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AMOR2-13-RMF

CPU : IVY BRIDGE BGA
Chip Set : Panther Point
GFX : Internal
Remarks : CRV Platform

Model Name : A-PROJECT_MONO
PBA Name : MAIN
PCB Code : BA41-0XXXXA (GCE)
BA41-0XXXXA (NY)
BA41-0XXXXA (HAN)
Dev. Step : PR
Revision : 1.0
T.R. Date : 2013.02.22

Design	CHECK	APPROVAL

Owner : SEC Mobile R & D Signature : X

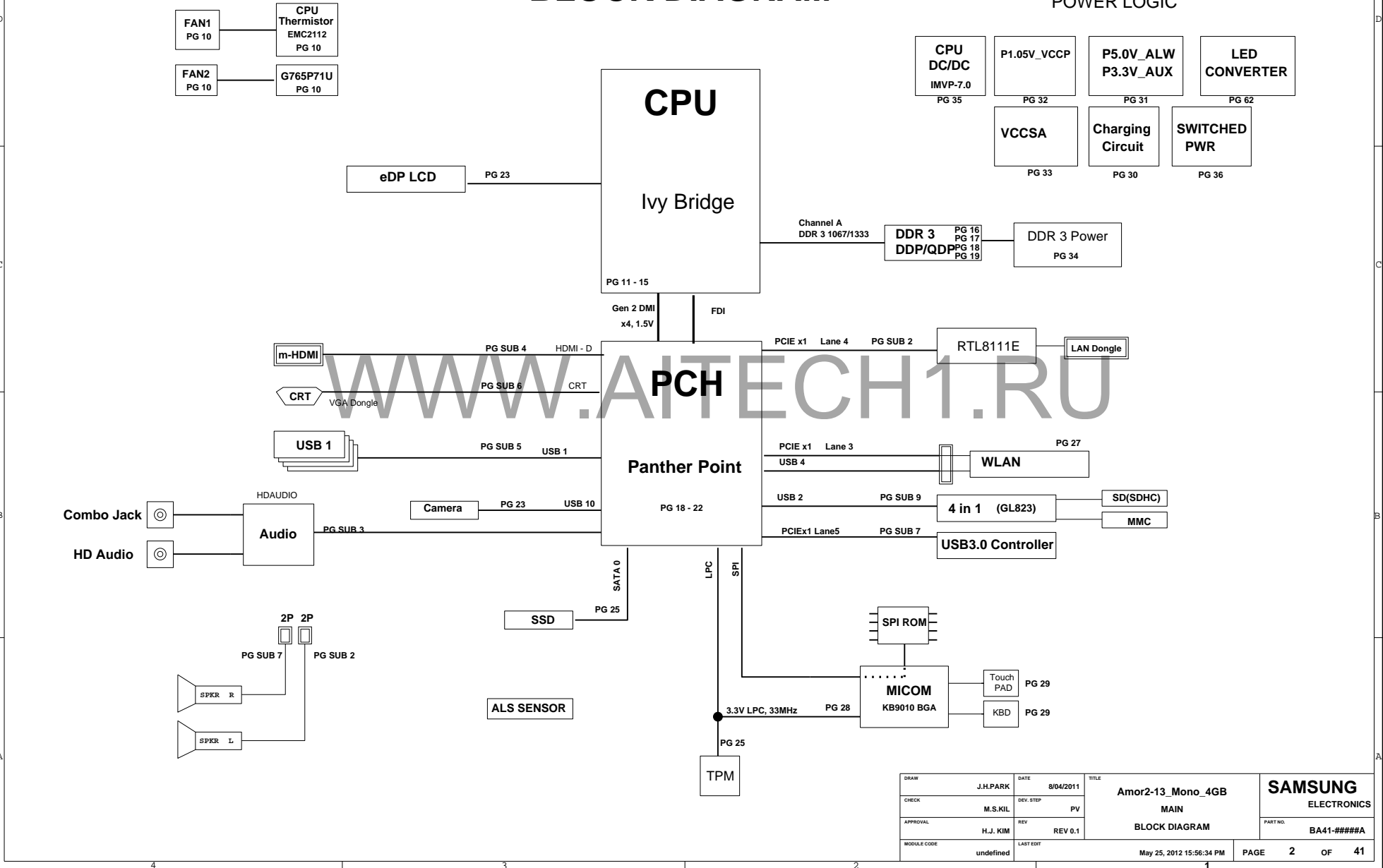
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DRAW	J.H.PARK	DATE	8/04/2011	TITLE	Amor2-13_Mono_4GB	SAMSUNG ELECTRONICS PART NO. BA41-####A
CHECK	M.S.KIL	DEV. STEP	PV	MAIN		
APPROVAL	H.J. KIM	REV	REV 0.1	COVER		
MODULE CODE		LAST EDIT	May 25, 2012 15:56:34 PM	PAGE	1	OF 41

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BLOCK DIAGRAM

POWER LOGIC



DRAW	J.H.PARK	DATE	8/04/2011	TITLE	Amor2-13_Mono_4GB	SAMSUNG ELECTRONICS PART NO. BA41-####A
CHECK	M.S.KIL	DEV. STEP	PV	MAIN		
APPROVAL	H.J. KIM	REV	REV 0.1	BLOCK DIAGRAM		
MODULE CODE	undefined	LAST EDIT	May 25, 2012 15:56:34 PM	PAGE	2 OF 41	

BOARD INFORMATION

SCHEMATIC ANNOTATIONS AND BOARD INFORMATION

Voltage Rails	Active in
VDC P3.3V_MICOM P5.0V_ALW P5.0V_STB	Primary DC system power supply (7 to 21V) 3.3V always power rail (for Micom) 5.0V always power rail 5.0V always power rail
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 DDR3 (off in S4-S5)
P5.0V P3.3V P1.8V P1.5V P0.75V VCCSA	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) 0.75V power rail for DDR3 (off in S3-S5) VCCSA switched power rail (off in S3-S5)
VCC_CORE P1.05V (VCCP)	Core Voltage for CPU Core for COUGARPOINT
	S4 - S5
	S3
	S0
	S0

USB PORT Assign		PCI Express Assign	
PORT #	ASSIGNED TO	PORT #	ASSIGNED TO
0	NC	1	Mini Card 1 (WLAN)
1	SYSTEM PORT 1	2	NC
2	MMC	3	NC
3	NC	4	LAN CONTROLLER
4	MINI PCIE (WLAN)	5	USB3.0 BRIDGE
5	NC	6	NC
6	NC (N/A WITH HM65)	7	NC
7	NC (N/A WITH HM65)	8	NC
8	NC		
9	NC		
10	NC		
11	Camera		
12	NC		
	NC		

SATA PORT Assign	
PORT #	ASSIGNED TO
0	HDD
1	NC
2	NC
3	NC
4	NC
5	NC

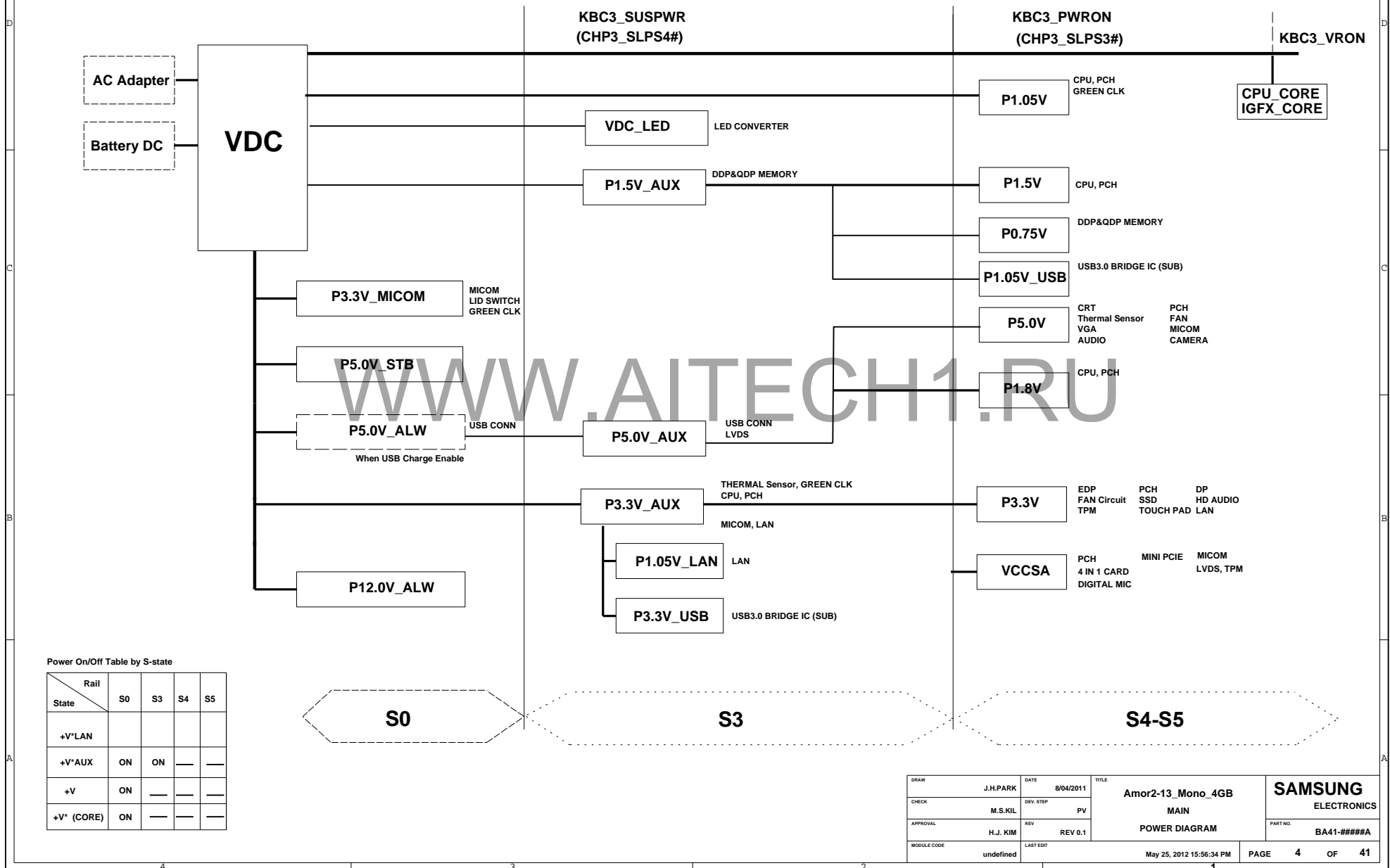
Crystal / Oscillator			
TYPE	FREQUENCY	DEVICE	USAGE
Crystal	32.768KHz	COUGAR POINT	Real Time Clock
Crystal	25MHz	LAN	REALTEK
Crystal	25MHz	COUGAR POINT	
Crystal	24MHz	USB3.0 CHIP(SUB)	

LCD Pannel Detect (TBD)		
Devices	Resolution	PANNEL_DETECT_0

I ² C / SMB Address			
Devices	Address	Hex	Bus
PCH	Master	-	SMBUS Master
CPU Thermal Sensor	0011 000X	30h	Thermal Sensor
SODIMM0	1010 000x	A0h	-
SODIMM1	1010 010x	A4h	-
Thermal Sensor on SODIMM0	0011 000x	30h	-
Thermal Sensor on SODIMM1	0011 010x	34h	-
on board DDR3 thermal Sensor	1001 100x	98h	
Platform thermal management TS	1001 011x	96h	

POWER DIAGRAM

Rev 0.7

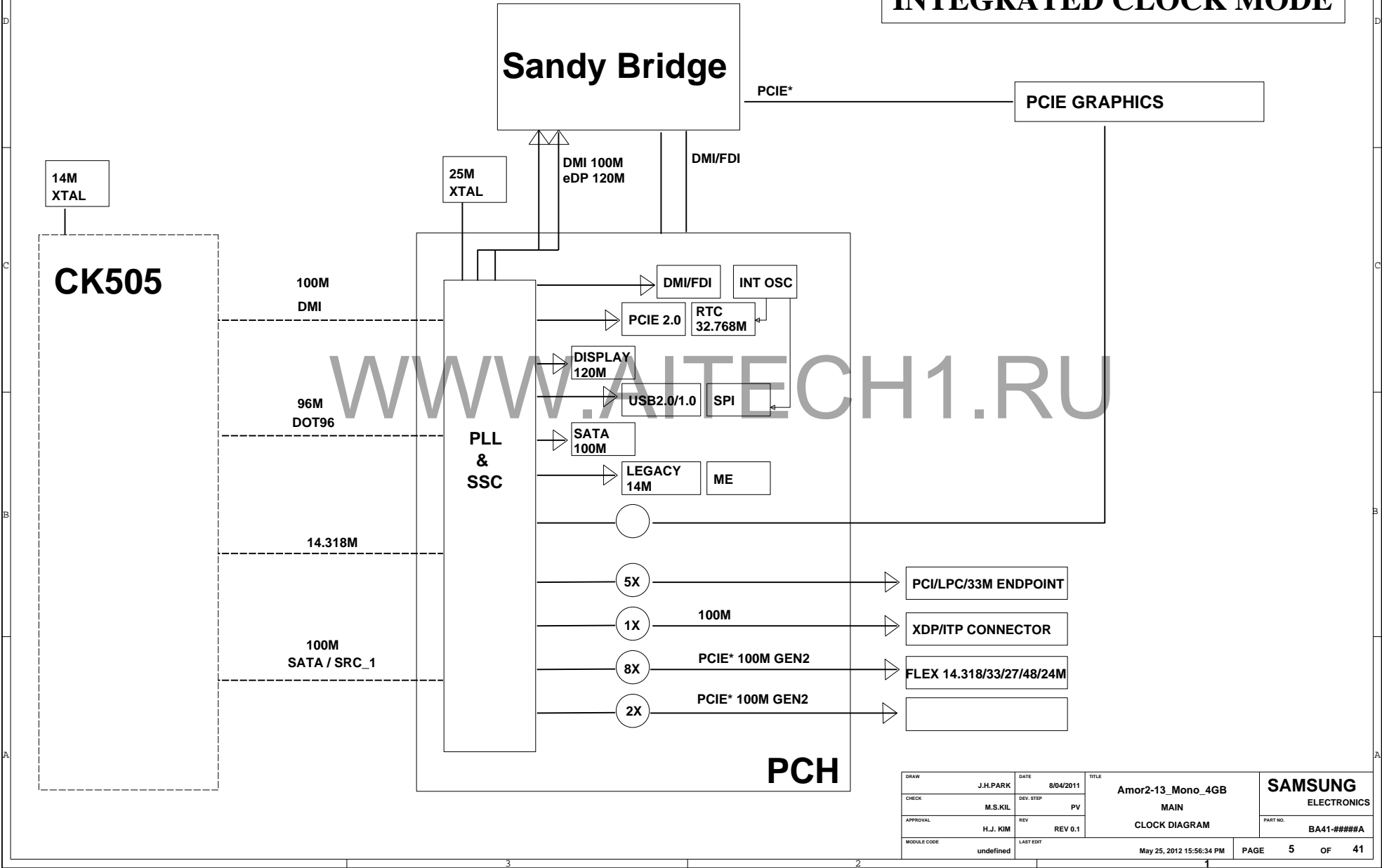


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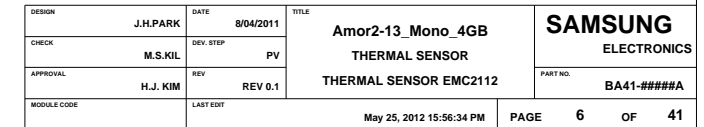
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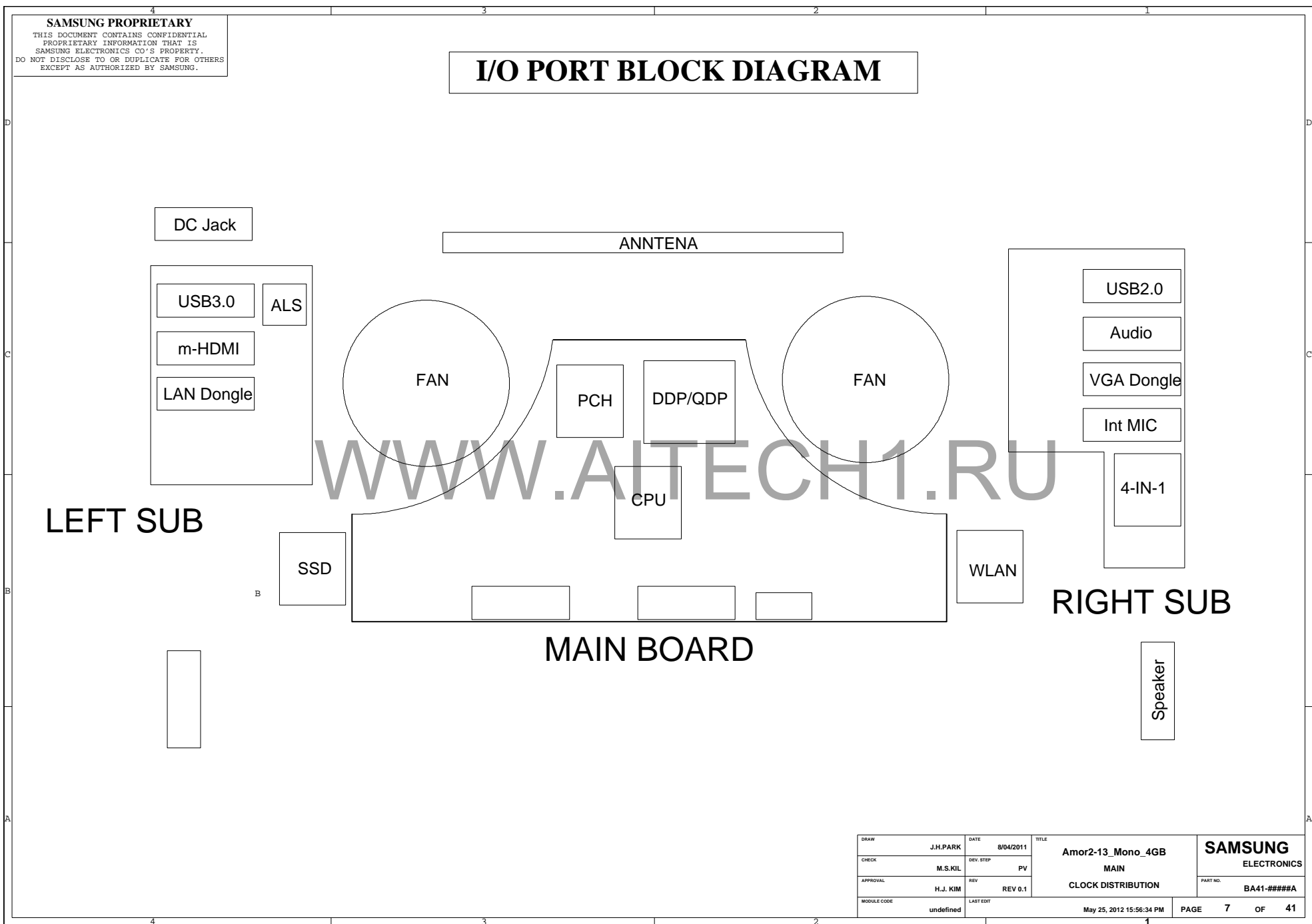
Rev. 1.0

INTEGRATED CLOCK MODE



DRAW	J.H.PARK	DATE	8/04/2011	TITLE	Amor2-13_Mono_4GB	SAMSUNG
CHECK	M.S.KIL	DEV. STEP	PV		MAIN	ELECTRONICS
APPROVAL	H.J. KIM	REV	REV 0.1		CLOCK DIAGRAM	PART NO. BA41-####A
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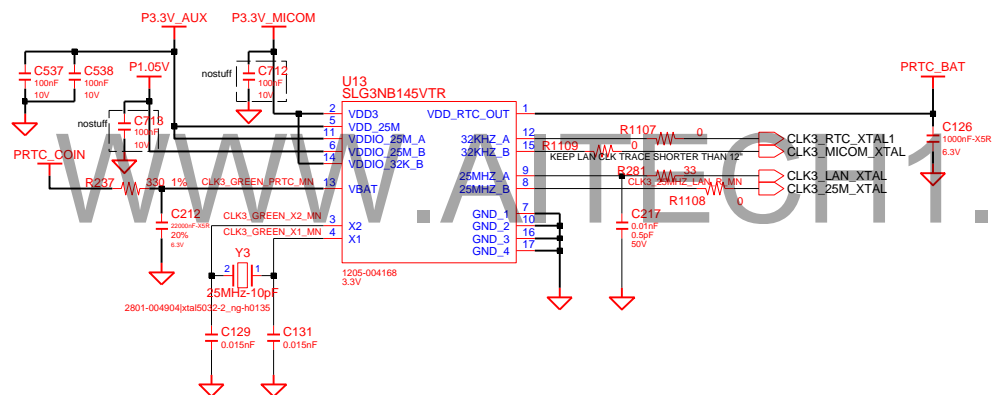


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CHECK	M.S.KIL	DEV. STEP	PV	MAIN		
APPROVAL	H.J. KIM	REV	REV 0.1	CLOCK DISTRIBUTION		
MODULE CODE	undefined	LAST EDIT	May 25, 2012 15:56:34 PM	PAGE	7	OF 41

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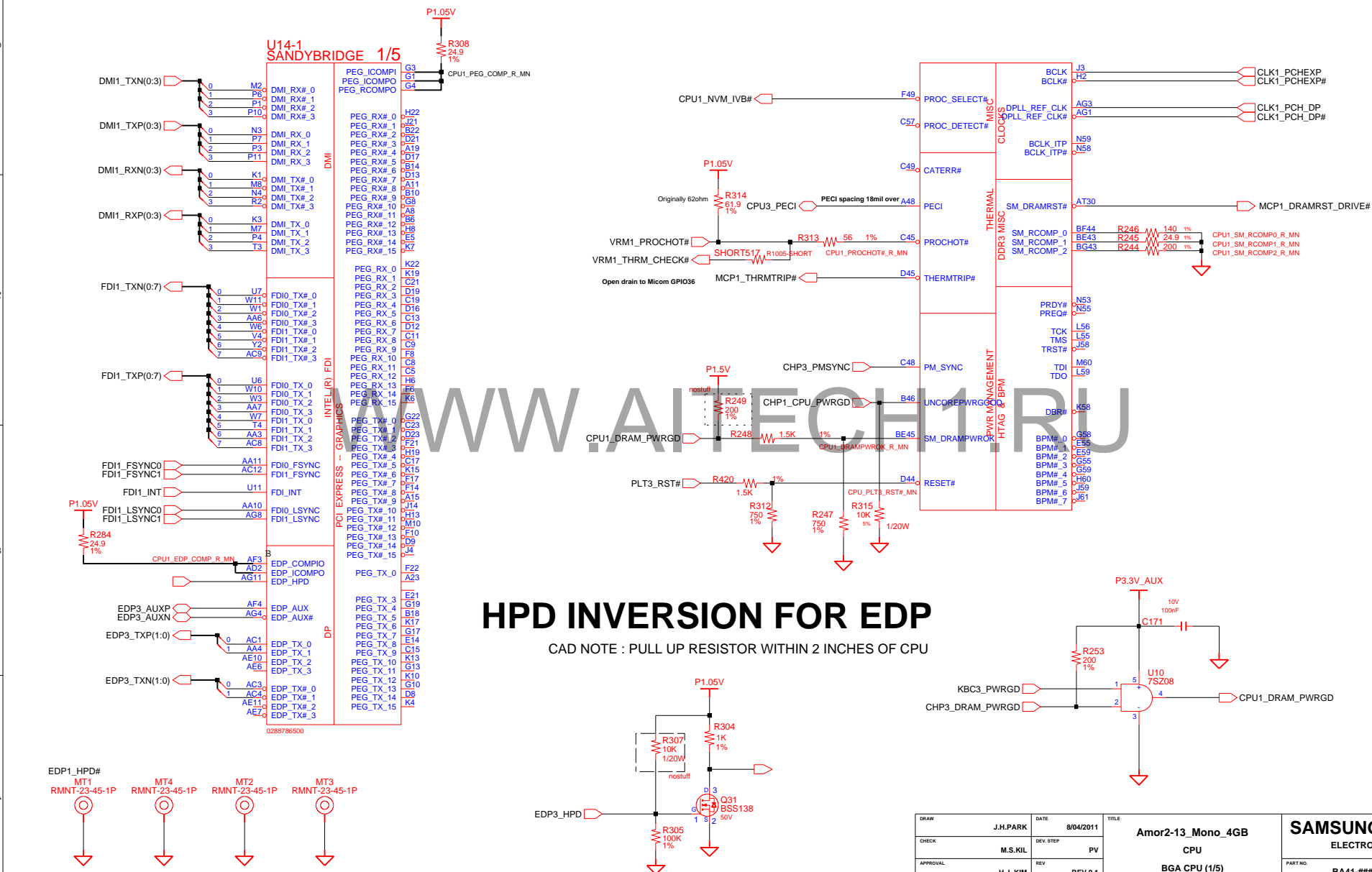
CLOCK DISTRIBUTOR



DRAW	J.H.PARK	DATE	8/04/2011	TITLE	Amor2-13_Mono_4GB GREENCLK CLOCK DISTRIBUTION	SAMSUNG ELECTRONICS
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APPROVAL	H.J. KIM	REV	REV 0.1			
MODULE CODE	undefined	LAST EDIT	May 25, 2012 15:56:34 PM	PAGE	8	OF 41

HPD INVERSION FOR EDP

CAD NOTE : PULL UP RESISTOR WITHIN 2 INCHES OF CPU

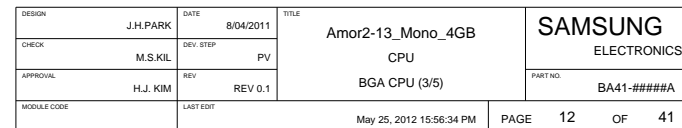


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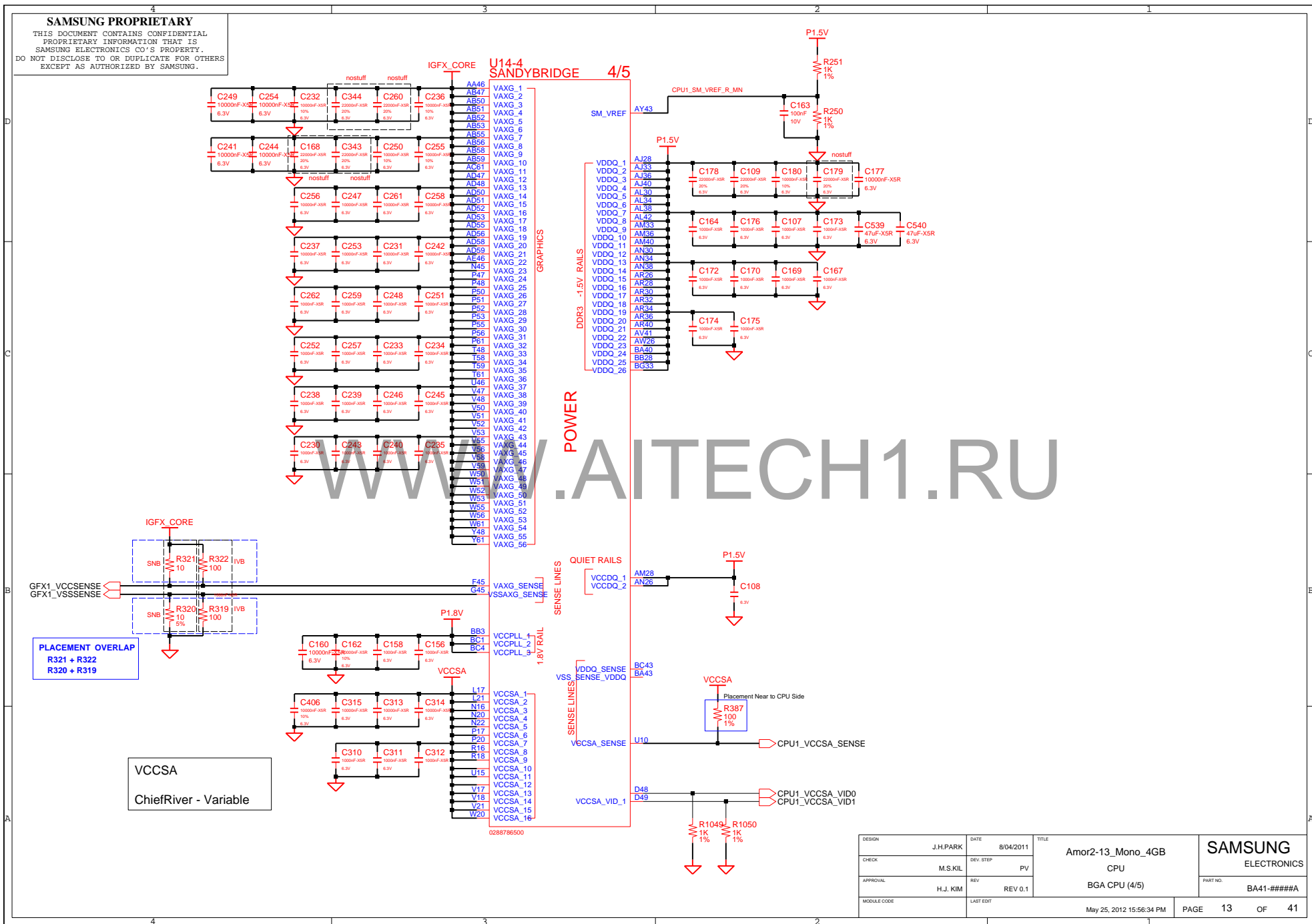
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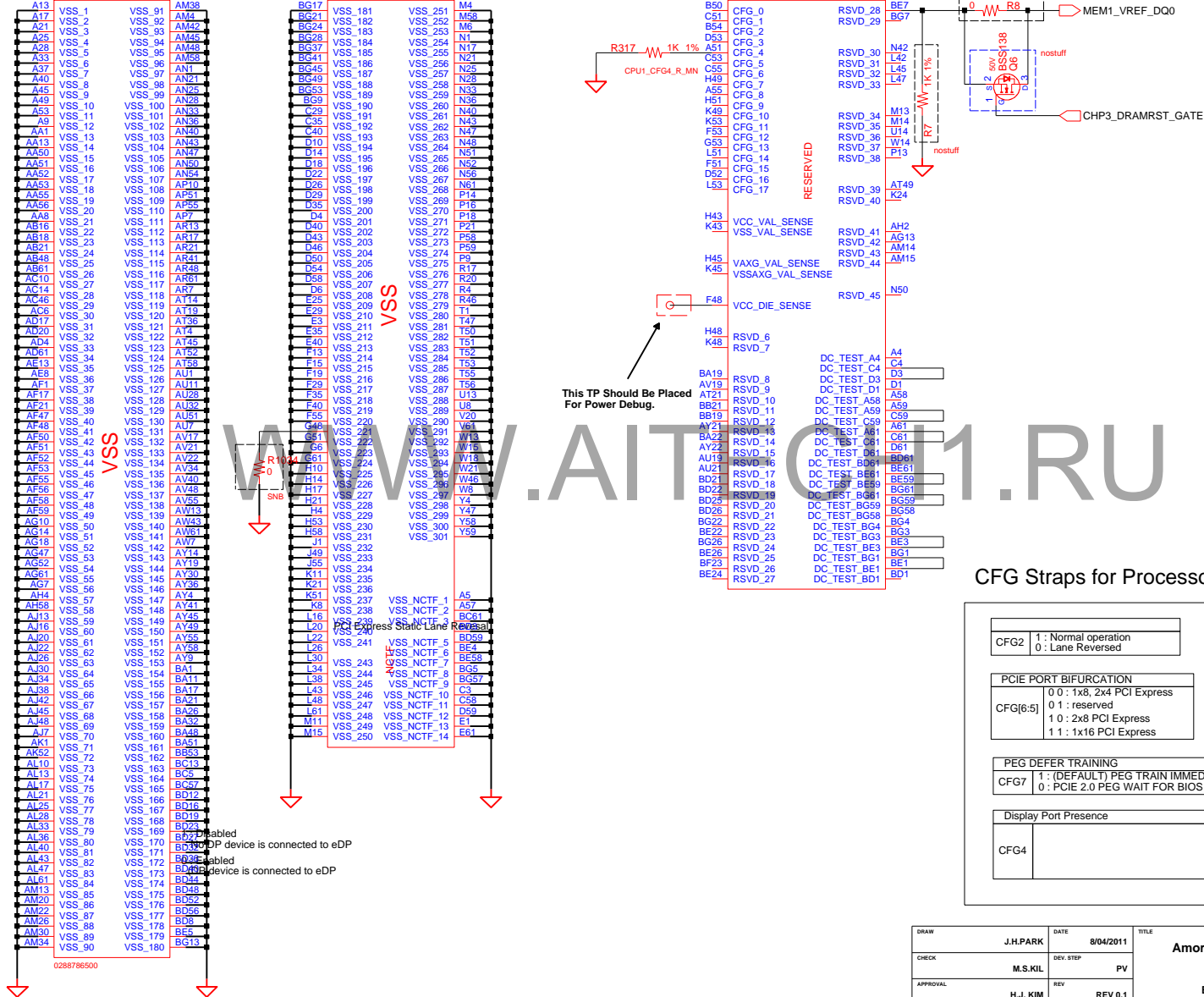
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DESIGN	J.H.PARK	DATE	8/04/2011	Amor2-13_Mono_4GB CPU BGA CPU (4/5)				
CHECK	M.S.KIL	DEV. STEP	PV					
APPROVAL	H.J. KIM	REV	REV 0.1		PART NO.	BA41-####A		
MODULE CODE	LAST EDIT			May 25, 2012 15:56:34 PM	PAGE	13	OF	41

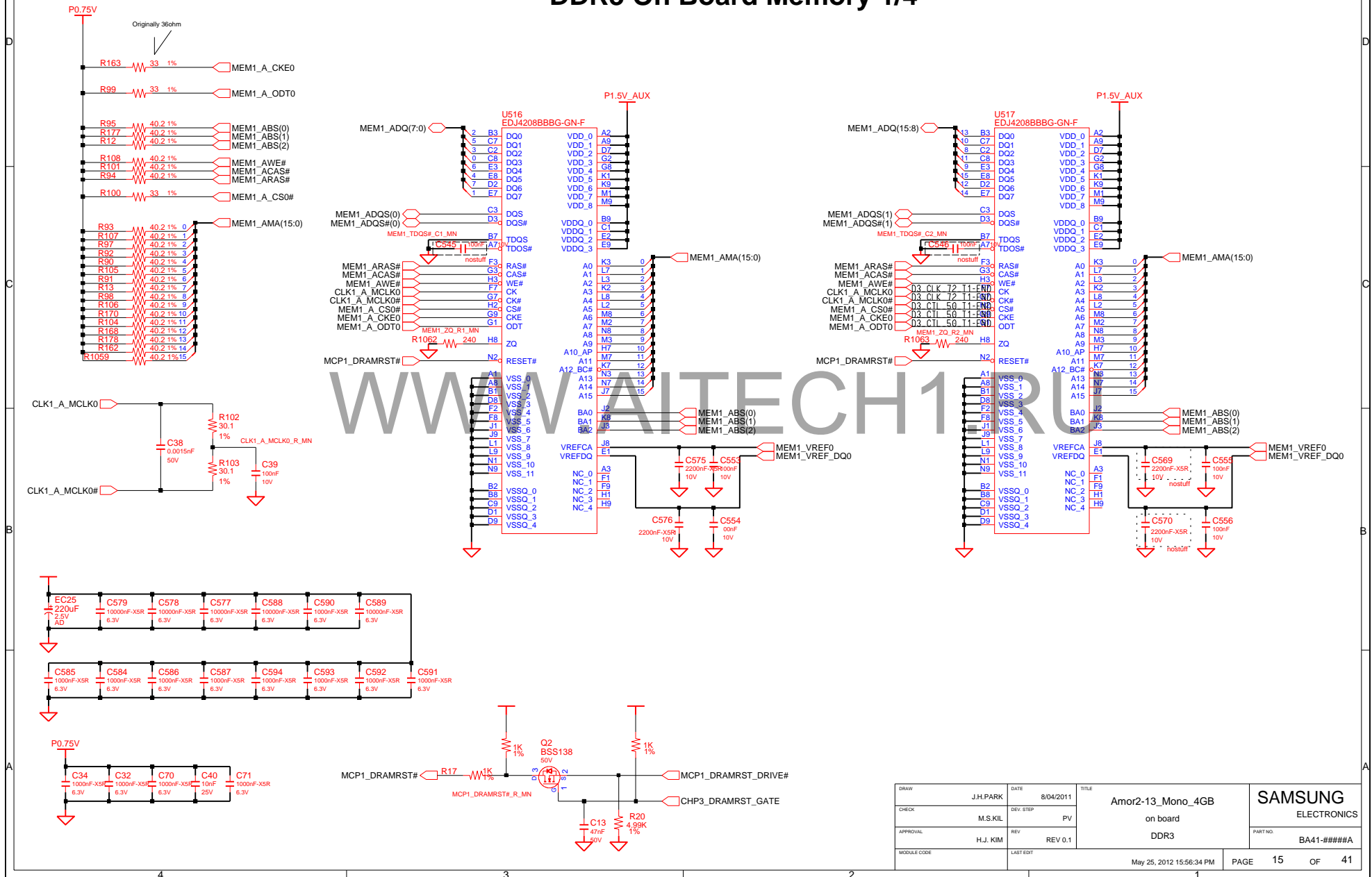
U14-5
SANDYBRIDGE

5/5



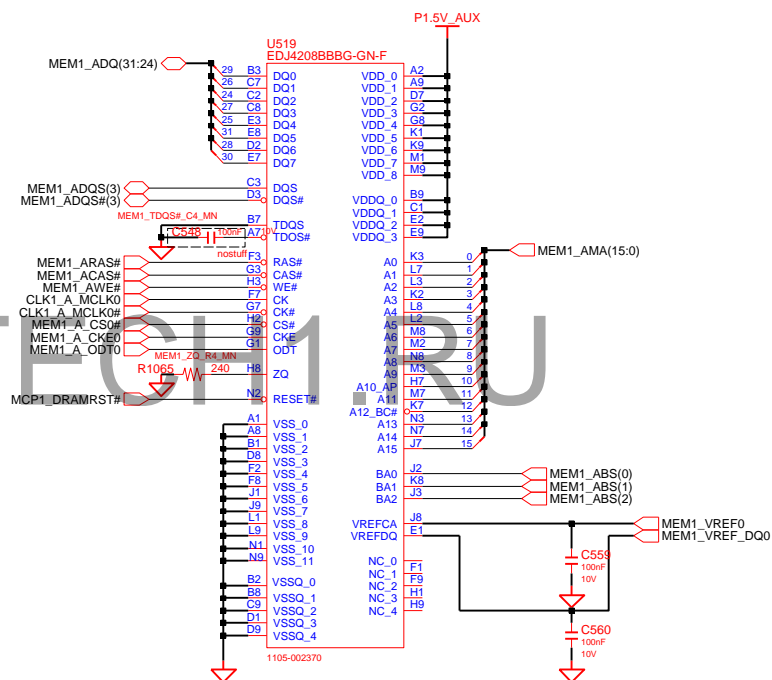
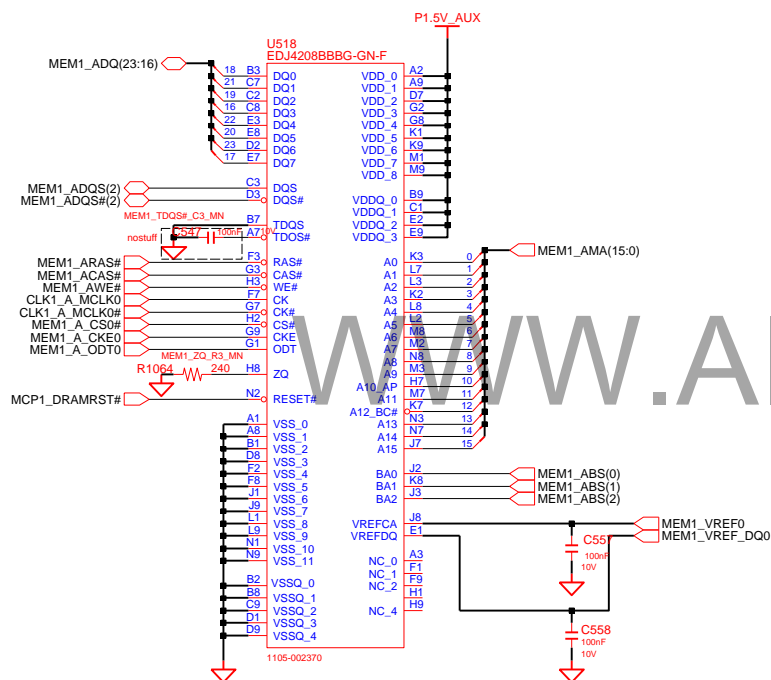
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DDR3 On Board Memory 1/4



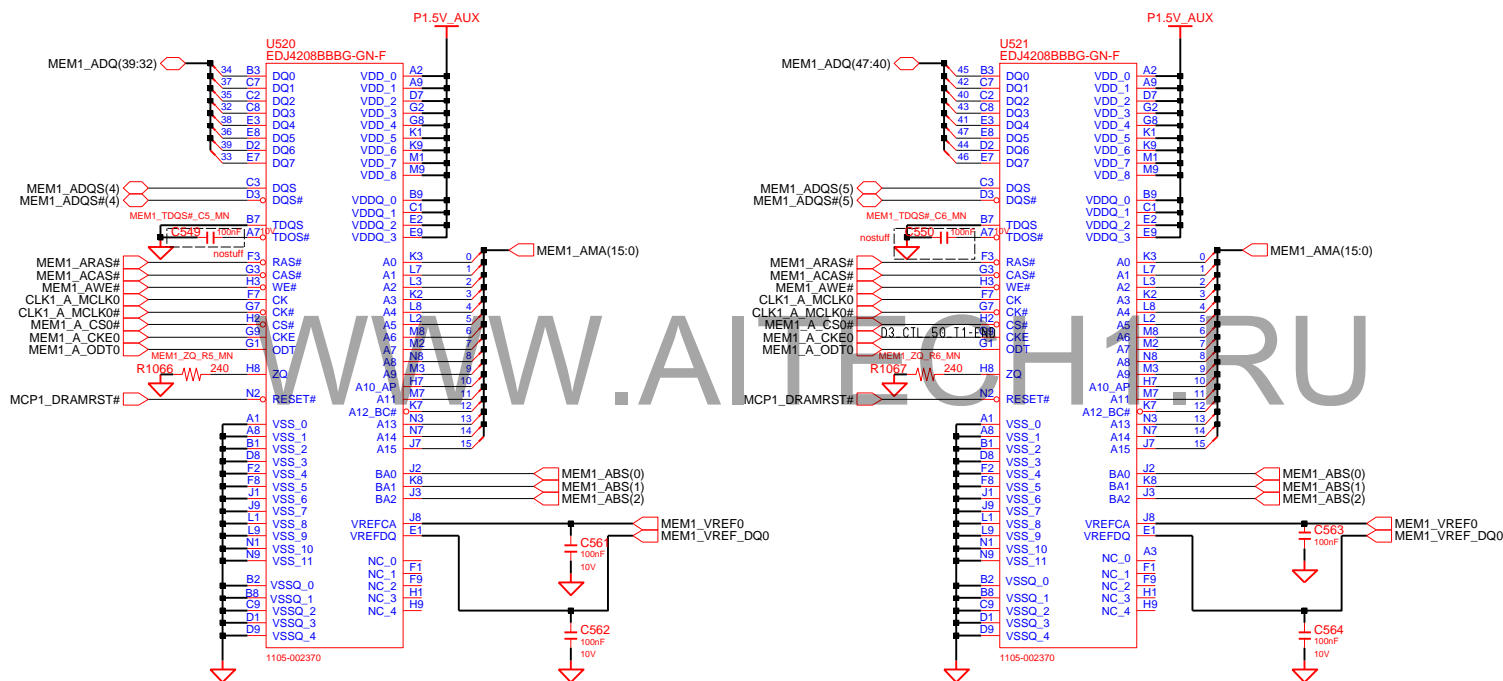
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APPROVAL	H.J. KIM	REV	REV 0.1	DDR3		
MODULE CODE		LAST ENT				
May 25, 2012 15:56:34 PM						PAGE 15 OF 41

DDR3 On Board Memory 2/4

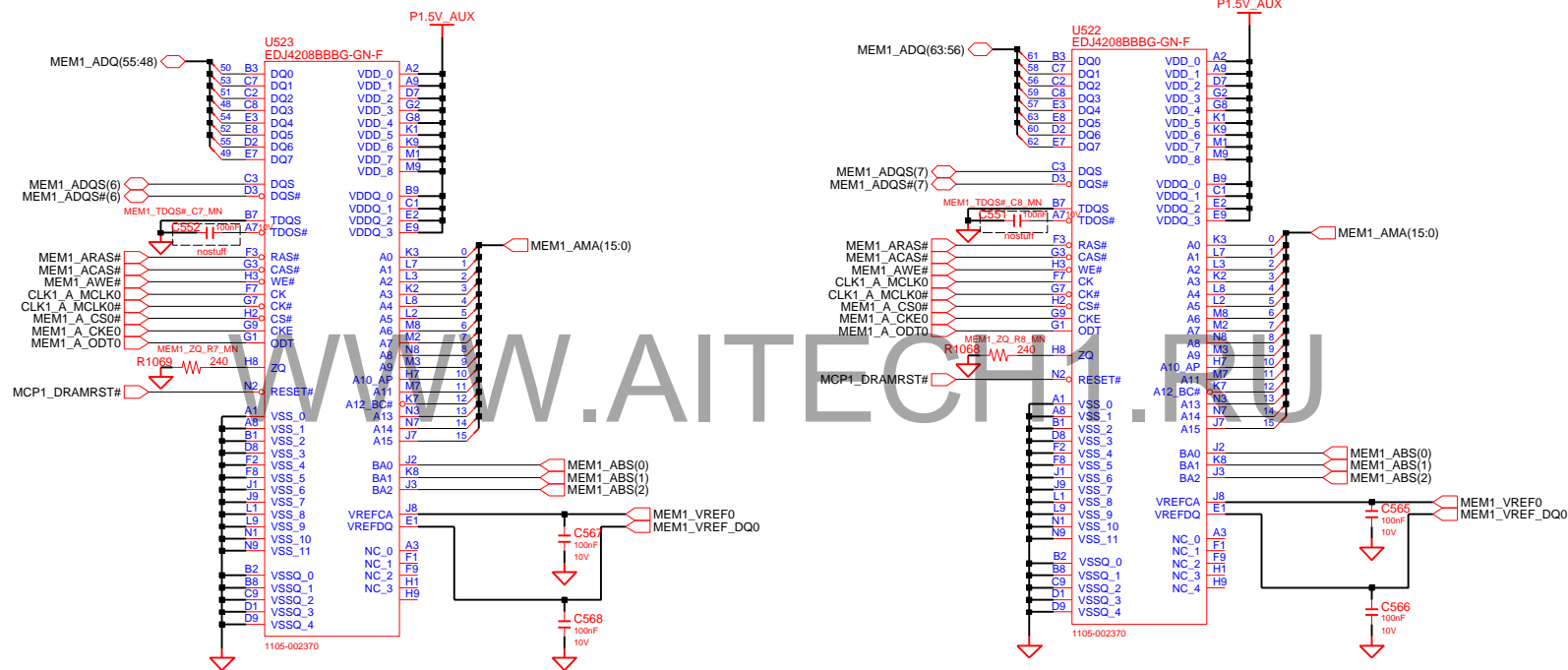


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CHECK	M.S.KIL	DEV. STEP	PV	on board		
APPROVAL	H.J. KIM	REV	REV 0.1	DDR3		
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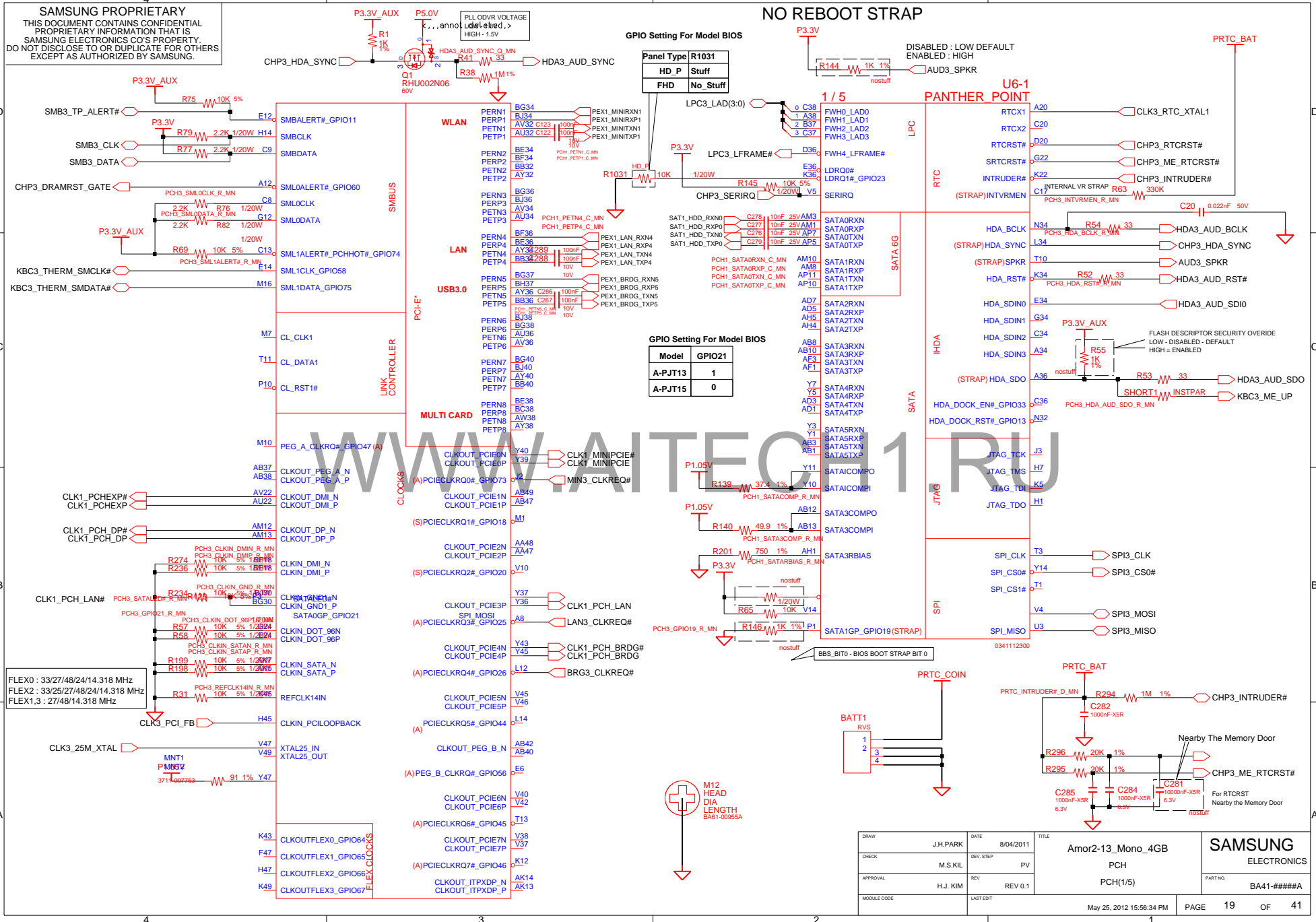
DDR3 On Board Memory 3/4



DDR3 On Board Memory 4/4



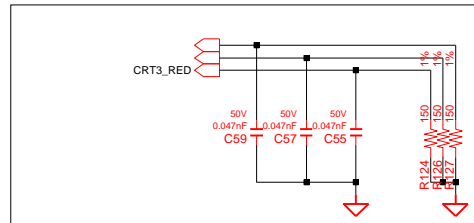
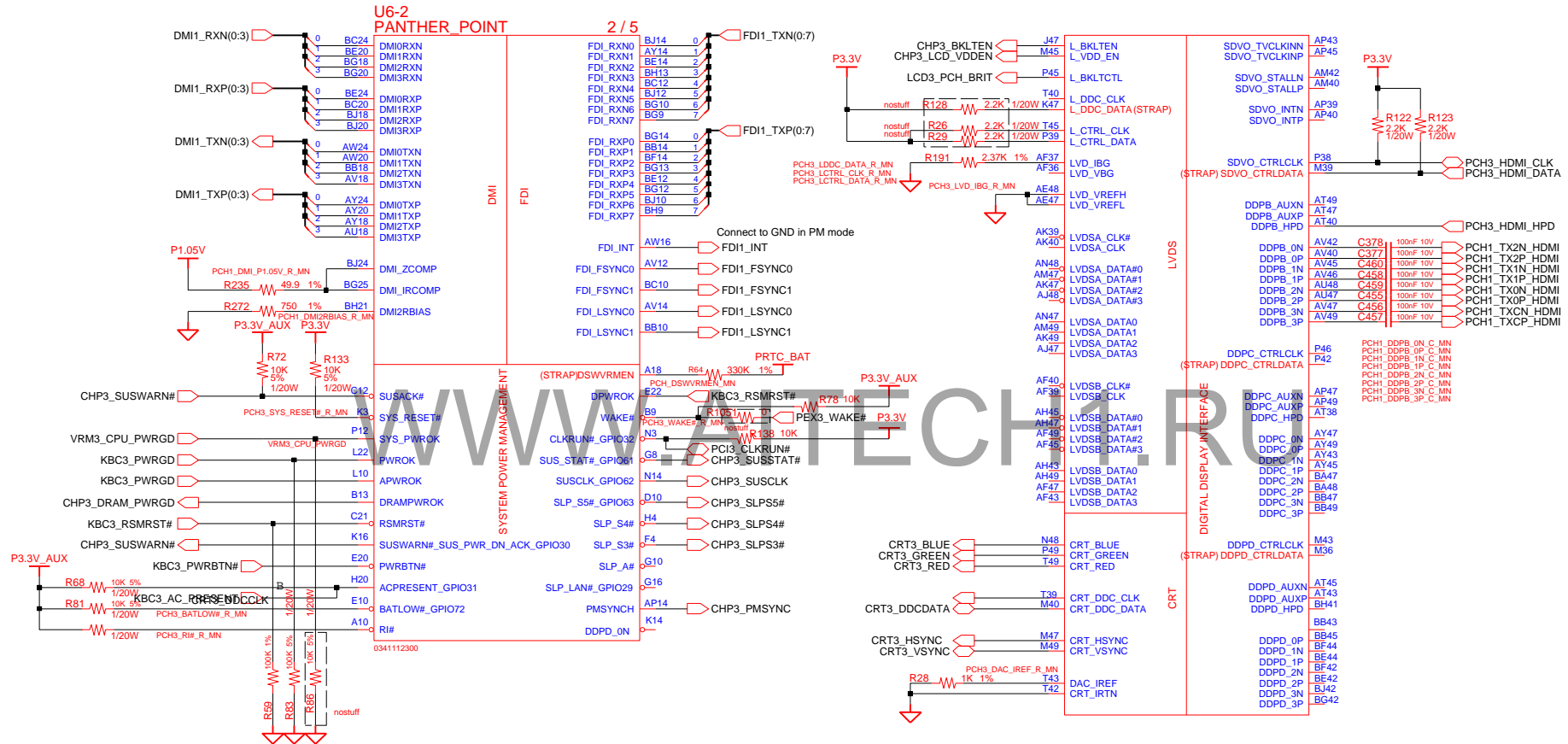
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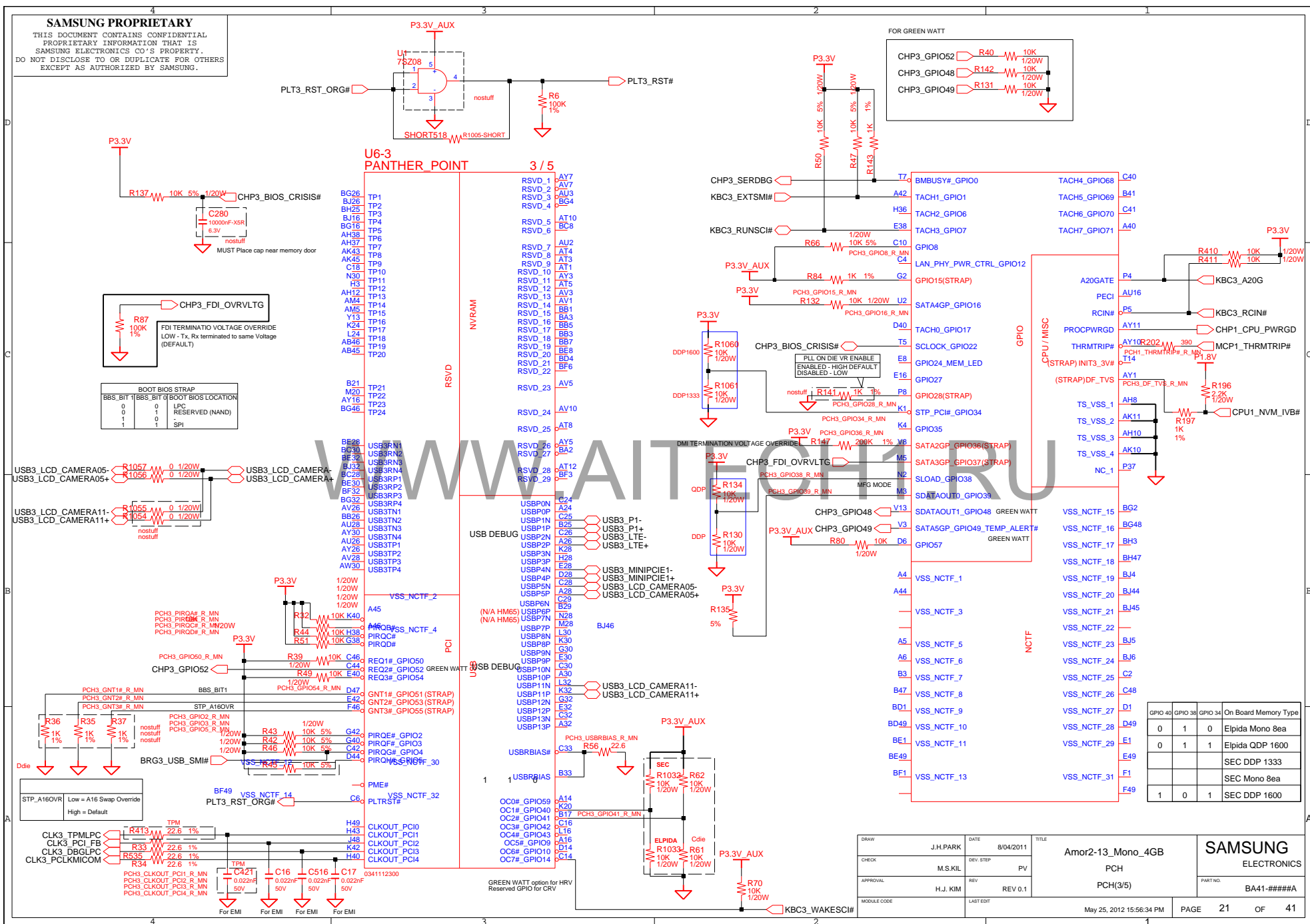
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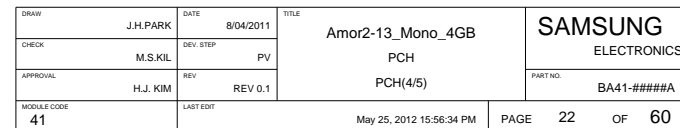
DDI PORT B DETECT	
SDVO_CTRL_DATA	1 PORT B DETECTED 0 PORT B NOT DETECTED



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CHECK	M.S.KIL	DEV. STEP	PV		PCH	
APPROVAL	H.J. KIM	REV	REV 0.1		PCH(2/5)	
MODULE CODE		LAST EDIT				
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4 VSS159 VSS259 H46

5 / 5



DRAW	J.H.PARK	DATE	8/04/2011	TITLE Amor2-13_Mono_4GB PCH PCH(5/5)	SAMSUNG ELECTRONICS
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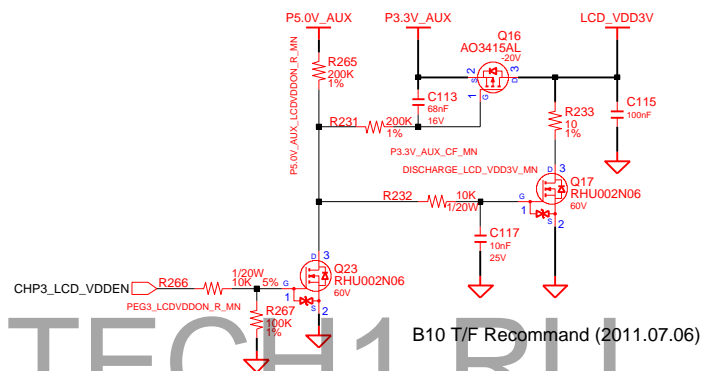
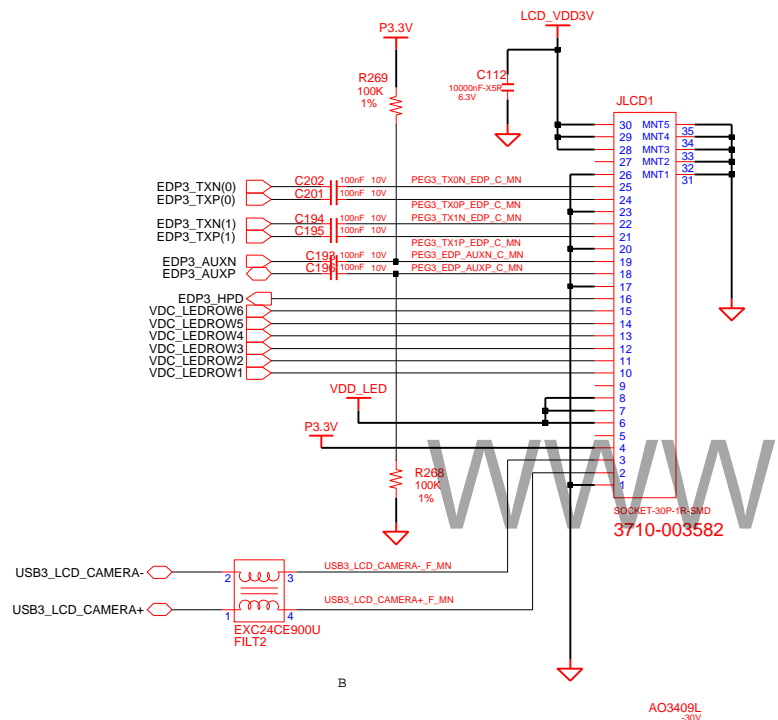
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EDP LOGIC

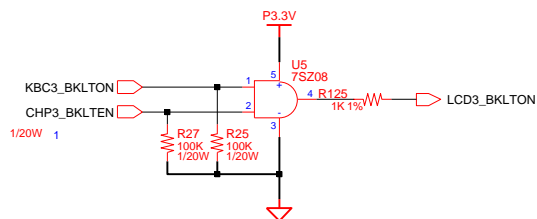
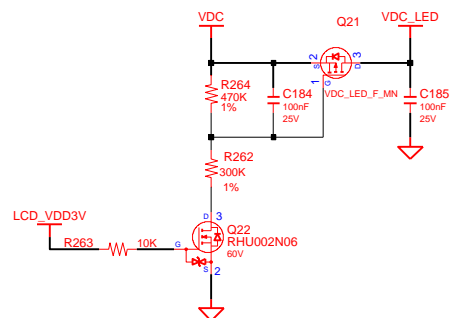
LCD Power

EBL Purpose



B10 T/F Reccomand (2011.07.06)

LED Power

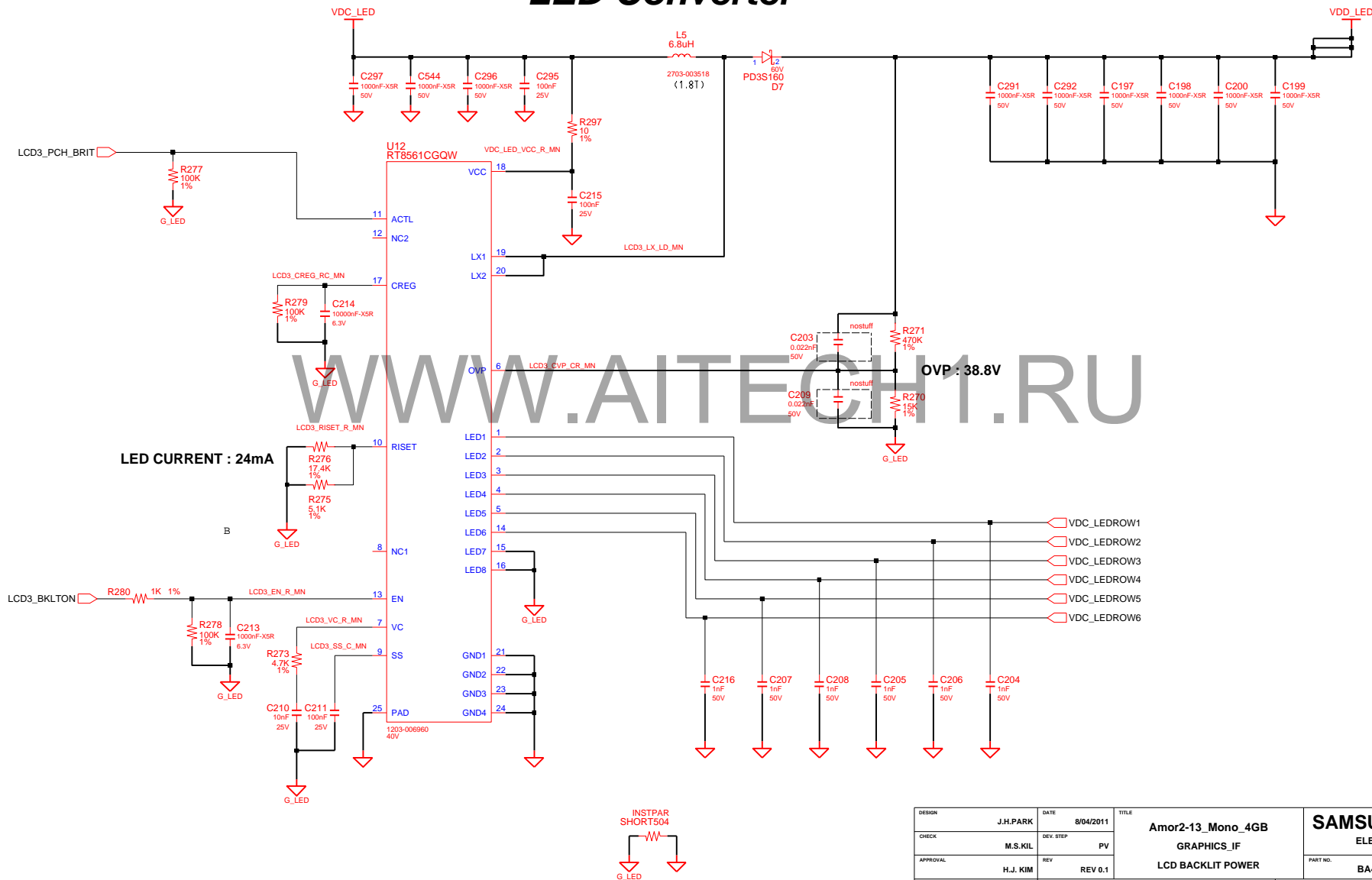


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APPROVAL	H.J. KIM	REV	REV 0.1	EDP		
MODULE CODE		LAST EDIT				

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LCD Backlit Power LED Converter



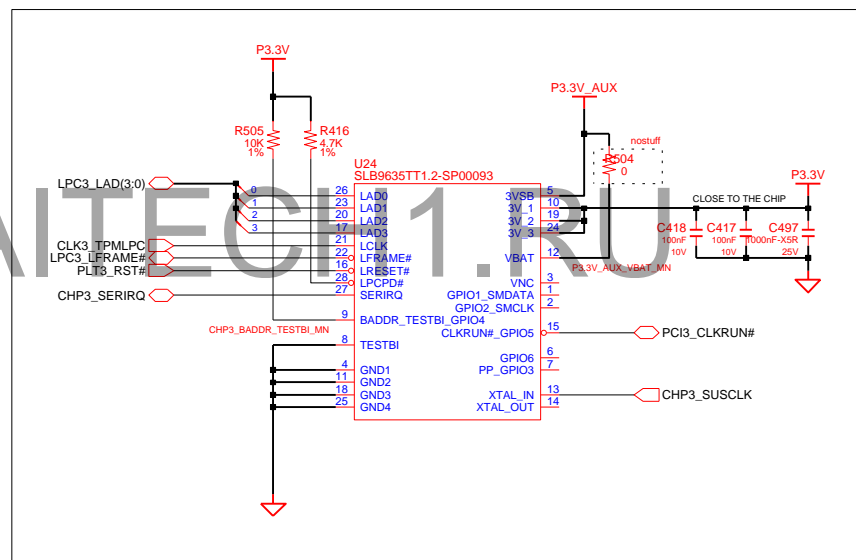
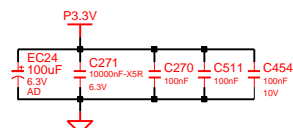
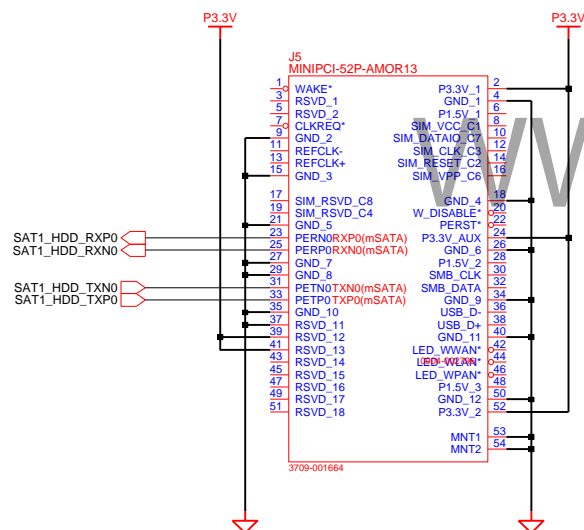
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CHECK	M.S.KIL	DEV. STEP	PV			PART NO. BA41-####A
APPROVAL	H.J. KIM	REV	REV 0.1			
MODULE CODE		LAST EDIT				
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SSD CONN (HDD)

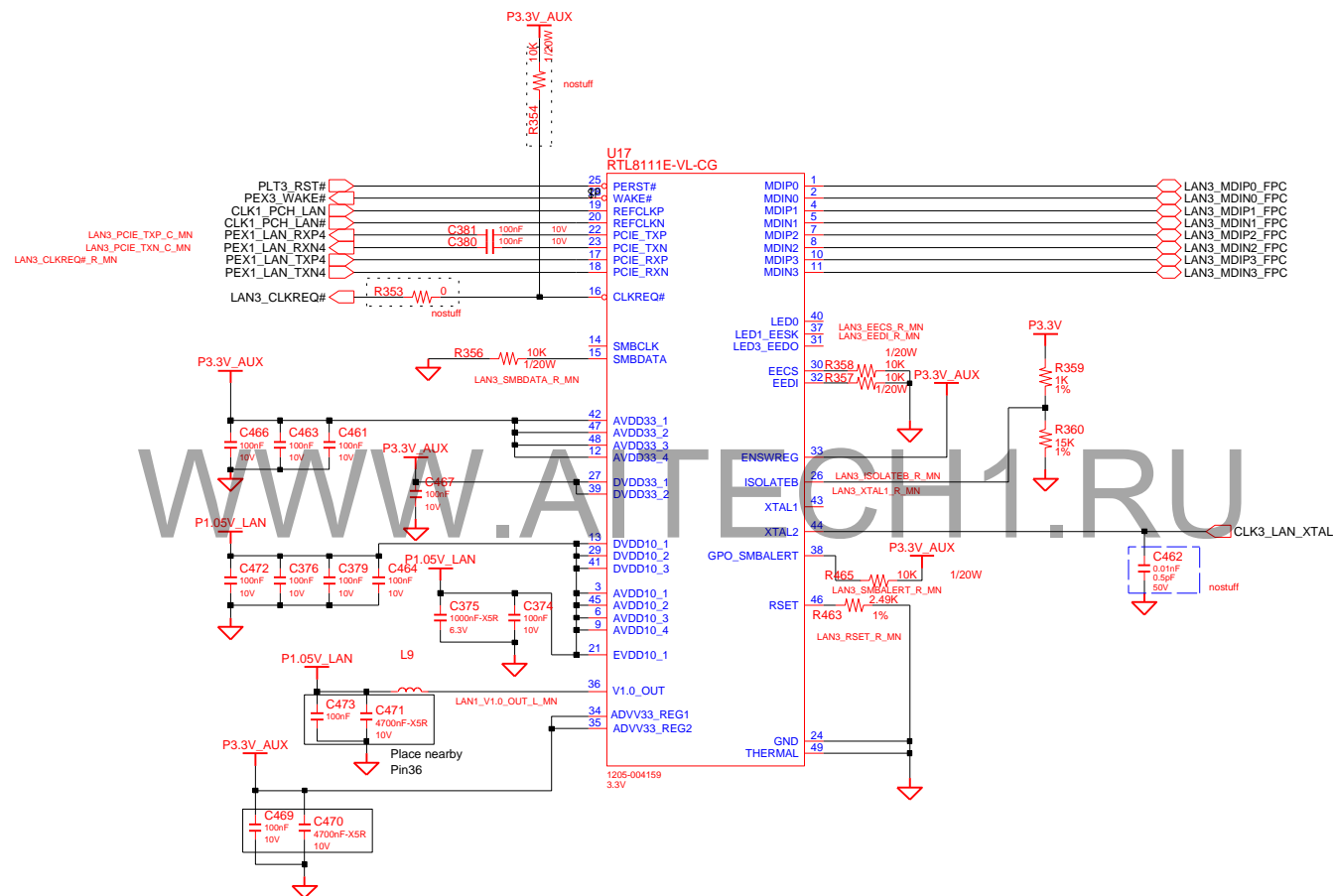
TPM1.2



TPM
 TPM
 TPM
 TPM
 TPM

DESIGN	J.H.PARK	DATE	8/04/2011	TITLE	Amor2-13_Mono_4GB	SAMSUNG ELECTRONICS PART NO. BA41-####A
CHECK	M.S.KIL	DEV. STEP	PV		SSD & TPM	
APPROVAL	H.J. KIM	REV	REV 0.1		SSD & TPM	
MODULE CODE		LAST EDIT				
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DESIGN	J.H.PARK	DATE	8/04/2011	Amor2-13_Mono_4GB LAN LAN_Realtek_RTL8105E	SAMSUNG ELECTRONICS	
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APPROVAL	H.J. KIM	REV	REV 0.1		PART NO.	BA41-####A
MODULE CODE	LAST EDIT				May 25, 2012 15:56:34 PM	PAGE 27 OF 41

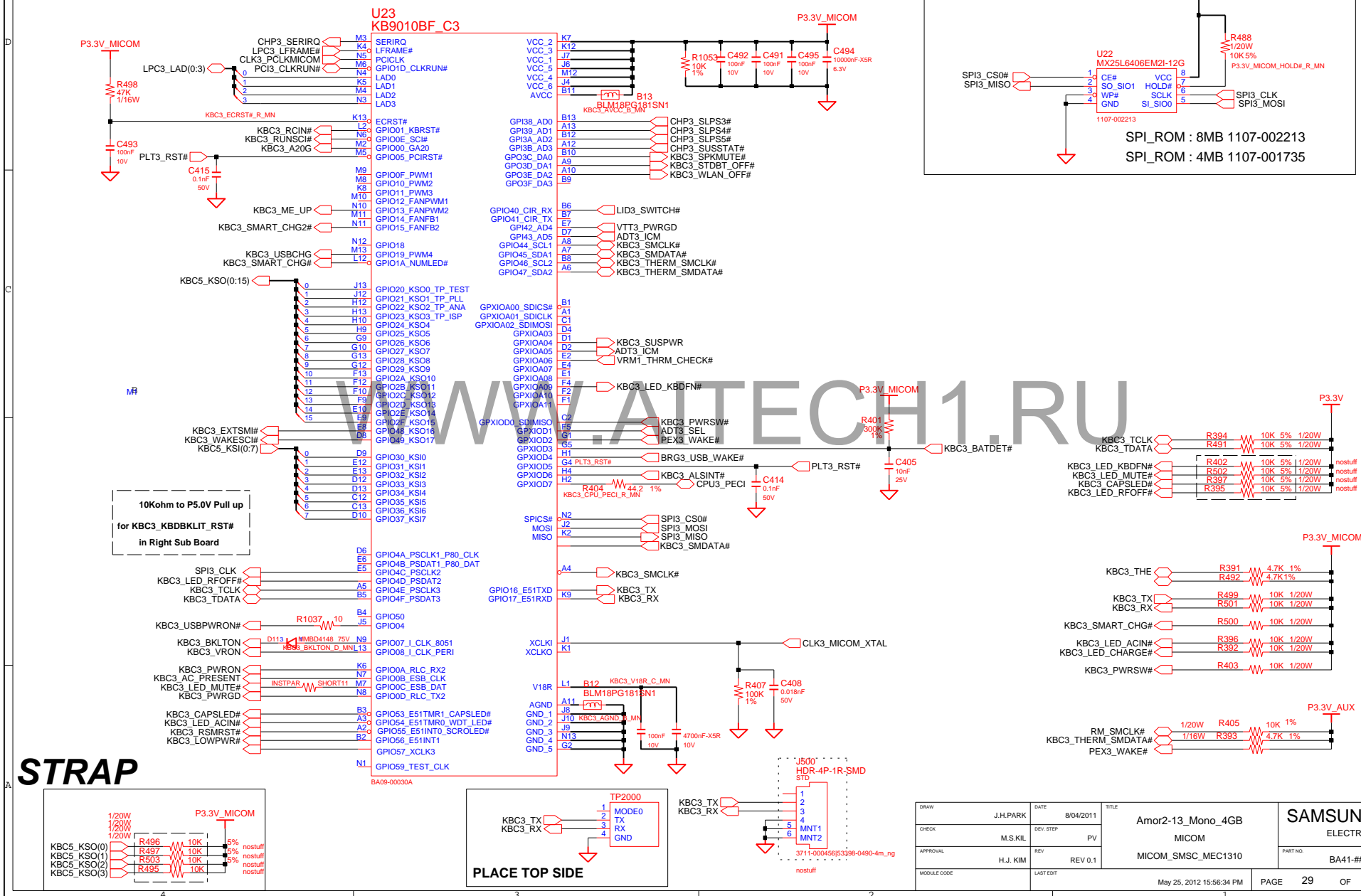
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MAIN BOARD (MICOM)

BE CAUTION SPI ROM SIZE!!

SPI_ROM_SOCKET



DRAW	J.H.PARK	DATE	8/04/2011	TITLE	Amor2-13_Mono_4GB	SAMSUNG ELECTRONICS
CHECK	M.S.KIL	DEV. STEP	PV		MICOM	
APPROVAL	H.J. KIM	REV	REV 0.1		MICOM_SMSC_MEC1310	
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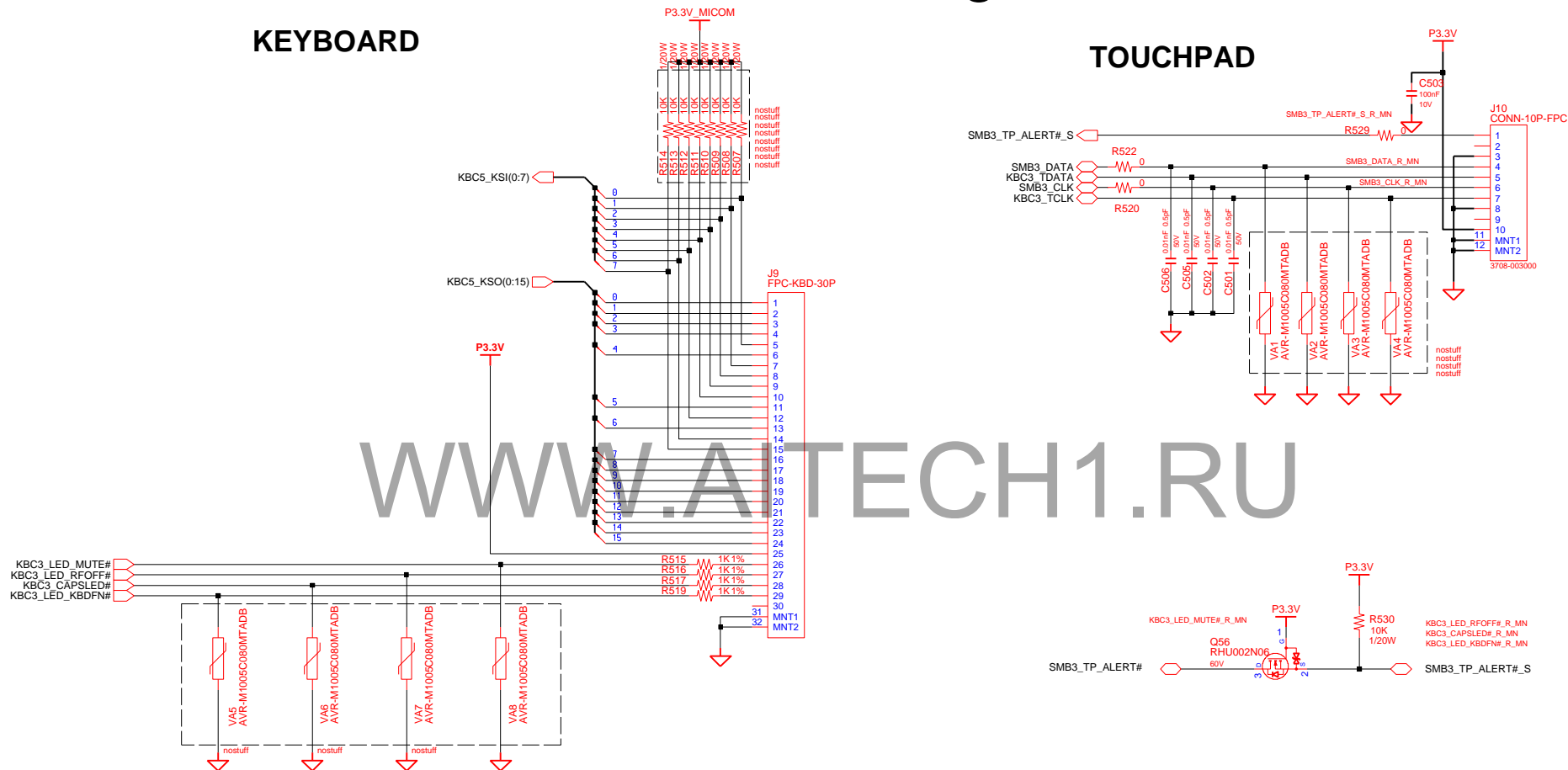
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Micom Glue Logic

KEYBOARD

TOUCHPAD



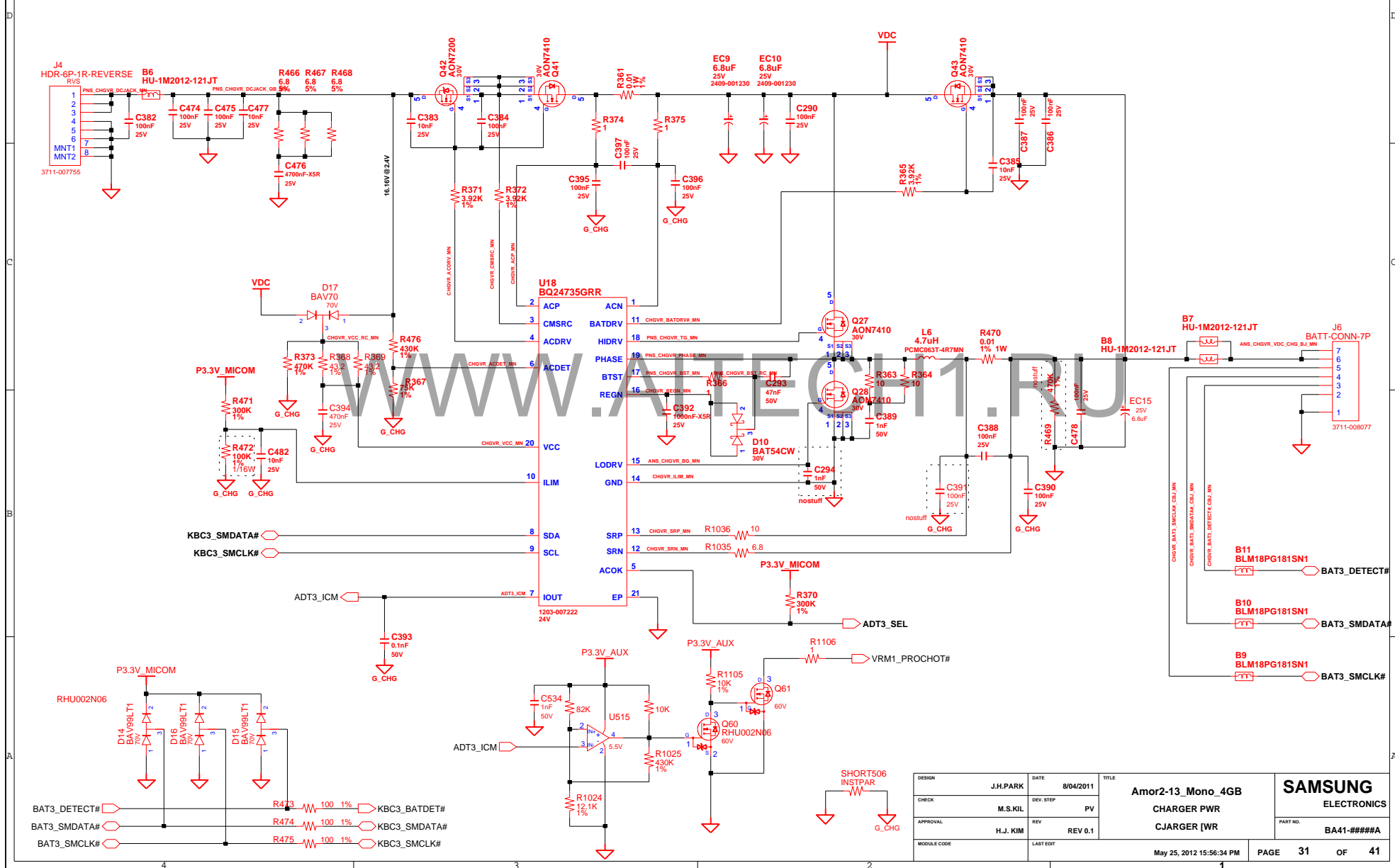
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CHECK	M.S.KIL	DEV. STEP	PV		MICOM	
APPROVAL	H.J. KIM	REV	REV 0.1		MICOM GLUE LOGIC	
MODULE CODE		LAST EDIT				
May 25, 2012 15:56:34 PM						PAGE 30 OF 41

PART NO.
BA41-####A

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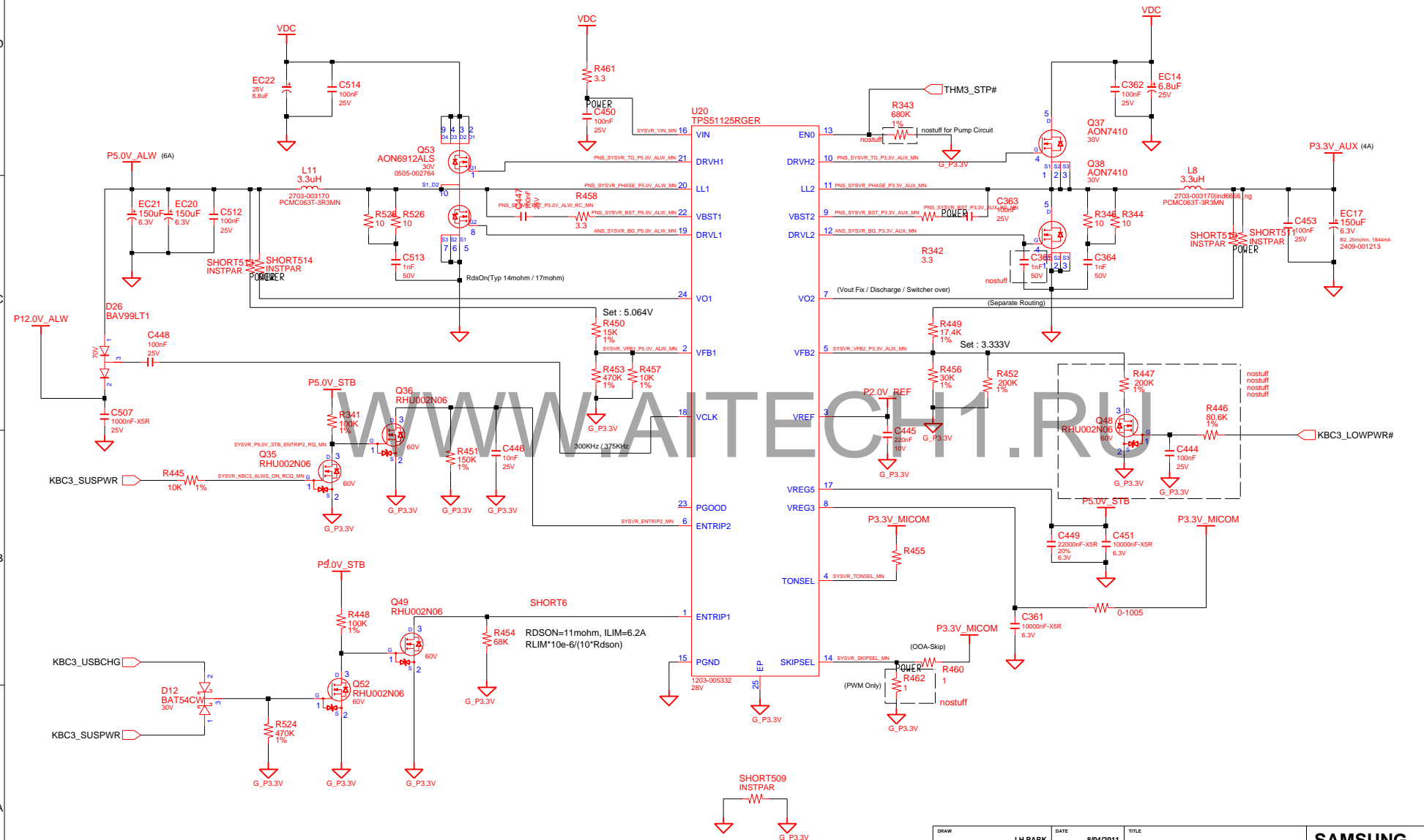
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CHARGER & POWER MANAGEMENT



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P3.3V_AUX & P5.0V_AUX

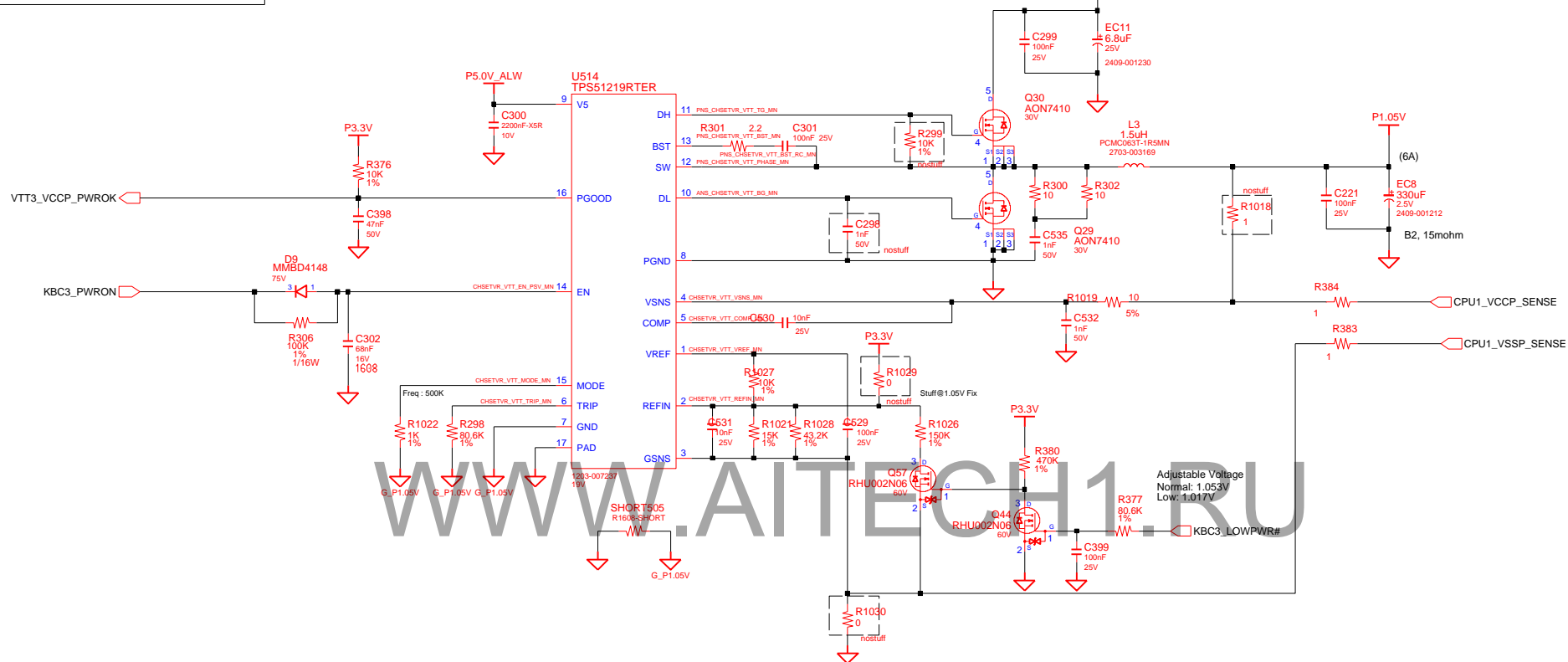


DRAW	J.H.PARK	DATE	8/04/2011	TITLE	Amor2-13_Mono_4GB	SAMSUNG ELECTRONICS PART NO. BA41-####A
CHECK	M.S.KIL	DEV. STEP	PV		P3.3V_AUX & P5.0V_ALW	
APPROVAL	H.J. KIM	REV	REV 0.1		P3.3V_AUX & P5.0V_ALW	
MODULE CODE	undefined	LAST EDIT				
					May 25, 2012 15:56:34 PM	PAGE 32 OF 41

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Chipset Power (P1.05V)



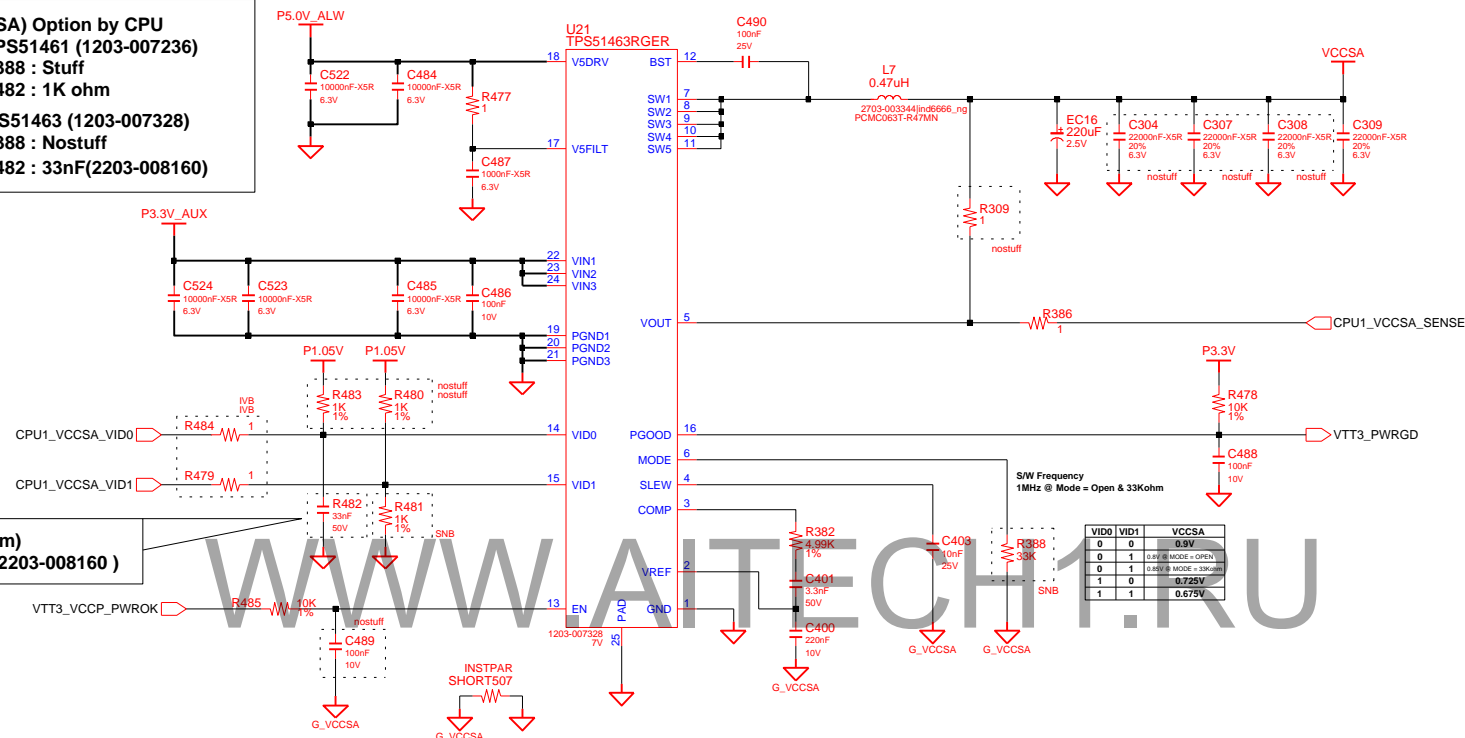
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CHIPSET POWER(VCCSA)

U21 (VCCSA) Option by CPU

- SNB : TPS51461 (1203-007236)
R388 : Stuff
R482 : 1K ohm
- IVB : TPS51463 (1203-007328)
R388 : Nostuff
R482 : 33nF(2203-008160)



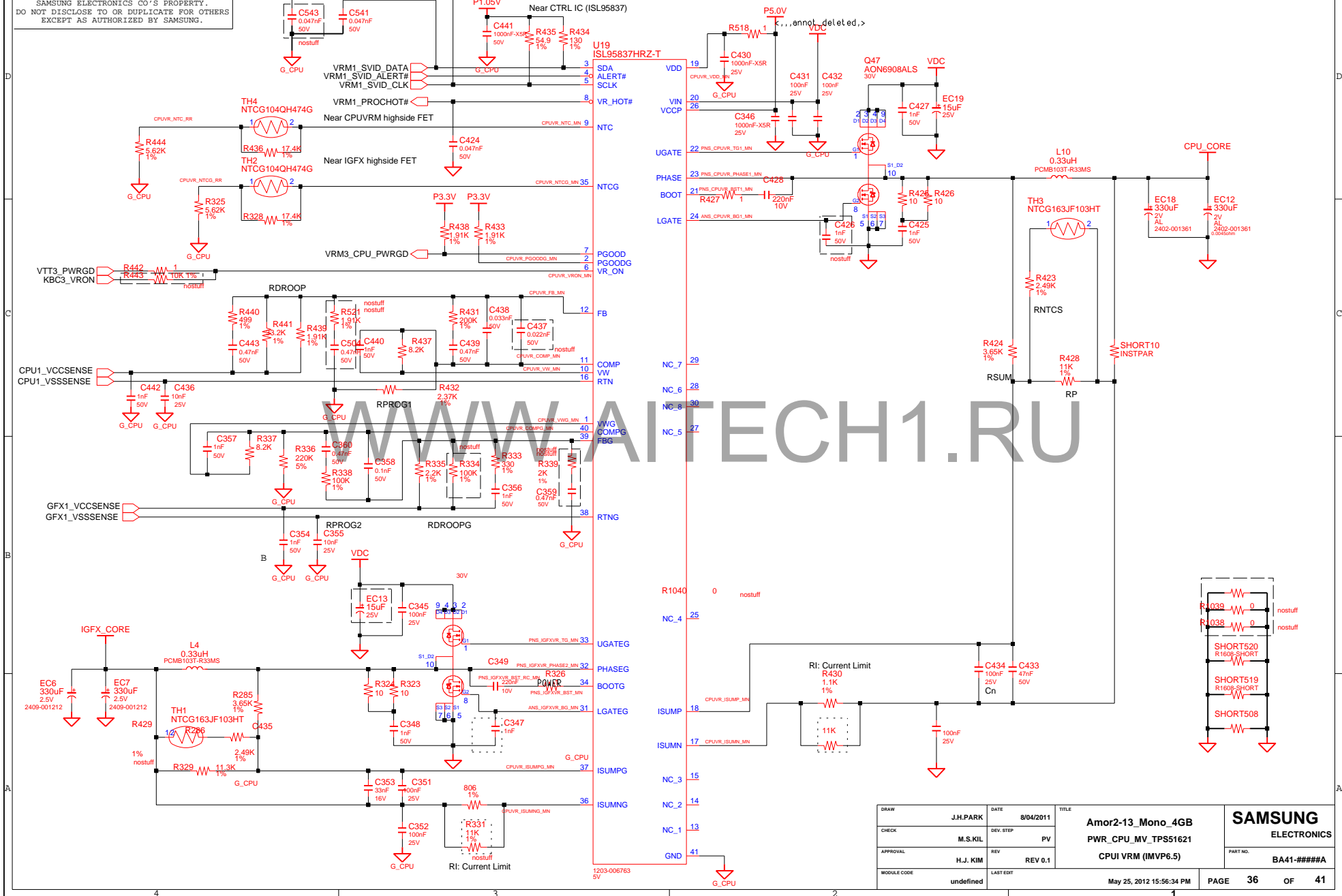
DDR3 Power

DRAW J.H.PARK		DATE 8/04/2011	TITLE Amor2-13_Mono_4GB P1.05V TI TPS51125		SAMSUNG ELECTRONICS	
CHECK M.S.KIL	DEV. STEP PV					
APPROVAL H.J. KIM	REV REV 0.1					
MODULE CODE undefined		LAST EDIT May 25, 2012 15:56:34 PM		PAGE 35	OF 41	

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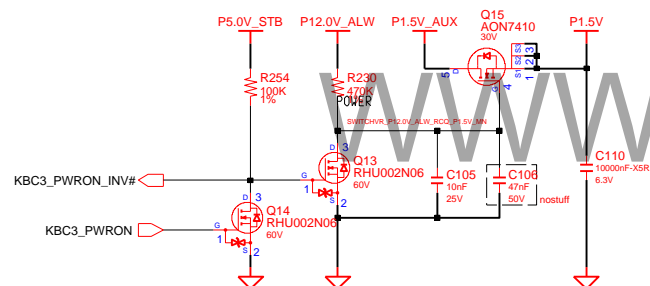
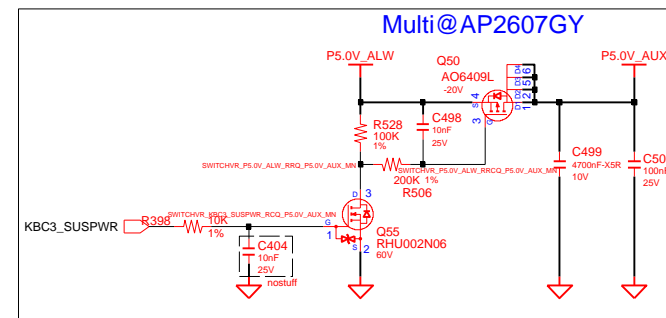
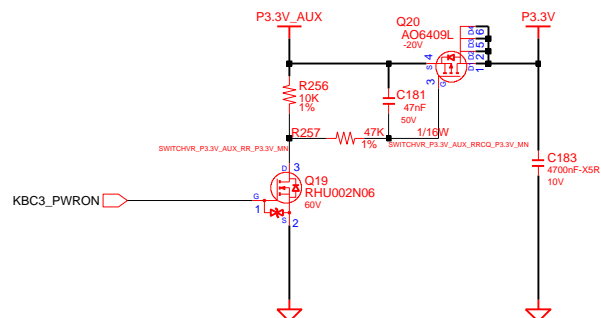
CPU VRM (IMVP-7)



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P5.0V_AUX

Multi@AP2607GY



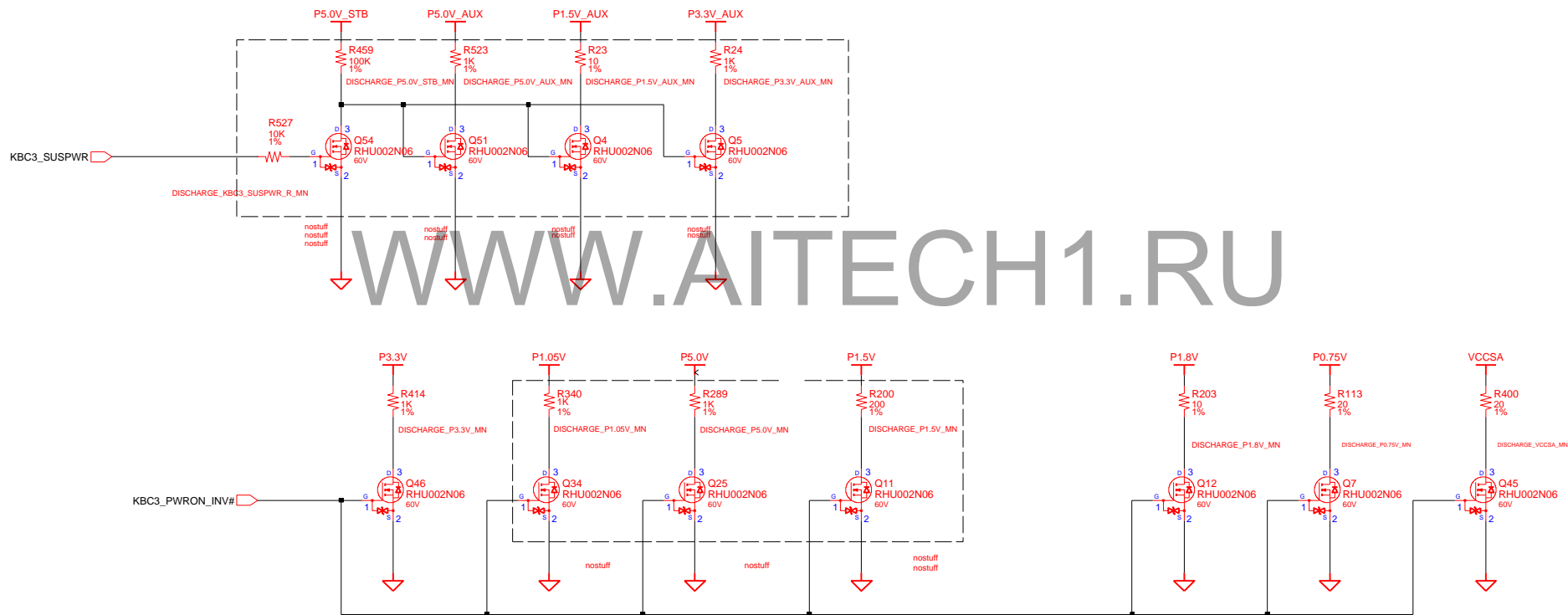
The schematic diagram illustrates the power supply section of the KBC3_PWRON board. It features a 5.0V_ALW input connected to a network of resistors (R330, R327), capacitors (C350, C267, C268), and MOSFETs (Q24, Q33). The output is connected to three 5.0V_AU* lines, each with a 100nF capacitor (C267, C268) and a 4700nF-XSR capacitor (C268).

DRAW	J.H.PARK	DATE	8/04/2011	TITLE Amor2-13_Mono_4GB PWR_MV_SWITCHED SWITCHED POWER	SAMSUNG ELECTRONICS
CHECK	M.S.KIL	DEV. STEP	PV		
APPROVAL	H.J. KIM	REV	REV 0.1		
MODULE CODE	LAST EDIT				
				May 25, 2012 15:56:34 PM	PAGE 37 OF 41

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POWER DISCHARGER



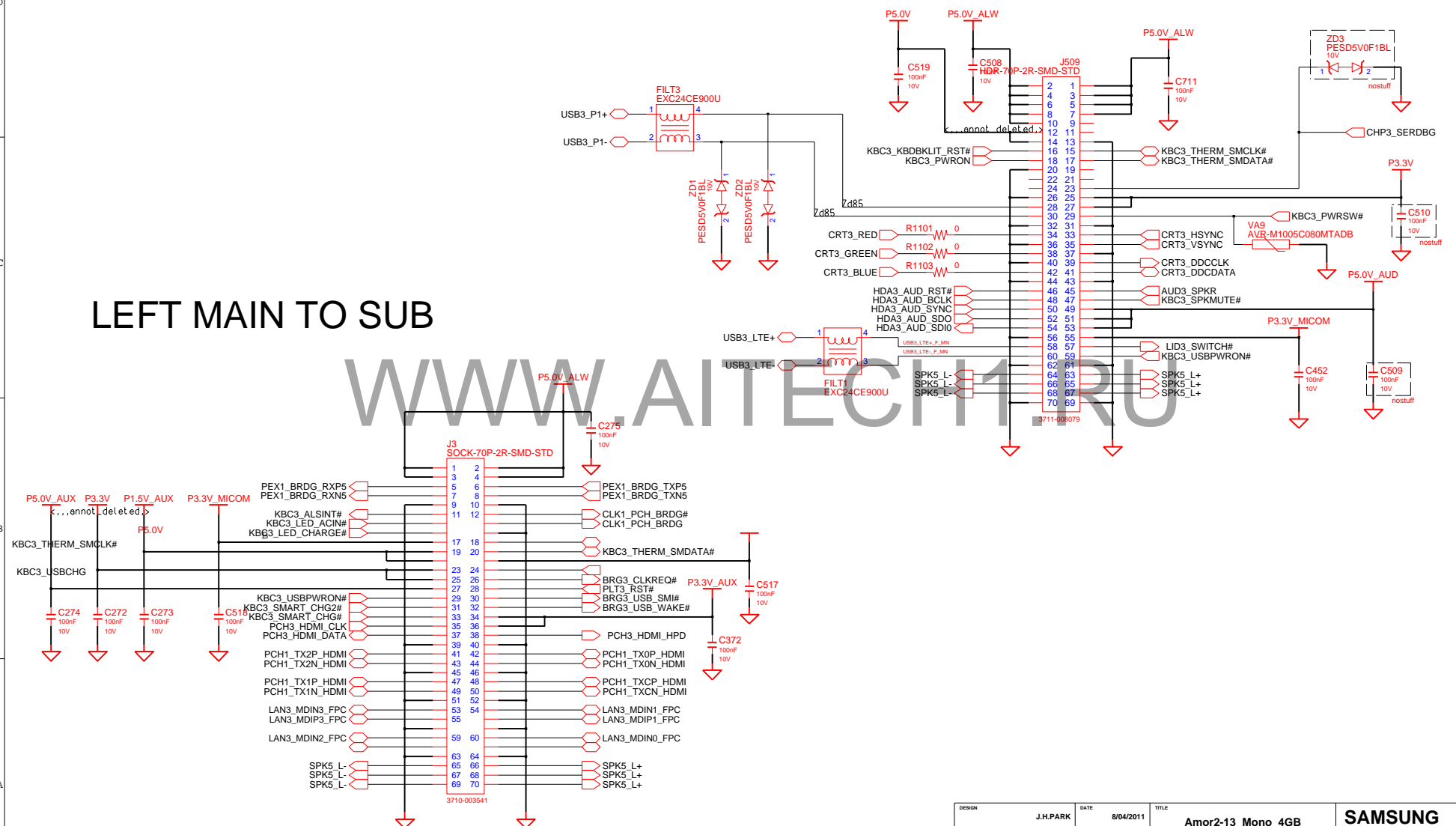
DESIGN	J.H.PARK	DATE	8/04/2011	TITLE	Amor2-13_Mono_4GB	SAMSUNG ELECTRONICS PART NO. BA41-####A
CHECK	M.S.KIL	DEV. STEP	PV		MOUNT HOLE	
APPROVAL	H.J. KIM	REV	REV 0.1		MOUNT HOLE	
MODULE CODE		LAST EDIT		May 25, 2012 15:56:34 PM	PAGE 38 OF 41	

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RIGHT MAIN TO SUB

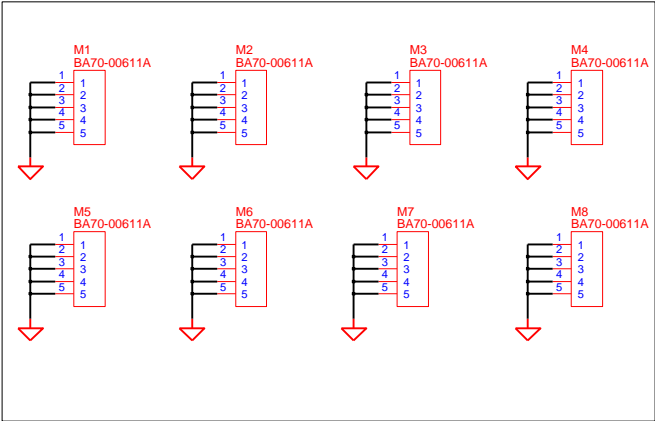
LEFT MAIN TO SUB



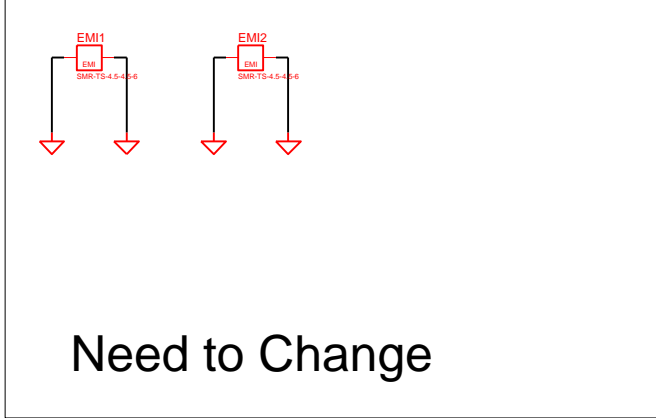
DESIGN	J.H.PARK	DATE	8/04/2011	TITLE	Amor2-13_Mono_4GB	SAMSUNG ELECTRONICS PART NO. BA41-####A
CHECK	M.S.KIL	DEV. STEP	PV		MAIN TO SUB CONNECTOR	
APPROVAL	H.J. KIM	REV	REV 0.1		MAIN TO SUB CONNECTOR	
MODULE CODE		LAST EDIT				
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Memory Shield Can Clip



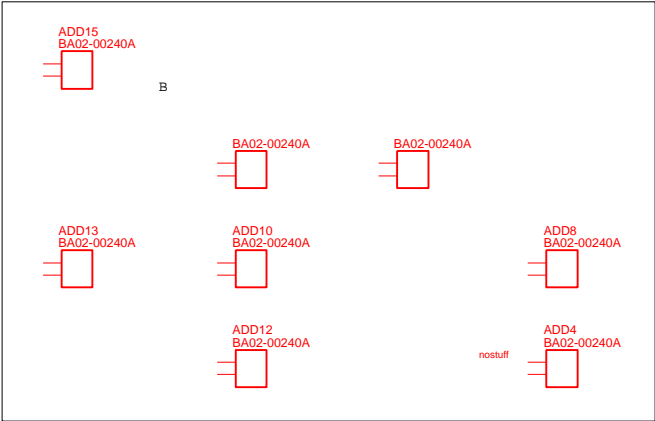
EMI Finger



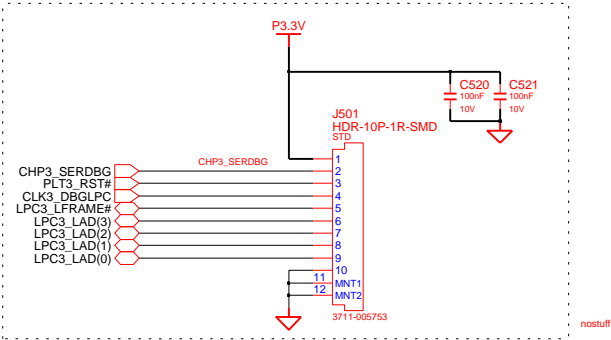
Need to Change

WWW.AITECH1.RU

Corner Fill for CPU, PCH



80H PORT DEBUG



DESIGN	J.H.PARK	DATE	8/04/2011	TITLE	Amor2-13_Mono_4GB	SAMSUNG ELECTRONICS
CHECK	M.S.KIL	DEV. STEP	PV		MOUNT HOLE	
APPROVAL	H.J. KIM	REV	REV 0.1		MOUNT HOLE	
MODULE CODE		LAST EDIT				PART NO. BA41-####A
May 25, 2012 15:56:34 PM						PAGE 40 OF 41

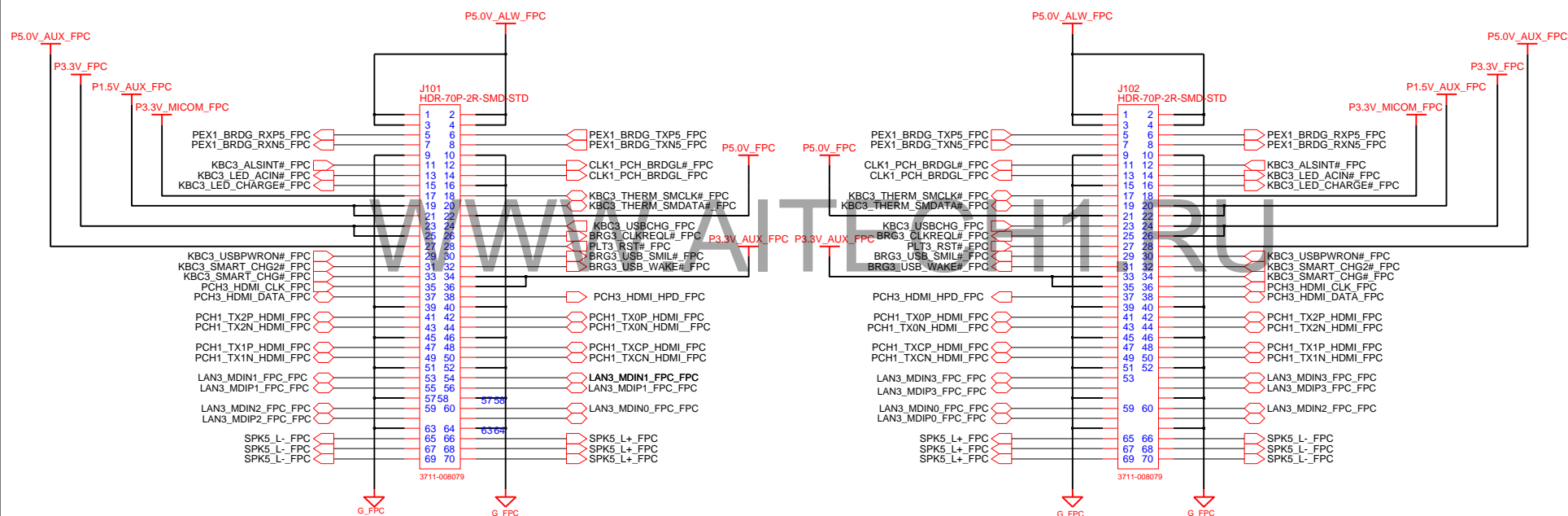
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LEFT Board to Board PCB

Main Board Side

Sub Board Side



DRAW	J.H.PARK	DATE	8/04/2011	TITLE	Amor2-13_Mono_4GB	SAMSUNG ELECTRONICS PART NO. BA41-####A
CHECK	M.S.KIL	DEV. STEP	PV			
APPROVAL	H.J. KIM	REV	REV 0.1			
MODULE CODE		LAST EDIT				
May 25, 2012 15:56:34 PM						PAGE 41 OF 41

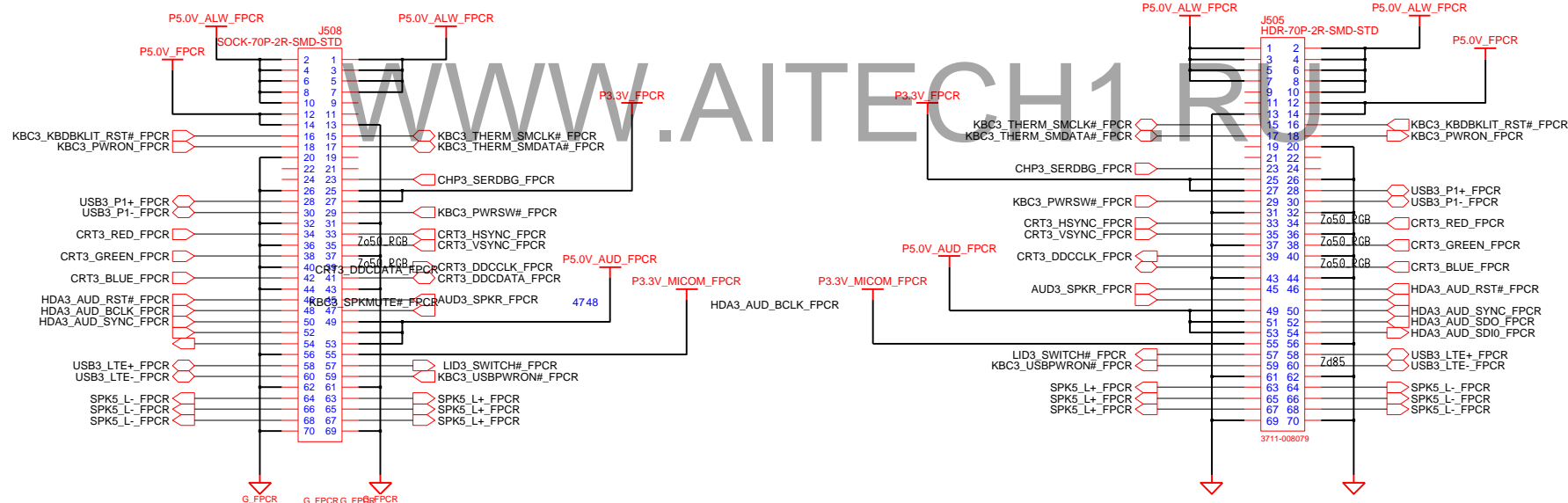
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Right(LTE) Board to Board PCB

Main Board Side

Sub Board Side

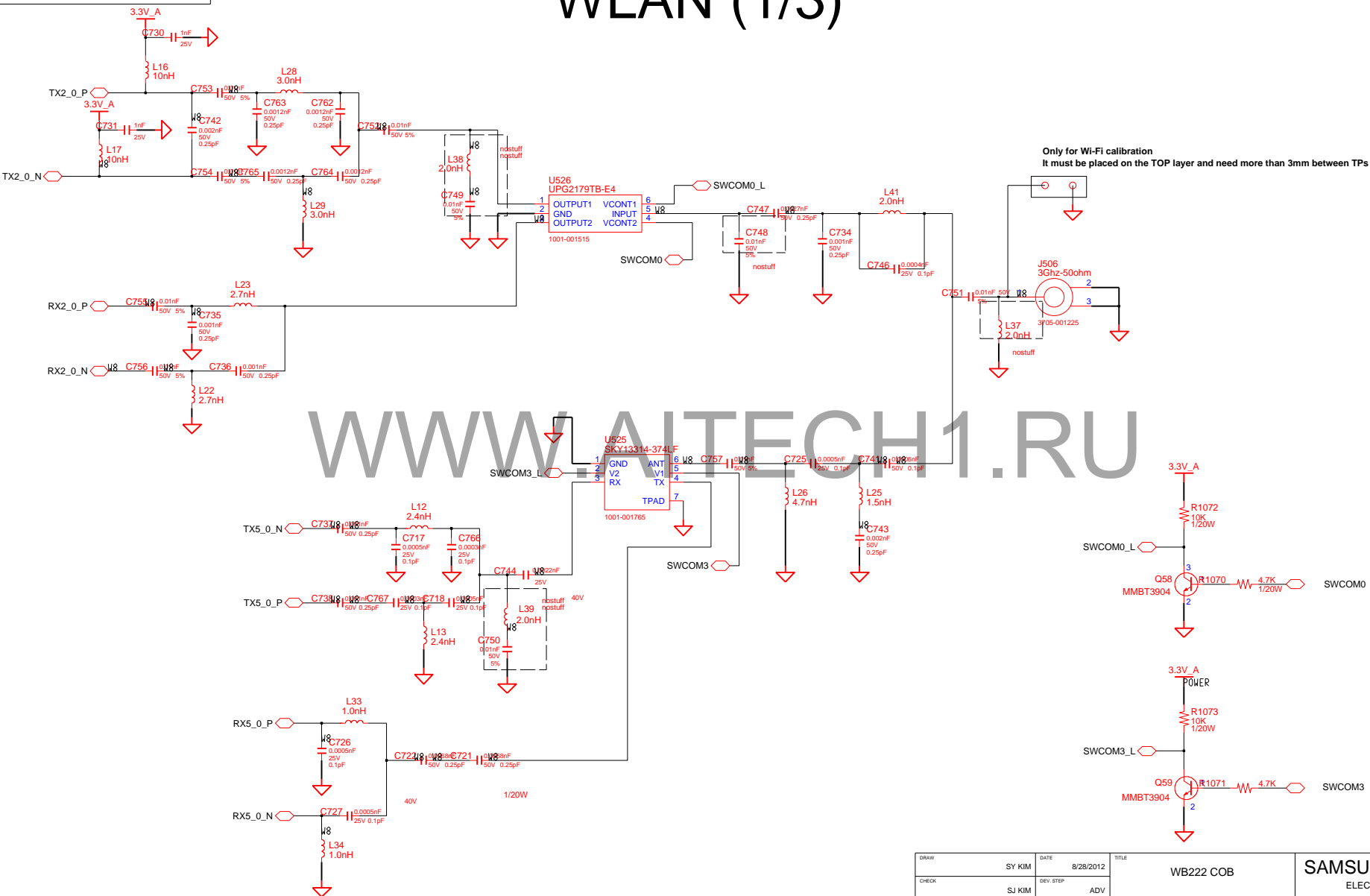


DESIGN	KIL, M.S.	DATE	12/29/2012	TITLE	Amor2-13_Mono_4GB	SAMSUNG ELECTRONICS
CHECK	JUNG, H.S.	DEV. STEP	PV	Right Board to Board PCB		
APPROVAL	KIM, H.J.	REV	0.1	PART NO. BA41-####A		
MODULE CODE	LAST EDIT		December, 29, 2012 6:33:57 PM		PAGE 41 of 41	

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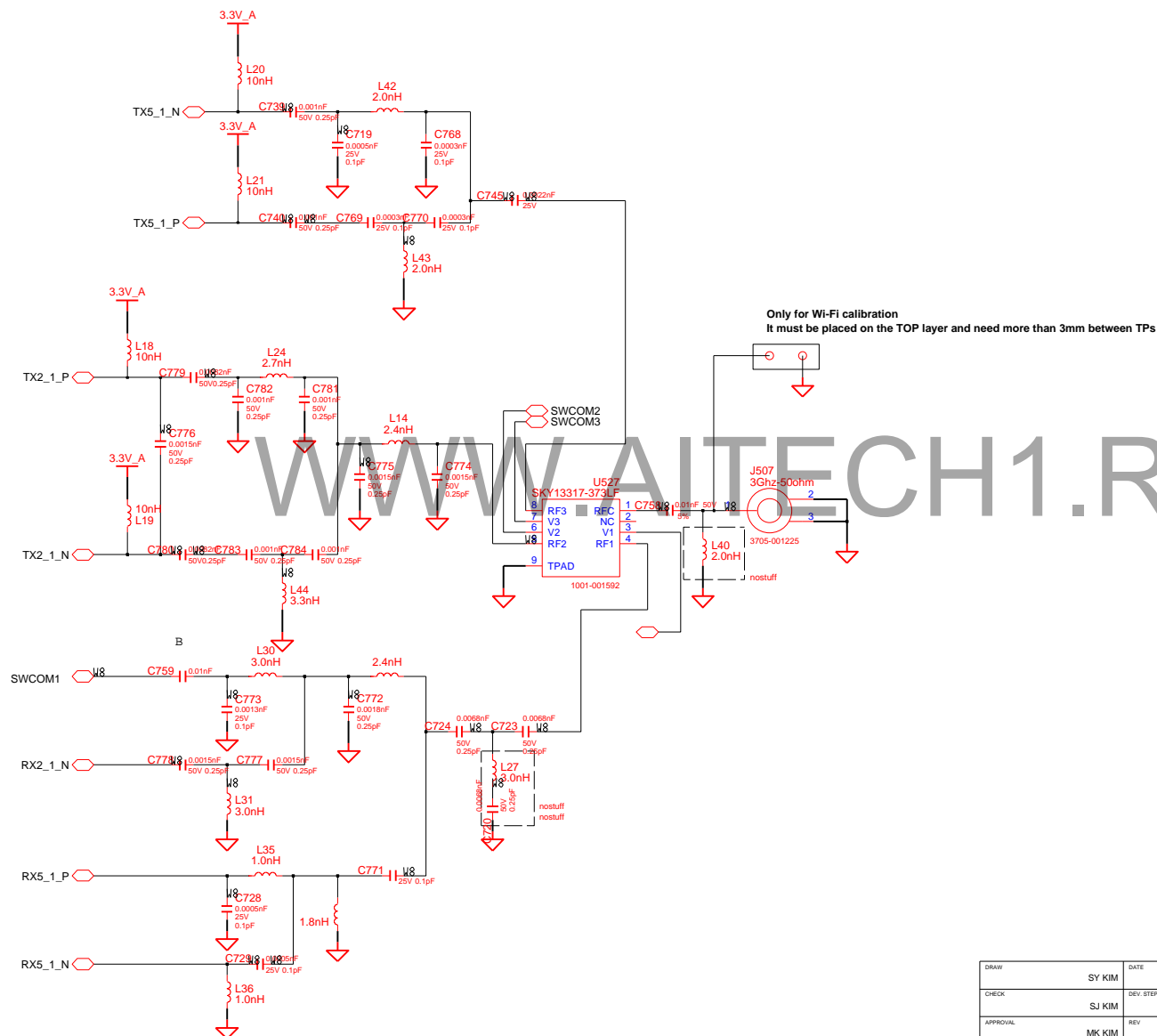
WLAN (1/3)



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WLAN (2/3)

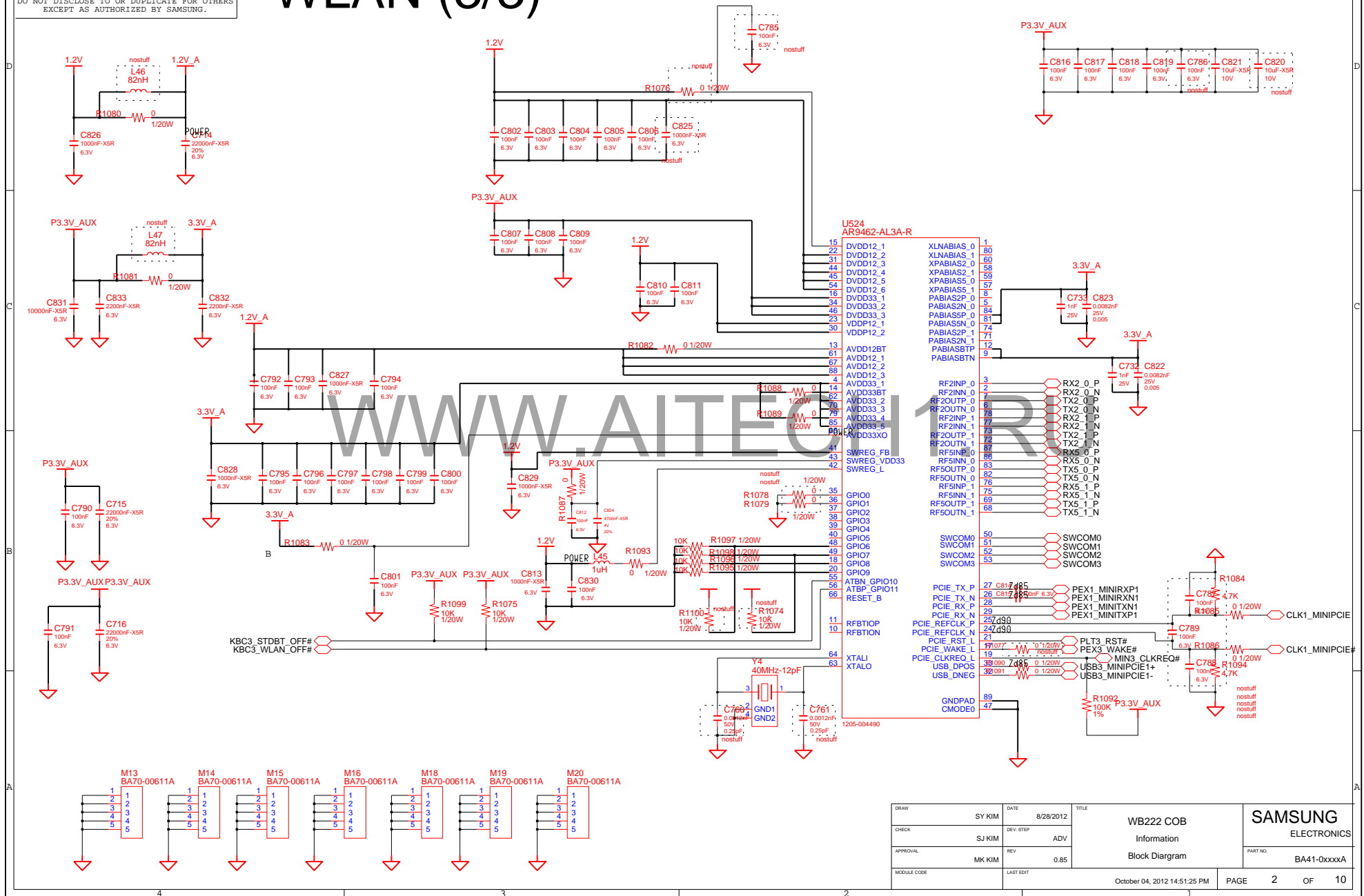


DRAW	SY KIM	DATE	8/28/2012	TITLE	WB222 COB	SAMSUNG
CHECK	SJ KIM	DEV. STEP	ADV			ELECTRONICS
APPROVAL	MK KIM	REV	0.85			PART NO.
MODULE CODE		LAST EDIT				BA41-0xxxxA
				October 04, 2012 14:51:25 PM	PAGE	2 OF 10

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WLAN (3/3)



DRAW	SY KIM	DATE	8/28/2012	TITLE	WB222 COB	SAMSUNG ELECTRONICS
CHECK	SJ KIM	DEV. STEP	ADV	Information	Block Diagram	
APPROVAL	MK KIM	REV	0.85			
MODULE CODE		LAST EDIT				
October 04, 2012 14:51:25 PM						PAGE 2 OF 10