN46	VSS91	VSS181	ALU62	AH4	VSS293	VSS358	AA14	AR14	VSS221	VSS487	BR3
BN39	VSS92	VSS182	ALU62	AH4	VSS294	VSS359	AA14	AR14	VSS222	VSS488	BR3
BN32	VSS93	VSS183	ALU62	AH4	VSS295	VSS360	AA14	AR14	VSS223	VSS489	BR3
BN24	VSS94	VSS184	ALU62	AH4	VSS296	VSS361	AA14	AR14	VSS224	VSS490	BR3
BN17	VSS95	VSS185	ALU62	AH4	VSS297	VSS362	AA14	AR14	VSS225	VSS491	BR3
BN9	VSS96	VSS186	ALU62	AH4	VSS298	VSS363	AA14	AR14	VSS226	VSS492	BR3
BN62	VSS97	VSS187	ALU62	AH4	VSS299	VSS364	AA14	AR14	VSS227	VSS493	BR3
BN54	VSS98	VSS188	ALU62	AH4	VSS300	VSS365	AA14	AR14	VSS228	VSS494	BR3
BN46	VSS99	VSS189	ALU62	AH4	VSS301	VSS366	AA14	AR14	VSS229	VSS495	BR3
BN39	VSS100	VSS190	ALU62	AH4	VSS302	VSS367	AA14	AR14	VSS230	VSS496	BR3
BN32	VSS101	VSS191	ALU62	AH4	VSS303	VSS368	AA14	AR14	VSS231	VSS497	BR3
BN24	VSS102	VSS192	ALU62	AH4	VSS304	VSS369	AA14	AR14	VSS232	VSS498	BR3
BN17	VSS103	VSS193	ALU62	AH4	VSS305	VSS370	AA14	AR14	VSS233	VSS499	BR3
BN9	VSS104	VSS194	ALU62	AH4	VSS306	VSS371	AA14	AR14	VSS234	VSS500	BR3
BN62	VSS105	VSS195	ALU62	AH4	VSS307	VSS372	AA14	AR14	VSS235	VSS501	BR3
BN54	VSS106	VSS196	ALU62	AH4	VSS308	VSS373	AA14	AR14	VSS236	VSS502	BR3
BN46	VSS107	VSS197	ALU62	AH4	VSS309	VSS374	AA14	AR14	VSS237	VSS503	BR3
BN39	VSS108	VSS198	ALU62	AH4	VSS310	VSS375	AA14	AR14	VSS238	VSS504	BR3
BN32	VSS109	VSS199	ALU62	AH4	VSS311	VSS376	AA14	AR14	VSS239	VSS505	BR3
BN24	VSS110	VSS200	ALU62	AH4	VSS312	VSS377	AA14	AR14	VSS240	VSS506	BR3
BN17	VSS111	VSS201	ALU62	AH4	VSS313	VSS378	AA14	AR14	VSS241	VSS507	BR3
BN9	VSS112	VSS202	ALU62	AH4	VSS314	VSS379	AA14	AR14	VSS242	VSS508	BR3
BN62	VSS113	VSS203	ALU62	AH4	VSS315	VSS380	AA14	AR14	VSS243	VSS509	BR3
BN54	VSS114	VSS204	ALU62	AH4	VSS316	VSS381	AA14	AR14	VSS244	VSS510	BR3
BN46	VSS115	VSS205	ALU62	AH4	VSS317	VSS382	AA14	AR14	VSS245	VSS511	BR3
BN39	VSS116	VSS206	ALU62	AH4	VSS318	VSS383	AA14	AR14	VSS246	VSS512	BR3
BN32	VSS117	VSS207	ALU62	AH4	VSS319	VSS38					

DDR SO-DIMM #1

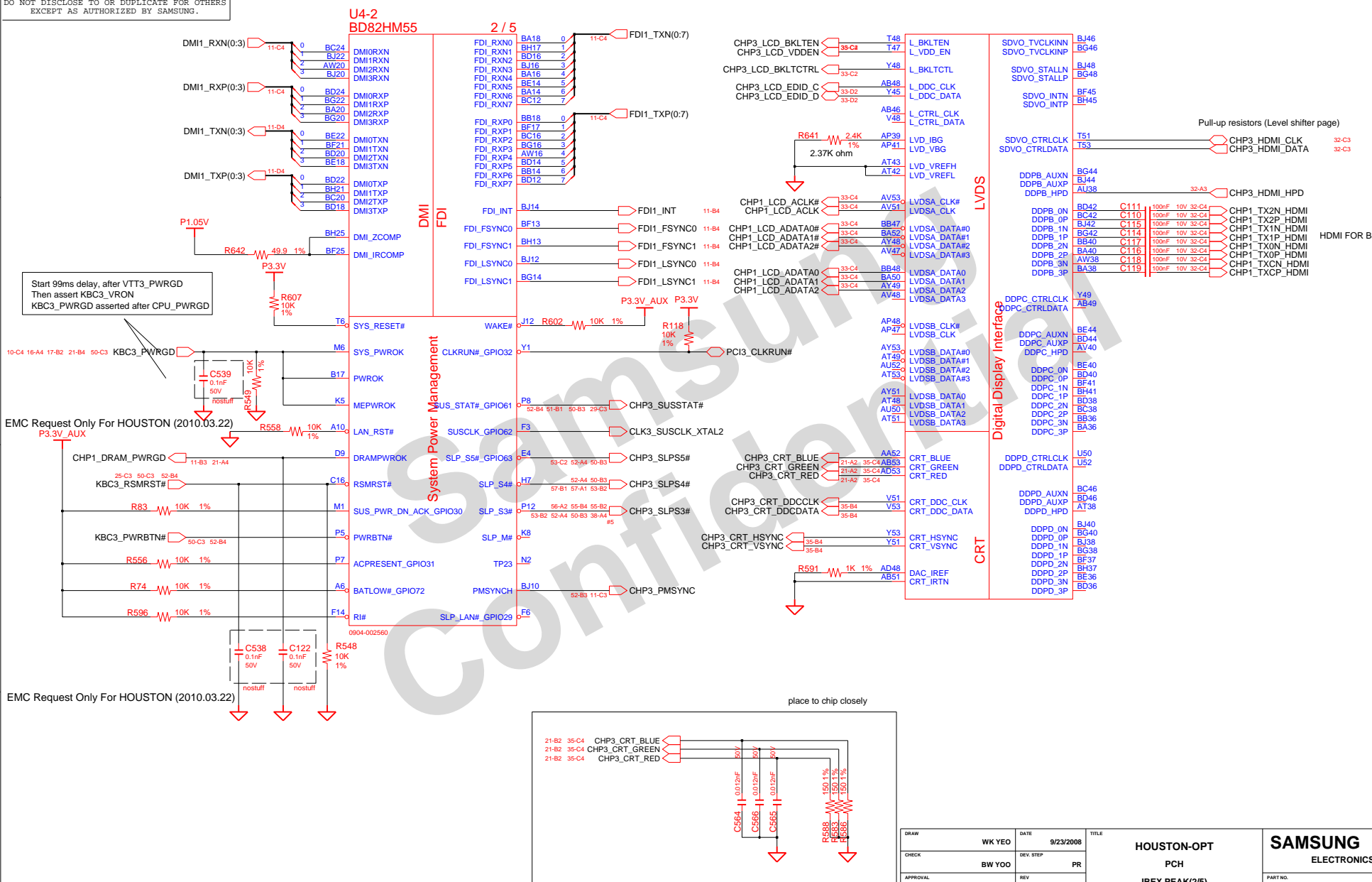
Height : 8 mm (STANDARD)
P/N : 3709-001615 (FOXCONN)
P/N : 3709-001622 (CONCRAFT)

After making Library, Sodimm need to be update!!!



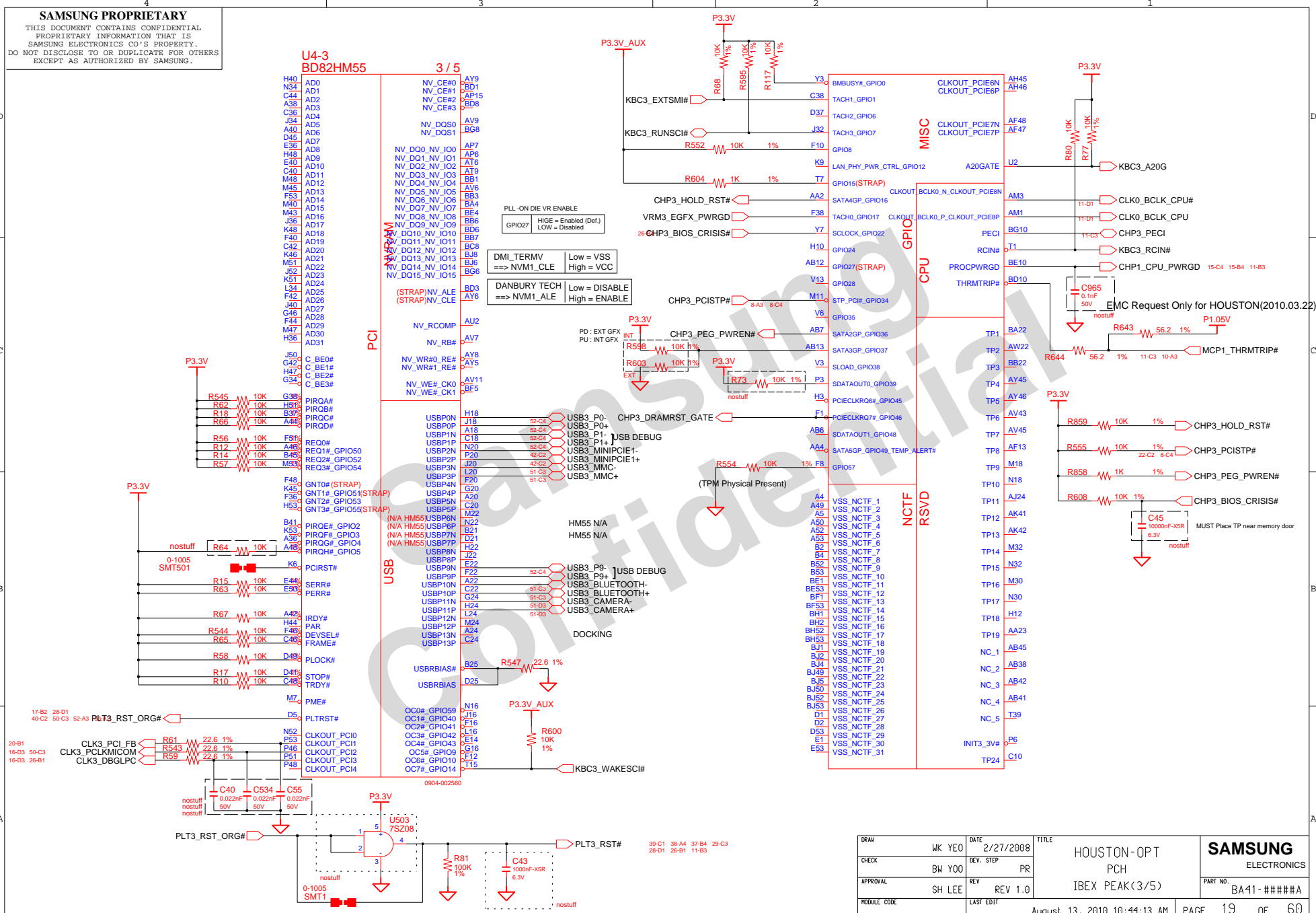
DRAW	WK YEO	DATE	2/27/2008	TITLE	HOUSTON-OPT	SAMSUNG
CHECK	BW YOO	DEV. STEP	PR	SODIMM B	ELECTRONICS	
APPROVAL	SH LEE	REV	REV 1.0	DDR3	PART NO.	BA41-####A
MODULE CODE		LAST EDIT			August 13, 2010 10:44:13 AM	PAGE 16 OF 60

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DRAW	WK YEO	DATE	9/23/2008	HOUSTON-OPT PCH IBEX PEAK(2/5)	SAMSUNG ELECTRONICS
CHECK	BW YOO	DEV. STEP	PR		
APPROVAL	SH LEE	REV	REV 1.0		
MODULE CODE				August 13, 2010 10:44:13 AM	PAGE 18 OF 60

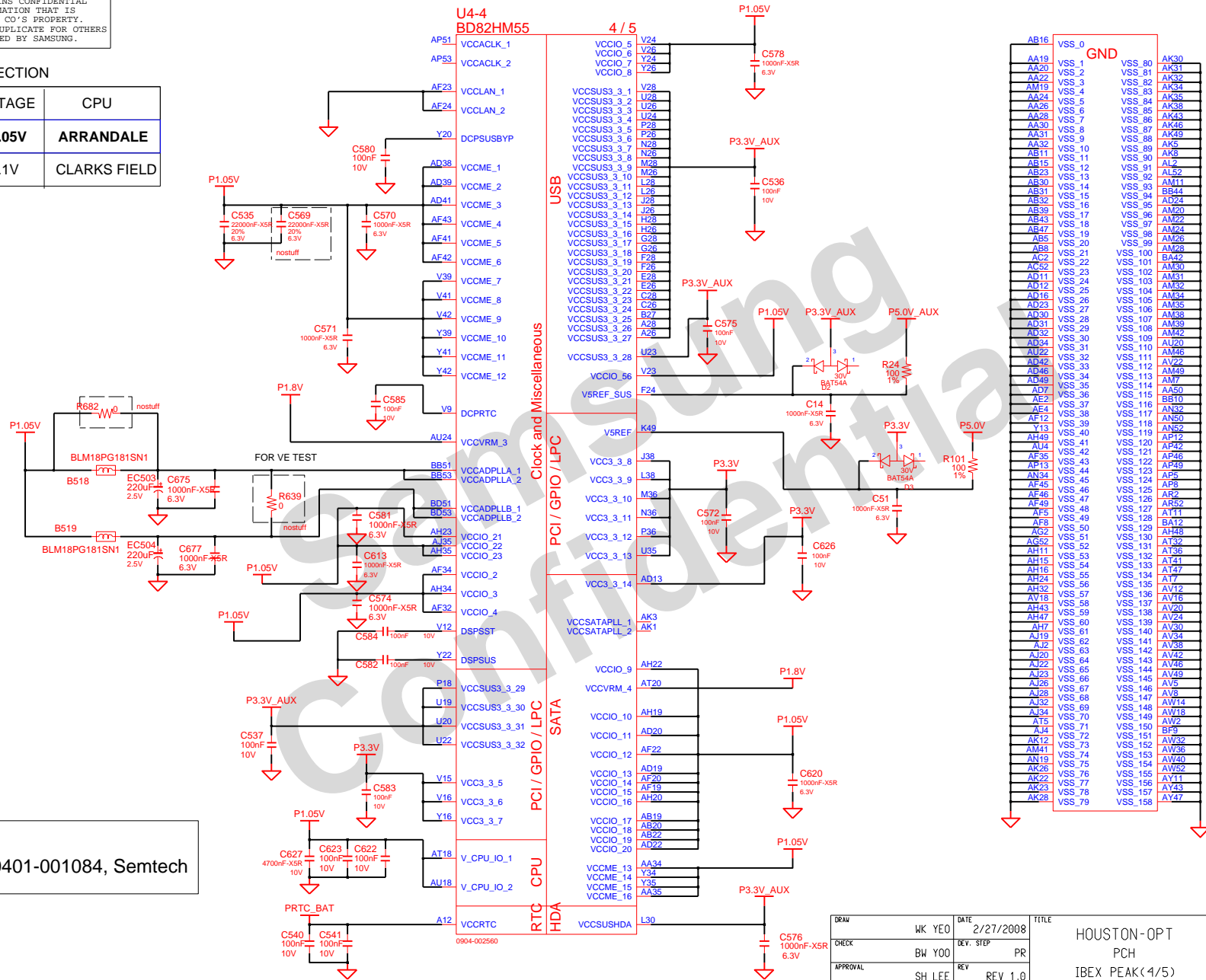
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DRAW	WK YEO	DATE	2/27/2008	TITLE	HOUSTON-OPT	SAMSUNG ELECTRONICS
CHECK	BW YOO	DEV. STEP	PR	PCH		
APPROVAL	SH LEE	REV	REV 1.0	IBEX PEAK(3/5)	PART NO.	
MODULE CODE		LAST EDIT	August 13, 2010 10:44:13 AM	PAGE	19 OF 60	

**VTT POWER SELECTION

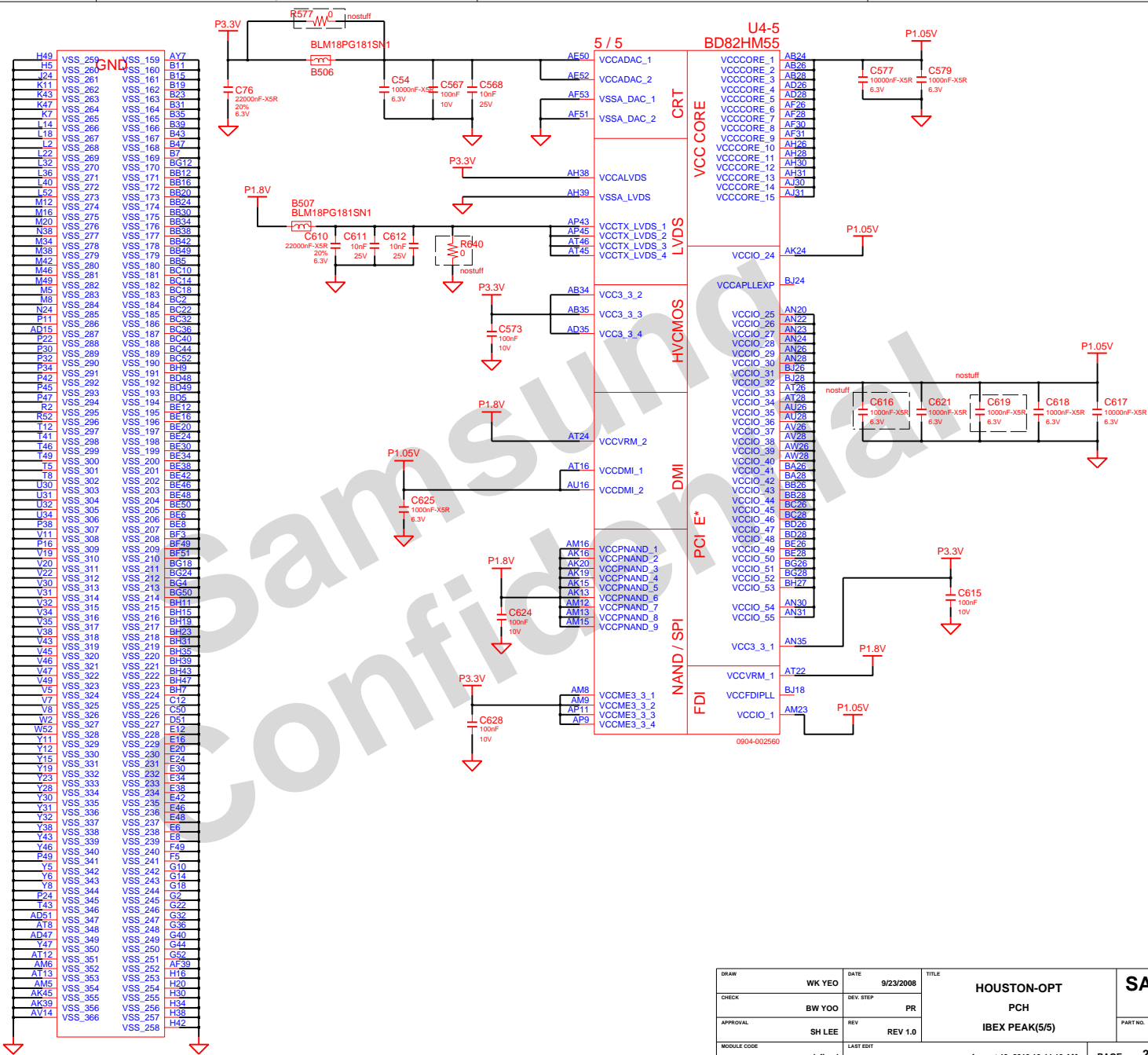
VTT_SEL	VOLTAGE	CPU
1	P1.05V	ARRANDALE
0	P1.1V	CLARKS FIELD



For VE
D2, D3 : 0401-001084, Semtech

DRAW	WK YEO	DATE	2/27/2008	TITLE HOUSTON-OPT PCH IBEX PEAK(4/5)	SAMSUNG ELECTRONICS
CHECK	BW YOO	DEV. STEP	PR		
APPROVAL	SH LEE	REV	REV 1.0		
MODULE CODE	LAST EDIT				
				August 13, 2010 10:44:13 AM	PAGE 20 OF 600

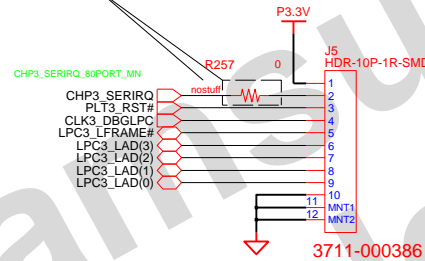
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DRAW		WK YEO		DATE	9/23/2008		TITLE HOUSTON-OPT PCH IBEX PEAK(5/5)		SAMSUNG ELECTRONICS				
CHECK		BW YOO		DEV. STEP		PR							
APPROVAL		SH LEE		REV		REV 1.0							
MODULE CODE				LAST EDIT				August 13, 2010 10:44:13 AM		PAGE	21	OF	60

80H PORT DEBUG

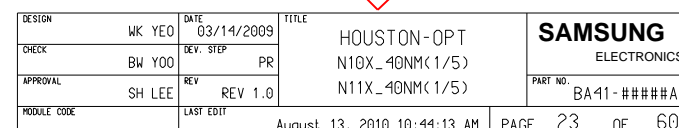
For MICOM 80H Debug Port Test

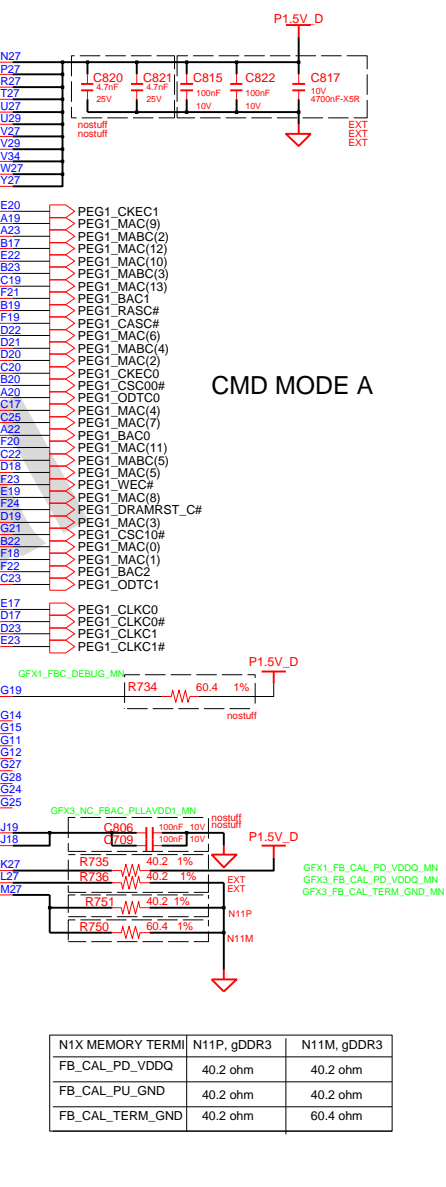
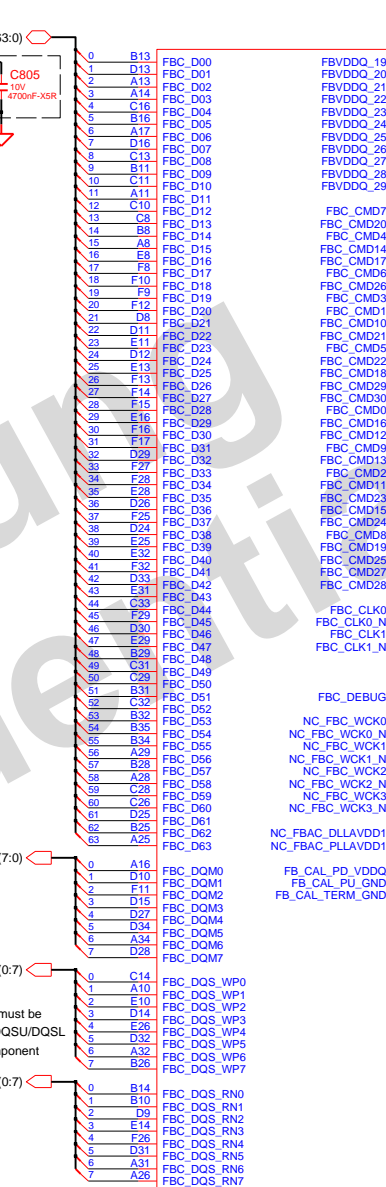
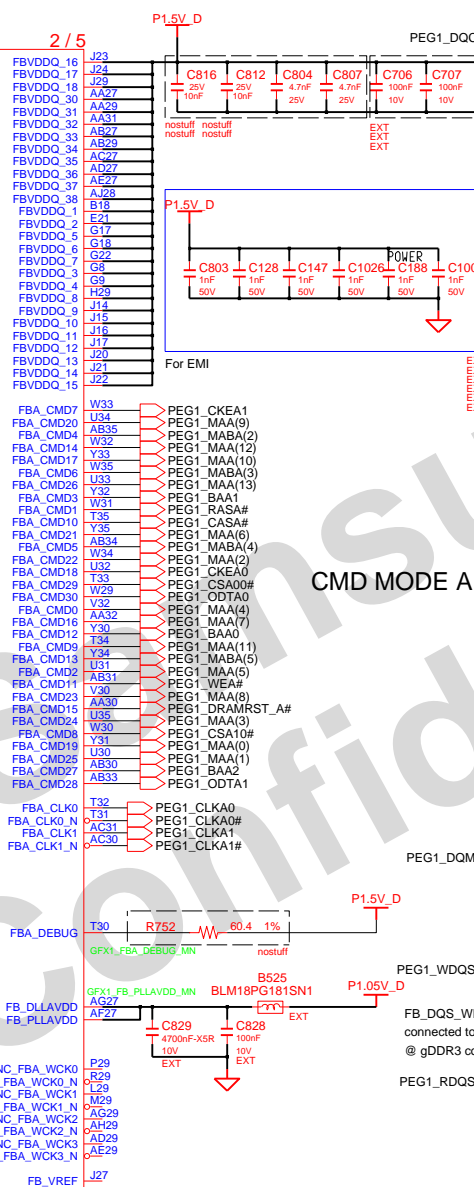
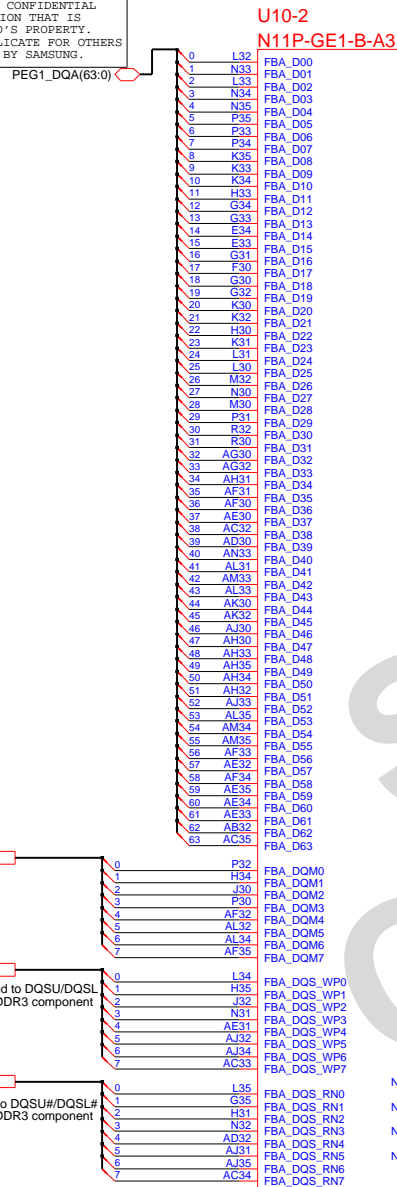


DESIGN	WK YEO	DATE	11/10/2008	TITLE	HOUSTON-OPT DEBUG PORT 80H DECODER	SAMSUNG ELECTRONICS
CHECK	BW YOO	DEV. STEP	PR			PART NO. BA41-#####A
APPROVAL	SH LEE	REV	REV 1.0			
MODULE CODE		LAST EDIT	August 13, 2010 10:44:13 AM	PAGE	22	OF 60

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1 / 5





CMD MODE A

CMD MODE A

N1X MEMORY TERMI	N11P, gDDR3	N11M, gDDR3
FB_CAL_PD_VDDQ	40.2 ohm	40.2 ohm
FB_CAL_PU_GND	40.2 ohm	40.2 ohm
FB_CAL_TERM_GND	40.2 ohm	60.4 ohm

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U10-3

N11P-GE1-B-A3

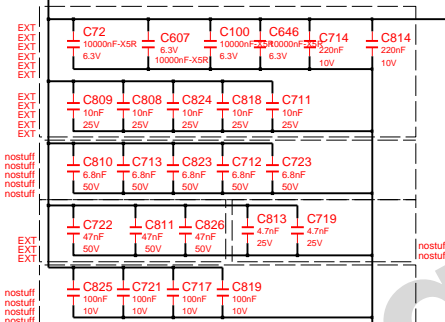
3 / 5

B3	GND_1	GND_97	V16
B6	GND_2	GND_98	V18
B9	GND_3	GND_99	V20
B12	GND_4	GND_100	V22
B15	GND_5	GND_101	V24
B21	GND_6	GND_102	V31
B24	GND_7	GND_103	Y11
B27	GND_8	GND_104	Y13
B30	GND_9	GND_105	Y15
B33	GND_10	GND_106	Y17
C2	GND_11	GND_107	Y19
C34	GND_12	GND_108	Y21
E5	GND_13	GND_109	Y23
E9	GND_14	GND_110	Y25
E12	GND_15	GND_111	AA2
E15	GND_16	GND_112	AA5
E18	GND_17	GND_114	AA12
E24	GND_18	GND_115	AA13
E27	GND_19	GND_116	AA14
E30	GND_20	GND_117	AA15
F2	GND_21	GND_118	AA16
F5	GND_22	GND_119	AA17
F31	GND_23	GND_120	AA18
F34	GND_24	GND_121	AA19
J5	GND_25	GND_122	AA20
J31	GND_26	GND_123	AA21
J34	GND_27	GND_124	AA22
L9	GND_28	GND_125	AA23
M2	GND_29	GND_126	AA24
M5	GND_30	GND_127	AA25
M11	GND_31	GND_128	AB34
M13	GND_32	GND_129	AB12
M15	GND_33	GND_130	AB14
M17	GND_34	GND_131	AB15
M19	GND_35	GND_132	AB18
M21	GND_36	GND_133	AB20
M23	GND_37	GND_134	AB24
M25	GND_38	GND_135	AC9
M31	GND_39	GND_136	AD2
M34	GND_40	GND_137	AD42
N11	GND_41	GND_138	AD5
N12	GND_42	GND_139	AD11
N13	GND_43	GND_140	AD13
N14	GND_44	GND_141	AD15
N15	GND_45	GND_142	AD17
N16	GND_46	GND_143	AD21
N17	GND_47	GND_144	AD23
N18	GND_48	GND_145	AD25
N19	GND_49	GND_146	AD31
N20	GND_50	GND_147	AE11
N21	GND_51	GND_148	AE12
N22	GND_52	GND_149	AE13
N23	GND_53	GND_150	AE14
N24	GND_54	GND_151	AE15
N25	GND_55	GND_152	AE16
F12	GND_56	GND_153	AE17
F14	GND_57	GND_154	AE18
P16	GND_58	GND_155	AE19
P18	GND_59	GND_156	AE21
P20	GND_60	GND_157	AE22
P22	GND_61	GND_158	AE23
P24	GND_62	GND_159	AE24
R2	GND_63	GND_160	AE25
R5	GND_64	GND_161	AG2
R31	GND_65	GND_162	AG2
R34	GND_66	GND_163	AG5
T11	GND_67	GND_164	AG31
T13	GND_68	GND_165	AG34
T15	GND_69	GND_166	AK2
T17	GND_70	GND_167	AK5
T19	GND_71	GND_168	AK31
T21	GND_72	GND_170	AK34
T23	GND_73	GND_171	AL8
T25	GND_74	GND_172	AL9
U11	GND_75	GND_173	AL12
U12	GND_76	GND_174	AL15
U13	GND_77	GND_175	AL18
U14	GND_78	GND_176	AL21
U15	GND_79	GND_177	AL24
U16	GND_80	GND_178	AL27
U17	GND_81	GND_180	AN2
U18	GND_82	GND_181	AN34
U19	GND_83	GND_182	AP3
U20	GND_84	GND_183	AP6
U21	GND_85	GND_184	AP9
U22	GND_86	GND_185	AP12
U23	GND_87	GND_186	AP15
U24	GND_88	GND_187	AP18
U25	GND_89	GND_188	AP21
V5	GND_90	GND_189	AP24
V9	GND_91	GND_190	AP27
V12	GND_92	GND_191	AP30
V14	GND_93	GND_192	AP33
	GND_94	GND_193	
	GND_95		
	GND_96		

0904-002552

EXT

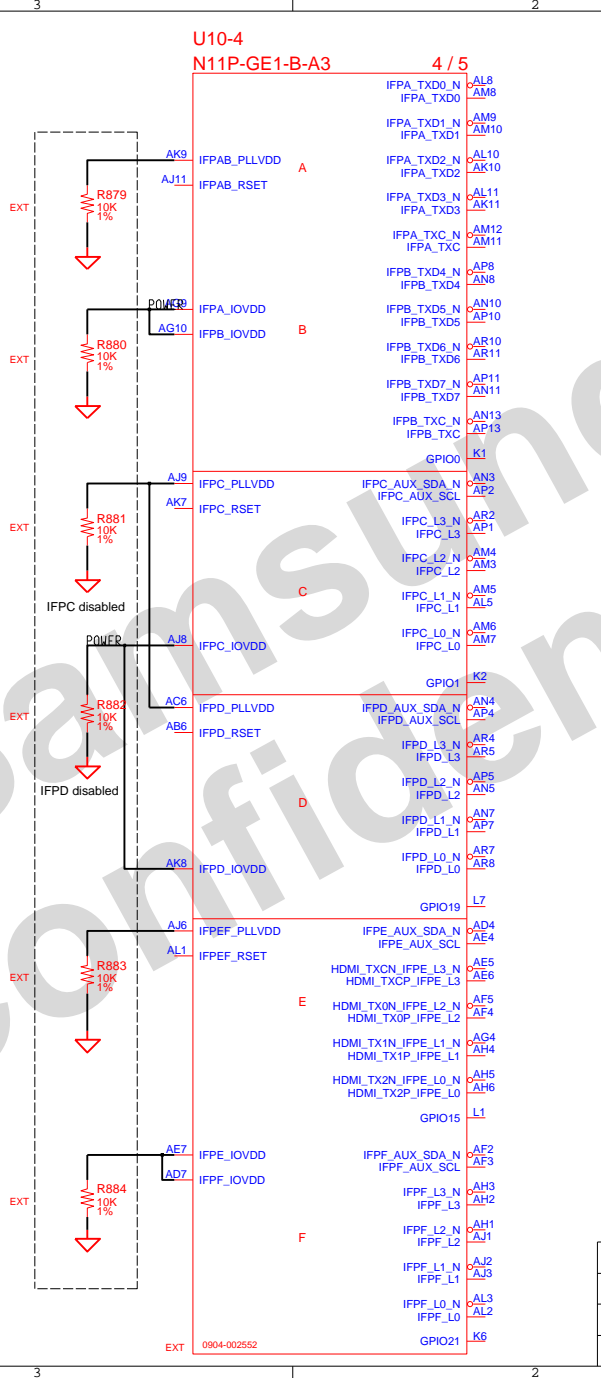
EGFX_CORE



L11	VDD_1	VDD_57	V19
L12	VDD_2	VDD_58	V21
L13	VDD_3	VDD_59	V23
L14	VDD_4	VDD_60	V25
L15	VDD_5	VDD_61	W11
L16	VDD_6	VDD_62	W12
L17	VDD_7	VDD_63	W13
L18	VDD_8	VDD_64	W14
L19	VDD_9	VDD_65	W15
L20	VDD_10	VDD_66	W16
L21	VDD_11	VDD_67	W17
L22	VDD_12	VDD_68	W18
L23	VDD_13	VDD_69	W19
L24	VDD_14	VDD_70	W20
L25	VDD_15	VDD_71	W21
M12	VDD_16	VDD_72	W22
M14	VDD_17	VDD_73	W23
M16	VDD_18	VDD_74	W24
M18	VDD_19	VDD_75	W25
M20	VDD_20	VDD_76	Y12
M22	VDD_21	VDD_77	Y14
M24	VDD_22	VDD_78	Y16
P11	VDD_23	VDD_79	Y18
P13	VDD_24	VDD_80	Y20
P15	VDD_25	VDD_81	Y22
P17	VDD_26	VDD_82	Y24
P19	VDD_27	VDD_83	AB11
P21	VDD_28	VDD_84	AB13
P23	VDD_29	VDD_85	AB15
P25	VDD_30	VDD_86	AB17
R11	VDD_31	VDD_87	AB19
R12	VDD_32	VDD_88	AB21
R13	VDD_33	VDD_89	AB23
R14	VDD_34	VDD_90	AB25
R15	VDD_35	VDD_91	AC11
R16	VDD_36	VDD_92	AC12
R17	VDD_37	VDD_93	AC13
R18	VDD_38	VDD_94	AC14
R19	VDD_39	VDD_95	AC15
R20	VDD_40	VDD_96	AC16
R21	VDD_41	VDD_97	AC17
R22	VDD_42	VDD_98	AC18
R23	VDD_43	VDD_99	AC19
R24	VDD_44	VDD_100	AC21
R25	VDD_45	VDD_101	AC22
T12	VDD_46	VDD_102	AC23
T14	VDD_47	VDD_103	AC24
T16	VDD_48	VDD_104	AC25
T18	VDD_49	VDD_105	AD12
T20	VDD_50	VDD_106	AD16
T22	VDD_51	VDD_107	AD17
T24	VDD_52	VDD_108	AD18
V11	VDD_53	VDD_109	AD22
V13	VDD_54	VDD_110	AD24
V15	VDD_55	VDD_111	
V17	VDD_56		

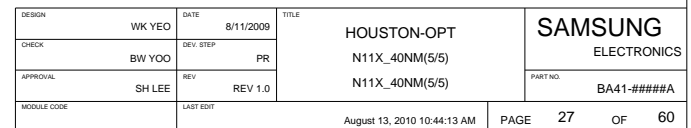
EGFX_CORE

DESIGN	WK YEO	DATE	03/14/2009	TITLE	HOUSTON-OPT N10X_40NM(3/5) N11X_40NM(3/5)	SAMSUNG ELECTRONICS PART NO. BA41-#####
CHECK	BW YOO	DEV. STEP	PR	REV	REV 1.0	
APPROVAL	SH LEE	LAST EDIT	August 13, 2010 10:44:13 AM	PAGE	25	OF 60



DESIGN	WK YEO	DATE	03/14/2009	TITLE	HOUSTON-OPT N10X_40NM(4/5) N11X_40NM(4/5)	SAMSUNG ELECTRONICS PART NO. BA41-#####
CHECK	BW YOO	DEV. STEP	PR	REV	REV 1.0	
APPROVAL	SH LEE	LAST EDIT	August 13, 2010 10:44:13 AM	PAGE	26	OF 60
MODULE CODE						

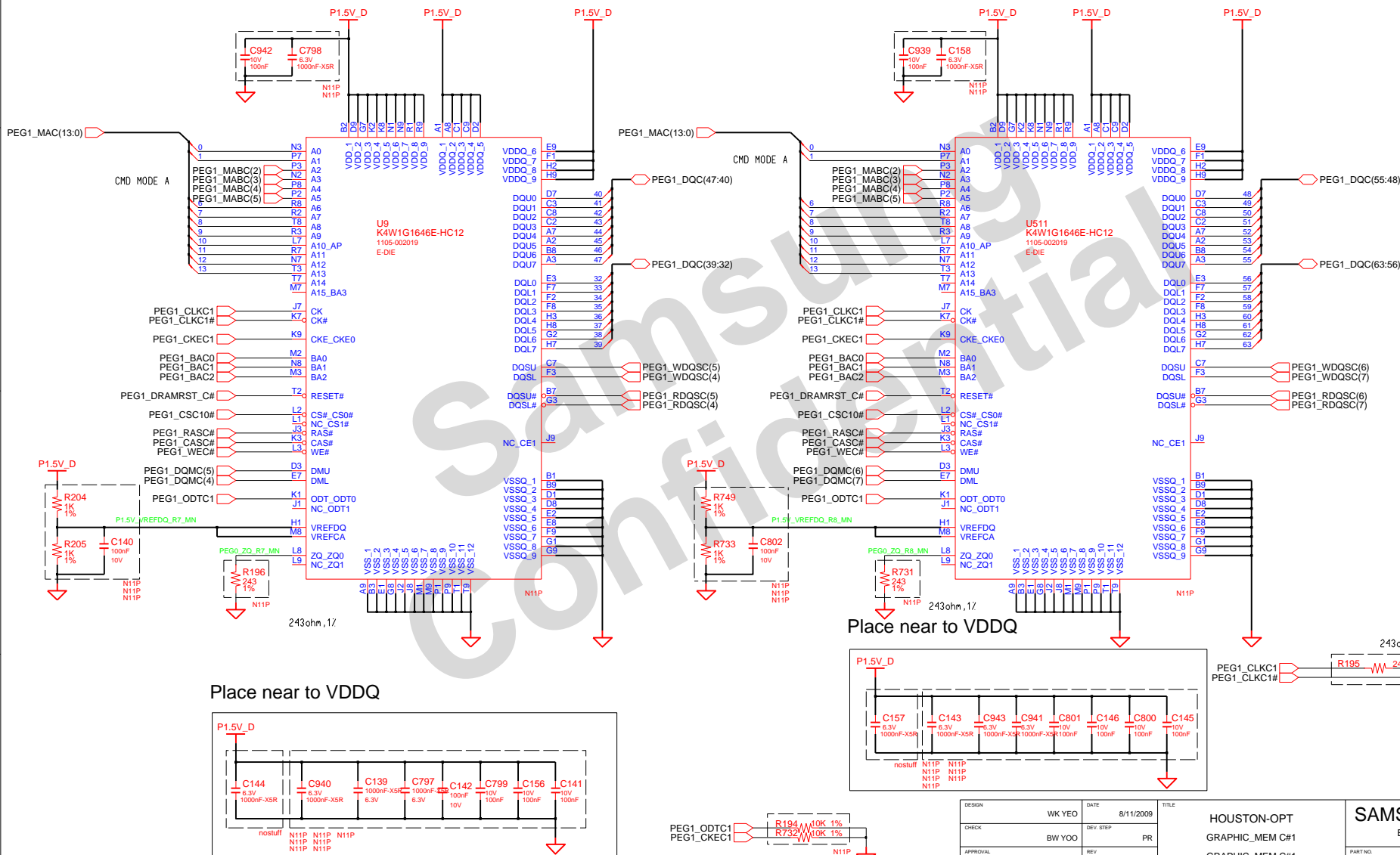
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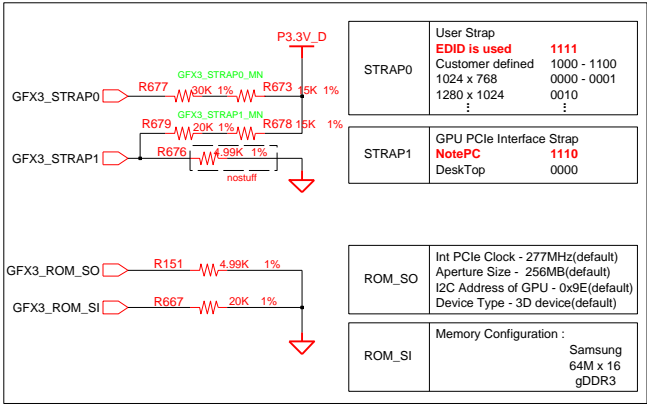
C-Channel #1 (gDDR3 1GB)



DESIGN	WK YEO	DATE	8/11/2009	TITLE	HOUSTON-OPT	SAMSUNG ELECTRONICS	
CHECK	BW YOO	DEV. STEP	PR				GRAPHIC_MEM C#1
APPROVAL	SH LEE	REV	REV 1.0				GRAPHIC_MEM C#1
				PART NO.	BA41-####A		
MODULE CODE	LAST EDIT		August 13, 2010 10:44:13 AM			PAGE 31 OF 60	

N11x_40nm STRAP

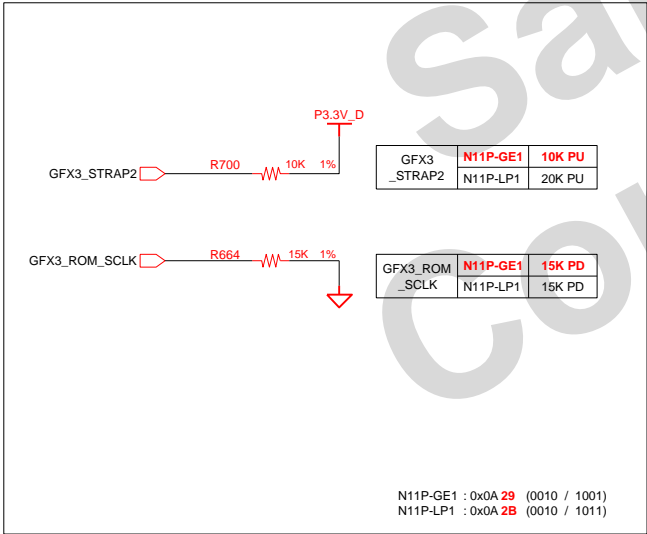
Function Straps



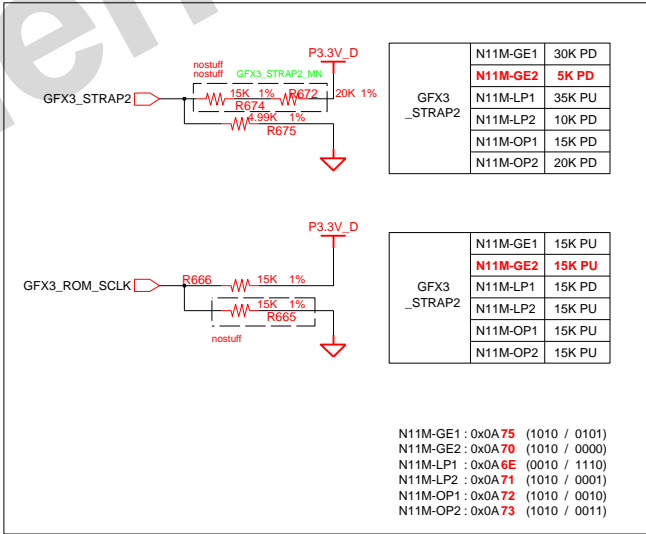
RESISTOR	PULL UP	PULL DOWN
5K	1000	0000
10K	1001	0001
15K	1010	0010
20K	1011	0011
25K	1100	0100
30K	1101	0101
35K	1110	0110
45K	1111	0111

STRAP PIN	BIT 3	BIT 2	BIT 1	BIT0
STRAP0	USER[3]	USER[2]	USER[1]	USER[0]
STRAP1	3GIO_PADCFG[3]	3GIO_PADCFG[2]	3GIO_PADCFG[1]	3GIO_PADCFG[0]
ROM_SO	XCLK_417	FB_0_BAR_SIZE	SMB_ALT_ADDR	VGA_DEVICE
ROM_SI	RAMCFG[3]	RAMCFG[2]	RAMCFG[1]	RAMCFG[0]
STRAP2	PCI_DEVID[3]	PCI_DEVID[2]	PCI_DEVID[1]	PCI_DEVID[0]
ROM_SCLK	PCI_DEVID[4]	SUB_VENDOR	SLOT_CLK_CFG	PEX_PLN_EN_TERM

Chip Select Straps (N11P)



Chip Select Straps (N11M)

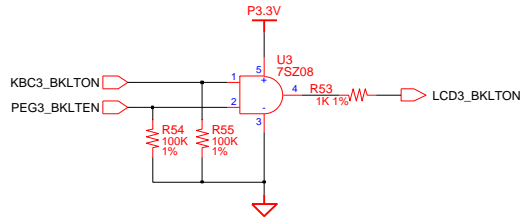


N11M-GE1 : 0x0A75 (1010 / 0101)
N11M-GE2 : 0x0A70 (1010 / 0000)
N11M-LP1 : 0x0A6E (0010 / 1110)
N11M-LP2 : 0x0A71 (1010 / 0001)
N11M-OP1 : 0x0A72 (1010 / 0010)
N11M-OP2 : 0x0A73 (1010 / 0011)

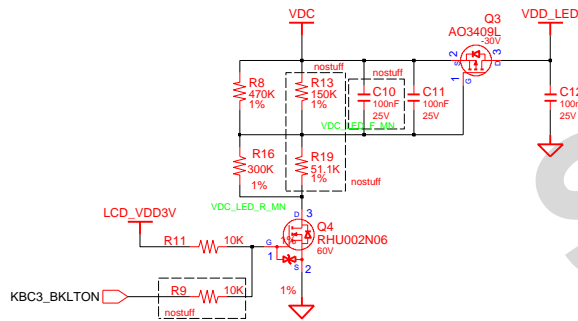
LVDS LOGIC

1Ch. LCD Connector + CAMERA

Backlight On

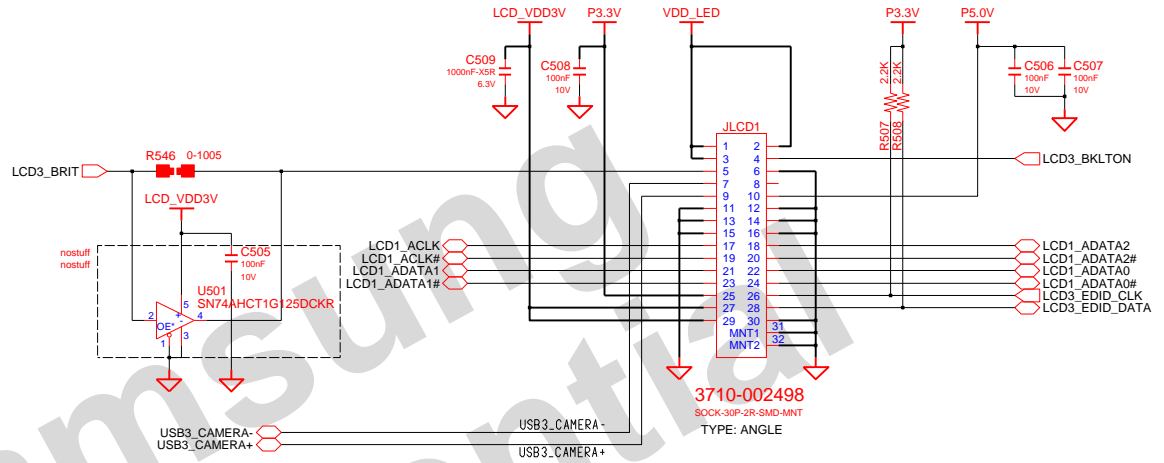
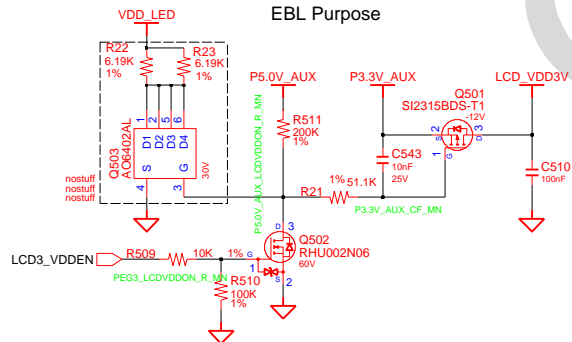


LED Power

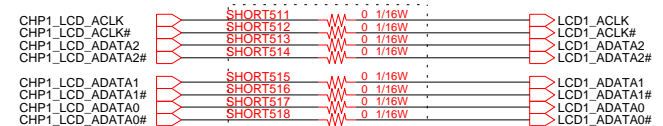
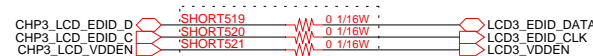
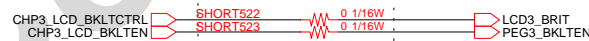


LCD Power

EBL Purpose

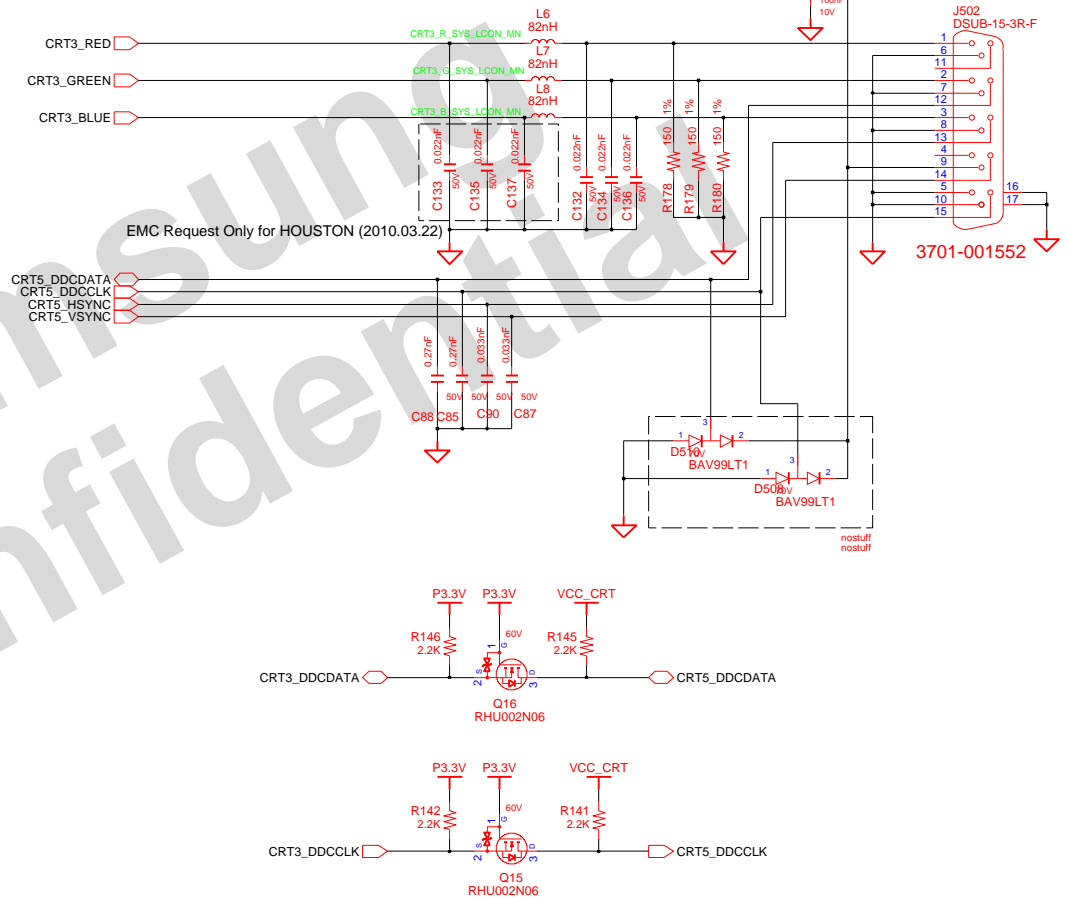
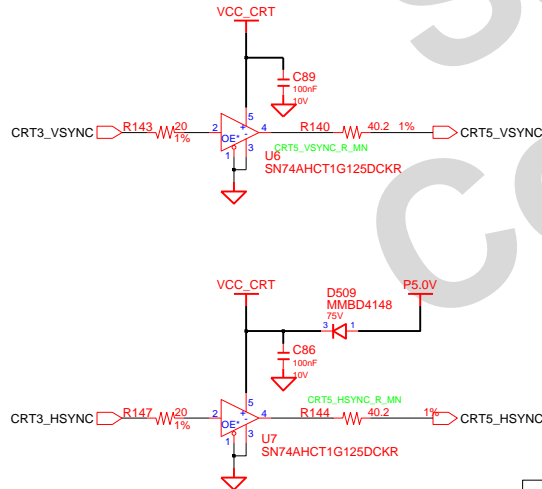
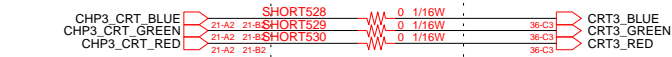


For VE
JLCD1 : Jingshi Locking-type connector



DESIGN	WK YEO	DATE	9/23/2008	TITLE	HOUSTON-OPT	SAMSUNG
CHECK	BW YOO	DEV. STEP	PR	GRAPHICS_IF	ELECTRONICS	
APPROVAL	SH LEE	REV	REV 1.0	LVDS		
MODULE CODE		LAST EDIT				
				August 13, 2010 10:44:13 AM	PAGE	33
					OF	60

CRT LOGIC



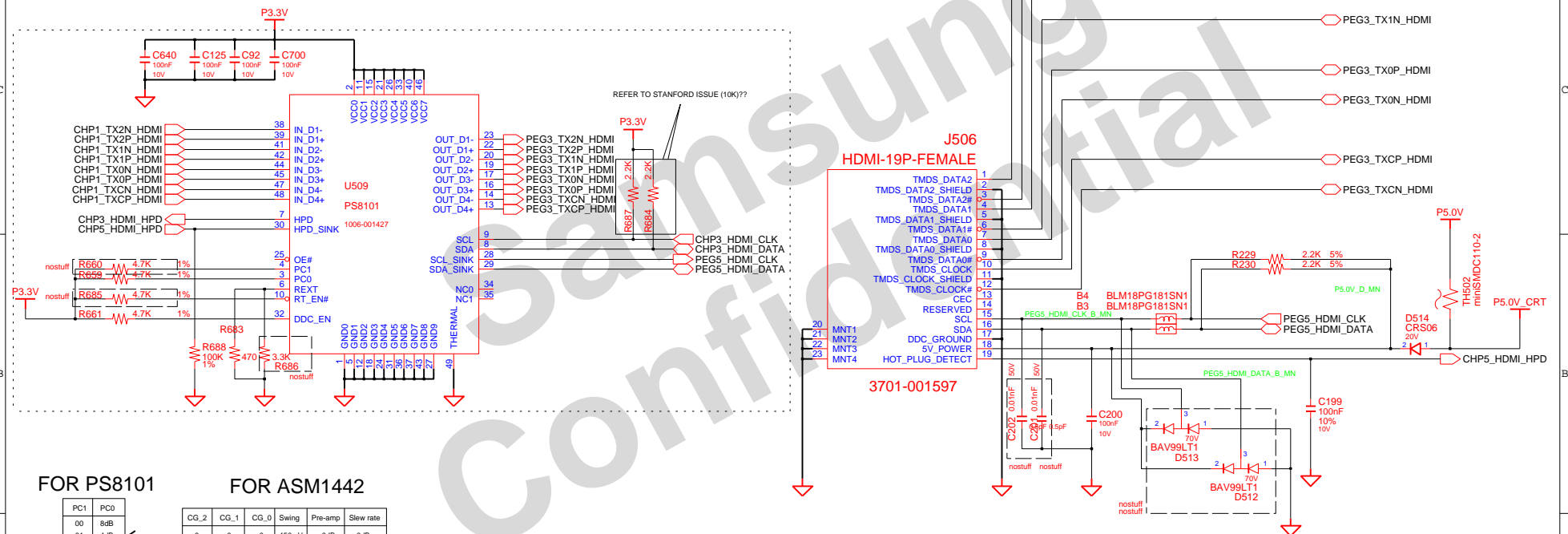
For VE
D509, D511 : 0401-000191, Semtech

DESIGN	WK YEO	DATE	9/23/2008	TITLE	HOUSTON-OPT	SAMSUNG
CHECK	BW YOO	DEV. STEP	PR	GRAPHICS_IF		ELECTRONICS
APPROVAL	SH LEE	REV	REV 1.0	CRT		PART NO.
MODULE CODE		LAST EDIT				BA41-####A
				August 13, 2010 10:44:13 AM	PAGE	34
					OF	60

HDMI Graphic

After checking, Houston need to use CMC for each signal.
(EMC request at 2010.04.15)

For VE
B532, B533, B534,B535 : removed
J506 : Alltop connector
Q18 : 0501-000465, Semtech



FOR PS8101

FOR ASM1442

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

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

N10xN11x_40nm HDMI/DP/LVDS support only 3.3V voltage tolerance

FOR ASM1442

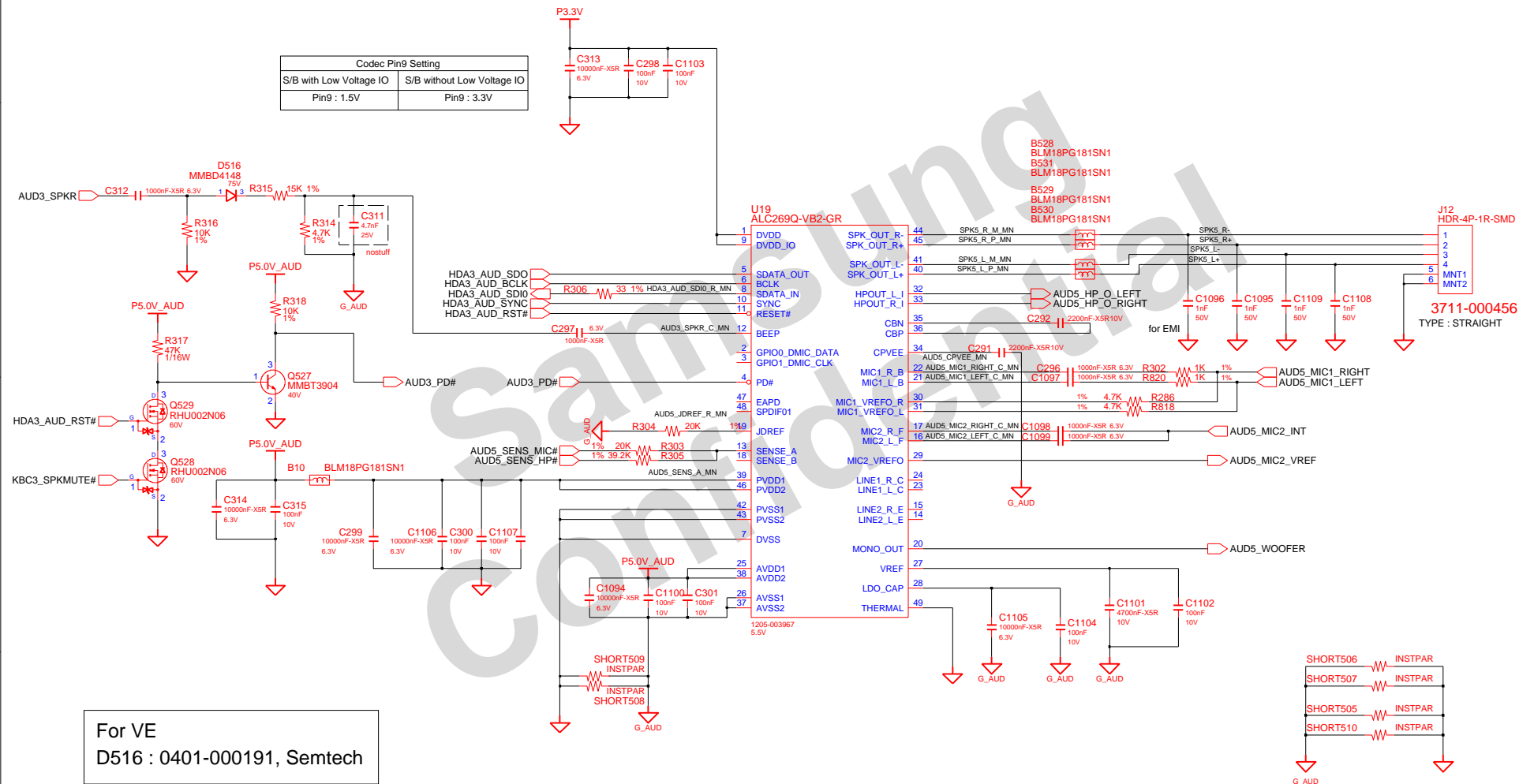
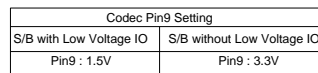
EQ_1	EQ_0	Equalization
0	0	12dB
0	1	9dB
1	0	6dB
1	1	3dB

Internal Default Value

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

DESIGN	WK YEO	DATE	9/23/2008	TITLE	HOUSTON-OPT GRAPHICS_IF HDMI	SAMSUNG ELECTRONICS
CHECK	BW YOO	DEV. STEP	PR			PART NO. BA41-####A
APPROVAL	SH LEE	REV	REV 1.0			
MODULE CODE		LAST EDIT				
August 13, 2010 10:44:13 AM				PAGE	35	OF 60

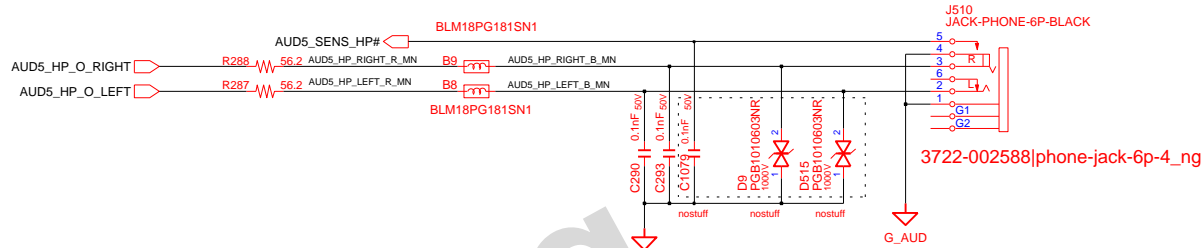
HD AUDIO



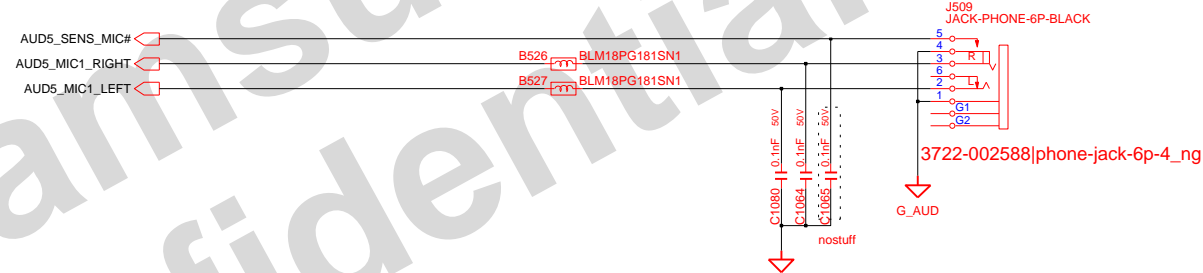
For VE
D516 : 0401-000191, Semtech

DESIGN	WK YEO	DATE	9/23/2008	TITLE HOUSTON-OPT HDA CODEC AUDIO CODEC ALC269	SAMSUNG ELECTRONICS
CHECK	BW YOO	DEV. STEP	PR		
APPROVAL	SH LEE	REV	REV 1.0		
MODULE CODE	LAST EDIT				
				August 13, 2010 10:44:13 AM	PART NO. BA41-####A
				PAGE 36	OF 60

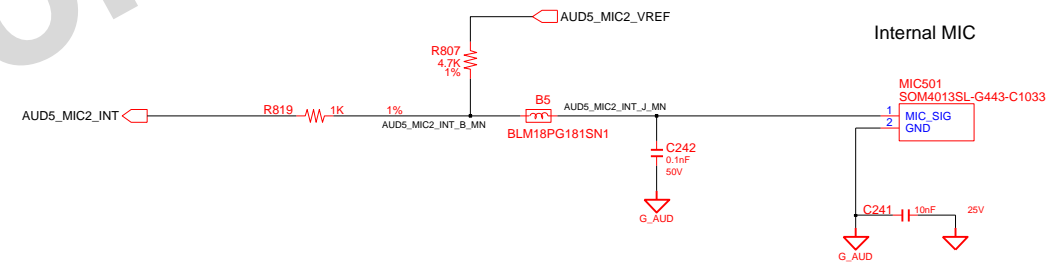
HEADPHONE



MIC JACK



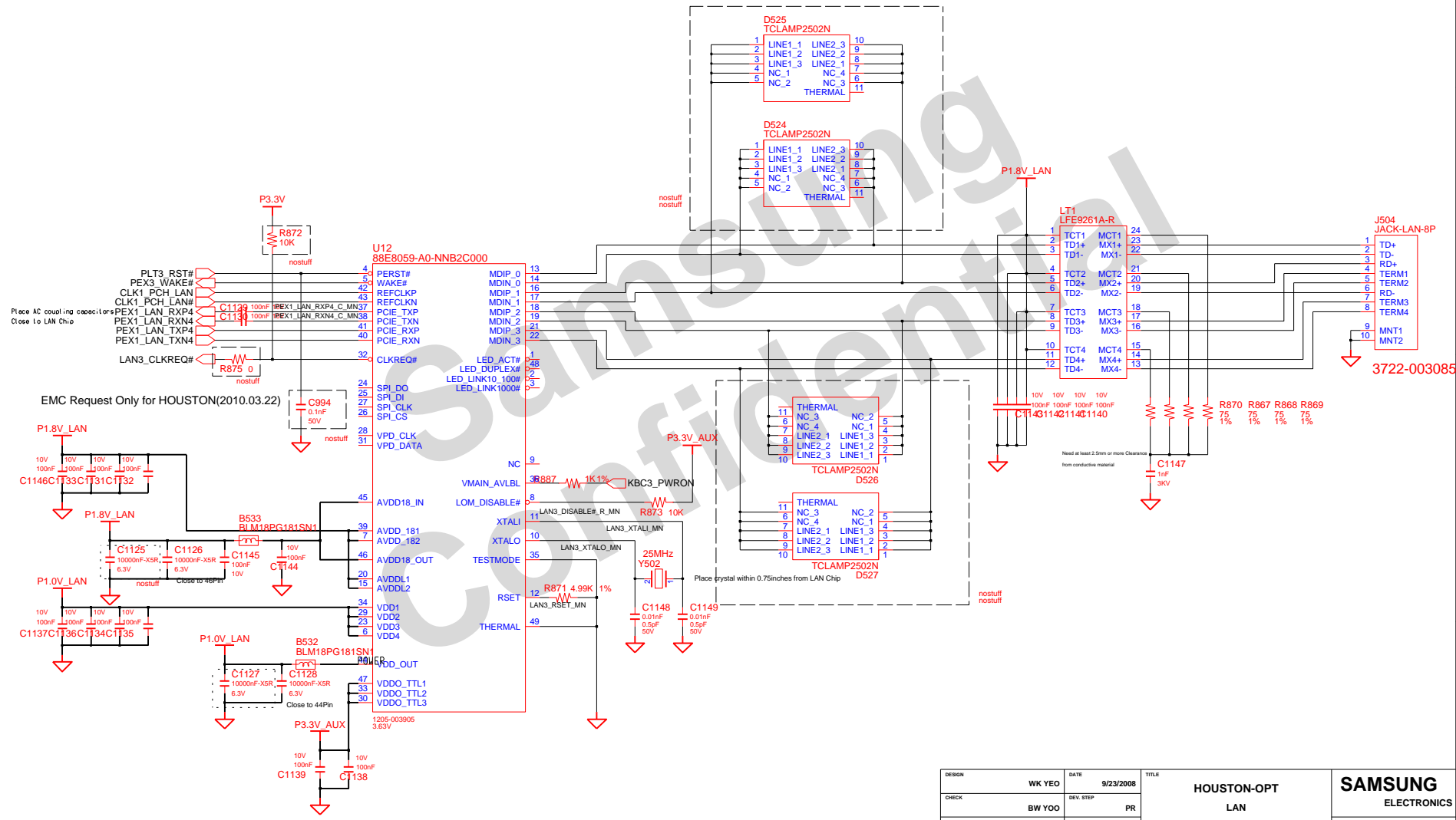
Internal MIC



DESIGN	WK YEO	DATE	9/23/2008	TITLE	HOUSTON-OPT	SAMSUNG
CHECK	BW YOO	DEV. STEP	PR	HDA_CODEC		ELECTRONICS
APPROVAL	SH LEE	REV	REV 1.0	AUDIO JACK		PART NO.
MODULE CODE		LAST EDIT				BA41-####A
				August 13, 2010 10:44:13 AM	PAGE 37	OF 60

DRAW	WK YEO	DATE	9/23/2008	HOUSTON-OPT MAIN WOOFER	SAMSUNG ELECTRONICS	
CHECK	BW YOO	DEV. STEP	PR			
APPROVAL	SH LEE	REV	REV 1.0		PART NO.	BA41-####A
MODULE CODE	undefined	LAST EDIT	August 13, 2010 10:44:13 AM		PAGE	38 OF 60

Marvell 88E8059(48pin, QFN,no LED)

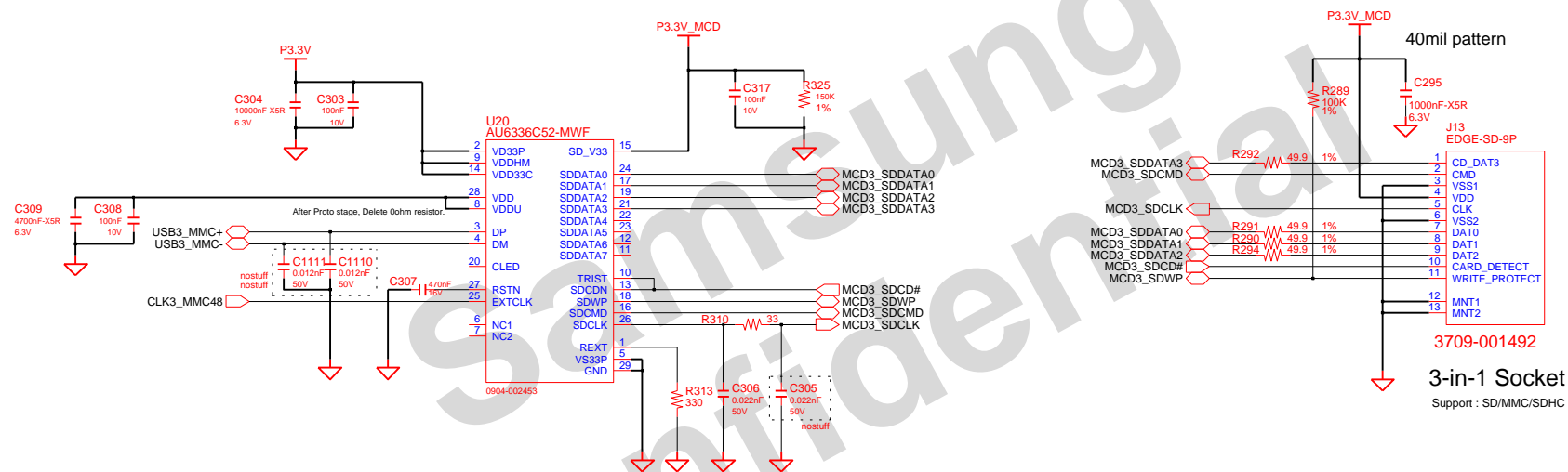


DESIGN	WK YEO	DATE	9/23/2008	TITLE	HOUSTON-OPT	SAMSUNG ELECTRONICS
CHECK	BW YOO	DEV. STEP	PR		LAN	
APPROVAL	SH LEE	REV	REV 1.0		LAN_Marvell 88E8059	PART NO. BA41-####A
MODULE CODE		LAST EDIT				
August 13, 2010 10:44:13 AM						PAGE 39 OF 60

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3 IN 1 CARD (AU6336)

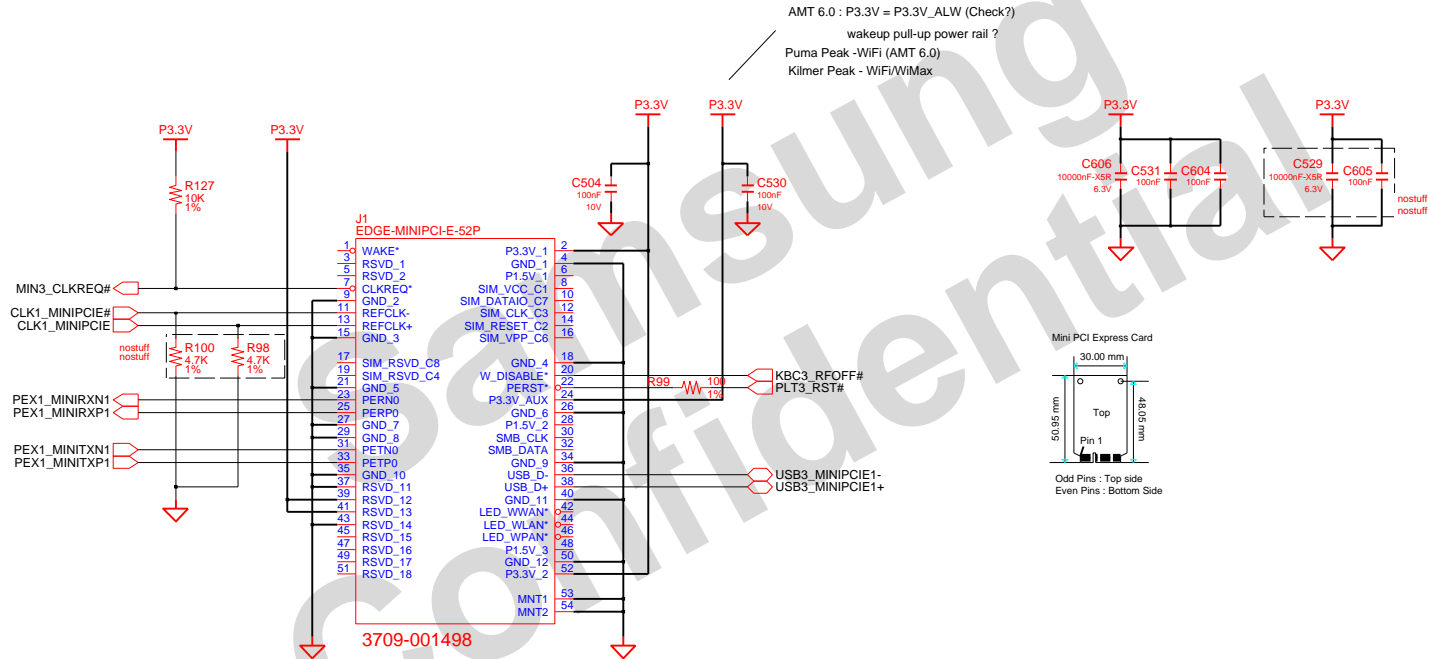


DESIGN	WK YEO	DATE	9/23/2008	TITLE	HOUSTON-OPT MULTICARD 3 IN 1 CARD(AU6336)	SAMSUNG ELECTRONICS
CHECK	BW YOO	DEV. STEP	PR			
APPROVAL	SH LEE	REV	REV 1.0			
MODULE CODE		LAST EDIT		August 13, 2010 10:44:13 AM	PAGE 40 OF 60	

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WLAN, 4mm

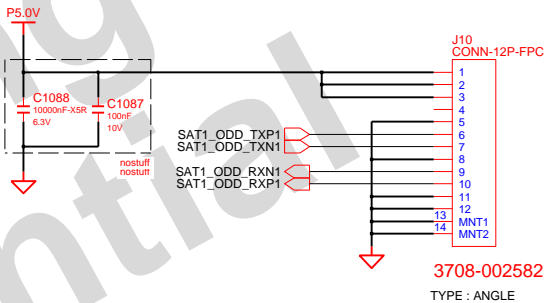
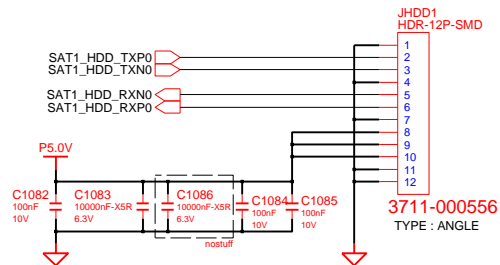


DESIGN	WK YEO	DATE	9/23/2008	TITLE	HOUSTON-OPT MINI_PCIE_CONN WLAN	SAMSUNG ELECTRONICS
CHECK	BW YOO	DEV. STEP	PR			
APPROVAL	SH LEE	REV	REV 1.0			
MODULE CODE		LAST EDIT				
				August 13, 2010 10:44:13 AM	PAGE 41	OF 60

SATA I/F CONN

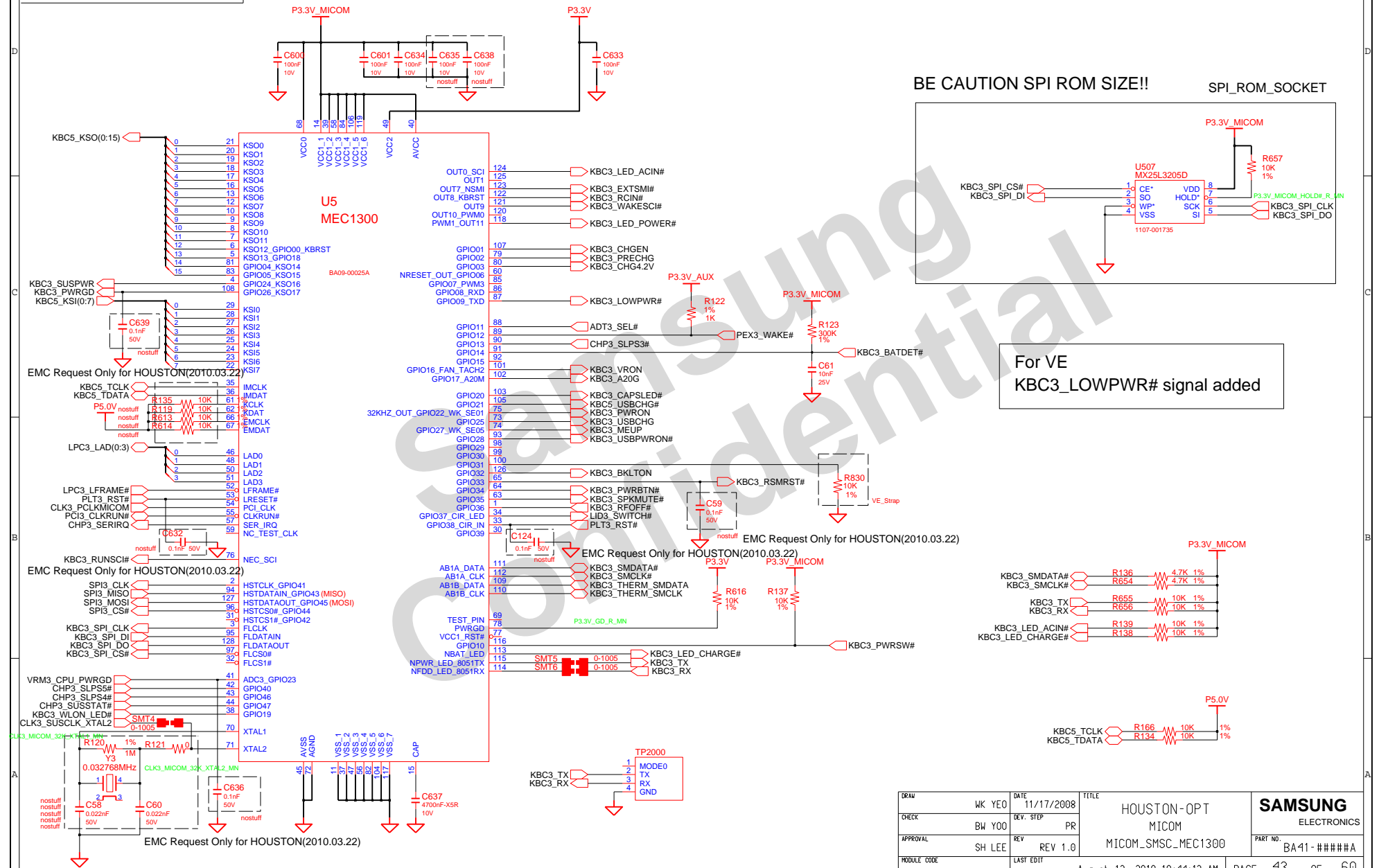
SATA HDD CONN

MAIN TO SUB : SATA ODD CONN



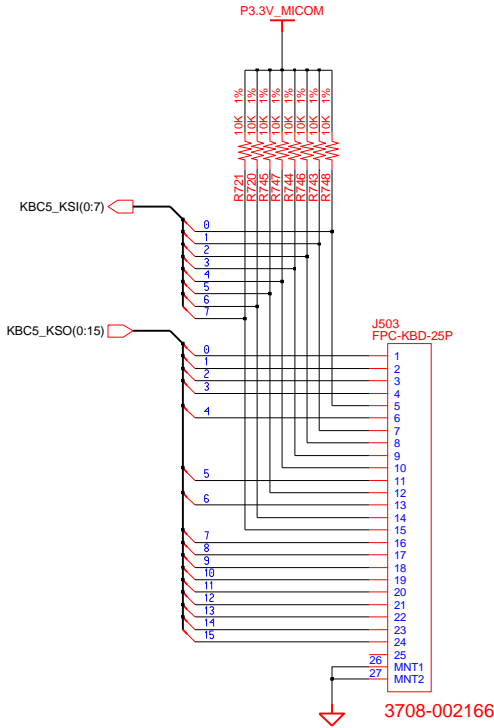
DESIGN	WK YEO	DATE	8/11/2009	TITLE	HOUSTON-OPT SATA_DEVICES	SAMSUNG ELECTRONICS
CHECK	BW YOO	DEV. STEP	PR			
APPROVAL	SH LEE	REV	REV 1.0			
MODULE CODE		LAST EDIT				
				August 13, 2010 10:44:13 AM	PAGE 42	OF 60

MAIN BOARD (MICOM)

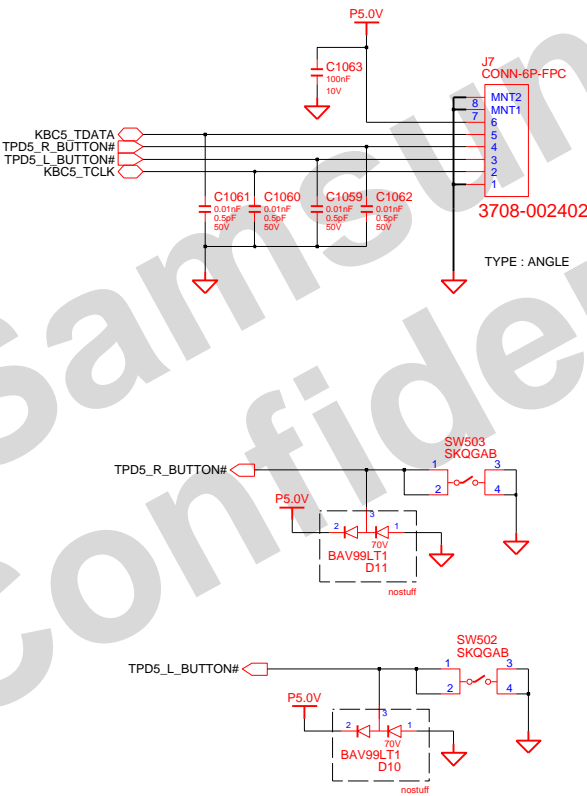


Micom Glue Logic

KEYBOARD



TOUCHPAD

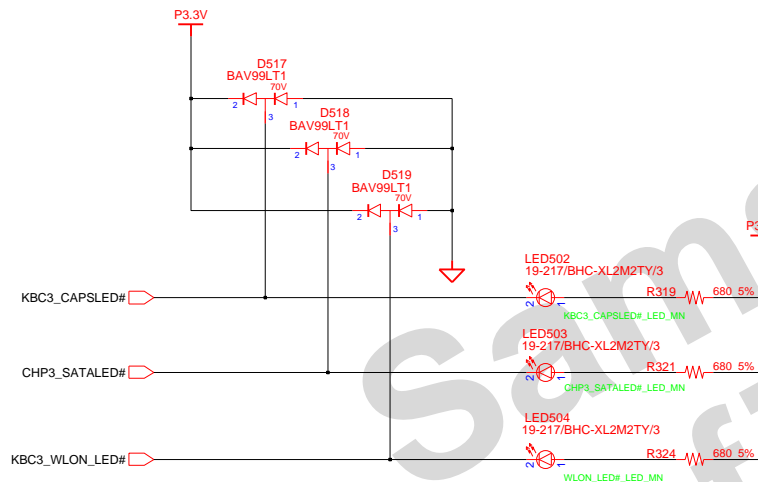


DESIGN	WK YEO	DATE	9/23/2008	TITLE	HOUSTON-OPT MICOM GLUE LOGIC KEYBOARD & TOUCHPAD	SAMSUNG ELECTRONICS
CHECK	BW YOO	DEV. STEP	PR			
APPROVAL	SH LEE	REV	REV 1.0			
MODULE CODE		LAST EDIT				
				August 13, 2010 10:44:13 AM	PAGE 44	OF 60

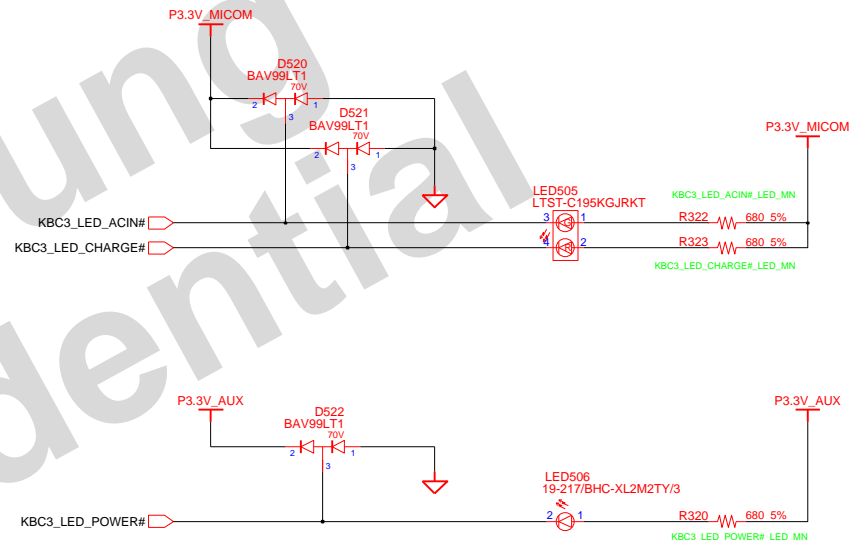
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FUNCTION KEY LED



ADAPTERIN/CHARGING LED



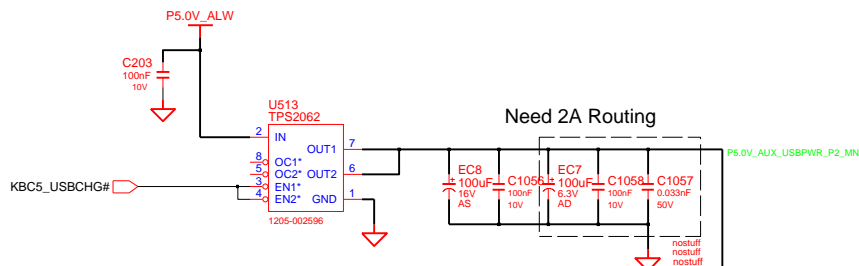
Houston R vakue is changed from 475 to 680 ohm for DFM Issue(2010.04.17)

For VE

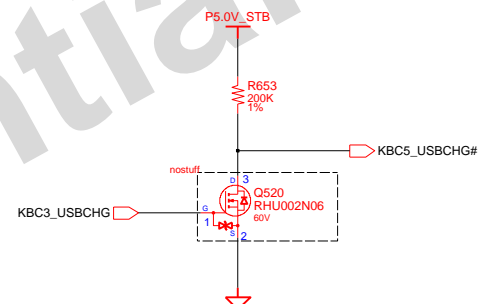
D517, D518, D519, D520, D521, D522 : 0401-000132 : Semtech

DRAW	WK YEO	DATE	9/23/2008	TITLE	HOUSTON-OPT LED_SWITCH	SAMSUNG ELECTRONICS
CHECK	BW YOO	DEV. STEP	PR			PART NO. BA41-####A
APPROVAL	SH LEE	REV	REV 1.0			
MODULE CODE		LAST EDIT				
				August 13, 2010 10:44:13 AM	PAGE 45	OF 60

For VE
J508 : Alltop connector
J3 : Jingshi connector
D507 : 0401-000132, Semtech

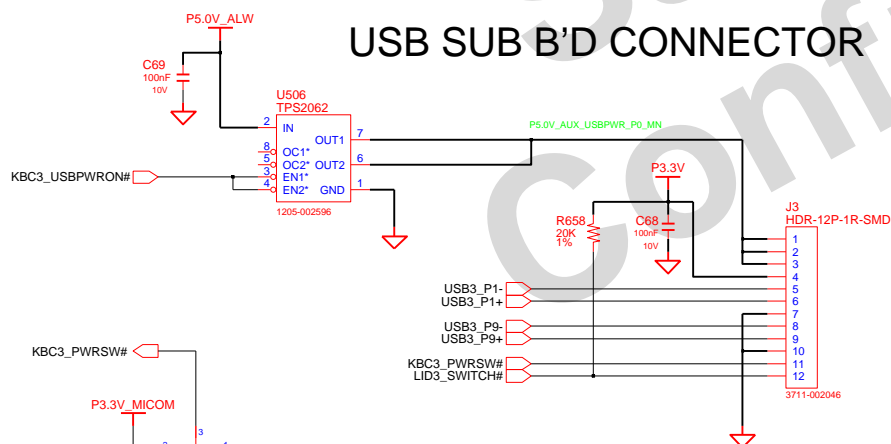


TYPE : ANGLE



for sleep in charge

For FAST BOOTING
P3.3V -> P3.3V AUX

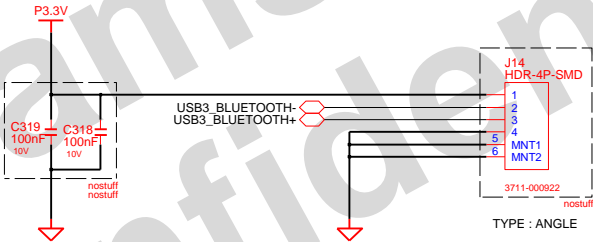


TYPE : STRAIGHT

DESIGN	WK YEO	DATE	9/23/2008	TITLE HOUSTON-OPT USB_CONN USB	SAMSUNG ELECTRONICS
CHECK	BW YOO	DEV. STEP	PR		
APPROVAL	SH LEE	REV	REV 1.0		
MODULE CODE	LAST EDIT				
				August 13, 2010 10:44:13 AM	PAGE 46 OF 60

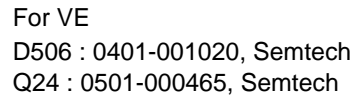
Bluetooth Interface

Houston use only WLAN + B/T Combo



DESIGN	WK YEO	DATE	9/23/2008	TITLE	HOUSTON-OPT USB_DEVICES BLUETOOTH	SAMSUNG ELECTRONICS
CHECK	BW YOO	DEV. STEP	PR			
APPROVAL	SH LEE	REV	REV 1.0			
MODULE CODE		LAST EDIT	August 13, 2010 10:44:13 AM	PAGE	47	OF 60


Referred from Berkeley14



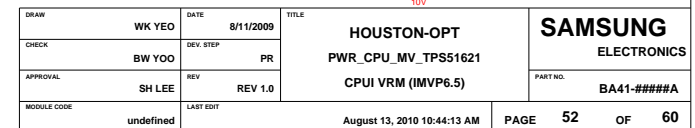
DESIGN	WK YEO	DATE	2/2/2009	TITLE HOUSTON-OPT P3.3V_AUX / P5.0V_ALW TI TPS51125	SAMSUNG ELECTRONICS
CHECK	BW YOO	DEV. STEP	PR		
APPROVAL	SH LEE	REV	REV 1.0		
MODULE CODE	LAST EDIT				
				August 13, 2010 10:44:13 AM	PAGE 49 OF 60 PART NO. BA41-#####

Referred from Berkeley14
Controller Changed (Pin2Pin), Ton Resistor, VDD Resistor Changed



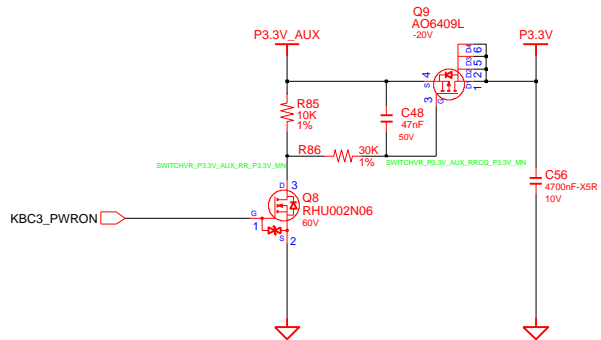
DRAW	WK YEO	DATE	01/09/2008	TITLE	HOUSTON-OPT P1.05V TI TPS51125	
CHECK	BW YOO	DEV. STEP	PR			
APPROVAL	SH LEE	REV	REV 1.0			
MODULE CODE				LAST EDIT	August 13, 2010 10:44:13 AM	PAGE 50 OF 60

Referred from Houston13

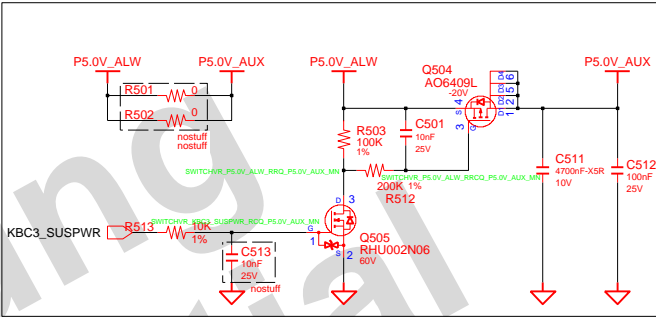


Switched Power

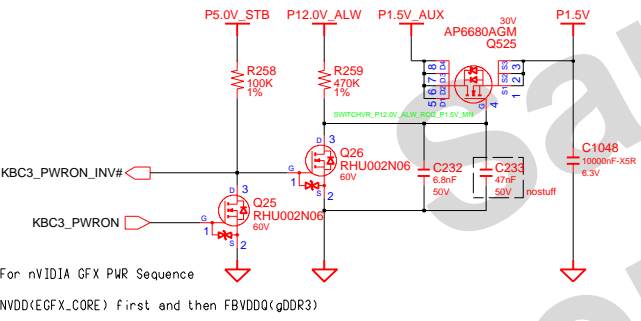
Switched Power On (P3.3V) Multi@AP2607GY,Si3433BDV



P5.0V_AUX

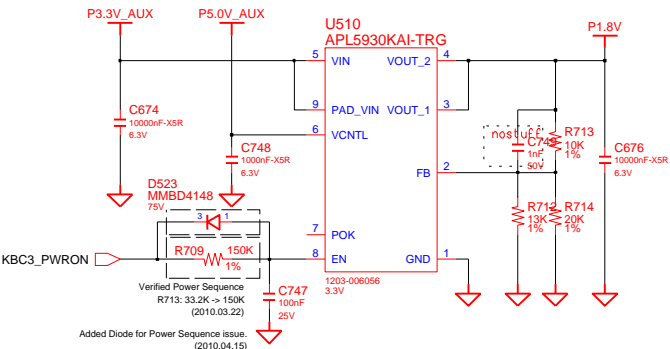


Switched Power On (P1.5V)

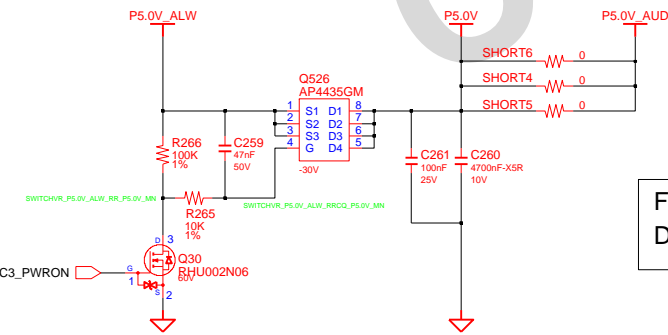


For nVIDIA GFX PWR Sequence
NVDD(EGFX_CORE) First and then FBVDDQ(gDDR3)

P1.8V(LDO)



Switched Power On (P5.0V) Multi@Si443DDY



For VE
D523 : 0401-000191, Semtech

DRAW	WK YEO	DATE	8/11/2009	TITLE	HOUSTON-OPT	SAMSUNG
CHECK	BW YOO	DEV. STEP	PR	PWR_MV_DISCHARGER	ELECTRONICS	
APPROVAL	SH LEE	REV	REV 1.0	Switched Power 1	PART NO.	BA41-####A
MODULE CODE	undefined	LAST EDIT	August 13, 2010 10:44:13 AM	PAGE	55	OF 60

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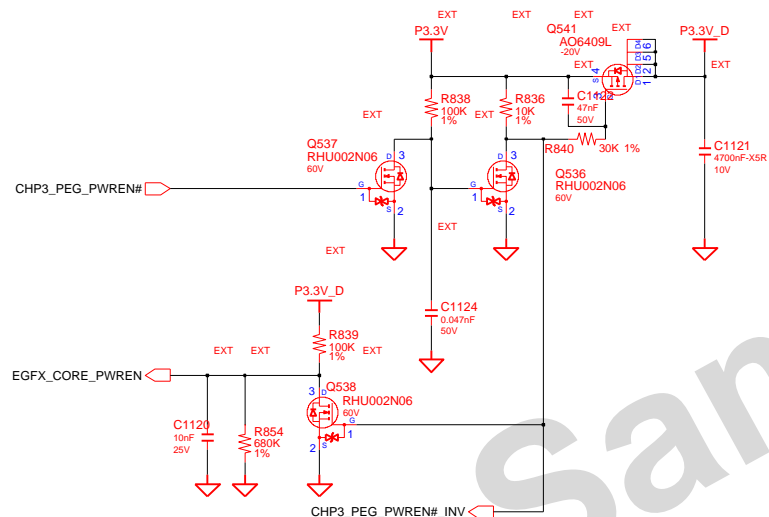
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Switched Power 2 (For nVidia GFX Power Sequence)

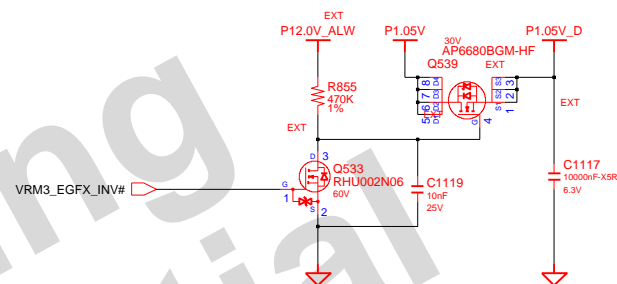
Sequence (D3.3V -> GFX Core -> D1.8V -> D1.5V -> D1.05V)

OPT_ONLY

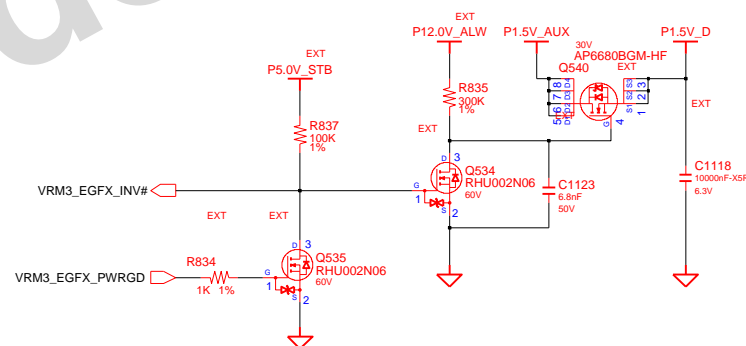
Discrete Switched Power (D3.3V : Max_1.2A)



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

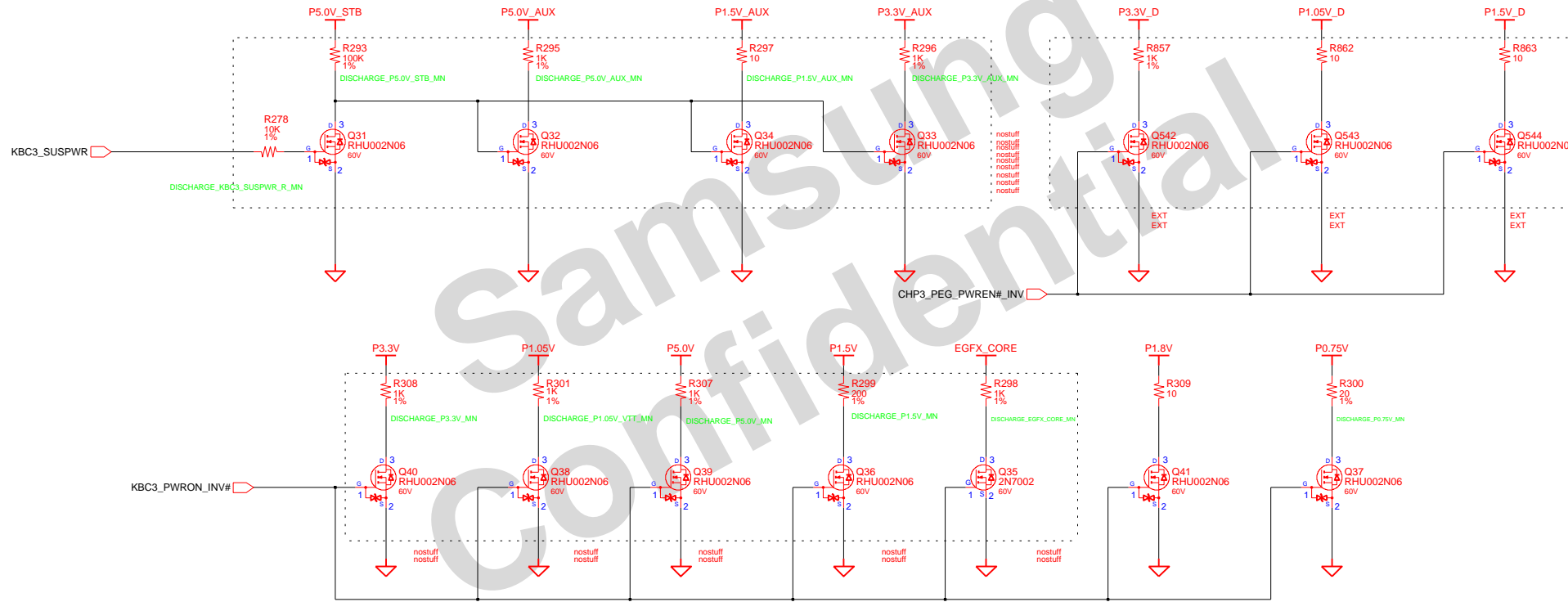


Discrete Switched Power (D1.5V : Max 5.0A)



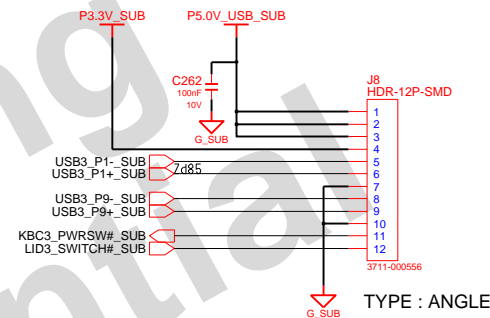
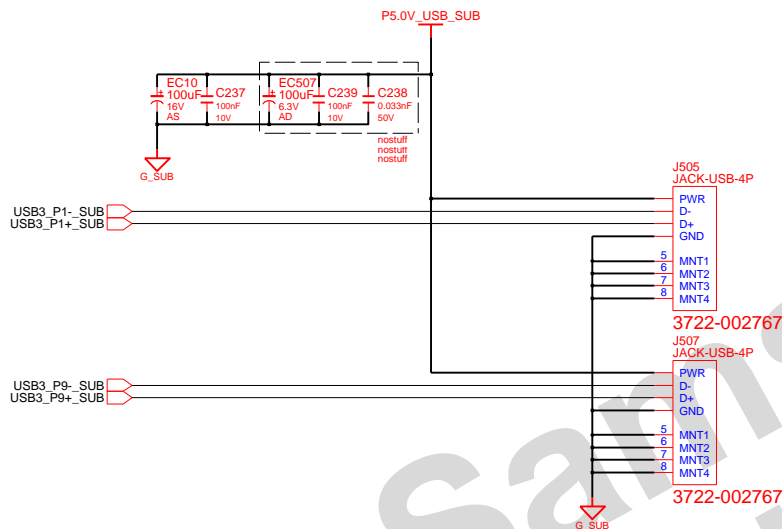
DRAW	WK YEO	DATE	10/30/2008	TITLE	HOUSTON-OPT LPC-TPM_1p2 Switched Power 2	SAMSUNG ELECTRONICS PART NO. BA41-#####
CHECK	BW YOO	DEV. STEP	PR			
APPROVAL	SH LEE	REV	REV 1.0			
MODULE CODE	undefined	LAST EDIT	August 13, 2010 10:44:13 AM	PAGE	56 OF 60	

POWER DISCHARGER

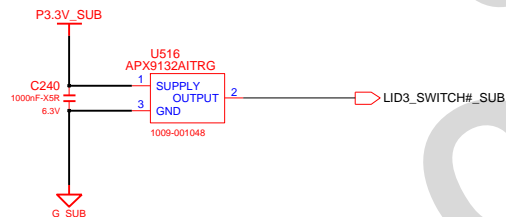


DESIGN	WK YEO	DATE	8/11/2009	TITLE	HOUSTON-OPT SUB BOARD1 Discharging Logic	SAMSUNG ELECTRONICS
CHECK	BW YOO	DEV. STEP	PR			PART NO.
APPROVAL	SH LEE	REV	REV 1.0			BA41-####A
MODULE CODE		LAST EDIT			August 13, 2010 10:44:13 AM	PAGE 57 OF 60

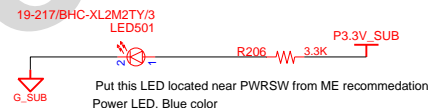
SUB TO MAIN USB CONN



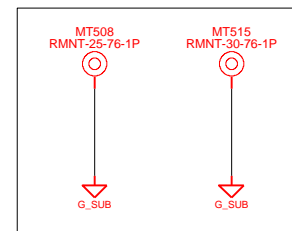
LID_SWITCH



Power ON LED



Power Switch Button



USB sub board mount hole

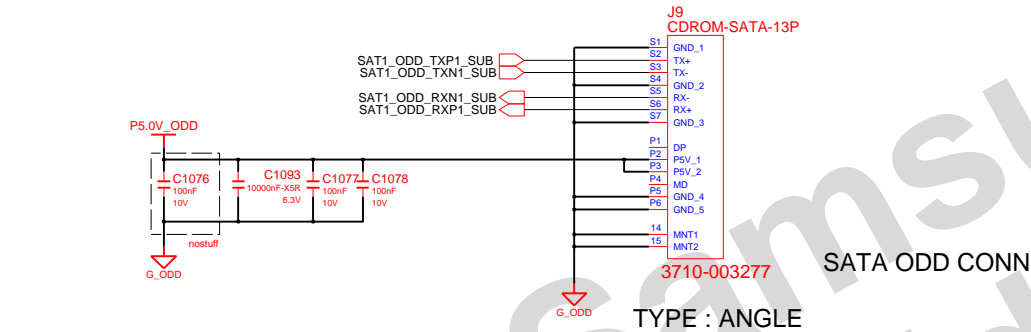
For VE
J505, J507 : Alltop connector
U516 : 1009-001048

For FAST BOOTING
P3.3V SUB -> P3.3V AUX SUB

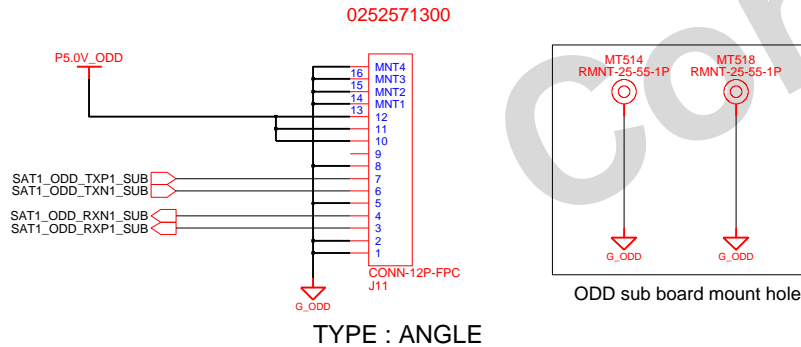
DESIGN	WK YEO	DATE	9/23/2008	HOUSTON-OPT SUB BOARD1 2 USB & POWER SW	SAMSUNG ELECTRONICS	
CHECK	SW YOO	DEV. STEP	PR			
APPROVAL	SH LEE	REV	REV 1.0		PART NO.	BA41-####A
MODULE CODE	LAST EDIT				August 13, 2010 10:44:13 AM	PAGE 58 OF 60

SATA ODD SUB BOARD(15")

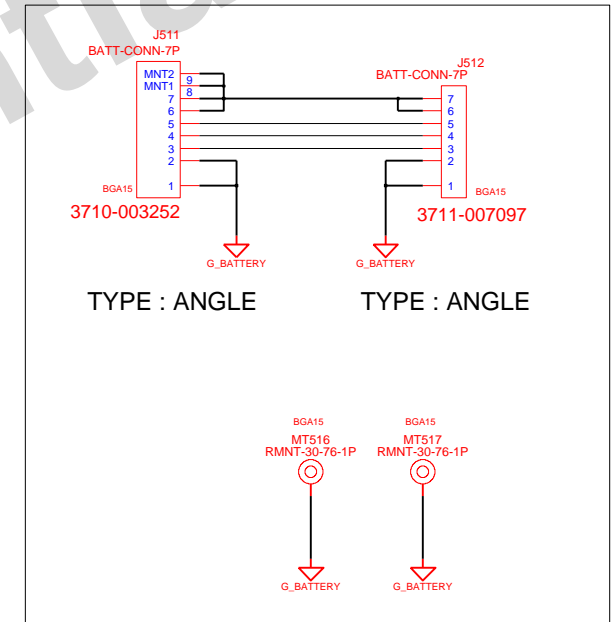
SATA ODD SUB BOARD



SUB TO MAIN : SATA ODD CONN



15" BATTERY SUBBOARD

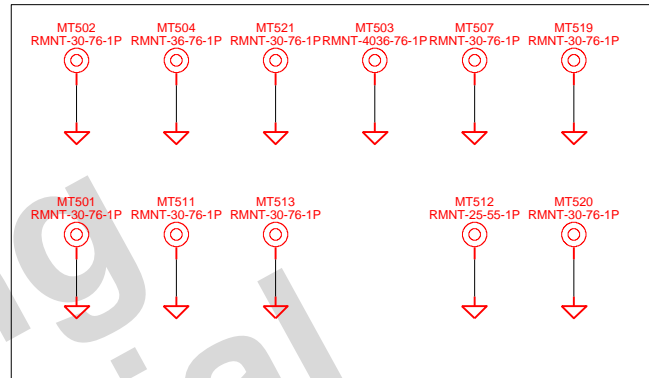


DRAW	WK YEO	DATE	8/1/2009	TITLE	HOUSTON-OPT	SAMSUNG
CHECK	BW YOO	DEV. STEP	PR	ICT PORT	ICT PORT	ELECTRONICS
APPROVAL	SH LEE	REV	REV 1.0	ICT PORT	ICT PORT	PART NO.
MODULE CODE		LAST EDIT				BA41-####A
				August 13, 2010 10:44:13 AM	PAGE	59 OF 60

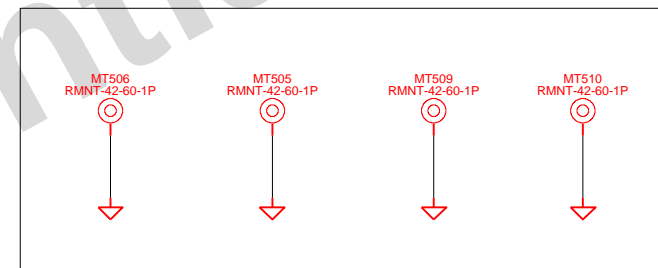
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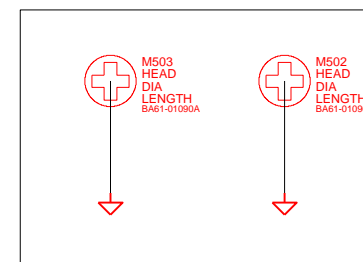
Mainboard Mount ((30-76)X8EA,(40-76)X1EA,(25-55)X2EA)



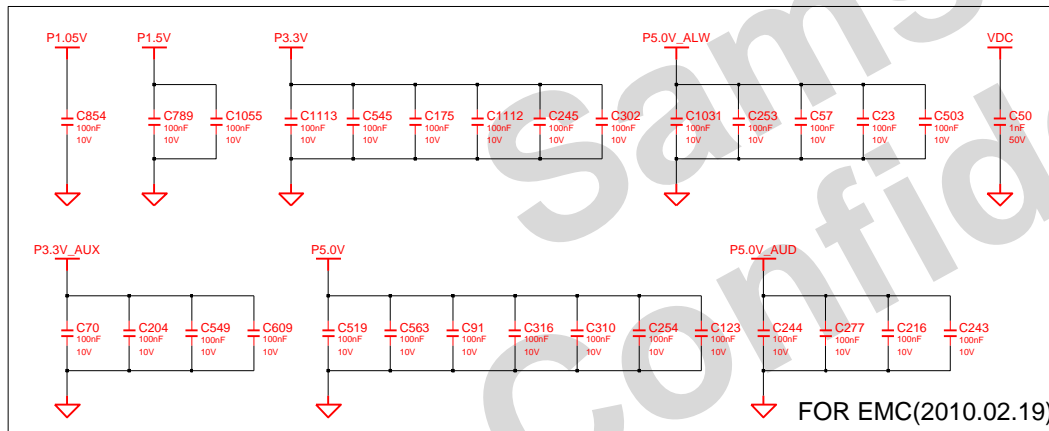
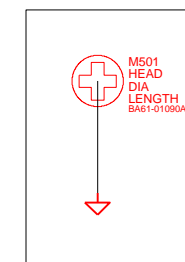
CPU Thermal (NEED TO VE UPDATE!!!)



GPU Thermal

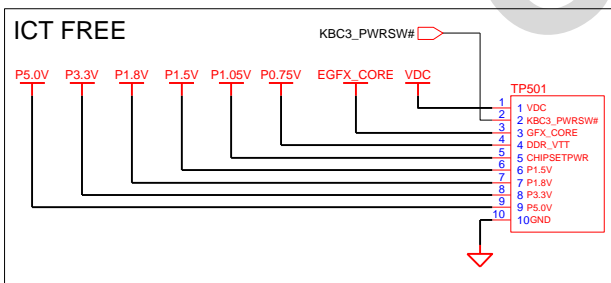


FAN



FOR EMC(2010.02.19)

ICT FREE



DRAW	WK YEO	DATE	9/23/2008	TITLE	HOUSTON-OPT	SAMSUNG
CHECK	BW YOO	DEV. STEP	PR	ICT PORT	Etc.	ELECTRONICS
APPROVAL	SH LEE	REV	REV 1.0			PART NO.
MODULE CODE		LAST EDIT				BA41-####A
				August 13, 2010 10:44:13 AM	PAGE	60
					OF	60