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# Nike2-15-DC

CPU : IvyBridge BGA DC

Chip Set : Intel Panther Point

GFX : ATI Mars-XT M2  
ATI Venus-XT M2

Remarks : ChiefRiver Platform

Model Name : NIKE2-15 DC (High / Mid)

PBA Name : MAIN

PCB Code : BA41-02202A (GCE/HST/PTC)

Dev. Step : PVR

Revision : 0.8

T.R. Date : 2012.11.09

Design	CHECK	APPROVAL

■ Owner : SEC Mobile R&amp;D Signature : x

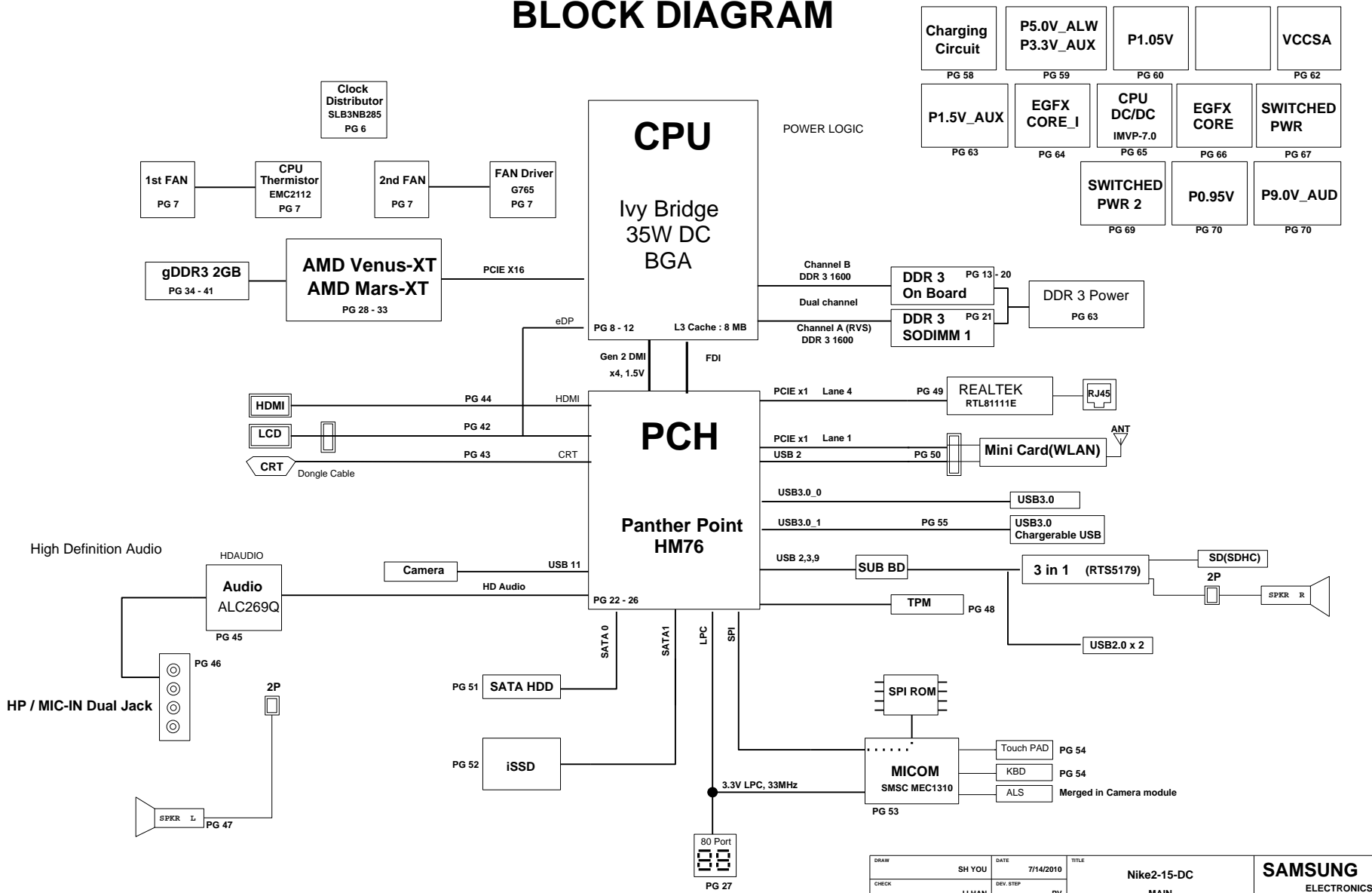
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sheet43 : VGA  
sheet44 : HDMI  
sheet45 : Audio - ALC269Q-VC-GR  
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sheet48 : TPM 1.2  
sheet49 : LAN (Realtek RTL8111E)  
sheet50 : WLAN  
sheet51 : SATA interface (HDD I/F)  
sheet52 : EC (ISSD)  
sheet53 : MICOM / BIOS(MEC1310)  
sheet54 : MICOM Glue Logic  
sheet55 : USB3.0 connector  
sheet56 : LED / LID SWITCH  
sheet57 : MAIN TO SUB CONNECTOR  
sheet58 : Power - charger  
sheet59 : Power - P3.3V\_AUX / P5.0V\_AUX  
sheet60 : Power - P1.05V (Chipset Power)  
sheet61 : Power - P1.5V\_D  
sheet62 : Power - VCCSA  
sheet63 : Power - DDR3  
sheet64 : Power - EGFX CORE I  
sheet65 : Power - CPU VRM  
sheet66 : Power - EGFX\_CORE  
sheet67 : Power - Switched Power 1  
sheet68 : Power - Power Discharge  
sheet69 : Power - Switched Power 2  
sheet70 : Power - P0.95V\_D / P9.0V\_AUD  
sheet74 : Mount Hole / Decap  
sheet75 : Shield Can / Corner Fill

DRAW	SH YOU	DATE	7/14/2010	TITLE	Nike2-15-DC	SAMSUNG
CHECK	JJ HAN	DEV. STEP	PV	MAIN		ELECTRONICS
APPROVAL	SS BAIK	REV	REV 1.0	COVER		PART NO. BA41-####A
MODULE CODE		LAST EDIT	October 04, 2012 14:55:42 PM	PAGE	1	OF 75

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# BLOCK DIAGRAM



DRAW	SH YOU	DATE	7/14/2010	TITLE	Nike2-15-DC MAIN BLOCK DIAGRAM	SAMSUNG ELECTRONICS
CHECK	JJ HAN	DEV. STEP	PV			PART NO. BA41-####A
APPROVAL	SS BAIK	REV	REV 1.0			
MODULE CODE	undefined	LAST EDIT		October 04, 2012 14:55:42 PM	PAGE 2 OF 75	

## BOARD INFORMATION

### SCHEMATIC ANNOTATIONS AND BOARD INFORMATION

Voltage Rails	Active in
VDC P3.3V_MICOM P5.0V_ALW P5.0V_LDO	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 P0.85V	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) 0.85V switched power rail (off in S3-S5)
VCC_CORE EGFX_CORE P1.05V (VCCP)	Core Voltage for CPU Core Voltage for GPU VCC for COUGARPOINT

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 (WLAN)	3	NC
3	Multi Memory Card Controller	4	LAN CONTROLLER
4	NC	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	Mini PCI Express (HSPA)		
9	SYSTEM PORT 2		
10	NC		
11	Camera		
12	USIM		
13	NC		

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

#### Crystal / Oscillator

TYPE	FREQUENCY	DEVICE	USAGE
Crystal	32.768KHz	PANTHER POINT	Real Time Clock
Crystal	25MHz	LAN	REALTEK
Crystal	25MHz	PANTHER POINT	
Crystal	27MHz	CHELSEA	

#### LCD Pannel Detect (TBD)

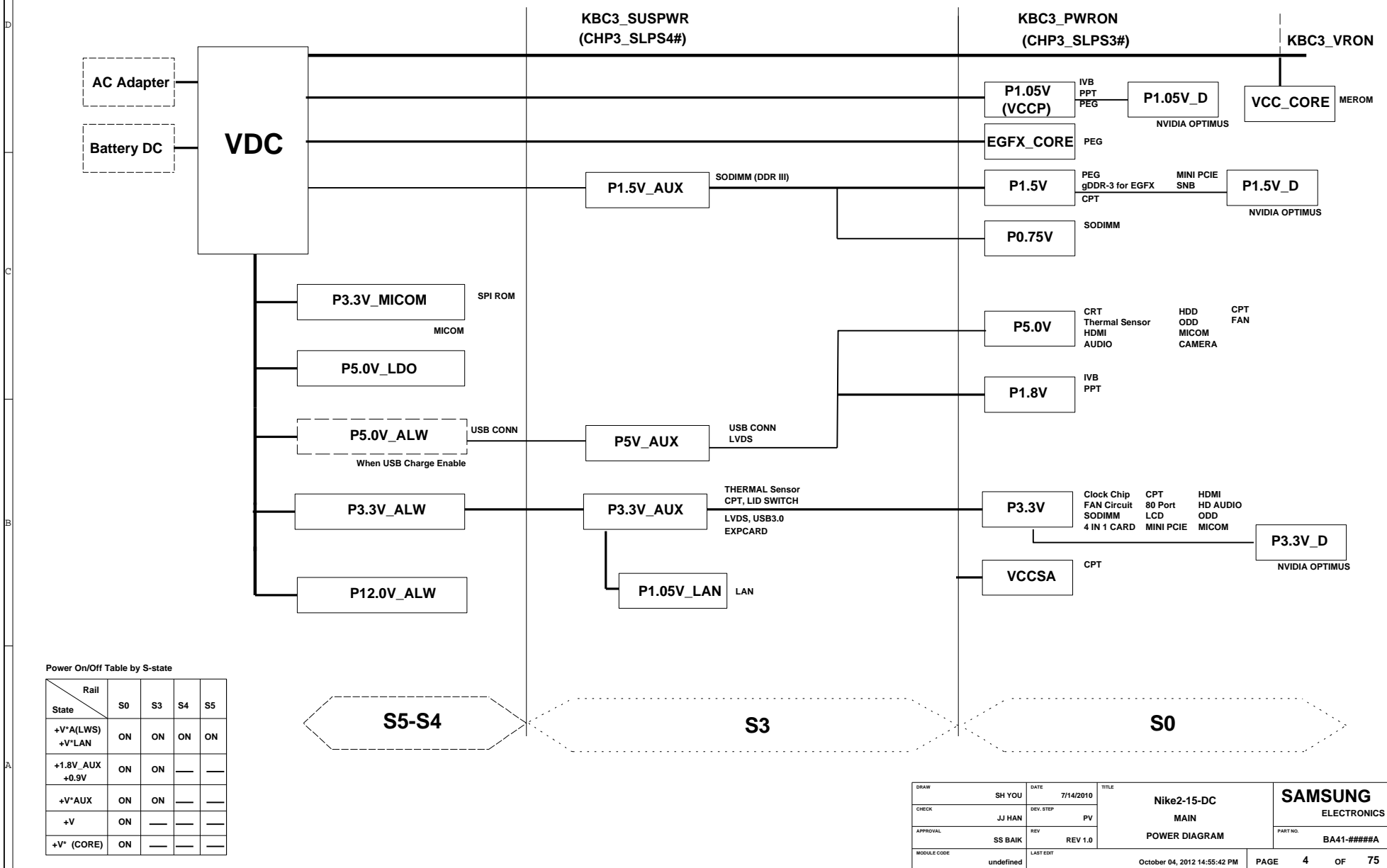
Devices	Resolution	PANNEL_DETECT_0
---------	------------	-----------------

#### I<sup>2</sup>C / SMB Address

Devices	Address	Hex	Bus
PANTHER POINT	Master	-	SMBUS Master
CPU Thermal Sensor	0011 000X	30h	-
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	-

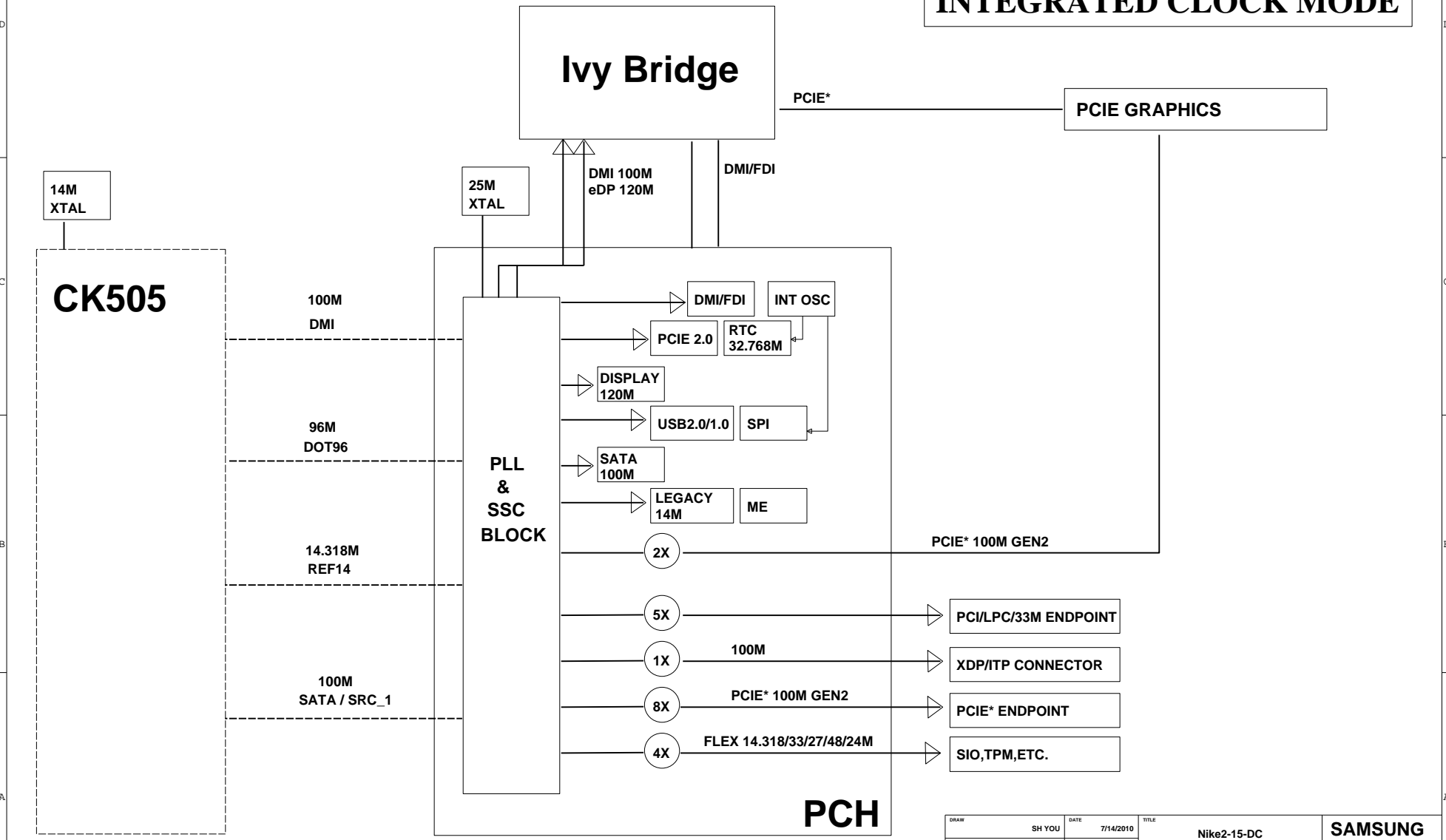
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CHECK	JJ HAN	DEV. STEP	PV			
APPROVAL	SS BAIK	REV	REV 1.0			
MODULE CODE	undefined	LAST EDIT	October 04, 2012 14:55:42 PM	PAGE		
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## Rev 0.7



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CLOCK DISTRIBUTION Rev. 1.0  
INTEGRATED CLOCK MODE

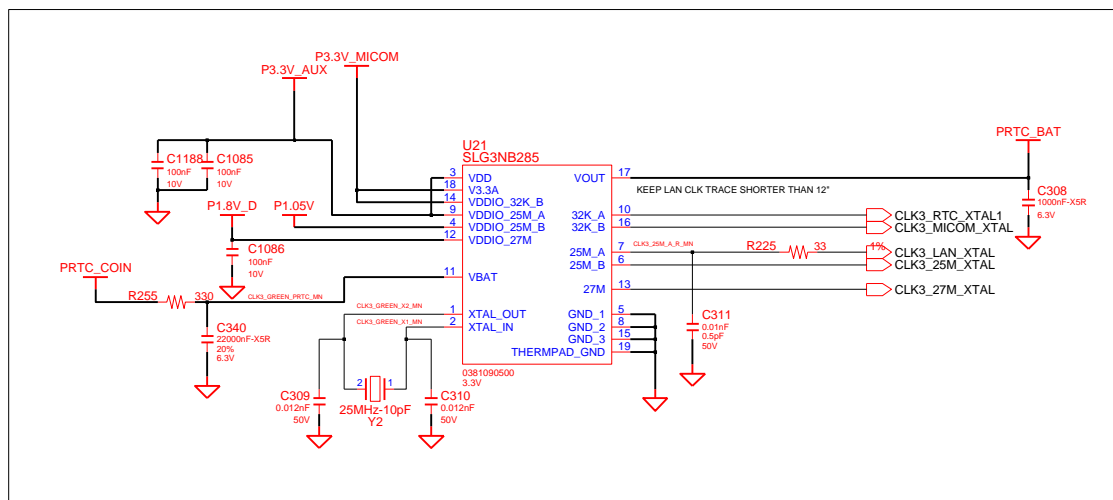


DRAW	SH YOU	DATE	7/14/2010	TITLE	Nike2-15-DC	SAMSUNG
CHECK	JJ HAN	DEV. STEP	PV	MAIN		ELECTRONICS
APPROVAL	SS BAIK	REV	REV 1.0	CLOCK DIAGRAM	PART NO.	BA41-####A
MODULE CODE	undefined	LAST EDIT	October 04, 2012 14:55:42 PM	PAGE	5	OF 75

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## CLOCK DISTRIBUTOR

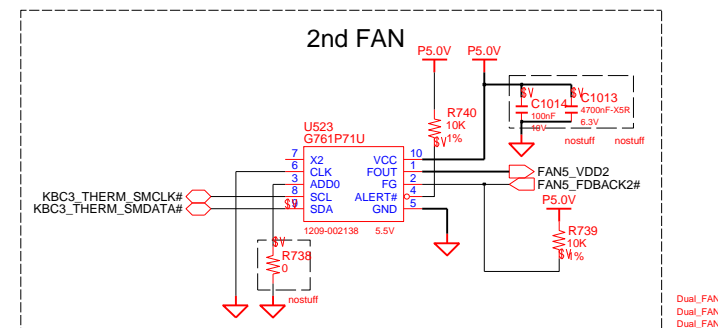
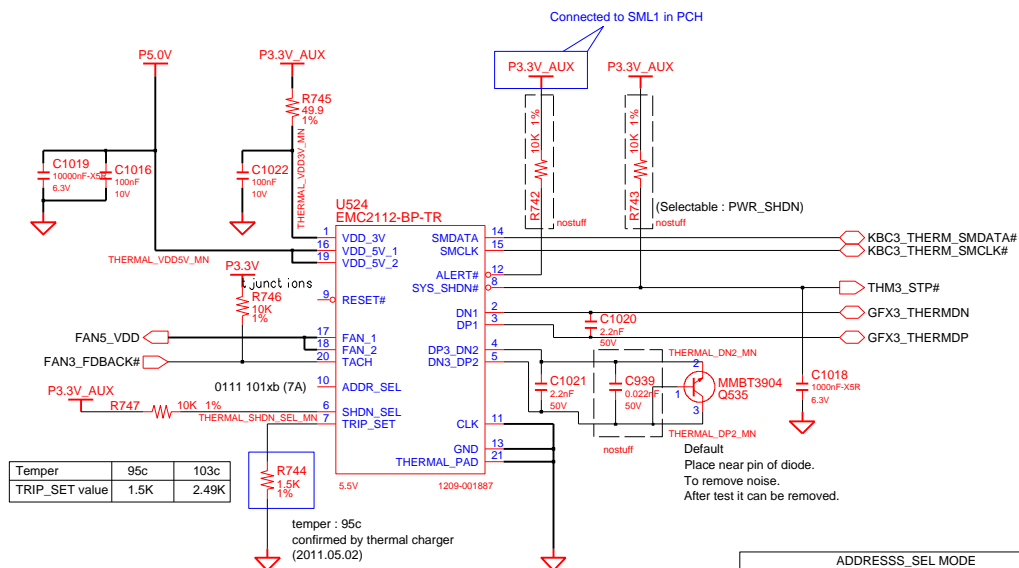


DESIGN	SH YOU	DATE	6/2/2011	TITLE	Nike2-15-DC	SAMSUNG ELECTRONICS
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APPROVAL	SS BAIK	REV	REV 1.0			PART NO. BA41-#####A
MODULE CODE		LAST EDIT	October 04, 2012 14:55:42 PM	PAGE	6	OF 75

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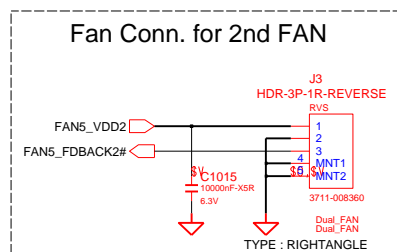
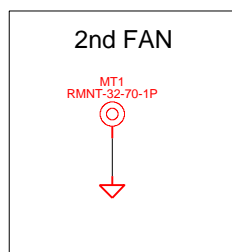
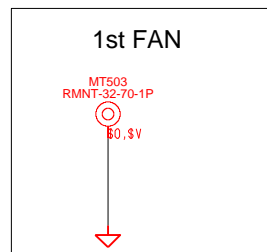
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## THERMAL SENSOR & FAN CONTROL



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

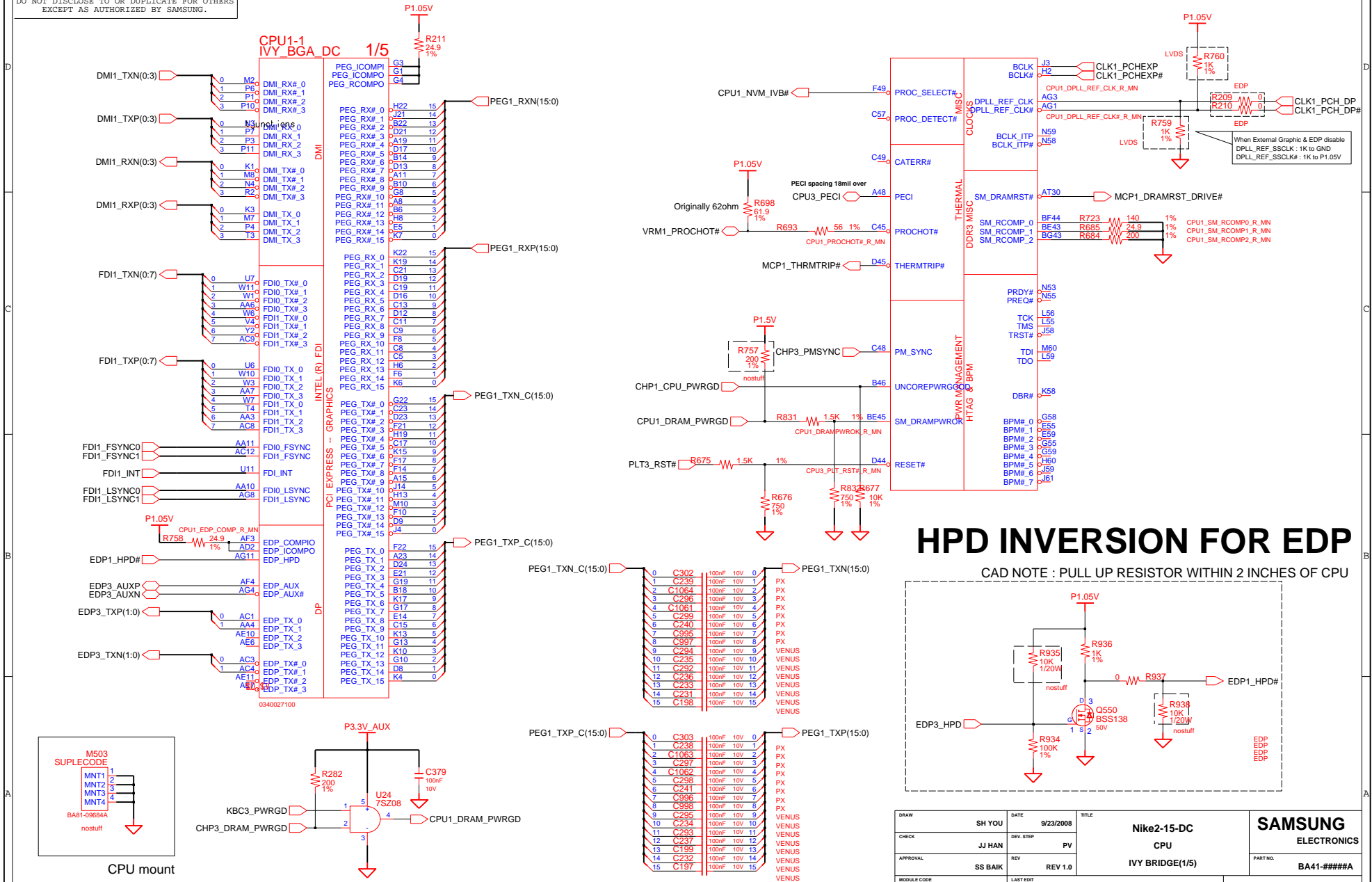
SHDNSEL MODE	
0	INTEL TR MODE
HIGH Z	AMD CPU/DIODE MODE
✓ 1	EXT.DIODE 2 MODE



DESIGN	SH YOU	DATE	7/14/2010	TITLE	Nike2-15-DC	SAMSUNG
CHECK	JJ HAN	DEV. STEP	PV		THERMAL SENSOR	ELECTRONICS
APPROVAL	SS BAIK	REV	REV 1.0		THERMAL SENSOR EMC2112	PART NO.
MODULE CODE		LAST EDIT				BA41-####A
				October 04, 2012 14:55:42 PM	PAGE	7 OF 75

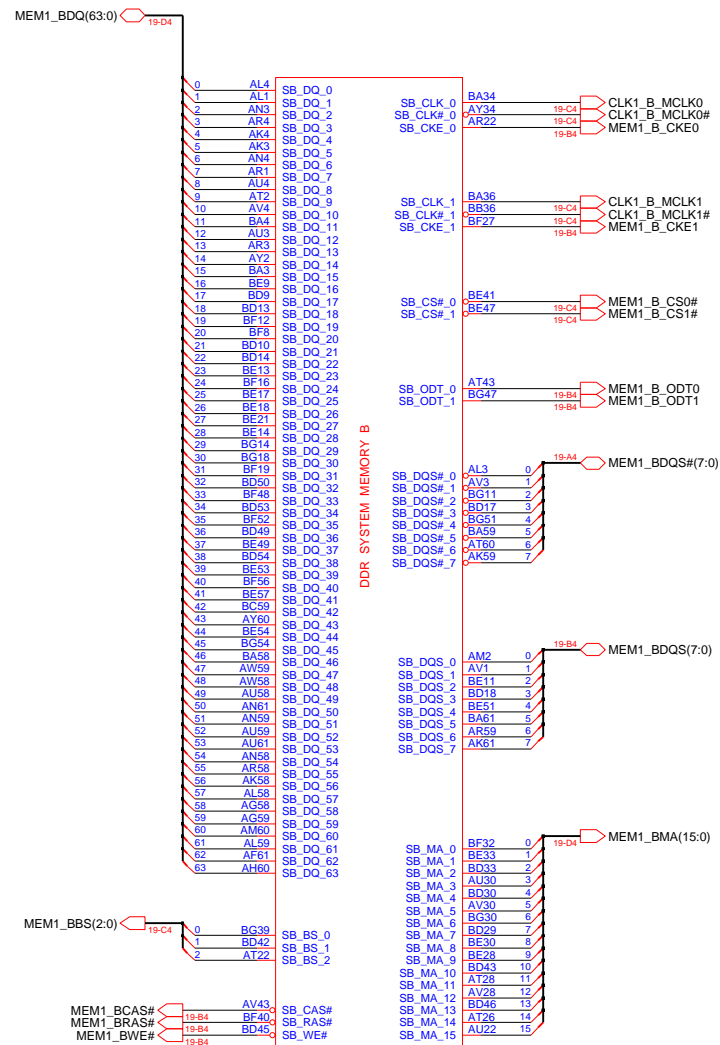
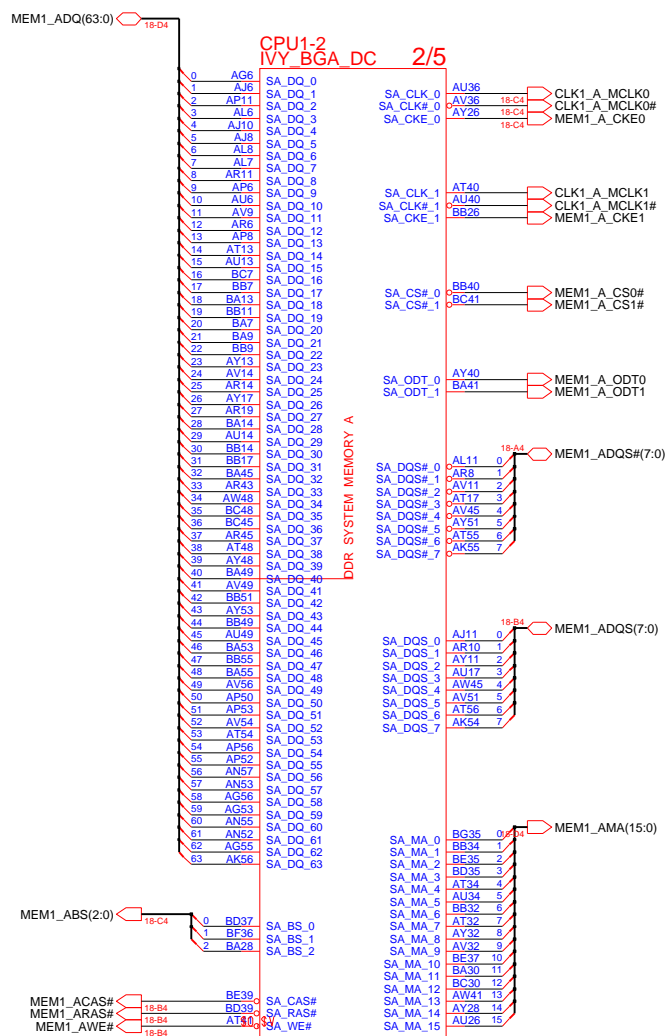
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## IVY BRIDGE PROCESSOR (DMI,PEG, FDI)





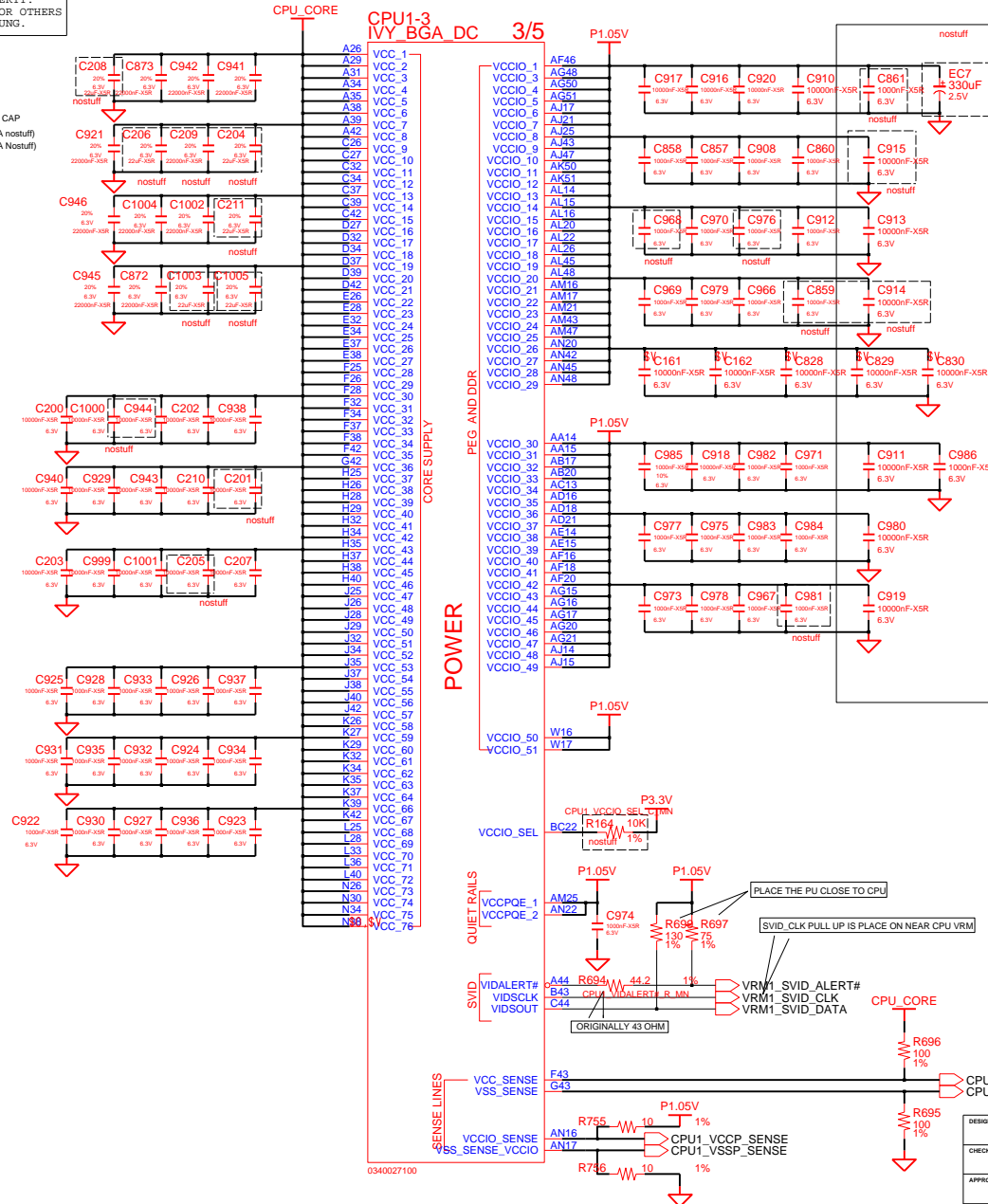
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DRAW	SH YOU	DATE	10/02/2010	TITLE	Nike2-15-DC CPU IVY BRIDGE(2/5)	SAMSUNG ELECTRONICS
CHECK	JJ HAN	DEV. STEP	PV			PART NO. BA41-####A
APPROVAL	SS BAIK	REV	REV 1.0			
MODULE CODE	undefined	LAST EDIT	October 04, 2012 14:55:42 PM	PAGE	9	OF 75

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Normal Solution Output CAP  
22uF : 16EA(7EA nostuff)  
10uF : 12EA(3EA nostuff)

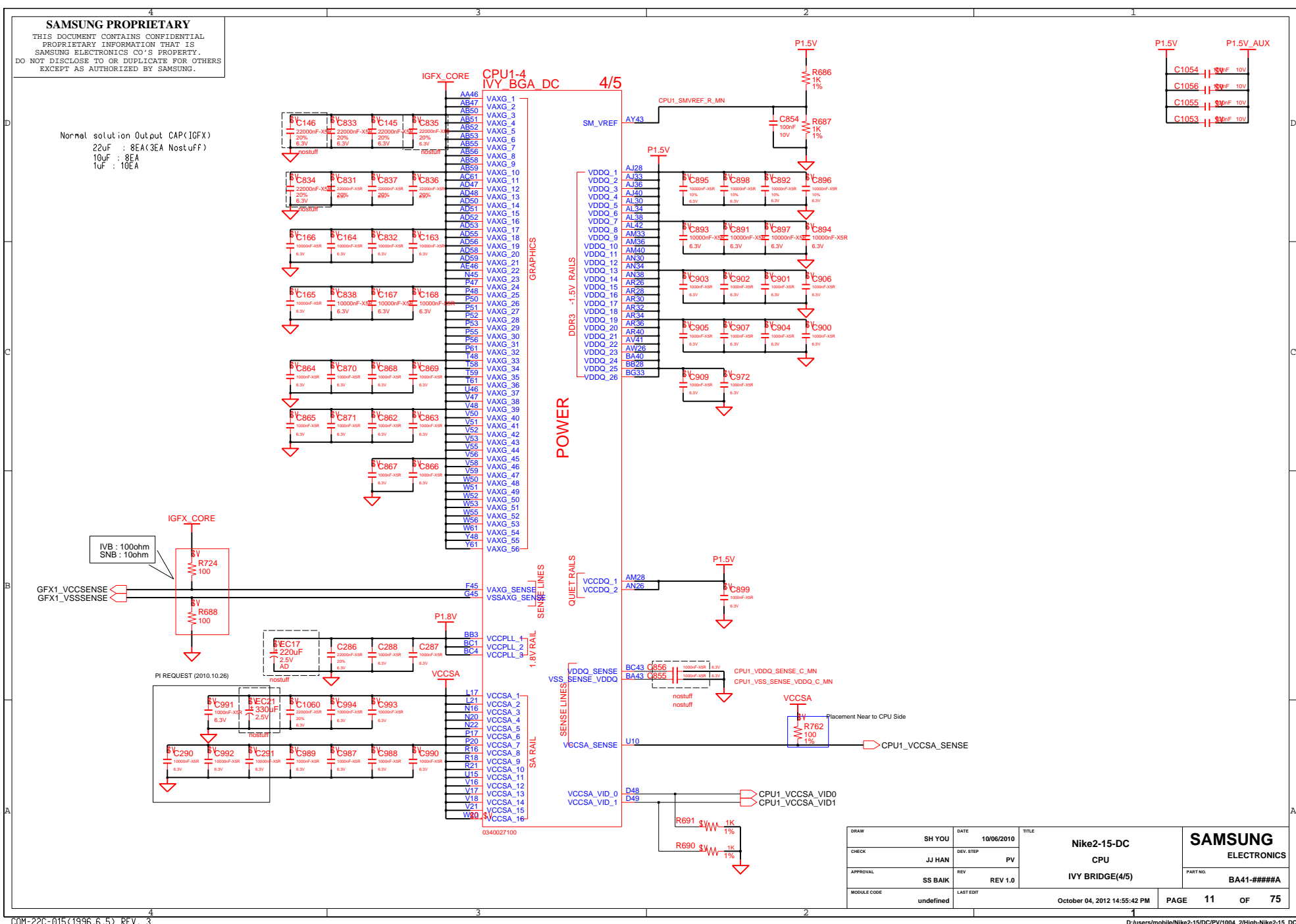


PI REQUEST (2010.10.26)

DESIGN	SH YOU	DATE	6/26/2009	TITLE	Nike2-15-DC CPU	SAMSUNG ELECTRONICS
CHECK	JJ HAN	DEV. STEP	PV			
APPROVAL	SS BAIK	REV	REV 1.0			
MODULE CODE		LAST EDIT				PART NO. BA41-####A
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```
Normal solution Output CAP(IGFX)
22uF : 8EA(3EA Nostuff)
10uF : 8EA
1uF : 10EA
```

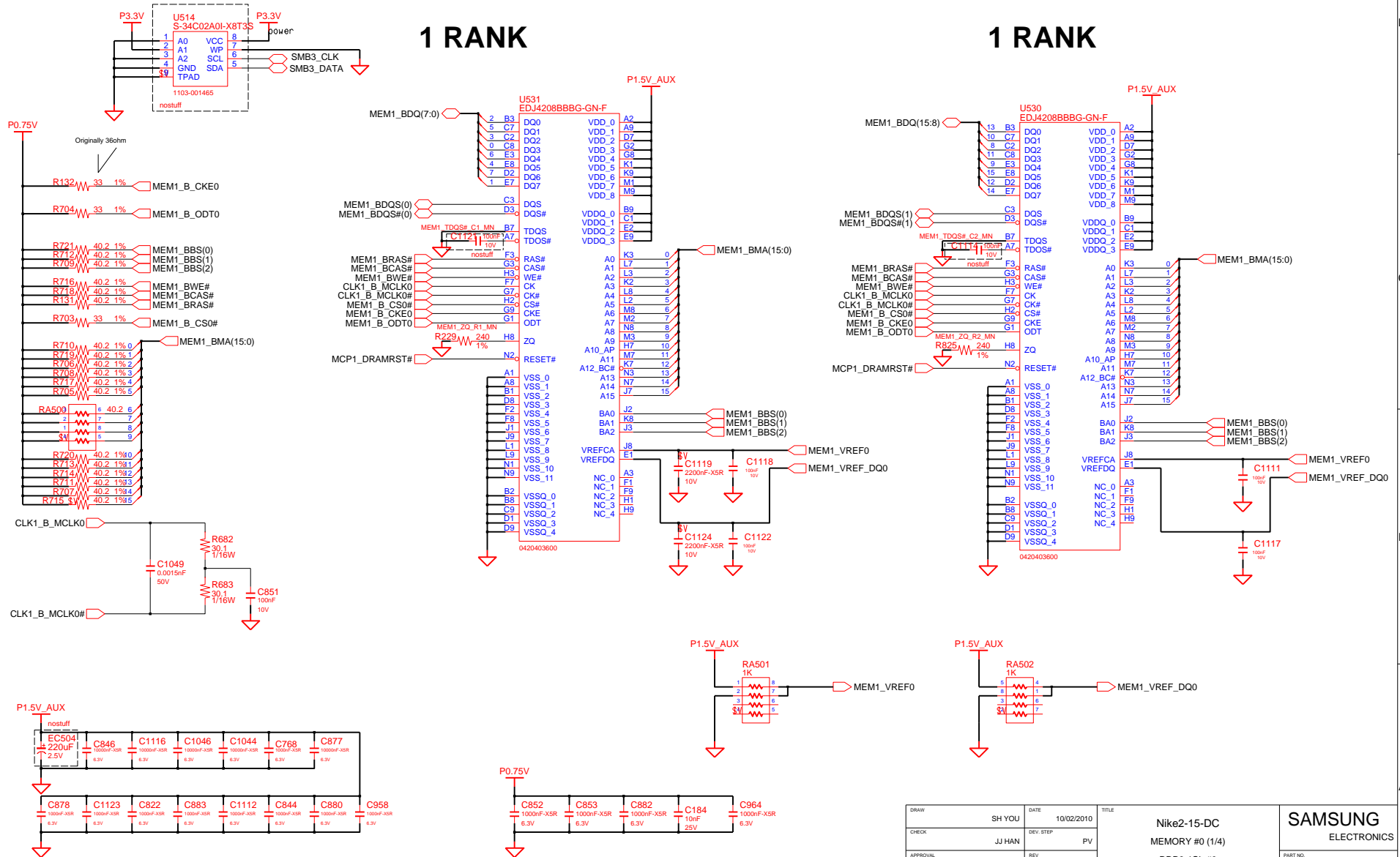




# DDR3 on board #B (1/4)

1 RANK

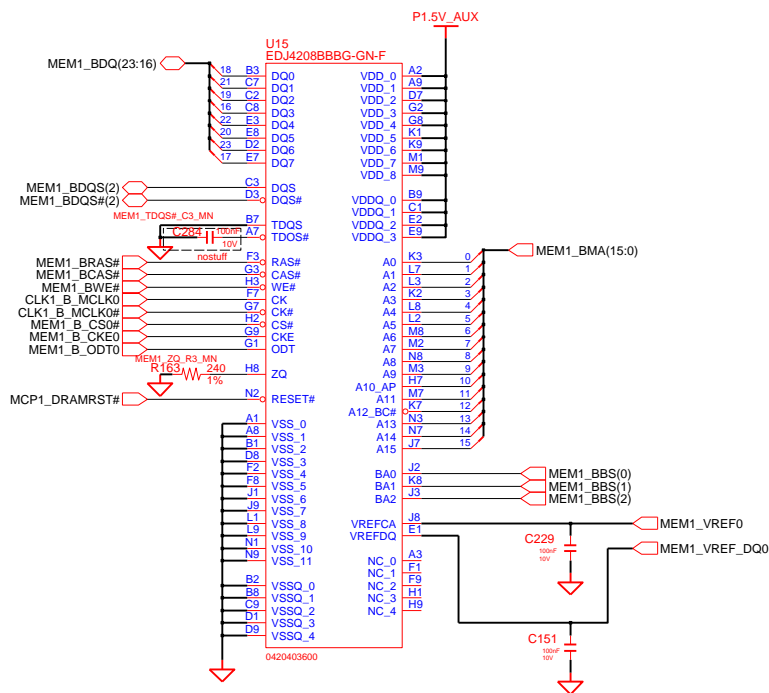
1 RANK



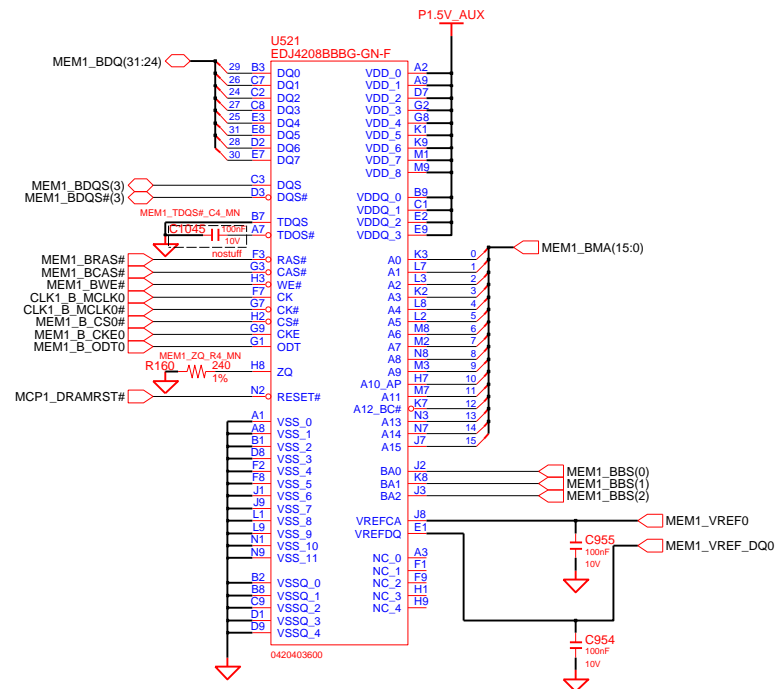
DRAW	SH YOU	DATE	10/02/2010	TITLE	Nike2-15-DC	SAMSUNG ELECTRONICS
CHECK	JJ HAN	DEV. STEP	PV		MEMORY #0 (1/4)	
APPROVAL	SS BAIK	REV	REV 1.0		DDR3 4Gb #0	
MODULE CODE	undefined	LAST EDIT				
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# DDR3 on board #B (2/4)

## 1 RANK



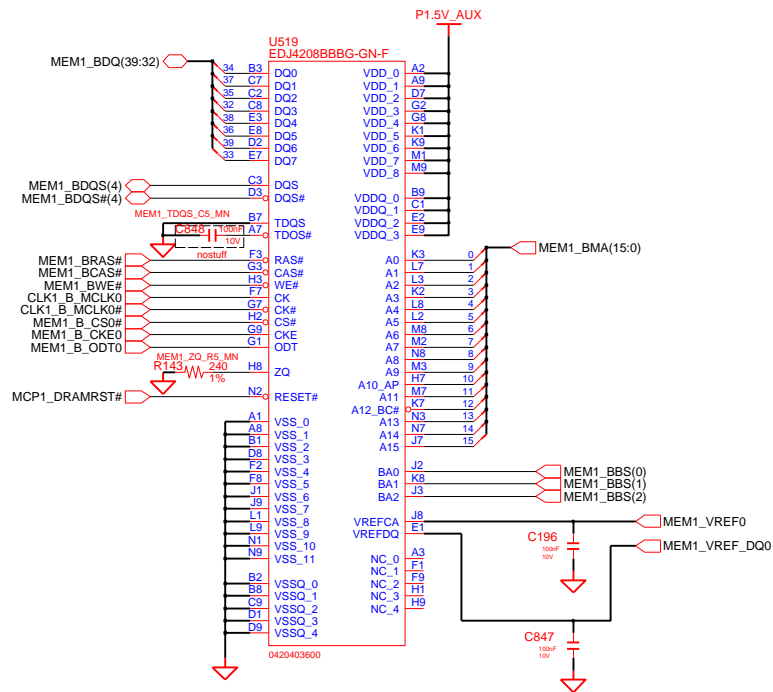
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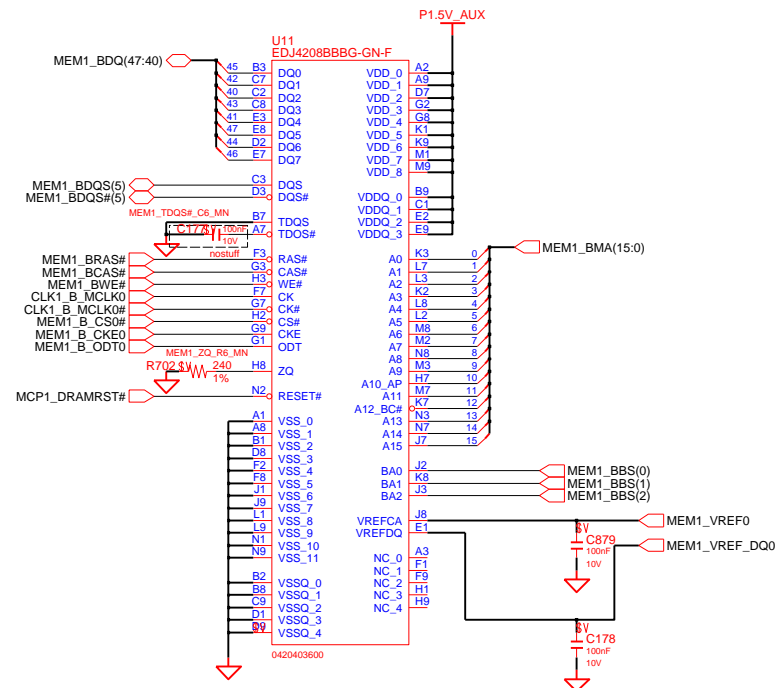
DRAW	SH YOU	DATE	10/02/2010	TITLE	Nike2-15-DC	SAMSUNG ELECTRONICS
CHECK	JJ HAN	DEV. STEP	PV		MEMORY #0 (2/4)	
APPROVAL	SS BAIK	REV	REV 1.0		DDR3 4Gb #0	PART NO. BA41-####A
MODULE CODE	undefined	LAST ENT		October 04, 2012 14:55:42 PM	PAGE 14 OF 75	

# DDR3 on board #B (3/4)

## 1 RANK



## 1 RANK

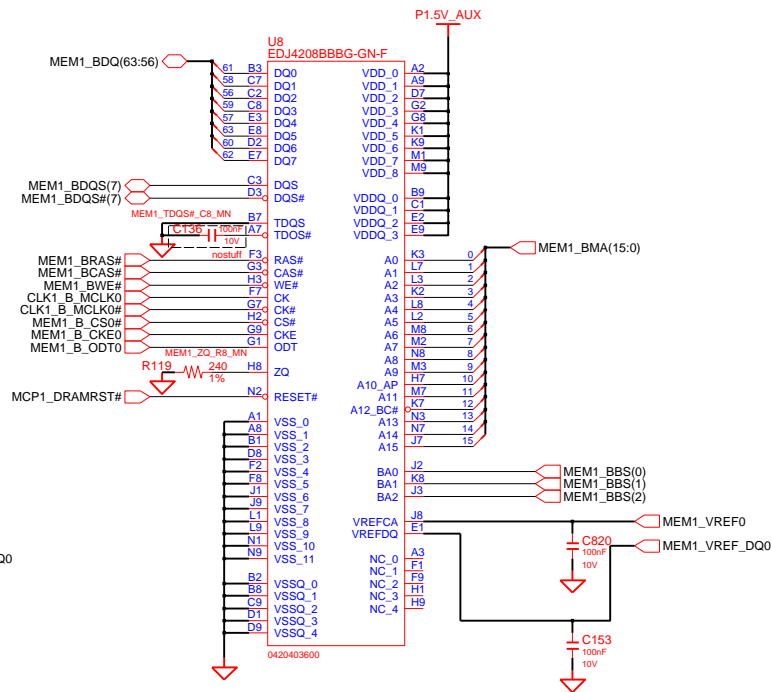
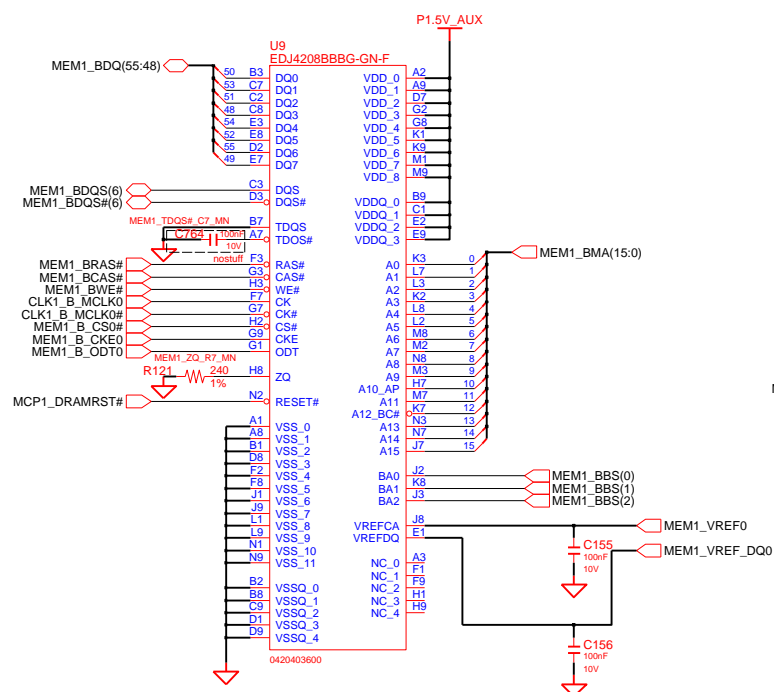


DRAW	SH YOU	DATE	10/02/2010	TITLE	Nike2-15-DC	SAMSUNG ELECTRONICS
CHECK	JJ HAN	DEV. STEP	PV		MEMORY #0 (3/4)	
APPROVAL	SS BAIK	REV	REV 1.0		DDR3 4Gb #0	
MODULE CODE	undefined	LAST ENT				
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# DDR3 on board #B (4/4)

1 RANK

1 RANK



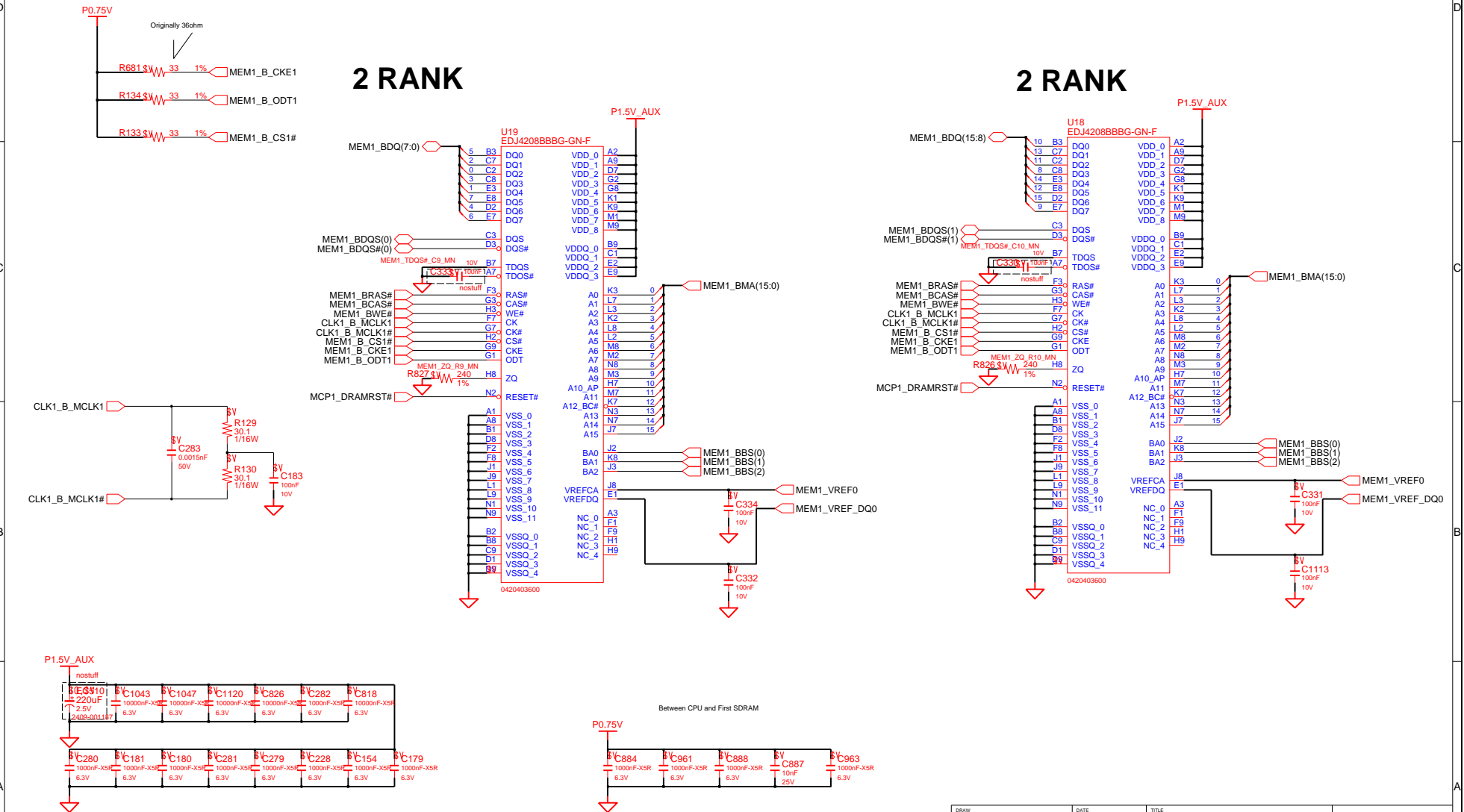
DRAW	SH YOU	DATE	10/02/2010	TITLE	Nike2-15-DC	SAMSUNG ELECTRONICS
CHECK	JJ HAN	DEV. STEP	PV		MEMORY #0 (4/4)	
APPROVAL	SS BAIK	REV	REV 1.0		DDR3 4Gb #0	
MODULE CODE	undefined	LAST ENT				
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# DDR3 on board #B (1/4)

## 2 RANK

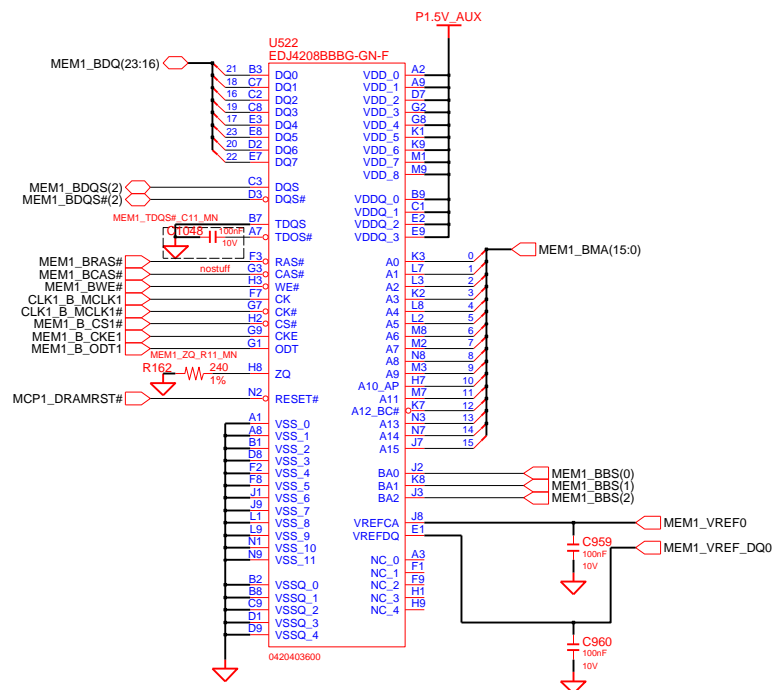
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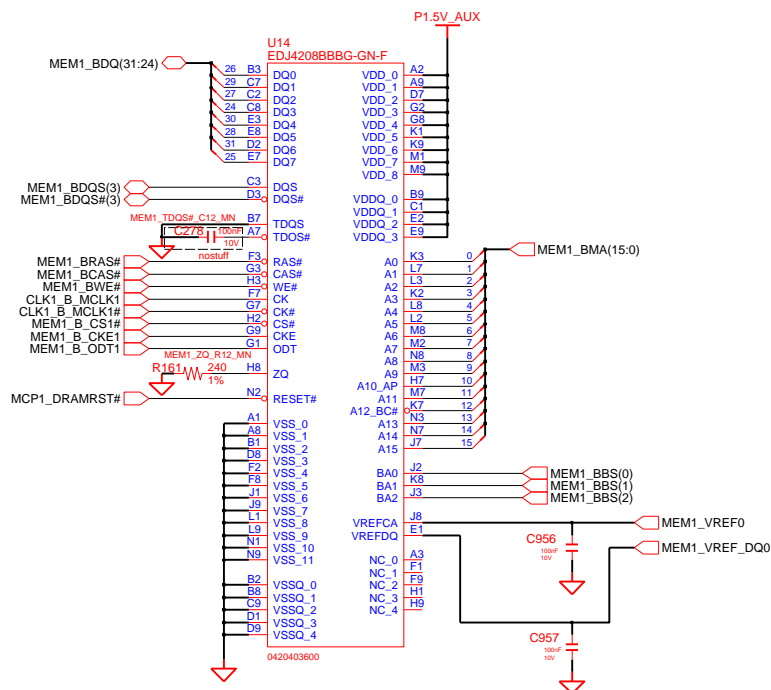
DRAW	SH YOU	DATE	10/02/2010	TITLE	Nike2-15-DC	SAMSUNG ELECTRONICS
CHECK	JJ HAN	DEV. STEP	PV		MEMORY #0 2RANK(1/4)	
APPROVAL	SS BAIK	REV	REV 1.0		DDR3 4Gb #0	
MODULE CODE	undefined	LAST ENT				
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## DDR3 on board #B (2/4)

### 2 RANK



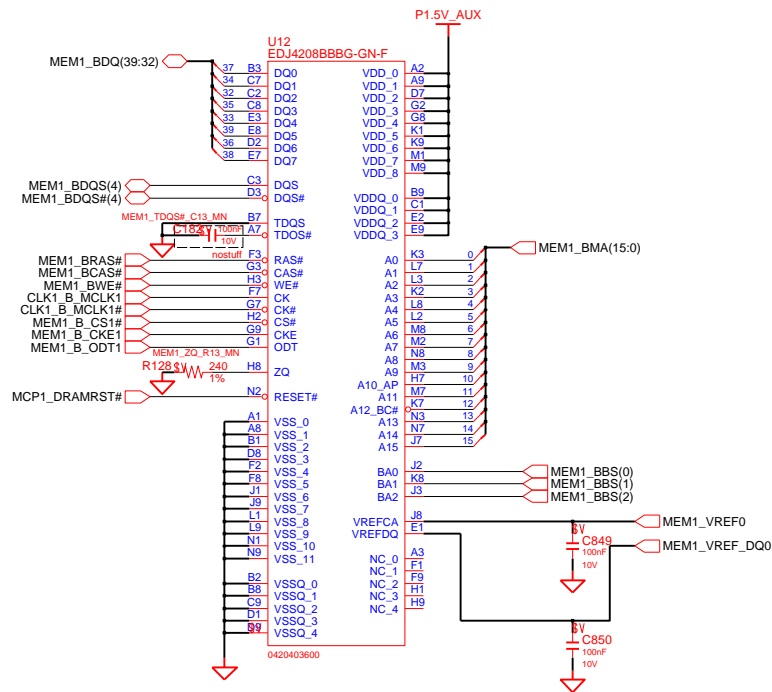
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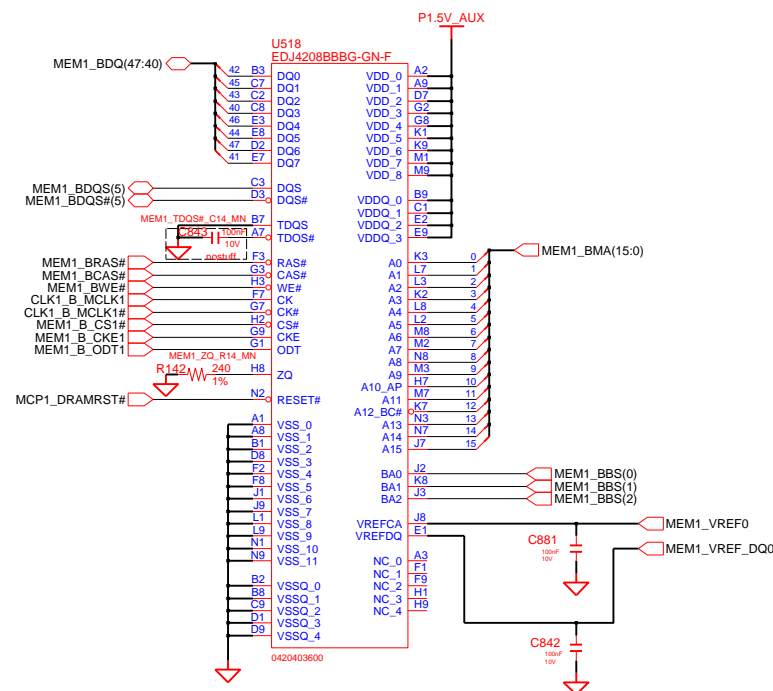
DRAW	SH YOU	DATE	10/02/2010	TITLE	Nike2-15-DC	SAMSUNG ELECTRONICS
CHECK	JJ HAN	DEV. STEP	PV		MEMORY #0 2RANK(2/4)	
APPROVAL	SS BAIK	REV	REV 1.0		DDR3 4Gb #0	
MODULE CODE	undefined	LAST ENT		October 04, 2012 14:55:42 PM	PAGE 18 OF 75	PART NO. BA41-####A

## DDR3 on board #B (3/4)

### 2 RANK



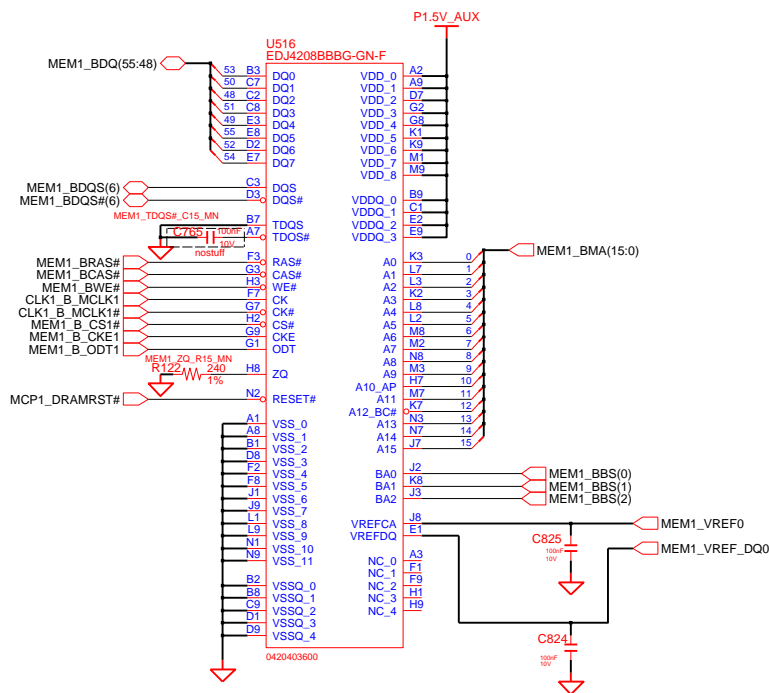
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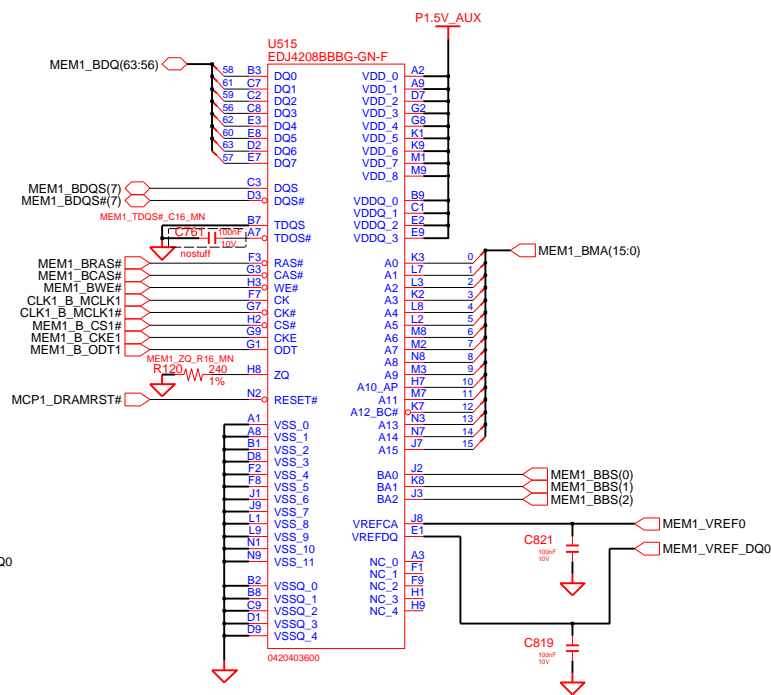
DRAW	SH YOU	DATE	10/02/2010	TITLE	Nike2-15-DC	SAMSUNG ELECTRONICS
CHECK	JJ HAN	DEV. STEP	PV	MEMORY #0 2RANK(3/4)	PART NO.	
APPROVAL	SS BAIK	REV	REV 1.0	DDR3 4Gb #0	BA41-####A	
MODULE CODE	undefined	LAST ENT	October 04, 2012 14:55:42 PM	PAGE	19	OF 75

## DDR3 on board #B (4/4)

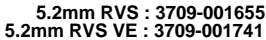
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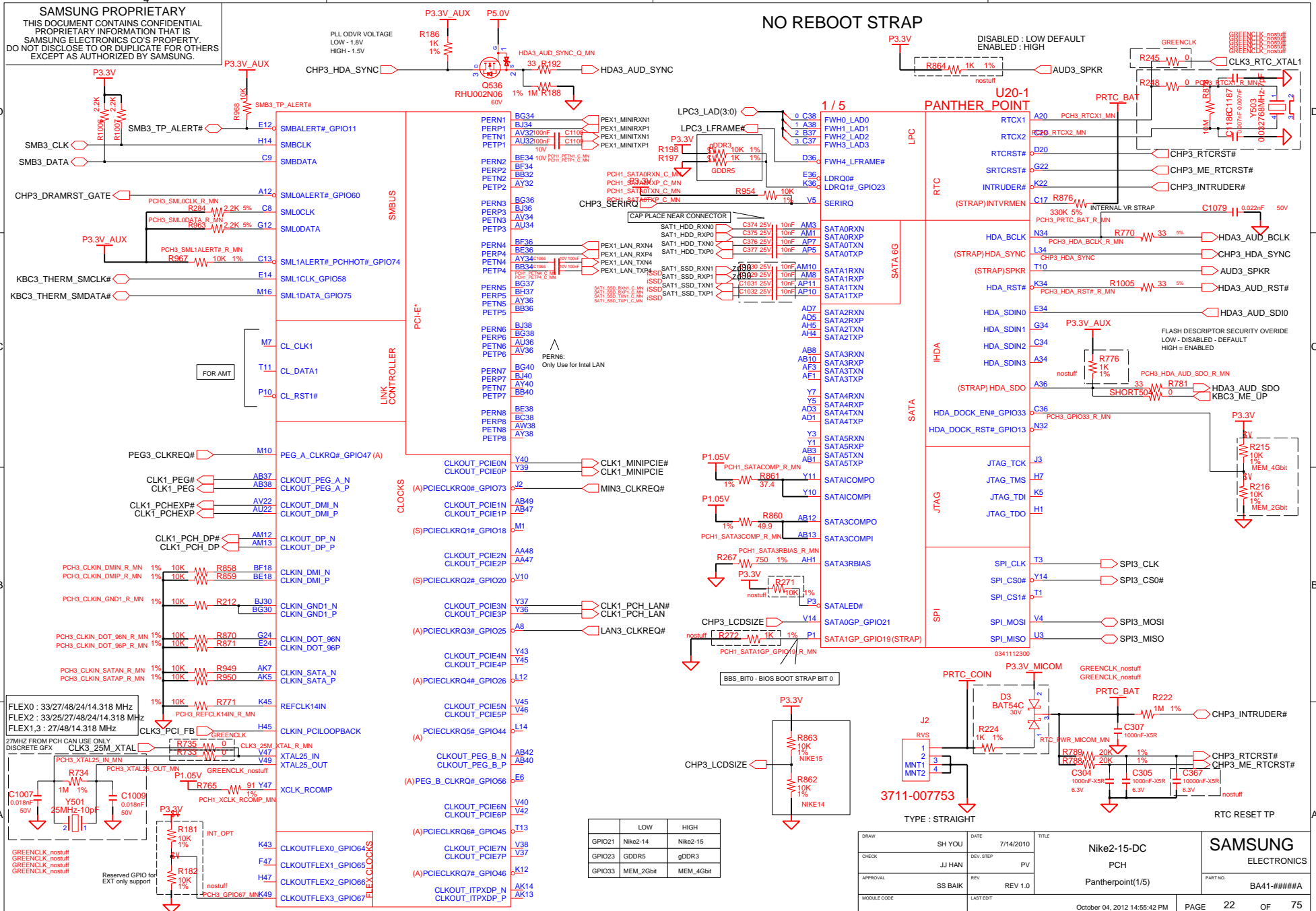
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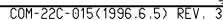


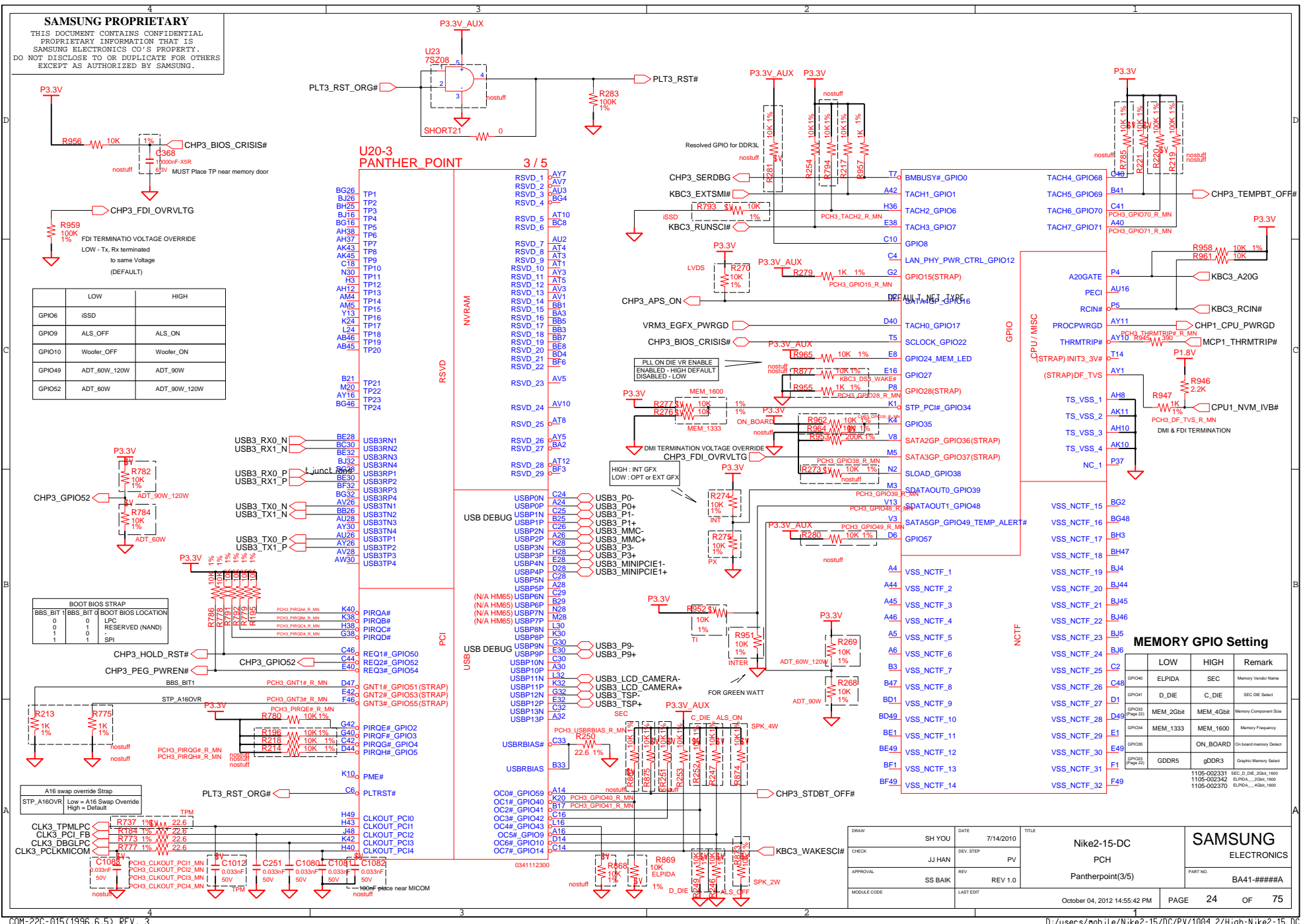
DRAW	SH YOU	DATE	10/02/2010	TITLE	Nike2-15-DC	SAMSUNG ELECTRONICS
CHECK	JJ HAN	DEV. STEP	PV		MEMORY #0 2 RANK(4/4)	
APPROVAL	SS BAIK	REV	REV 1.0		DDR3 4Gb #0	PART NO.
MODULE CODE	undefined	LAST ENT				BA41-####A
				October 04, 2012 14:55:42 PM	PAGE	20 OF 75



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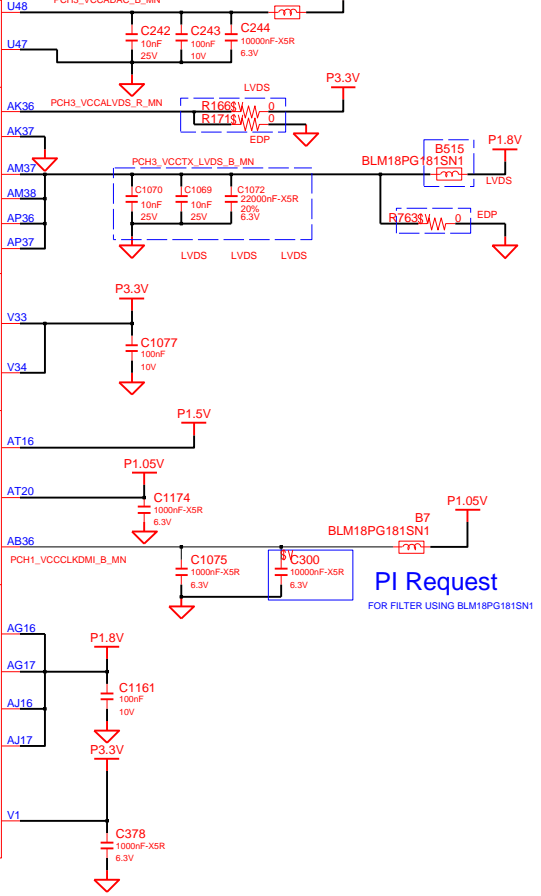
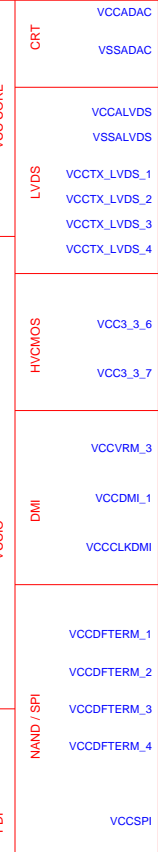
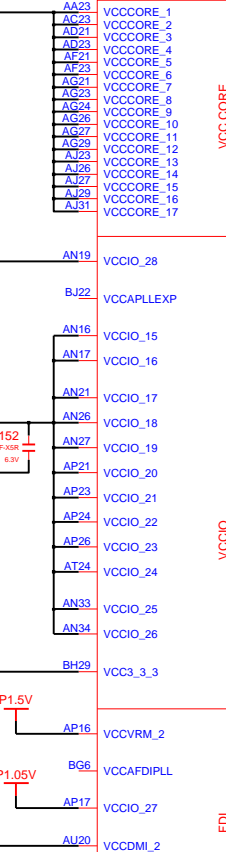
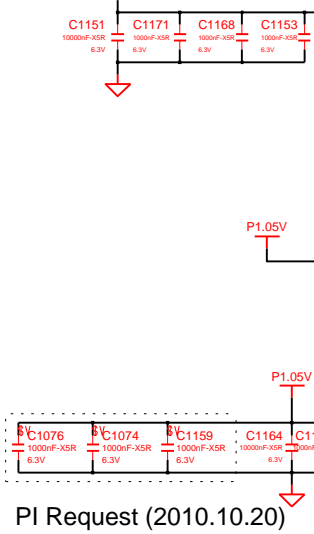
**U20-5  
PANTHER POINT**

This power share with thermal sensor

5 / 5

AY4	VSS159	VSS259	H46
AY42	VSS160	VSS260	K18
AY46	VSS161	VSS261	K39
AY8	VSS162	VSS262	K46
B11	VSS163	VSS263	L1
B15	VSS164	VSS264	L7
B19	VSS165	VSS265	L13
B23	VSS166	VSS266	L2
B27	VSS167	VSS267	L20
B31	VSS168	VSS268	L26
B35	VSS169	VSS269	L28
B39	VSS170	VSS270	L36
B7	VSS171	VSS271	L48
F45	VSS172	VSS272	M12
BB12	VSS173	VSS273	M16
BB16	VSS174	VSS274	M18
BB20	VSS175	VSS275	M22
BB22	VSS176	VSS276	M24
BB24	VSS177	VSS277	M30
BB28	VSS178	VSS278	M32
BB30	VSS179	VSS279	M34
BB38	VSS180	VSS280	M38
BB4	VSS181	VSS281	M4
BB46	VSS182	VSS282	M42
BC14	VSS183	VSS283	M48
BC18	VSS184	VSS284	M8
BC2	VSS185	VSS285	N18
BC22	VSS186	VSS286	N28
BC26	VSS187	VSS287	N47
BC32	VSS188	VSS288	P18
BC34	VSS189	VSS289	P30
BC36	VSS190	VSS290	P40
BC40	VSS191	VSS291	P47
BC42	VSS192	VSS292	P7
BC46	VSS193	VSS293	P21
BD5	VSS194	VSS294	P23
BE22	VSS195	VSS295	P24
BE26	VSS196	VSS296	P27
BE40	VSS197	VSS297	P37
BF10	VSS198	VSS298	T37
BF12	VSS199	VSS299	T4
BF16	VSS200	VSS300	T14
BF20	VSS201	VSS301	T34
BF22	VSS202	VSS302	T47
BF24	VSS203	VSS303	T8
BF26	VSS204	VSS304	V17
BF28	VSS205	VSS305	V25
BF3	VSS206	VSS306	V27
BF38	VSS207	VSS307	V29
BF40	VSS208	VSS308	V31
BF8	VSS209	VSS309	V36
BG17	VSS210	VSS310	V39
BG21	VSS211	VSS311	V43
BG23	VSS212	VSS312	V7
BG33	VSS213	VSS313	W19
BG44	VSS214	VSS314	W2
BC8	VSS215	VSS315	W27
BH11	VSS216	VSS316	W48
BH15	VSS217	VSS317	Y12
BH17	VSS218	VSS318	Y35
BH19	VSS219	VSS319	Y4
H10	VSS220	VSS320	Y46
BH27	VSS221	VSS321	Y8
BH31	VSS222	VSS322	BG29
BH33	VSS223	VSS323	N24
BH35	VSS224	VSS324	AJ3
BH39	VSS225	VSS325	AD47
BH43	VSS226	VSS326	B42
BH7	VSS227	VSS327	BE10
D3	VSS228	VSS328	BG41
D12	VSS229	VSS329	G14
D16	VSS230	VSS330	H16
D18	VSS231	VSS331	T36
D22	VSS232	VSS332	BG22
D24	VSS233	VSS333	BG24
D26	VSS234	VSS334	C22
D30	VSS235	VSS335	AP13
D32	VSS236	VSS336	M14
D34	VSS237	VSS337	AP3
D38	VSS238	VSS338	AP1
D42	VSS239	VSS339	BE16
D8	VSS240	VSS340	BC16
E18	VSS241	VSS341	BG28
E26	VSS242	VSS342	BJ28
G18	VSS243	VSS343	
G20	VSS244	VSS344	
G26	VSS245	VSS345	
G28	VSS246	VSS346	
G36	VSS247	VSS347	
G48	VSS248	VSS348	
H12	VSS249	VSS349	
H18	VSS250	VSS350	
H22	VSS251	VSS351	
H24	VSS252	VSS352	
H26	VSS253		
H30	VSS254		
H32	VSS255		
H34	VSS256		
F3	VSS257		
VSS258			

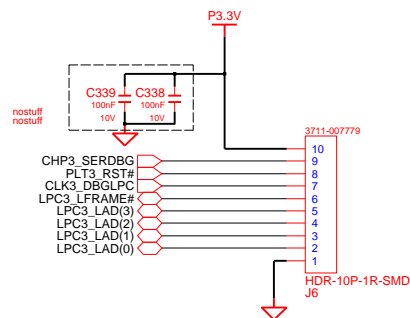
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DRAW	SH YOU	DATE	7/14/2010	TITLE Nike2-15-DC PCH Pantherpoint(5/5)		SAMSUNG ELECTRONICS	
CHECK	JJ HAN	DEV. STEP	PV				
APPROVAL	SS BAIK	REV	REV 1.0	PART NO. BA41-####A			
MODULE CODE	undefined	LAST EDIT	October 04, 2012 14:55:42 PM			PAGE	26

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# 80H PORT DEBUG



DESIGN	SH YOU	DATE	7/14/2010	TITLE	Nike2-15-DC	SAMSUNG
CHECK	JJ HAN	DEV. STEP	PV	DEBUG PORT		ELECTRONICS
APPROVAL	SS BAIK	REV	REV 1.0	SPI ROM & 80H DECODER	PART NO.	BA41-####A
MODULE CODE	LAST EDIT				PAGE	27 OF 75
				October 04, 2012 14:55:42 PM		



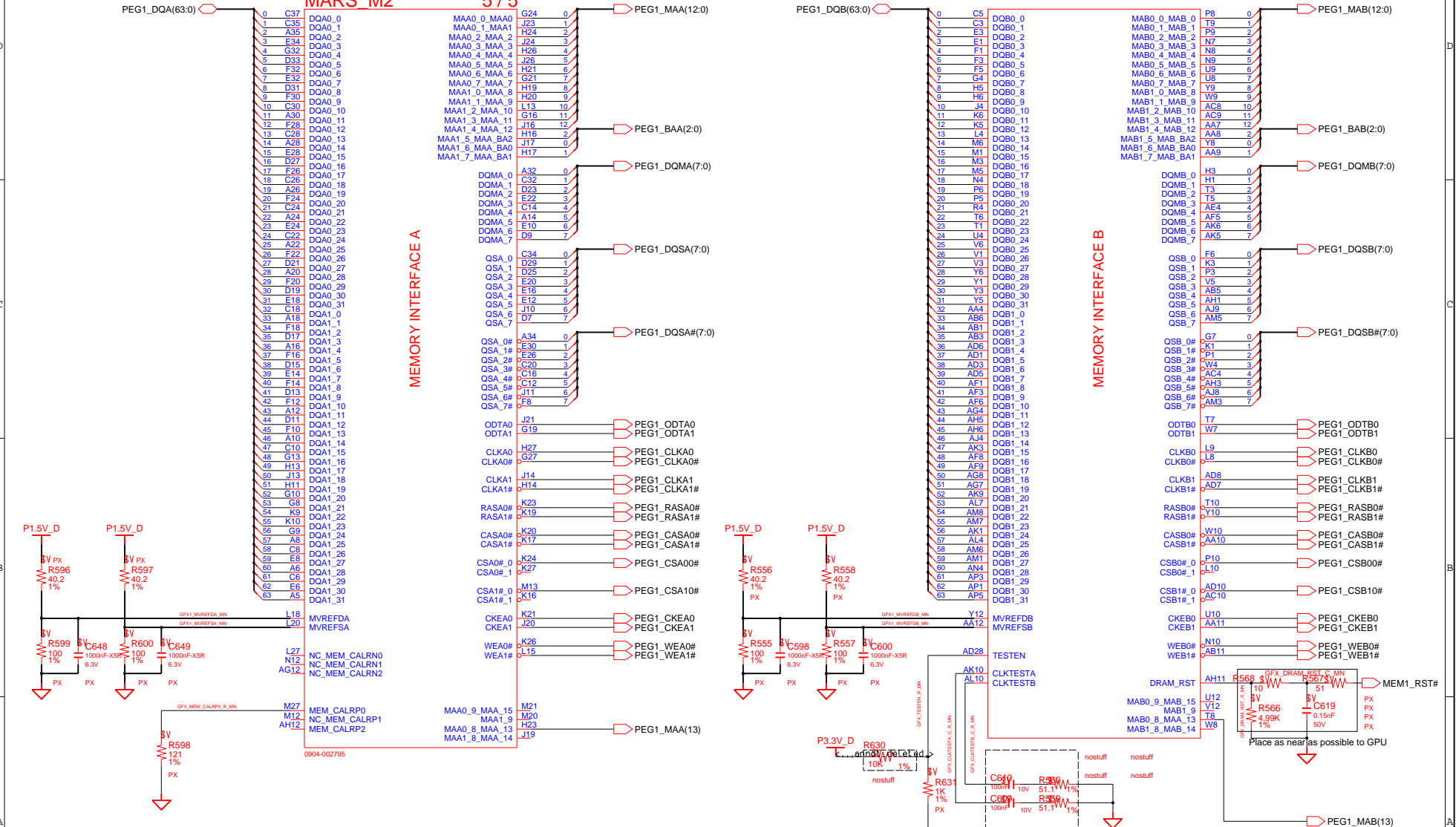
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U4-5  
MARS\_M2

5 / 5

MEMORY INTERFACE A

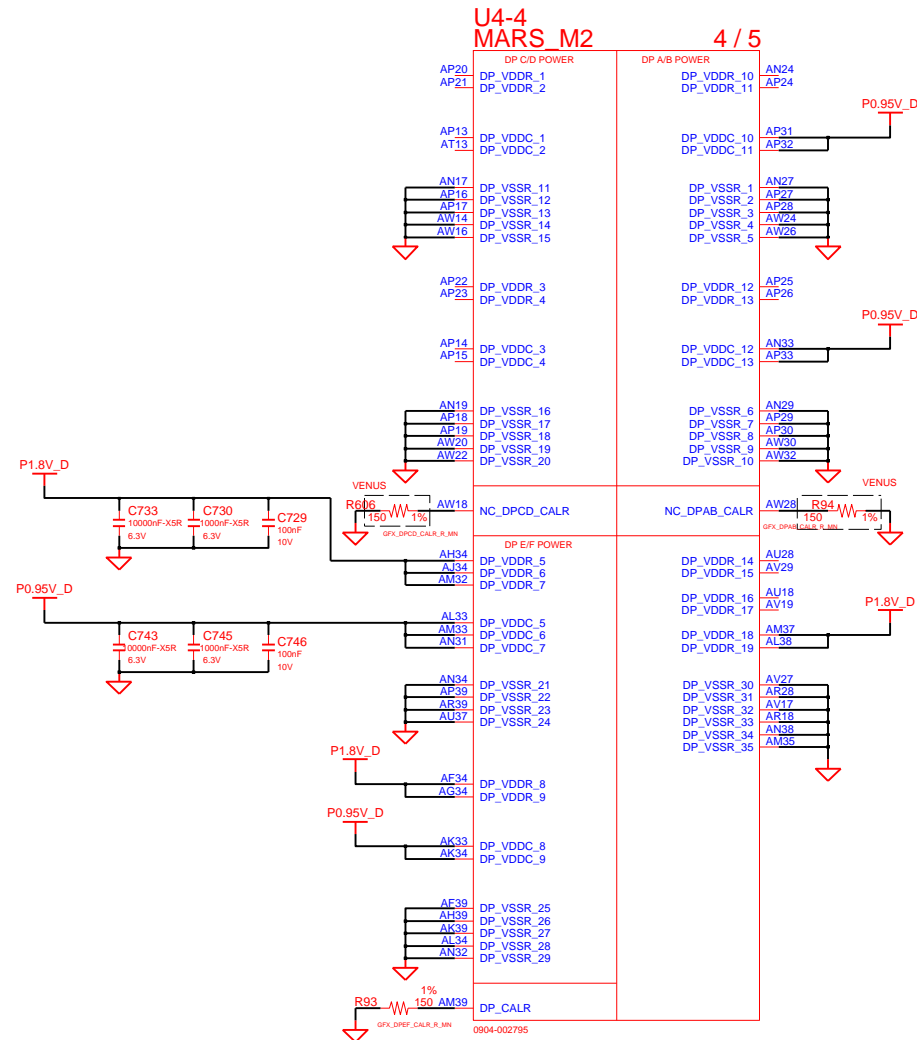
MEMORY INTERFACE B



DESIGN	SH YOU	DATE	7/14/2010	TITLE	Nike2-15-DC
CHECK	JJ HAN	DEV. STEP	PV		MARS
APPROVAL	SS BAIK	REV	REV 1.0		MARS (2/5)
MODULE CODE		LAST EDIT			
October 04, 2012 14:55:42 PM					PAGE 29 OF 75

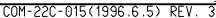
SAMSUNG	
ELECTRONICS	
PART NO.	BA41-####A

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DESIGN	SH YOU	DATE	7/14/2010	TITLE  Nike2-15-DC  MARS  MARS (3/5)		SAMSUNG ELECTRONICS			
CHECK	JJ HAN	DEV. STEP	PV						
APPROVAL	SS BAIK	REV	REV 1.0						
				PART NO.		BA41-####A			
MODULE CODE	LAST EDIT			October 04, 2012 14:55:42 PM		PAGE	30	OF	75

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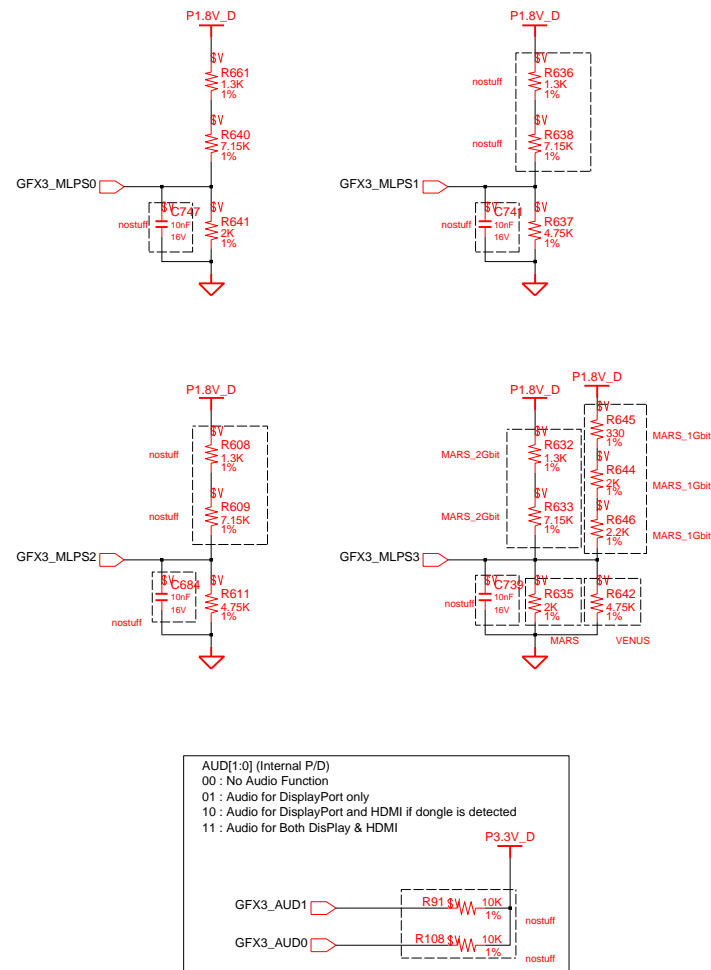
STRAP PIN	BIT 5	BIT 4	BIT 3	BIT 2	BIT 1
PS_0	AUD_PINSTRAP[0]	N/A	ROM_CONFIG[2]	ROM_CONFIG[1]	ROM_CONFIG[0]
PS_1	TX_DEEMPH_EN	TX_FULL_SWING	N/A	CLK_PM_EN	GEN3_EN
PS_2	N/A	VGA_DIS	BIOS_ROM_EN	N/A	N/A
PS_3	AUD_PINSTRAP[2]	AUD_PINSTRAP[1]	BOARD_CONFIG[2]	BOARD_CONFIG[1]	BOARD_CONFIG[0]

CAPACITOR	Bits[5:4]
680	00
82	01
10	10
NC	11

PULL UP	PULL DOWN	Bits[3:1]
NC	4750	000
8450	2000	001
4530	2000	010
6980	4990	011
4530	4990	100
3240	5620	101
3400	10000	110
4750	NC	111

ROM_CONFIG[2:0] If BIOS_ROM_EN=1, ROM type If BIOS_ROM_EN=0, Memory Aperture Size 000 : 128MB 001 : 256MB 010 : 64MB 011 : Reserved	BIOS_ROM_EN 0 : External BIOS ROM disabled 1 : External BIOS ROM enabled
AUD_PINSTRAP[2:0] 111 : No endpoints 110 : One endpoint 101 : Two endpoints 100 : Three endpoints 011 : Four endpoints  000 : All endpoints	TX_FULL_SWING 0 : 50% TX output swing => Low loss interconnection 1 : Full TX output swing
AUD_PINSTRAP[2:0] 111 : No endpoints 110 : One endpoint 101 : Two endpoints 100 : Three endpoints 011 : Four endpoints  000 : All endpoints	TX_DEEMPH_EN 0 : TX DE-EMPHASIS disabled (eg. on-board) 1 : TX DE-EMPHASIS enabled (eg. MXM)
BOARD_CONFIG[2:0] Used for board configuration (eg: Different Memory Vendors) If don't use : 000	GEN3_EN 0 : 5.0GT/s capable for PCIe DEVICE 1 : 8.0GT/s capable for PCIe DEVICE
BOARD_CONFIG[2:0] Used for board configuration (eg: Different Memory Vendors) If don't use : 000	CLK_PM_EN 0 : CLKREQB Power management disabled 1 : CLKREQB Powermanagement enabled
001 : 2Gbit GDDR5 Samsung in MARS 010 : 1Gbit GDDR5 Samsung in MARS	VGA_DIS 0 : VGA Controller capacity enabled 1 : Not recognized as VGA controller

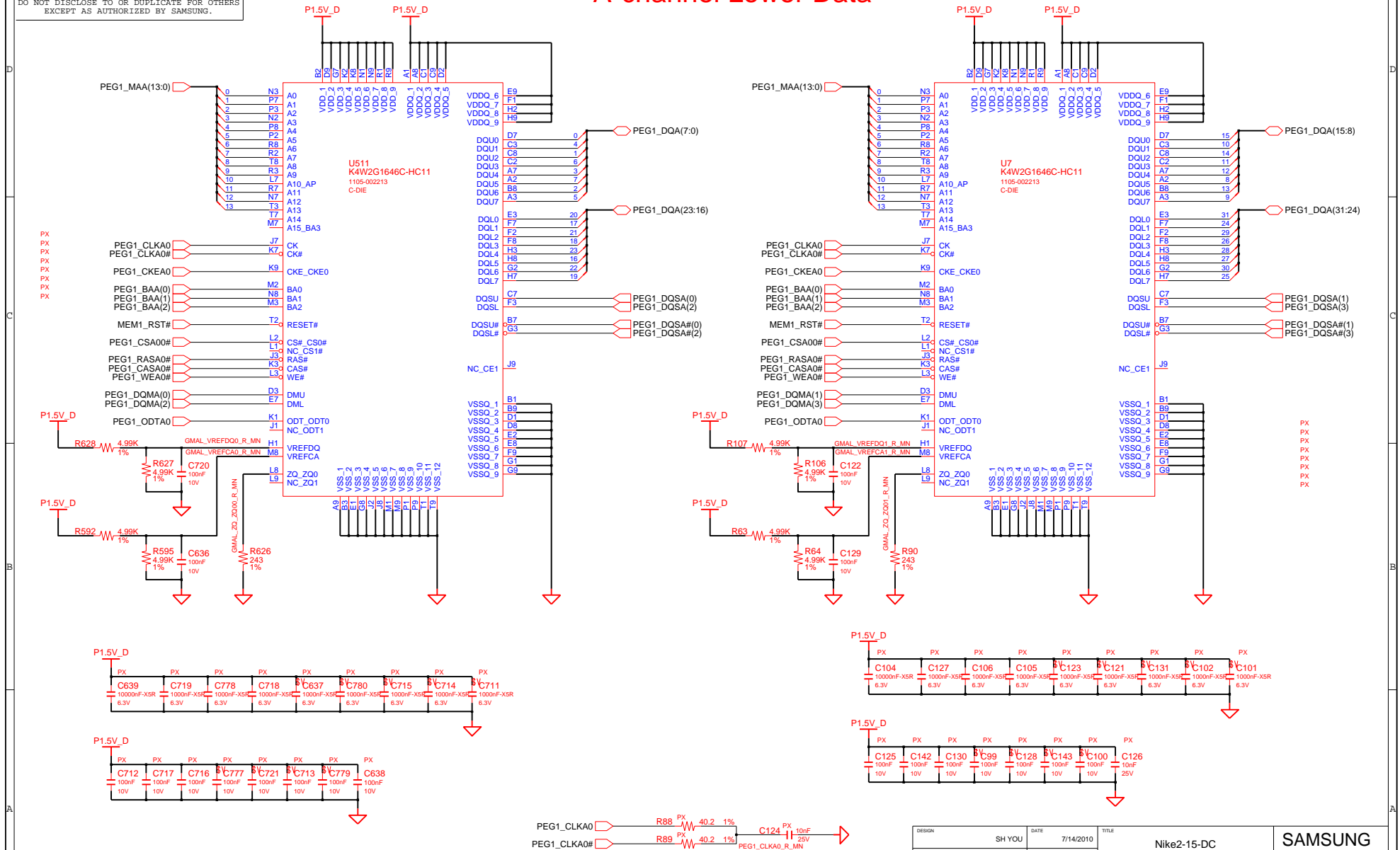
## Straps



DESIGN	SH YOU	DATE	7/14/2010	TITLE	Nike2-15-DC	SAMSUNG ELECTRONICS
CHECK	JJ HAN	DEV. STEP	PV	GRAPHIC STRAP	GRAPHIC STRAP	
APPROVAL	SS BAIK	REV	REV 1.0	GRAPHIC STRAP		
MODULE CODE		LAST EDIT	October 04, 2012 14:55:42 PM	PAGE	33 OF 75	

# A-channel Lower Data

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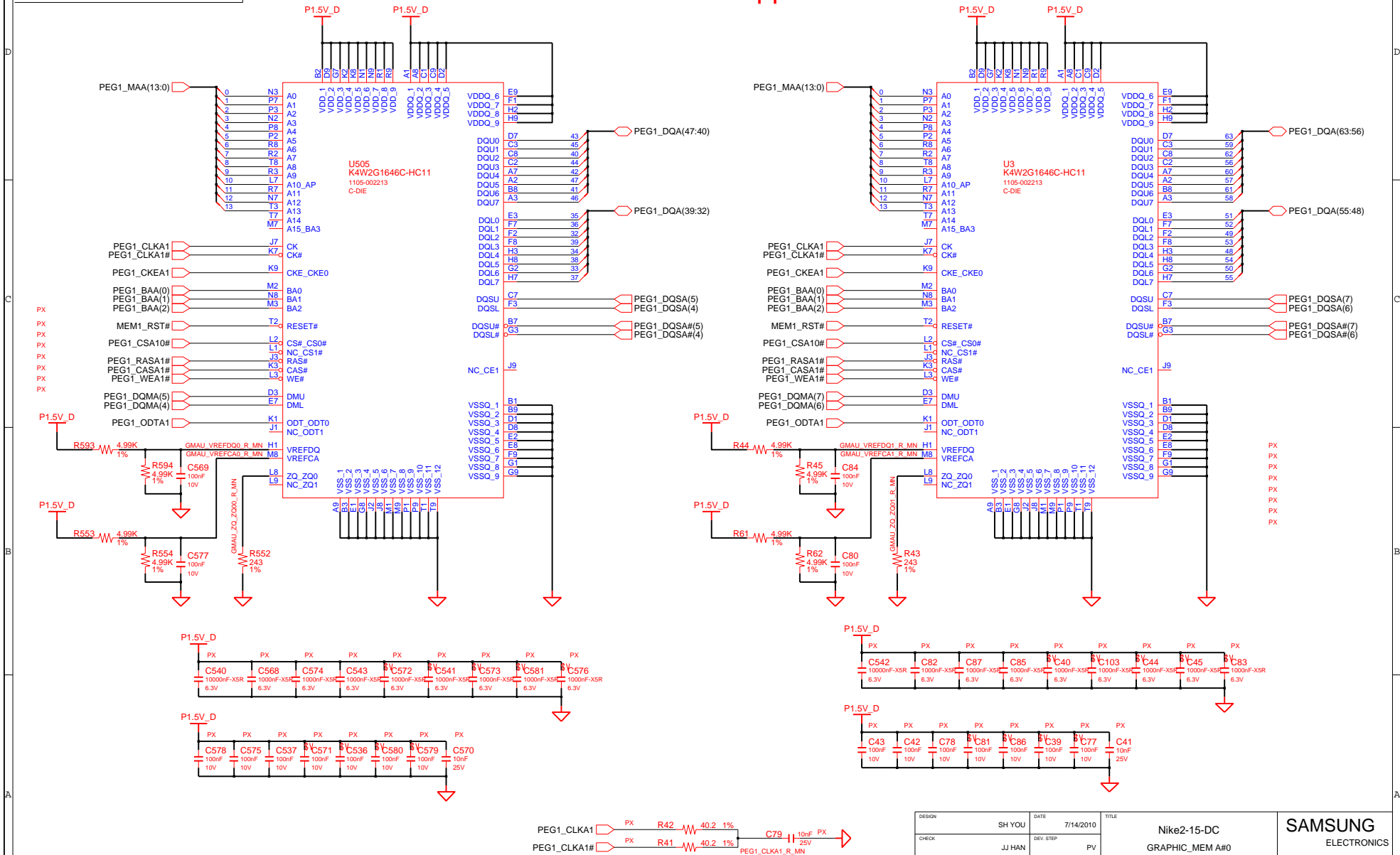
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APPROVAL	SS BAIK	REV	REV 1.0		GRAPHIC_MEM A0
MODULE CODE		LAST EDIT			
October 04, 2012 14:55:42 PM				PAGE	34 OF 75

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ELECTRONICS  
PART NO.  
BA41-####A

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## A-channel Upper Data

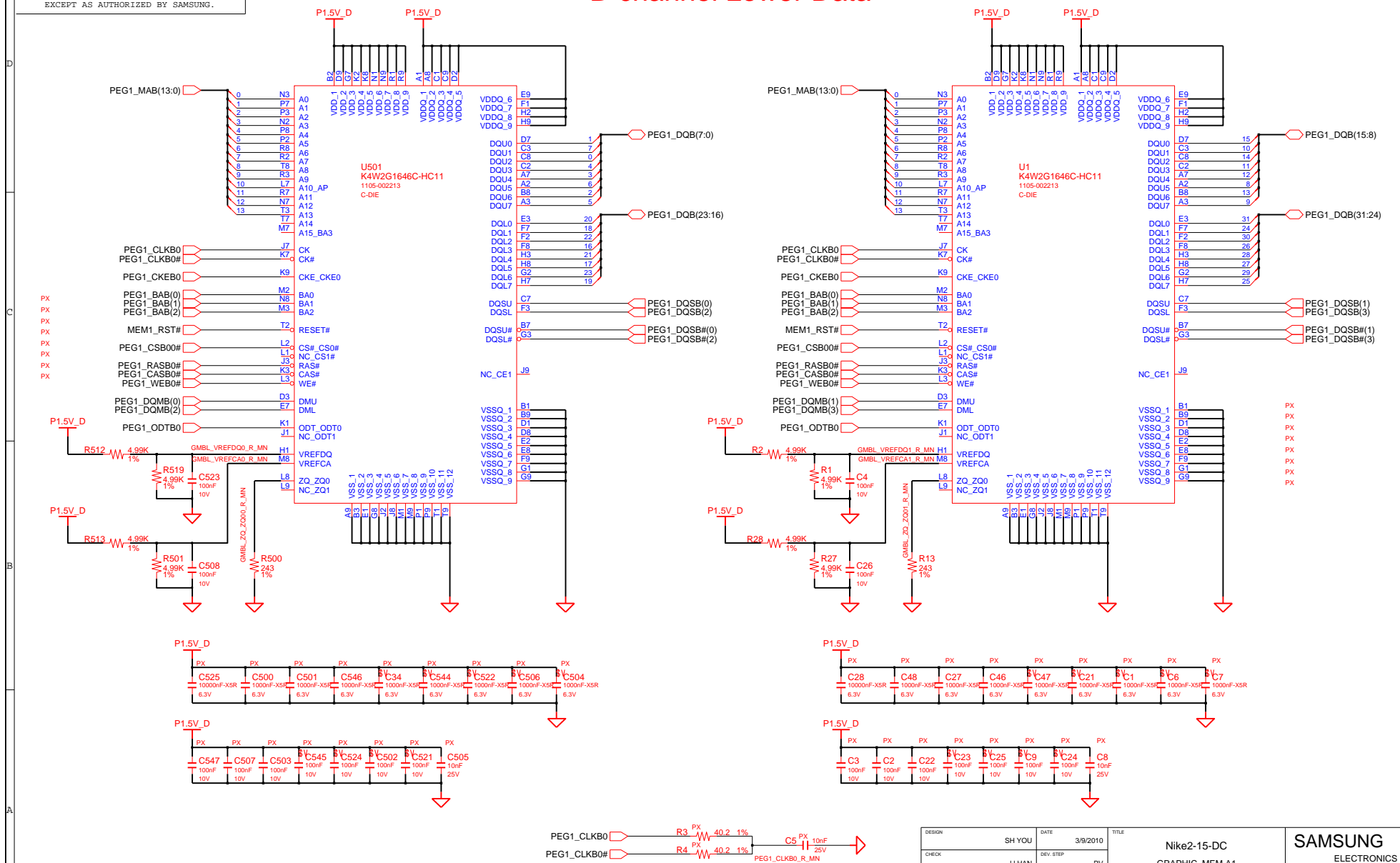


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CHECK	JJ HAN	DEV. STEP	PV		GRAPHIC_MEM A#0
APPROVAL	SS BAIK	REV	REV 1.0		GRAPHIC_MEM A#0
MODULE CODE		LAST EDIT			
				October 04, 2012 14:55:42 PM	PAGE 35 OF 75

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## B-channel Lower Data

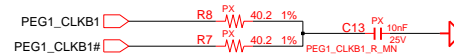
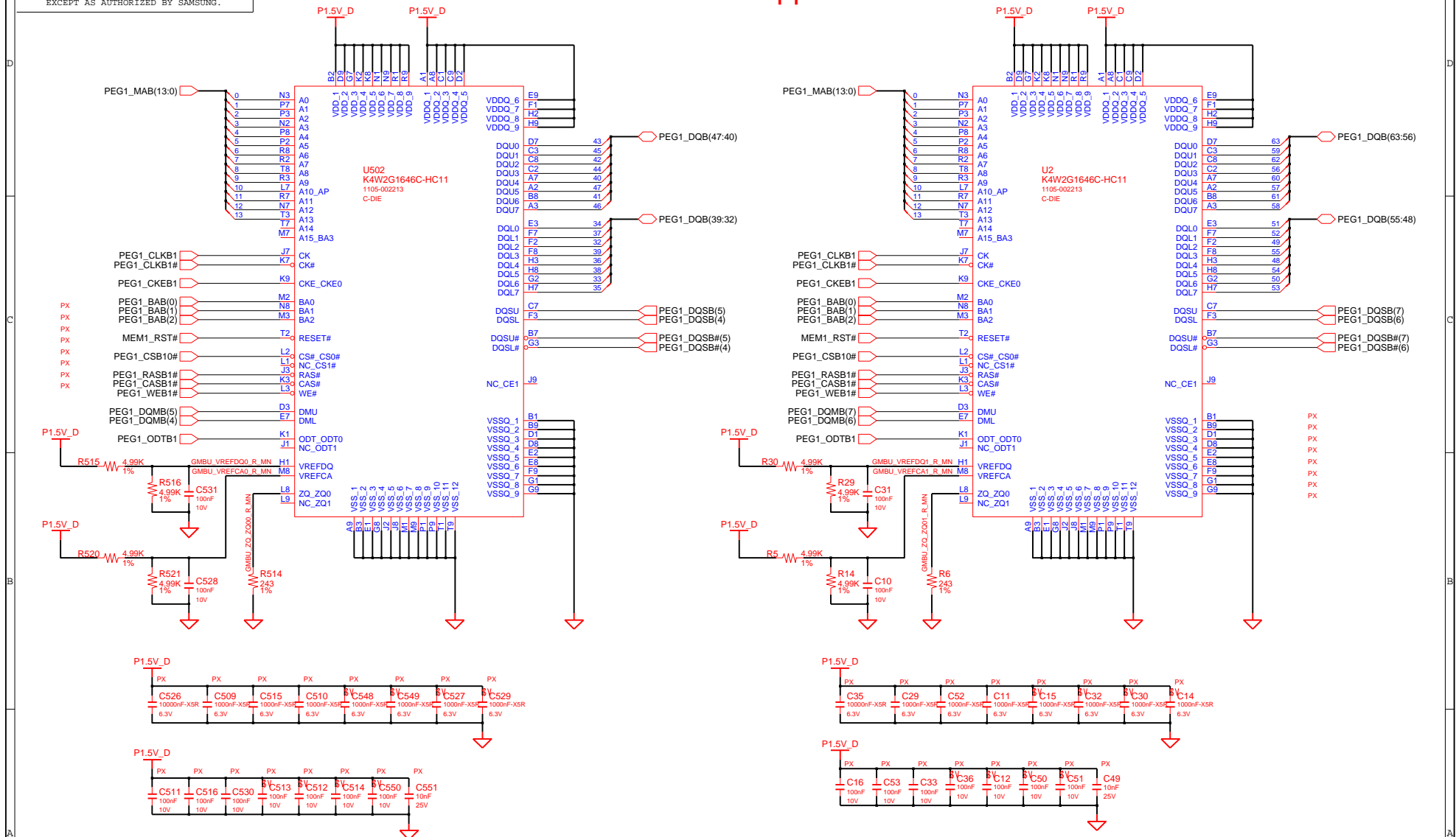


DESIGN	SH YOU	DATE	3/9/2010	TITLE	Nike2-15-DC	SAMSUNG ELECTRONICS
CHECK	JJ HAN	DEV. STEP	PV		GRAPHIC_MEM A1	
APPROVAL	SS BAIK	REV	REV 1.0			PART NO. BA41-####A
MODULE CODE	undefined	LAST EDIT	October 04, 2012 14:55:42 PM	PAGE	36	OF 75

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## B-channel Upper Data



DESIGN	SH YOU	DATE	3/9/2010	TITLE	Nike2-15-DC
CHECK	JJ HAN	DEV. STEP	PV		GRAPHIC_MEM A#1
APPROVAL	SS BAIK	REV	REV 1.0		
MODULE CODE	undefined	LAST EDIT	October 04, 2012 14:55:42 PM	PAGE	37 OF 75

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ELECTRONICS  
PART NO.  
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4				3				2				1			
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DESIGN	SH YOU	DATE	7/14/2010	TITLE	Nike2-15-DC GRAPHIC_MEM B0 GRAPHIC_MEM B0	SAMSUNG ELECTRONICS
CHECK	JJ HAN	DEV. STEP	PV			
APPROVAL	SS BAIK	REV	REV 1.0			
MODULE CODE		LAST EDIT		October 04, 2012 14:55:42 PM	PAGE 38 OF 75	PART NO. BA41-####A

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DESIGN	SH YOU	DATE	7/14/2010	TITLE Nike2-15-DC GRAPHIC_MEM B#0 GRAPHIC_MEM B#0		SAMSUNG ELECTRONICS PART NO. BA41-####A																																			
CHECK	JJ HAN	DEV. STEP	PV																																						
APPROVAL	SS BAIK	REV	REV 1.0																																						
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DESIGN	SH YOU	DATE	3/9/2010	TITLE  Nike2-15-DC GRAPHIC_MEM B1	<div>SAMSUNG ELECTRONICS</div>		
CHECK	JJ HAN	DEV. STEP	PV				
APPROVAL	SS BAIK	REV	REV 1.0		PART NO.	BA41-####A	
MODULE CODE	undefined	LAST EDIT	October 04, 2012 14:55:42 PM		PAGE	40 OF 75	



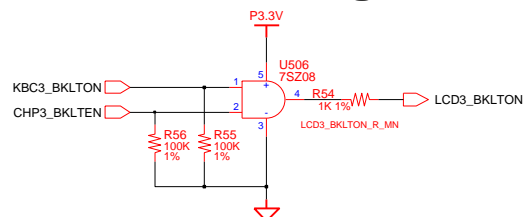
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DESIGN	SH YOU	DATE	3/9/2010	TITLE Nike2-15-DC GRAPHIC_MEM B#1		SAMSUNG ELECTRONICS PART NO. BA41-####A																																			
CHECK	JJ HAN	DEV. STEP	PV																																						
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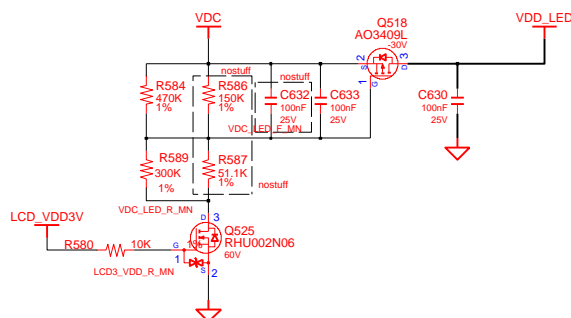
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# eDP // LVDS LOGIC

## Backlight On

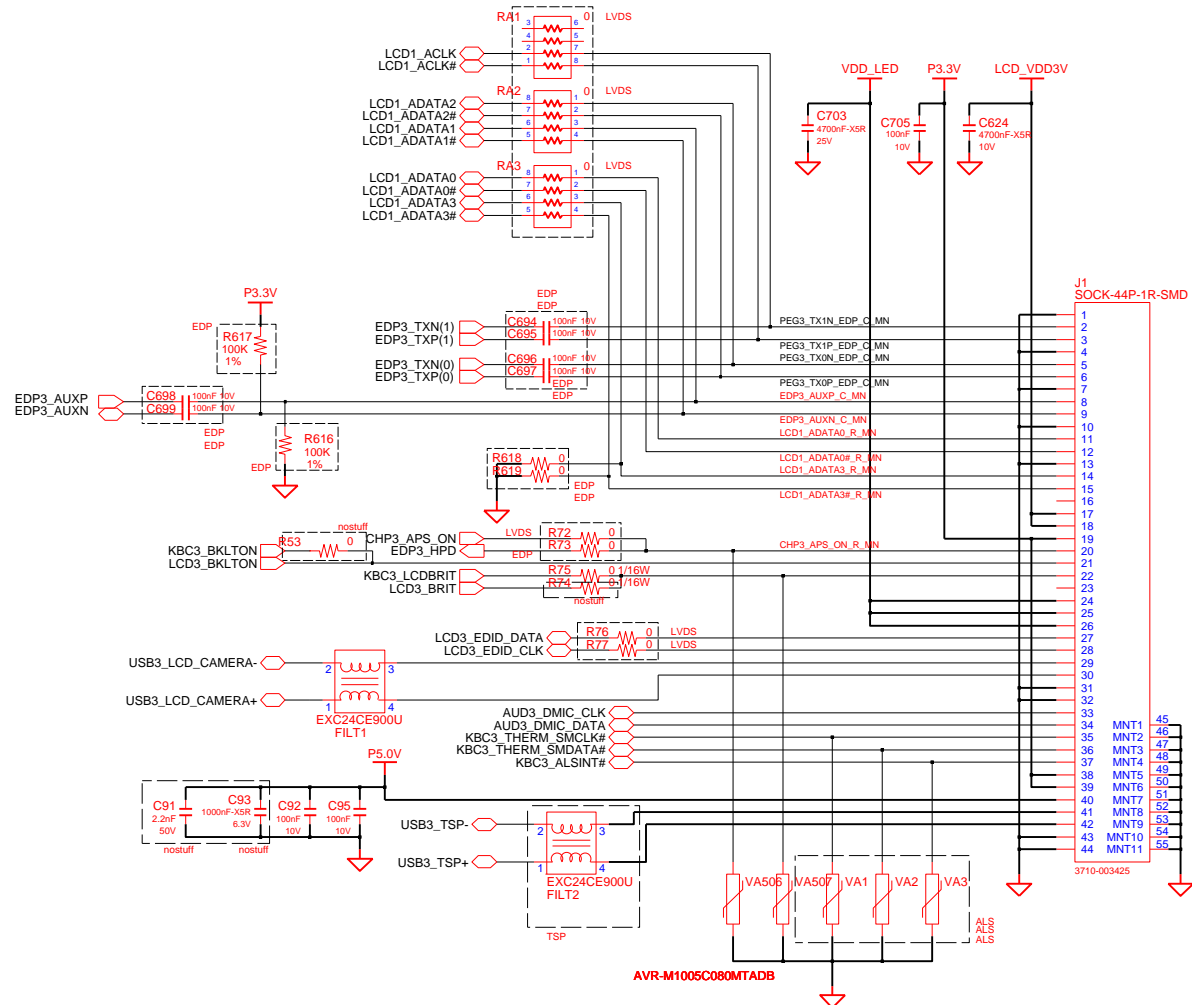
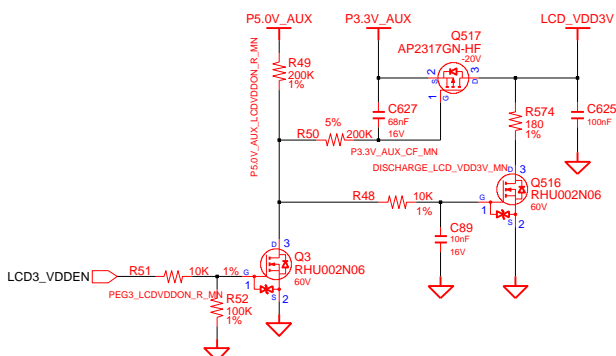


## LED Power



## LCD Power

EBL Purpose

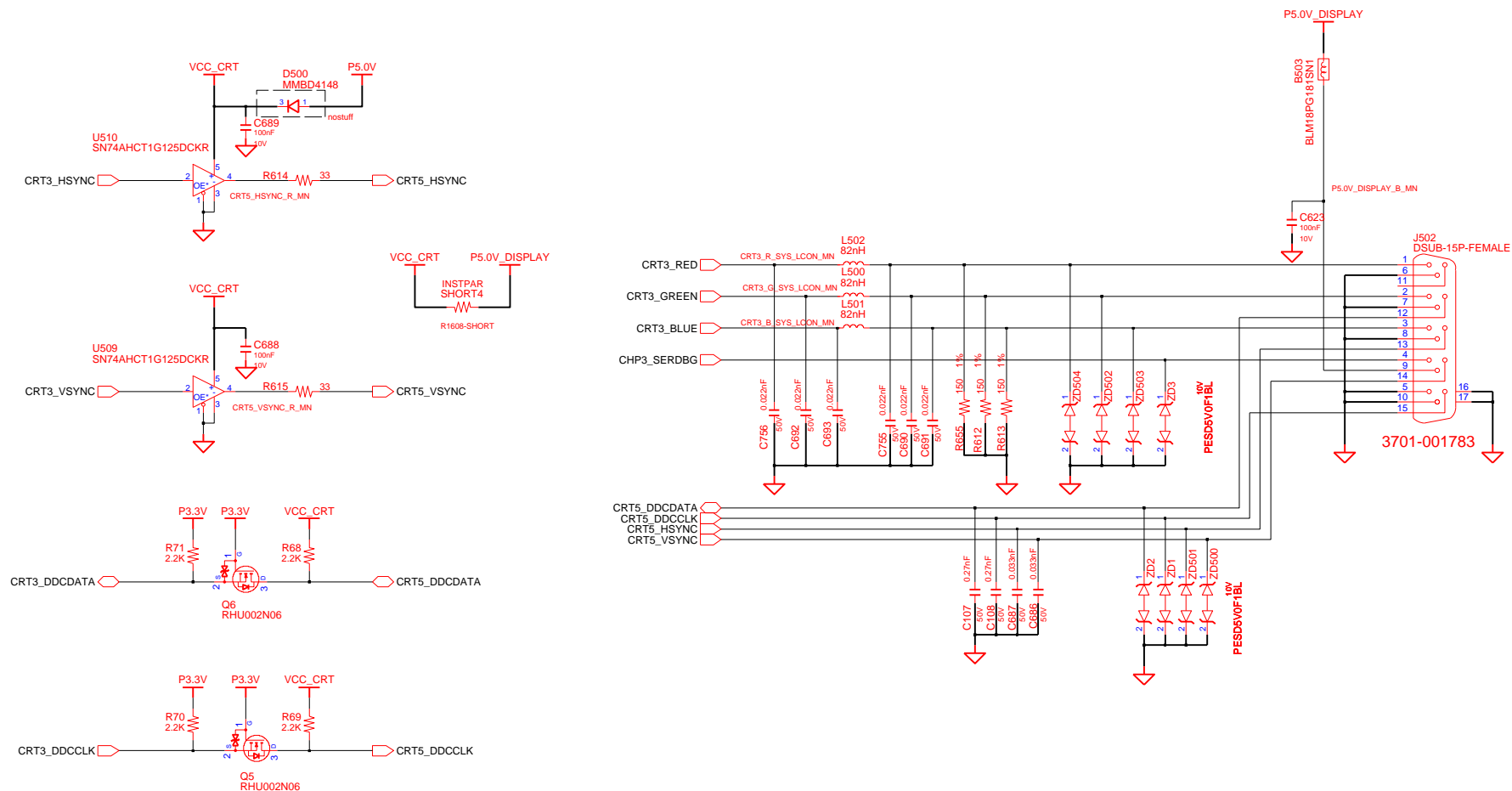


DESIGN	SH YOU	DATE	7/14/2010	TITLE	Nike2-15-DC	SAMSUNG ELECTRONICS
CHECK	JJ HAN	DEV. STEP	PV	GRAPHICS_IF		
APPROVAL	SS BAIK	REV	REV 1.0	LVDS / CAMERA		
MODULE CODE		LAST EDIT				
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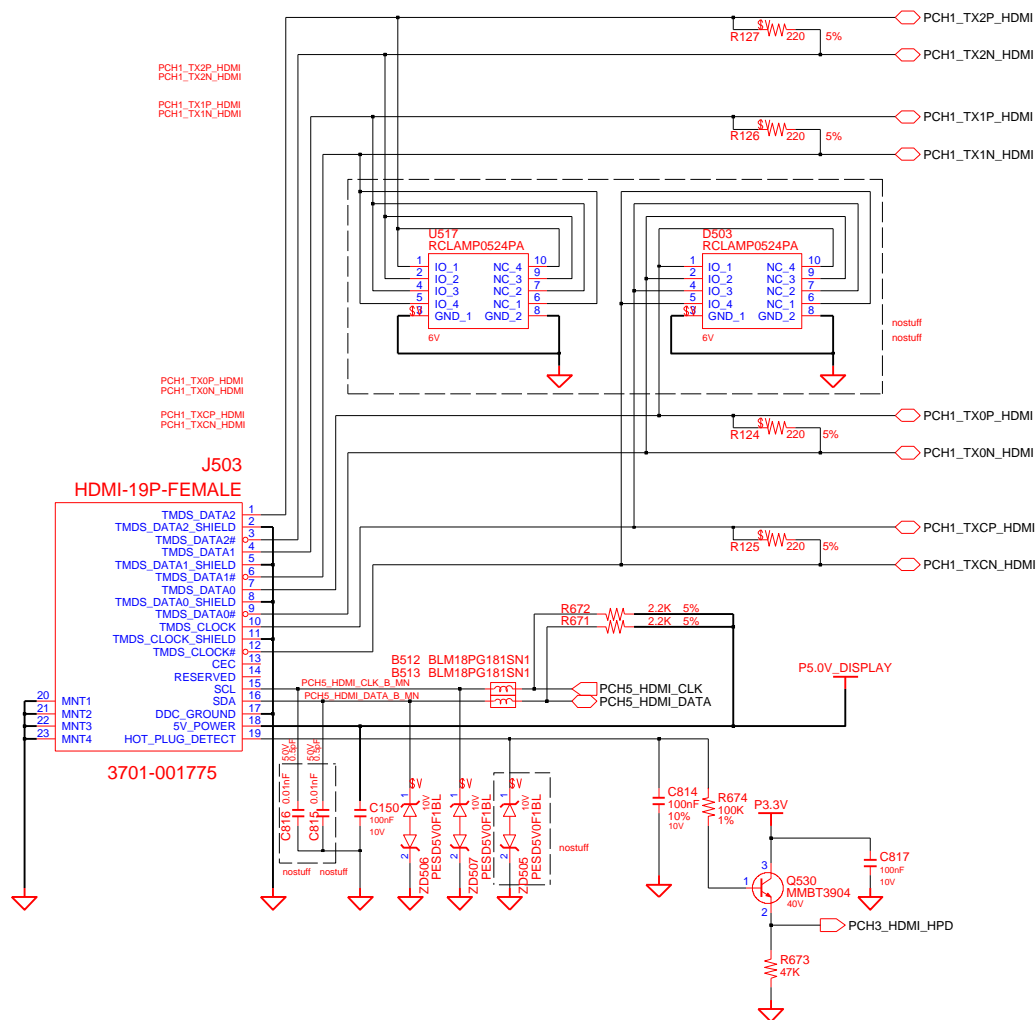
# VGA



DESIGN	SH YOU	DATE	7/14/2010	TITLE	Nike2-15-DC	SAMSUNG ELECTRONICS
CHECK	JJ HAN	DEV. STEP	PV		GRAPHICS_IF	
APPROVAL	SS BAIK	REV	REV 1.0		VGA Dongle	
MODULE CODE		LAST EDIT		October 04, 2012 14:55:42 PM	PAGE 43 OF 75	PART NO. BA41-####A

After checking, Houston need to use CMC for each signal.

Display from PCH	Display from GPU
PCH3_HDMI_xxx PCH1_xxxx_HDMI	PEG3_HDMI_xxx PEG3_xxxx_HDMI

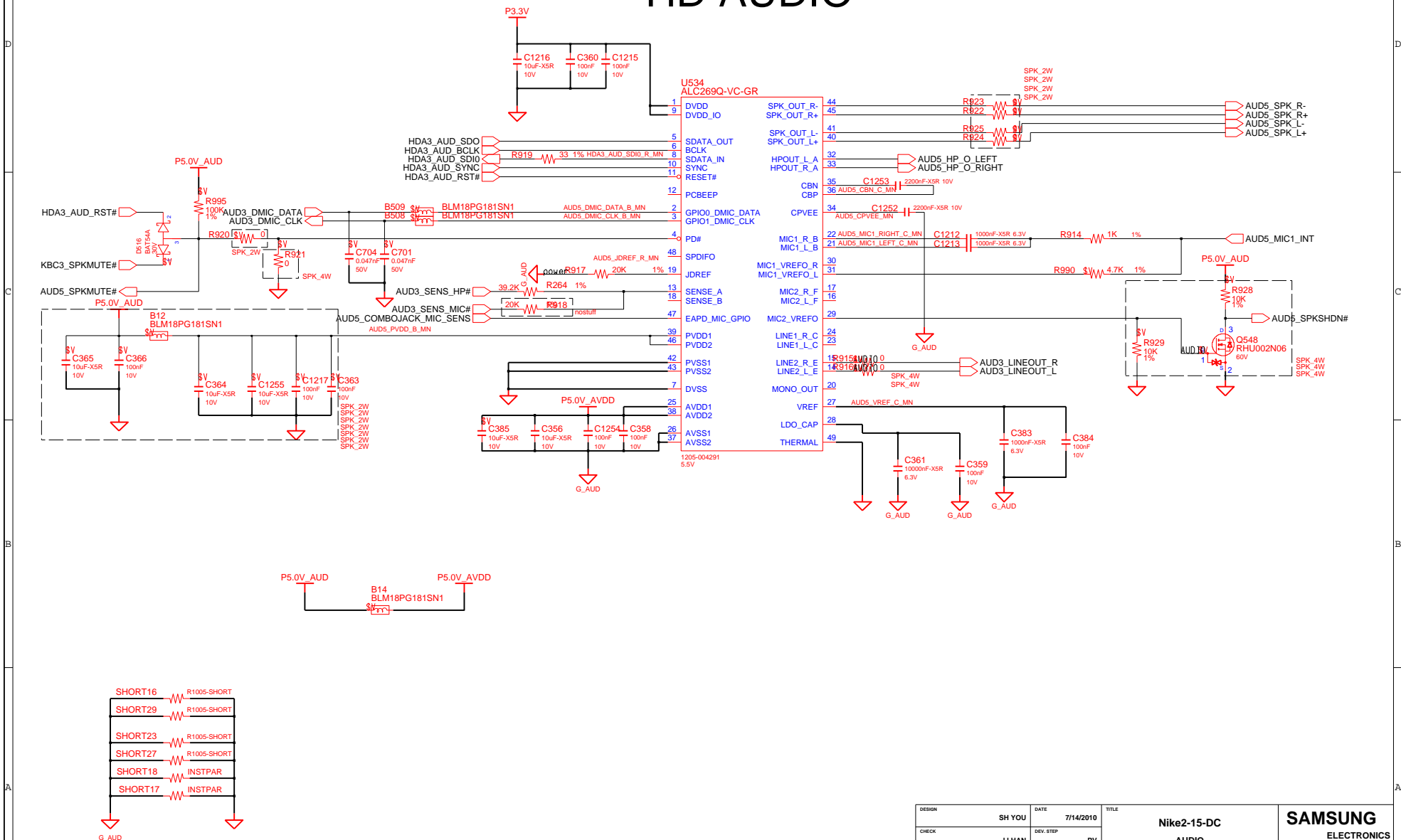


DESIGN	SH YOU	DATE	7/14/2010	TITLE  <b>Nike2-15-DC</b> <b>GRAPHICS_IF</b>  <b>HDMI</b>	<b>SAMSUNG</b> ELECTRONICS
CHECK	JJ HAN	DEV. STEP	PV		
APPROVAL	SS BAIK	REV	REV 1.0		
MODULE CODE	LAST EDIT			October 04, 2012 14:55:42 PM	PAGE 44 OF 75

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## HD AUDIO

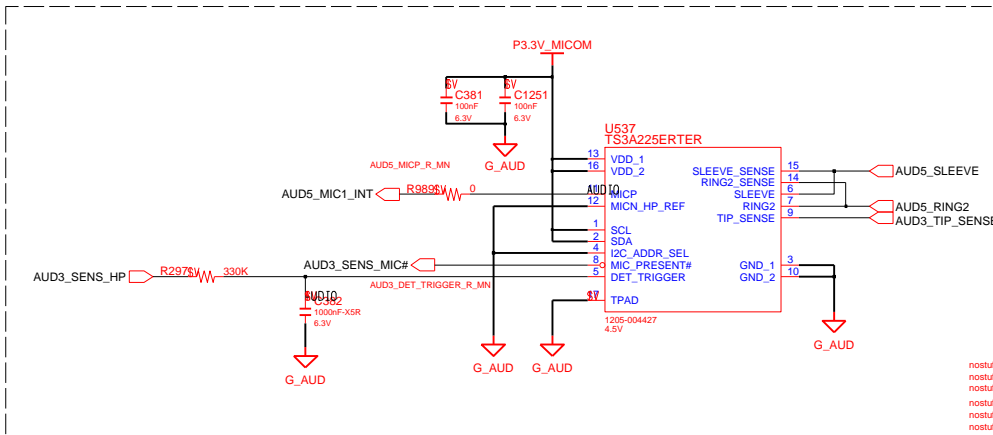
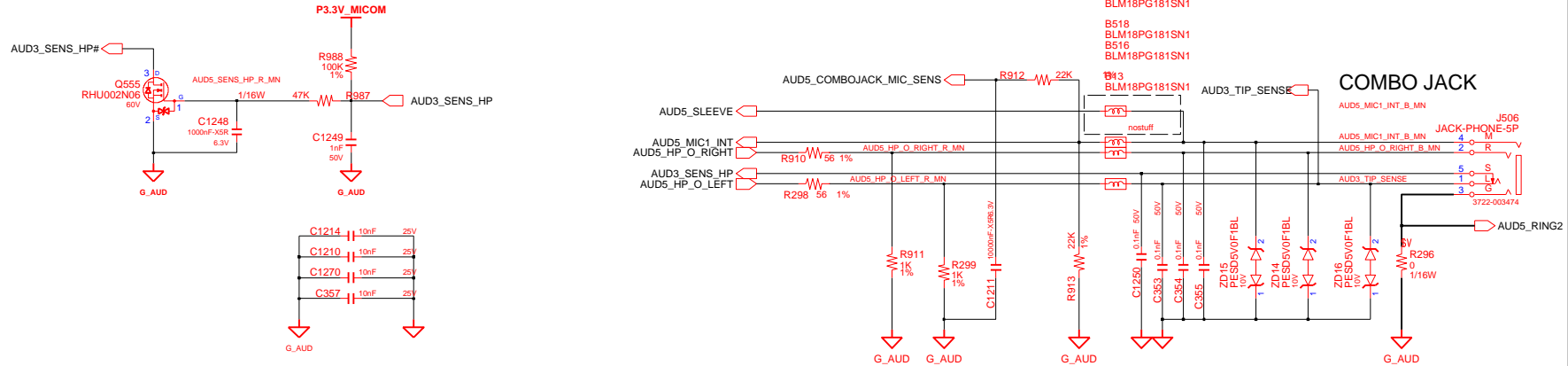


DESIGN	SH YOU	DATE	7/14/2010	TITLE	Nike2-15-DC AUDIO ALC269Q-VB2	SAMSUNG ELECTRONICS
CHECK	JJ HAN	DEV. STEP	PV			PART NO. BA41-####A
APPROVAL	SS BAIK	REV	REV 1.0			
MODULE CODE		LAST EDIT				
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## HD AUDIO

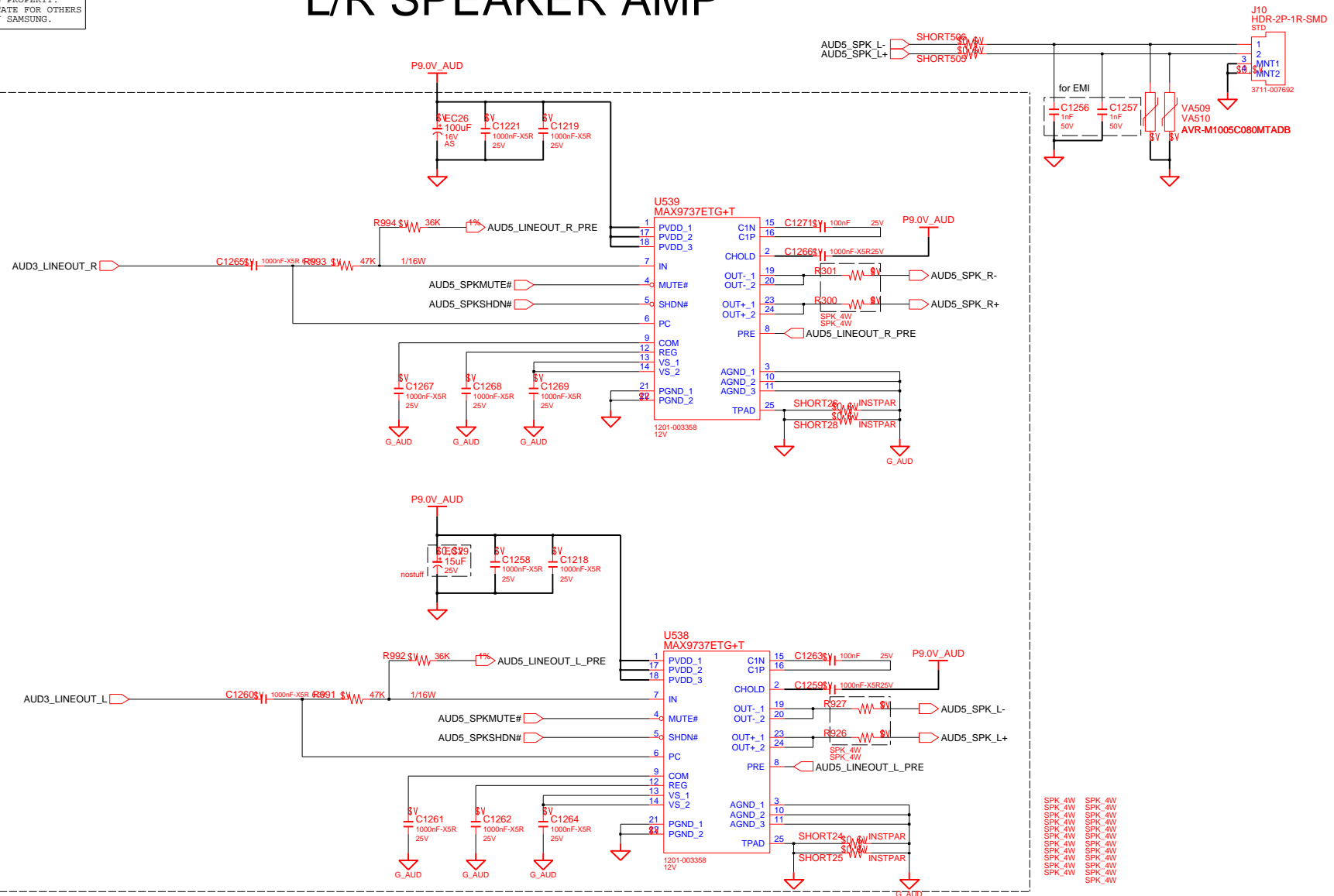


DESIGN	SH YOU	DATE	7/14/2010	TITLE	Nike2-15-DC	SAMSUNG ELECTRONICS
CHECK	JJ HAN	DEV. STEP	PV	AUDIO	AUDIO	
APPROVAL	SS BAIK	REV	REV 1.0	COMBO JACK 1 WOOFER	COMBO JACK 1 WOOFER	
MODULE CODE		LAST EDIT				
October 04, 2012 14:55:42 PM						PAGE 46 OF 75

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# L/R SPEAKER AMP



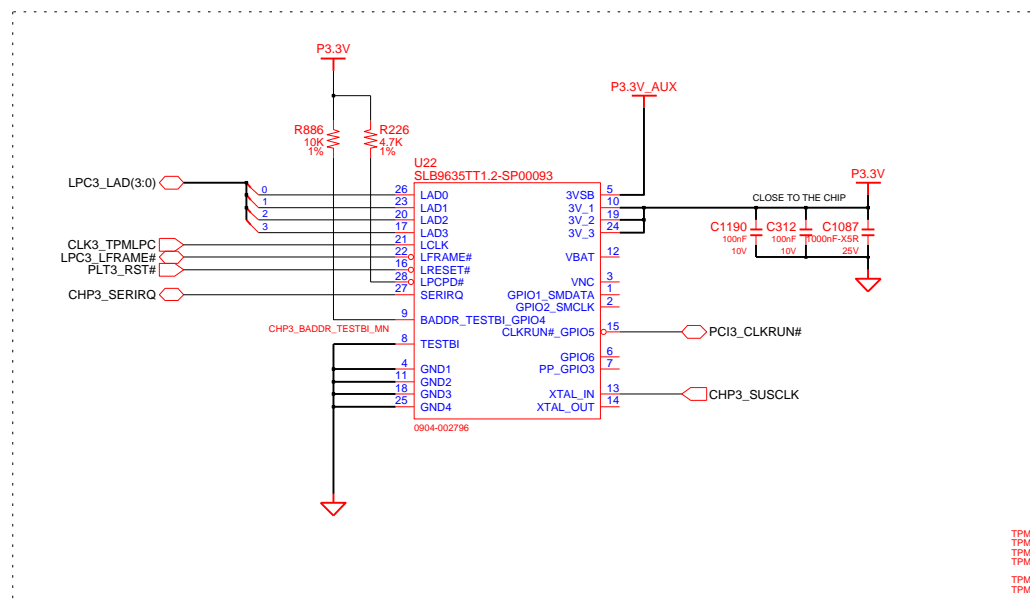
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CHECK	JJ HAN	DEV. STEP	PV		AUDIO	
APPROVAL	SS BAIK	REV	REV 1.0		L/R SPEAKER AMP	
MODULE CODE		LAST EDIT				PART NO. BA41-####A
				October 04, 2012 14:55:42 PM	PAGE	47 OF 75

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# TPM1.2

For Win8 OS : 0904-002796



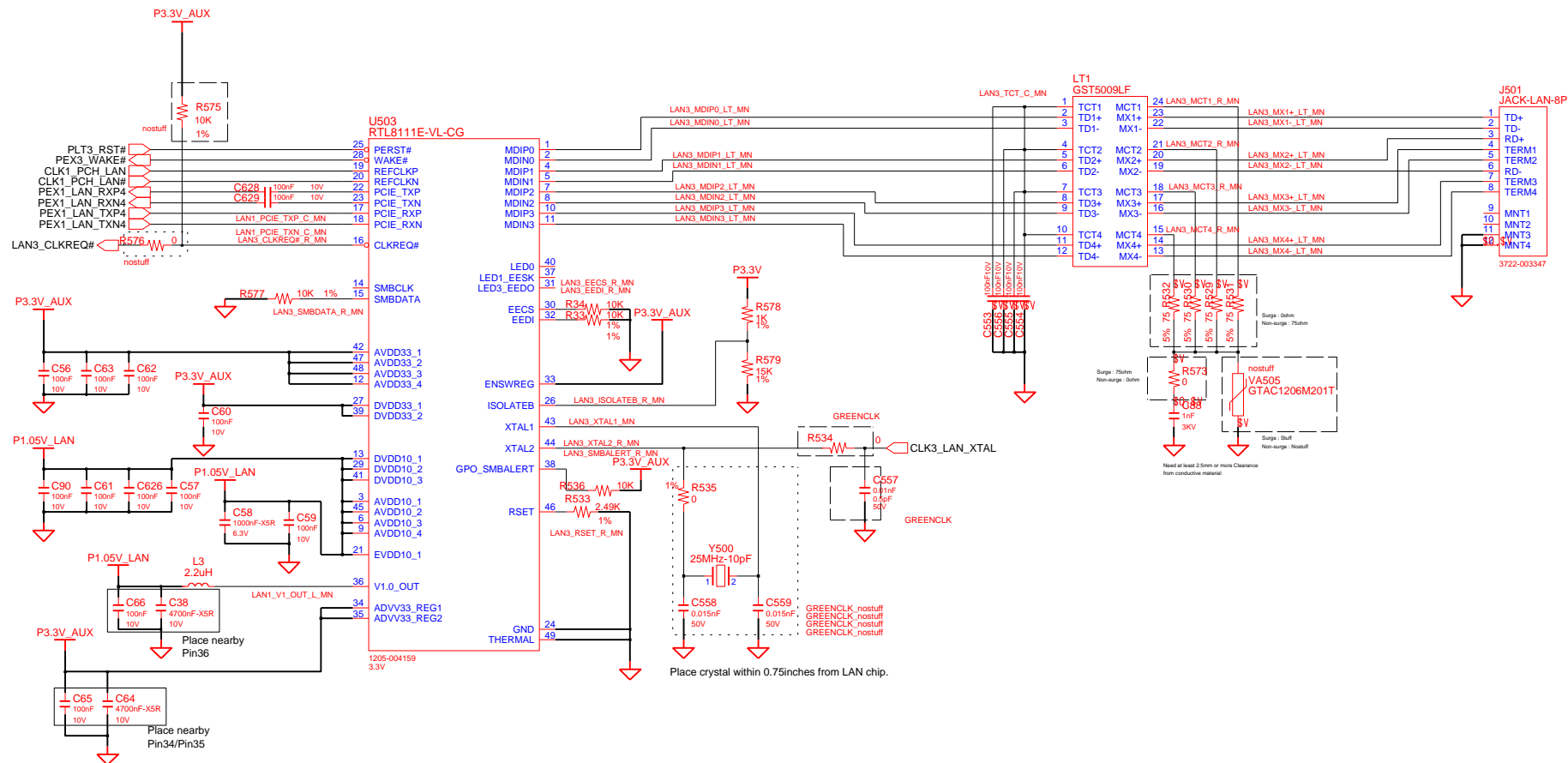
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APPROVAL	SS BAIK	REV	REV 1.0	TPM	TPM	
MODULE CODE		LAST EDIT		October 04, 2012 14:55:42 PM	PAGE	48 OF 75



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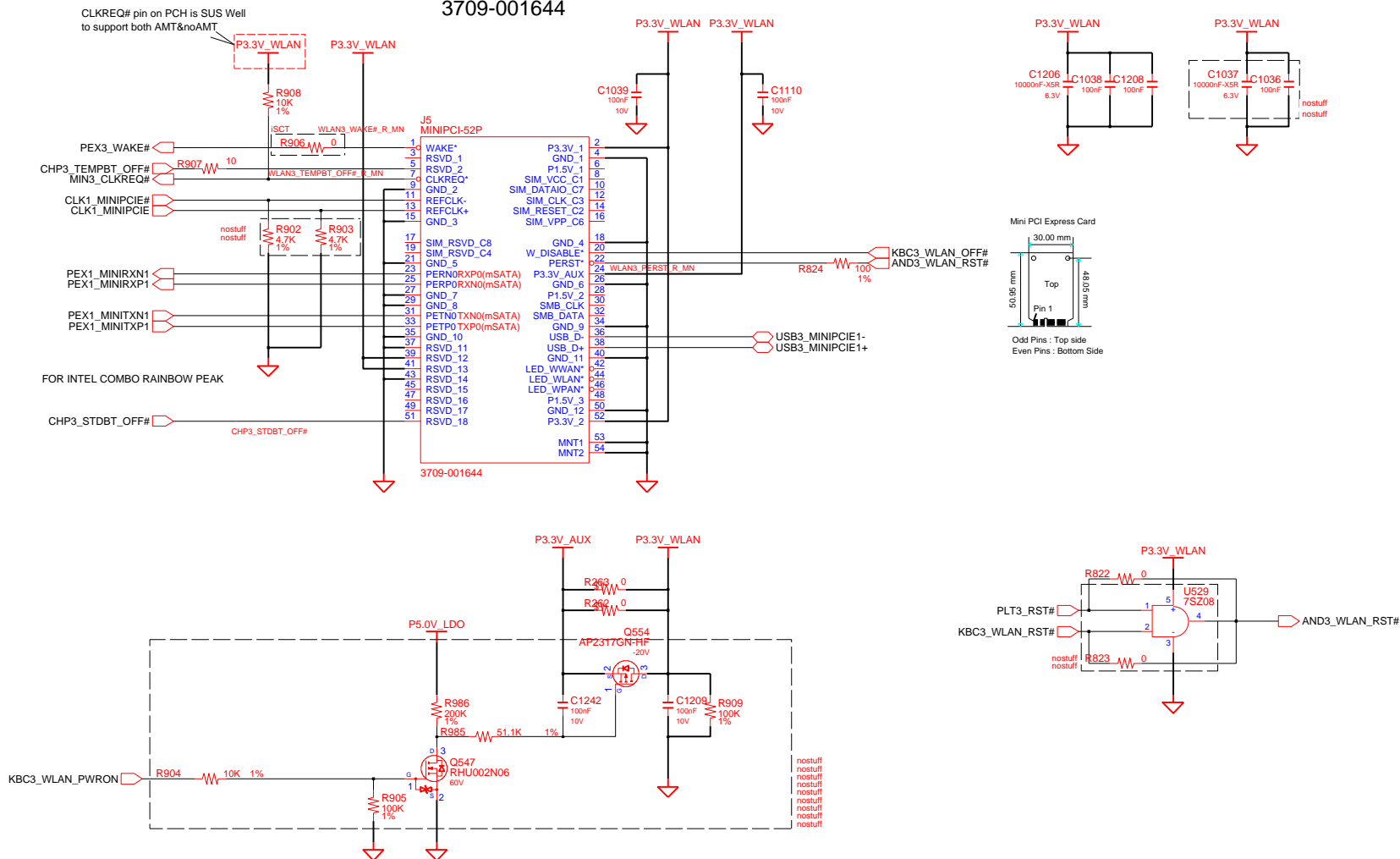
## Realtek RTL8111E (GigaBit)



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APPROVAL	SS BAIK	REV	REV 1.0		LAN Realtek RTL8111E
MODULE CODE		LAST EDIT			
				October 04, 2012 14:55:42 PM	PAGE 49 OF 75

**SAMSUNG**  
ELECTRONICS  
PART NO. BA41-####A

3709-001644



DESIGN	SH YOU	DATE	7/14/2010	Nike2-15-DC WLAN WLAN	SAMSUNG ELECTRONICS
CHECK	JJ HAN	DEV. STEP	PV		
APPROVAL	SS BAIK	REV	REV 1.0		
MODULE CODE	LAST EDIT				
October 04, 2012 14:55:42 PM					PAGE 50 OF 75

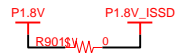
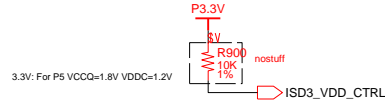
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SATA HDD CONN

DESIGN	SH YOU	DATE	7/14/2010	TITLE	Nike2-15-DC  SATA I/F  SATA I/F	SAMSUNG ELECTRONICS		
CHECK	JJ HAN	DEV. STEP	PV			PART NO.	BA41-####A	
APPROVAL	SS BAIK	REV	REV 1.0					
MODULE CODE	LAST EDIT		October 04, 2012 14:55:42 PM			PAGE 51 OF 75		

# ISSD

8GB P4 : BA59-03190A  
8GB P5 : BA59-03321A  
16GB P5 : BA59-03290A



**PI Request**

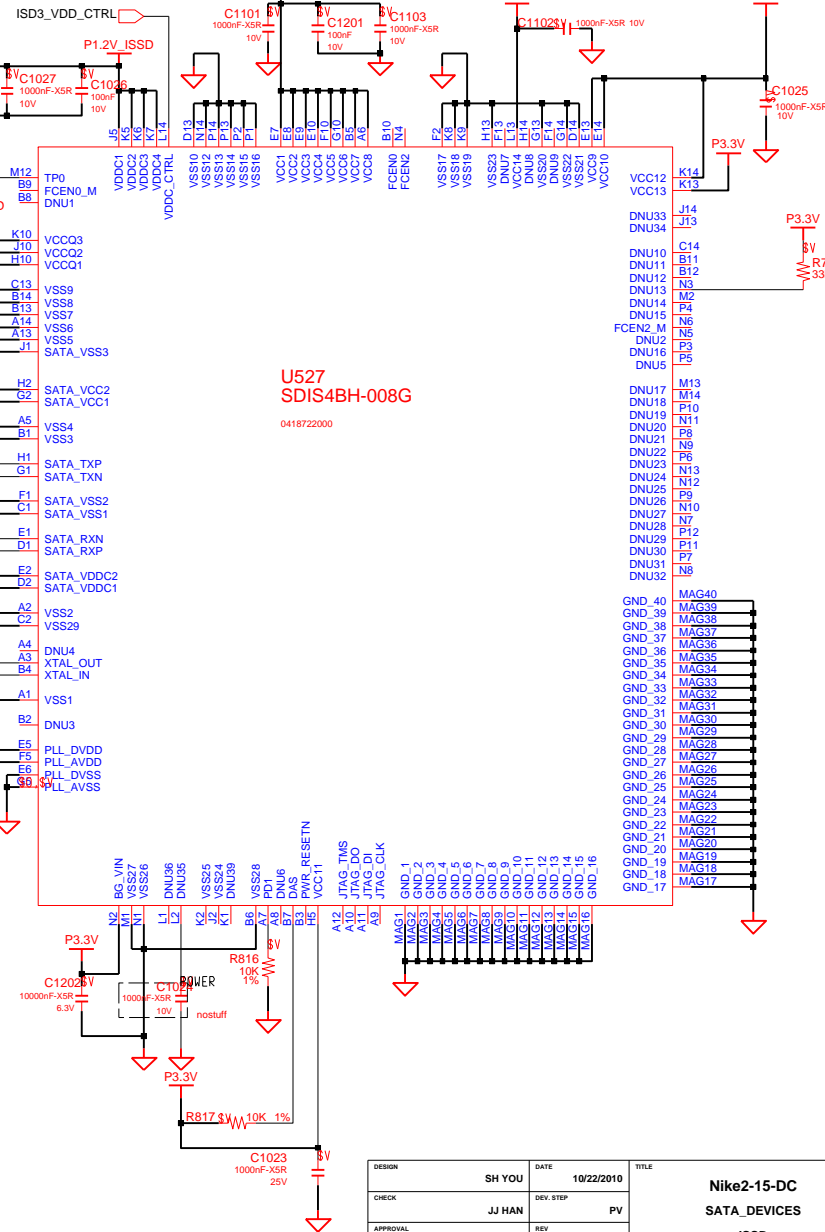
FOR FILTER USING BLM18PG181SN1

**PI Request**

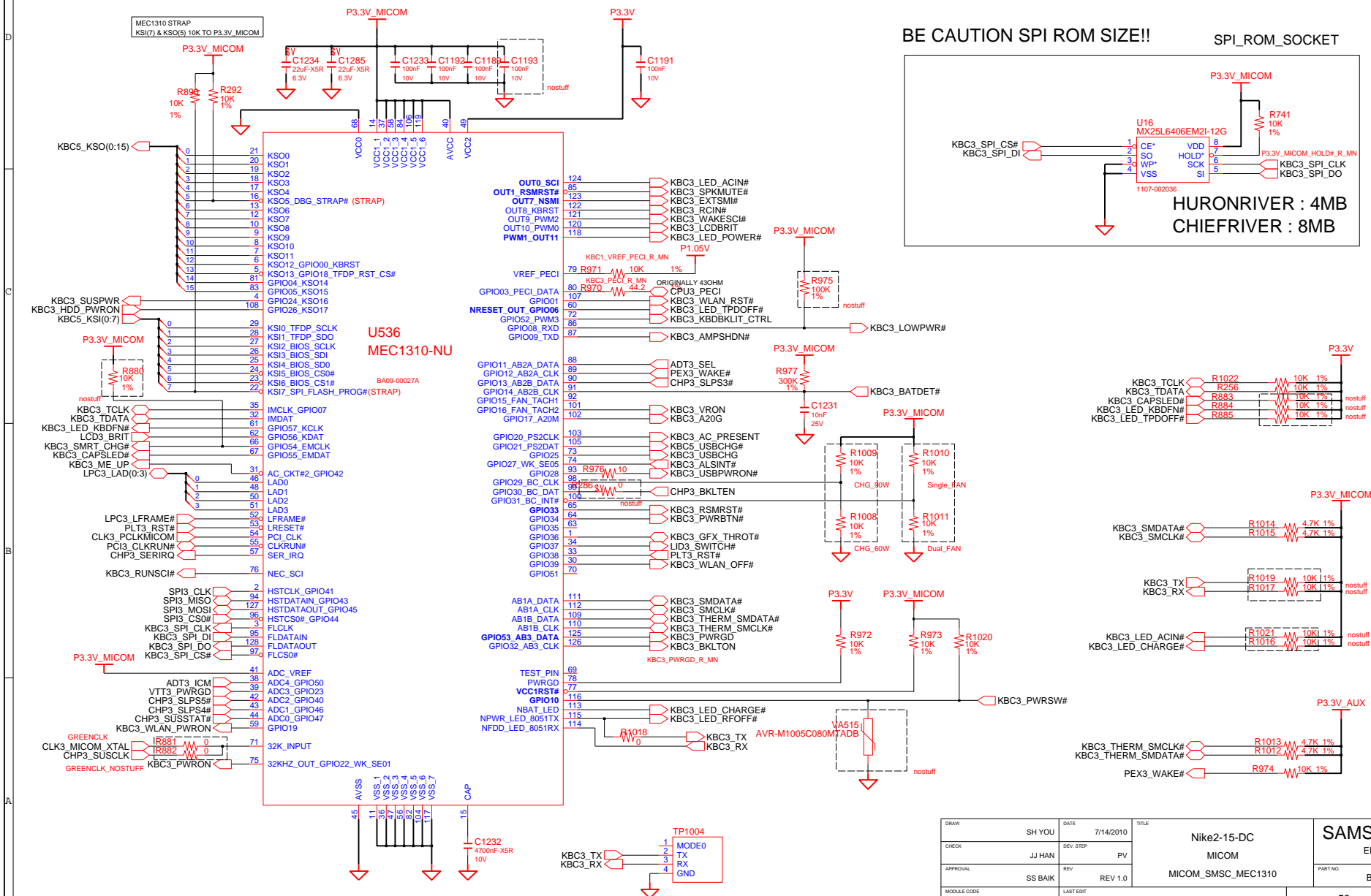
FOR FILTER USING BLM18PG181SN1

**PI Request**

FOR FILTER USING BLM18PG181SN1



## MAIN BOARD (MICOM)

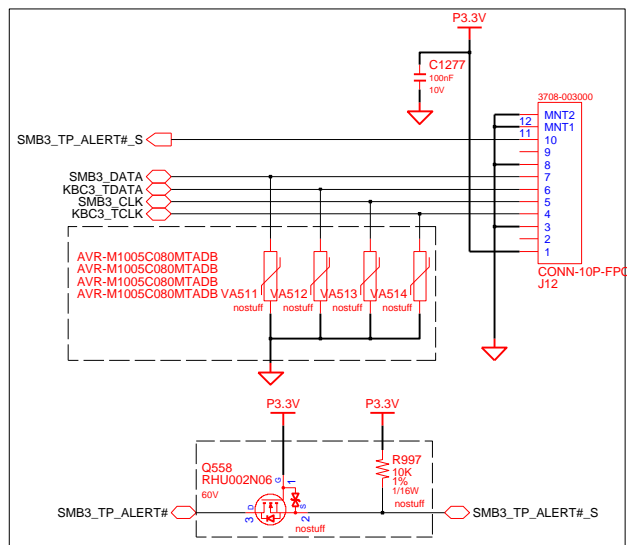


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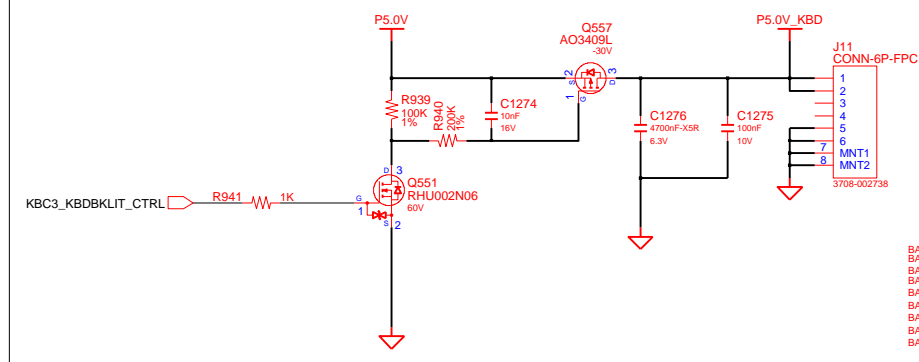
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# Micom Glue Logic MAIN TO SUB

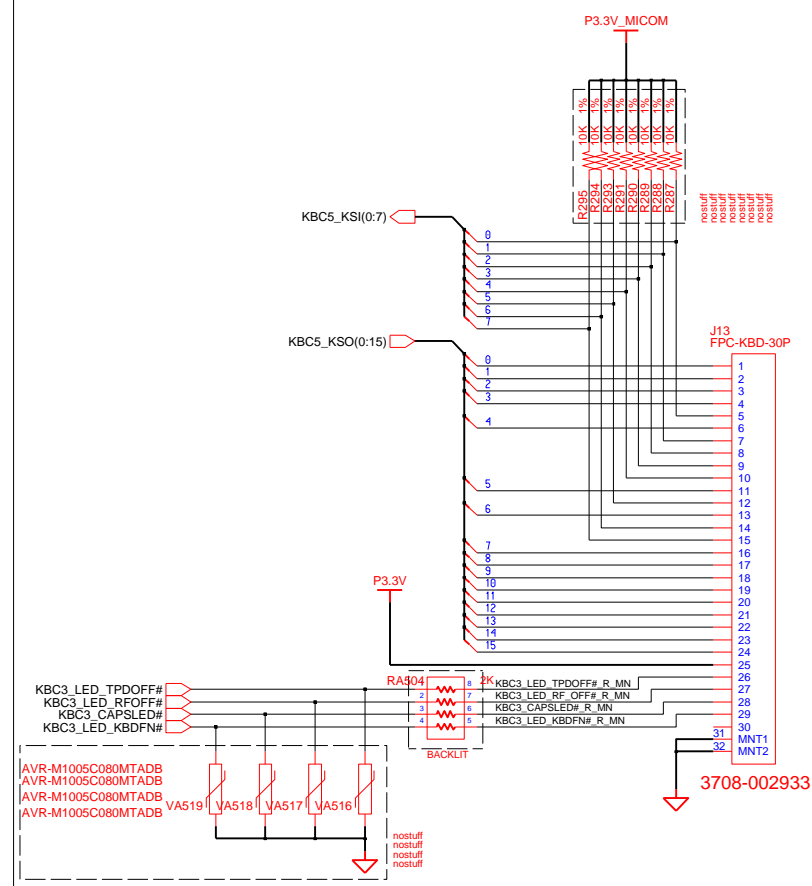
## FOR IMAGE SENSOR TOUCHPAD



## MAIN TO KBD BKLIT CONNECTOR



## KEYBOARD



DRAW	SH YOU	DATE	7/14/2010	TITLE	Nike2-15-DC	SAMSUNG ELECTRONICS
CHECK	JJ HAN	DEV. STEP	PV	MICOM	MICOM	
APPROVAL	SS BAIK	REV	REV 1.0	MICOM GLUE LOGIC		PART NO. BA41-####A
MODULE CODE		LAST EDIT			October 04, 2012 14:55:42 PM	PAGE 54 OF 75

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**Table 1: Drawing Information**

NO.	DESCRIPTION	DATE	BY	CHKD	REV
1	SH YOU	7/14/2010			
2	JJ HAN				
3	SS BAIK				

**Table 2: Title Block**

TITLE		PART NO.	
Nike2-15-DC		BA41-####A	
USB & BLUETOOTH			
USB			

**Table 3: Revision History**

NO.	DESCRIPTION	DATE	BY	CHKD	REV
1	SH YOU	7/14/2010			
2	JJ HAN				
3	SS BAIK				

**Table 4: Module Code**

MODULE CODE	LAST EXT

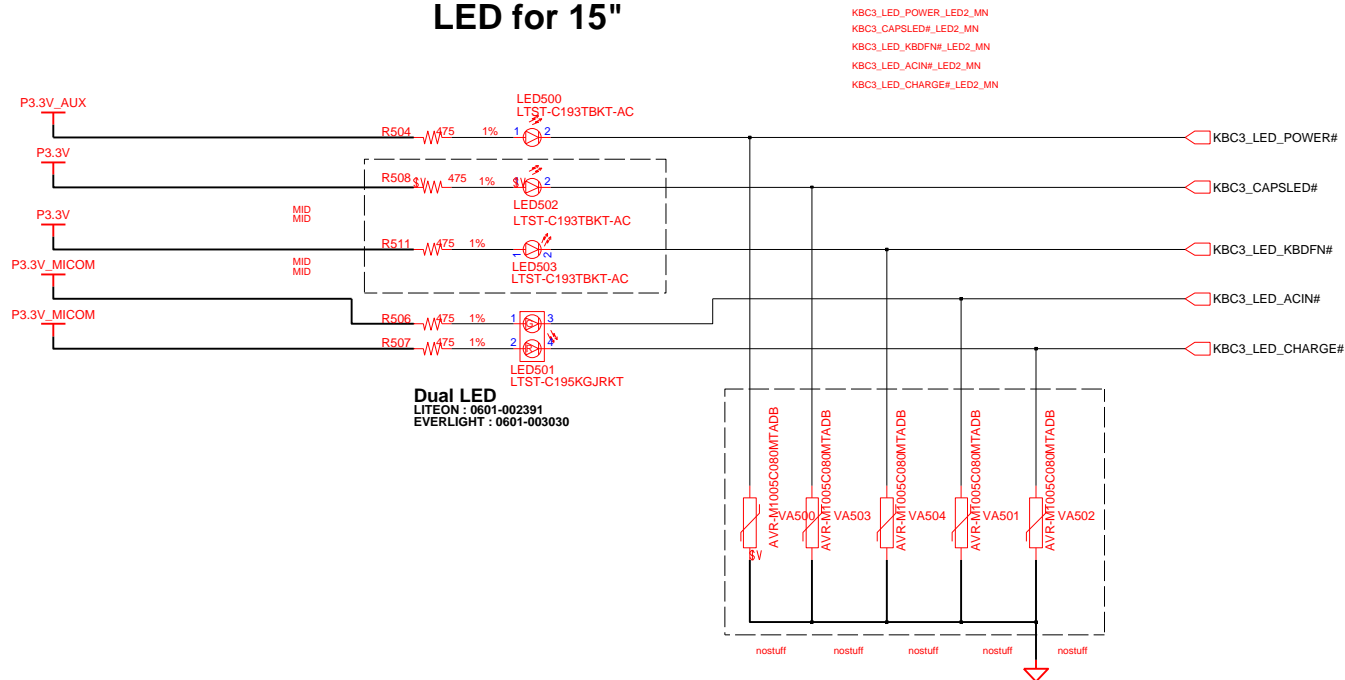
**Table 5: Date and Page Information**

DATE	PAGE	OF
October 04, 2012 14:55:42 PM	55	75

DRAW	SH YOU	DATE	7/14/2010	TITLE <b>Nike2-15-DC</b> <b>USB &amp; BLUETOOTH</b>  <b>USB</b>	<b>SAMSUNG</b> ELECTRONICS	
CHECK	JJ HAN	DEV. STEP	PV			
APPROVAL	SS BAIK	REV	REV 1.0		PART NO.	BA41-####A
MODULE CODE	LAST EDIT				October 04, 2012 14:55:42 PM	PAGE 55 OF 75

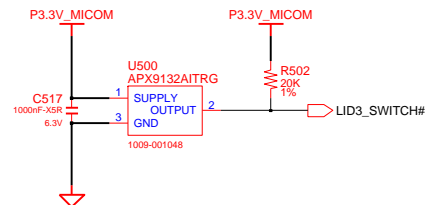
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## LED for 15"



## LID\_SWITCH

ANPEC : 1009-001048  
SEIKI : 1009-001053



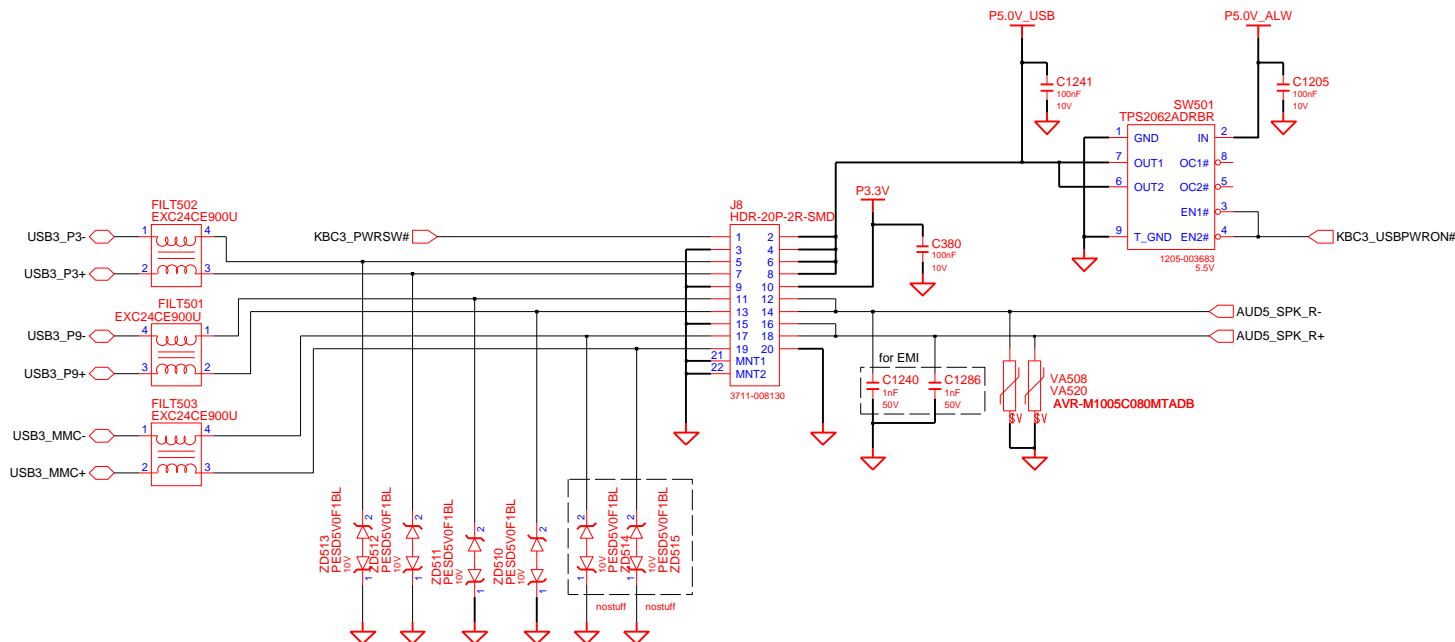
DRAW	SH YOU	DATE	05/18/2012	TITLE	Nike2-15-DC LED_SWITCH	SAMSUNG ELECTRONICS
CHECK	JJ HAN	DEV. STEP	PV			PART NO. BA41-####A
APPROVAL	SS BAIK	REV	REV 1.0		LED / LID SWITCH	
MODULE CODE		LAST EDIT		October 04, 2012 14:55:42 PM	PAGE 56 OF 75	



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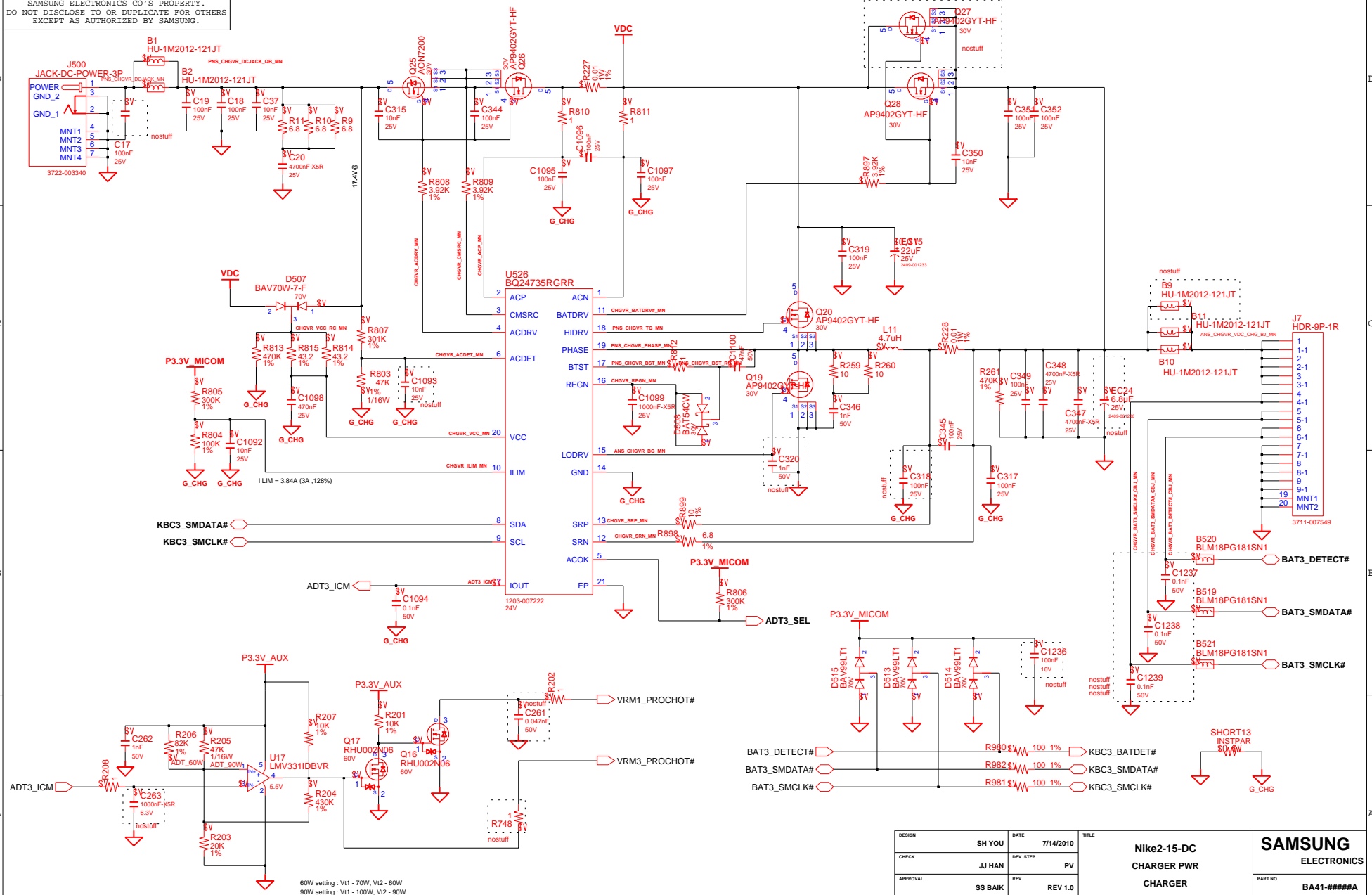
## USB2.0 MAIN TO SUB



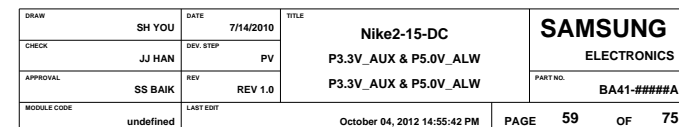
DESIGN	SH YOU	DATE	7/14/2010	TITLE	Nike2-15-DC	SAMSUNG ELECTRONICS
CHECK	JJ HAN	DEV. STEP	PV	SUB BOARD CONNECTOR		
APPROVAL	SS BAIK	REV	REV 1.0	MAIN TO SUB		
MODULE CODE		LAST EDIT		October 04, 2012 14:55:42 PM	PAGE 57 OF 75	PART NO. BA41-####A

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DESIGN	SH YOU	DATE	7/14/2010	TITLE  Nike2-15-DC CHARGER PWR  CHARGER	SAMSUNG ELECTRONICS		
CHECK	JJ HAN	DEV. STEP	PV				
APPROVAL	SS BAIK	REV	REV 1.0		PART NO.	BA41-####A	
MODULE CODE	LAST EDIT				October 04, 2012 14:55:42 PM	PAGE	58 OF 75



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[illegible]

DESIGN	SH YOU	DATE	7/14/2010	TITLE Nike2-15-DC CHIPSET PWR P1.05V	<b>SAMSUNG</b> ELECTRONICS
CHECK	JJ HAN	DEV. STEP	PV		
APPROVAL	SS BAIK	REV	REV 1.0		
MODULE CODE				LAST EDIT October 04, 2012 14:55:42 PM	PART NO. BA41-#####A
				PAGE	60 OF 75

4				3				2				1			
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D															
C															
B															
A															
4				3				2				1			
CON-22C-015(1996.6.5) REV. 3												D:/users/mobile/Nike2-15/DC/PV/1004.2/High-Nike2-15_00			

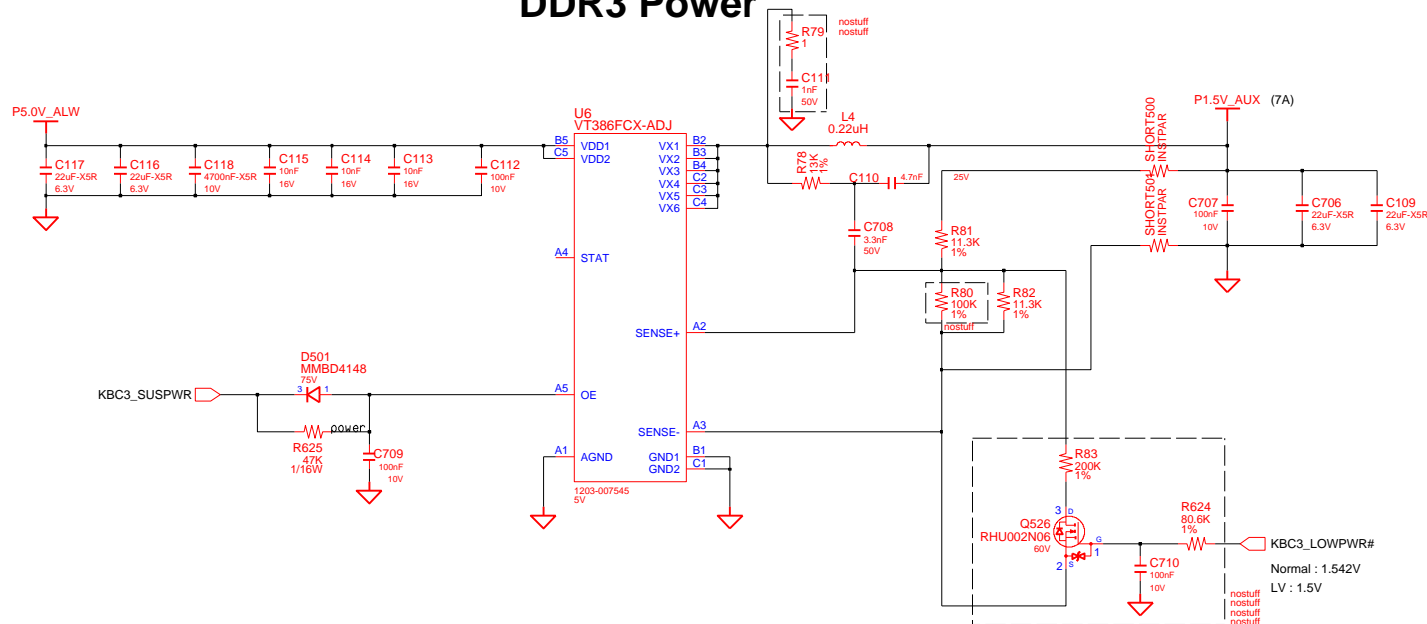
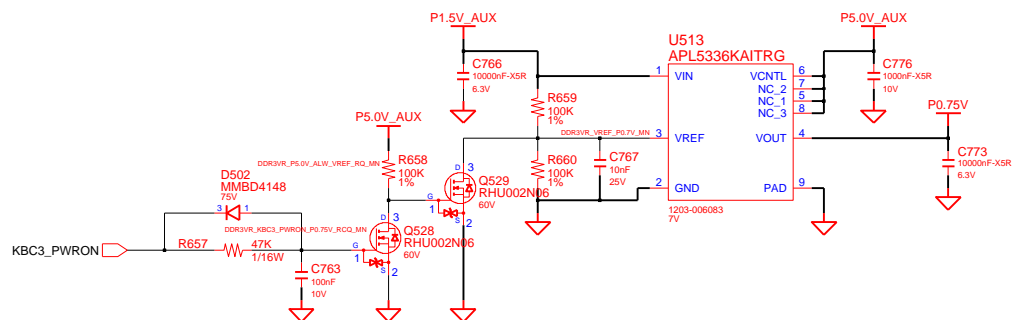
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CHECK	JJ HAN	DEV. STEP	PV	P1.0V	PART NO.	
APPROVAL	SS BAIK	REV	REV 1.0	VCCIO	BA41-####A	
MODULE CODE	LAST EDIT			October 04, 2012 14:55:42 PM	PAGE 61 OF 75	

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DESIGN	SH YOU	DATE	7/14/2010	TITLE  Nike2-15-DC VCSA VCCSA	SAMSUNG ELECTRONICS	
CHECK	JJ HAN	REV. STEP	PV		PART NO.  BA41-####A	
APPROVAL	SS BAIK	REV	REV 1.0			
MODULE CODE	LAST EDIT		October 04, 2012 14:55:42 PM			PAGE

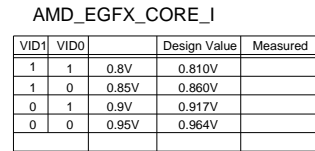
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**DDR3 Power****DDR3 VTT(0.75V)**

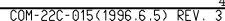
DRAW	SH YOU	DATE	7/14/2010	TITLE	Nike2-15-DC	SAMSUNG
CHECK	JJ HAN	DEV. STEP	PV		DDR3 POWER	ELECTRONICS
APPROVAL	SS BAIK	REV	REV 1.0		DDR3 POWER	PART NO.
MODULE CODE	undefined	LAST EDIT	October 04, 2012 14:55:42 PM			BA41-####A
				PAGE	63	OF 75

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

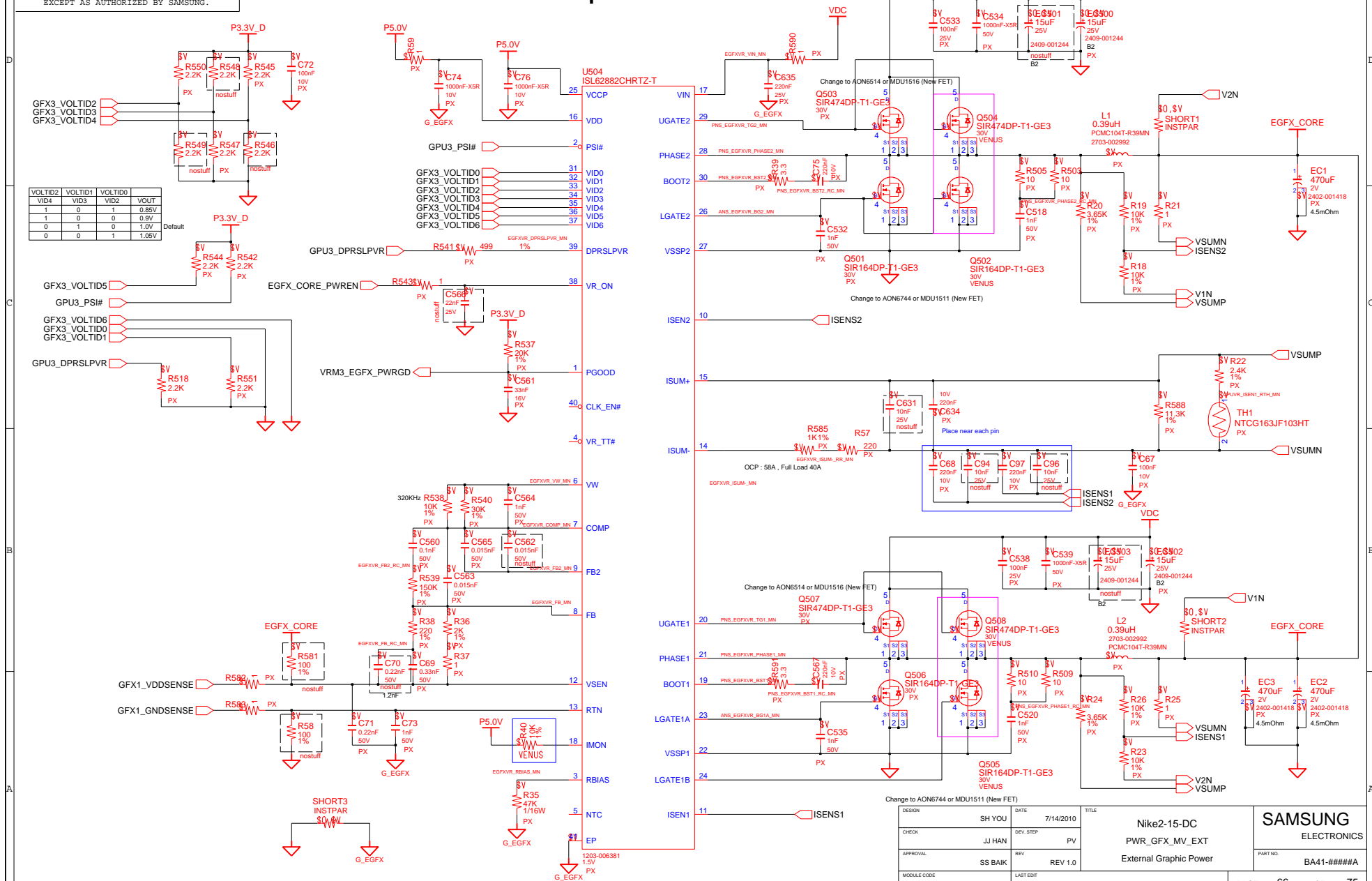




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## External Graphic Core Power

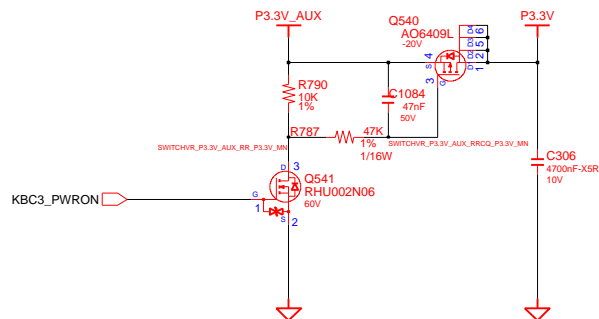


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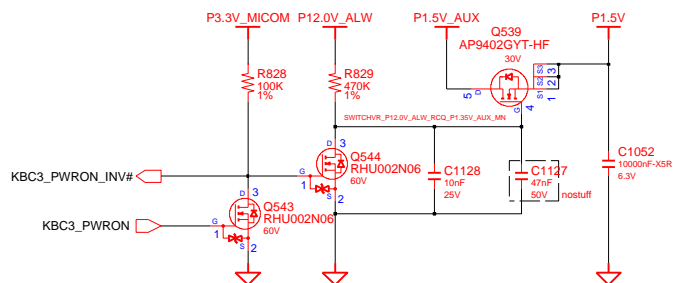
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## Switched Power

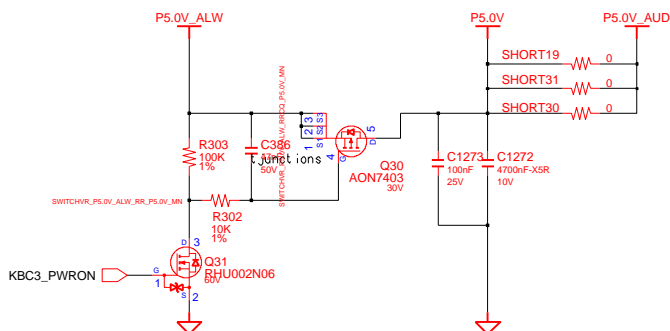
### Switched Power On (P3.3V)



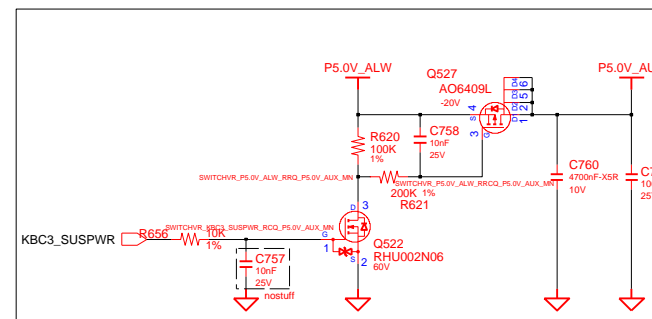
### Switched Power On (P1.5V)



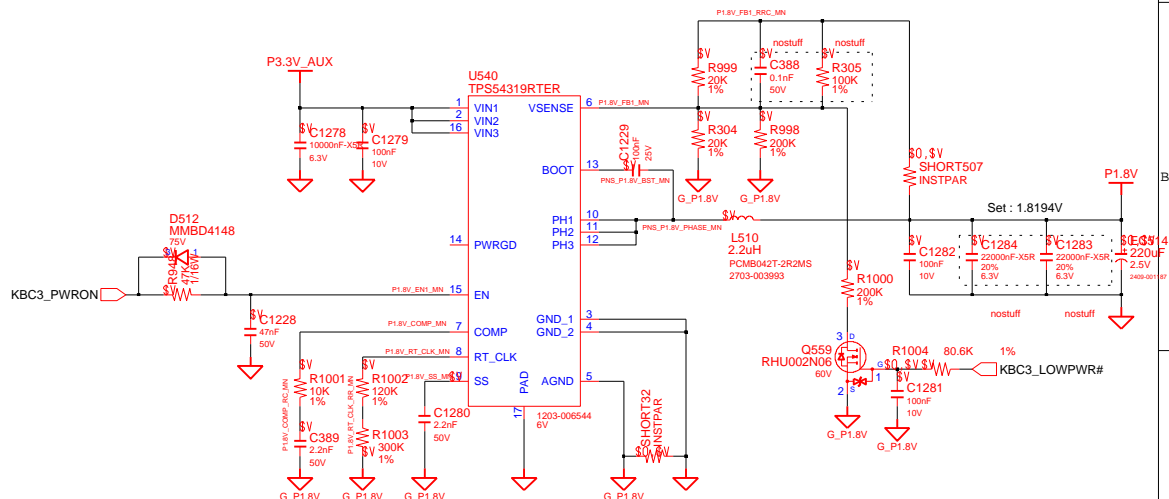
### Switched Power On (P5.0V)



### P5.0V\_AUX



### P1.8V (LVDS,PCH Core,LAN , ME IO)



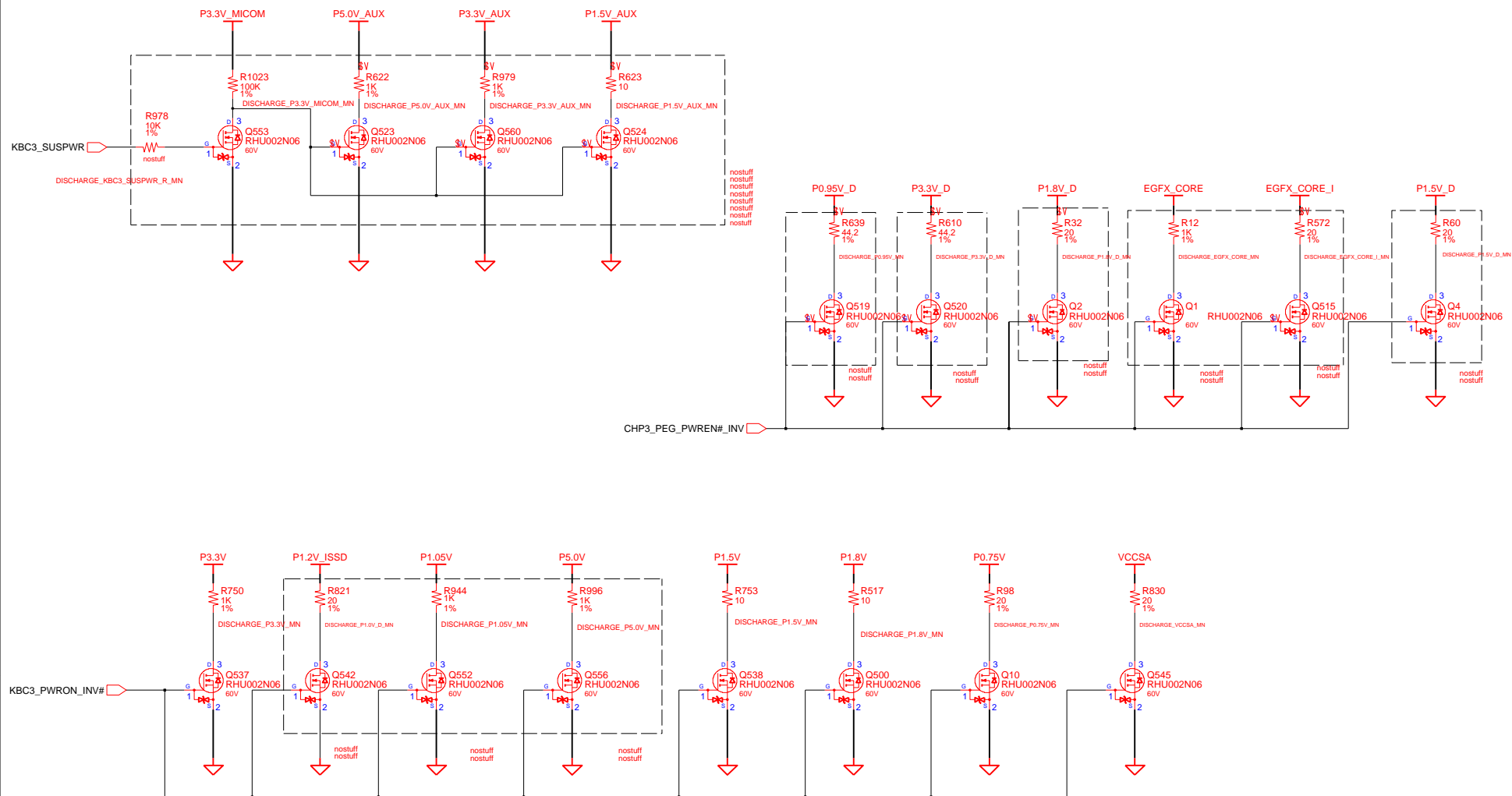
DRAW	SH YOU	DATE	7/14/2010	TITLE	Nike2-15-DC
CHECK	JJ HAN	DEV. STEP	PV		PWR_MV_SWITCHED
APPROVAL	SS BAIK	REV	REV 1.0		SWITCHED POWER
MODULE CODE		LAST EDIT		October 04, 2012 14:55:42 PM	PAGE 67 OF 75

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PART NO.  
BA41-####A

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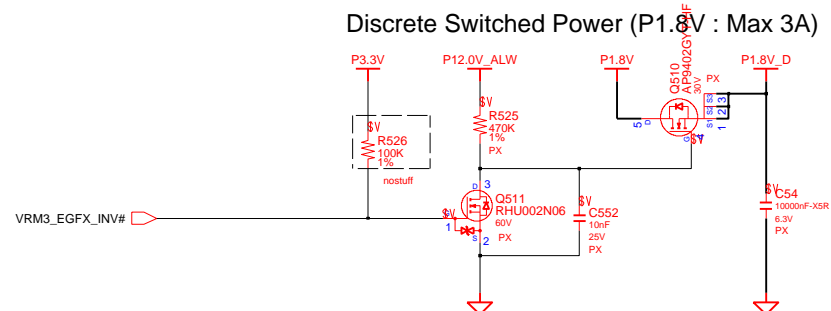
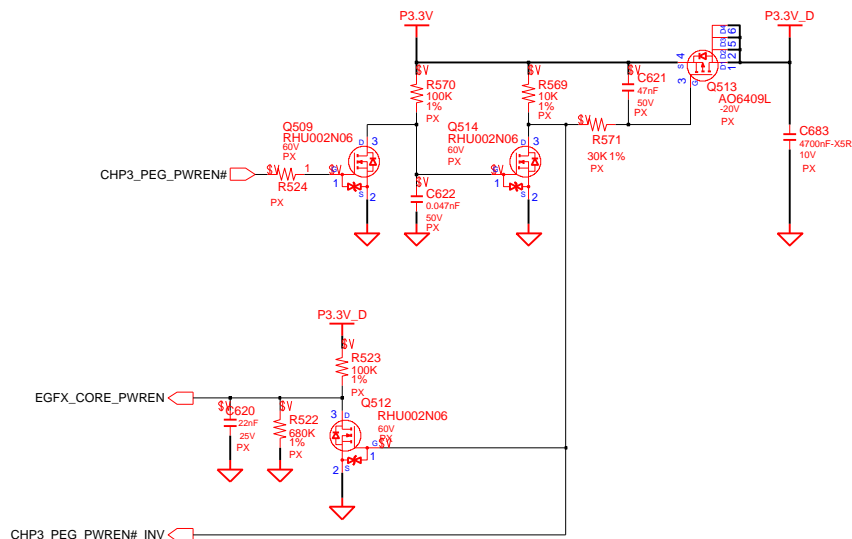
# POWER DISCHARGER



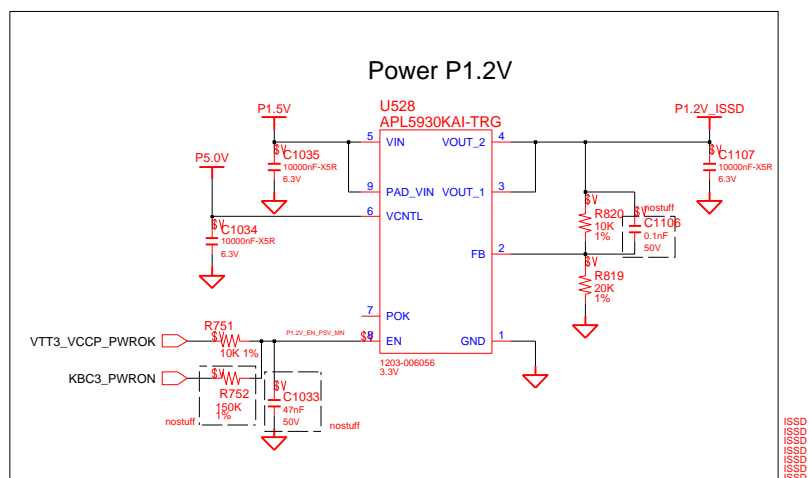
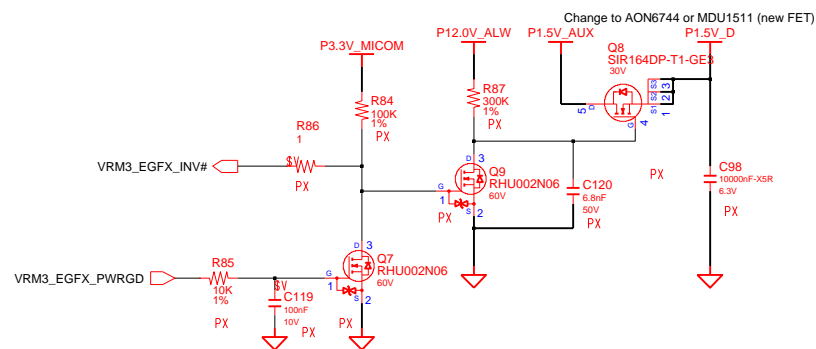
Changed to Stuff for PCH power sequence(2011.07.22)

DRAW	SH YOU	DATE	7/14/2010	TITLE  Nike2-15-DC  PWR_MV_DISCHARGER  DISCHARGING LOGIC		SAMSUNG  ELECTRONICS	
CHECK	JJ HAN	DEV. STEP	PV				
APPROVAL	SS BAIK	REV	REV 1.0			PART NO.	BA41-####A
MODULE CODE	undefined	LAST EDIT	October 04, 2012 14:55:42 PM			PAGE	68 OF 75

### Discrete Switched Power (P3.3V\_D : Max\_1.2A)



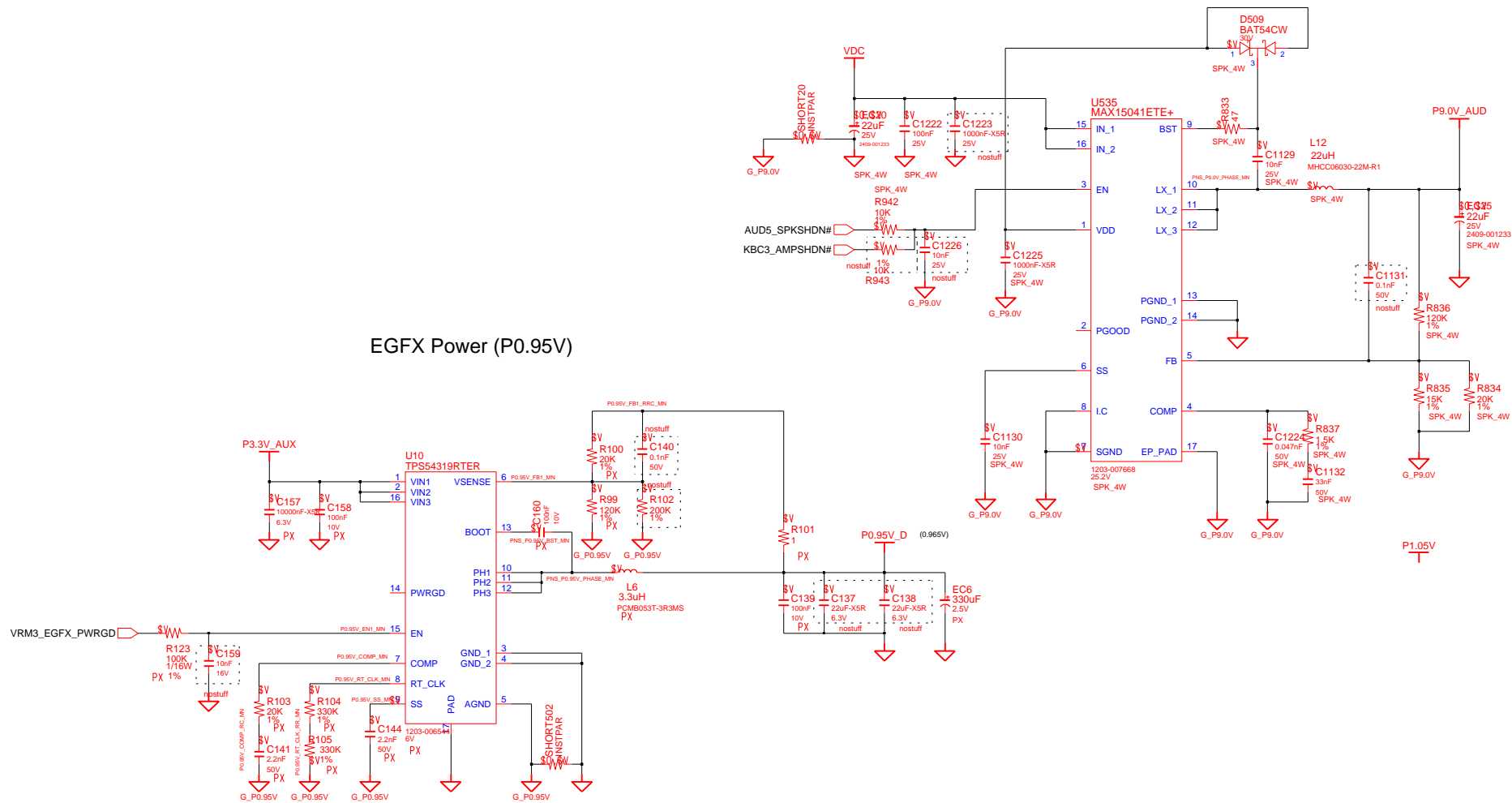
## Discrete Switched Power (D1.5V : Max 5.0A)



DRAW	SH YOU	DATE	7/14/2010	Nike2-15-DC Switched PWR 2		SAMSUNG ELECTRONICS		
CHECK	JJ HAN	DEV. STEP	PV					
APPROVAL	SS BAIK	REV	REV 1.0	FOT POWER XPRESS & USB3.0 PWR		PART NO.	BA41-####A	
MODULE CODE	LAST EDIT		October 04, 2012 14:55:42 PM			PAGE	69	OF

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EGFX Power (P0.95V)



DESIGN	SH YOU	DATE	7/14/2010	TITLE  Nike2-15-DC  P9.0V_AUD  P9.0V_AUD	SAMSUNG ELECTRONICS
CHECK	JJ HAN	DEV. STEP	PV		
APPROVAL	SS BAIK	REV	REV 1.0		
MODULE CODE			LAST EDIT		
				October 04, 2012 14:55:42 PM	PAGE 70 OF 75

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DRAW	SH YOU	DATE	7/14/2010	TITLE	Nike2-15-DC 3 IN 1 SUB BD 3 IN 1 SUB BD	<b>SAMSUNG</b> ELECTRONICS	
CHECK	JJ HAN	DEV. STEP	PV				
APPROVAL	SS BAIK	REV	REV 1.0			MODULE CODE	LAST EDIT

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A																																							
<table border="1"><tr><td>DESIGN</td><td>SH YOU</td><td>DATE</td><td>6/2/2011</td><td colspan="2" rowspan="3">TITLE</td><td rowspan="3">Nike2-15-DC USB SUB BD USB SUB BD</td><td rowspan="3"><b>SAMSUNG</b> ELECTRONICS</td></tr><tr><td>CHECK</td><td>JJ HAN</td><td>DEV. STEP</td><td>PV</td></tr><tr><td>APPROVAL</td><td>SS BAIK</td><td>REV</td><td>REV 1.0</td></tr><tr><td colspan="2">MODULE CODE</td><td colspan="2">LAST EDIT</td><td colspan="2">October 04, 2012 14:55:42 PM</td><td>PAGE</td><td>72 OF 75</td></tr></table>																DESIGN	SH YOU	DATE	6/2/2011	TITLE		Nike2-15-DC USB SUB BD USB SUB BD	<b>SAMSUNG</b> ELECTRONICS	CHECK	JJ HAN	DEV. STEP	PV	APPROVAL	SS BAIK	REV	REV 1.0	MODULE CODE		LAST EDIT		October 04, 2012 14:55:42 PM		PAGE	72 OF 75
DESIGN	SH YOU	DATE	6/2/2011	TITLE		Nike2-15-DC USB SUB BD USB SUB BD	<b>SAMSUNG</b> ELECTRONICS																																
CHECK	JJ HAN	DEV. STEP	PV																																				
APPROVAL	SS BAIK	REV	REV 1.0																																				
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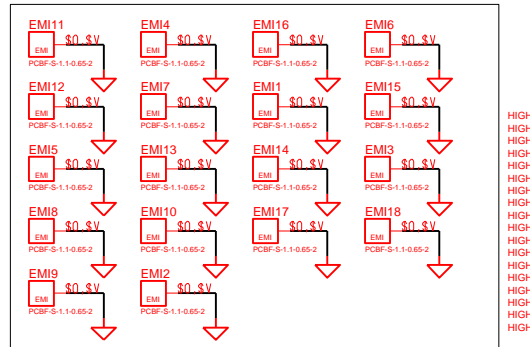
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<div><div><div><b>SAMSUNG PROPRIETARY</b> THIS DOCUMENT CONTAINS CONFIDENTIAL PROPRIETARY INFORMATION THAT IS SAMSUNG ELECTRONICS CO.'S PROPERTY. DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS EXCEPT AS AUTHORIZED BY SAMSUNG.</div></div></div>																																							
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<table border="1"><tr><td>DESIGN</td><td>SH YOU</td><td>DATE</td><td>7/14/2010</td><td rowspan="3">TITLE</td><td rowspan="3">Nike2-15-DC LCD SUB BD LCD SUB BD</td><td rowspan="3">SAMSUNG ELECTRONICS</td></tr><tr><td>CHECK</td><td>JJ HAN</td><td>DEV. STEP</td><td>PV</td></tr><tr><td>APPROVAL</td><td>SS BAIK</td><td>REV</td><td>REV 1.0</td></tr><tr><td colspan="2">MODULE CODE</td><td colspan="2">LAST EDIT</td><td>October 04, 2012 14:55:42 PM</td><td>PAGE</td><td>73</td><td>OF</td><td>75</td></tr></table>																DESIGN	SH YOU	DATE	7/14/2010	TITLE	Nike2-15-DC LCD SUB BD LCD SUB BD	SAMSUNG ELECTRONICS	CHECK	JJ HAN	DEV. STEP	PV	APPROVAL	SS BAIK	REV	REV 1.0	MODULE CODE		LAST EDIT		October 04, 2012 14:55:42 PM	PAGE	73	OF	75
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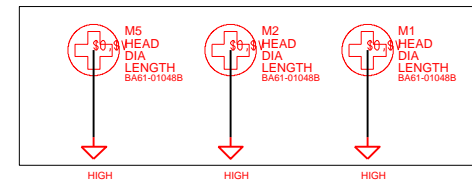
Diagram showing the connection of MT500, MT504, MT501, and MT502 components to a common ground. MT500, MT504, and MT501 are connected to a common ground point labeled '50.\$V'. MT502 is connected to a common ground point labeled '50.\$V'.

DESIGN	SH YOU	DATE	6/2/2011	TITLE  Nike2-15-DC  Mount Hole / Decap	<b>SAMSUNG</b> ELECTRONICS
CHECK	JJ HAN	DEV. STEP	PV		
APPROVAL	SS BATK	REV	REV 1.0		
MODULE CODE	LAST EDIT				
				October 04, 2012 14:55:42 PM	PAGE 74 OF 75

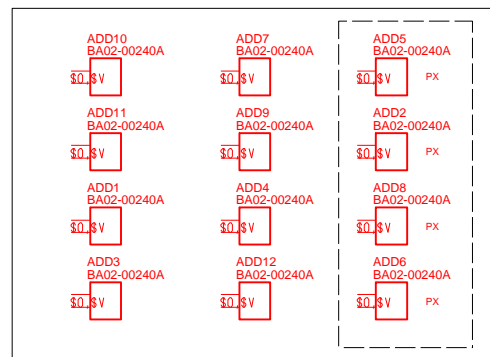
## Shield Can Gasket



## Memory Shield Can PEM



## CornerFill



DESIGN	SH YOU	DATE	7/14/2010	TITLE	Nike2-15-DC	SAMSUNG ELECTRONICS
CHECK	JJ HAN	DEV. STEP	PV			
APPROVAL	SS BAIK	REV	REV 1.0	Shield Can / Corner Fill	PART NO.	BA41-####A
MODULE CODE		LAST EDIT	October 04, 2012 14:55:42 PM	PAGE	75	OF 75