

SCALA2-EXT

CPU : Arrandale PGA
 Chip Set : Intel Ibex Peak
 GFX : N11M
 Remarks : Calpella Platform

Model Name : SCALA2-EXT
 PBA Name : MAIN
 PCB Code : BA41-01424A (GCE)
 BA41-01423A (NY)
 BA41-01425A (HAN)

Dev. Step : MP1.1
 Revision : 1.1
 T.R. Date : 2010.12.10

Design	CHECK	APPROVAL
QZ DAI	SIMMAN WU	BC LEE

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

sheet01 : Cover
 sheet02 : BLOCK DIAGRAM
 sheet03 : BOARD INFORMATION
 sheet04 : POWER DIAGRAM
 sheet05 : POWER RAILS
 sheet06 : POWER SEQUENCE
 sheet07 : CLOCK DISTRIBUTION
 sheet08 : CK505-SHRINK
 sheet09 : Thermal Sensor
 sheet10 : CPU
 sheet11 : CPU
 sheet12 : CPU
 sheet13 : CPU
 sheet14 : DDR3 SODIMM #0
 sheet15 : DDR3 SODIMM #1
 sheet16 : PCH-IbexPeak
 sheet17 : PCH-IbexPeak
 sheet18 : PCH-IbexPeak
 sheet19 : PCH-IbexPeak
 sheet20 : PCH-IbexPeak
 sheet21 : 80 port
 sheet22 : N11X-GE2/GE1
 sheet23 : N11X-GE2/GE1
 sheet24 : N11X-GE2/GE1
 sheet25 : N11X-GE2/GE1
 sheet26 : GFX memory
 sheet27 : GFX memory
 sheet28 : LVDS / CAMERA
 sheet29 : CRT
 sheet30 : HDMI
 sheet31 : Audio - ALC269
 sheet32 : Audio - HP/MIC WOOFER(2.1CH)
 sheet33 : LAN (Realtek 8111E)
 sheet34 : WLAN
 sheet35 : SATA interface
 sheet36 : MICOM / BIOS
 sheet37 : MICOM Glue Logic (KBD / TP)
 sheet38 : USB connector Bluetooth
 sheet39 : SUB B'D connector
 sheet40 : Power - charger
 sheet41 : Power - P3.3V_AUX / P5.0V_AUX
 sheet42 : Power - P1.05V (Chipset Power)
 sheet43 : Power - DDR3
 sheet44 : Power - CPU VRM
 sheet45 : Power - IGFX_CORE
 sheet46 : Power - EGFX_CORE
 sheet47 : Power - Switched Power 1
 sheet48 : Power - Power Discharge
 sheet49 : USB/POWER SW SUB BD
 sheet50 : 3-in-1 card (GL823) & LED SUB BOARD
 sheet51 : ODD Sub B'd / Battery Sub B'd(for 15")
 sheet52 : Multimedia Sub B'd
 sheet53 : MOUNT HOLE
 sheet54 : Power - Switched Power 2
 sheet55 : Power - VCCSA

DRAW	QZ DAI	DATE	8/19/2010	TITLE	SCALA2-EXT	SAMSUNG ELECTRONICS
CHECK	SIMMAN WU	DEV. STEP	MP	MAIN		
APPROVAL	BC LEE	REV	rev. 1.1	COVER	PART NO. BA41-01423A	
MODULE CODE		LAST EDIT	December 25, 2010 10:42:33 AM	PAGE	1	OF 52

SCHEMATIC ANNOTATIONS AND BOARD INFORMATION

Voltage Rails		Active in
VDC P12.0V_ALW P3.3V_MICOM P5.0V_ALW P5.0V_STB	Primary DC system power supply (7 to 21V) 12.0V always power rail 3.3V always power rail (for Micom) 5.0V always power rail 5.0V always power rail	S4 - S5
P5.0V_AUX P3.3V_AUX P1.5V_AUX	5.0V switched on power rail (off in S4-S5) 3.3V switched on power rail (off in S4-S5) 1.5V power rail for DDR (off in S4-S5)	S3
P5.0V P3.3V P1.8V P1.5V P1.05V P0.75V	5.0V switched power rail (off in S3-S5) 3.3V switched power rail (off in S3-S5) 1.8V switched power rail (off in S3-S5) 1.5V switched power rail (off in S3-S5) 1.05V power rail for chipset (off in S3-S5) 0.9V power rail for DDR (off in S3-S5)	S0
VCC_CORE IGFX_CORE EGFX_CORE P1.05V (VCCP)	Core Voltage for CPU Core Voltage for IGFX Core Voltage for GPU VCC for Arrandale & IBEX Peak	S0

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

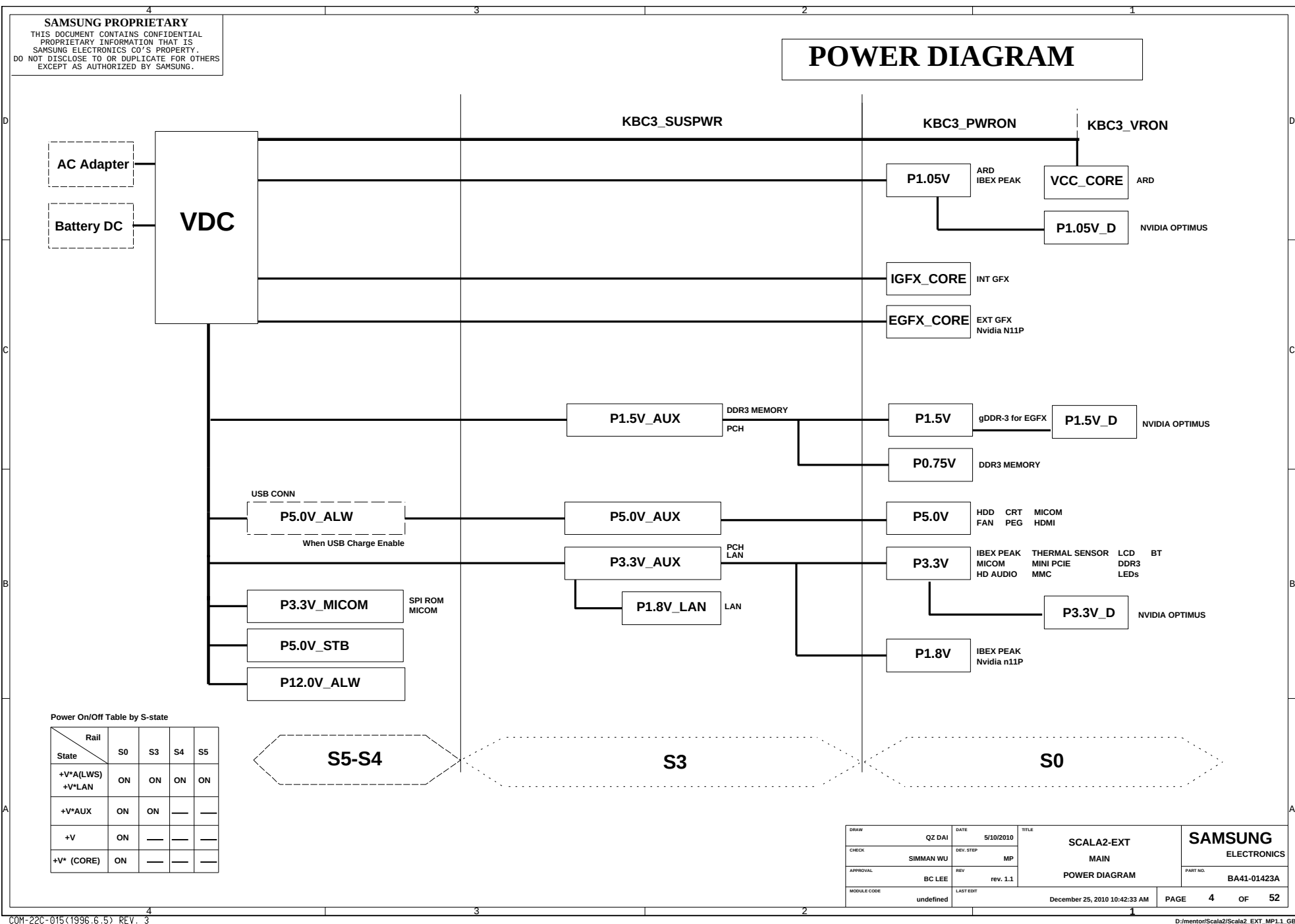
SATA PORT Assign	
PORT #	ASSIGNED TO
0	HDD
1	ODD
2	(N/A WITH HM55)
3	(N/A WITH HM55)
4	
5	

Crystal / Oscillator		
TYPE	FREQUENCY	USAGE
Crystal	32.768KHz	Real Time Clock
Crystal	14.318MHz	CK-505
Crystal	25MHz	Intel LAN

LCD Pannel Detect		
Devices	Resolution	PANNEL_DETECT_0
LTN140AT17	HD(1366x768)	SEC3250

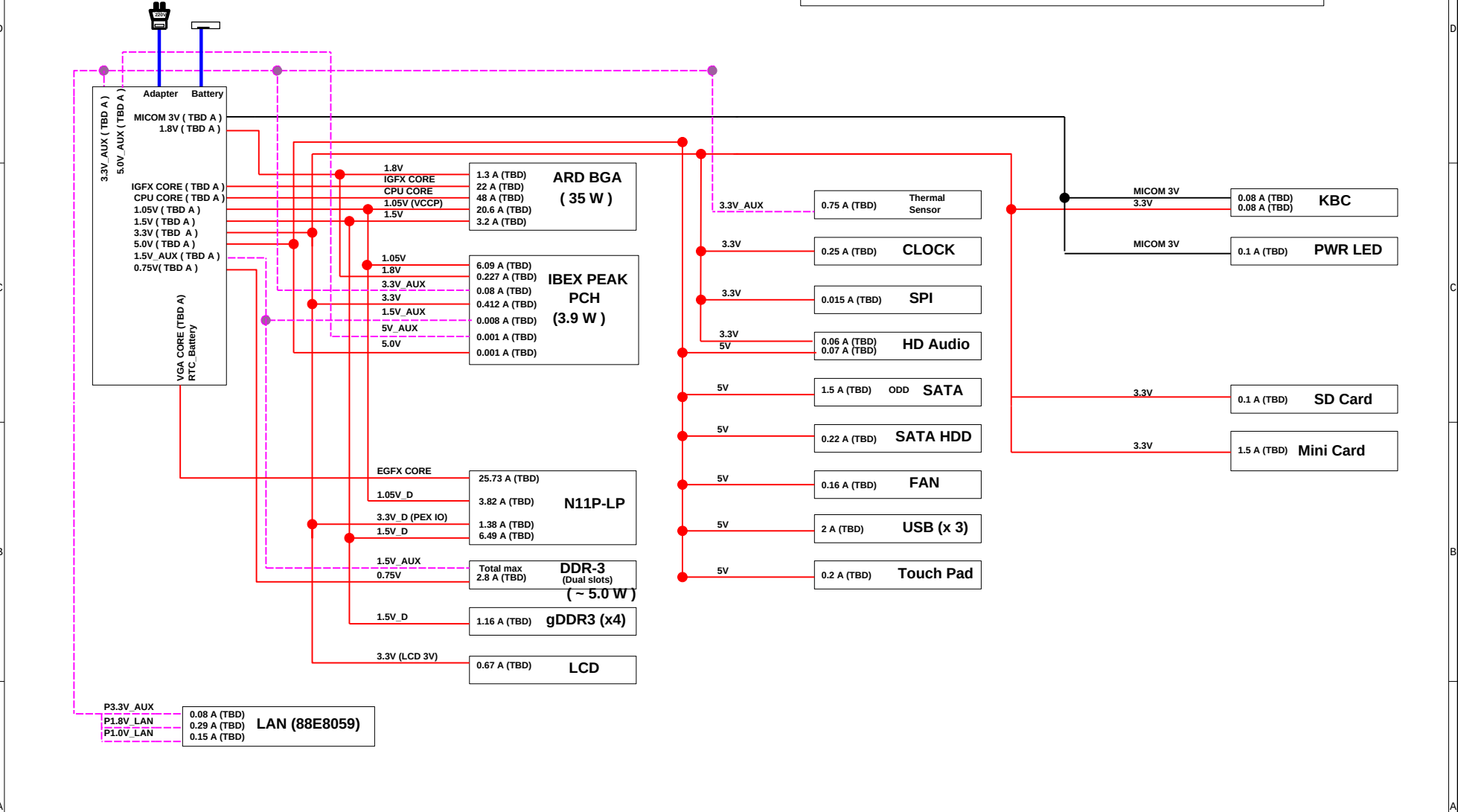
Devices	Address	Hex	Bus
IBEX PEAK	Master	-	SMBUS Master
CPU Thermal Sensor	0111 101x	7Ah	Thermal Sensor
SODIMM0	1010 000x	A0h	-
SODIMM1	1010 010x	A4h	-
Thermal Sensor on SODIMM0	0011 000x	30h	-
Thermal Sensor on SODIMM1	0011 010x	34h	-
CK-505M Shrink(Clock Generator)	1101 001x	D2h	Clock, Unused Clock Output Disable
Thermal Sensor on board	1101 100x	96h	
Power thermal management TS	1101 011x	96h	

DRAW	QZ DAI	DATE	8/19/2010	TITLE	SCALA2-EXT		
CHECK	SIMMAN WU	DEV. STEP	MP		MAIN		
APPROVAL	BC LEE	REV	rev. 1.1		BOARD INFO	PART NO.	BA41-01423A
MODULE CODE	undefined	LAST EDIT	December 25, 2010 10:42:33 AM			PAGE	3 OF 52

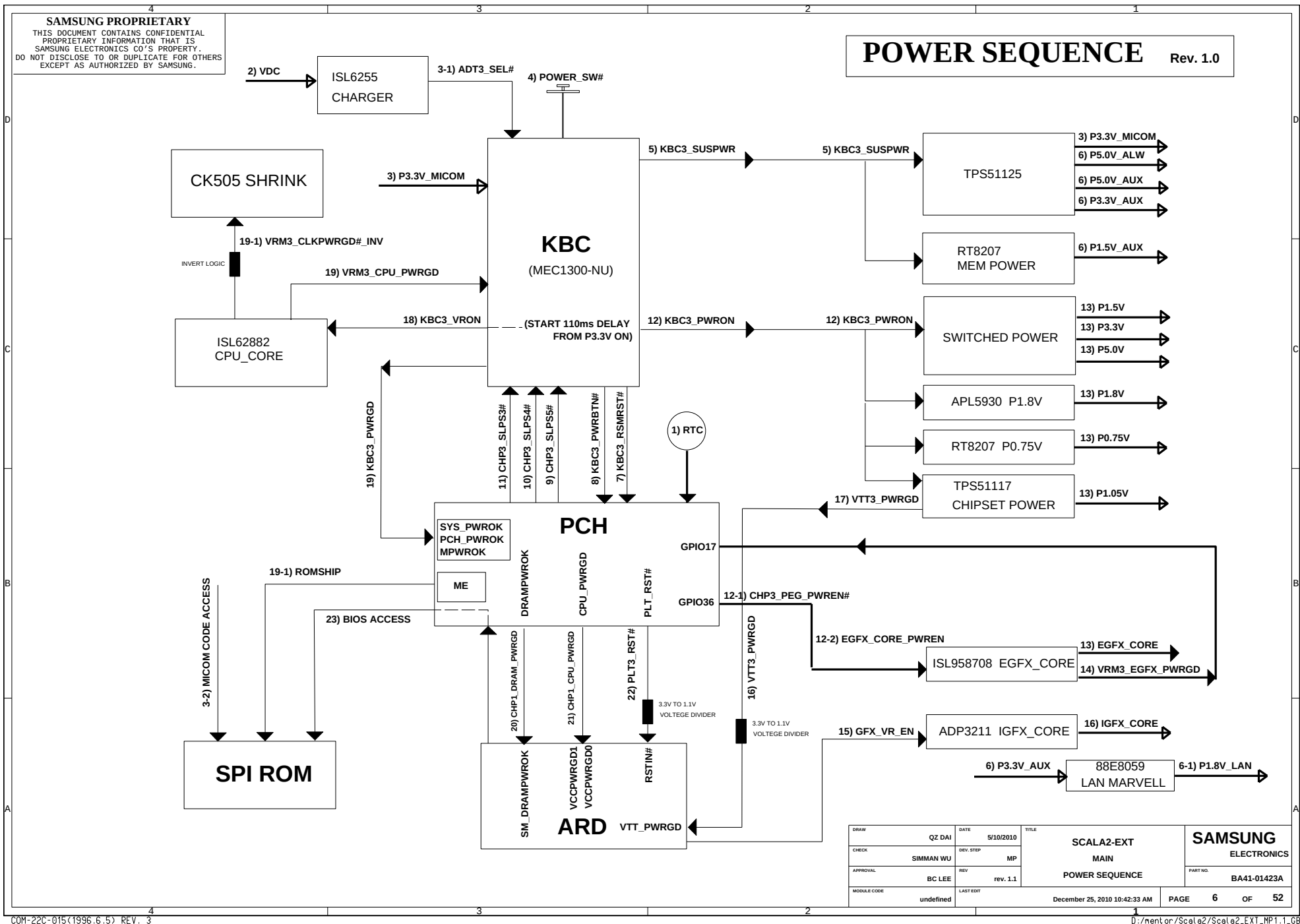


SAMSUNG PROPRIETARY
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

POWER RAILS ANALYSIS



DRAW	QZ DAI	DATE	5/10/2010	TITLE	SCALA2-EXT MAIN POWER RAILS	SAMSUNG ELECTRONICS
CHECK	SIMMAN WU	DEV. STEP	MP			PART NO. BA41-01423A
APPROVAL	BC LEE	REV	rev. 1.1			
MODULE CODE	undefined	LAST EDIT	December 25, 2010 10:42:33 AM	PAGE	5	OF 52



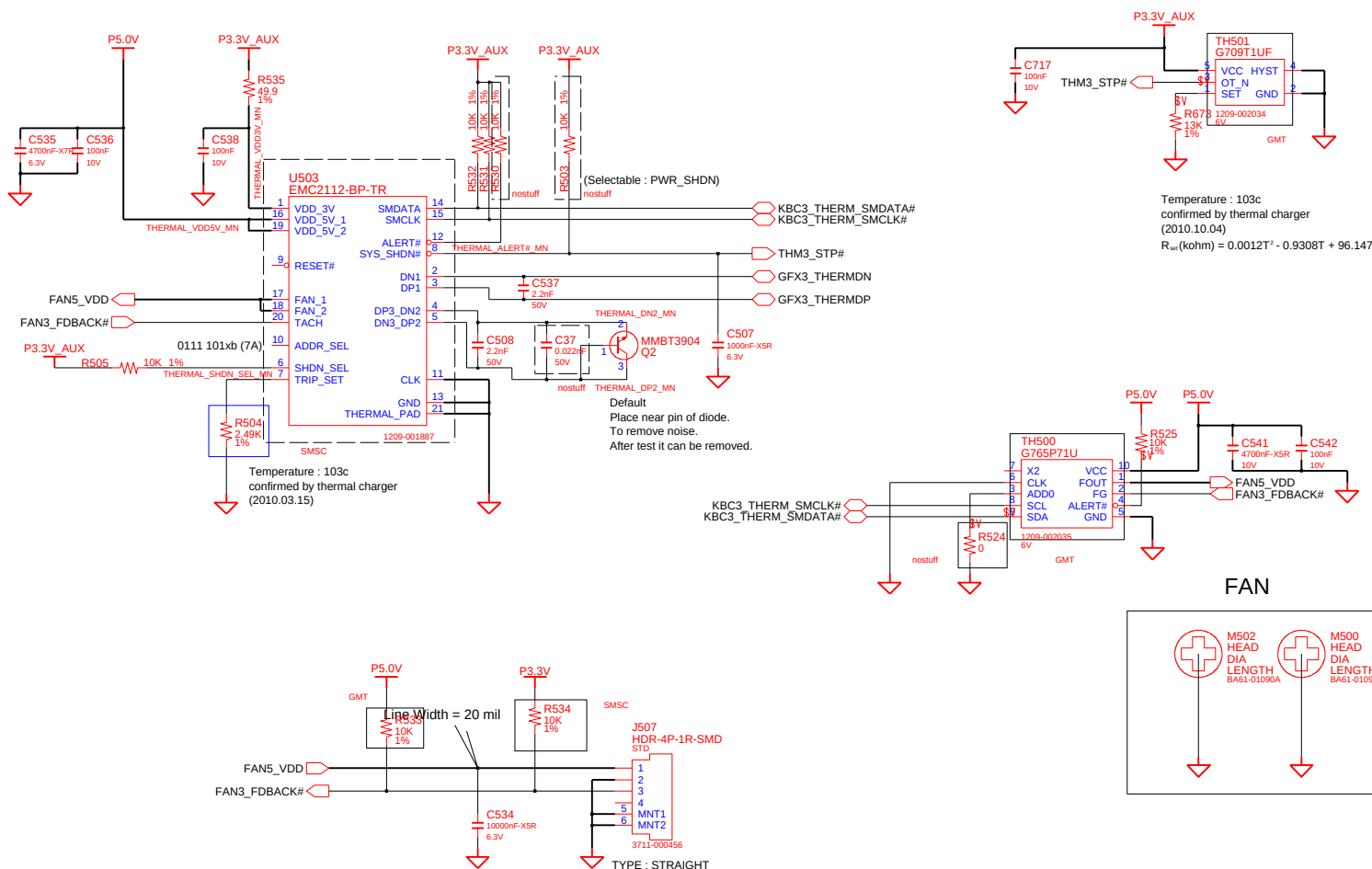
SAMSUNG PROPRIETARY

THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

THERMAL SENSOR & FAN CONTROL

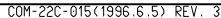
ADDRESSSEL MODE	
0	0101 111xb
✓ HIGH Z	0111 101xb (7A)
1	0101 110xb

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



DESIGN	QZ DAI	DATE	8/19/2010	TITLE	SCALA2-EXT	SAMSUNG
CHECK	SIMMAN WU	DEV. STEP	MP		THERMAL SENSOR	ELECTRONICS
APPROVAL	BC LEE	REV	rev. 1.1		THERMAL SENSOR EMC2112	PART NO.
MODULE CODE		LAST EDIT	December 25, 2010 10:42:33 AM			BA41-01423A
				PAGE	9	OF 52

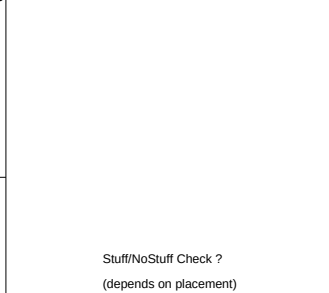
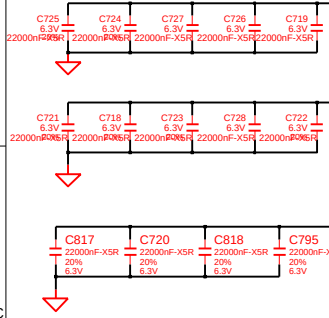
ARRANDALE PROCESSOR (DMI,PEG, FDI)





SAMSUNG PROPRIETARY
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

14x 22 uF : CPU VR side



Stuff/NoStuff Check ?
(depends on placement)

CPU CORE
CPU500-3
ARD/CFD PGA

- VCC1
- VCC2
- VCC3
- VCC4
- VCC5
- VCC6
- VCC7
- VCC8
- VCC9
- VCC10
- VCC11
- VCC12
- VCC13
- VCC14
- VCC15
- VCC16
- VCC17
- VCC18
- VCC19
- VCC20
- VCC21
- VCC22
- VCC23
- VCC24
- VCC25
- VCC26
- VCC27
- VCC28
- VCC29
- VCC30
- VCC31
- VCC32
- VCC33
- VCC34
- VCC35
- VCC36
- VCC37
- VCC38
- VCC39
- VCC40
- VCC41
- VCC42
- VCC43
- VCC44
- VCC45
- VCC46
- VCC47
- VCC48
- VCC49
- VCC50
- VCC51
- VCC52
- VCC53
- VCC54
- VCC55
- VCC56
- VCC57
- VCC58
- VCC59
- VCC60
- VCC61
- VCC62
- VCC63
- VCC64
- VCC65
- VCC66
- VCC67
- VCC68
- VCC69
- VCC70
- VCC71
- VCC72
- VCC73
- VCC74
- VCC75
- VCC76
- VCC77
- VCC78
- VCC79
- VCC80
- VCC81
- VCC82
- VCC83
- VCC84
- VCC85
- VCC86
- VCC87
- VCC88
- VCC89
- VCC90
- VCC91
- VCC92
- VCC93
- VCC94
- VCC95
- VCC96
- VCC97
- VCC98
- VCC99
- VCC100

POWER

CPU VIDS

SENSE LINES

1.1V RAIL POWER

PSI#

VID_0

VID_1

VID_2

VID_3

VID_4

VID_5

VID_6

PROC_DPRSLPVR

VTT_SELECT

ISENSE

VCC_SENSE

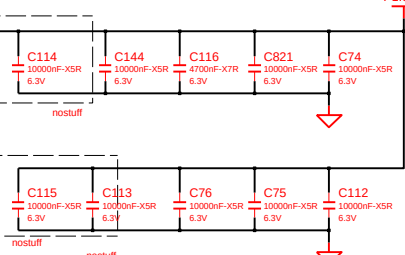
VSS_SENSE

VTT_SENSE

VSS_SENSE_VTT

ALL VTT DECAP IS SHARED

3 / 5



AF10

AF10

AF10

AF10

AF10

AF10

AF10

AF10

AF10

AF10

AF10

AF10

AF10

AF10

AF10

AF10

AF10

AF10

AF10

AF10

AF10

AF10

AF10

AF10

AF10

AF10

AF10

AF10

AF10

AF10

AF10

AF10

AF10

AF10

AF10

AF10

AF10

AF10

AF10

AF10

AF10

AF10

AF10

AF10

AF10

AF10

AF10

AF10

AF10

AF10

AF10

AF10

AF10

VTT33

VTT34

VTT35

VTT36

VTT37

VTT38

VTT39

VTT40

VTT41

VTT42

VTT43

VTT44

VTT45

VTT46

VTT47

VTT48

VTT49

VTT50

VTT51

VTT52

VTT53

VTT54

VTT55

VTT56

VTT57

VTT58

VTT59

VTT60

VTT61

VTT62

VTT63

VTT64

VTT65

VTT66

VTT67

VTT68

VTT69

VTT70

VTT71

VTT72

VTT73

VTT74

VTT75

VTT76

VTT77

VTT78

VTT79

VTT80

VTT81

VTT82

VTT83

VTT84

VTT85

VTT33

VTT34

VTT35

VTT36

VTT37

VTT38

VTT39

VTT40

VTT41

VTT42

VTT43

VTT44

VTT45

VTT46

VTT47

VTT48

VTT49

VTT50

VTT51

VTT52

VTT53

VTT54

VTT55

VTT56

VTT57

VTT58

VTT59

VTT60

VTT61

VTT62

VTT63

VTT64

VTT65

VTT66

VTT67

VTT68

VTT69

VTT70

VTT71

VTT72

VTT73

VTT74

VTT75

VTT76

VTT77

VTT78

VTT79

VTT80

VTT81

VTT82

VTT83

VTT84

VTT85

VTT33

VTT34

VTT35

VTT36

VTT37

VTT38

VTT39

VTT40

VTT41

VTT42

VTT43

VTT44

VTT45

VTT46

VTT47

VTT48

VTT49

VTT50

VTT51

VTT52

VTT53

VTT54

VTT55

VTT56

VTT57

VTT58

VTT59

VTT60

VTT61

VTT62

VTT63

VTT64

VTT65

VTT66

VTT67

VTT68

VTT69

VTT70

VTT71

VTT72

VTT73

VTT74

VTT75

VTT76

VTT77

VTT78

VTT79

VTT80

VTT81

VTT82

VTT83

VTT84

VTT85

VTT33

VTT34

VTT35

VTT36

VTT37

VTT38

VTT39

VTT40

VTT41

VTT42

VTT43

VTT44

VTT45

VTT46

VTT47

VTT48

VTT49

VTT50

VTT51

VTT52

VTT53

VTT54

VTT55

VTT56

VTT57

VTT58

VTT59

VTT60

VTT61

VTT62

VTT63

VTT64

VTT65

VTT66

VTT67

VTT68

VTT69

VTT70

VTT71

VTT72

VTT73

VTT74

VTT75

VTT76

VTT77

VTT78

VTT79

VTT80

VTT81

VTT82

VTT83

VTT84

VTT85

VTT33

VTT34

VTT35

VTT36

VTT37

VTT38

VTT39

VTT40

VTT41

VTT42

VTT43

VTT44

VTT45

VTT

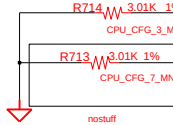
SAMSUNG PROPRIETARY
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

CPU500-5
ARD/CFD_PG5 / 5

AT20	VSS1	VSS81	AE34
AI17	VSS2	VSS82	AE33
AR31	VSS3	VSS83	AE32
AR28	VSS4	VSS84	AE31
AR26	VSS5	VSS85	AE30
AR24	VSS6	VSS86	AE29
AR23	VSS7	VSS87	AE28
AR20	VSS8	VSS88	AE27
AR17	VSS9	VSS89	AE26
AR15	VSS10	VSS90	AE6
AR12	VSS11	VSS91	AD10
AR9	VSS12	VSS92	AC9
AR6	VSS13	VSS93	AC2
AR3	VSS14	VSS94	AC1
AP20	VSS15	VSS95	AB35
AP17	VSS16	VSS96	AB34
AP13	VSS17	VSS97	AB33
AP10	VSS18	VSS98	AB32
AP7	VSS19	VSS99	AB31
AP4	VSS20	VSS100	AB30
AP2	VSS21	VSS101	AB29
AN34	VSS22	VSS102	AB28
AN31	VSS23	VSS103	AB27
AN23	VSS24	VSS104	AB26
AN20	VSS25	VSS105	AB6
AM17	VSS26	VSS106	AA10
AM29	VSS27	VSS107	Y8
AM27	VSS28	VSS108	Y4
AM25	VSS29	VSS109	Y2
AM20	VSS30	VSS110	W35
AM17	VSS31	VSS111	W34
AM14	VSS32	VSS112	W33
AM11	VSS33	VSS113	W32
AM8	VSS34	VSS114	W31
AM5	VSS35	VSS115	W30
AM2	VSS36	VSS116	W29
AL34	VSS37	VSS117	W28
AL31	VSS38	VSS118	W27
AL23	VSS39	VSS119	W26
AL20	VSS40	VSS120	W25
AL17	VSS41	VSS121	W24
AL12	VSS42	VSS122	U8
AL9	VSS43	VSS123	U4
AL3	VSS44	VSS124	U2
AK29	VSS45	VSS125	T35
AK27	VSS46	VSS126	T34
AK25	VSS47	VSS127	T33
AK20	VSS48	VSS128	T32
AK17	VSS49	VSS129	T31
AJ31	VSS50	VSS130	T29
AJ23	VSS51	VSS131	T28
AJ20	VSS52	VSS132	T27
AJ17	VSS53	VSS133	T26
AJ14	VSS54	VSS134	T6
AJ11	VSS55	VSS135	T5
AJ8	VSS56	VSS136	R10
AJ5	VSS57	VSS137	P8
AJ2	VSS58	VSS138	P2
AH35	VSS59	VSS139	N35
AH34	VSS60	VSS140	N34
AH33	VSS61	VSS141	N33
AH32	VSS62	VSS142	N32
AH31	VSS63	VSS143	N31
AH30	VSS64	VSS144	N30
AH29	VSS65	VSS145	N29
AH28	VSS66	VSS146	N28
AH27	VSS67	VSS147	N27
AH26	VSS68	VSS148	N26
AH25	VSS69	VSS149	N25
AH20	VSS70	VSS150	N6
AH17	VSS71	VSS151	M10
AH13	VSS72	VSS152	L35
AH9	VSS73	VSS153	L32
AH6	VSS74	VSS154	L29
AH3	VSS75	VSS155	L8
AG10	VSS76	VSS156	L5
AF8	VSS77	VSS157	L2
AF4	VSS78	VSS158	K34
AF2	VSS79	VSS159	K33
AE35	VSS80	VSS160	K30

K27	VSS161	AE34
K9	VSS162	AE33
K6	VSS163	AE32
K3	VSS164	AE31
J32	VSS165	AE30
J30	VSS166	AE29
J21	VSS167	AE28
J19	VSS168	AE27
H35	VSS169	AE26
H32	VSS170	AE6
H28	VSS171	AD10
H26	VSS172	AC9
H24	VSS173	AC2
H22	VSS174	AC1
H18	VSS175	AB35
H15	VSS176	AB34
H13	VSS177	AB33
H11	VSS178	AB32
H8	VSS179	AB31
H5	VSS180	AB30
H2	VSS181	AB29
G34	VSS182	AB28
G31	VSS183	AB27
G20	VSS184	AB26
G9	VSS185	AB6
G6	VSS186	AA10
G3	VSS187	Y8
F30	VSS188	Y4
F27	VSS189	Y2
F25	VSS190	W35
F22	VSS191	W34
F19	VSS192	W33
F16	VSS193	W32
E35	VSS194	W31
E32	VSS195	W30
E29	VSS196	W29
E24	VSS197	W28
E21	VSS198	W27
E13	VSS199	W26
E11	VSS200	W25
E8	VSS201	W24
E5	VSS202	U8
E2	VSS203	U4
D33	VSS204	U2
D30	VSS205	T35
D26	VSS206	T34
D9	VSS207	T33
D6	VSS208	T32
D3	VSS209	T31
C34	VSS210	T29
C32	VSS211	T28
C29	VSS212	T27
C26	VSS213	T26
C24	VSS214	T6
C22	VSS215	T5
C19	VSS216	R10
C16	VSS217	P8
B31	VSS218	P2
B25	VSS219	N35
B21	VSS220	N34
B18	VSS221	N33
B17	VSS222	N32
B13	VSS223	N31
B11	VSS224	N30
B8	VSS225	N29
B6	VSS226	N28
B4	VSS227	N27
A29	VSS228	N26
A27	VSS229	N25
A23	VSS230	N6
A9	VSS231	M10
	VSS232	L35
	VSS233	L32

NCTF
AT35
AT1
AR34
B2
B1
A35
VSS_NCTF1
VSS_NCTF2
VSS_NCTF3
VSS_NCTF4
VSS_NCTF5
VSS_NCTF6
VSS_NCTF7



AP25	RSVD1	RSVD32	AJ13
AL25	RSVD2	RSVD33	AJ12
AL24	RSVD3	RSVD34	AH25
AL22	RSVD4	RSVD35	AK26
A93	RSVD5	RSVD36	AL26
AG9	RSVD6	RSVD37	AR2
M27	RSVD7	RSVD38	AJ26
L28	RSVD8	RSVD39	AJ27
H17	SA_DIMM_VREFDQ		
H17	SB_DIMM_VREFDQ		
G25	RSVD11		
G17	RSVD12	RSVD_NCTF_40	AP1
E31	RSVD13	RSVD_NCTF_41	AT2
E30	RSVD14	RSVD_NCTF_42	AT3
		RSVD_NCTF_43	AR1
AM30	CFG_0	RSVD45	AL28
AM28	CFG_1	RSVD46	AL29
AP31	CFG_2	RSVD47	AP30
AL32	CFG_3	RSVD48	AP32
AL30	CFG_4	RSVD49	AL27
AM31	CFG_5	RSVD50	AT31
AM29	CFG_6	RSVD51	AP33
AM32	CFG_7	RSVD52	AR33
AK32	CFG_8	RSVD53	AT33
AK31	CFG_9	RSVD_NCTF_54	AT34
AK28	CFG_10	RSVD_NCTF_55	AR35
AJ28	CFG_11	RSVD_NCTF_56	AR35
AN30	CFG_12	RSVD_NCTF_57	AR32
AN32	CFG_13	RSVD58	
AJ32	CFG_14		
AJ29	CFG_15	RSVD_TP_59	E15
AJ30	CFG_16	RSVD_TP_60	F15
AK30	CFG_17	KEY	A2
H16	RSVD_TP_86	RSVD62	D15
		RSVD63	C15
		RSVD64	AJ15
		RSVD65	AH15
B19	RSVD15		
A19	RSVD16		
A20	RSVD17		
B20	RSVD18		
U9	RSVD19	RSVD_TP_66	AA5
T9	RSVD20	RSVD_TP_67	AA4
		RSVD_TP_68	R8
AC9	RSVD21	RSVD_TP_69	AD3
AB9	RSVD22	RSVD_TP_70	AD2
		RSVD_TP_71	AA2
		RSVD_TP_72	AA1
		RSVD_TP_73	R9
		RSVD_TP_74	AG7
		RSVD_TP_75	AE3
C1	RSVD_NCTF_23		
A3	RSVD_NCTF_24		
		RSVD_TP_76	V4
		RSVD_TP_77	V5
		RSVD_TP_78	N2
		RSVD_TP_79	N2
J29	RSVD26	RSVD_TP_80	AD5
J28	RSVD27	RSVD_TP_81	AD7
		RSVD_TP_82	W3
A34	RSVD_NCTF_28	RSVD_TP_83	W2
A33	RSVD_NCTF_29	RSVD_TP_84	N3
		RSVD_TP_85	AE5
C35	RSVD_NCTF_30		AD9
B35	RSVD_NCTF_31		

(VSS) RSVD86

CRB is NC
EDS/DG is GND recommend

CFG Straps for Processor

PCI Express Configuration Select	
CFG0	1: Single PEG 0: Bifunction enabled

PCI Express Static Lane Reversal	
CFG3	1: Normal operation 0: Lane Reversed

Display Port Presence	
CFG4	1: Disabled - No DP device is connected to eDP 0: Enabled - (DP device is connected to eDP

PCIe 2.0 SUPPORT	
CFG7	1: Normal operation 0: PCIe2.0 Jitter support

DESIGN	QZ DAI	DATE	8/19/2010	TITLE	SCALA2-EXT	SAMSUNG
CHECK	SIMMAN WU	DEV. STEP	MP		CPU	ELECTRONICS
APPROVAL	BC LEE	REV	rev. 1.1		BGA CPU (4/5)	PART NO.
MODULE CODE		LAST EDIT				BA41-01423A
				December 25, 2010 10:42:33 AM	PAGE	13 OF 52

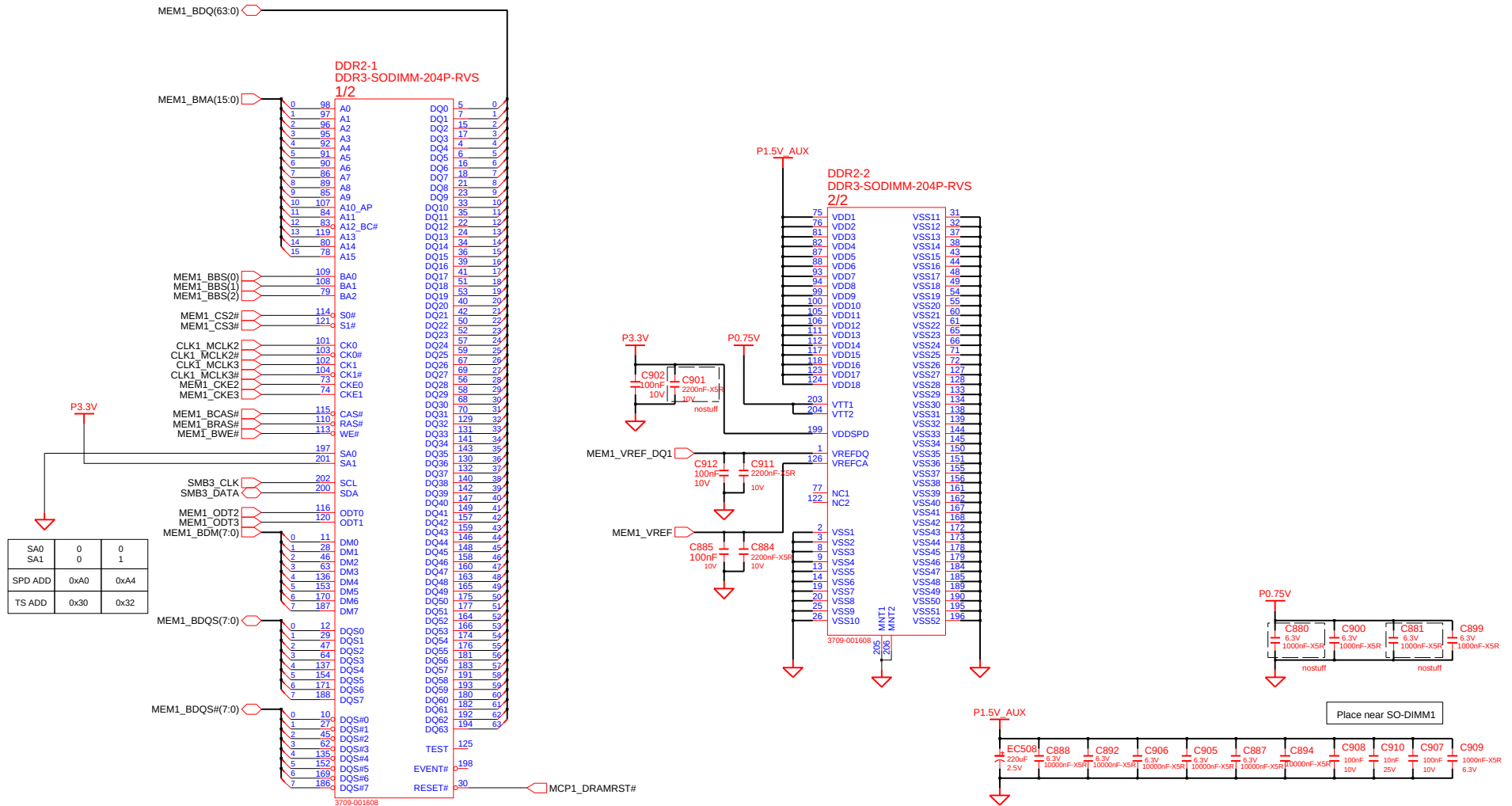
SAMSUNG PROPRIETARY
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

DDR SO-DIMM #1

Height : 4 mm (STANDARD)

P/N : 3709-001560 (FOXCONN)

P/N : 3709-001607 (CONCRAFT)



DRAW	QZ DAI	DATE	8/19/2010	TITLE	SCALA2-EXT SODIMM A	SAMSUNG ELECTRONICS
CHECK	SIMMAN WU	DEV. STEP	MP			PART NO. BA41-01423A
APPROVAL	BC LEE	REV	rev. 1.1		DDR3	
MODULE CODE		LAST EDIT	December 25, 2010 10:42:33 AM	PAGE	14	OF 52

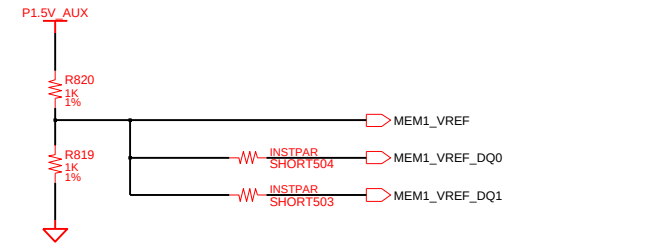
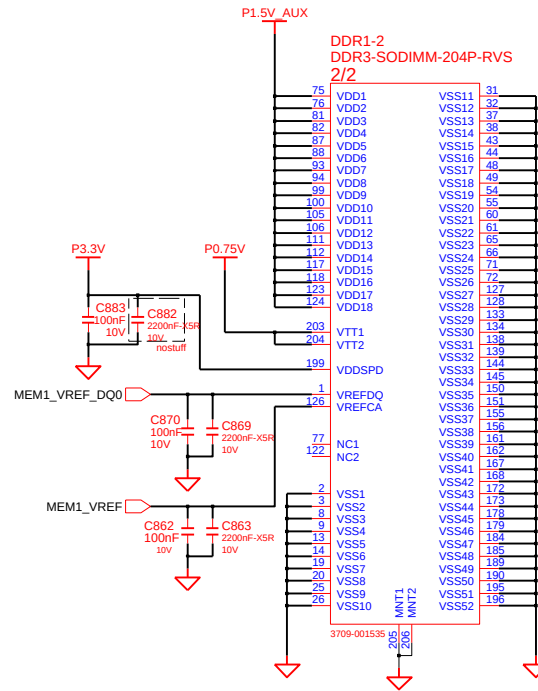
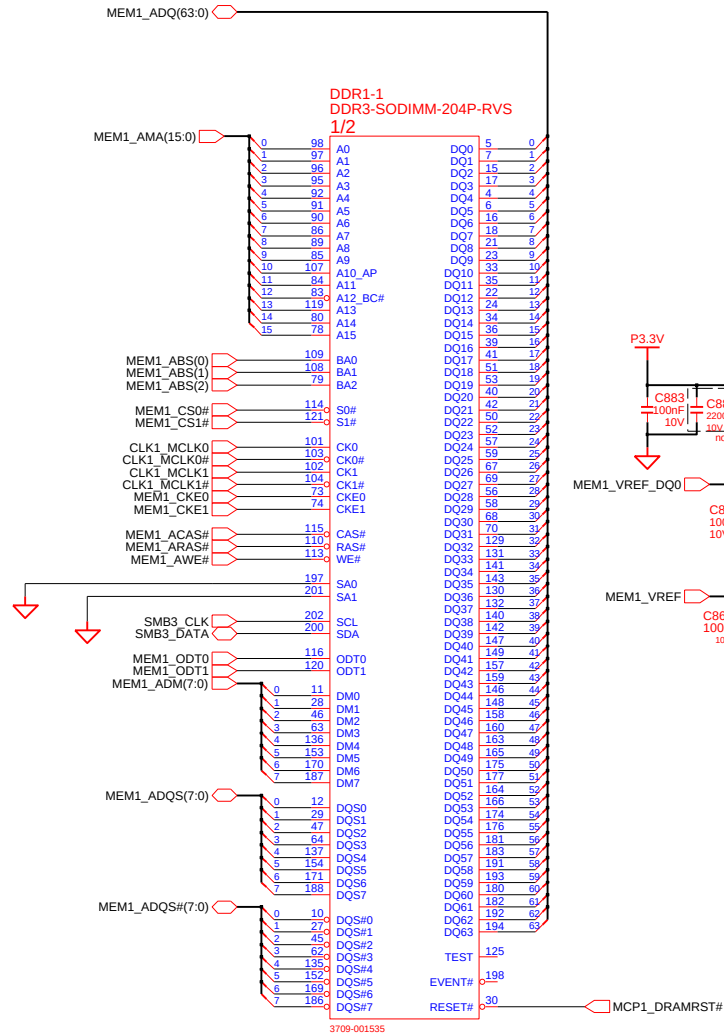
SAMSUNG PROPRIETARY
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

DDR SO-DIMM #0

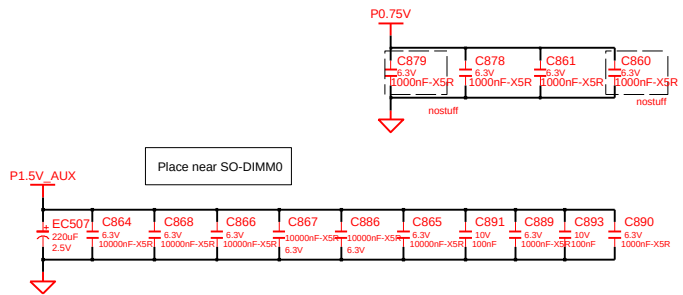
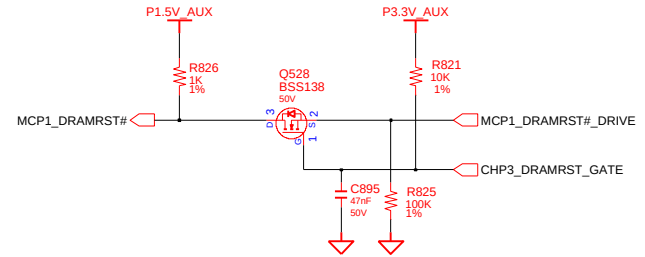
Height : 8 mm (STANDARD)

P/N : 3709-001615 (FOXCONN)

P/N : 3709-001622 (CONCRAFT)

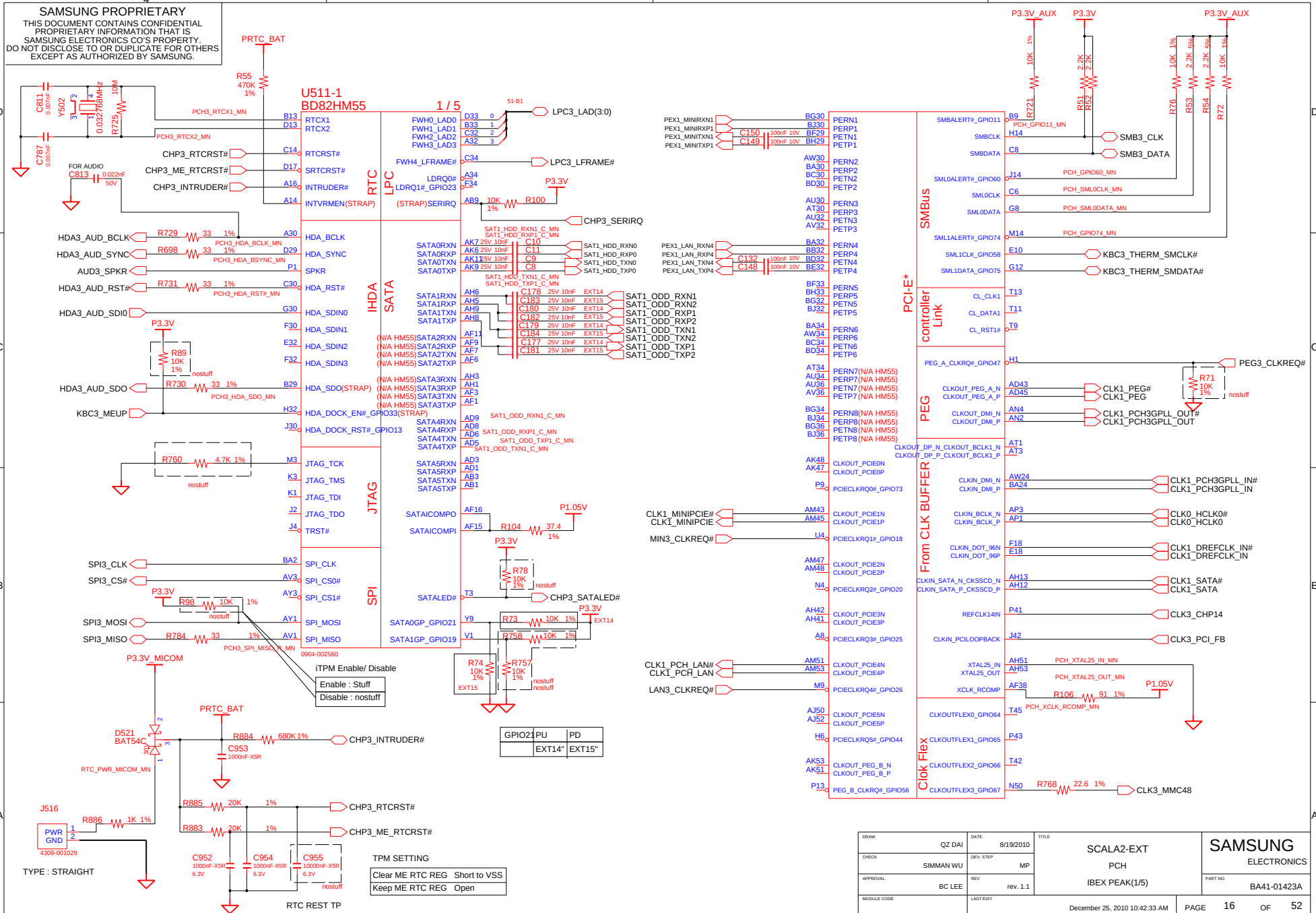


Place between two memory Connector



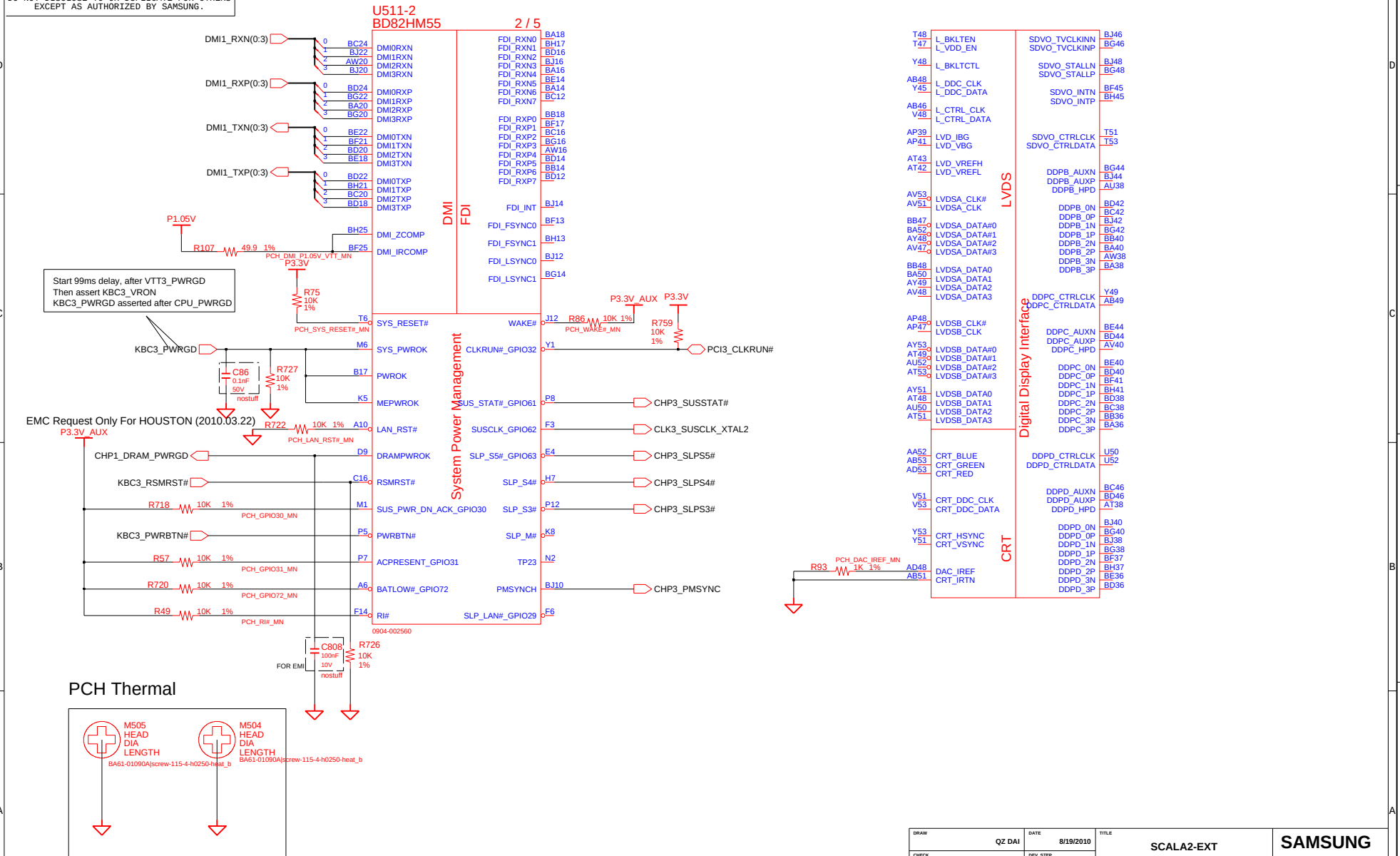
DRAW	QZ DAI	DATE	8/19/2010	TITLE	SCALA2-EXT SODIMM B DDR3	SAMSUNG ELECTRONICS
CHECK	SIMMAN WU	DEV. STEP	MP			PART NO. BA41-01423A
APPROVAL	BC LEE	REV	rev. 1.1			
MODULE CODE		LAST EDIT				
December 25, 2010 10:42:33 AM						PAGE 15 OF 52

SAMSUNG PROPRIETARY
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

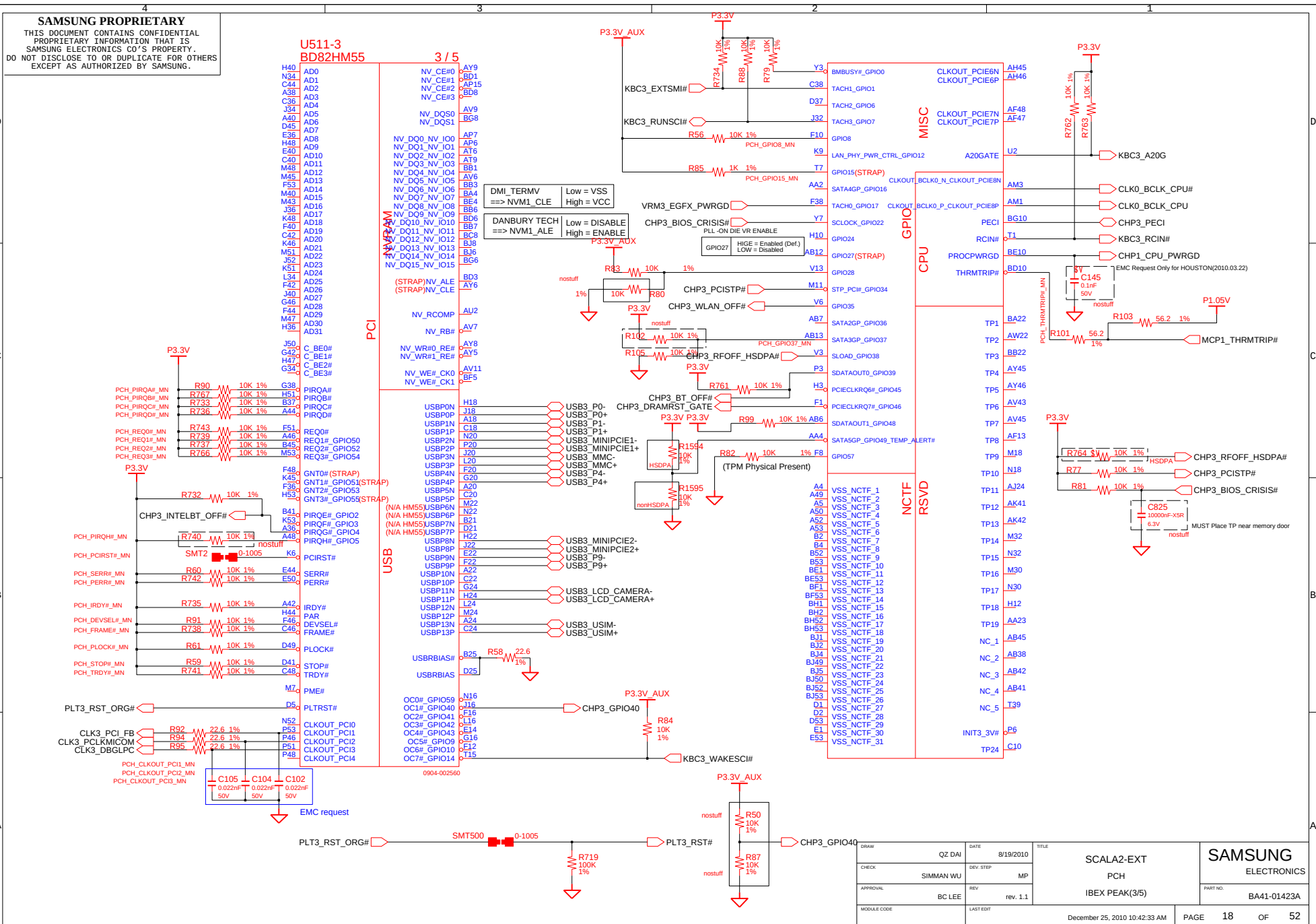


DRAW	QZ DAI	DATE	8/19/2010	TITLE	SCALA2-EXT PCH IBEX PEAK(1/5)	SAMSUNG ELECTRONICS
CHECK	SIMMAN WU	DEV. STEP	MP			
APPROVAL	BC LEE	REV	rev. 1.1			
MODULE CODE		LAST EDIT		December 25, 2010 10:42:33 AM		PAGE 16 OF 52

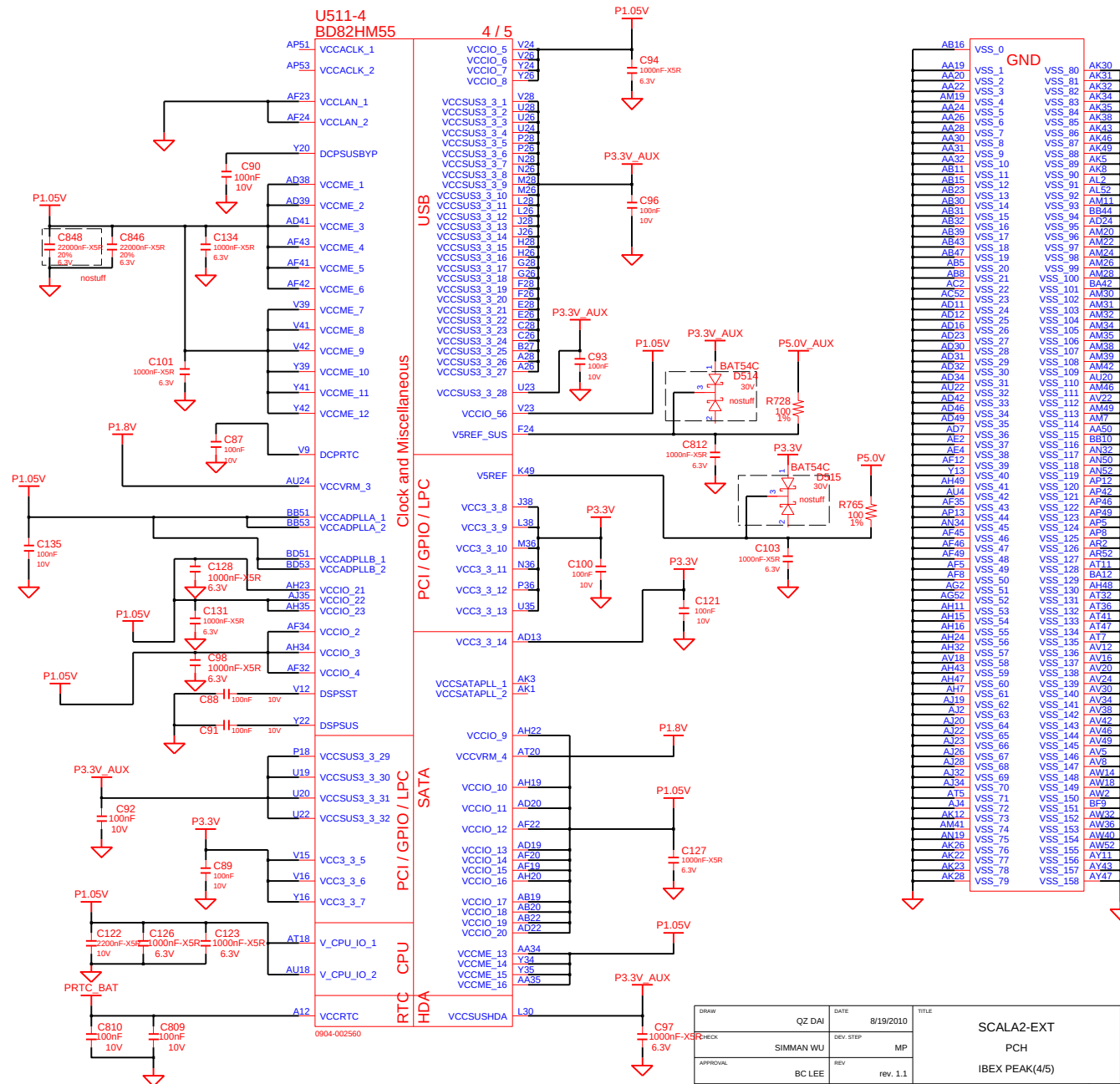
SAMSUNG PROPRIETARY
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.



DRAW	QZ DAI	DATE	8/19/2010	TITLE	SCALA2-EXT	SAMSUNG
CHECK	SIMMAN WU	DEV. STEP	MP		PCH	ELECTRONICS
APPROVAL	BC LEE	REV	rev. 1.1		IBEX PEAK(2/5)	PART NO.
MODULE CODE		LAST EDIT				BA41-01423A
				December 25, 2010 10:42:33 AM	PAGE	17 OF 52

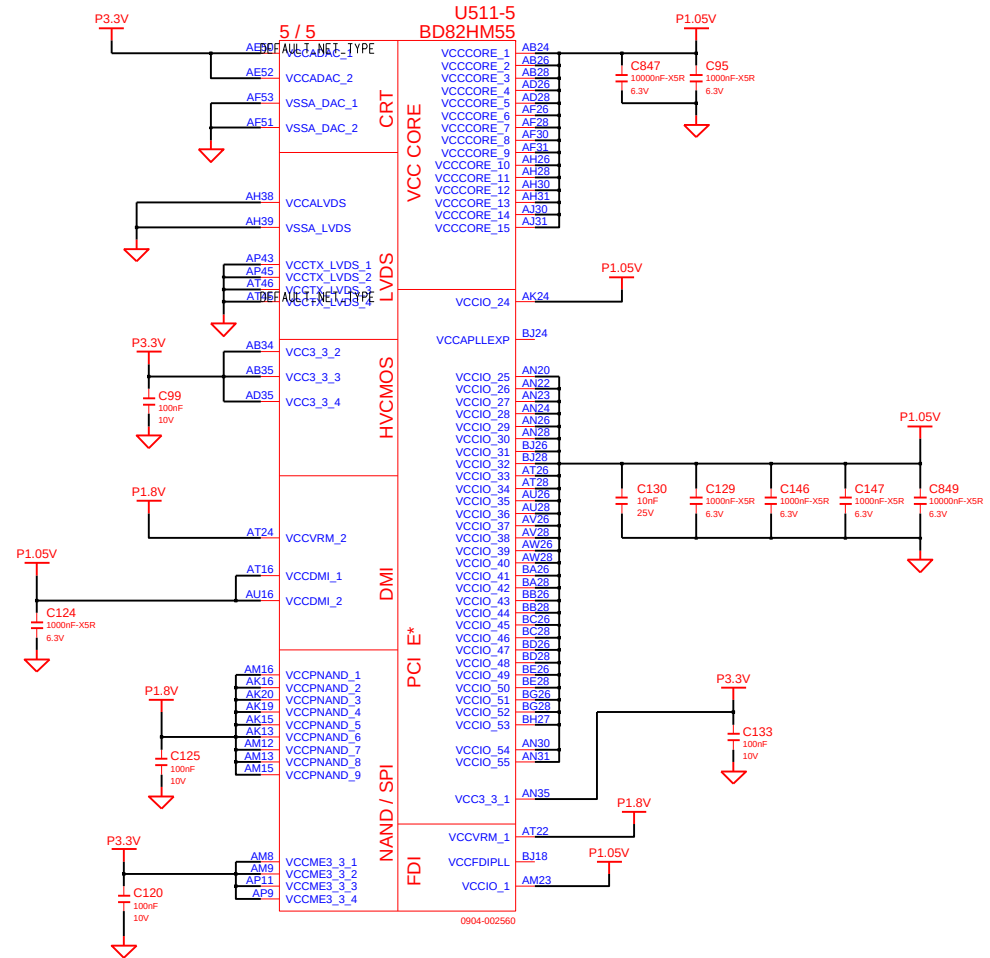


VTT_SEL	VOLTAGE	CPU
1	P1.05V	ARRANDALE
0	P1.1V	CLARKS FIELD



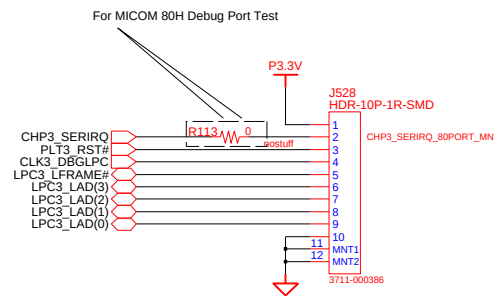
SAMSUNG PROPRIETARY
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

H49	VSS_255	VSS_159	AV7
H5	VSS_261	VSS_160	B11
J24	VSS_261	VSS_161	B15
K11	VSS_262	VSS_162	B19
K43	VSS_263	VSS_163	B23
K47	VSS_263	VSS_163	B31
K7	VSS_264	VSS_164	B35
L14	VSS_265	VSS_165	B39
L18	VSS_266	VSS_166	B43
L2	VSS_267	VSS_167	B47
L22	VSS_268	VSS_168	B7
L32	VSS_269	VSS_169	BG12
L36	VSS_270	VSS_170	BG16
L52	VSS_271	VSS_171	BG20
L60	VSS_272	VSS_172	BG24
M12	VSS_273	VSS_173	BG28
M16	VSS_274	VSS_174	BG32
M34	VSS_275	VSS_175	BG36
M38	VSS_276	VSS_176	BG40
M42	VSS_277	VSS_177	BG44
M38	VSS_278	VSS_178	BG48
M49	VSS_279	VSS_179	BG52
M42	VSS_280	VSS_180	BG56
M49	VSS_281	VSS_181	BC10
M5	VSS_282	VSS_182	BC14
M8	VSS_283	VSS_183	BC18
N24	VSS_284	VSS_184	BC22
P11	VSS_285	VSS_185	BC26
AD15	VSS_286	VSS_186	BC30
P22	VSS_287	VSS_187	BC34
P30	VSS_288	VSS_188	BC38
P32	VSS_289	VSS_189	BC42
P34	VSS_290	VSS_190	BC46
P42	VSS_291	VSS_191	BC50
P45	VSS_292	VSS_192	BC54
P47	VSS_293	VSS_193	BC58
P52	VSS_294	VSS_194	BC62
P52	VSS_295	VSS_195	BC66
P12	VSS_296	VSS_196	BC70
T41	VSS_297	VSS_197	BC74
T46	VSS_298	VSS_198	BC78
T49	VSS_299	VSS_199	BC82
T5	VSS_300	VSS_200	BC86
T8	VSS_301	VSS_201	BC90
U30	VSS_302	VSS_202	BC94
U31	VSS_303	VSS_203	BC98
U32	VSS_304	VSS_204	BC102
U34	VSS_305	VSS_205	BC106
P38	VSS_306	VSS_206	BC110
P16	VSS_307	VSS_207	BC114
V11	VSS_308	VSS_208	BC118
V18	VSS_309	VSS_209	BC122
V20	VSS_310	VSS_210	BC126
V22	VSS_311	VSS_211	BC130
V30	VSS_312	VSS_212	BC134
V31	VSS_313	VSS_213	BC138
V32	VSS_314	VSS_214	BC142
V34	VSS_315	VSS_215	BC146
V35	VSS_316	VSS_216	BC150
V38	VSS_317	VSS_217	BC154
V43	VSS_318	VSS_218	BC158
V45	VSS_319	VSS_219	BC162
V46	VSS_320	VSS_220	BC166
V47	VSS_321	VSS_221	BC170
V49	VSS_322	VSS_222	BC174
V5	VSS_323	VSS_223	BC178
V7	VSS_324	VSS_224	BC182
V7	VSS_325	VSS_225	BC186
V8	VSS_326	VSS_226	BC190
W2	VSS_327	VSS_227	BC194
W52	VSS_328	VSS_228	BC198
Y11	VSS_329	VSS_229	BC202
Y12	VSS_330	VSS_230	BC206
Y15	VSS_331	VSS_231	BC210
Y19	VSS_332	VSS_232	BC214
Y23	VSS_333	VSS_233	BC218
Y28	VSS_334	VSS_234	BC222
Y30	VSS_335	VSS_235	BC226
Y31	VSS_336	VSS_236	BC230
Y32	VSS_337	VSS_237	BC234
Y38	VSS_338	VSS_238	BC238
Y43	VSS_339	VSS_239	BC242
Y46	VSS_340	VSS_240	BC246
P49	VSS_341	VSS_241	BC250
Y5	VSS_342	VSS_242	BC254
Y6	VSS_343	VSS_243	BC258
Y8	VSS_344	VSS_244	BC262
P24	VSS_345	VSS_245	BC266
T43	VSS_346	VSS_246	BC270
AD51	VSS_347	VSS_247	BC274
AT8	VSS_348	VSS_248	BC278
AD47	VSS_349	VSS_249	BC282
Y47	VSS_350	VSS_250	BC286
AT12	VSS_351	VSS_251	BC290
AM6	VSS_352	VSS_252	BC294
AT13	VSS_353	VSS_253	BC298
AM5	VSS_354	VSS_254	BC302
AK45	VSS_355	VSS_255	BC306
AK39	VSS_356	VSS_256	BC310
AV14	VSS_357	VSS_257	BC314
	VSS_358	VSS_258	BC318



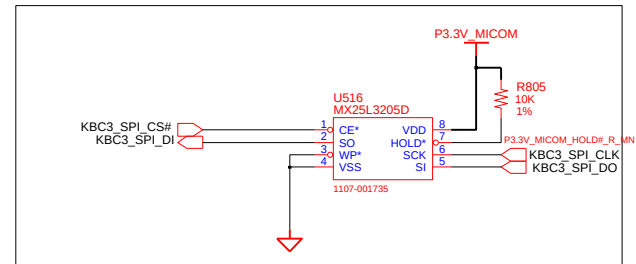
DRAW	QZ DAI	DATE	8/19/2010	SCALA2-EXT PCH IBEX PEAK(5/5)		SAMSUNG	
CHECK	SIMMAN WU	DEV. STEP	MP			ELECTRONICS	
APPROVAL	BC LEE	REV	rev. 1.1			PART NO.	BA41-01423A
MODULE CODE	undefined	LAST EDIT	December 25, 2010 10:42:33 AM			PAGE	20 OF 52

80H PORT DEBUG



BE CAUTION SPI ROM SIZE!!

SPI_ROM_SOCKET

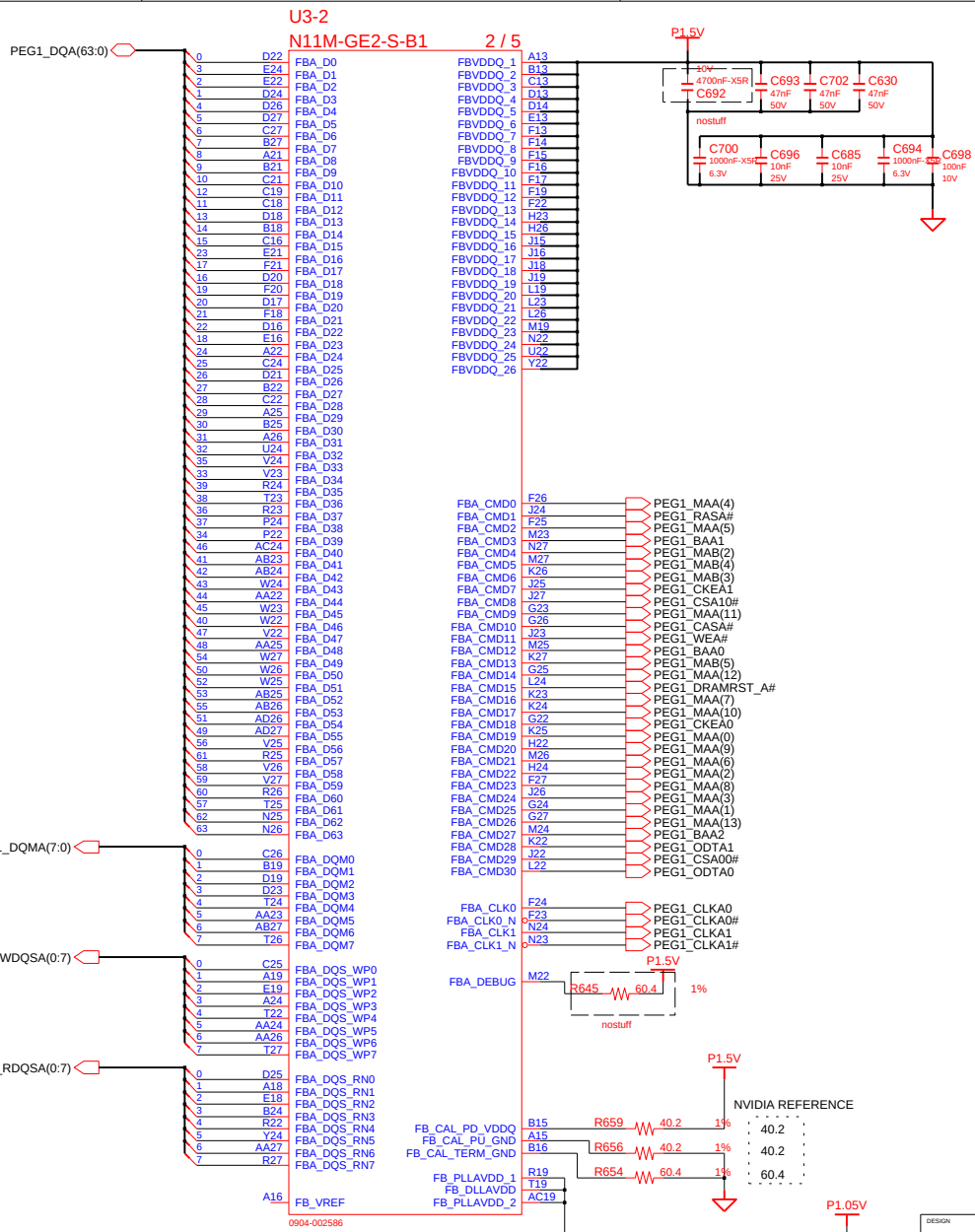


DESIGN	QZ DAI	DATE	8/19/2010	TITLE	SCALA2-EXT DEBUG PORT 80H DECODER	SAMSUNG ELECTRONICS
CHECK	SIMMAN WU	DEV. STEP	MP			PART NO. BA41-01423A
APPROVAL	BC LEE	REV	rev. 1.1			
MODULE CODE		LAST EDIT	December 25, 2010 10:42:33 AM	PAGE	21	OF 52

Graphic PEM

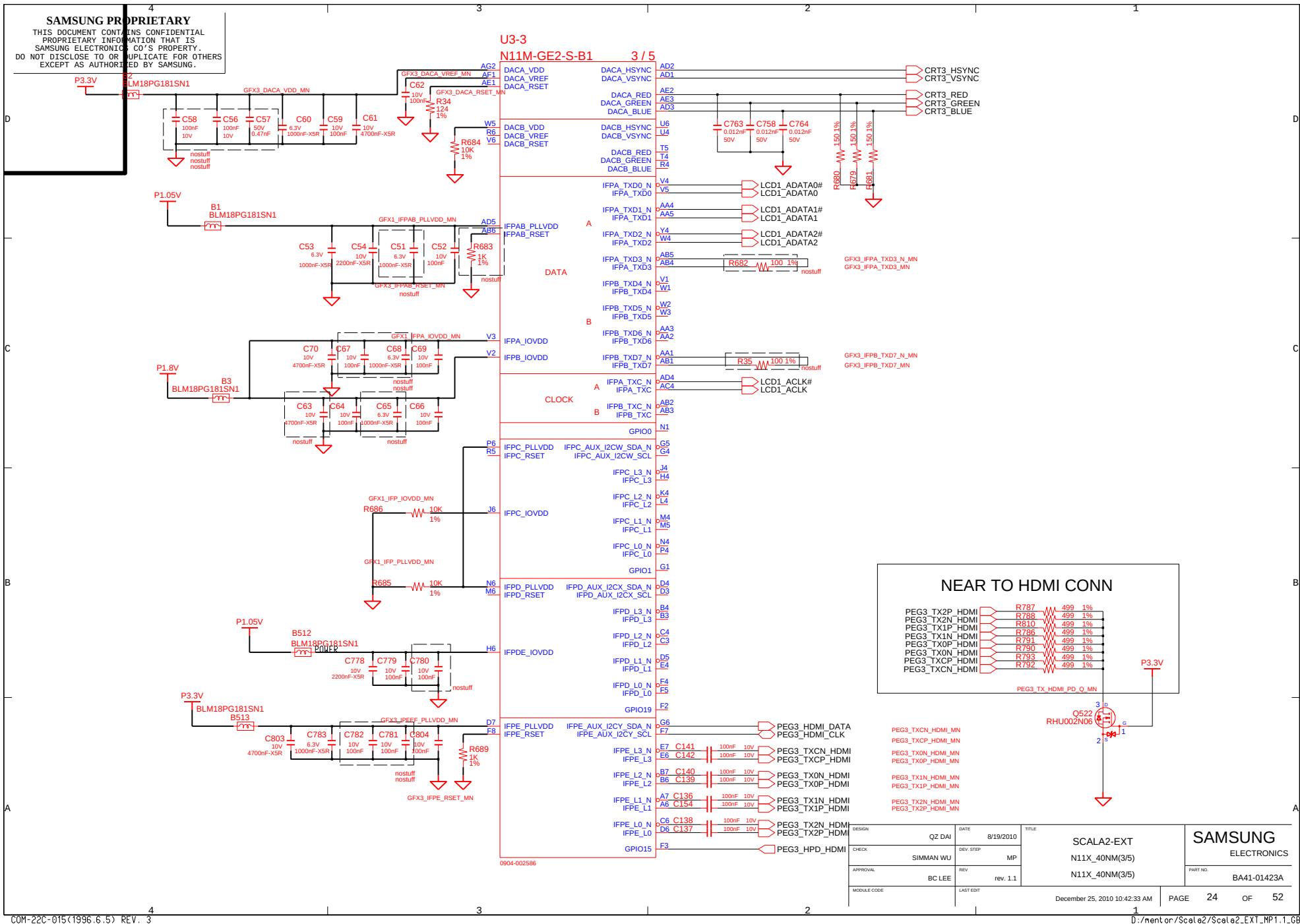
DESIGN	QZ DAI	DATE	8/19/2010	TITLE SCALA2-EXT N11X_40NM(1/5) N11X_40NM(1/5)			SAMSUNG ELECTRONICS PART NO. BA41-01423A			
CHECK	SIMMAN WU	DEV. STEP	MP							
APPROVAL	BC LEE	REV	REV. 1.1							
MODULE CODE	LAST EDIT			December 25, 2010 10:42:33 AM			PAGE	22	OF	52

SAMSUNG PROPRIETARY
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.



CMD MODE A

DESIGN	QZ DAI	DATE	8/19/2010	TITLE	SCALA2-EXT	SAMSUNG
CHECK	SIMMAN WU	DEV. STEP	MP		N11X_40NM(2/5)	ELECTRONICS
APPROVAL	BC LEE	REV	rev. 1.1		N11X_40NM(2/5)	PART NO.
MODULE CODE		LAST EDIT				BA41-01423A
December 25, 2010 10:42:33 AM				PAGE	23	OF 52



SAMSUNG PROPRIETARY
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

Pin	Description	Activate
GPIO(0)	General Purpose	NC
GPIO(1)	HPD-C	NC
GPIO(2)	LCD0_BL_PWM	High
GPIO(3)	LCD0_VDD	High
GPIO(4)	LCD0_BL_EN	High
GPIO(5)	GPU_VID0	00 0.8V 10 0.95V
GPIO(6)	GPU_VID1	01 0.85V 11 1.03V
GPIO(7)	GPU_VID2	NC
GPIO(8)	OVERT	LOW
GPIO(9)	ALERT	NC
GPIO(10)	MEM_VREF	NC
GPIO(11)	SLI_SYNC	NC
GPIO(12)	PWR_LEVEL	NC
GPIO(13)	MEM_VID	NC
GPIO(14)	PWR_CTRL1	NC
GPIO(15)	HPD-E	High
GPIO(16)	FAN_PWM	NC
GPIO(17)	Reserved	NC
GPIO(18)	Reserved	NC
GPIO(19)	HPD-D	NC

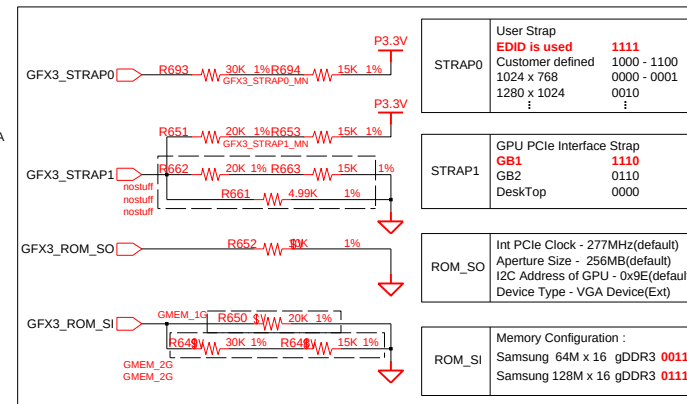
Strap option	Bit 3	Bit 2	Bit 1	Bit 0
ROM_SO	XCLK 417	FB_0_BAR_SIZE	SMB_ALT_ADDR	VGA_DEVICE
ROM_SCLK	DEVID[4]	VENID	CLK_CFG	PLL_TERM
ROM_SI	RAMCFG[3]	RAMCFG[2]	RAMCFG[1]	RAMCFG[0]
STRAP2	DEVID[3]	DEVID[2]	DEVID[1]	DEVID[0]
STRAP1	PADCFG[3]	PADCFG[2]	PADCFG[1]	PADCFG[0]
STRAP0	USER[3]	USER[2]	USER[1]	USER[0]
Resistor value	PU to VDD	PD to GND	XCLK417 = 0 27MHz	
5K ohm	1000	0000	RAM CFG (SEC)	
10 Kohm	1001	0001	0011 gDDR3 1Gb	
15K ohm	1010	0010	USER[3:0]=1111 for EDID	
20K ohm	1011	0011	PADCFG[3:0]=0110 for NB	
25K ohm	1100	0100		
30K ohm	1101	0101		
35K ohm	1110	0110		
45K ohm	1111	0111		

	Bit3	Bit2	Bit1	Bit0
ROMSO	0	0	0	0
SCLK	1	0	1	0
Si	0	0	1	1
Si	0	1	1	1
Strap2	0	0	0	0
Strap2	0	1	0	1
Strap1	1	1	1	0
Strap0	1	1	1	1

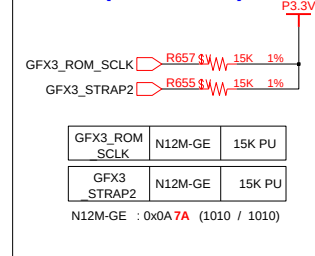
U3-5
N11M-GE2-S-B1

5 / 5

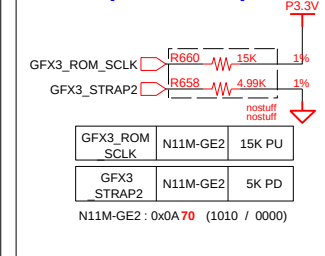
Function Straps



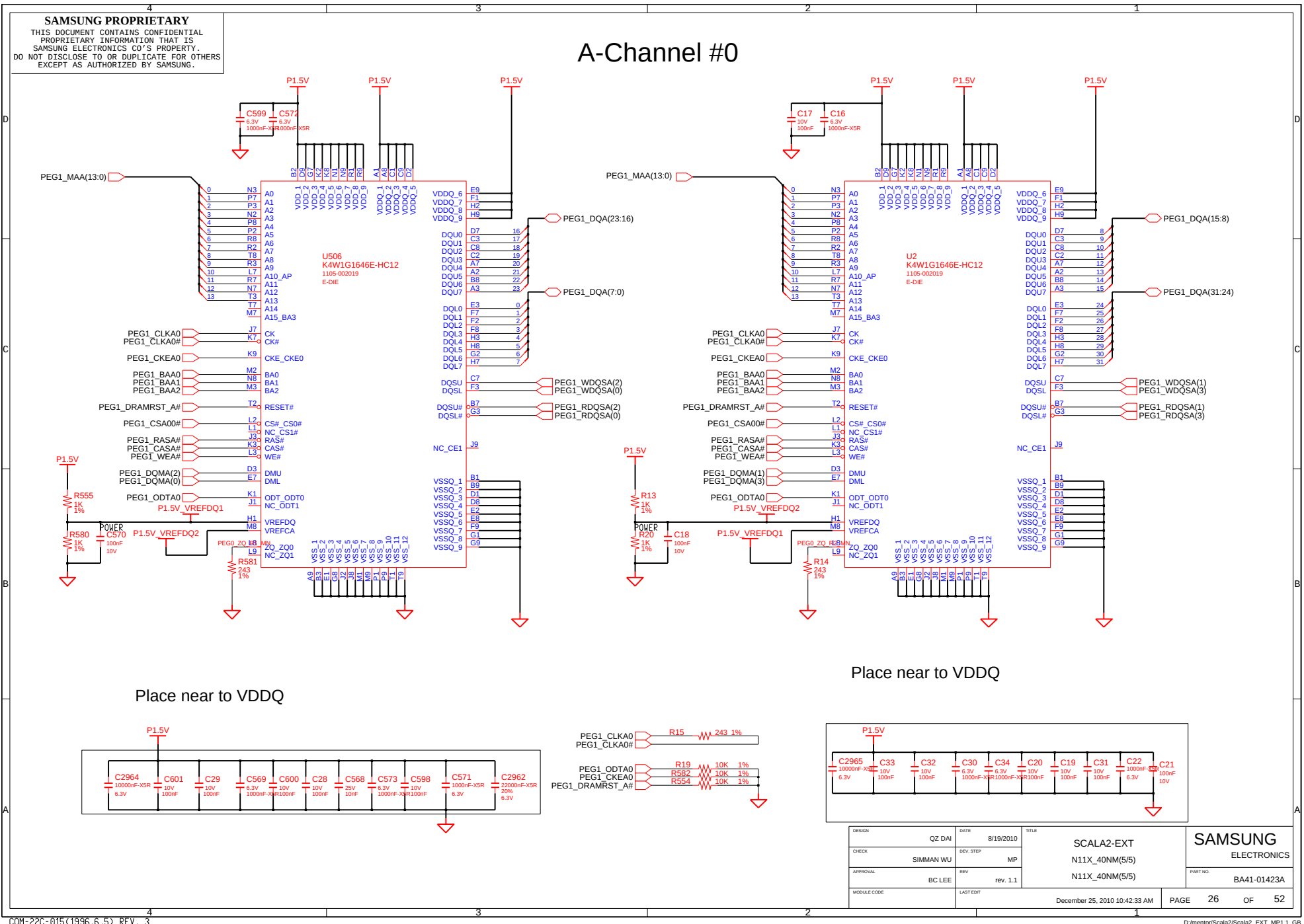
Chip Select Straps (N12M-GB1)



Chip Select Straps (N11M-GB1)

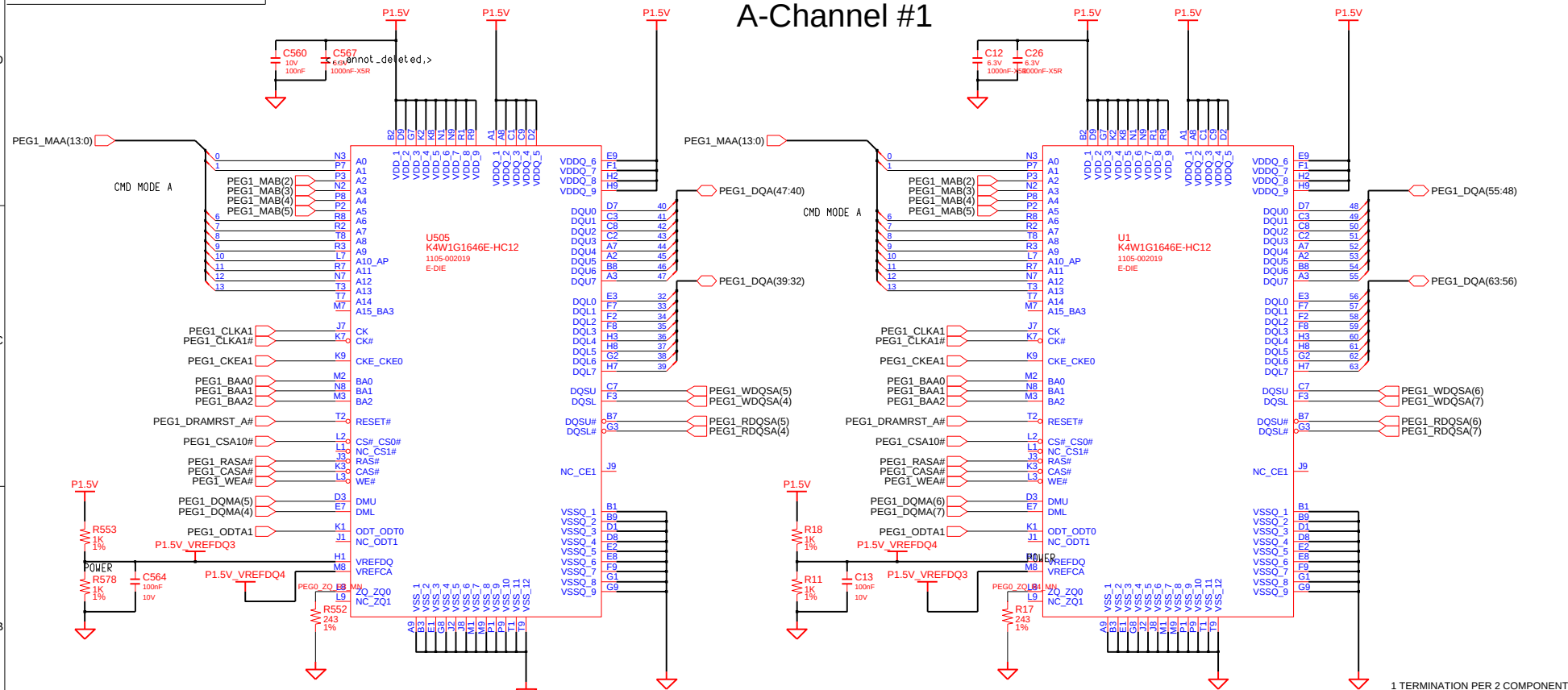


DESIGN	QZ DAI	DATE	8/19/2010	TITLE	SCALA2-EXT	SAMSUNG
CHECK	SIMMAN WU	DEV. STEP	MP		N11X_40NM(4/5)	ELECTRONICS
APPROVAL	BC LEE	REV	rev. 1.1		N11X_40NM(4/5)	PART NO.
MODULE CODE		LAST EDIT				BA41-01423A
December 25, 2010 10:42:33 AM						PAGE 25 OF 52



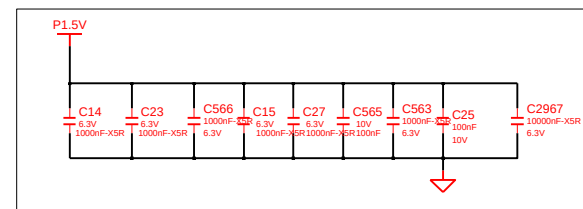
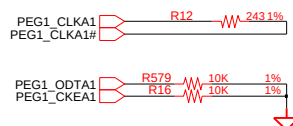
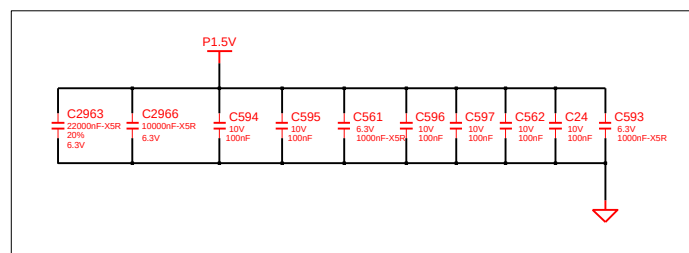
SAMSUNG PROPRIETARY
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

A-Channel #1



Place near to VDDQ

Place near to VDDQ



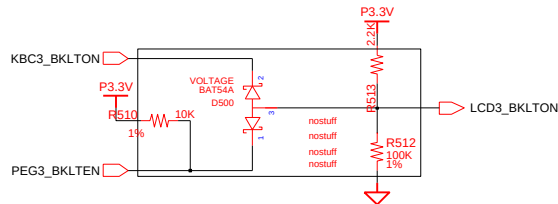
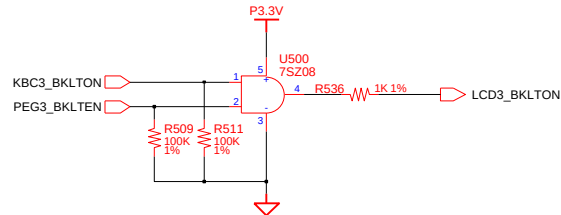
DESIGN	QZ DAI	DATE	8/19/2010	TITLE SCALA2-EXT GRAPHIC_MEM A#0 GRAPHIC_MEM A#0	
CHECK	SIMMAN WU	DEV. STEP	MP		
APPROVAL	BC LEE	REV	rev. 1.1		
MODULE CODE	LAST EDIT				
				December 25, 2010 10:42:33 AM	PAGE 27 OF 52

LVDS LOGIC

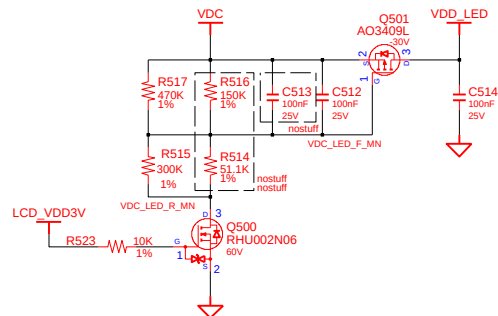
SAMSUNG PROPRIETARY

THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

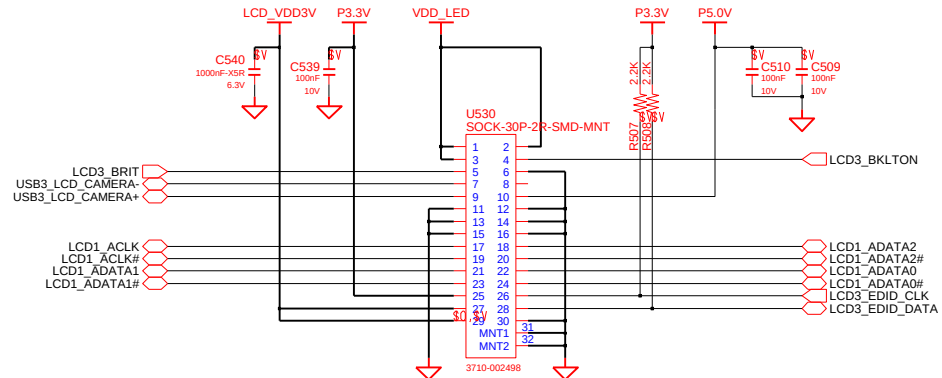
Backlight On



LED Power

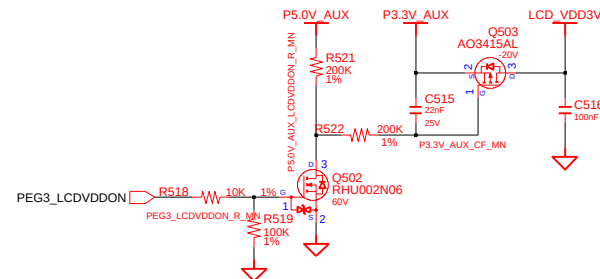


LCD Connector + CAMERA



TYPE: ANGLE

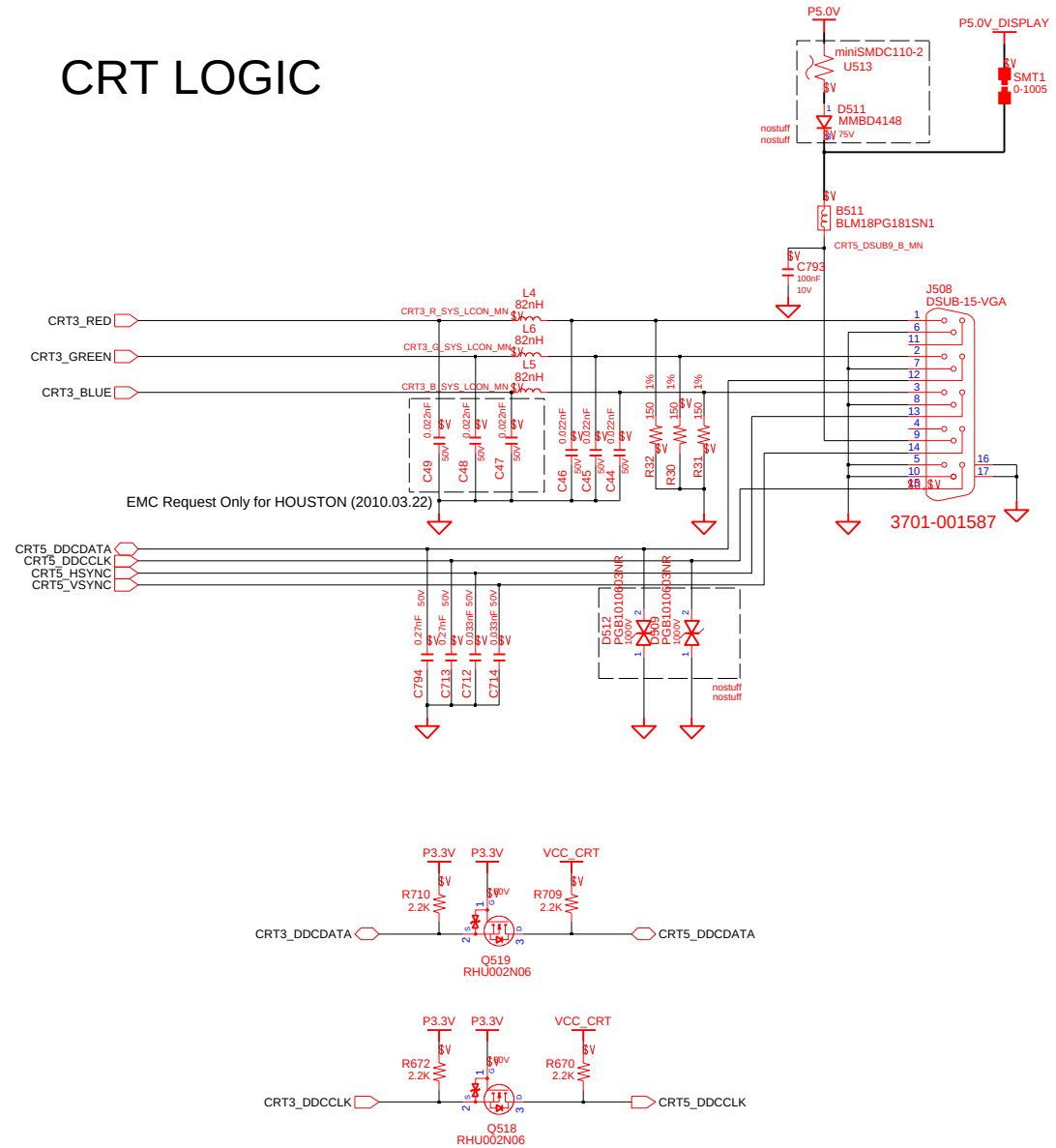
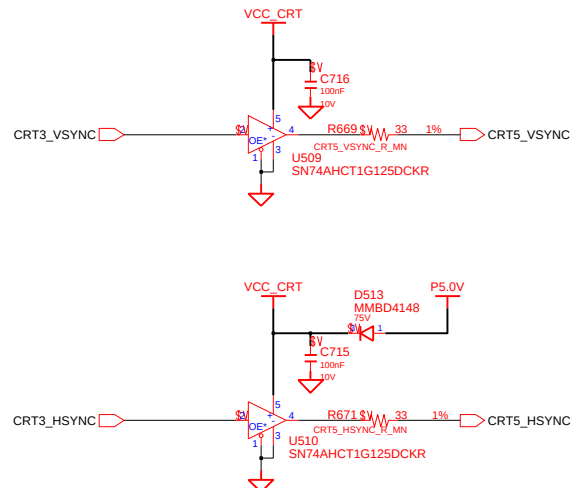
LCD Power



DESIGN	QZ DAI	DATE	8/19/2010	TITLE	SCALA2-EXT	SAMSUNG
CHECK	SIMMAN WU	DEV. STEP	MP	GRAPHICS_IF	ELECTRONICS	
APPROVAL	BC LEE	REV	rev. 1.1	LVDS	PART NO.	BA41-01423A
MODULE CODE		LAST EDIT		December 25, 2010 10:42:33 AM	PAGE	28 OF 52

SAMSUNG PROPRIETARY
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

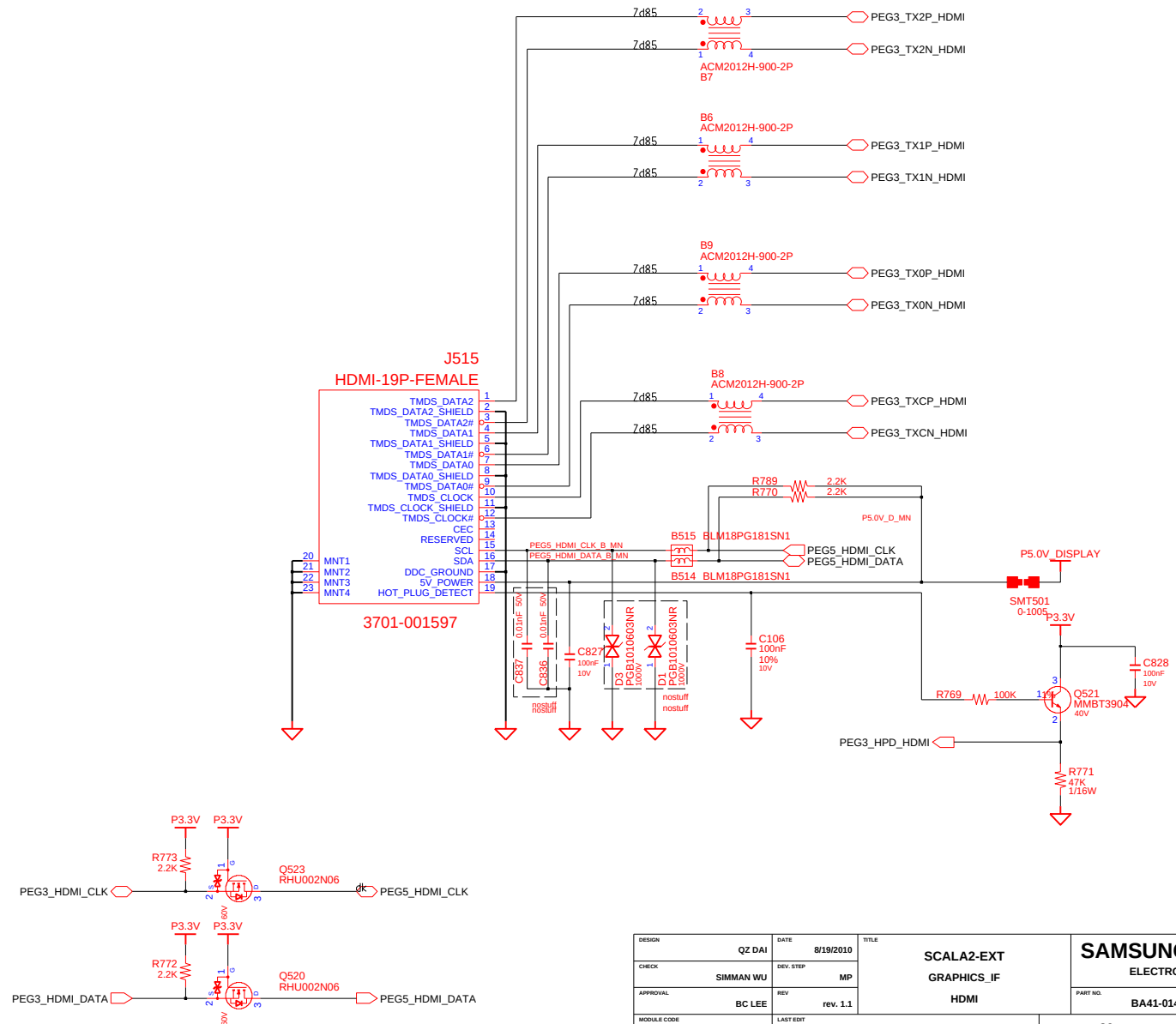
CRT LOGIC



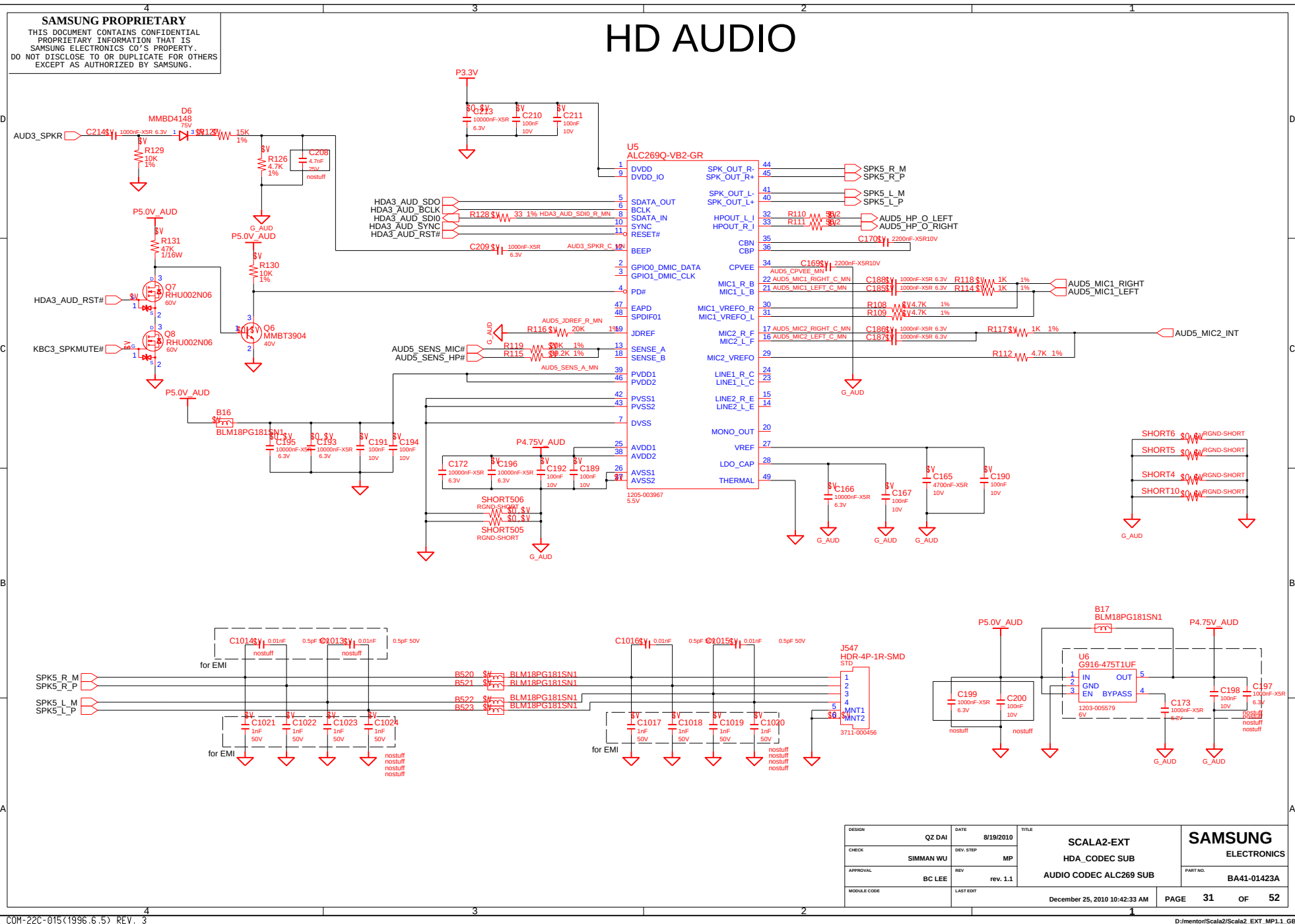
DESIGN	QZ DAI	DATE	8/19/2010	TITLE		SCALA2-EXT GRAPHICS_IF CRT		SAMSUNG	
CHECK	SIMMAN WU	DEV. STEP	MP					ELECTRONICS	
APPROVAL	BC LEE	REV	rev. 1.1			PART NO.		BA41-01423A	
MODULE CODE	LAST EDIT		December 25, 2010 10:42:33 AM			PAGE	29	OF	52

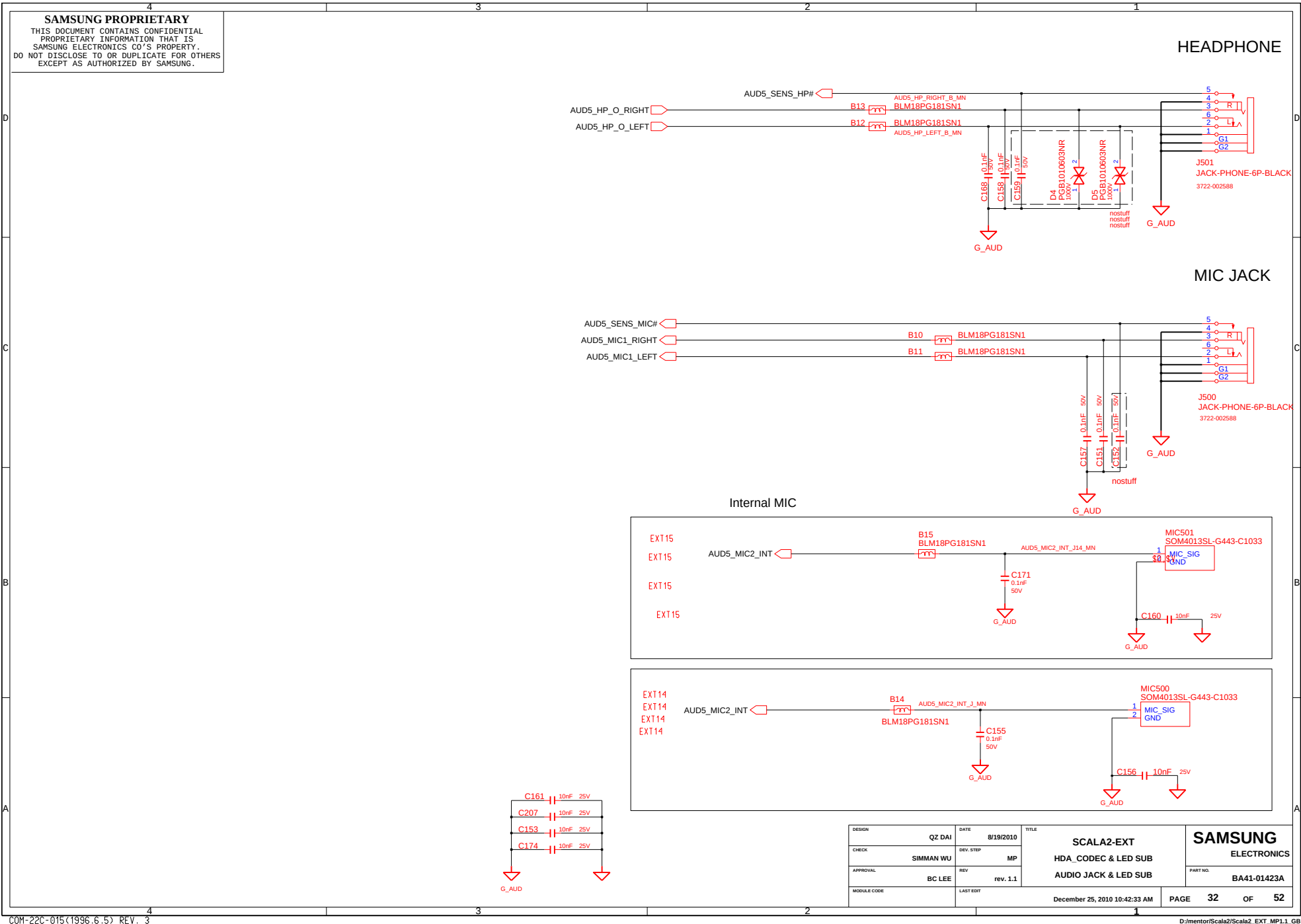
HDMI Graphic

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

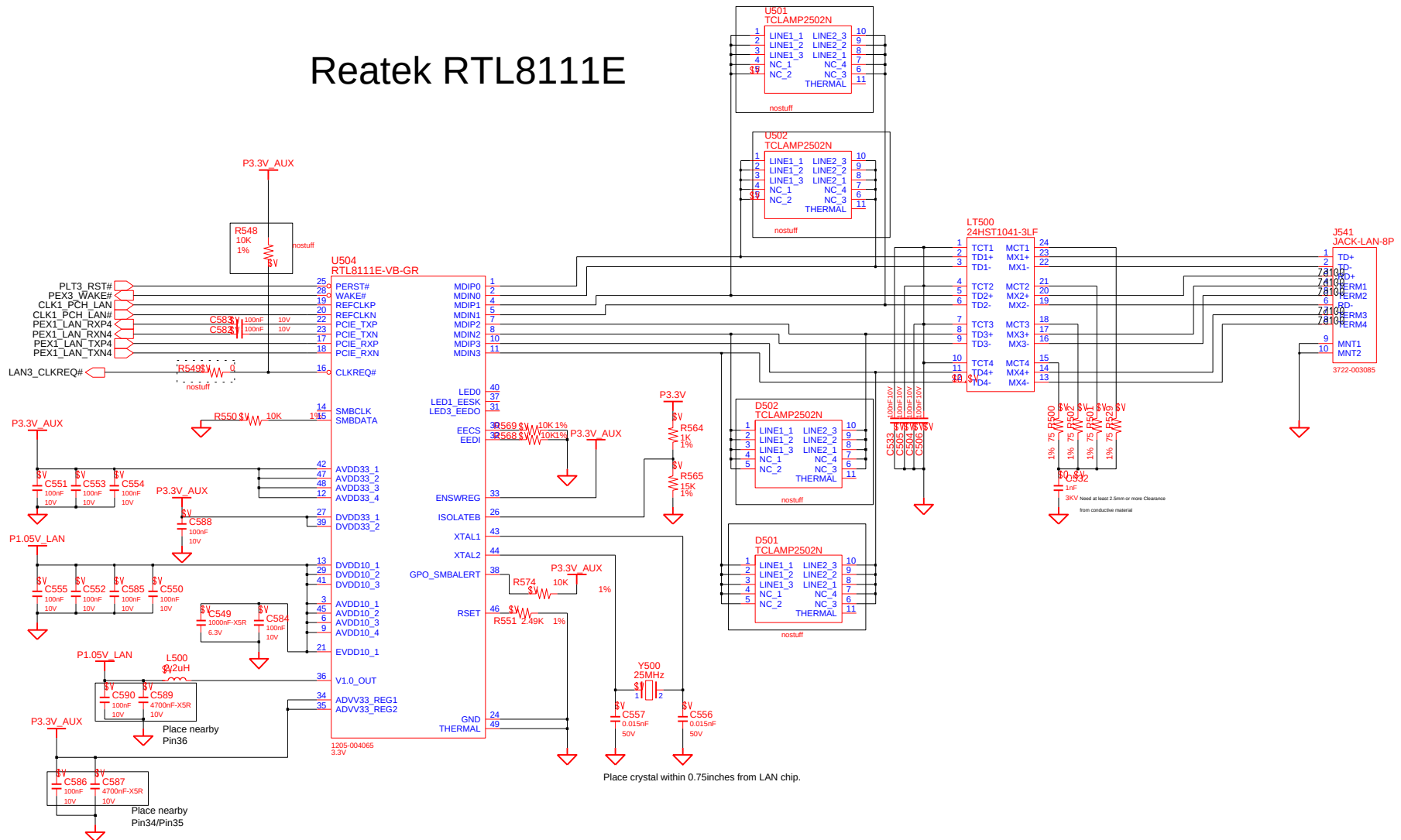


DESIGN	QZ DAI	DATE	8/19/2010	TITLE	SCALA2-EXT GRAPHICS_IF HDMI	SAMSUNG ELECTRONICS
CHECK	SIMMAN WU	DEV. STEP	MP			PART NO. BA41-01423A
APPROVAL	BC LEE	REV	rev. 1.1			
MODULE CODE		LAST EDIT	December 25, 2010 10:42:33 AM	PAGE	30	OF 52





Reatek RTL8111E



Place crystal within 0.75inches from LAN chip.

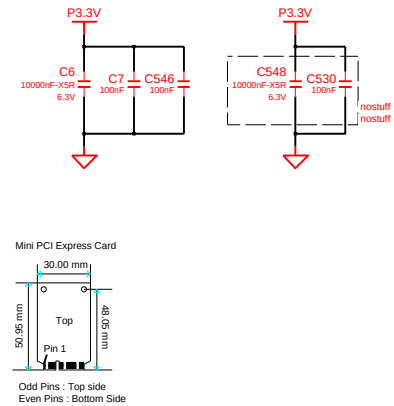
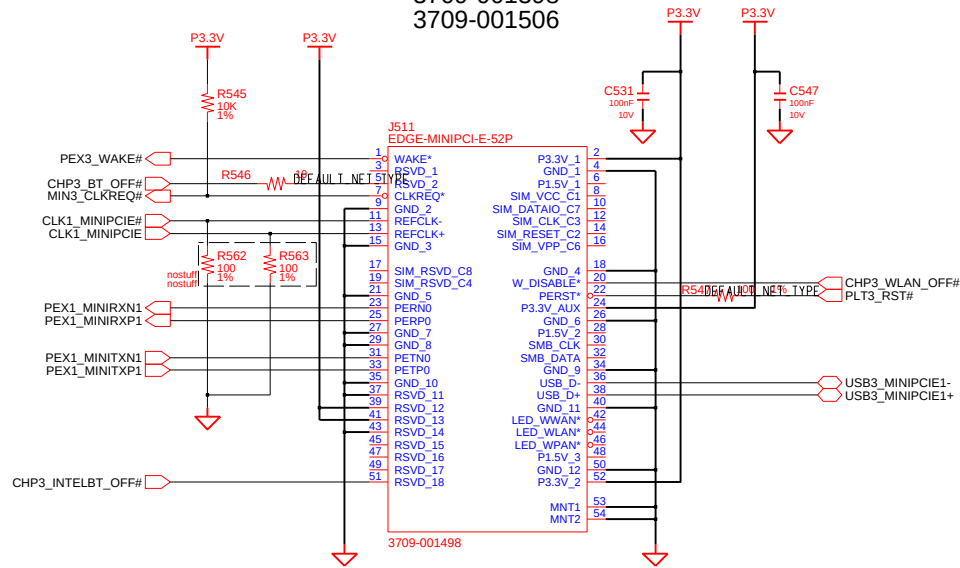
DESIGN	QZ DAI	DATE	8/19/2010	TITLE	SCALA2-EXT	SAMSUNG ELECTRONICS
CHECK	SIMMAN WU	DEV. STEP	MP		LAN	
APPROVAL	BC LEE	REV	rev. 1.1		LAN_Realtek_RTL8111	
MODULE CODE		LAST EDIT				PART NO. BA41-01423A
					December 25, 2010 10:42:33 AM	PAGE 33 OF 52

WLAN

Height : 7.0mm

3709-001398
3709-001506

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

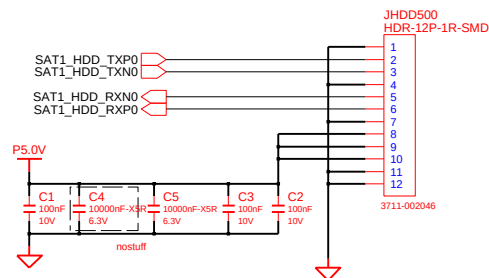


DESIGN	QZ DAI	DATE	8/19/2010	TITLE	SCALA2-EXT MULTICARD 3 IN 1 CARD(GL827S)	SAMSUNG ELECTRONICS
CHECK	SIMMAN WU	DEV. STEP	MP			PART NO. BA41-01423A
APPROVAL	BC LEE	REV	rev. 1.1			
MODULE CODE		LAST EDIT	December 25, 2010 10:42:33 AM	PAGE	34	OF 52

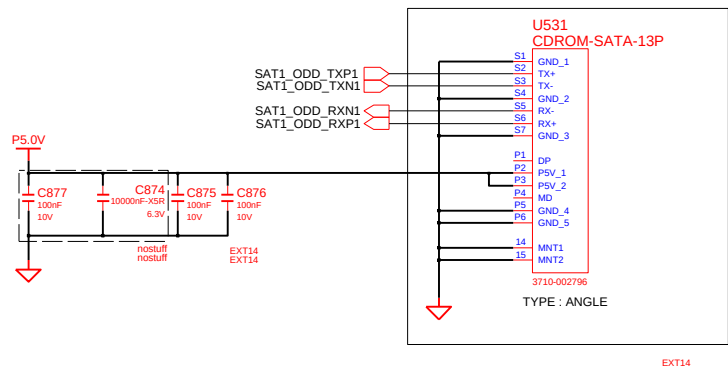
SATA I/F CONN

SATA HDD CONN

Cable Connector Type

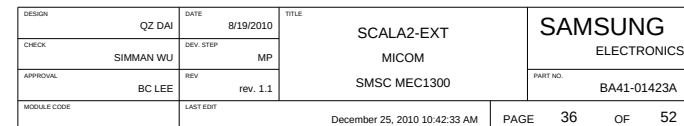


SATA ODD CONN



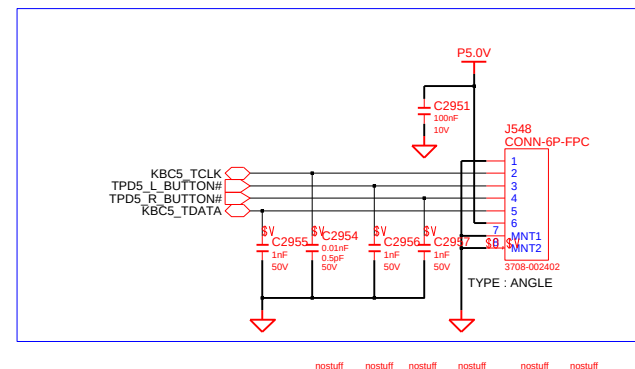
DESIGN	QZ DAI	DATE	8/19/2010	TITLE	SCALA2-EXT	SAMSUNG
CHECK	SIMMAN WU	DEV. STEP	MP	SATA I/F		ELECTRONICS
APPROVAL	BC LEE	REV	rev. 1.1	SATA I/F		PART NO.
MODULE CODE		LAST EDIT	December 25, 2010 10:42:33 AM			BA41-01423A
				PAGE	35	OF 52

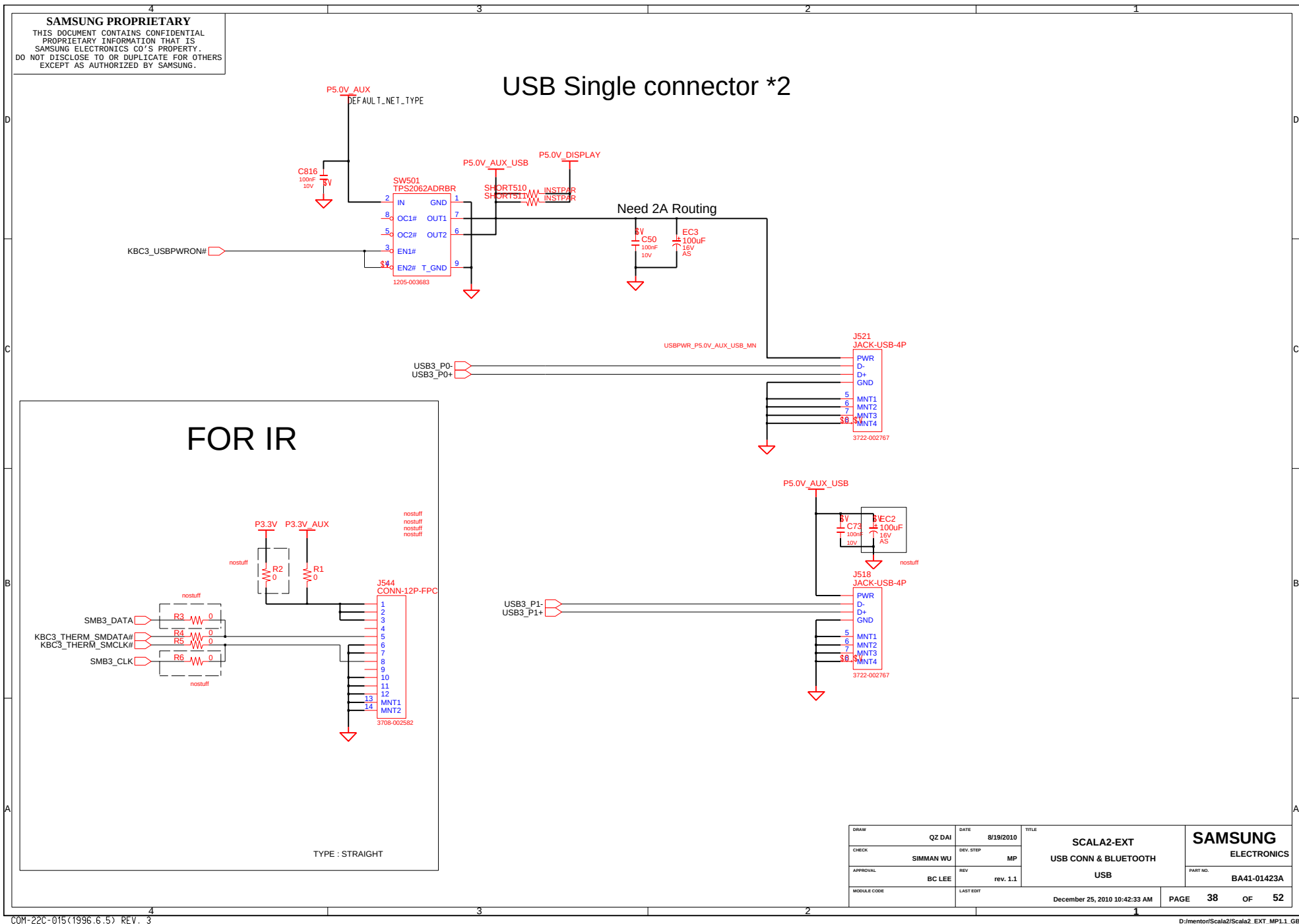
MAIN BOARD (MICOM)



L

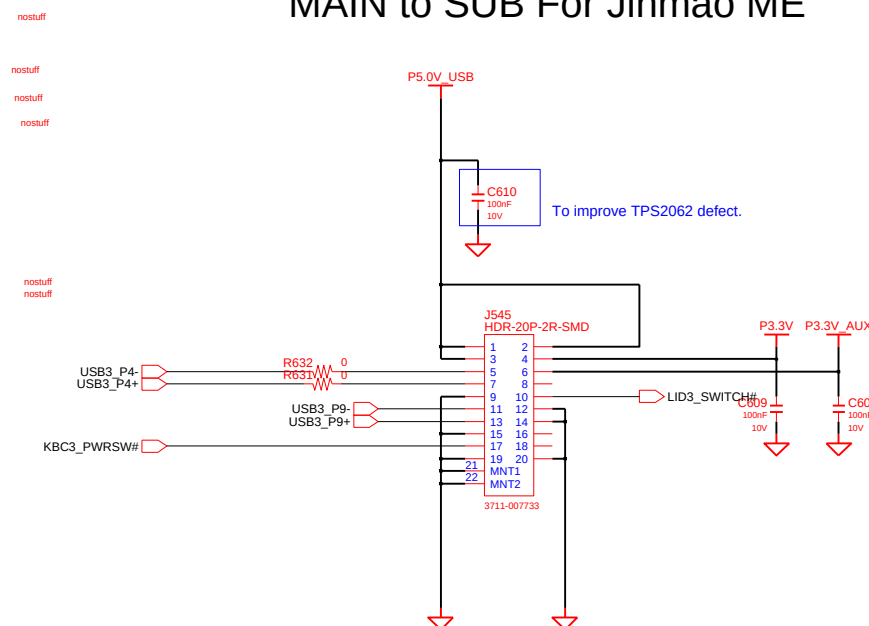
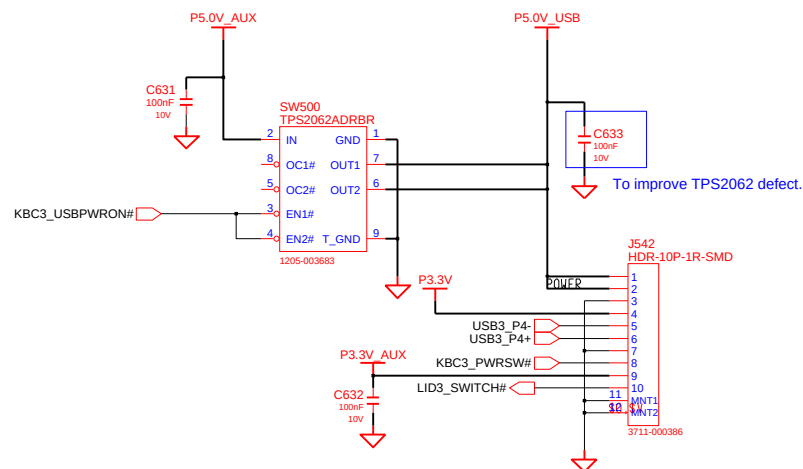
TOUCHPAD

D:/mentor/Scale2/Scale2_EXT_MP1.1_GB

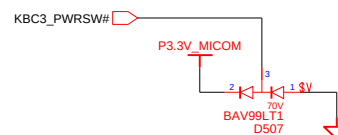
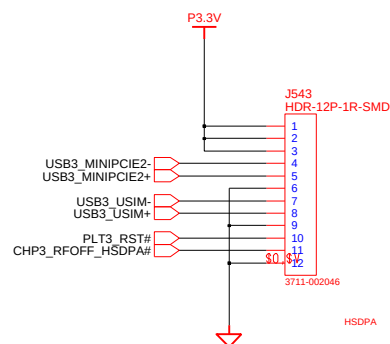


POWER S/W SUB B'D CONNECTOR

MAIN to SUB For Jinmao ME



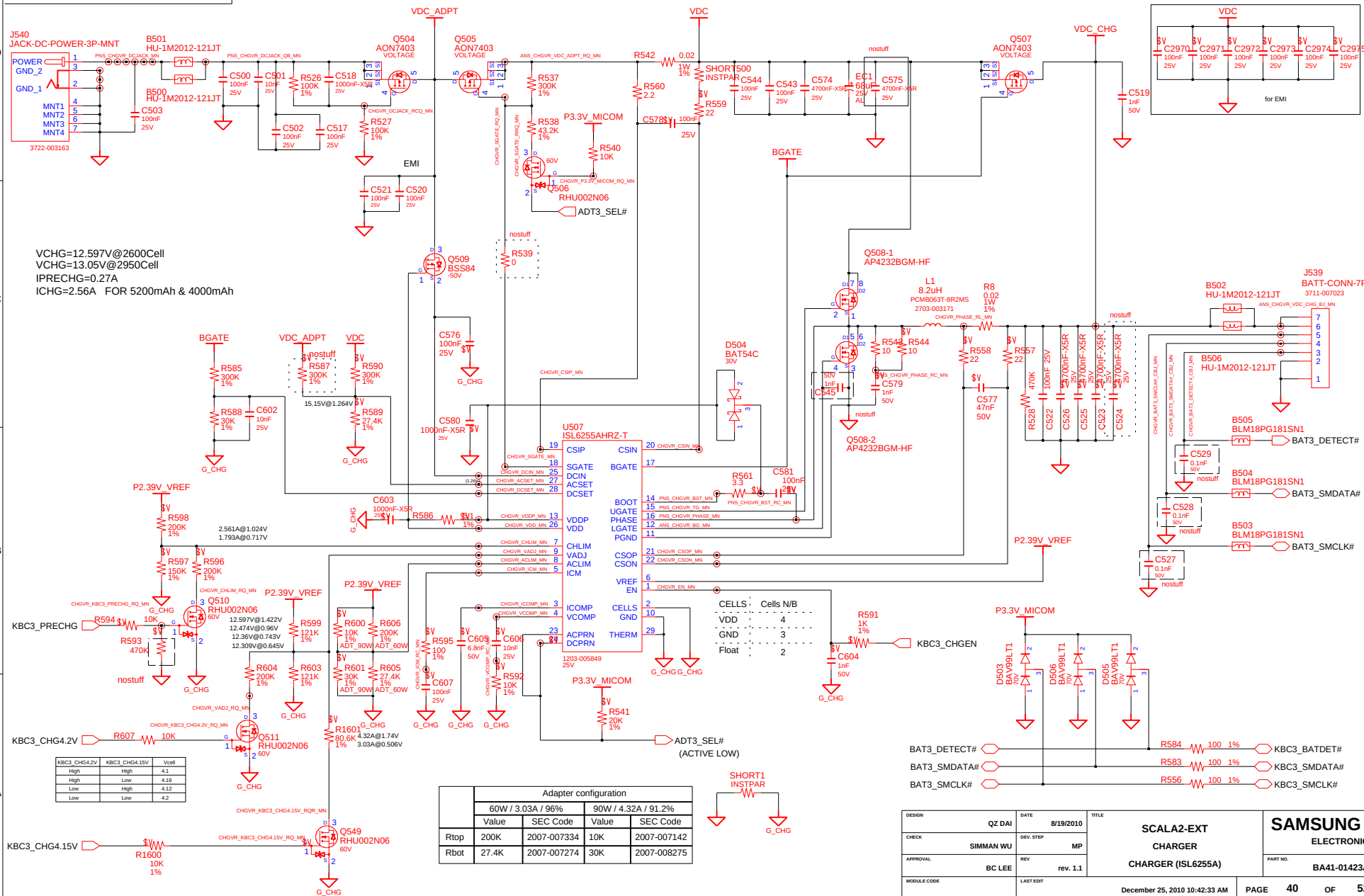
HSPA MAIN TO SUB CONN



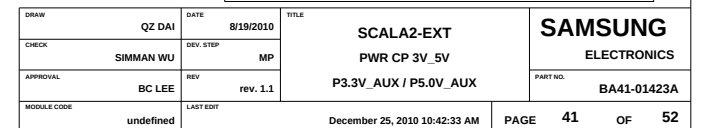
DESIGN	QZ DAI	DATE	8/19/2010	TITLE	SCALA2-EXT		
CHECK	SIMMAN WU	DEV. STEP	MP		USB_CONN		
APPROVAL	BC LEE	REV	REV. 1.1		USB CONNECTOR	PART NO.	BA41-01423A
MODULE CODE	LAST EDIT				December 25, 2010 10:42:33 AM	PAGE	39 OF 52

SAMSUNG PROPRIETARY
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

CHARGER & POWER MANAGEMENT

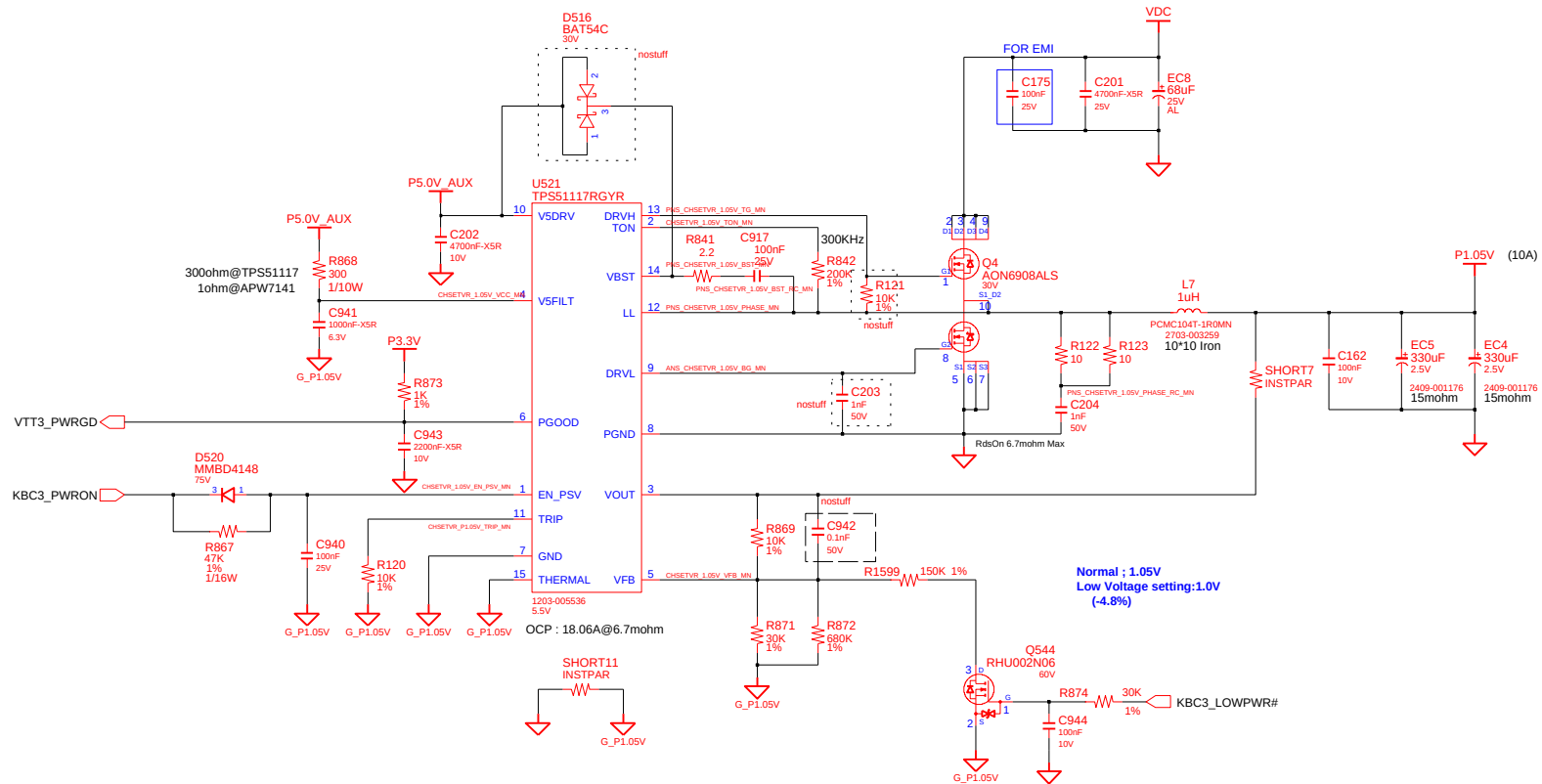


P3.3V_AUX & P5.0V_AUX



SAMSUNG PROPRIETARY
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

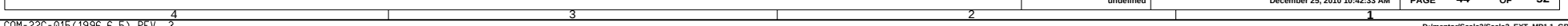
CHIPSET POWER(P1.05V)



DESIGN	QZ DAI	DATE	8/19/2010	TITLE	SCALA2-EXT P1.05V TI TPSS51117R	SAMSUNG ELECTRONICS
CHECK	SIMMAN WU	DEV. STEP	MP			PART NO. BA41-01423A
APPROVAL	BC LEE	REV	rev. 1.1			
MODULE CODE		LAST EDIT	December 25, 2010 10:42:33 AM	PAGE	42	OF 52

[illegible]

DRAW	QZ DAI	DATE	8/19/2010	TITLE	SCAL2A-EXT PWR MEMORY RT8207	SAMSUNG ELECTRONICS					
CHECK	SIMMAN WU	REV. STEP	MP								
APPROVAL	BC LEE	REV	rev. 1.1								
									PART NO.	BA41-01423A	
MODULE CODE		undefined		LAST EDIT		December 25, 2010 10:42:33 AM		PAGE	43	OF	52



1

Downloaded from ascelibrary.org by University of California, San Diego on 06/01/15. Copyright ASCE, For All Rights Reserved, No part of this document may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or by any information storage or retrieval system, without permission in writing from ASCE.

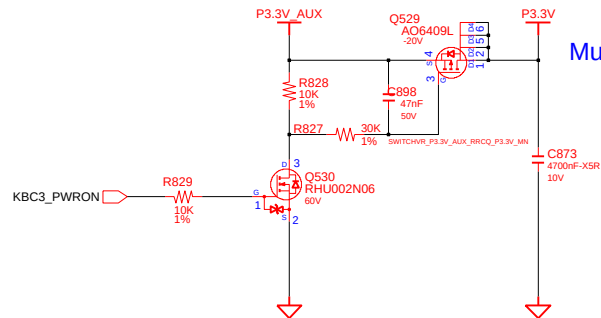
N11P-GE1@23.04W		31.66A @N11P-GE1&gDDR3	
N10P-GE@20.97W		29.48A @N10P-GE&gDDR3	
N11M-GE1@14.21W		16.77A @N11M-GE1&gDDR3	
N10M-GE@13.36W		14.72A @N10M-GE&gDDR3	

VID1	VIDO	N10P-GE	N11P-GE1	N11M-GE1	N11M-LP1	Design Value	Measured Value
1	1	0.80 V	0.8V	0.8V	0.8V	0.825V	
1	0	0.85V	0.85V	0.85V	0.85V	0.850V	
0	1	0.95V	0.95V	-	-	0.900V	
0	0	-	-	1.03V	-	1.000V	

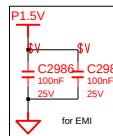
COM-22C-015(1996.6.5) REV. 3

SAMSUNG PROPRIETARY
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

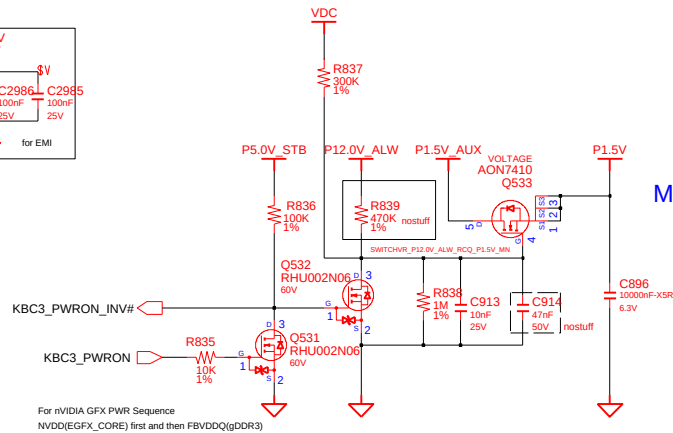
Multi@AP2607GY



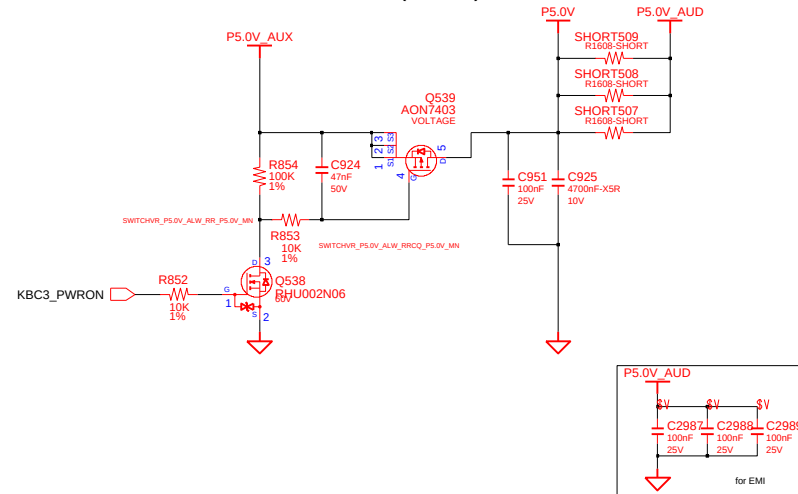
for EMI



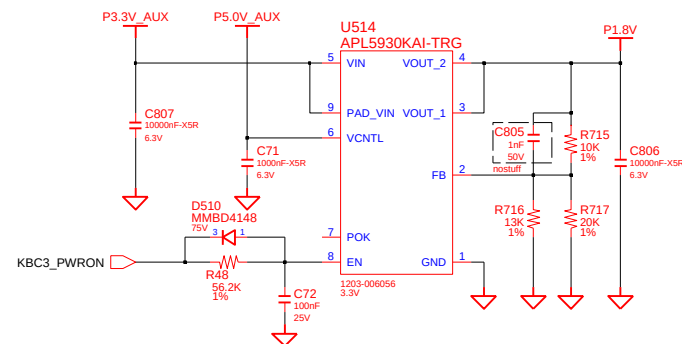
Multi@AO4476



Multi@Si443DDY



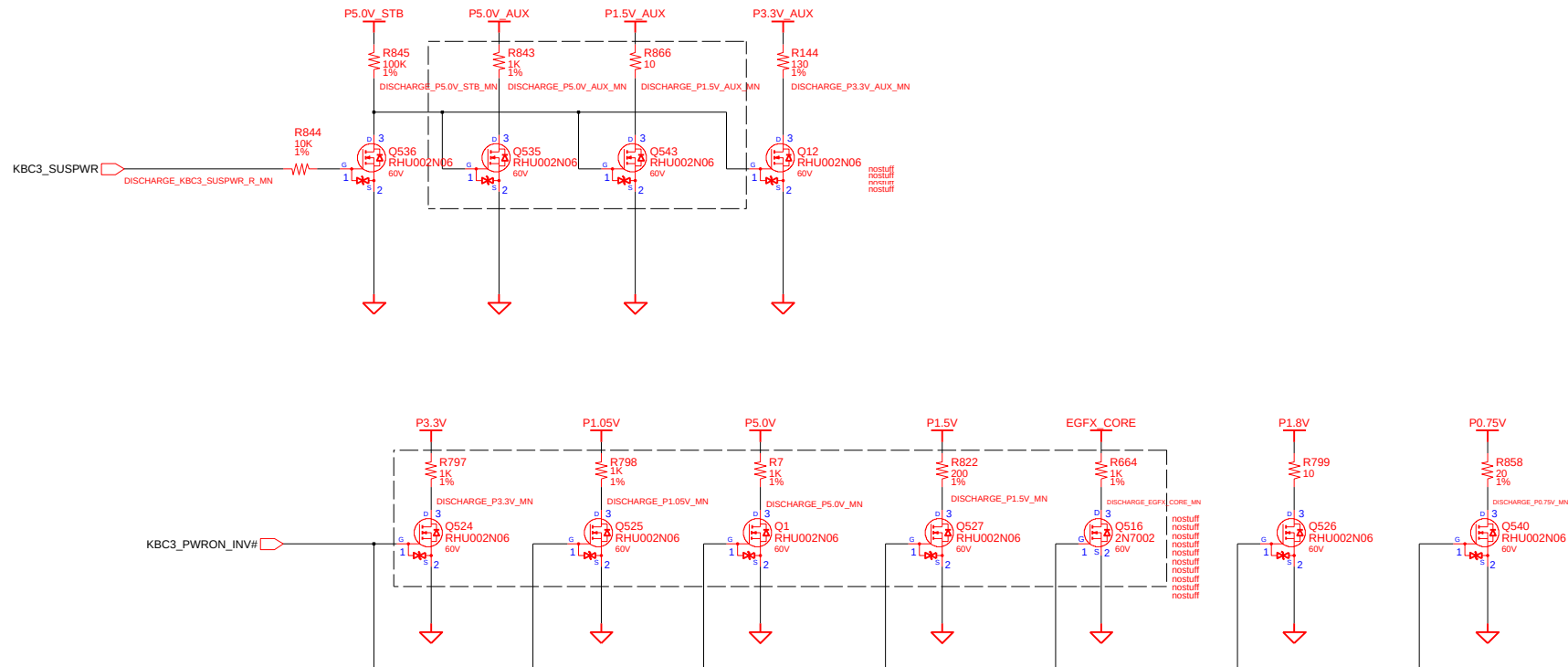
P1.8V(LDO)



DRAW	QZ DAI	DATE	8/19/2010	TITLE	SCALA2-EXT PWR_MV_SWITCHED SWITCHED POWER		SAMSUNG ELECTRONICS	
CHECK	SIMMAN WU	REV. STEP	MP				PART NO.	BA41-01423A
APPROVAL	BC LEE	REV	rev. 1.1					
MODULE CODE	LAST EDIT						December 25, 2010 10:42:33 AM	PAGE 46 OF 52

SAMSUNG PROPRIETARY
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

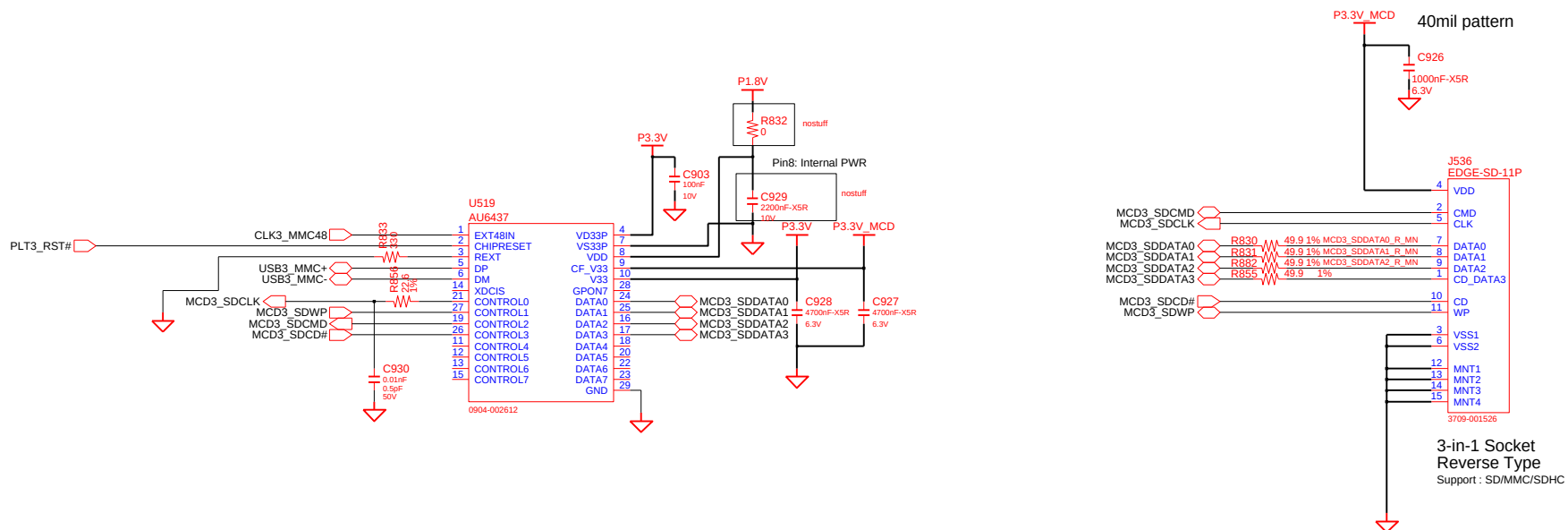
POWER DISCHARGER



DRAW	QZ DAI	DATE	8/19/2010	TITLE	SCALA2-EXT	SAMSUNG
CHECK	SIMMAN WU	DEV. STEP	MP		PWR_MV_DISCHARGER	ELECTRONICS
APPROVAL	BC LEE	REV	rev. 1.1		DISCHARGING LOGIC	PART NO.
MODULE CODE	undefined	LAST EDIT	December 25, 2010 10:42:33 AM			BA41-01423A
				PAGE	47	OF 52

THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

3 IN 1 CARD (AU6437)

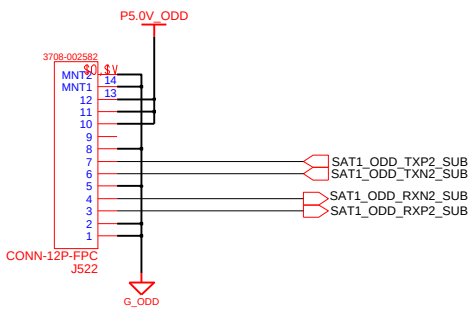


DESIGN		QZ DAI	DATE	8/19/2010	TITLE	SCALA2-EXT SUB BOARD2 3 in 1 SUB		SAMSUNG ELECTRONICS		
CHECK		SIMMAN WU	REV. STEP	MP						
APPROVAL		BC LEE	REV	rev. 1.1				PART NO.	BA41-01423A	
MODULE CODE		LAST EDIT						December 25, 2010 10:42:33 AM		PAGE

SATA ODD SUB BOARD

15.6"

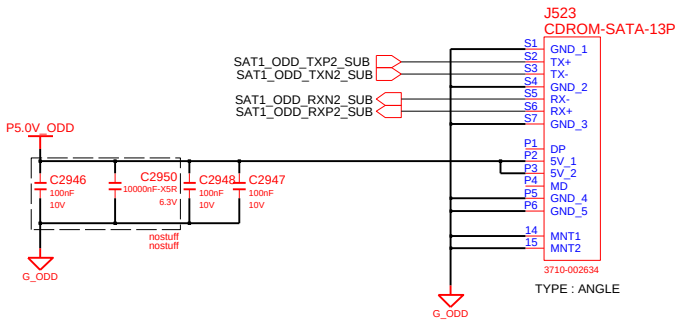
SUB TO MAIN : SATA ODD CONN



EXT15
EXT15
EXT15

EXT15

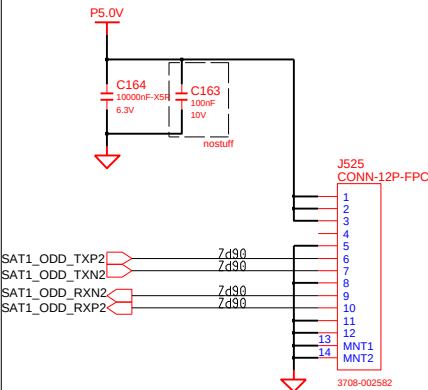
SATA ODD CONN



J523
CDROM-SATA-13P

3710-002634
TYPE : ANGLE

MAIN TO SUB : SATA ODD CONN



EXT15

EXT15

EXT15

MT19
RMNT-25-65-1P

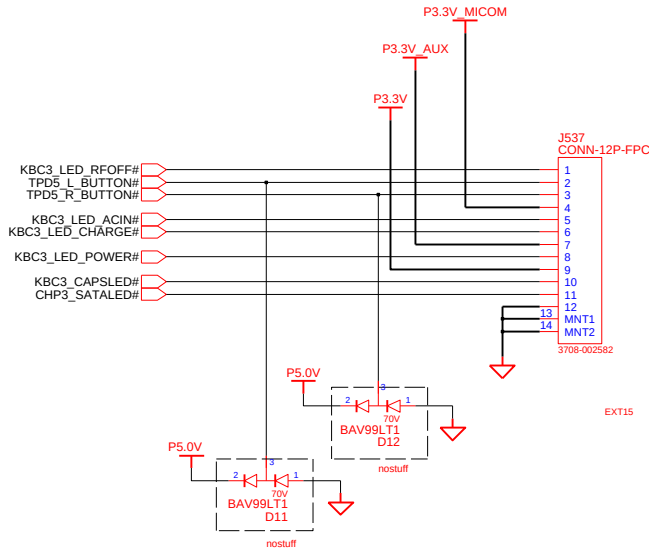
G_ODD

ODD sub board mount hole

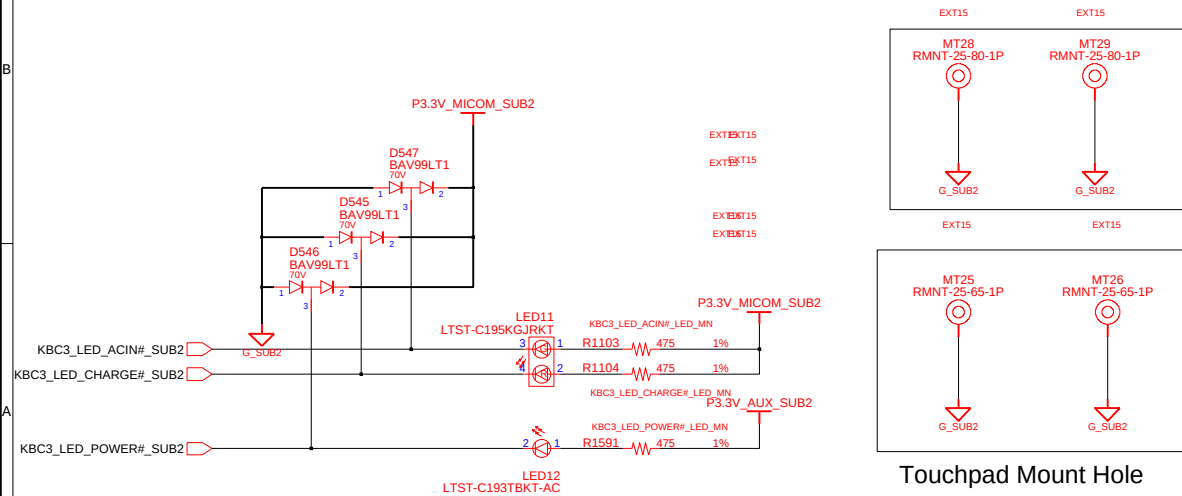
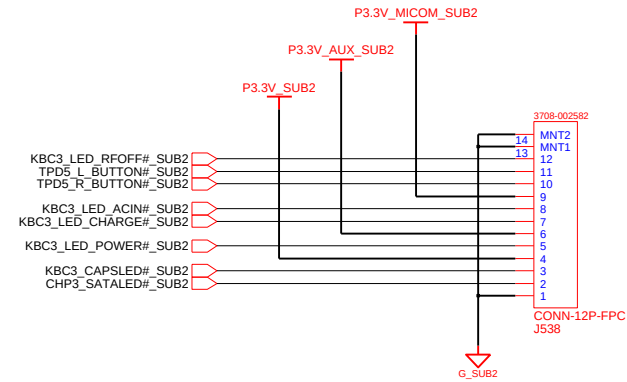
DRAW	QZ DAI	DATE	8/19/2010	TITLE	SCALA2-EXT SUB BOARD3 ODD SUB	SAMSUNG ELECTRONICS
CHECK	SIMMAN WU	DEV. STEP	MP			PART NO. BA41-01423A
APPROVAL	BC LEE	REV	rev. 1.1			
MODULE CODE		LAST EDIT		December 25, 2010 10:42:33 AM	PAGE 49 OF 52	

15.6"

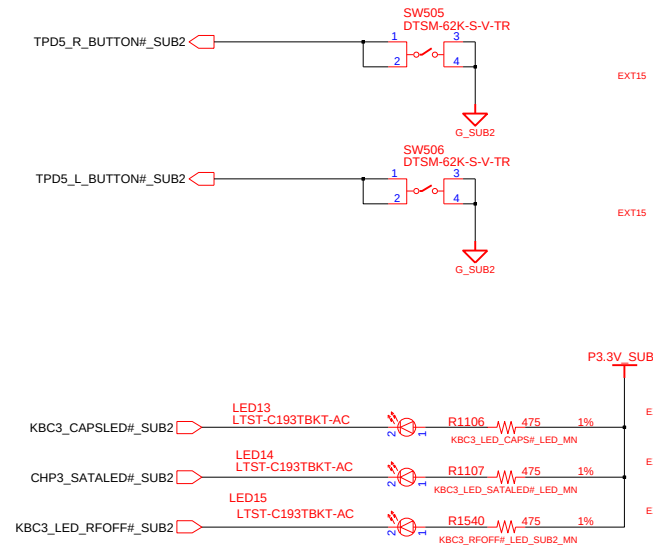
TOUCHPAD MAIN TO SUB



TOUCHPAD SUB TO MAIN

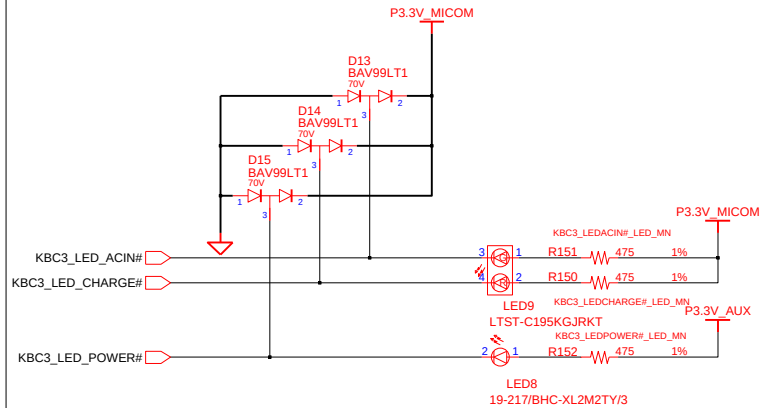


Touchpad Mount Hole

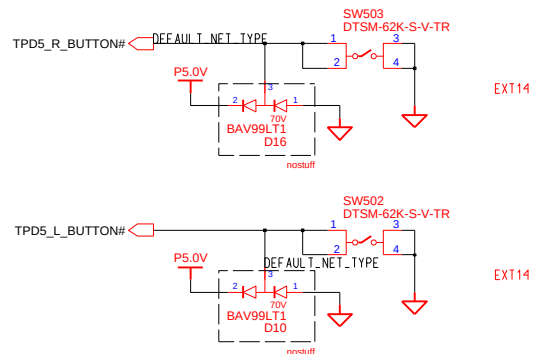


DRAW	QZ DAI	DATE	8/19/2010	TITLE	SCALA2-EXT SUB BOARD4 MULTIMEDIA SUB	SAMSUNG ELECTRONICS
CHECK	SIMMAN WU	DEV. STEP	MP			PART NO. BA41-01423A
APPROVAL	BC LEE	REV	rev. 1.1			
MODULE CODE		LAST EDIT				

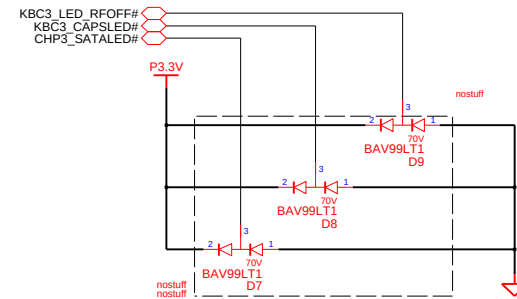
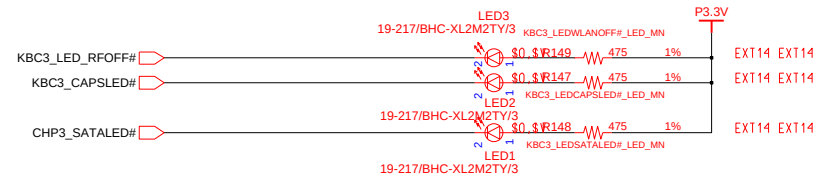
ADAPTERIN/CHARGING LED



EXT14
EXT14 EXT14
EXT14 EXT14
EXT14 EXT14
EXT14



ADAPTERIN/CHARGING LED



DESIGN	QZ DAI	DATE	8/19/2010	TITLE	SCALA2-EXT	SAMSUNG
CHECK	SIMMAN WU	DEV. STEP	MP	MNT hole		ELECTRONICS
APPROVAL	BC LEE	REV	rev. 1.1	MNT hole		PART NO.
MODULE CODE		LAST EDIT				BA41-01423A
				December 25, 2010 10:42:33 AM	PAGE	51 OF 52

THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

Diagram showing 10 different types of electrical components, each with a label and a symbol. The components are arranged in two rows of five. Each component has a label above it, a symbol in the middle, and a label below it. The symbols are: a circle with a dot, a circle with a cross, a circle with a dot and a cross, a circle with a cross and a dot, and a circle with a dot and a cross. The labels are: MT512, RMNT-25-65-1P, MT500, RMNT-25-65-1P, MT506, RMNT-30-80-1P, MT510, RMNT-30-80-1P, MT509, RMNT-30-80-1P, MT505, RMNT-30-80-1P, MT501, RMNT-30-80-1P, and MT502, RMNT-30-80-1P. The labels are in red text.

DRAW		QZ DAI	DATE	5/10/2010	TITLE SCALA2-EXT Switched PWR 2 FOR OPTIMUS PWR			
CHECK		SIMMAN WU	DEV. STEP	MP			PART NO.	
APPROVAL		BC LEE	REV	rev. 1.1			BA41-01423A	
MODULE CODE			LAST EDIT		December 25, 2010 10:42:33 AM		PAGE	52 OF 52

www.s-manuals.com