

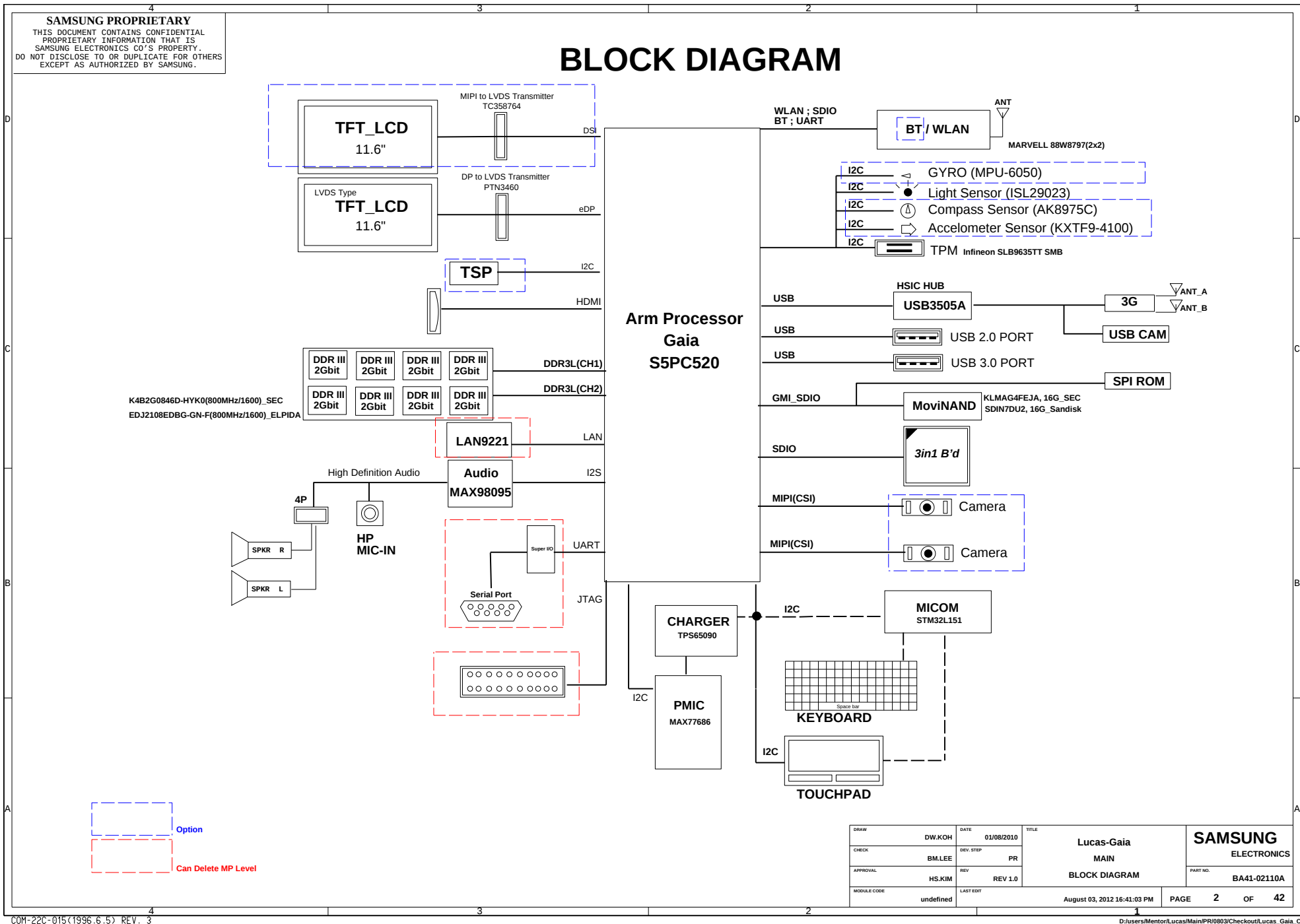
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Model Name   : XE303C12
PBA Name     : MAIN
PCB Code     : BA41-02110A { GCE }
                                   { AMT }
                                   { UMT }
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Design	CHECK	APPROVAL
DW.KOH	BM.LEE	HS.KIM

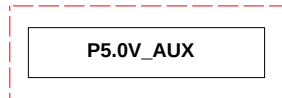
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D:/users/Mentor/Lucas/Main/PR/0803/Checkout/Lucas Gaia C



Rev 0.1



nomal

PMU(TPS65090)

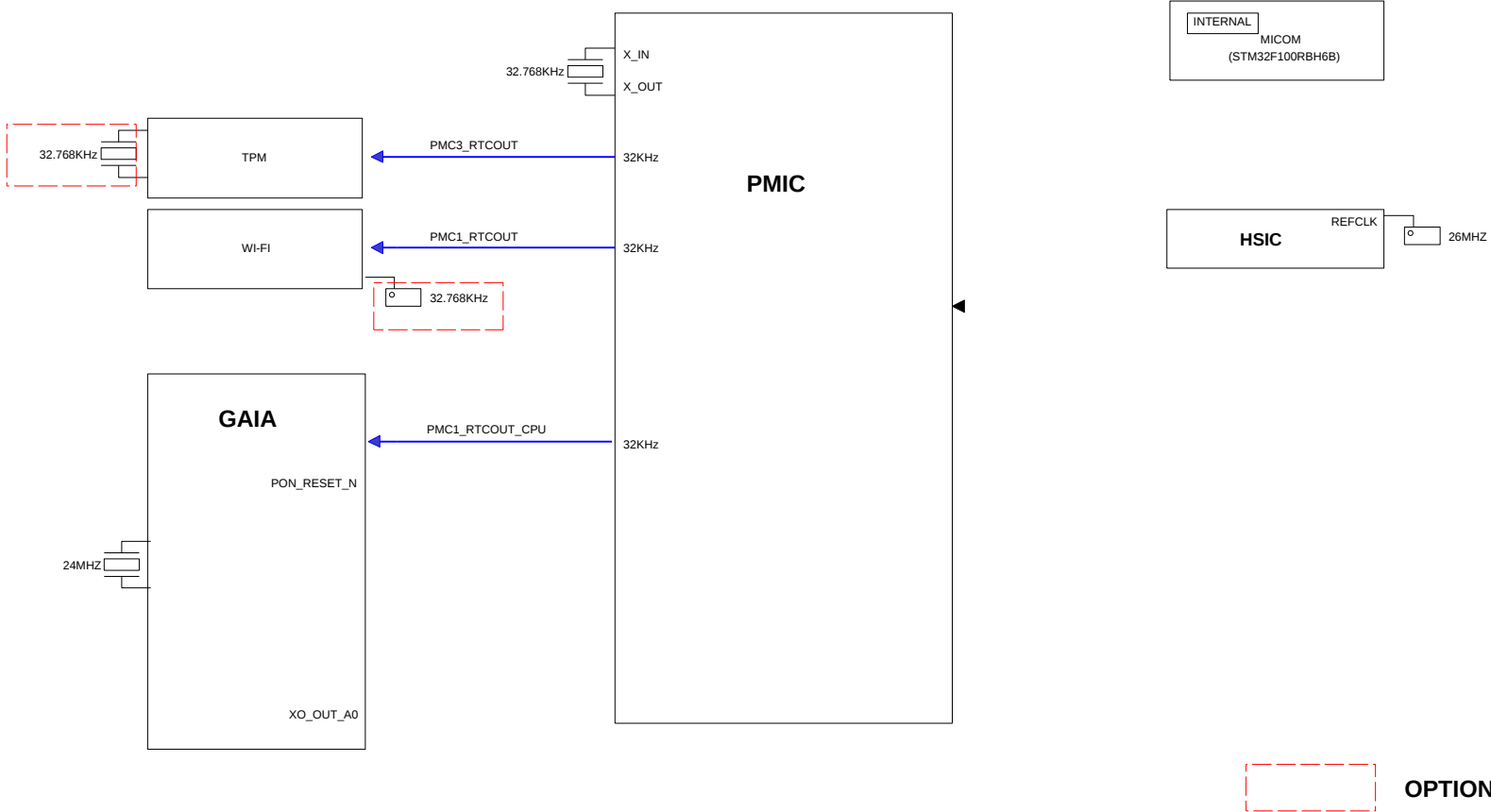
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APPROVAL		HS.KIM		REV		REV 1.0					
MODULE CODE				LAST EDIT				August 03, 2012 16:41:03 PM		PAGE 4 OF 42	

POWER SEQUENCE

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

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CLOCK DIAGRAM

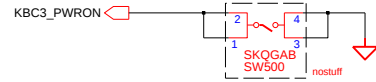


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MODULE CODE		undefined		LAST EDIT			August 03, 2012 16:41:03 PM			PAGE	6	OF	42

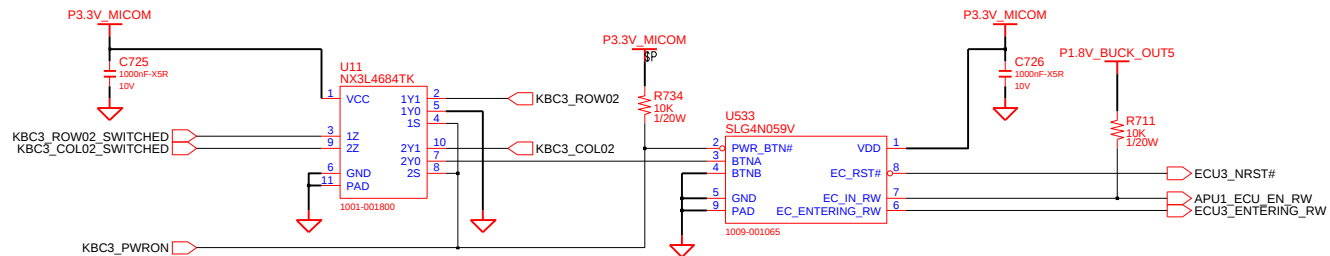
BUTTONS

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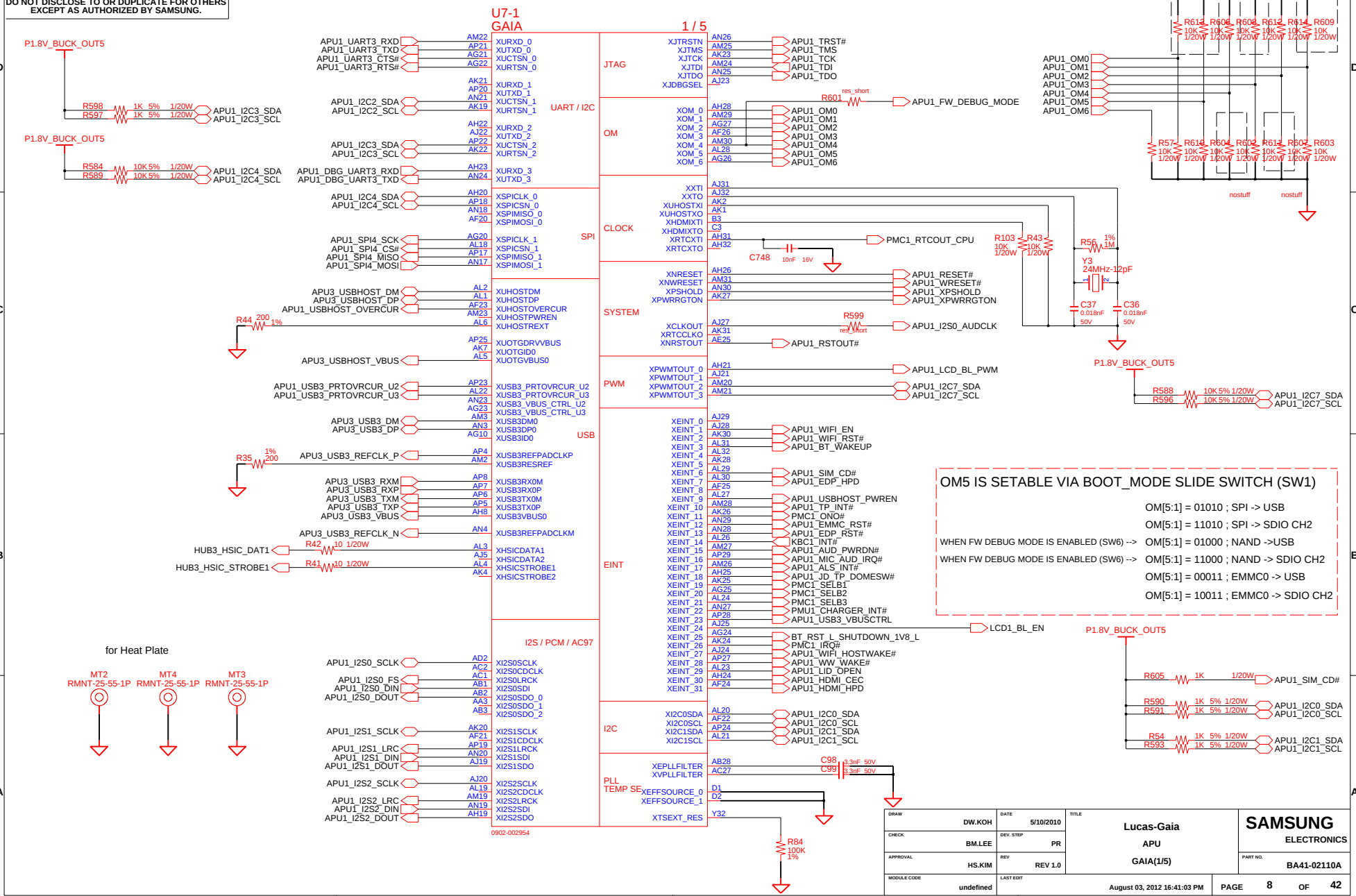
POWER ON



HOLELESS RESET



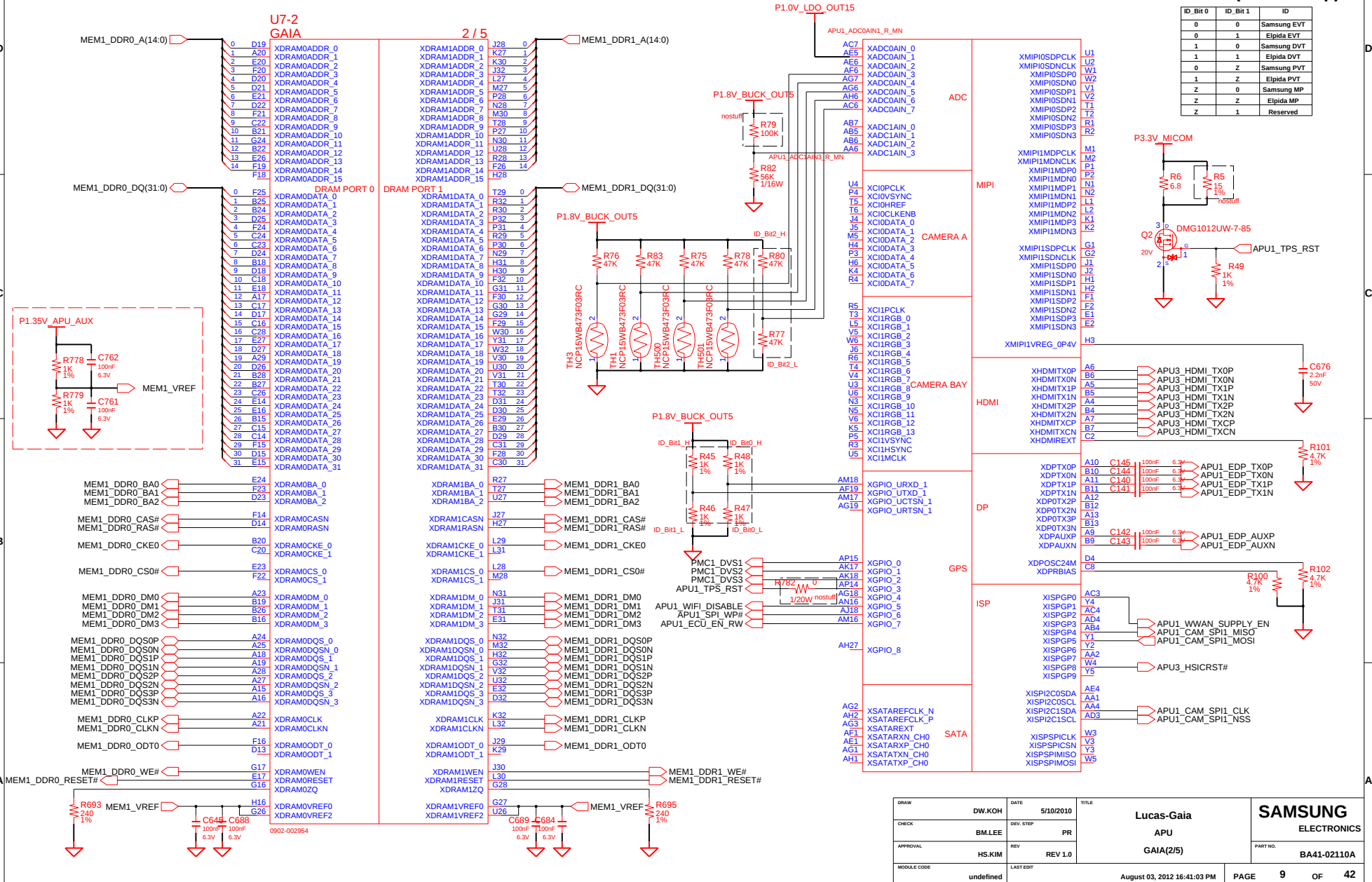
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MODULE CODE		LAST EDIT	August 03, 2012 16:41:03 PM			BA41-02110A
				PAGE	7	OF 42



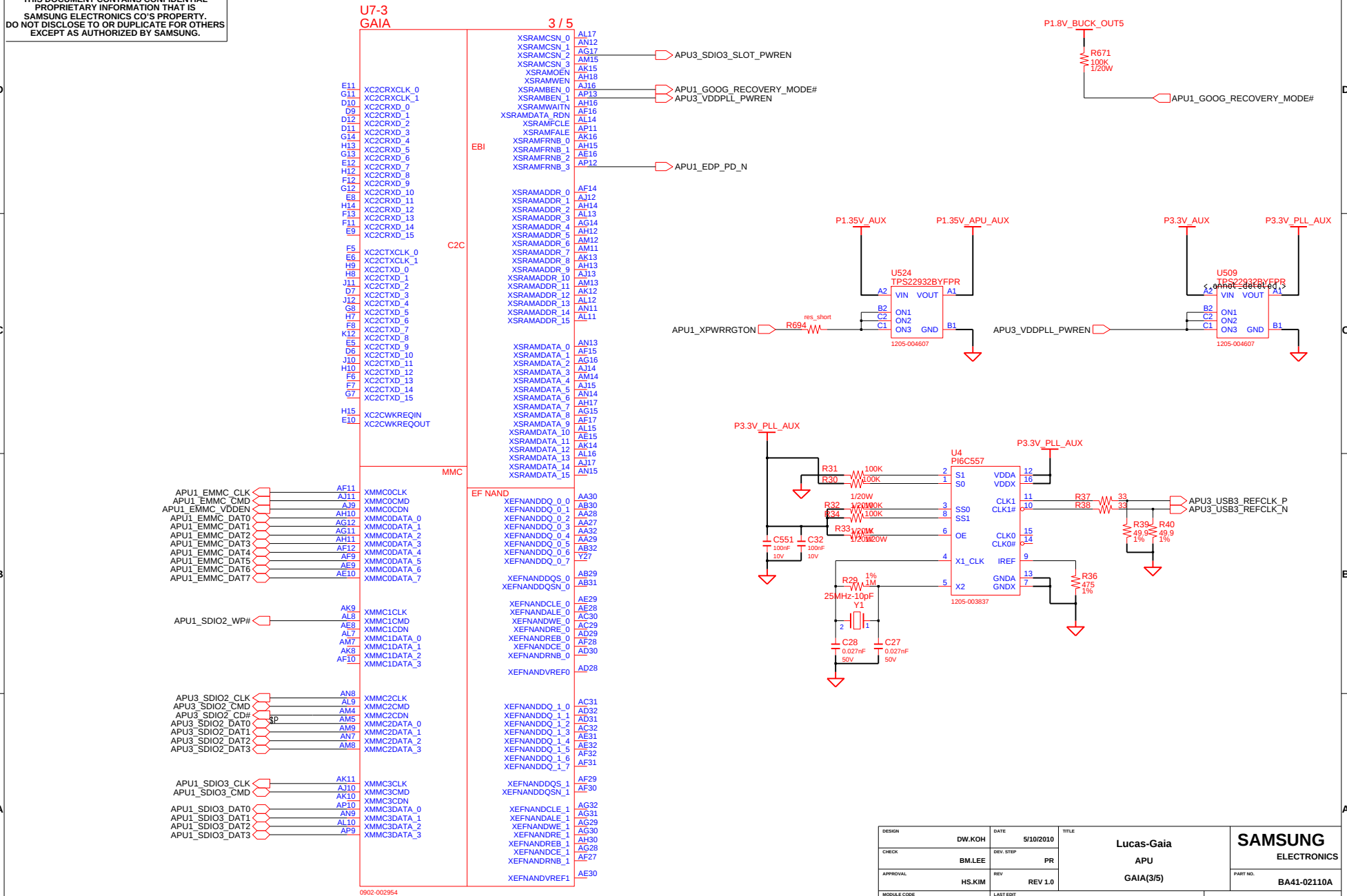
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Board ID(for develop)

ID_Bit 0	ID_Bit 1	ID
0	0	Samsung EVT
0	1	Elpida EVT
1	0	Samsung DVT
1	1	Elpida DVT
0	Z	Samsung PVT
1	Z	Elpida PVT
Z	0	Samsung MP
Z	Z	Elpida MP
Z	1	Reserved



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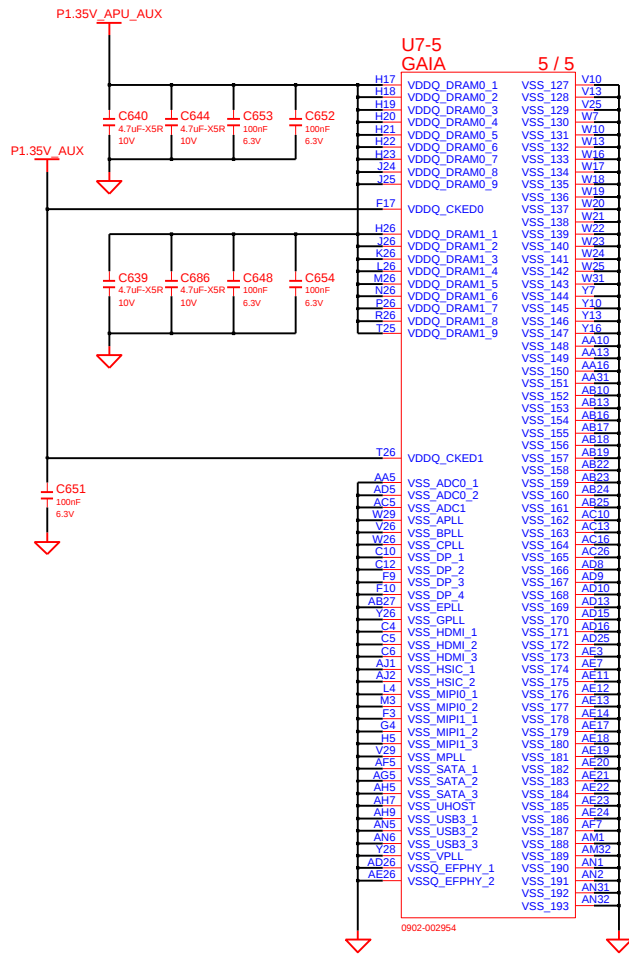
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APPROVAL	HS.KIM	REV	REV 1.0		GAIA(3/5)	
MODULE CODE		LAST EDIT				
August 03, 2012 16:41:03 PM						PAGE 10 OF 42

The image displays three distinct power planes from a PCB layout, each with its own set of decoupling and shorting components connected to a common ground plane.

- P1.0V_VDD_ARM_VCC:** This plane includes decoupling capacitors EC5 (100uF, 6.3V AD), C631 (4.7uF-XSR, 10V), C629 (4.7uF-XSR, 10V), C636 (4.7uF-XSR, 10V), and C642 (4.7uF-XSR, 10V). It also features shorting components SHORT505 and SHORT504 (INSTPAR, 6.3V).
- P1.0V_VDD_G3D_VCC:** This plane includes decoupling capacitors EC3 (100uF, 6.3V AD), C646 (4.7uF-XSR, 10V), C643 (4.7uF-XSR, 10V), C637 (4.7uF-XSR, 10V), and C632 (4.7uF-XSR, 10V). It also features shorting components SHORT506 and SHORT507 (INSTPAR, 6.3V).
- P1.1V_AP_MIF:** This plane includes decoupling capacitors EC4 (100uF, 6.3V AD), C687 (4.7uF-XSR, 10V), C650 (4.7uF-XSR, 10V), C647 (100nF, 6.3V), and C649 (100nF, 6.3V).

All components are connected to a common ground plane, indicated by the ground symbol at the bottom of each section.

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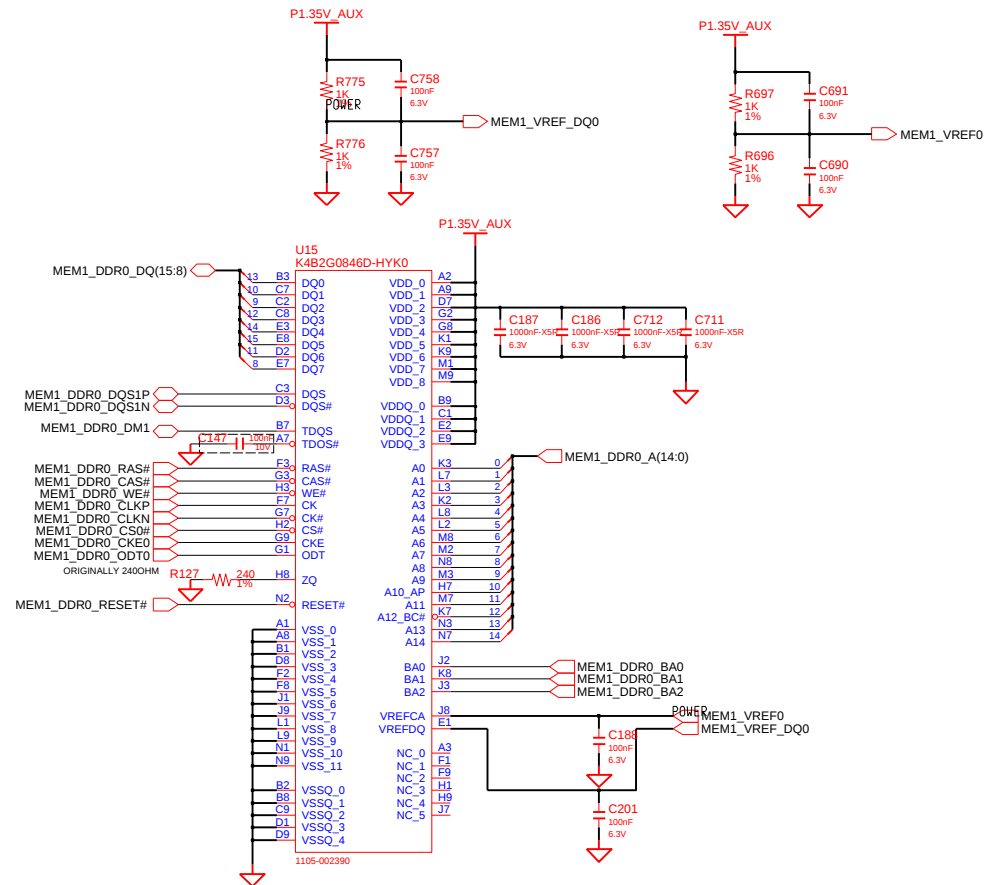
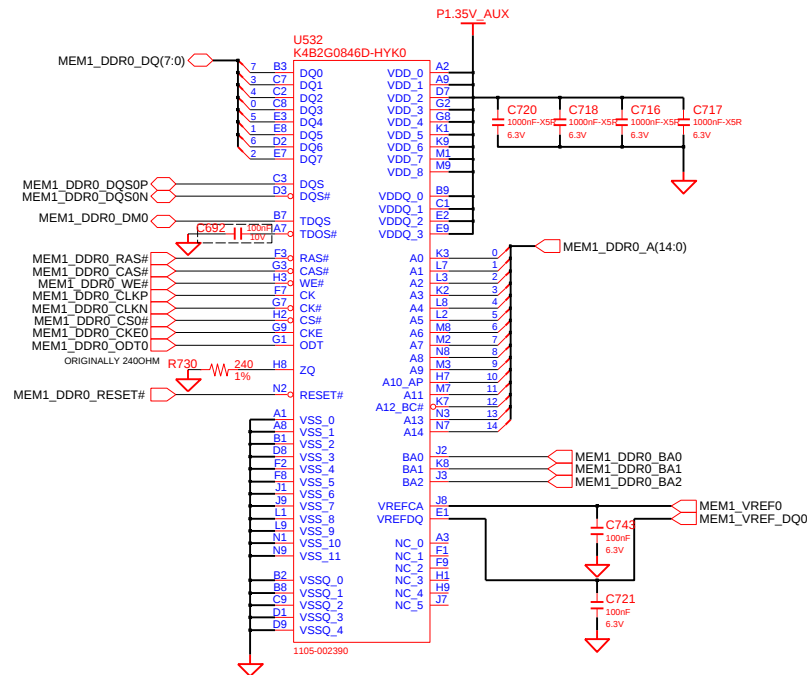
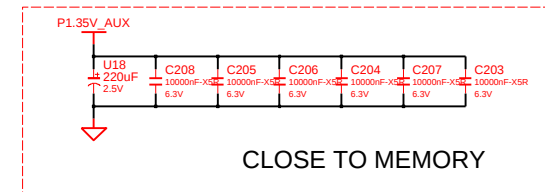
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A2	VSS_2	VSS_65	L9
A3	VSS_3	VSS_66	L12
A4	VSS_4	VSS_67	L15
A14	VSS_5	VSS_68	L29
A26	VSS_6	VSS_69	M6
A30	VSS_7	VSS_70	M9
A31	VSS_8	VSS_71	M12
A32	VSS_9	VSS_72	M15
B1	VSS_10	VSS_73	M16
B2	VSS_11	VSS_74	M17
B8	VSS_12	VSS_75	M18
B14	VSS_13	VSS_76	M21
B17	VSS_14	VSS_77	M22
B23	VSS_15	VSS_78	M23
B29	VSS_16	VSS_79	M25
B31	VSS_17	VSS_80	M29
B32	VSS_18	VSS_81	M31
C1	VSS_19	VSS_82	N6
C11	VSS_20	VSS_83	N9
C13	VSS_21	VSS_84	N12
C19	VSS_22	VSS_85	N15
C21	VSS_23	VSS_86	N29
C25	VSS_24	VSS_87	N27
C27	VSS_25	VSS_88	P6
C29	VSS_26	VSS_89	P9
C32	VSS_27	VSS_90	P12
D16	VSS_28	VSS_91	P15
D28	VSS_29	VSS_92	P24
E7	VSS_30	VSS_93	P29
E13	VSS_31	VSS_94	R7
E19	VSS_32	VSS_95	R12
E22	VSS_33	VSS_96	R15
E25	VSS_34	VSS_97	R16
E28	VSS_35	VSS_98	R17
E30	VSS_36	VSS_99	R18
E31	VSS_37	VSS_100	R21
E33	VSS_38	VSS_101	R22
G15	VSS_39	VSS_102	R23
G25	VSS_40	VSS_103	R25
H11	VSS_41	VSS_104	R31
H29	VSS_42	VSS_105	T7
J7	VSS_43	VSS_106	T16
J8	VSS_44	VSS_107	T24
J9	VSS_45	VSS_108	U7
J16	VSS_46	VSS_109	U17
J17	VSS_47	VSS_110	U18
J18	VSS_48	VSS_111	U19
J19	VSS_49	VSS_112	U20
J20	VSS_50	VSS_113	U21
J21	VSS_51	VSS_114	U22
J22	VSS_52	VSS_115	U23
J23	VSS_53	VSS_116	U24
K6	VSS_54	VSS_117	U25
K9	VSS_55	VSS_118	U29
K10	VSS_56	VSS_119	U31
K11	VSS_57	VSS_120	V7
K13	VSS_58	VSS_121	AP1
K14	VSS_59	VSS_122	AP2
K15	VSS_60	VSS_123	AP3
K24	VSS_61	VSS_124	AP30
K28	VSS_62	VSS_125	AP31
K31	VSS_63	VSS_126	AP32

DRAW		DW.KOH		DATE	5/10/2010		TITLE		Lucas-Gaia APU GAIA(5/5)		SAMSUNG ELECTRONICS		
CHECK		BM.LEE		DEV. STEP		PR							
APPROVAL		HS.KIM		REV		REV 1.0							
										PART NO.	BA41-02110A		
MODULE CODE		undefined		LAST EDIT		August 03, 2012 16:41:03 PM				PAGE	12	OF	42

DDR3L On B'd Memory (1/4)

* K4B2G0846D-HYK0(1600) : SEC : Component is used for 2GB Model

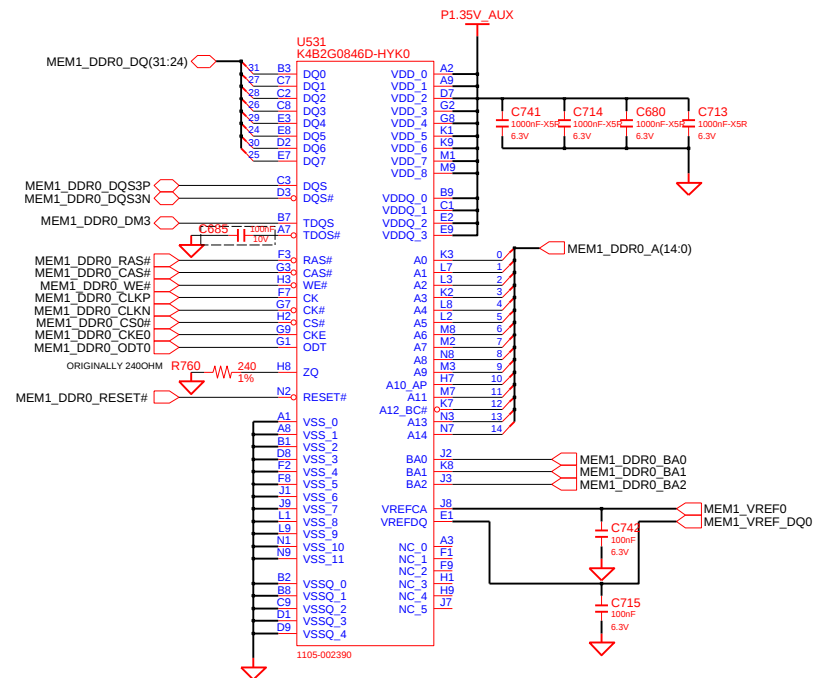
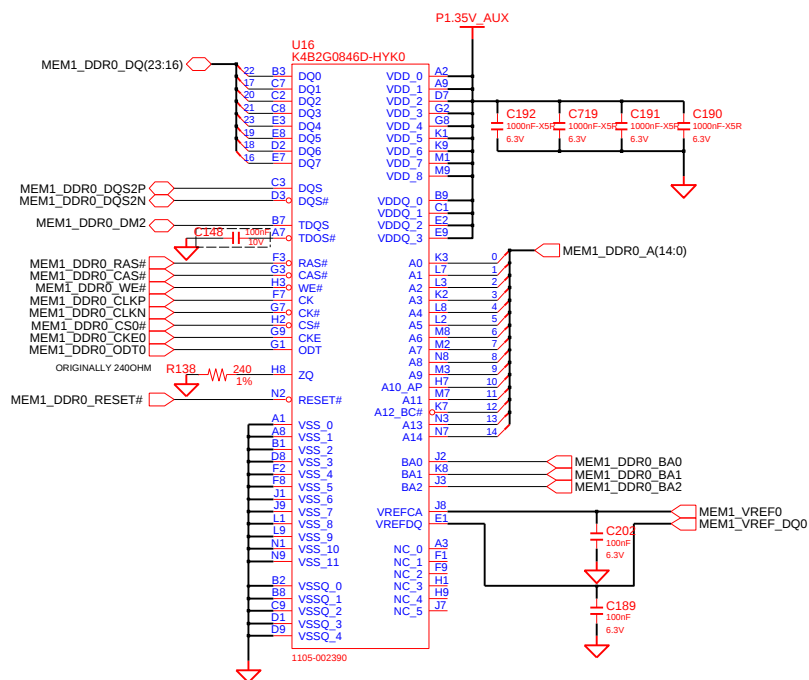
EDJ2108EDBG-GN-F(1600) : ELPIDA



DRAW	DW.KOH	DATE	10/02/2010	TITLE	Lucas-Gaia
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APPROVAL	HS.KIM	REV	REV 1.0	DDR3L	
MODULE CODE	undefined	LAST EDIT	August 03, 2012 16:41:03 PM	PAGE	13 OF 42

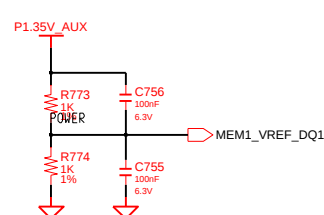
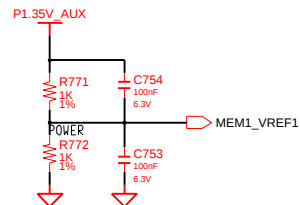
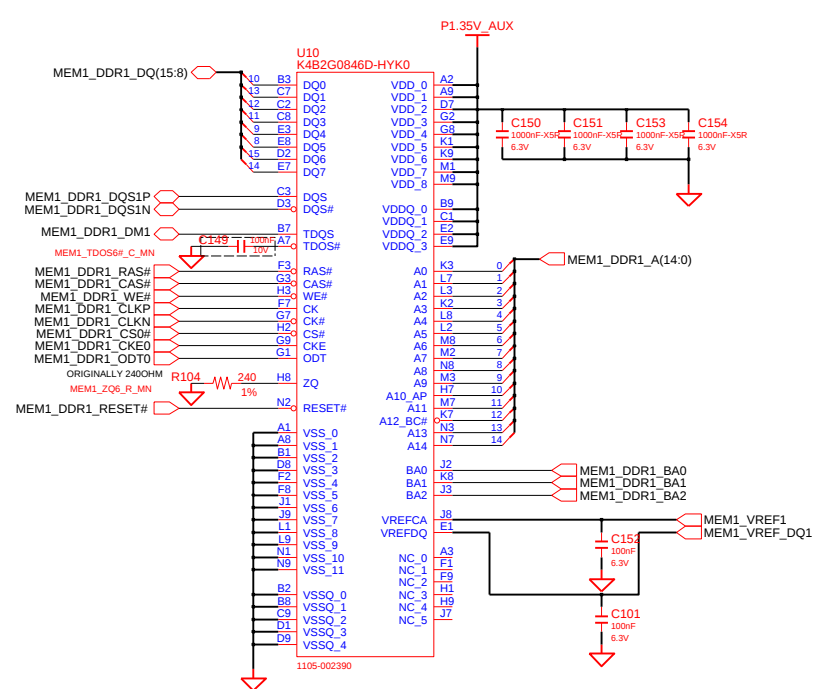
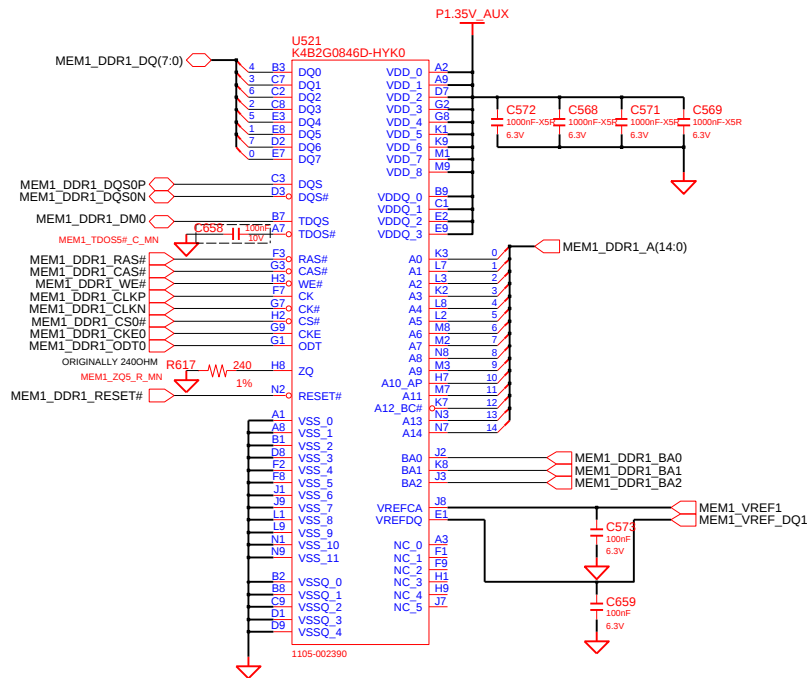
SAMSUNG
ELECTRONICS
PART NO.
BA41-02110A

DDR3L On B'd Memory (2/4)



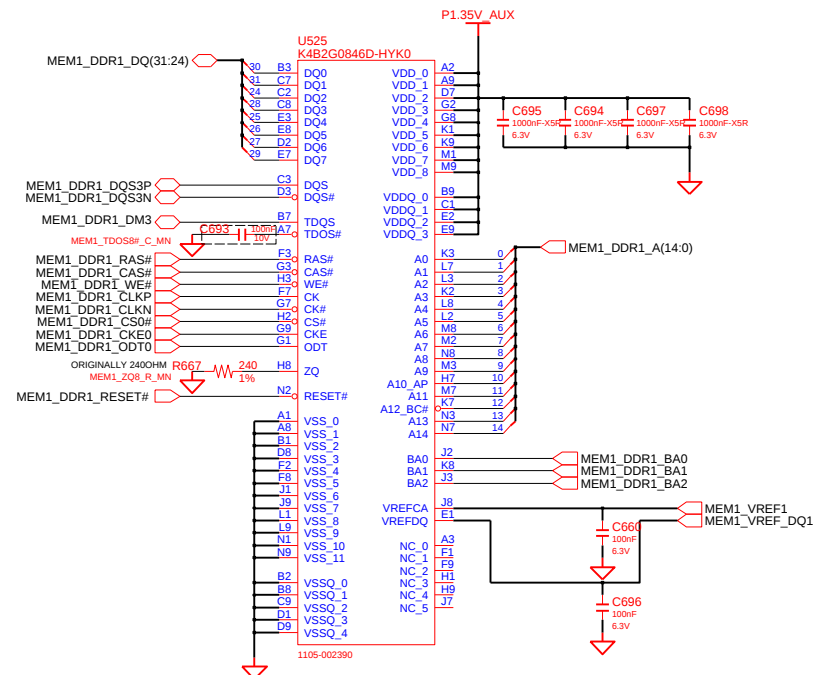
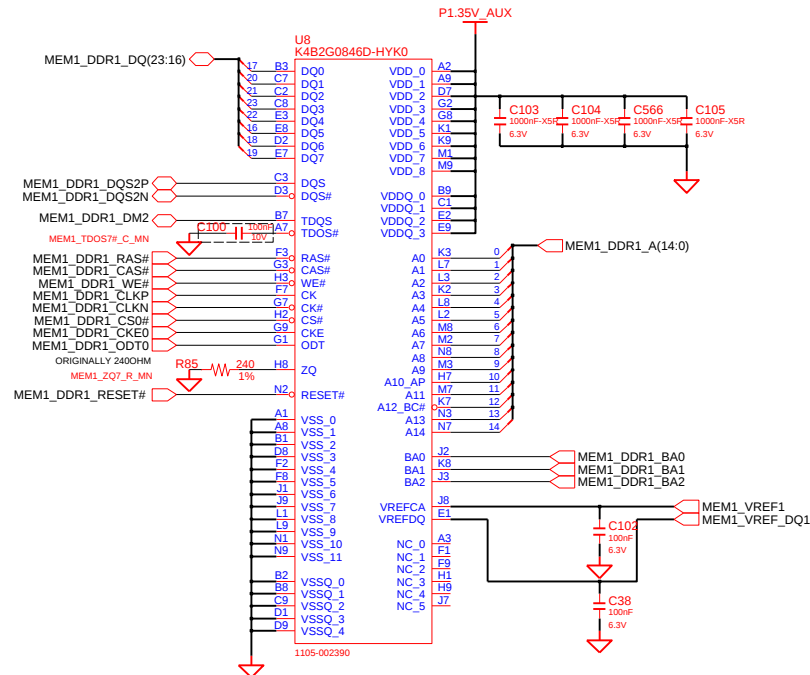
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APPROVAL	HS.KIM	REV	REV 1.0		DDR3L	
MODULE CODE	undefined	LAST EDIT	August 03, 2012 16:41:03 PM	PAGE	14	OF 42
					PART NO.	BA41-02110A

DDR3L On B'd Memory (3/4)



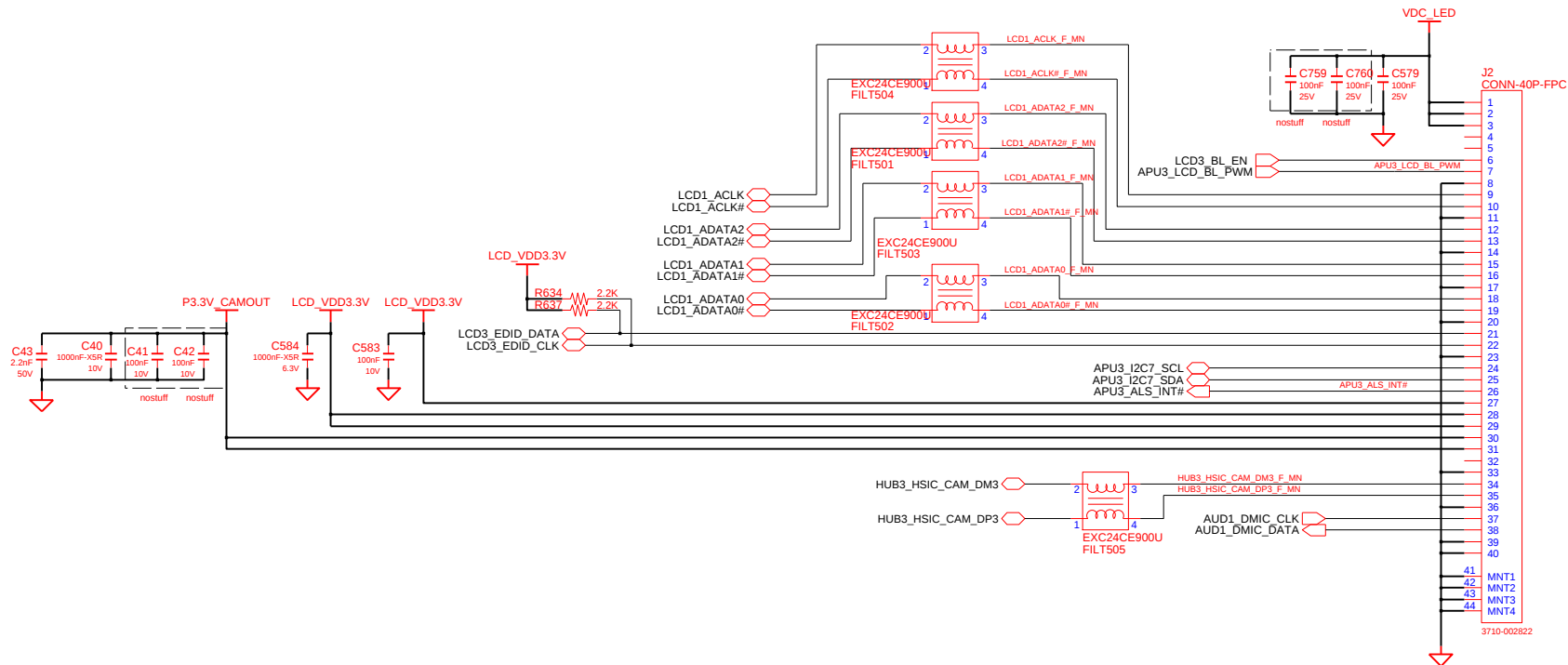
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MODULE CODE	undefined	LAST EDIT	August 03, 2012 16:41:03 PM	PAGE	15 OF 42
SAMSUNG ELECTRONICS					PART NO. BA41-02110A

DDR3L On B'd Memory (4/4)



DRAW	DW.KOH	DATE	10/02/2010	TITLE	Lucas-Gaia	SAMSUNG
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APPROVAL	HS.KIM	REV	REV 1.0	DDR3L	PART NO.	BA41-02110A
MODULE CODE	undefined	LAST EDIT	August 03, 2012 16:41:03 PM	PAGE	16	OF 42

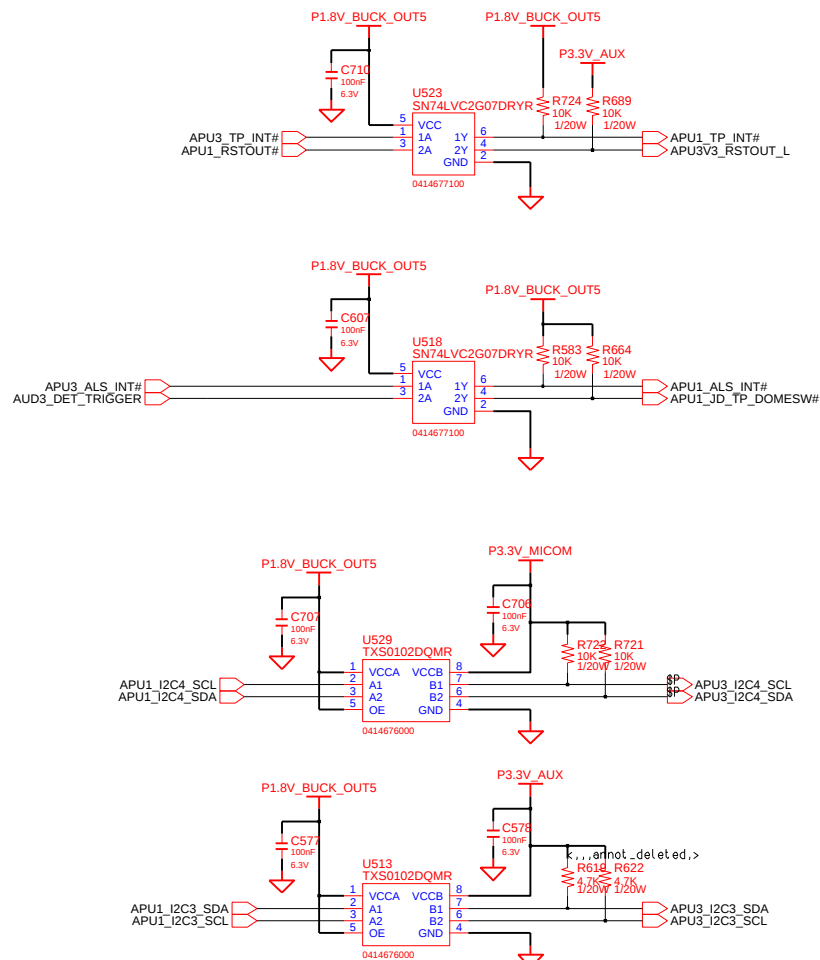
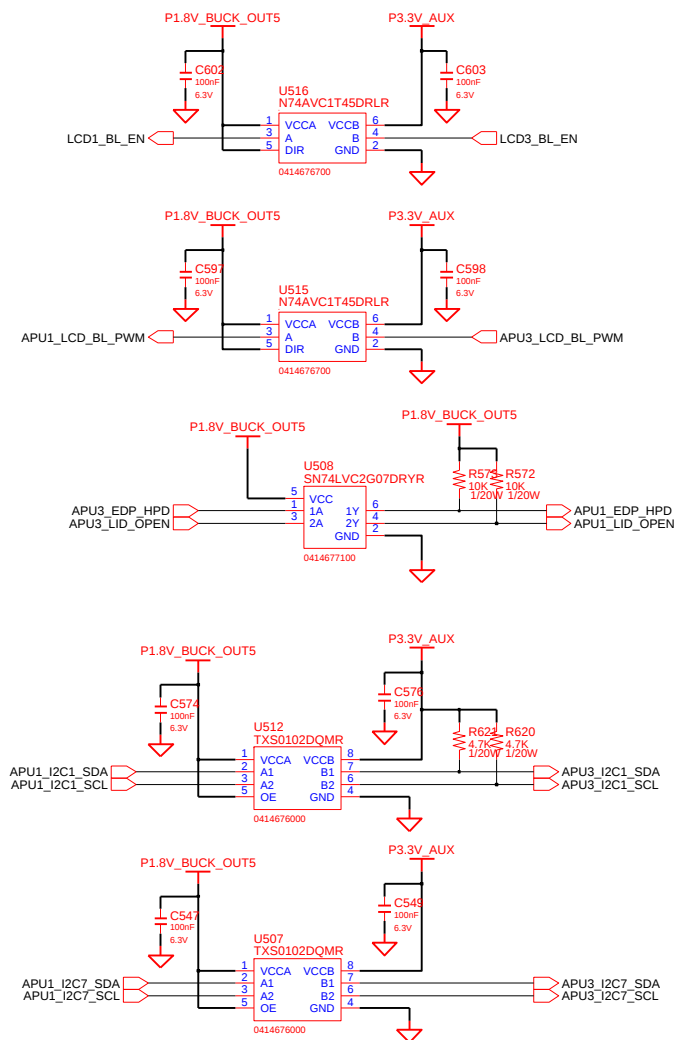
LVDS LOGIC



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CHECK	BM.LEE	DEV. STEP	PR		DISPLAY	
APPROVAL	HS.KIM	REV	REV 1.0		LCD_LVDS	
MODULE CODE		LAST EDIT		August 03, 2012 16:41:03 PM	PAGE 18 OF 42	PART NO. BA41-02110A

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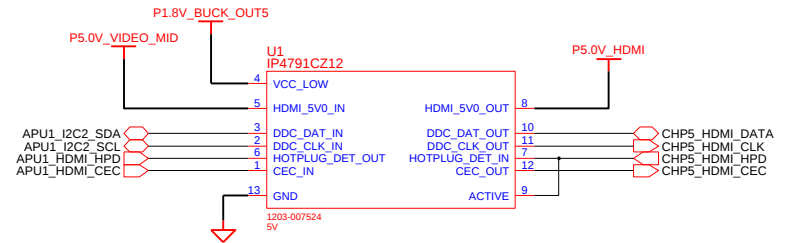
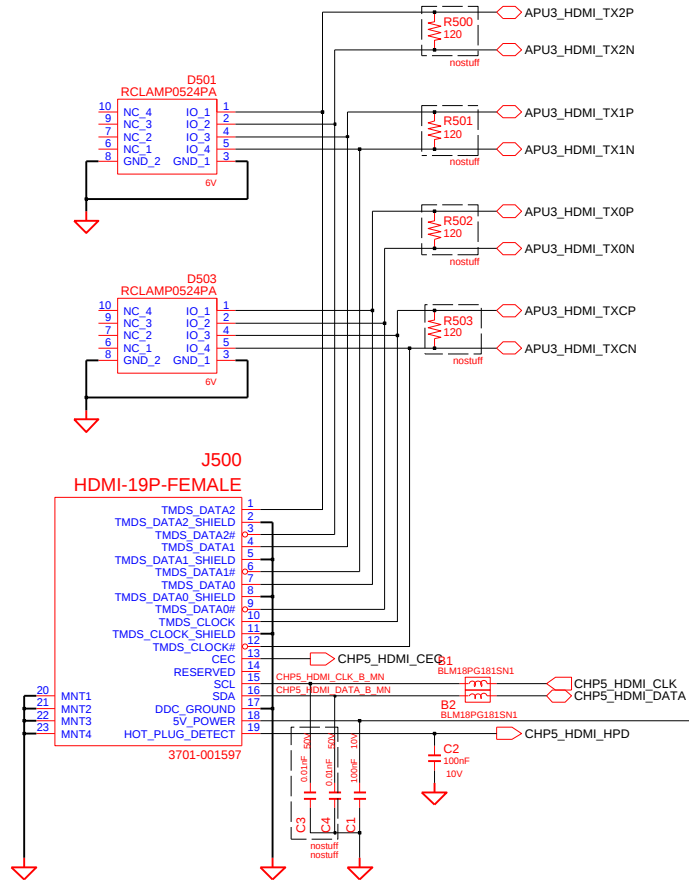
LEVEL_CONVERTERS



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APPROVAL	HS.KIM	REV	REV 1.0			
MODULE CODE	42	LAST EDIT	August 03, 2012 16:41:03 PM	PAGE	19	OF 45

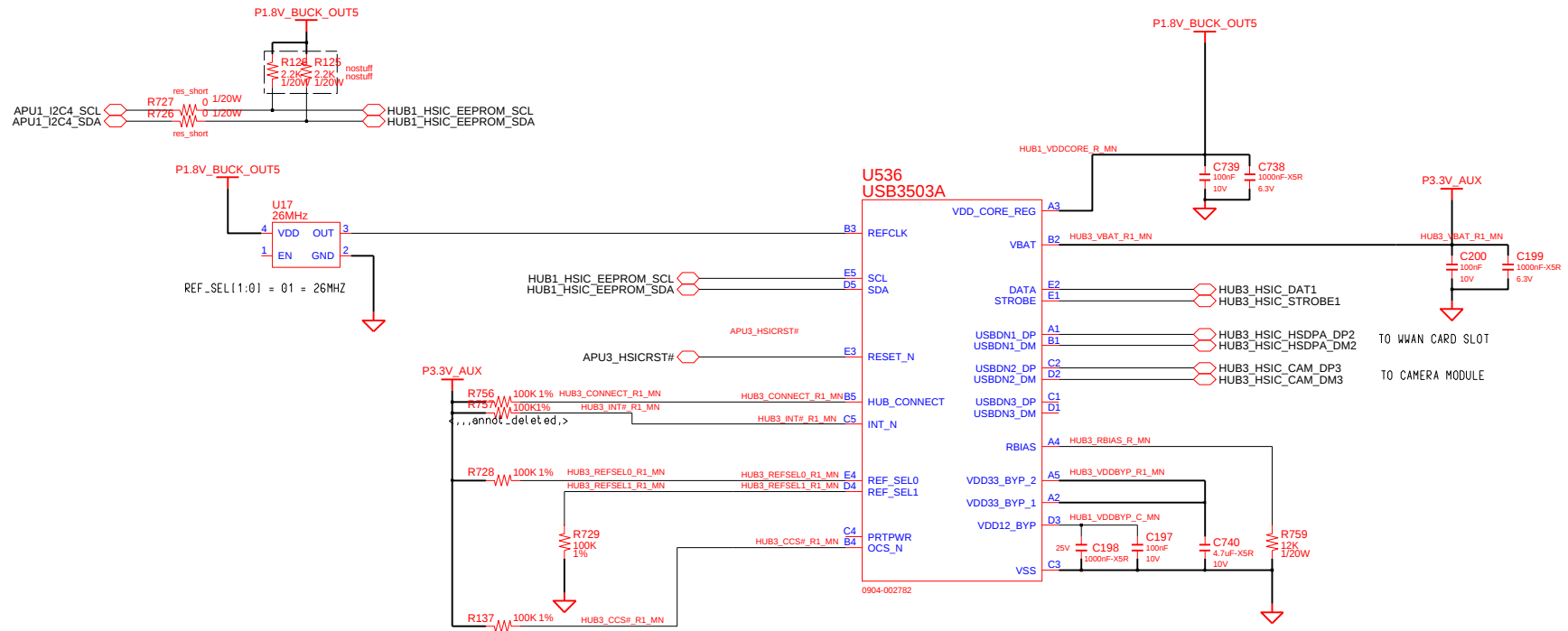
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HDMI



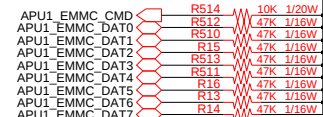
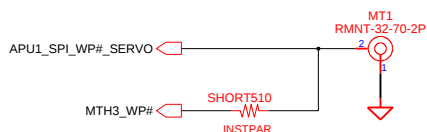
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APPROVAL	HS.KIM	REV	REV 1.0	HDMI	HDMI	
MODULE CODE	undefined	LAST EDIT	August 03, 2012 16:41:03 PM	PAGE	20	OF 42

HSIC HUB



DESIGN	DW.KOH	DATE	5/10/2010	TITLE	Lucas-Gaia
CHECK	BM.LEE	DEV. STEP	PR	HSIC	USB HUB
APPROVAL	HS.KIM	REV	REV 1.0		
MODULE CODE		LAST EDIT			
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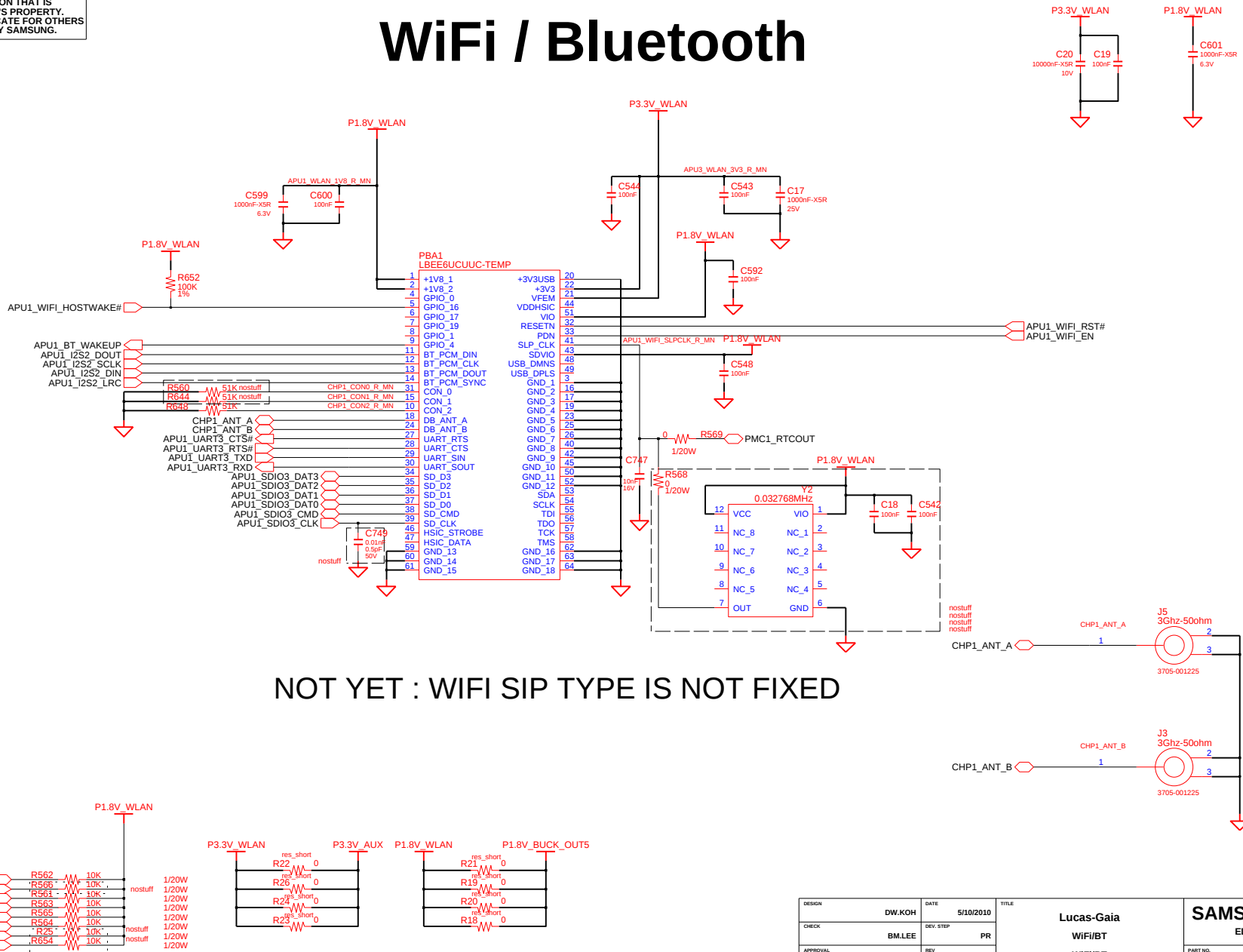
32MBIT SIP FLASH



DESIGN	DW.KOH	DATE	9/23/2008	TITLE Lucas-Gaia eMMC eMMC	SAMSUNG ELECTRONICS PART NO. BA41-02110A
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APPROVAL	HS.KIM	REV	REV 1.0		
MODULE CODE	LAST EDIT				
August 03, 2012 16:41:03 PM					PAGE 22 OF 42

COM-22C-015(1996.6.5) REV. 3	4	3	2	1
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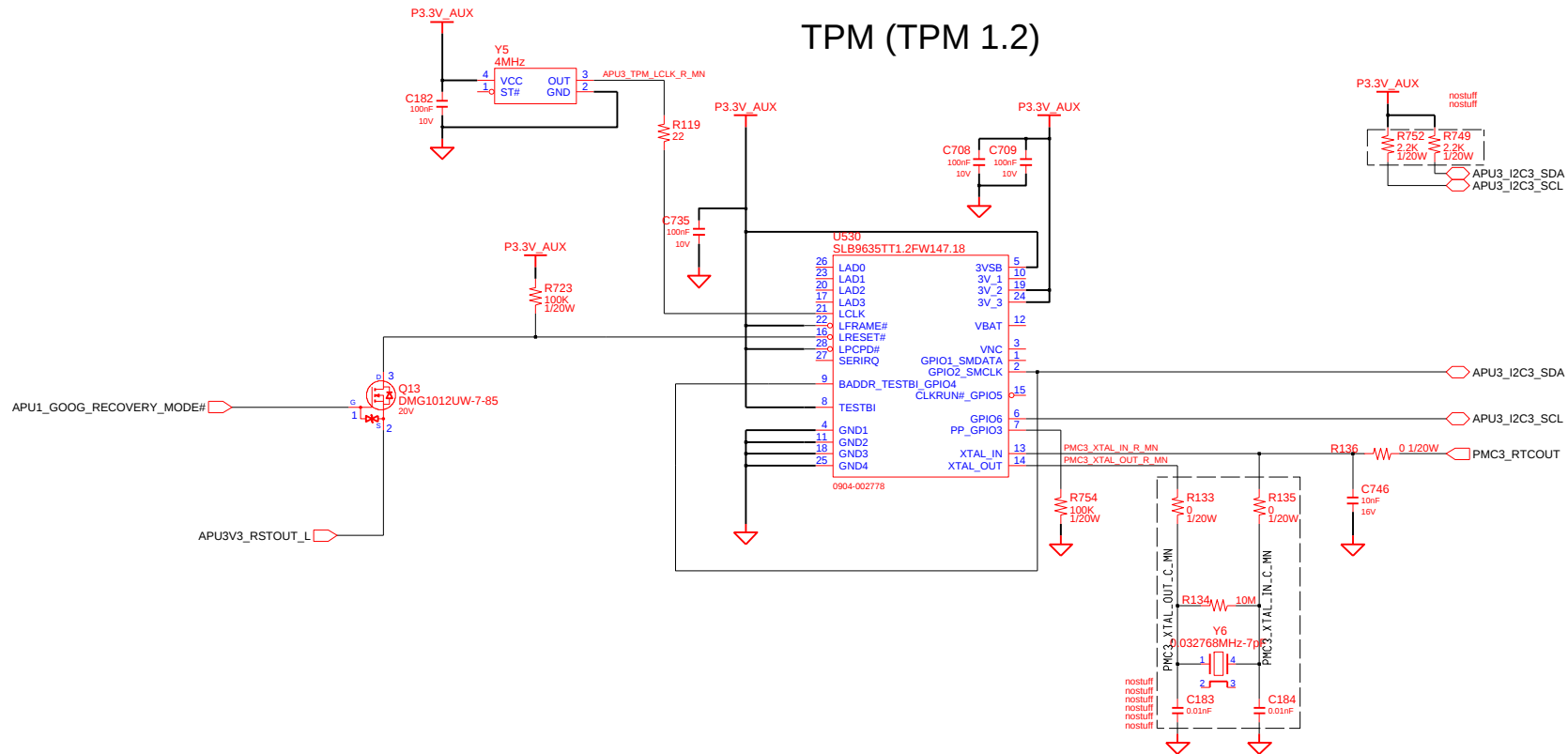
WiFi / Bluetooth



DESIGN	DW.KOH	DATE	5/10/2010	TITLE	Lucas-Gaia	SAMSUNG ELECTRONICS
CHECK	BM.LEE	DEV. STEP	PR		WIFI/BT	
APPROVAL	HS.KIM	REV	REV 1.0		WIFI/BT	
MODULE CODE		LAST EDIT				PART NO. BA41-02110A
August 03, 2012 16:41:03 PM						PAGE 24 OF 42

TPM

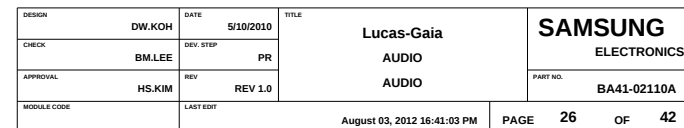
TPM (TPM 1.2)



DESIGN	DW.KOH	DATE	5/10/2010	TITLE	Lucas-Gaia
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MODULE CODE		LAST EDIT			
				August 03, 2012 16:41:03 PM	PAGE 25 OF 42

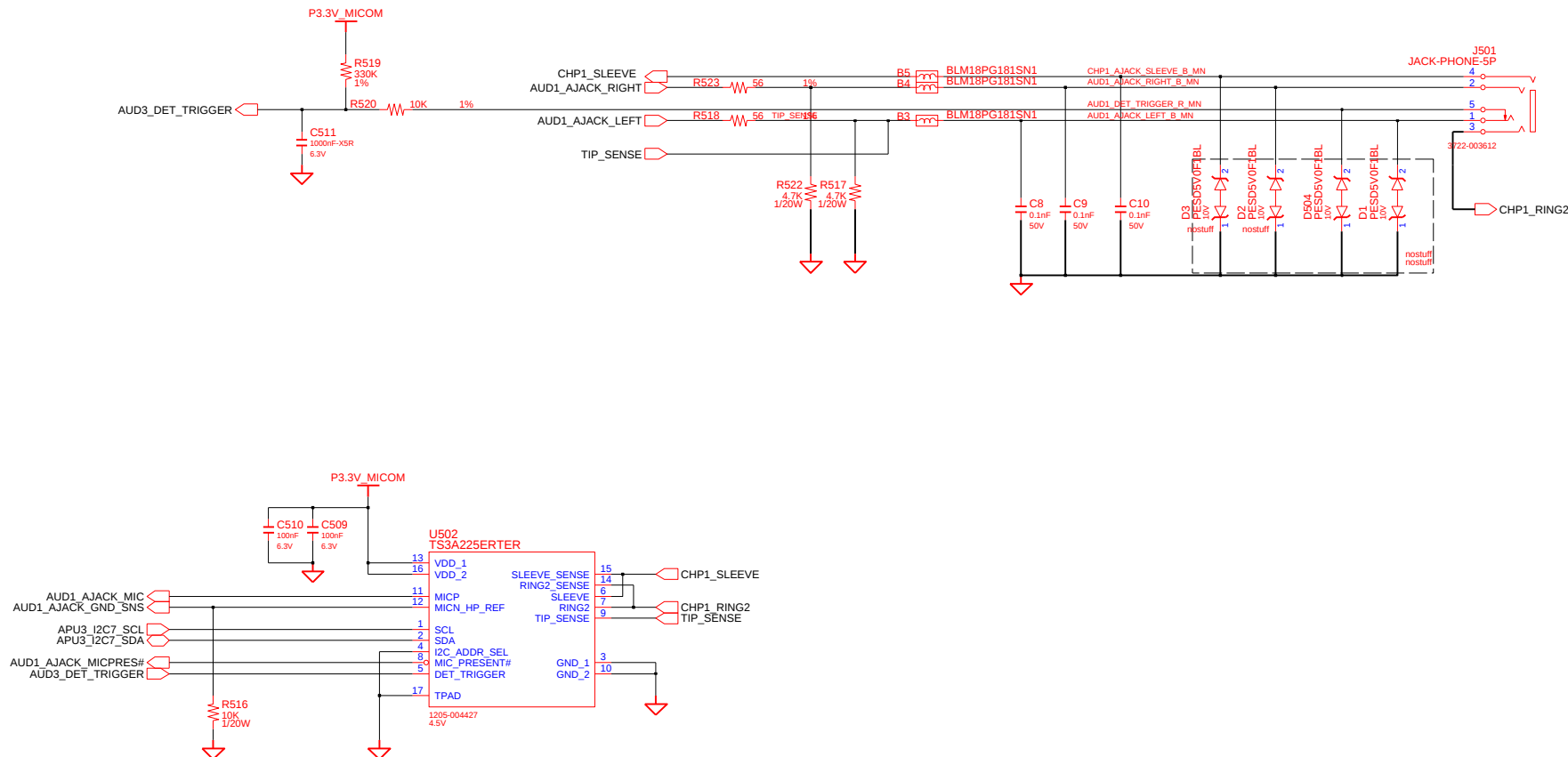
SAMSUNG
ELECTRONICS
PART NO.
BA41-02110A

AUDIO



Audio IF

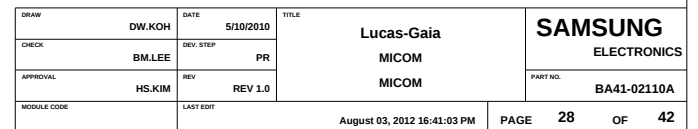
AUDIO COMBO JACK



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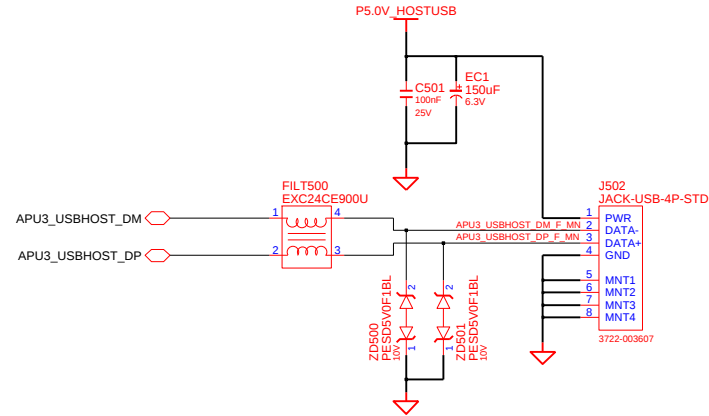
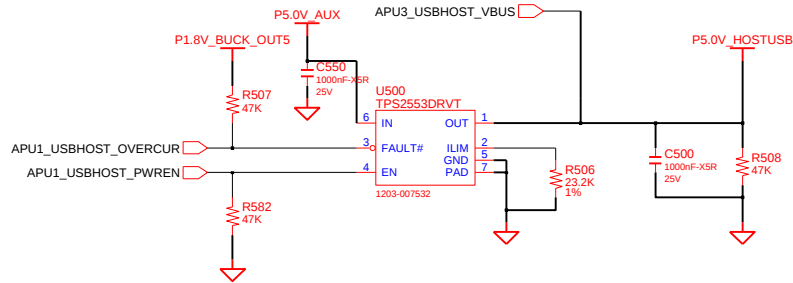
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D:/users/Mentor/Lucas/Main/PR/0803/Checkout/Lucas Gaia C

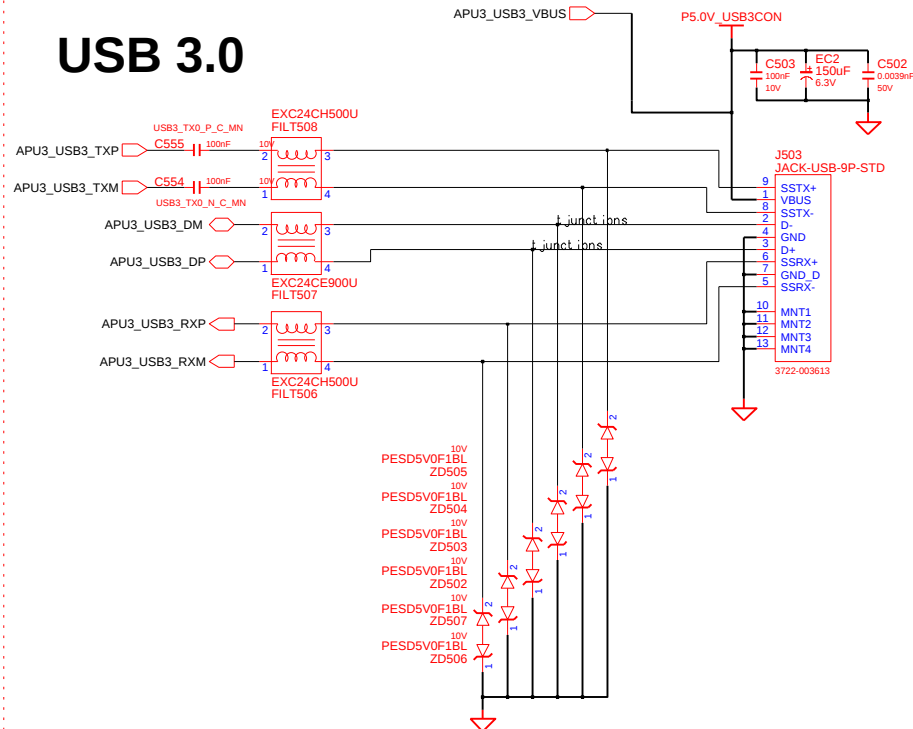


USB

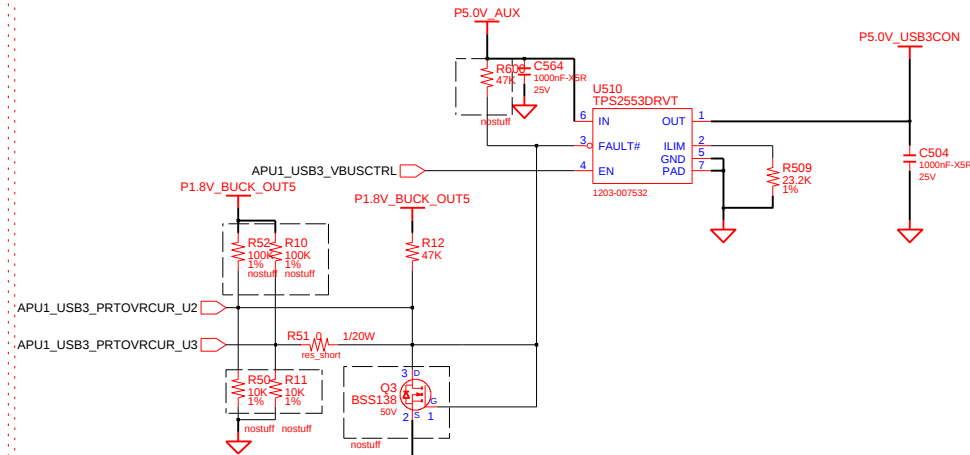
USB2.0 HOST_PORT_POWER



USB 3.0



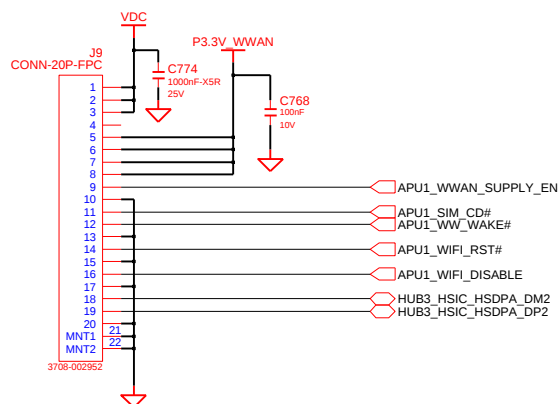
USB 3.0 VBUS POWER



DESIGN	DW.KOH	DATE	5/10/2010	TITLE	Lucas-Gaia	SAMSUNG ELECTRONICS
CHECK	BM.LEE	DEV. STEP	PR		USB	
APPROVAL	HS.KIM	REV	REV 1.0		USB PORT	
MODULE CODE		LAST EDIT				PART NO. BA41-02110A
August 03, 2012 16:41:03 PM						PAGE 30 OF 42

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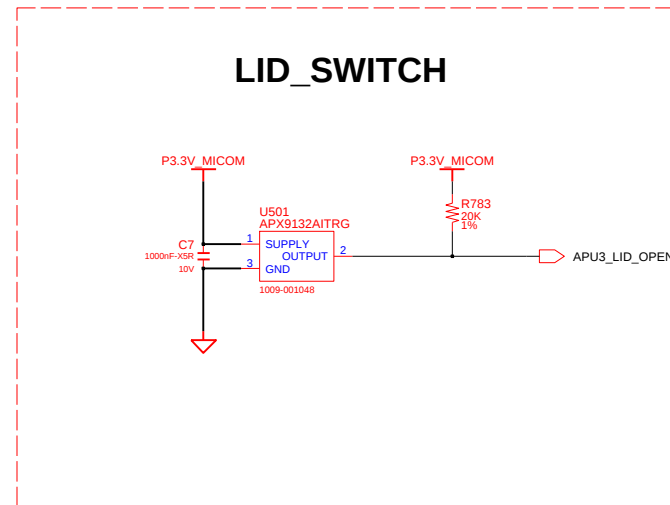
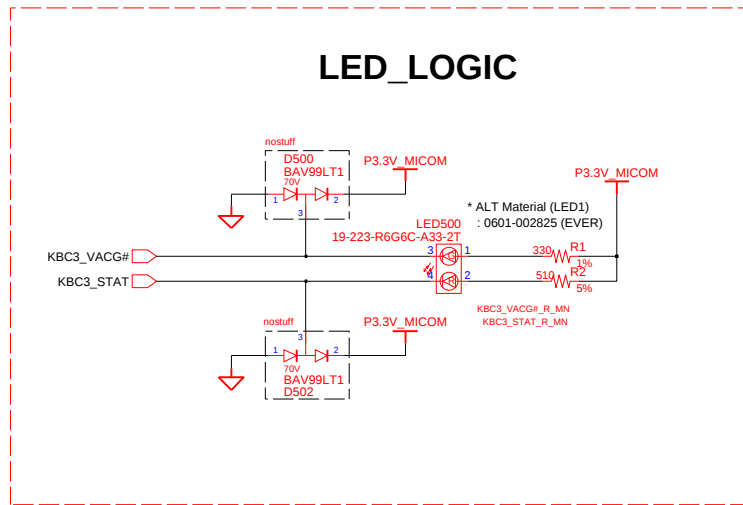
TO 3G SUB BD



DESIGN	DW.KOH	DATE	5/10/2010	TITLE	Lucas-Gaia 3G sub connector	SAMSUNG ELECTRONICS
CHECK	BM.LEE	DEV. STEP	PR			PART NO. BA41-02110A
APPROVAL	HS.KIM	REV	REV 1.0			
MODULE CODE		LAST EDIT	August 03, 2012 16:41:03 PM	PAGE	31	OF 42

LOGIC

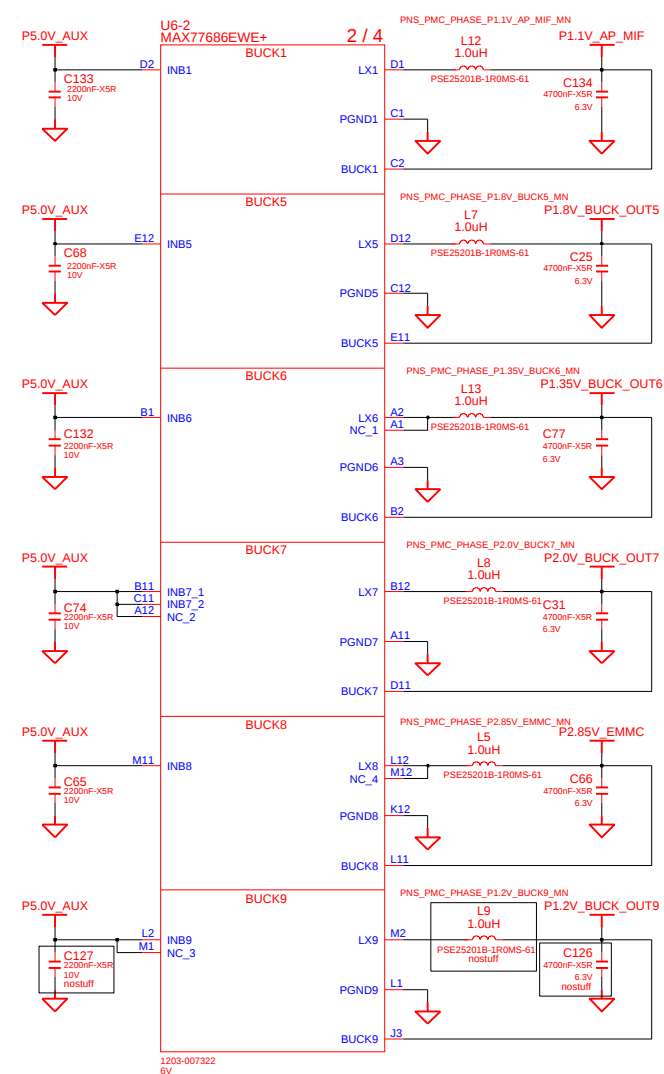
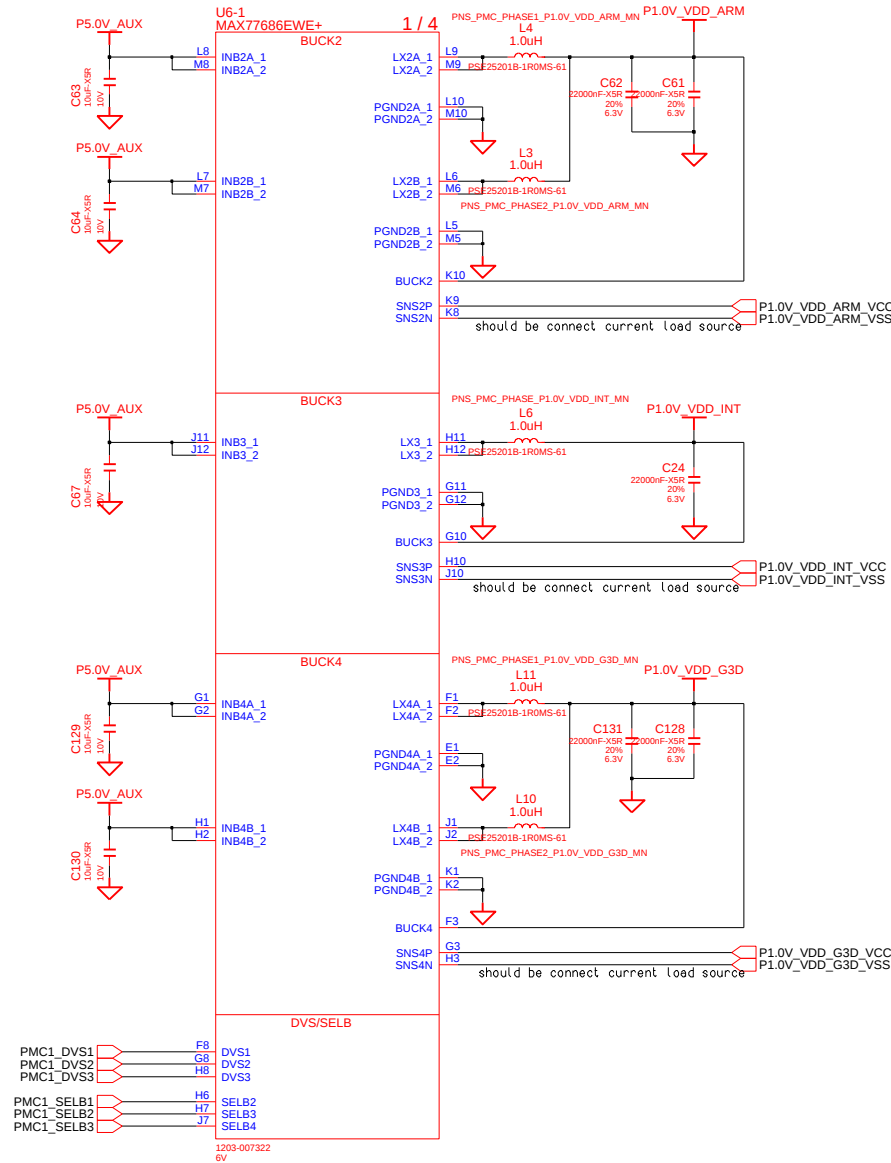
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DRAW	DW.KOH	DATE	5/10/2010	TITLE	Lucas-Gaia	SAMSUNG ELECTRONICS
CHECK	BM.LEE	DEV. STEP	PR		LED LOGIC	
APPROVAL	HS.KIM	REV	REV 1.0		LED LOGIC	
MODULE CODE		LAST EDIT				PART NO. BA41-02110A
				August 03, 2012 16:41:03 PM	PAGE	32 OF 42

PMIC SECTION 1/3

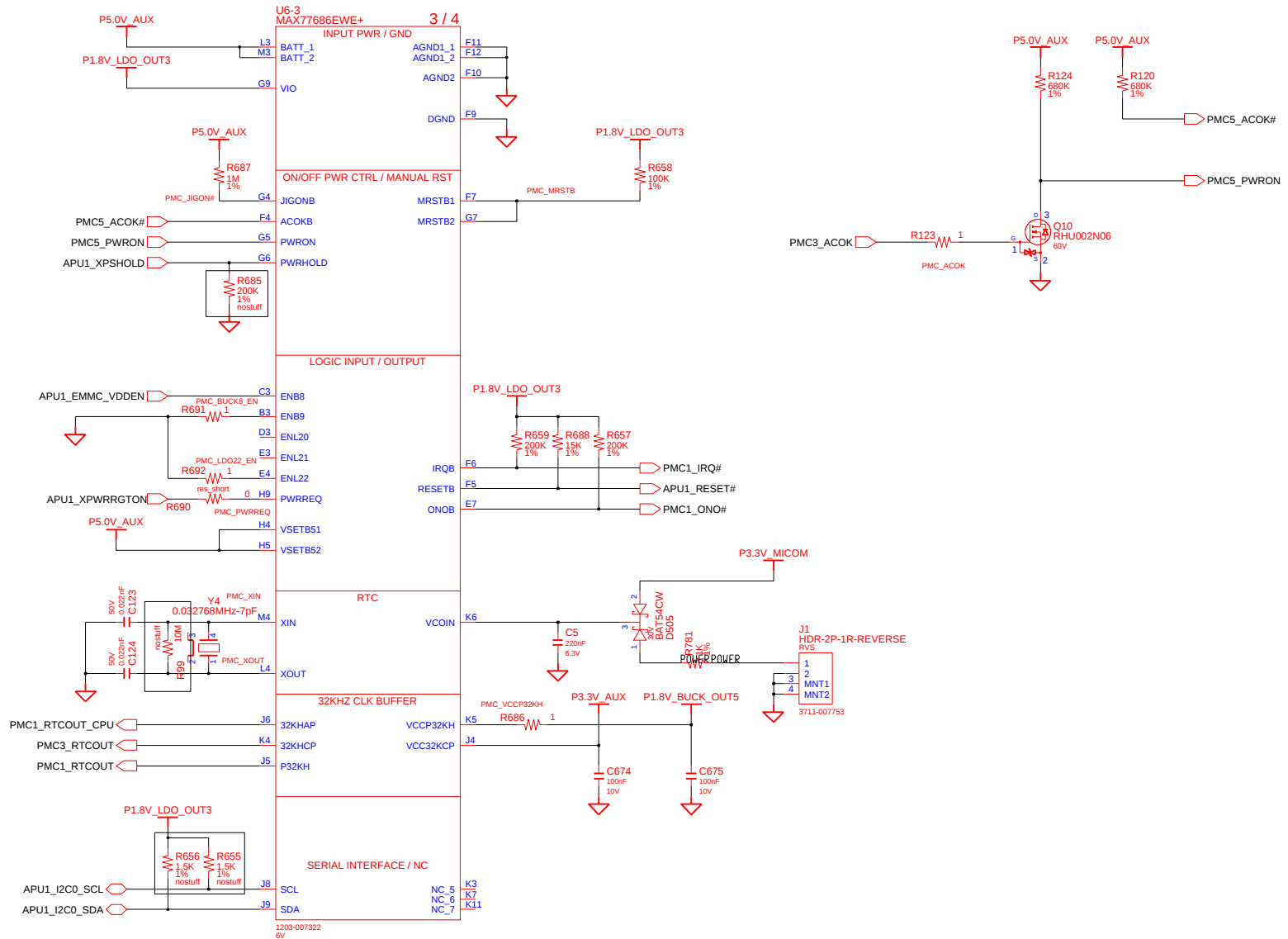
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DESIGN	DW.KOH	DATE	5/10/2010	TITLE	Lucas-Gaia	SAMSUNG ELECTRONICS
CHECK	BM.LEE	DEV. STEP	PR		PMIC	
APPROVAL	HS.KIM	REV	REV 1.0		MAX77686 1/3	
MODULE CODE		LAST EDIT				PART NO. BA41-02110A
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PMIC SECTION 2

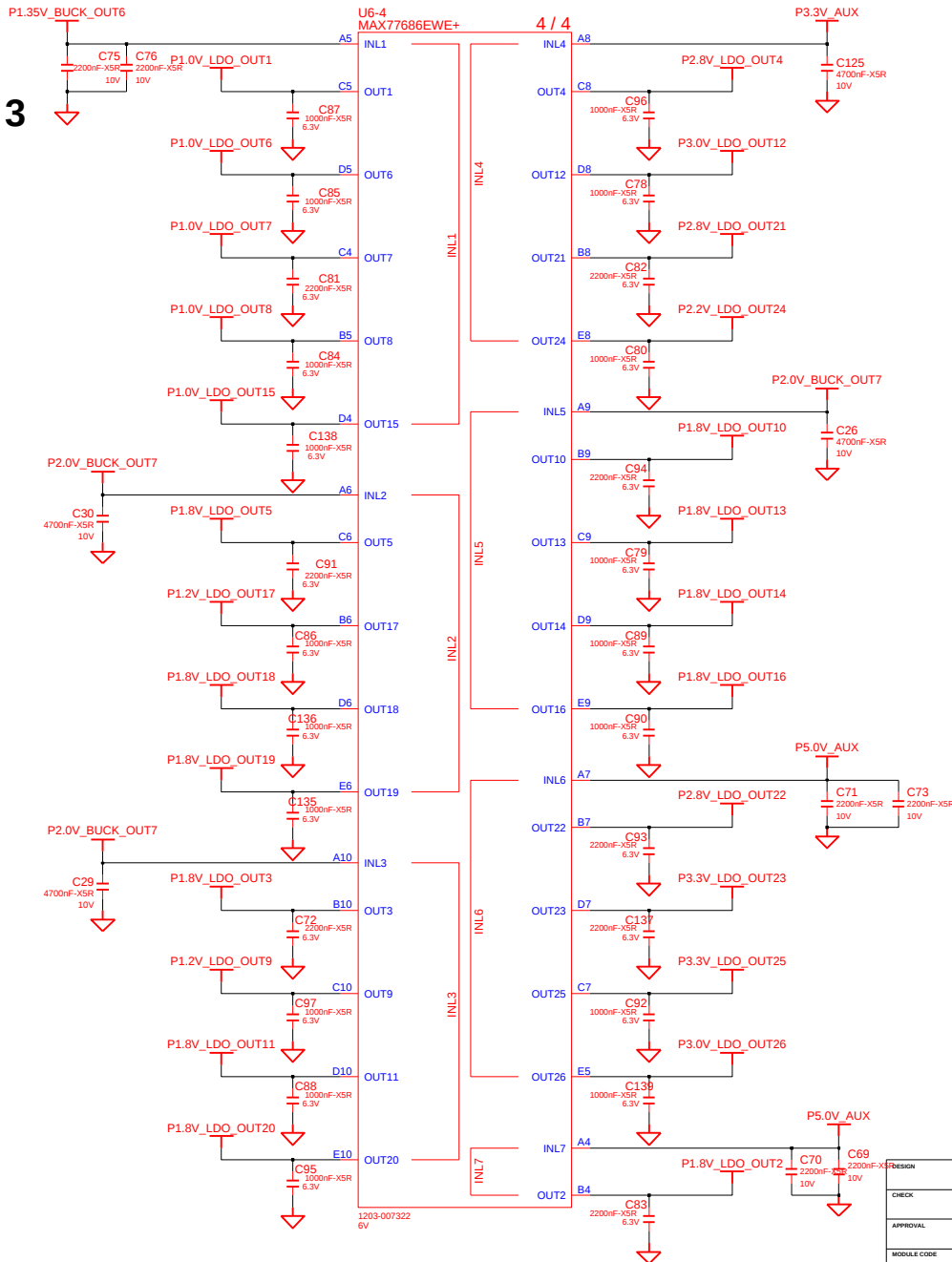
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DRAW	DW.KOH	DATE	5/10/2010	TITLE	Lucas-Gaia	SAMSUNG ELECTRONICS
CHECK	BM.LEE	DEV. STEP	PR		PMIC	
APPROVAL	HS.KIM	REV	REV 1.0		MAX77686 2/3	
MODULE CODE	undefined	LAST EDIT	August 03, 2012 16:41:03 PM	PAGE	34	OF 42

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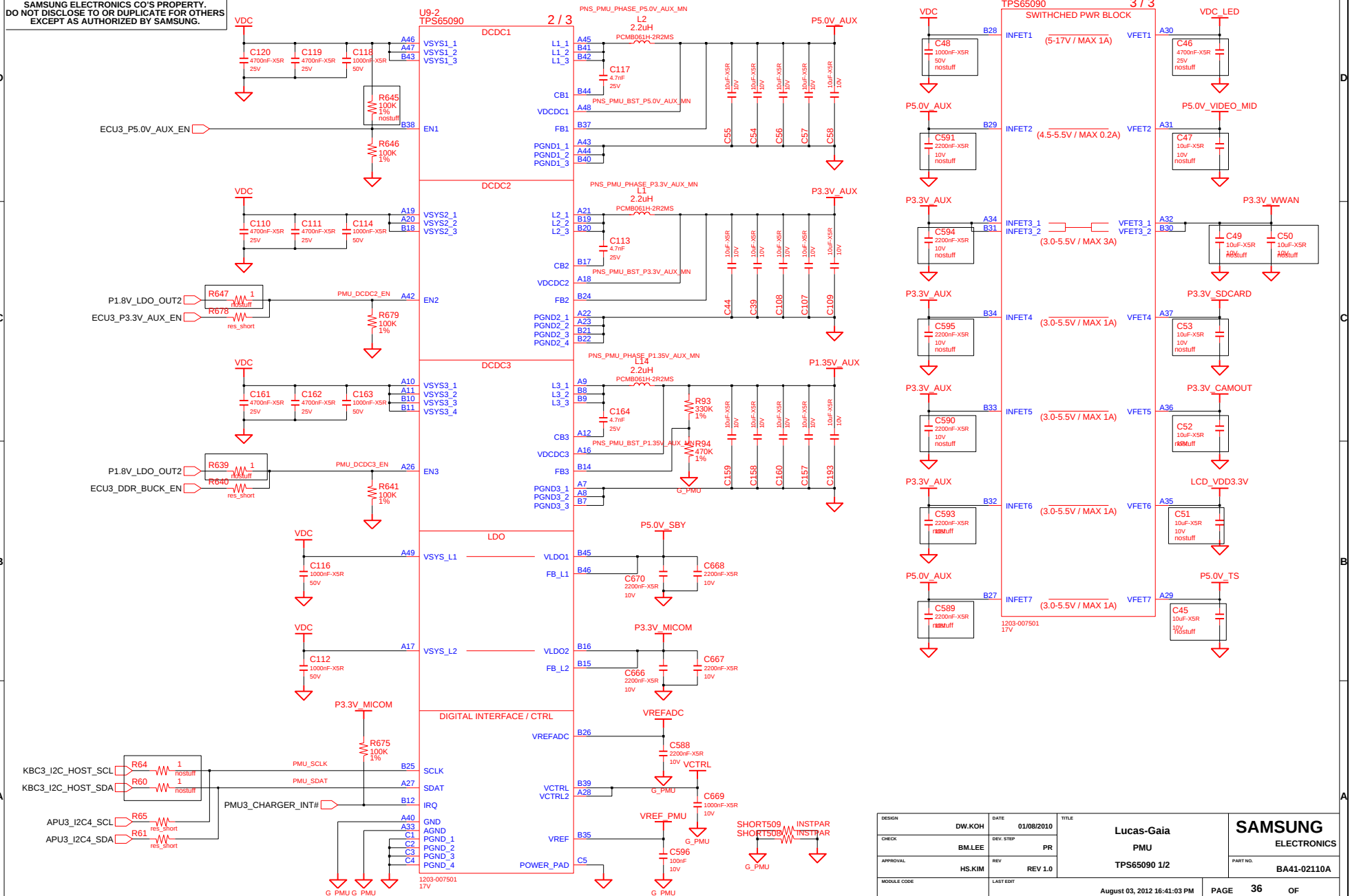
PMIC SECTION 3



DESIGN	DW.KOH	DATE	5/10/2010	TITLE	Lucas-Gaia	SAMSUNG ELECTRONICS
CHECK	BM.LEE	DEV. STEP	PR		PMIC	
APPROVAL	HS.KIM	REV	REV 1.0		MAX77686 3/3	
MODULE CODE		LAST EDIT				PART NO. BA41-02110A
				August 03, 2012 16:41:03 PM	PAGE	35 OF 42

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PMU SECTION 1 (BUCK / LDO / LOAD SW / CTRL)

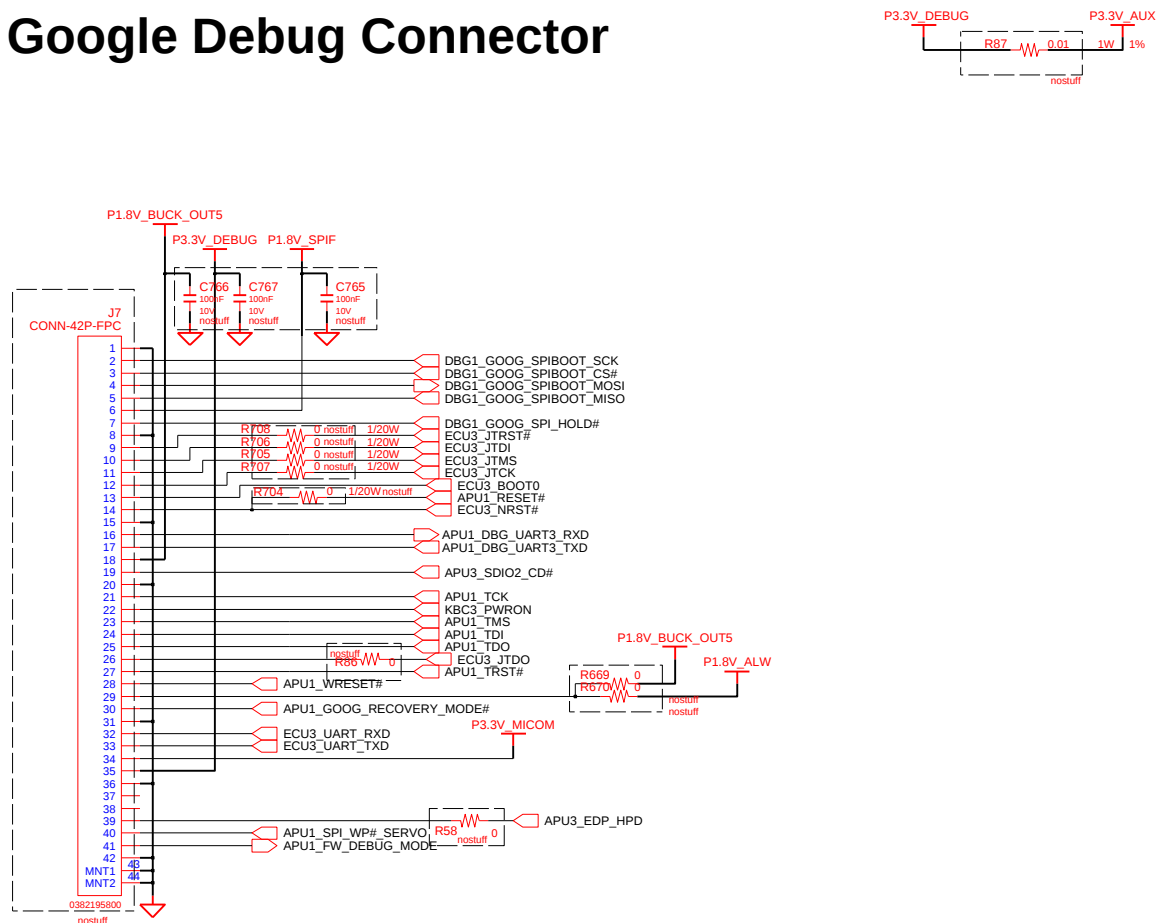


PMU SECTION 2 (CHARGER & POWER PATH MANAGEMENT)



(DEBUG)

Google Debug Connector



DRAW	DW.KOH	DATE	01/08/2010	TITLE	Lucas-Gaia	SAMSUNG
CHECK	BM.LEE	DEV. STEP	PR	DEBUG	DEBUG	ELECTRONICS
APPROVAL	HS.KIM	REV	REV 1.0	DEBUG(GOOGLE)	PART NO.	BA41-02110A
MODULE CODE	undefined	LAST EDIT	August 03, 2012 16:41:03 PM	PAGE	38	OF 42

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M4 HEAD
DIA
LENGTH
BA67-00391A

M1 HEAD
DIA
LENGTH
BA67-00391A

M3 HEAD
DIA
LENGTH
BA67-00391A

M2 HEAD
DIA
LENGTH
BA67-00391A

DRAW	DW.KOH	DATE	5/10/2010	TITLE Lucas-Gaia PEM & Mount hole PEM & Mount hole	PART NO. BA41-02110A
CHECK	BM.LEE	DEV. STEP	PR		
APPROVAL	HS.KIM	REV	REV 1.0		
MODULE CODE	LAST EDIT		August 03, 2012 16:41:03 PM		

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4 3 2 1

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M4 HEAD
DIA
LENGTH
BA67-00391A

M1 HEAD
DIA
LENGTH
BA67-00391A

M3 HEAD
DIA
LENGTH
BA67-00391A

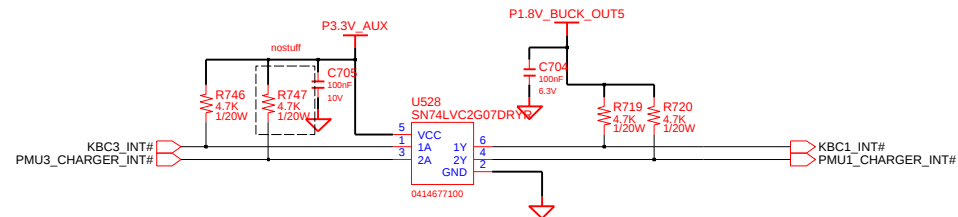
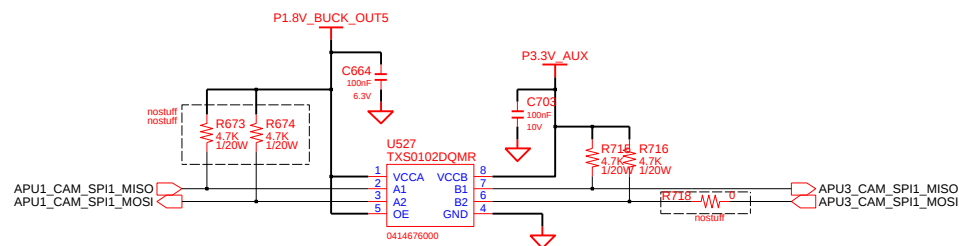
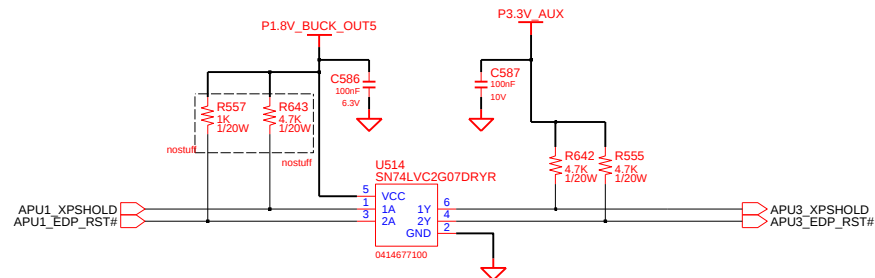
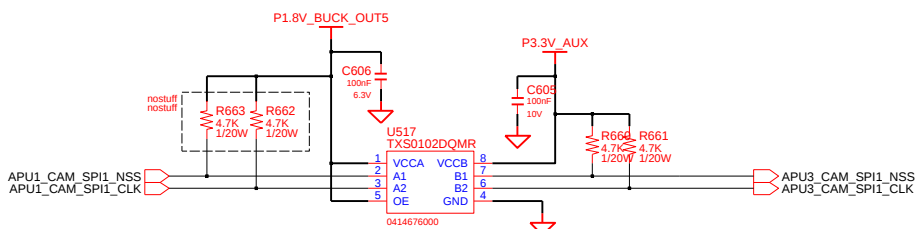
M2 HEAD
DIA
LENGTH
BA67-00391A

DRAW	DW.KOH	DATE	5/10/2010	TITLE Lucas-Gaia PEM & Mount hole PEM & Mount hole	PART NO. BA41-02110A
CHECK	BM.LEE	DEV. STEP	PR		
APPROVAL	HS.KIM	REV	REV 1.0		
MODULE CODE	LAST EDIT			August 03, 2012 16:41:03 PM	PAGE 39 OF 42

4 3 2 1

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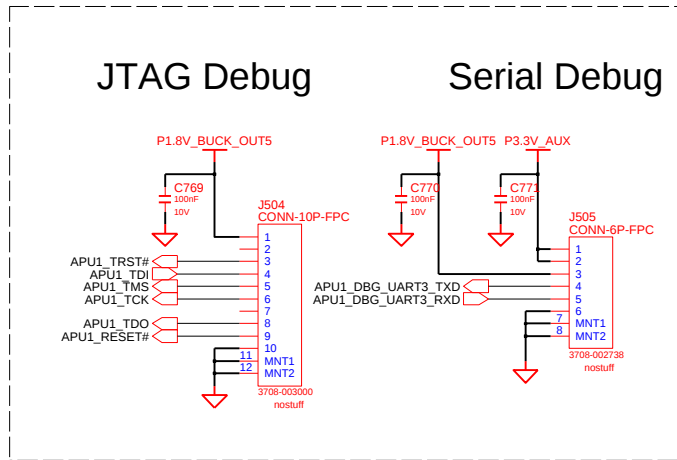
EC_LEVEL CONVERTERS



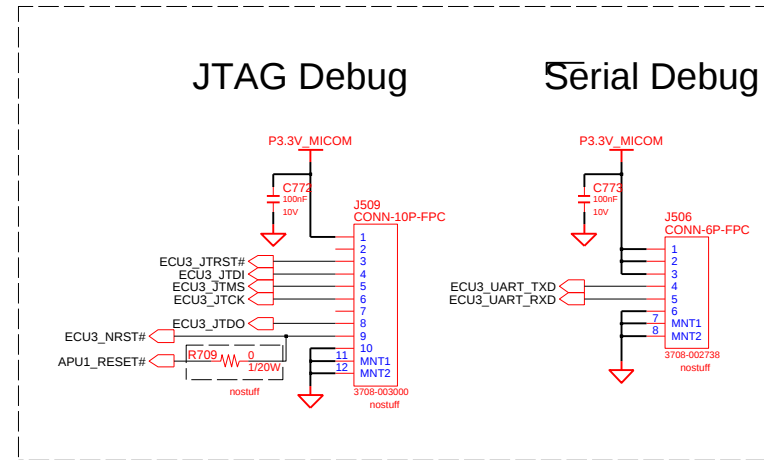
DESIGN	DW.KOH	DATE	5/10/2010	TITLE	Lucas-Gaia Level converter EC Level converters	SAMSUNG ELECTRONICS
CHECK	BM.LEE	DEV. STEP	PR			PART NO. BA41-02110A
APPROVAL	HS.KIM	REV	REV 1.0			
MODULE CODE		LAST EDIT		August 03, 2012 16:41:03 PM	PAGE 40 OF 42	

(DEBUG) JTAG / Serial Port

Option for Debugging(Gaia)



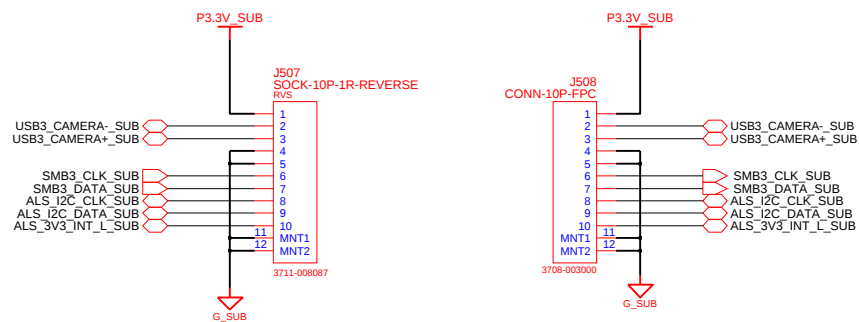
Option for Debugging(MICOM_EC)



DESIGN	DW.KOH	DATE	5/10/2010	TITLE	Lucas-Gaia	SAMSUNG
CHECK	BM.LEE	DEV. STEP	PR	DEBUG	DEBUG	ELECTRONICS
APPROVAL	HS.KIM	REV	REV 1.0	DEBUG	PART NO.	BA41-02110A
MODULE CODE	LAST EDIT		August 03, 2012 16:41:03 PM		PAGE	41 OF 42

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CAMERA SUB B'D



DESIGN	DW.KOH	DATE	2/1/2012	TITLE Lucas-Gaia Cam Sub Cam sub b'd	SAMSUNG ELECTRONICS
CHECK	BM.LEE	DEV. STEP	PR		
APPROVAL	HS.KIM	REV	REV 1.0		
MODULE CODE	LAST EDIT		August 03, 2012 16:41:03 PM		
PART NO.					BA41-02110A