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SantaFe

CPU : DOTHAN-ULV
Chip Set : INTEL 915GMS
Remarks : CPT LCD

Model Name : SantaFe
PBA Name :

Dev. Step : SR
Revision : 0.9
T.R. Date : 2005.xx.xx

DRAW	CHECK	APPROVAL
YM An	HJ Kim	JS Euh

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DRAW	Youngno An	DATE	3/7/2006	TITLE	SantaFe	SAMSUNG ELECTRONICS
CHECK	HJ Kim	DEV. STEP	SR	COVER	PART NO.	
APPROVAL	JS Euh	REV	0.9	March 7, 2006 12:22:03 PM		PAGE 1 OF 41
MODULE CODE	LAST EDIT					

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BOARD INFORMATION

SCHEMATIC ANNOTATIONS AND BOARD INFORMATION

PCI Devices

Devices	IDSEL#	REQ/GNT#	Interrupts
CARDBUS	AD25	0	A
USB Hub to PCI	AD29(internal)	Programmable	
LPC Bridge/IDE/AC97/SMBUS	AD30(internal)		
Internal MAC	AD31(internal)		
Internal MAC	AD24(internal)		

I²C / SMB Address

Devices	Address	Hex	Bus
ICH6M	Master	-	SMBUS Master
CK-410M (Clock Generator)	1101 001x	D2h	Clock, Unused Clock Output Disable
SODIMM0	1010 001X	A2h	-
MICOM	Master		
BATTERY	0001 011h	16h	-
THERMAL MORNITOR	x100 1100	4Ch	-

USB PORT Assign

PORT 0	RIGHT SIDE USB PORT
PORT 1	LEFT SIDE USB PORT
PORT 2	TSP CONTROLLER
PORT 3	DMB
PORT 4	BLUETOOTH
PORT 6	MINI CARD
PORT 5,7	EMPTY

System Power States

Power Rail	Devices (Page Number)
P5V	FAN(9) ICH6M(15) 80PORT(19) MICOM(25) DMB(27) USB(27) CARDBUS POWER(28) LDO(31) AUDIO AMP(32)
P3.3V	CLOCK(6) Thermal sensor(9) SODIMM(14) ICH6-M(17) FWH(19) 80PORT(19) HDD(24) MICOM(25) DMB(27) CARDBUS Controller(28) MiniCARD(29) SUB Left(30) CPU VRM(37)
P1.5V	CPU(8) 915GMS(12) ICH6-M(17) MiniCARD(29)
P2.5V	915GMS(11) ICH6-M(17) LCD(22) CRT(23) LAN(26)
P1.8V	CARDBUS Controller(28)
P5V_AUX	ICH6M(17) ISL6227(35) DDR2 POWER(36)
P3.3V_AUX	LM26CIM5X-TPA(9) ICH6-M(17) MICOM(25) LAN(26) LB LED(25) MiniCARD(29) MAX1999(34)
P1.8V_AUX	915GMS(11) SODIMM(17) DDR2 POWER(36)
VCCP	CLOCK(6) CPU(8) 915GMS(10) ICH6-M(17) MICOM(25)
VCC_CORE	CPU (8)

Voltage Rails

Power Rail	Descriptions
PRTC_BAT VDC	3.3V (can drop to 2.0V min. in G3 state) supply for the RTC well. Primary DC system power supply (9 to 19V)
P5V_AUX	5.0V power rail (off in S4-S5)
P3.3V_AUX	3.3V power rail (off in S4-S5)
P1.8V_AUX	GMCH/DDR II Power Source(off in S4-S5)
MEMT_VREF	0.9V DDR2 Reference(off in S4-S5)
P5V	5.0V switched power rail (off in S3-S5)
P3.3V	3.3V switched power rail (off in S3-S5)
P1.5V	1.5V switched power rail (off in S3-S5)
P2.5V	2.5V switched power rail (off in S3-S5)
VCCP	1.05V power rail. GMCH core, CPU/GMCH FSB Termination.
VCC_CORE	Core voltage for DOTHAN CPU (0.74~1.30V)
MICOM_P5V	3.3V always on power rail for MICOM
P1.5V_DMI	1.5V (Direct Media Interface Compensation)
INV_VDC	DC power (Inverter)
LCD_VDD3V	3.3V (LCD)
VCC_CRT	5V (CRT)
CB3_A_VCC	3.3V (CF card)
AVDD	4.75V (AD1986)
AMP_VDD	5V (Audio AMP)
BLT_P3.3V	3.3V(BLUETOOTH)

CPU Core Voltage Table

VID5	VID4	VID3	VID2	VID1	VID0	Voltage	VID5	VID4	VID3	VID2	VID1	VID0	Voltage
0	0	0	0	0	0	1.708 V	1	0	0	0	0	0	1.196 V
0	0	0	0	0	1	1.692 V	1	0	0	0	0	1	1.180 V
0	0	0	0	1	0	1.675 V	1	0	0	0	1	0	1.164 V
0	0	0	0	1	1	1.660 V	1	0	0	0	1	1	1.148 V
0	0	0	1	0	0	1.644 V	1	0	0	1	0	0	1.132 V
0	0	0	1	0	1	1.628 V	1	0	0	1	0	1	1.116 V
0	0	0	1	1	0	1.612 V	1	0	0	1	1	0	1.100 V
0	0	0	1	1	1	1.596 V	1	0	0	1	1	1	1.084 V
0	0	1	0	0	0	1.580 V	1	0	1	0	0	0	1.068 V
0	0	1	0	0	1	1.564 V	1	0	1	0	0	1	1.052 V
0	0	1	0	1	0	1.548 V	1	0	1	0	1	0	1.036 V
0	0	1	0	1	1	1.532 V	1	0	1	0	1	1	1.020 V
0	0	1	1	0	0	1.516 V	1	0	1	1	0	0	1.004 V
0	0	1	1	0	1	1.500 V	1	0	1	1	0	1	0.988 V
0	0	1	1	1	0	1.484 V	1	0	1	1	1	0	0.972 V
0	0	1	1	1	1	1.468 V	1	0	1	1	1	1	0.956 V
0	1	0	0	0	0	1.452 V	1	1	0	0	0	0	0.930 V
0	1	0	0	0	1	1.436 V	1	1	0	0	0	1	0.924 V
0	1	0	0	1	0	1.420 V	1	1	0	0	1	0	0.908 V
0	1	0	0	1	1	1.404 V	1	1	0	0	1	1	0.892 V
0	1	0	1	0	0	1.388 V	1	1	0	1	0	0	0.876 V
0	1	0	1	0	1	1.372 V	1	1	0	1	0	1	0.860 V
0	1	0	1	1	0	1.356 V	1	1	0	1	1	0	0.844 V
0	1	0	1	1	1	1.340 V	1	1	0	1	1	1	0.828 V
0	1	1	0	0	0	1.324 V	1	1	1	0	0	0	0.812 V
0	1	1	0	0	1	1.308 V	1	1	1	0	0	1	0.796 V
0	1	1	0	1	0	1.292 V	1	1	1	0	1	0	0.780 V
0	1	1	0	1	1	1.276 V	1	1	1	0	1	1	0.764 V
0	1	1	1	0	0	1.260 V	1	1	1	1	0	0	0.748 V
0	1	1	1	0	1	1.244 V	1	1	1	1	0	1	0.732 V
0	1	1	1	1	0	1.228 V	1	1	1	1	1	0	0.716 V
0	1	1	1	1	1	1.212 V	1	1	1	1	1	1	0.700 V

DOTHAN-ULV
HIGH FREQUENCY MODE

DOTHAN-ULV
LOW FREQUENCY MODE

DOTHAN-ULV
DEEPER SLEEP MODE
Refer to page43

DRAW	Youngno An	DATE	3/7/2006	TITLE	SantaFe MAIN BOARD INFORMATION	SAMSUNG ELECTRONICS PART NO.
CHECK	HJ Kim	DEV. STEP	SR			
APPROVAL	JS Euh	REV	0.9			
MODULE CODE		LAST EDIT	March 7, 2006 12:22:03 PM	PAGE	5 OF 41	

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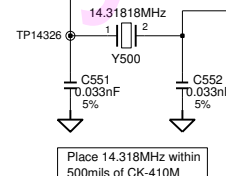
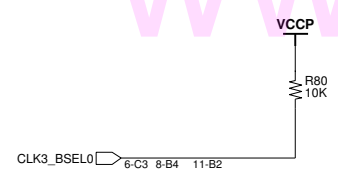
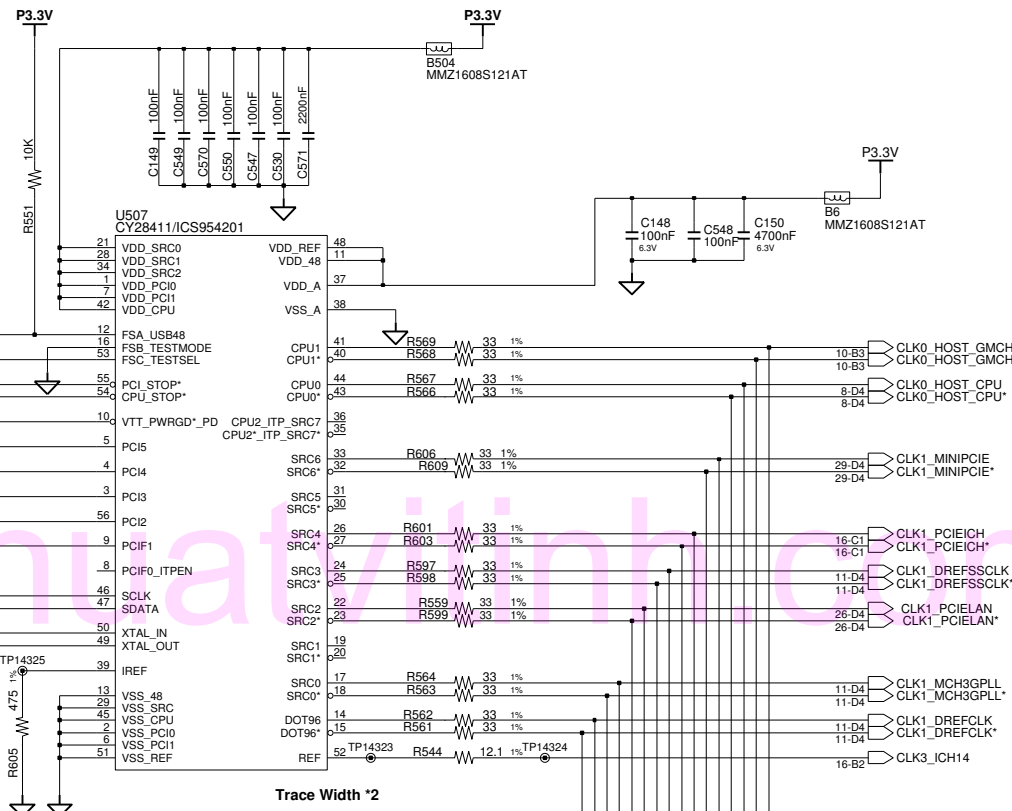
CK-410M

ICS954201
CY28411ZC

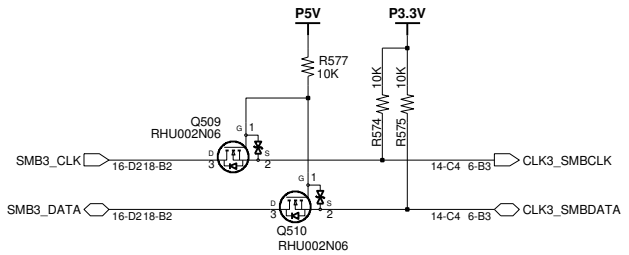
Bus Selection for CK-410M (100MHz)

F5B/F5C : by CPU/MCH BSEL(Page 6)
F5A : P3.3V PU

CK-410M CPU	F5A BSEL2	F5B BSEL1	F5C BSEL0	HOST CLK
	0	0	0	266 MHz
	0	0	1	333 MHz
	0	1	0	200 MHz
	0	1	1	400 MHz
	1	0	0	133 MHz
	1	0	1	100 MHz
	1	1	0	166 MHz
	1	1	1	RSVD



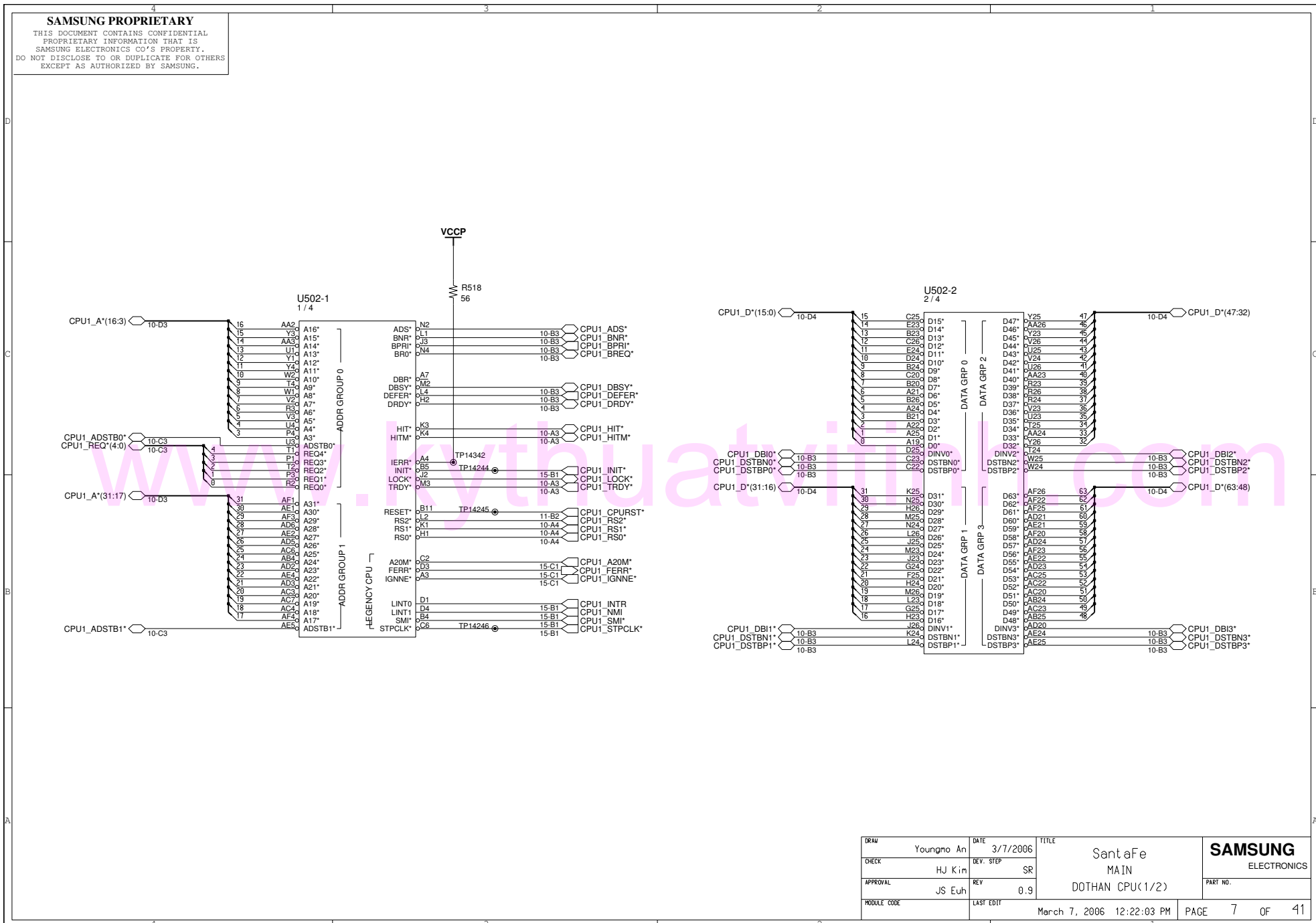
SMBUS Address "D2h"
ICS: 1205-002705
Cypress: 1205-002574



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CHECK	HJ Kim	DEV. STEP	SR	PART NO.		
APPROVAL	JS Euh	REV	0.9			
MODULE CODE		LAST EDIT	March 7, 2006 12:22:03 PM	PAGE	6 OF 41	

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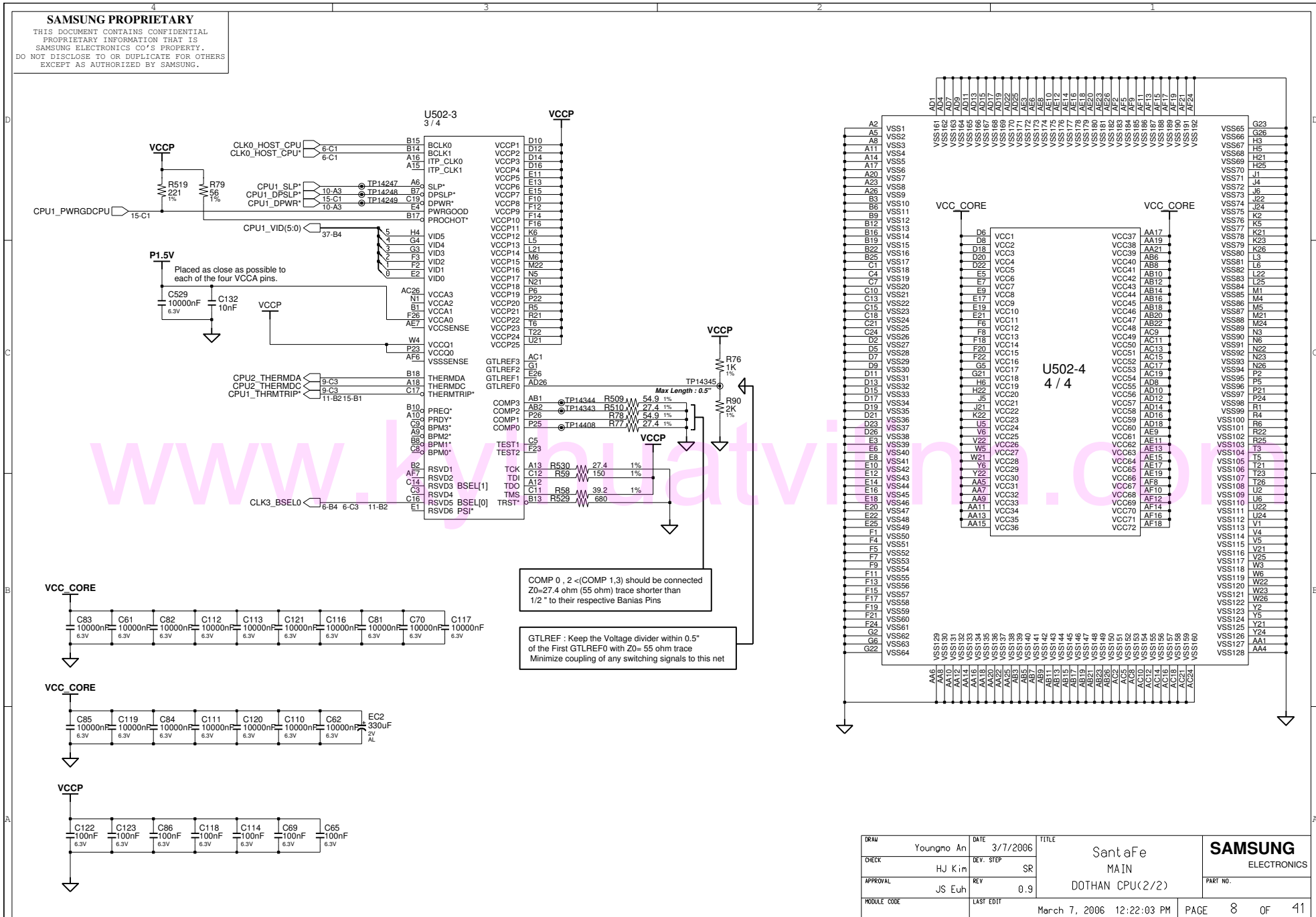
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DRAW	Youngmo An	DATE	3/7/2006	TITLE	Santafe MAIN DOTHAN CPU(1/2)	SAMSUNG ELECTRONICS
CHECK	HJ Kim	DEV. STEP	SR	PART NO.		
APPROVAL	JS Euh	REV	0.9			
MODULE CODE		LAST EDIT	March 7, 2006 12:22:03 PM	PAGE 7 OF 41		

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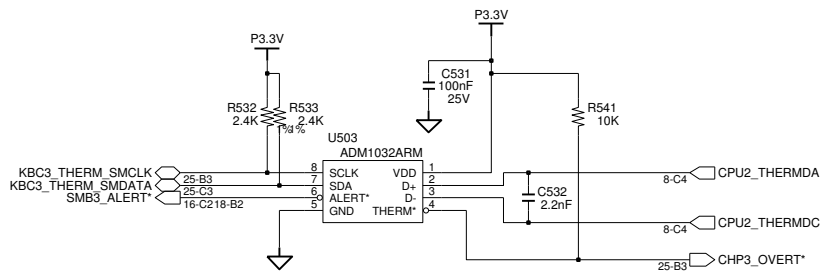
COMP 0, 2 < (COMP 1,3) should be connected Z0=27.4 ohm (55 ohm) trace shorter than 1/2" to their respective Banias Pins

GTLREF : Keep the Voltage divider within 0.5" of the First GTLREF0 with Z0= 55 ohm trace Minimize coupling of any switching signals to this net

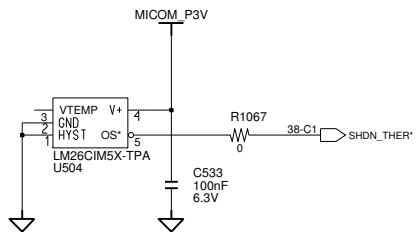
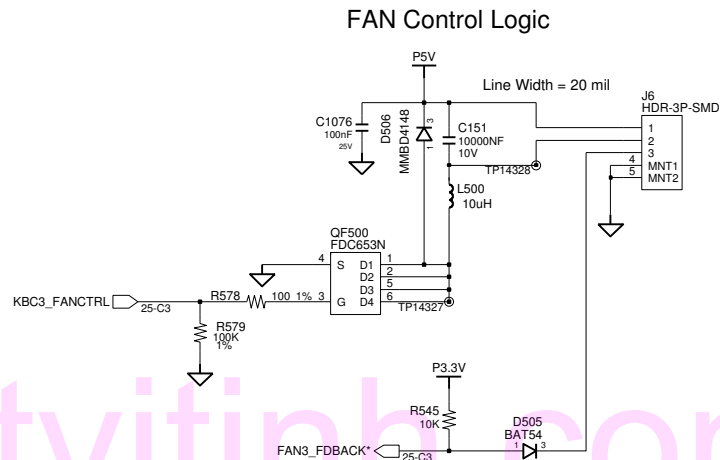
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CHECK	HJ Kim	DEV. STEP	SR			
APPROVAL	JS Euh	REV	0.9			
MODULE CODE		LAST EDIT	March 7, 2006 12:22:03 PM	PAGE	8 OF 41	

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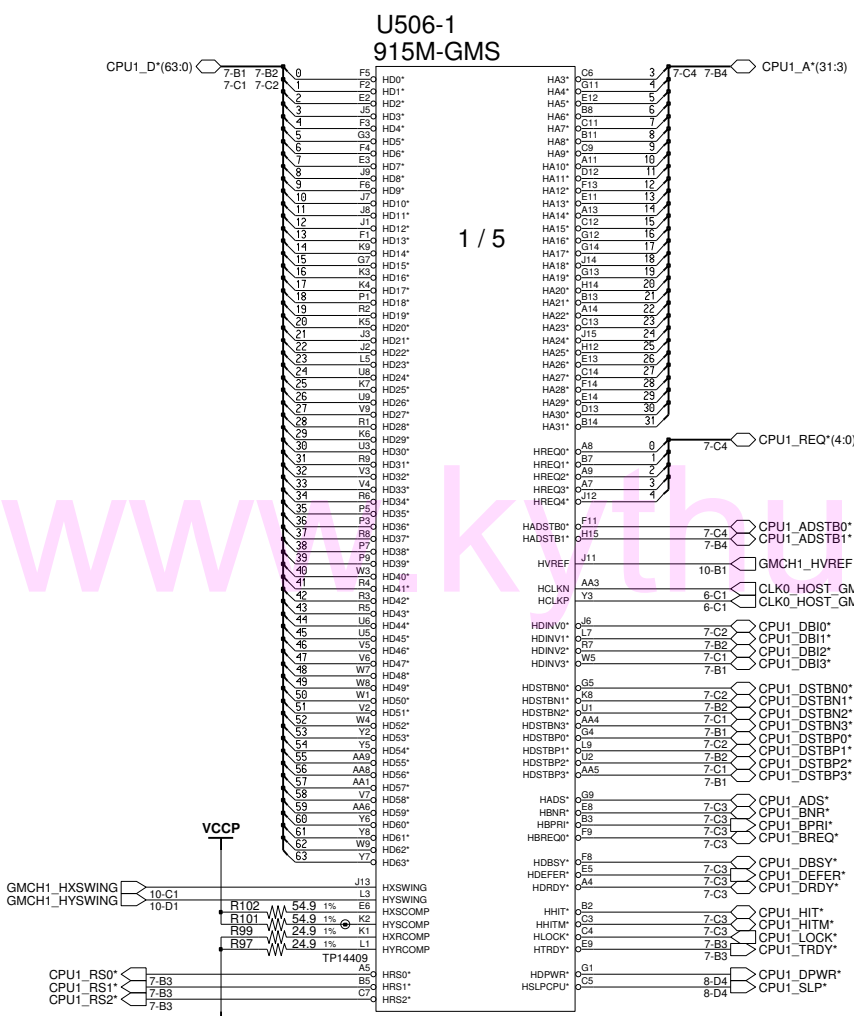
CPU Thermal Sensor
 SMBUS Addr"4Ch"(x100 1100)
 Put this sensor between CPU and MCH



DRAW	Youngno An	DATE	3/7/2006	TITLE	SantaFe MAIN	SAMSUNG ELECTRONICS
CHECK	HJ Kim	DEV. STEP	SR			
APPROVAL	JS Euh	REV	0.9	THERMAL SENSOR/FAN CONTRL	PART NO.	
MODULE CODE		LAST EDIT	March 7, 2006 12:22:03 PM	PAGE	9	OF 41

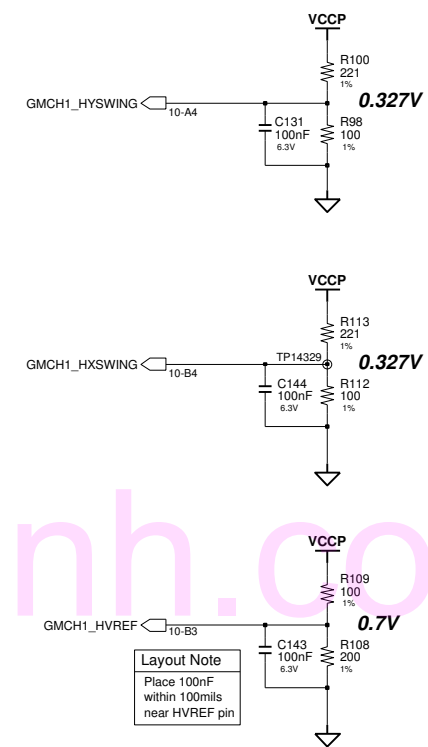
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HSLPCPU* - GMCH : Enhanced mode (def.)
HSLPCPU* - ICH : Legacy mode

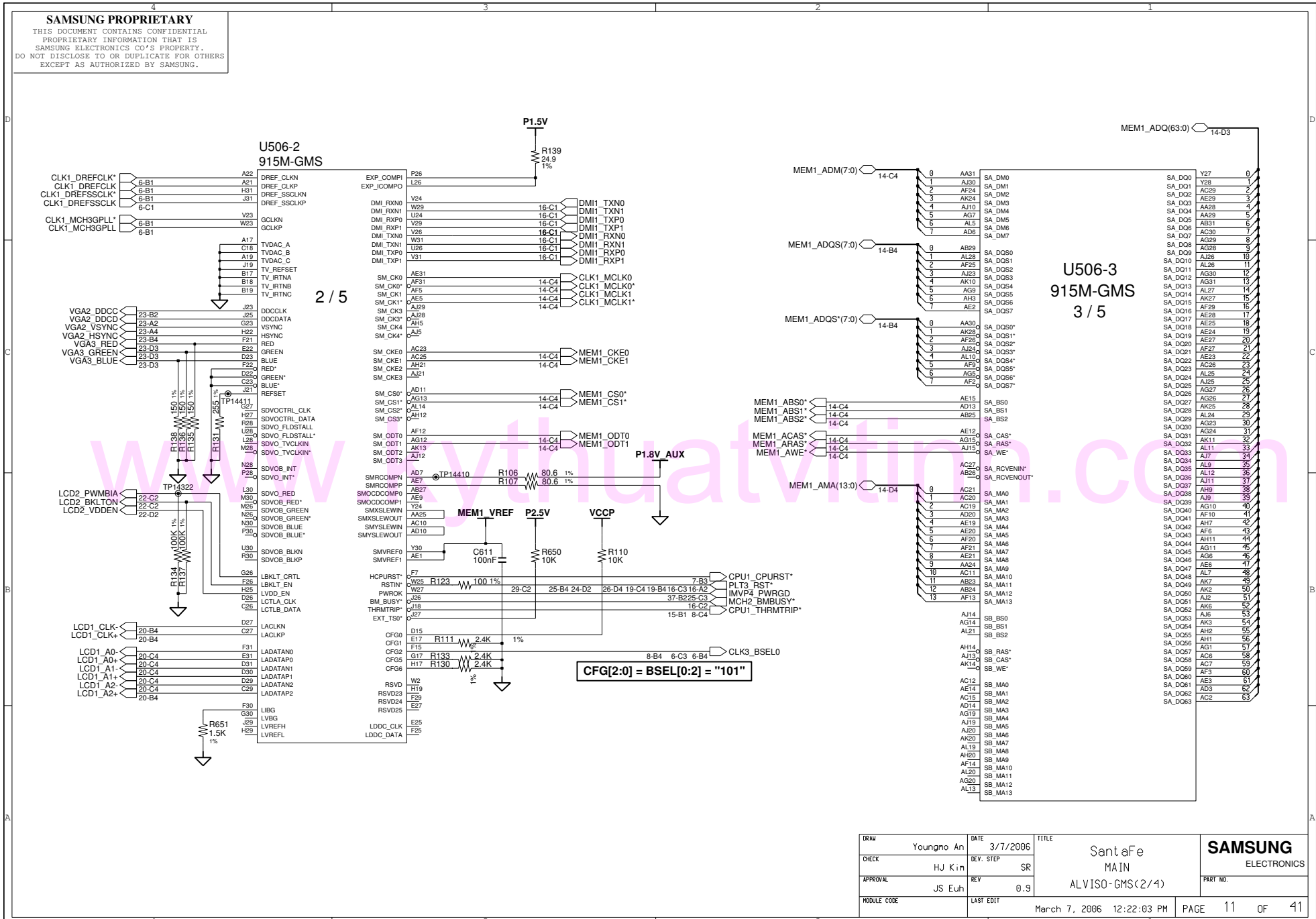


Layout Note
Place 100nF within 100mils near HVREF pin

DRAW	Youngmo An	DATE	3/7/2006	TITLE	SantaFe MAIN ALVISO-GMS(1/4)	SAMSUNG ELECTRONICS PART NO.
CHECK	HJ Kim	DEV. STEP	SR			
APPROVAL	JS Euh	REV	0.9			
MODULE CODE		LAST EDIT	March 7, 2006 12:22:03 PM	PAGE	10 OF 41	

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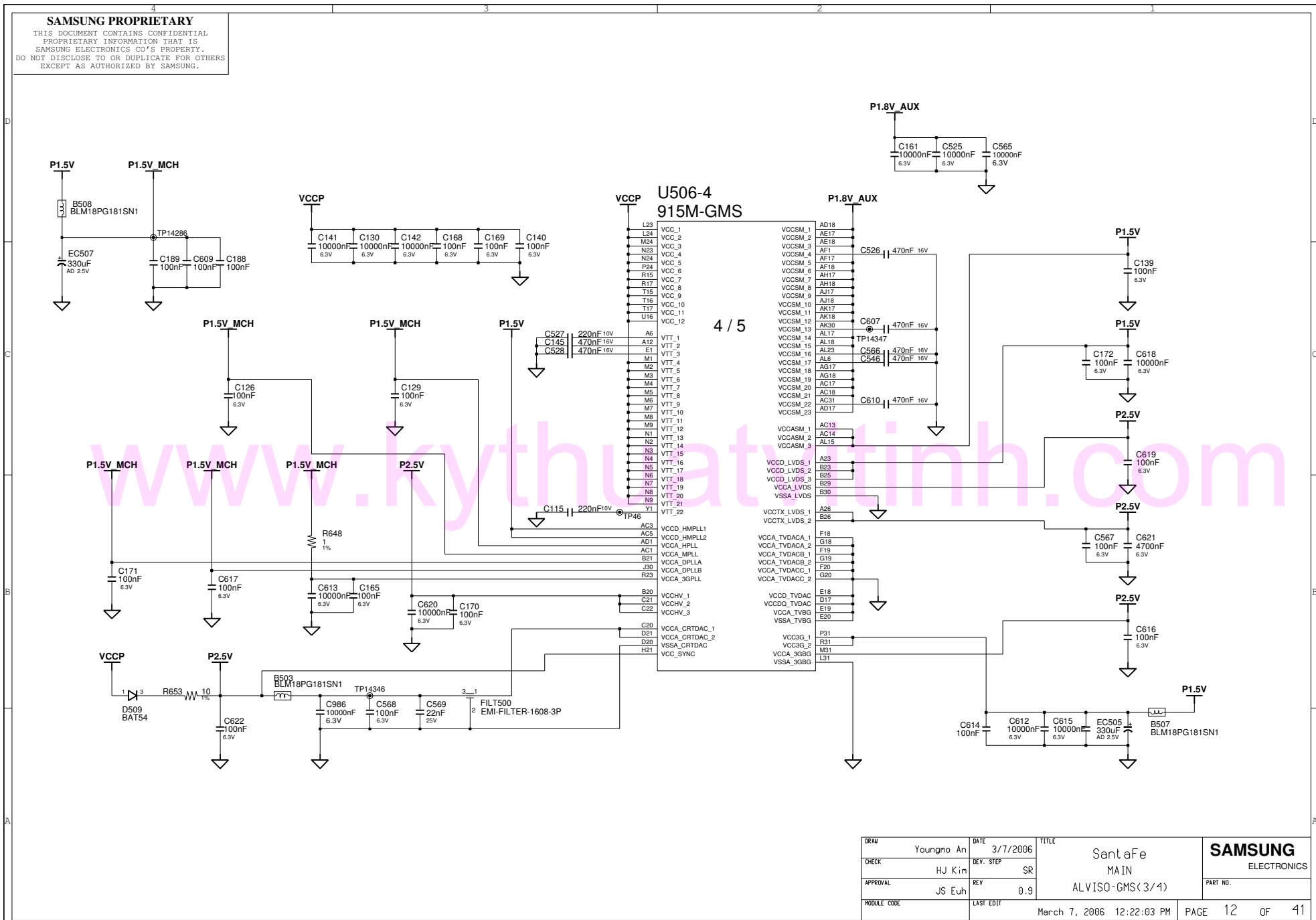
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CHECK	HJ Kim	DEV. STEP	SR	MAIN		
APPROVAL	JS Euh	REV	0.9	ALVISO-GMS(2/4)		PART NO.
MODULE CODE		LAST EDIT	March 7, 2006 12:22:03 PM	PAGE	11	OF 41

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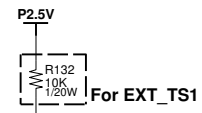
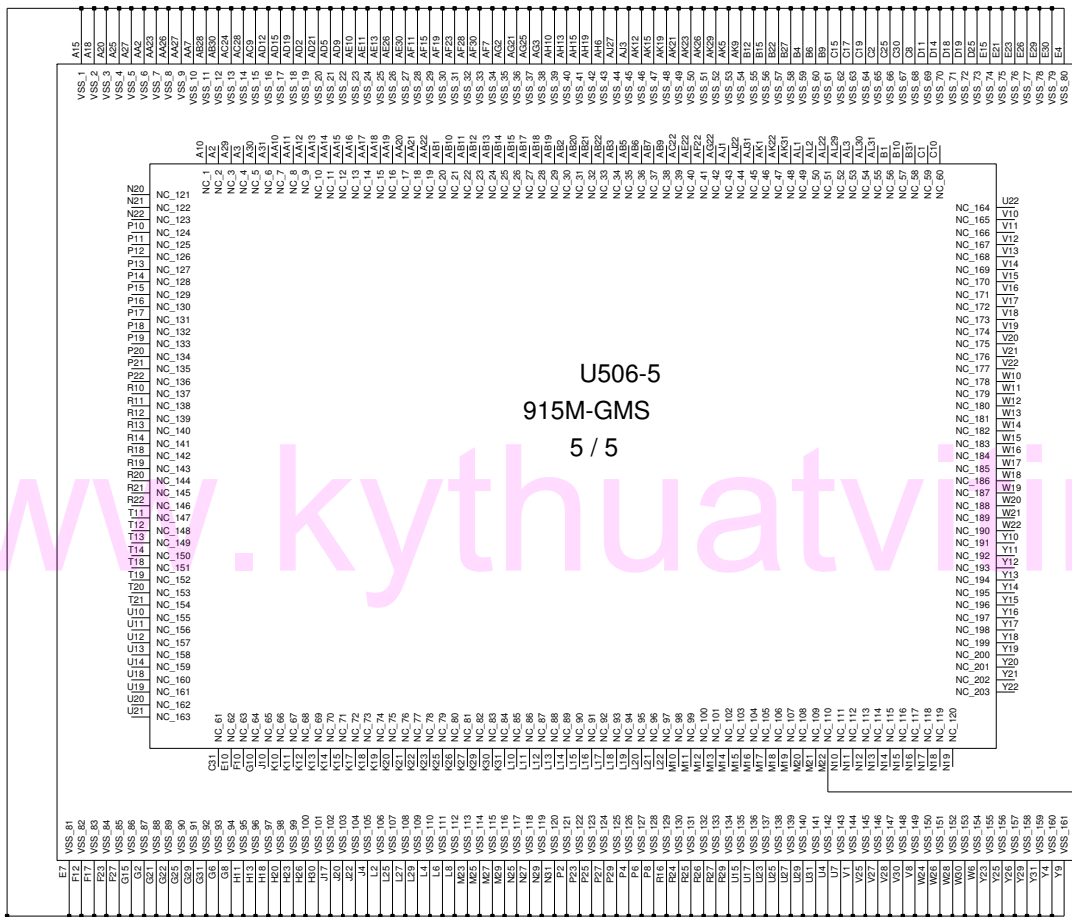
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CHECK	HJ Kim	DEV. STEP	SR	PART NO.		
APPROVAL	JS Euh	REV	0.9			
MODULE CODE		LAST EDIT	March 7, 2006 12:22:03 PM	PAGE 12 OF 41		

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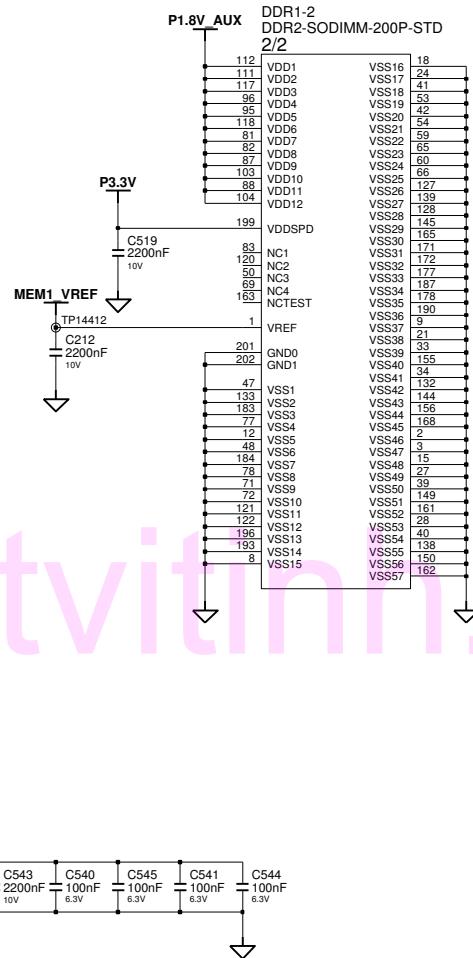
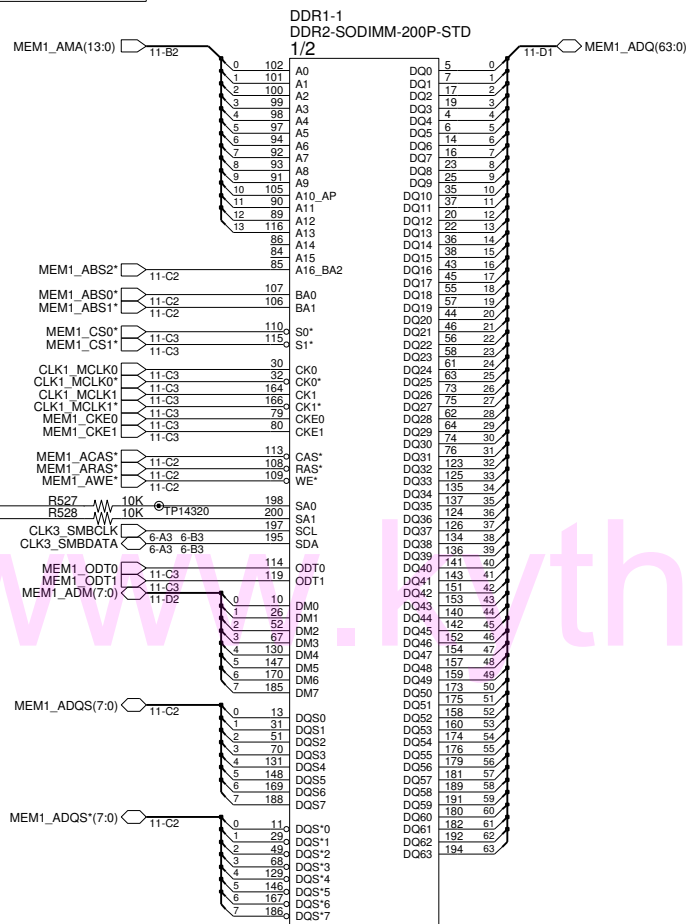
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CHECK	HJ Kim	DEV. STEP	SR	PART NO.		
APPROVAL	JS Euh	REV	0.9			
MODULE CODE		LAST EDIT	March 7, 2006 12:22:03 PM	PAGE	13	OF 41

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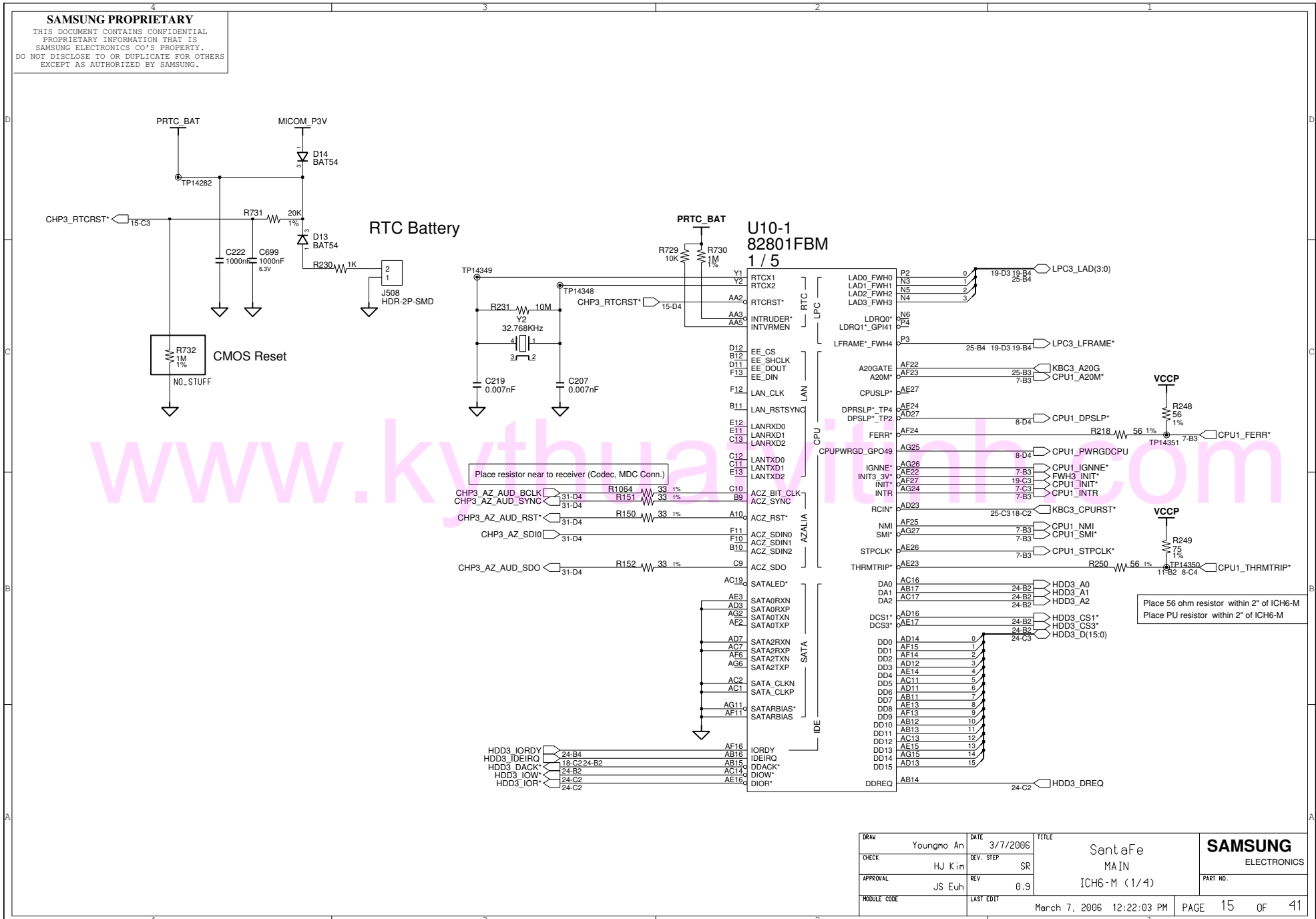
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DRAW	Youngmo An	DATE	3/7/2006	TITLE	Santafe MAIN DDR2 Memory	SAMSUNG ELECTRONICS
CHECK	HJ Kim	DEV. STEP	SR	PART NO.		
APPROVAL	JS Euh	REV	0.9			
MODULE CODE		LAST EDIT				
				March 7, 2006 12:22:03 PM	PAGE	14 OF 41

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DRAW	Youngmo An	DATE	3/7/2006	TITLE	SantaFe MAIN ICH6-M (1/4)	SAMSUNG ELECTRONICS PART NO.
CHECK	HJ Kim	DEV. STEP	SR			
APPROVAL	JS Euh	REV	0.9			
MODULE CODE		LAST EDIT	March 7, 2006 12:22:03 PM	PAGE	15 OF 41	

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U10-2 82801FBM 2/5

U10-3 82801FBM 3/5

AC caps : PCIe need to be within 250mils of the driver Resistor for Test : Place Stuffing Option to minimize stubs

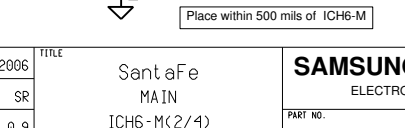
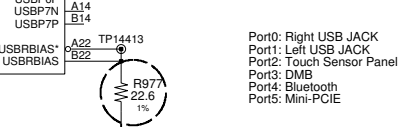
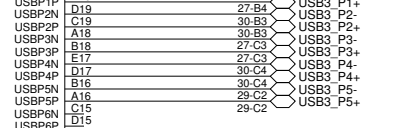
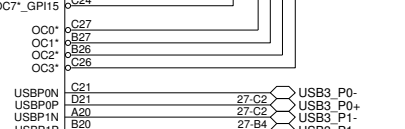
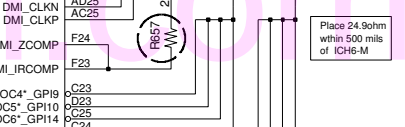
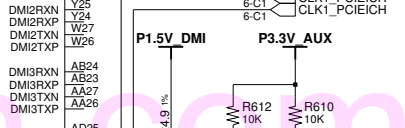
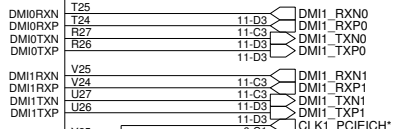
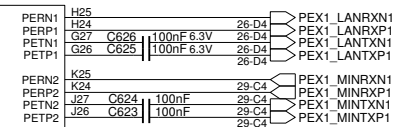
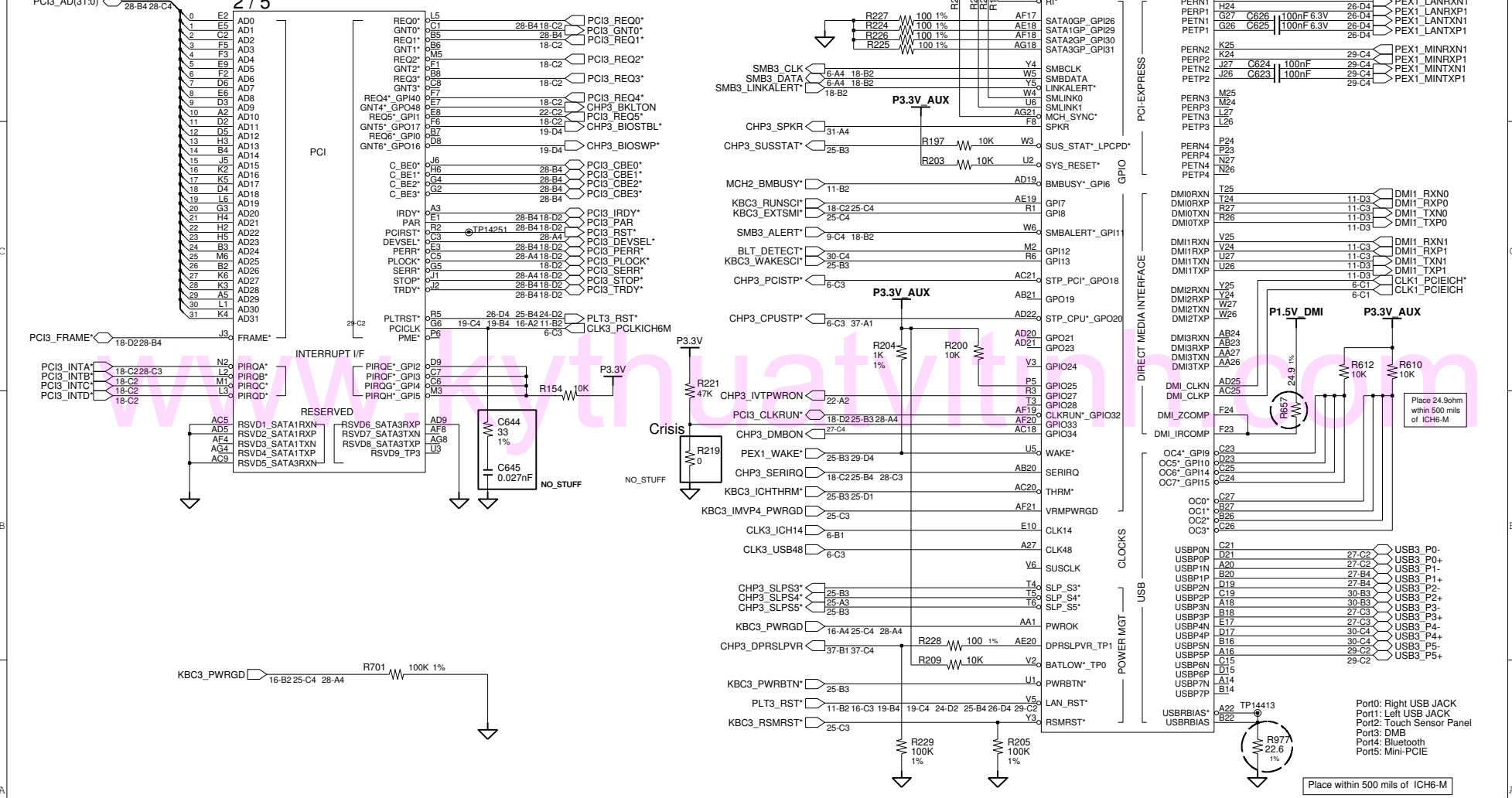
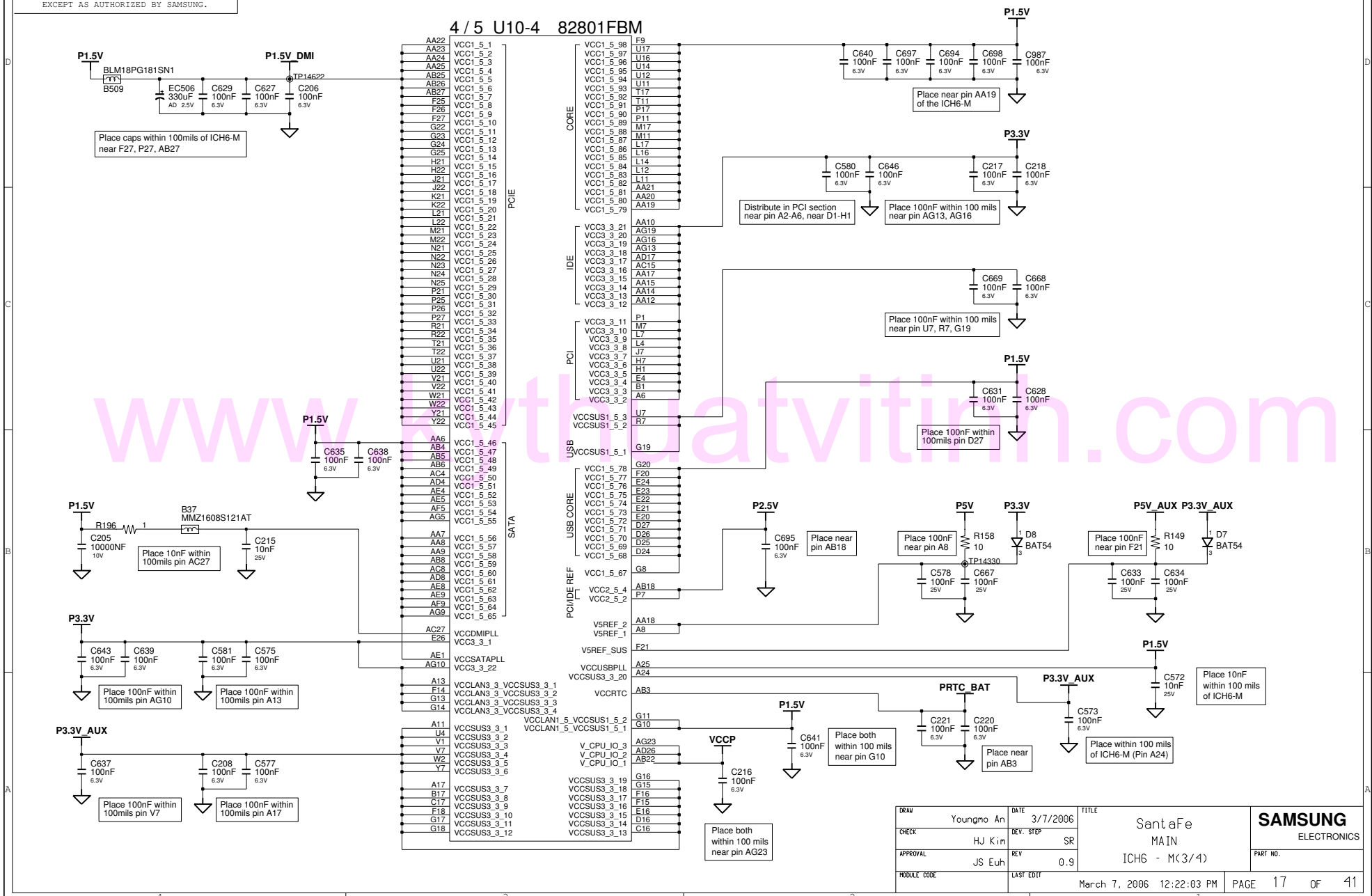


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4 / 5 U10-4 82801F8M

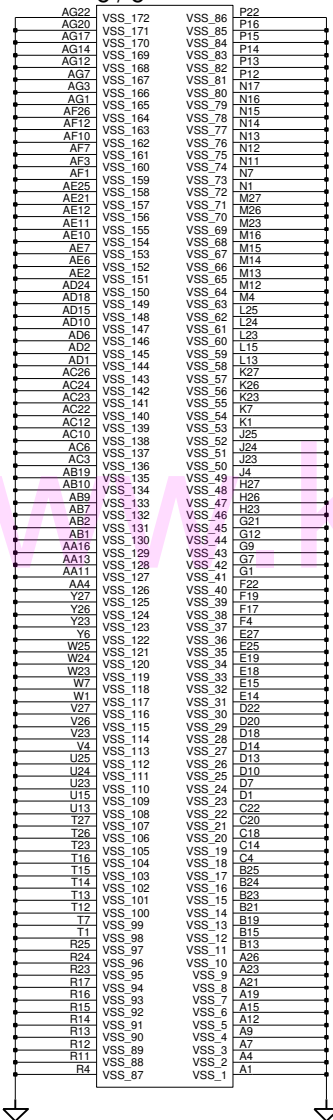


DRAW	Youngmo An	DATE	3/7/2006	TITLE	SantaFe	SAMSUNG ELECTRONICS
CHECK	HJ Kim	DEV. STEP	SR	MAIN	PART NO.	
APPROVAL	JS Euh	REV	0.9	ICH6 - M(3/4)		
MODULE CODE		LAST EDIT	March 7, 2006 12:22:03 PM	PAGE	17	OF 41

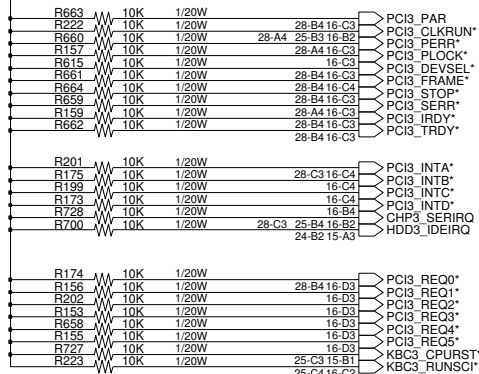
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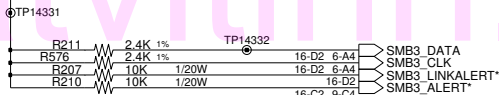
**U10-5
82801FBM
5 / 5**



P3.3V



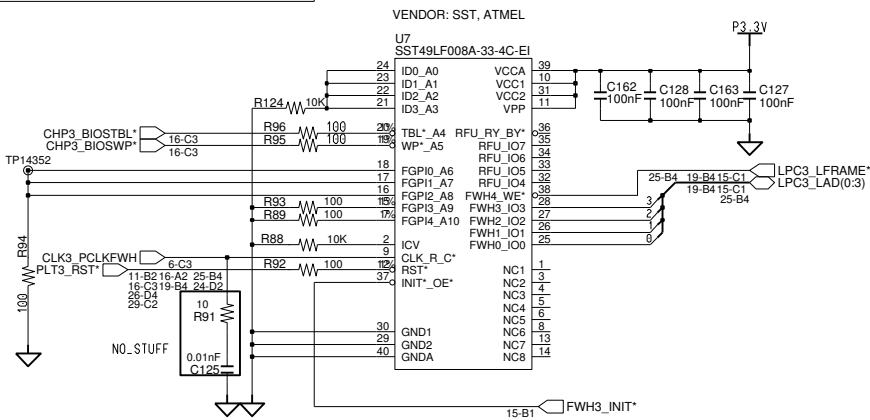
P3.3V_AUX



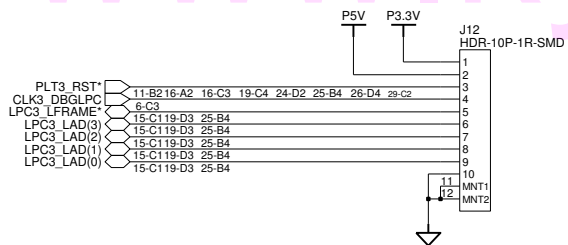
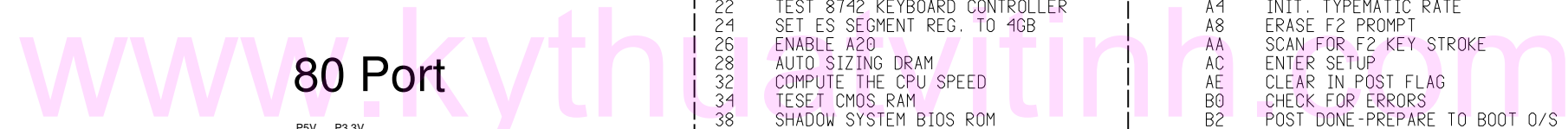
DRAW	Youngmo An	DATE	3/7/2006	TITLE	SantaFe	SAMSUNG ELECTRONICS
CHECK	HJ Kim	DEV. STEP	SR	MAIN		
APPROVAL	JS Euh	REV	0.9	ICH6 - M(4/4)		PART NO.
MODULE CODE		LAST EDIT	March 7, 2006 12:22:03 PM	PAGE	18	OF 41

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80 Port



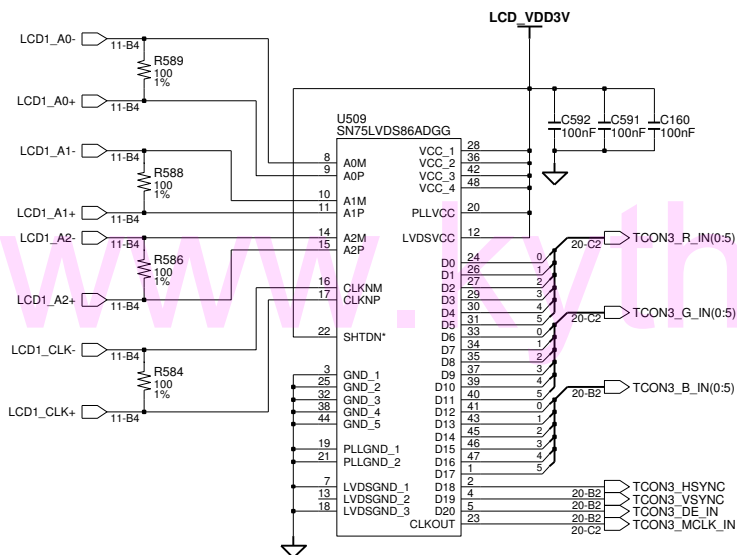
02	VERIFY REAL MODE	66	CONFIGURE ADVANCE CACHE REG.
03	DISABLE NMI	6A	DISPLAY EXTERNAL CACHE SIZE
04	GET CPU TYPE	6C	DISPLAY SHADOW MESSAGE
06	INIT. SYSTEM H/W	6E	DISPLAY NON-DISPOSABLE SEGMENT
08	INIT. CHIPSET REG.	70	DISPLAY ERROR MESSAGE
09	SET IN POST FLAG	72	CHECK FOR CONFIGURATION ERROR
0A	INIT CPU.REG	74	TEST REAL-TIME CLOCK
0B	CPU CACHE ON	76	CHECK FOR KEYBOARD ERROR
0C	INIT.CACHE TO POST	7C	SETUP HARDWARE INTERRUPT VECTOR
0E	INIT. I/O VALUE	7E	TEST COPROCESSER IF PRESENT
0F	ENABLE THE L-BUS IDE	80	DISABLE ON-BOARD I/O PORT
10	INIT. POWER MANAGER	82	DETECT AND INSTALL EXT.RS232C
11	LOAD ALTERNATE REG.	84	DETECT AND INSTALL EXT.PARALLEL
13	PCI BUS MASTER RESET WITH INITIAL POST VALUE	86	RE-INIT. ON-BOARD I/O PORT
14	INIT. KEYBOARD CONTROLLER	88	INIT. BIOS DATA ROM
16	CHECK CHECKSUM	8A	INIT.EXTENDED BIOS DATA AREA
18	8254 TIMER INIT.	8C	INIT. FDD CONTROLLER
1A	8237 DMA CONTROLLER INIT.	9A	SHADOW OPTION ROMS
1C	RESET INTERRUPT CONTROLLER	9C	SETUP POWER MANAGEMENT
20	TEST DRAM REFRESH	9E	ENABLE H/W INTERRUPT
22	TEST 8742 KEYBOARD CONTROLLER	A0	SET TIME OF DAY
24	SET ES SEGMENT REG. TO 4GB	A4	INIT. TYPOMATIC RATE
26	ENABLE A20	A8	ERASE F2 PROMPT
28	AUTO SIZING DRAM	AA	SCAN FOR F2 KEY STROKE
32	COMPUTE THE CPU SPEED	AC	ENTER SETUP
34	TESET CMOS RAM	AE	CLEAR IN POST FLAG
38	SHADOW SYSTEM BIOS ROM	B0	CHECK FOR ERRORS
3A	AUTO SIZING CACHE	B2	POST DONE-PREPARE TO BOOT O/S
3C	CONFIGURE ADVANCED CHIPSET REG.	B4	ONE BEEP
3D	LOAD ALTER REG. WITH CMOS VALUE	B6	CHECK PASSWORD (OPTION)
42	INIT. INTERRUPT VECTOR	B7	ACPI INIT
44	INIT. BIOS INTERRUPT	BA	DMI INIT
46	CHECK ROM COPYRIGHT NOTICE	BE	CLEAR SCREEN
47	INIT. I20 SUPPORT IF INSTALLED	C0	TRY BOOT WITH INT19
48	CHECK VIDEO CONFIGURE AGAINST CMOS	D0	INTERRUPT HANDLER ERROR
49	INIT. PCI BUS AND DEVICE	D2	UNKNOWN INTERRUPT ERROR
4A	INIT. ALL VIDEO BIOS ROM	D4	PENDING INTERRUPT ERROR
4C	SHADOW VIDEO BIOS ROM	D6	SHUTDOWN 5
50	DISPLAY CPU TYPE AND SPEED	D8	SHUTDOWN ERROR
52	TEST KEYBOARD	DA	EXTENDED BLOCK MOVE
54	SET KEYCLICK IF ENABLED	DC	SHUTDOWN 10
56	ENABLE KEYBOARD	89	ENABLE NMI
58	TEST FOR UNEXPECTED INTERRUPTS	90	INIT. HDD CONTROLLER
5A	DISPLAY " PRESS SETUP"	91	INIT. LOCAL BUS HDD CONTROLLER
5C	TEST RAM BETWEEN 512K AND 640K	92	JUMP TO USER PATCH 2
60	TEST EXTENDED MEMORY	94	DISABLE A20 ADDRESS LINE
62	TEST EXTENDED MEMORY ADDRESS LINE	96	CLEAR HUGE ES SEGMENT REG.
64	JUMP TO USER PATCH 1	98	SEARCH FOR OPTION ROMS

DRAW	Youngno An	DATE	3/7/2006	TITLE	SantaFe	SAMSUNG ELECTRONICS
CHECK	HJ Kim	DEV. STEP	SR	MAIN		
APPROVAL	JS Euh	REV	0.9	FWH & 80Port		PART NO.
MODULE CODE		LAST EDIT	March 7, 2006 12:22:03 PM	PAGE	19	OF 41

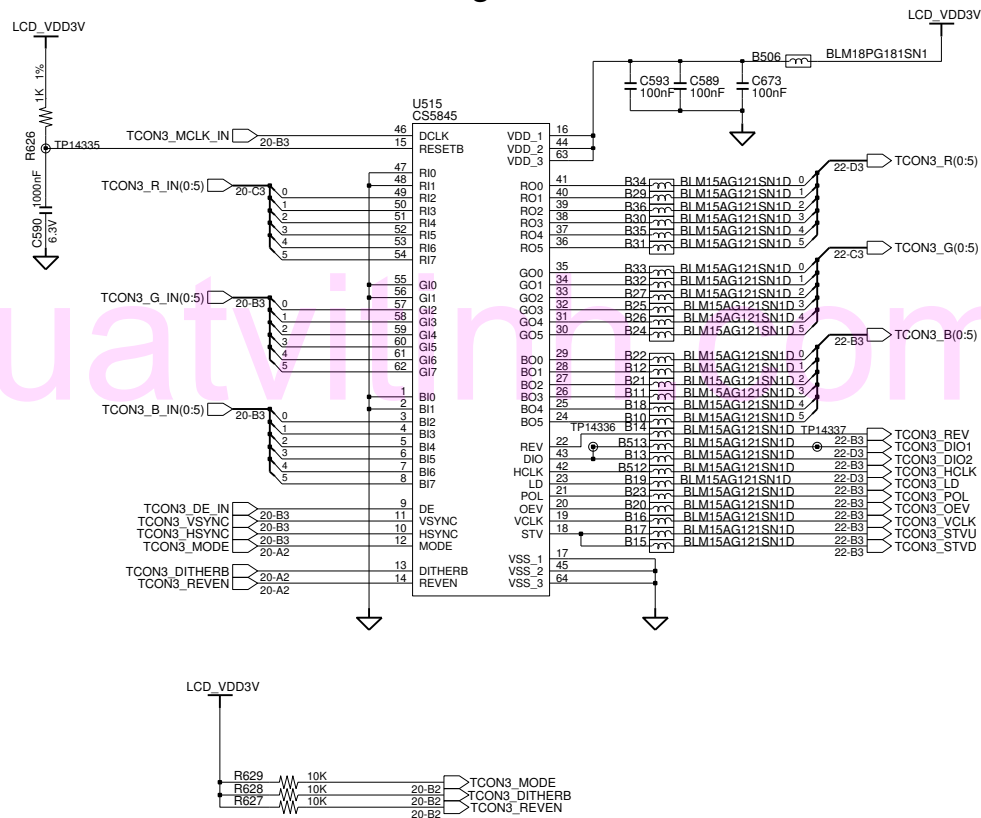
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LVDS to LVTTTL



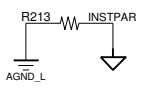
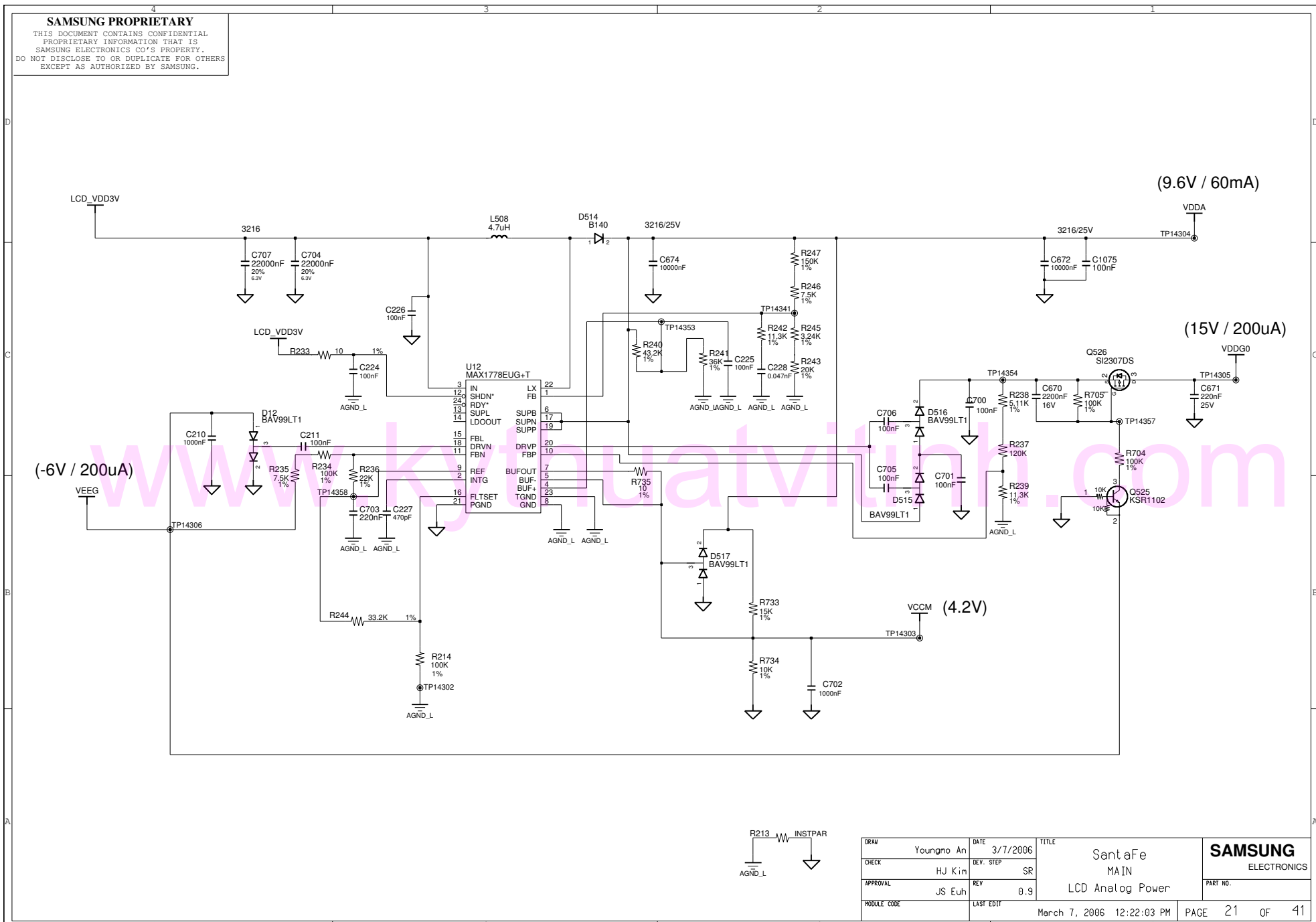
LCD Timing Controller



DRAW	Youngmo An	DATE	3/7/2006	TITLE	SantaFe MAIN	SAMSUNG ELECTRONICS
CHECK	HJ Kim	DEV. STEP	SR	LVDS TO LVTTTL & Tcon		
APPROVAL	JS Euh	REV	0.9	PART NO.		
MODULE CODE		LAST EDIT	March 7, 2006 12:22:03 PM	PAGE	20	OF 41

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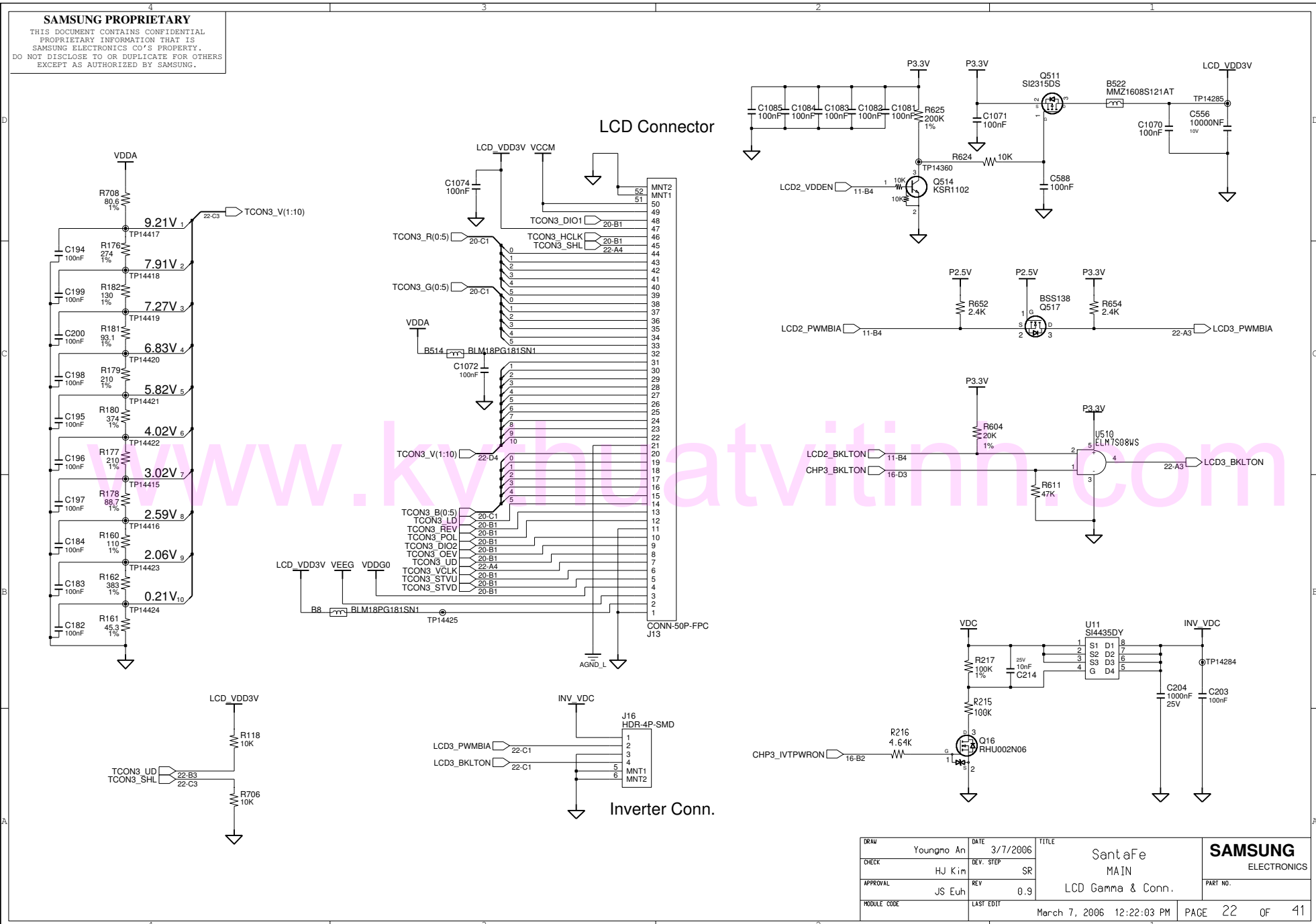
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DRAW	Youngmo An	DATE	3/7/2006	TITLE	SantaFe MAIN LCD Analog Power	SAMSUNG ELECTRONICS PART NO.
CHECK	HJ Kim	DEV. STEP	SR			
APPROVAL	JS Euh	REV	0.9			
MODULE CODE		LAST EDIT	March 7, 2006 12:22:03 PM	PAGE	21 OF 41	

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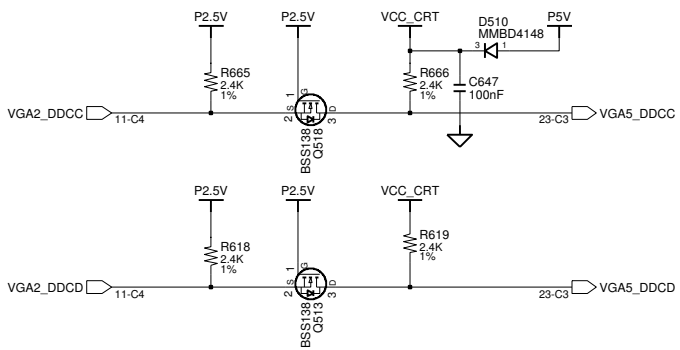
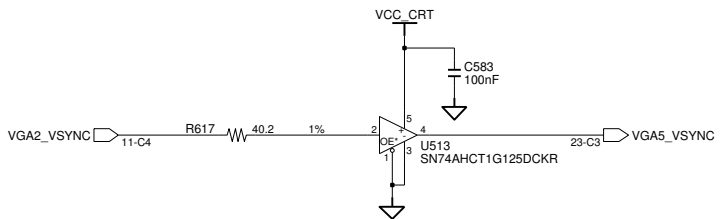
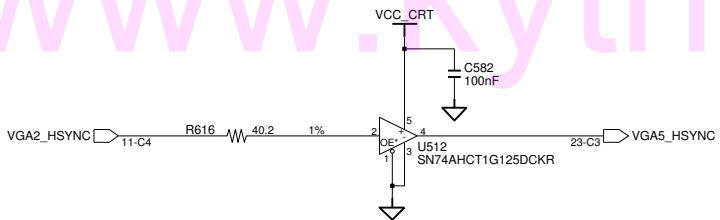
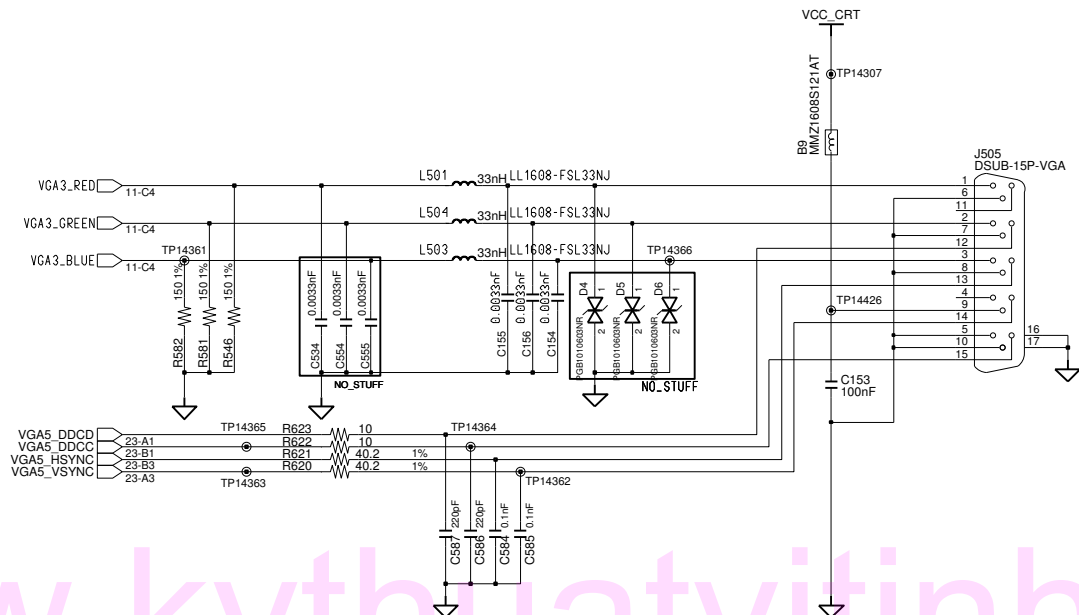
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DRAW	Youngmo An	DATE	3/7/2006	TITLE	SantaFe MAIN LCD Gamma & Conn.	SAMSUNG ELECTRONICS PART NO.
CHECK	HJ Kim	DEV. STEP	SR			
APPROVAL	JS Euh	REV	0.9			
MODULE CODE		LAST EDIT	March 7, 2006 12:22:03 PM	PAGE	22 OF 41	

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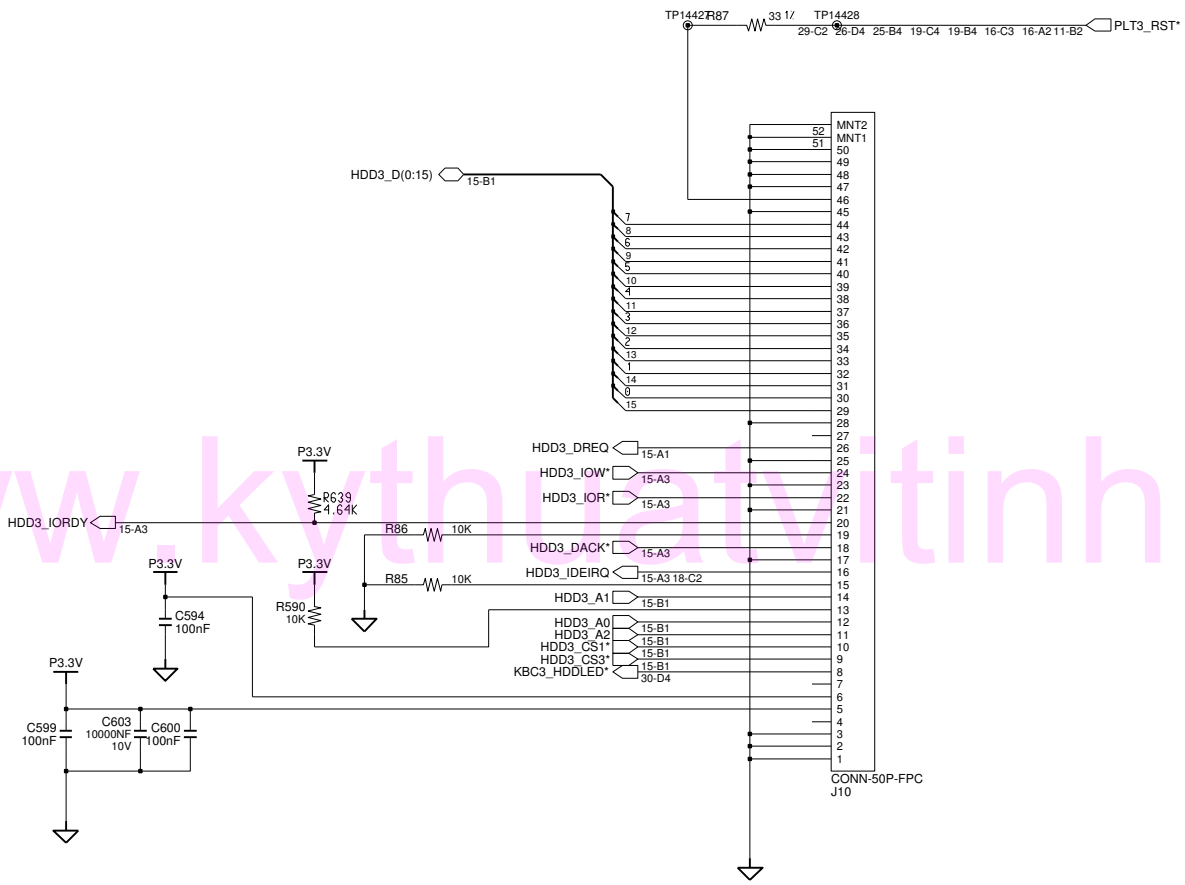
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DRAW	Youngmo An	DATE	3/7/2006	TITLE	SantaFe MAIN VGA Level Shift	SAMSUNG ELECTRONICS
CHECK	HJ Kim	DEV. STEP	SR	PART NO.		
APPROVAL	JS Euh	REV	0.9	March 7, 2006 12:22:03 PM		PAGE 23 OF 41
MODULE CODE		LAST EDIT				

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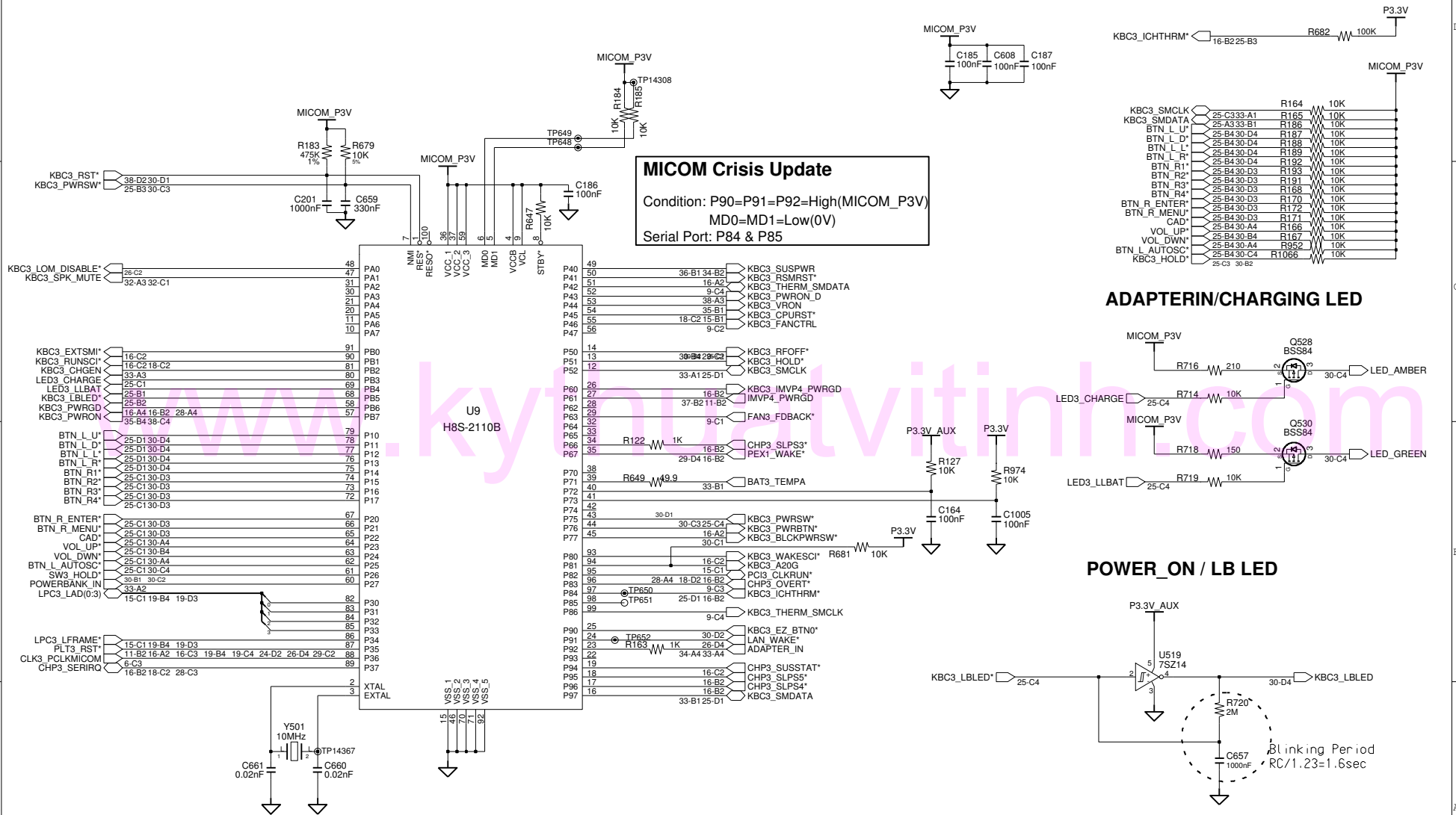


www.kythinhatvietinh.com

DRAW	Youngmo An	DATE	3/7/2006	TITLE	Sant aFe MAIN HDD CONNECTOR	SAMSUNG ELECTRONICS
CHECK	HJ Kim	DEV. STEP	SR	PART NO.		
APPROVAL	JS Euh	REV	0.9			
MODULE CODE		LAST EDIT	March 7, 2006 12:22:03 PM	PAGE 24 OF 41		

SAMSUNG PROPRIETARY

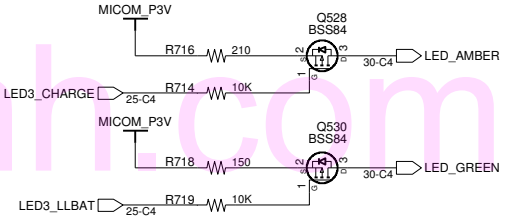
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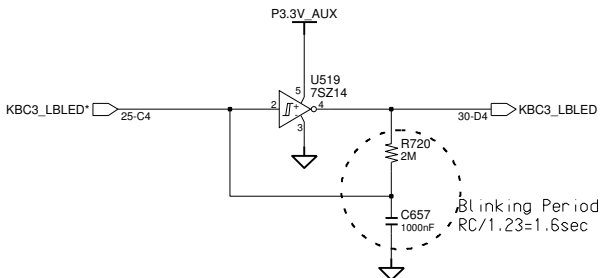
MICOM Crisis Update

Condition: P90=P91=P92=High(MICOM_P3V)
MD0=MD1=Low(0V)
Serial Port: P84 & P85

ADAPTERIN/CHARGING LED



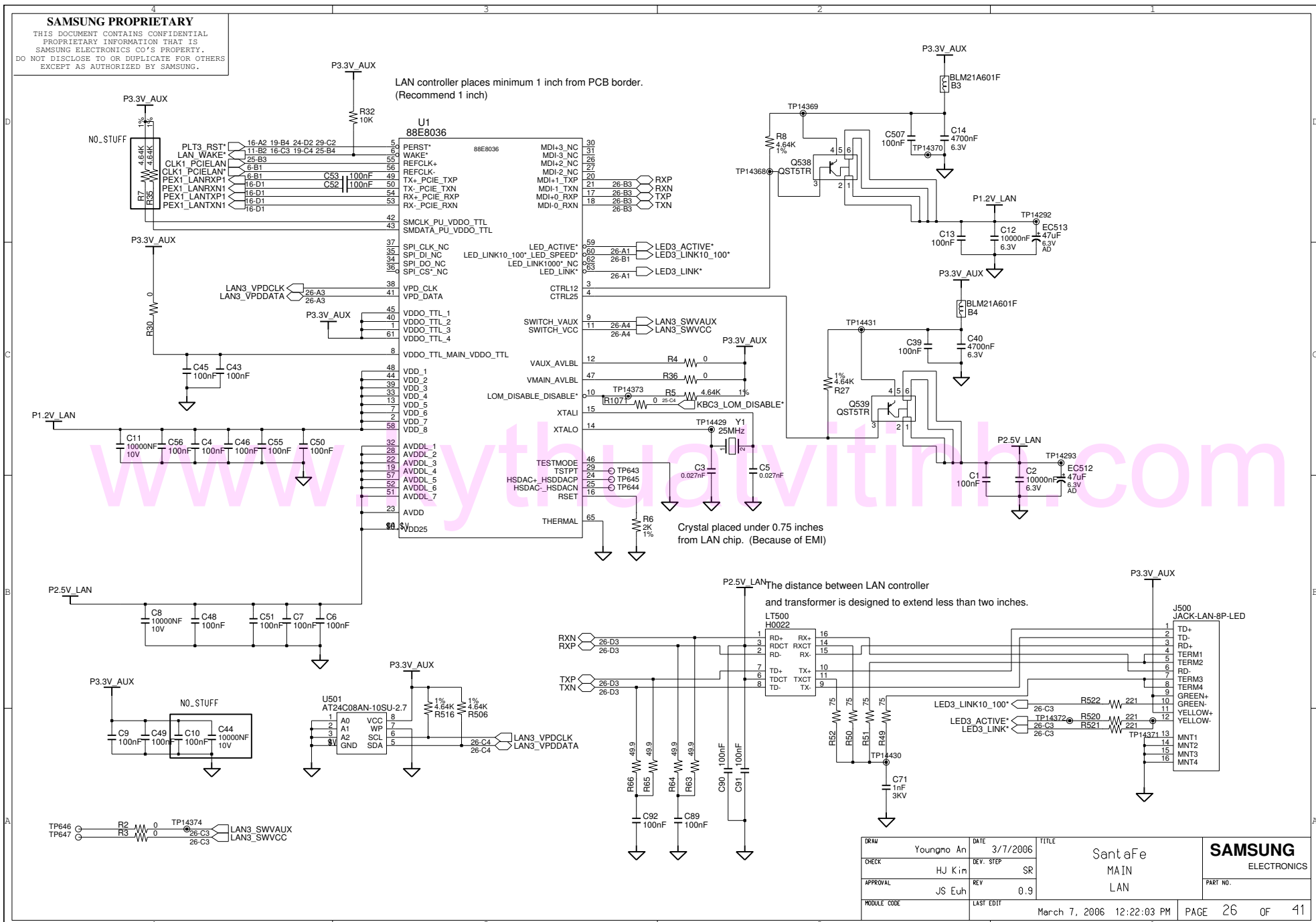
POWER_ON / LB LED



DRAW	Youngmo An	DATE	3/7/2006	TITLE	SantaFe MAIN MICOM	SAMSUNG ELECTRONICS PART NO. PAGE 25 OF 41
CHECK	HJ Kim	DEV. STEP	SR			
APPROVAL	JS Euh	REV	0.9			
MODULE CODE		LAST EDIT	March 7, 2006 12:22:03 PM			

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LAN controller places minimum 1 inch from PCB border. (Recommend 1 inch)

Crystal placed under 0.75 inches from LAN chip. (Because of EMI)

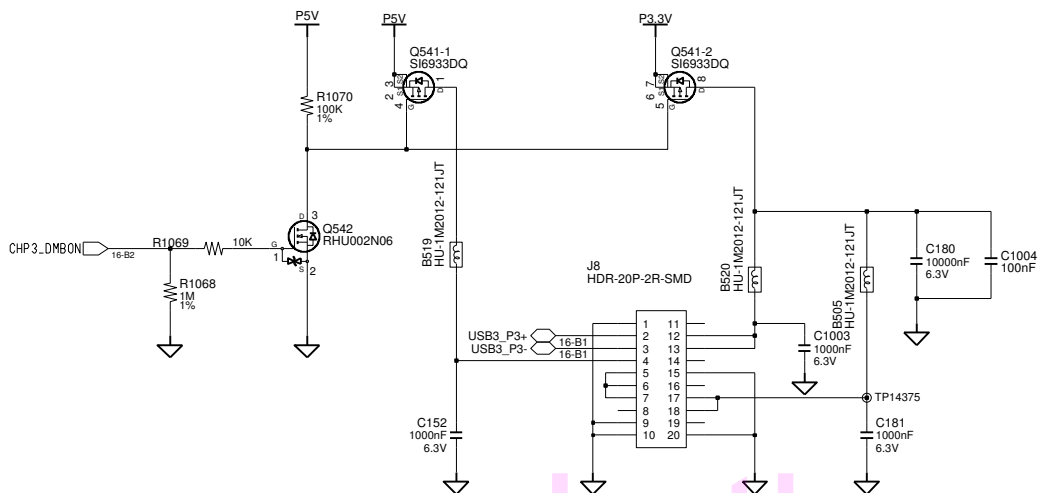
The distance between LAN controller and transformer is designed to extend less than two inches.

DRAW	Youngmo An	DATE	3/7/2006	TITLE	SantaFe MAIN LAN	SAMSUNG ELECTRONICS
CHECK	HJ Kim	DEV. STEP	SR			PART NO.
APPROVAL	JS Euh	REV	0.9			
MODULE CODE		LAST EDIT		March 7, 2006 12:22:03 PM	PAGE 26 OF 41	

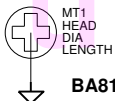
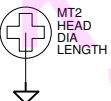
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DMB Connector & Pem(5mm Height)

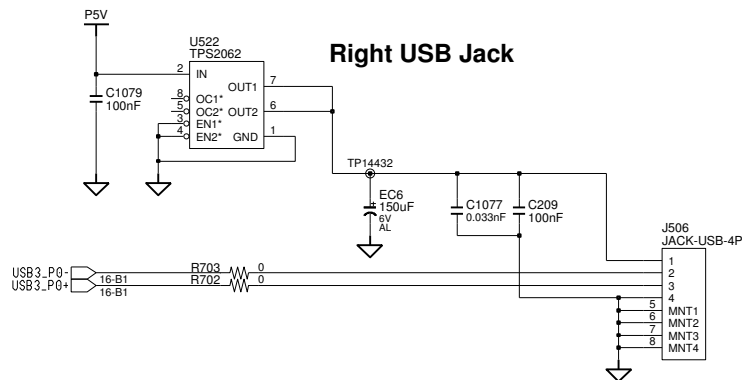


3711-005979

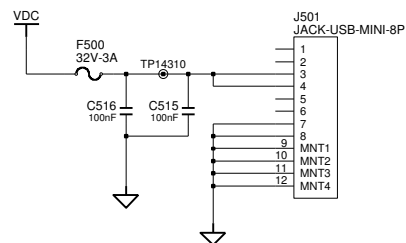
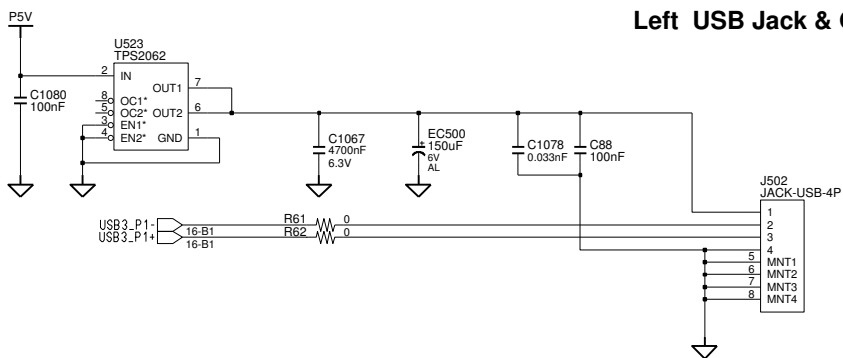


BA81-00730A

Right USB Jack



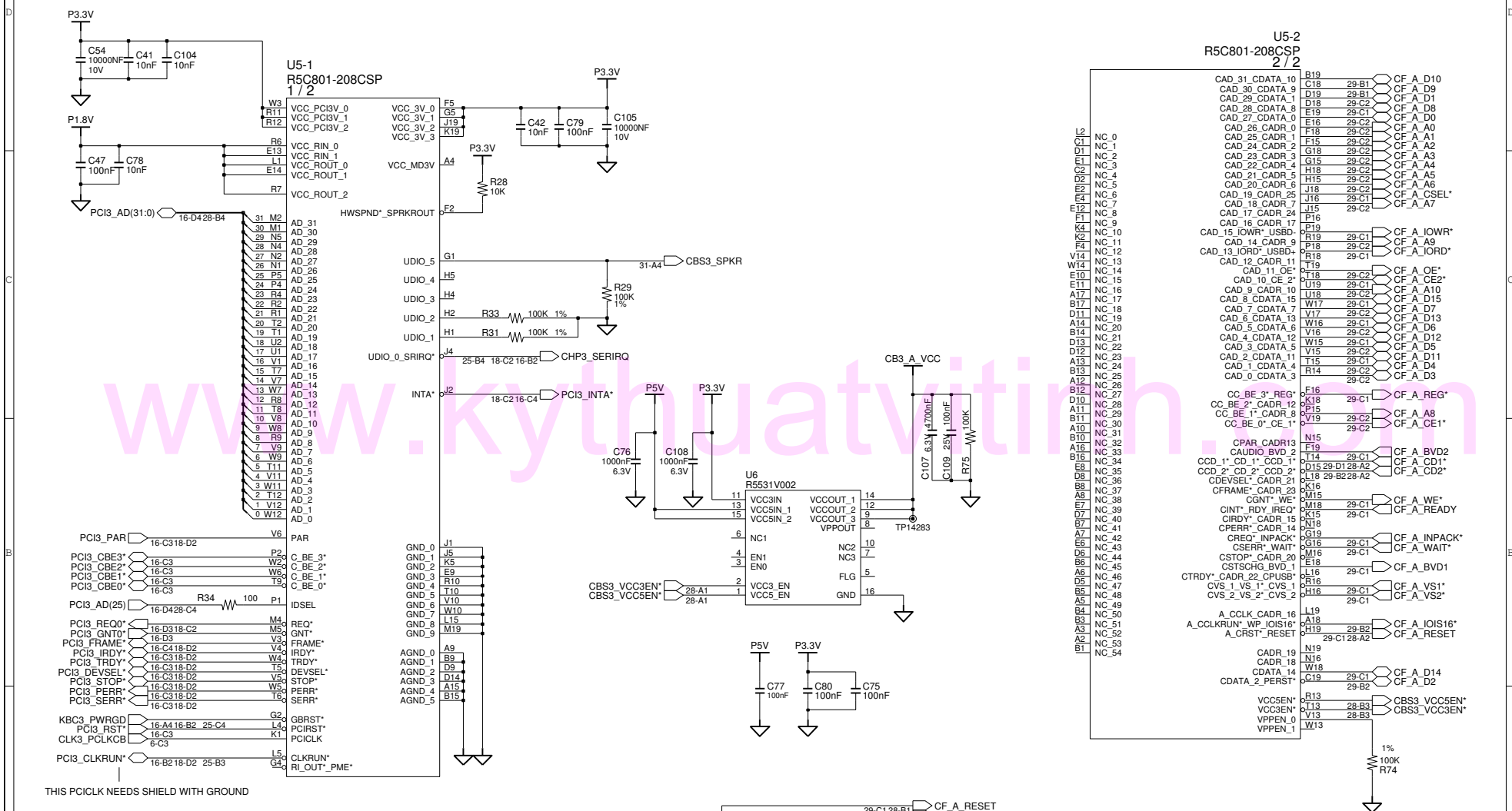
Left USB Jack & ODD Power Jack



DRAW	Youngmo An	DATE	3/7/2006	TITLE	SantaFe MAIN DMB & USB	SAMSUNG ELECTRONICS
CHECK	HJ Kim	DEV. STEP	SR	PART NO.		
APPROVAL	JS Euh	REV	0.9			
MODULE CODE		LAST EDIT	March 7, 2006 12:22:03 PM	PAGE 27 OF 41		

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THIS PCICLK NEEDS SHIELD WITH GROUND

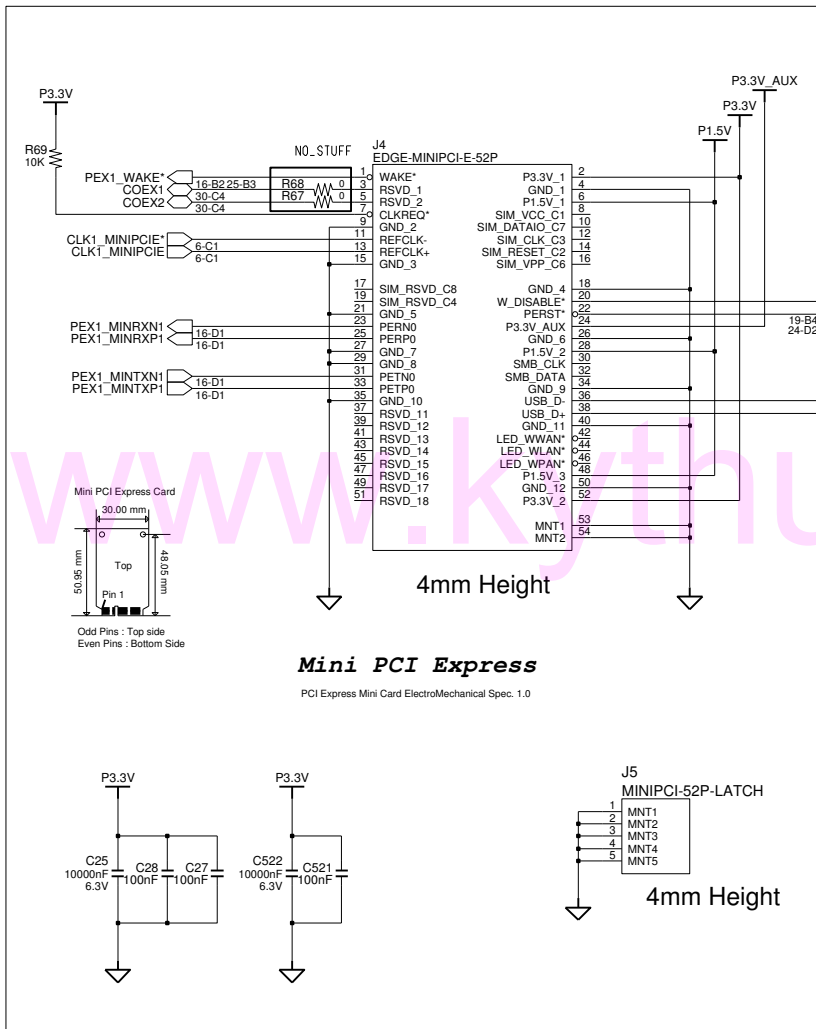
<p>PC13_PAR 16-C318-D2</p> <p>PC13_CBE3* 16-C3</p> <p>PC13_CBE2* 16-C3</p> <p>PC13_CBE1* 16-C3</p> <p>PC13_CBE0* 16-C3</p> <p>PC13_AD(25) 16-D428-C4</p> <p>PC13_REQ0* 16-D318-C2</p> <p>PC13_GNT0* 16-D3</p> <p>PC13_FRAME* 16-C418-D2</p> <p>PC13_IRDY* 16-C318-D2</p> <p>PC13_TRDY* 16-C318-D2</p> <p>PC13_DEVSEL* 16-C318-D2</p> <p>PC13_STOP* 16-C318-D2</p> <p>PC13_PERR* 16-C318-D2</p> <p>PC13_SERR* 16-C318-D2</p> <p>KBC3_PWRGD 16-A416-B2 25-C4</p> <p>PC13_RST* 16-C3</p> <p>CLK3_PCLKCB 6-C3</p> <p>PC13_CLKRUN* 16-B218-D2 25-B3</p>	<p>AD_31</p> <p>AD_30</p> <p>AD_29</p> <p>AD_28</p> <p>AD_27</p> <p>AD_26</p> <p>AD_25</p> <p>AD_24</p> <p>AD_23</p> <p>AD_22</p> <p>AD_21</p> <p>AD_20</p> <p>AD_19</p> <p>AD_18</p> <p>AD_17</p> <p>AD_16</p> <p>AD_15</p> <p>AD_14</p> <p>AD_13</p> <p>AD_12</p> <p>AD_11</p> <p>AD_10</p> <p>AD_9</p> <p>AD_8</p> <p>AD_7</p> <p>AD_6</p> <p>AD_5</p> <p>AD_4</p> <p>AD_3</p> <p>AD_2</p> <p>AD_1</p> <p>AD_0</p> <p>PAR</p> <p>C_BE_3*</p> <p>C_BE_2*</p> <p>C_BE_1*</p> <p>C_BE_0*</p> <p>IDSEL</p> <p>REQ*</p> <p>GNT*</p> <p>FRAME*</p> <p>IRDY*</p> <p>TRDY*</p> <p>DEVSEL*</p> <p>STOP*</p> <p>PERR*</p> <p>SERR*</p> <p>GBRST*</p> <p>PCIRST*</p> <p>PCICLK</p> <p>CLKRUN*</p> <p>RL_OUT*_PME*</p>	<p>GND_0</p> <p>GND_1</p> <p>GND_2</p> <p>GND_3</p> <p>GND_4</p> <p>GND_5</p> <p>GND_6</p> <p>GND_7</p> <p>GND_8</p> <p>GND_9</p> <p>AGND_0</p> <p>AGND_1</p> <p>AGND_2</p> <p>AGND_3</p> <p>AGND_4</p> <p>AGND_5</p>	<p>NC1</p> <p>NC2</p> <p>NC3</p> <p>EN1</p> <p>EN0</p> <p>VCC3_EN</p> <p>VCC5_EN</p> <p>NC4</p> <p>NC5</p> <p>NC6</p> <p>NC7</p> <p>NC8</p> <p>NC9</p> <p>NC10</p> <p>NC11</p> <p>NC12</p> <p>NC13</p> <p>NC14</p> <p>NC15</p> <p>NC16</p> <p>NC17</p> <p>NC18</p> <p>NC19</p> <p>NC20</p> <p>NC21</p> <p>NC22</p> <p>NC23</p> <p>NC24</p> <p>NC25</p> <p>NC26</p> <p>NC27</p> <p>NC28</p> <p>NC29</p> <p>NC30</p> <p>NC31</p> <p>NC32</p> <p>NC33</p> <p>NC34</p> <p>NC35</p> <p>NC36</p> <p>NC37</p> <p>NC38</p> <p>NC39</p> <p>NC40</p> <p>NC41</p> <p>NC42</p> <p>NC43</p> <p>NC44</p> <p>NC45</p> <p>NC46</p> <p>NC47</p> <p>NC48</p> <p>NC49</p> <p>NC50</p> <p>NC51</p> <p>NC52</p> <p>NC53</p> <p>NC54</p> <p>NC55</p>	<p>CF_A_RESET</p> <p>CF_A_CD1*</p> <p>CF_A_CD2*</p>
--	---	---	--	---

<p>DRAW Youngmo An</p> <p>CHECK HJ Kim</p> <p>APPROVAL JS Euh</p> <p>MODULE CODE</p>	<p>DATE 3/7/2006</p> <p>DEV. STEP SR</p> <p>REV 0.9</p> <p>LAST EDIT</p>	<p>TITLE SantaFe MAIN</p> <p>Cardbus controller</p>	<p>SAMSUNG ELECTRONICS</p> <p>PART NO.</p>
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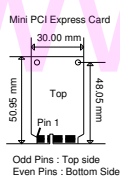
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CF SLOT

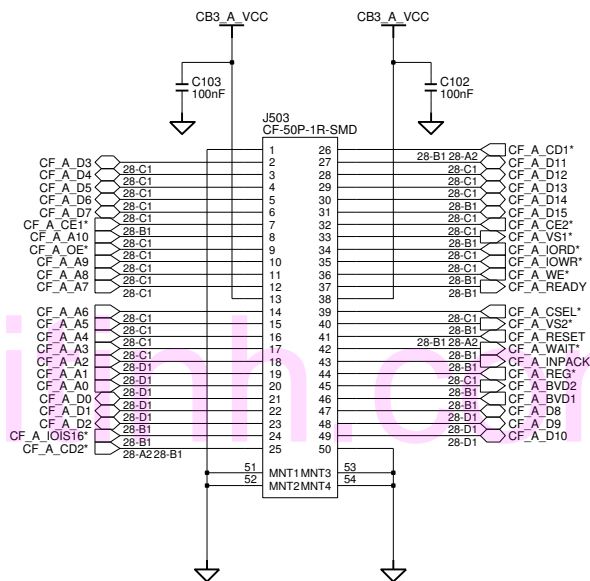
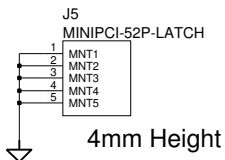
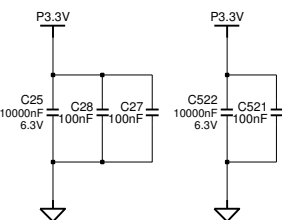


Mini PCI Express

PCI Express Mini Card ElectroMechanical Spec. 1.0



Odd Pins : Top side
Even Pins : Bottom Side

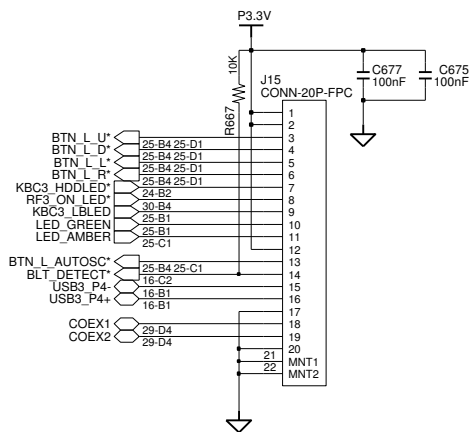


DRAW	Youngmo An	DATE	3/7/2006	TITLE	SantaFe MAIN	SAMSUNG ELECTRONICS
CHECK	HJ Kim	DEV. STEP	SR	Mini Card & CF Slot		
APPROVAL	JS Euh	REV	0.9			PART NO.
MODULE CODE	LAST EDIT		March 7, 2006 12:22:03 PM		PAGE	29 OF 41

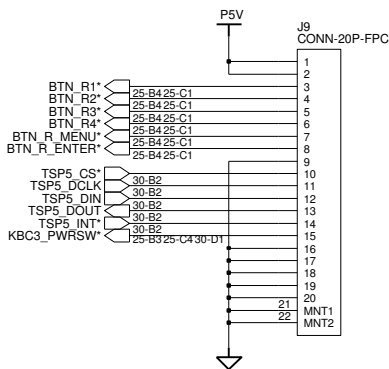
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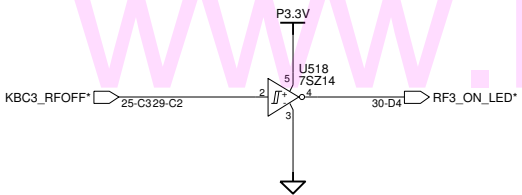
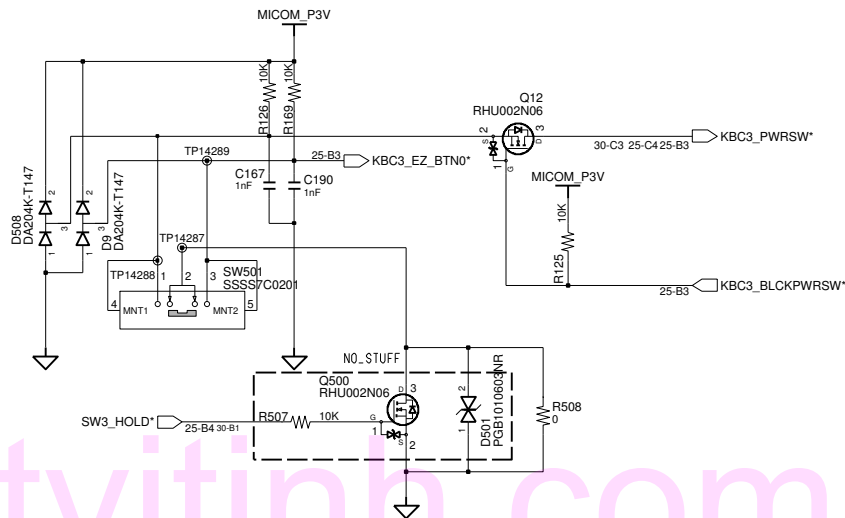
Main to Subboard(Left)



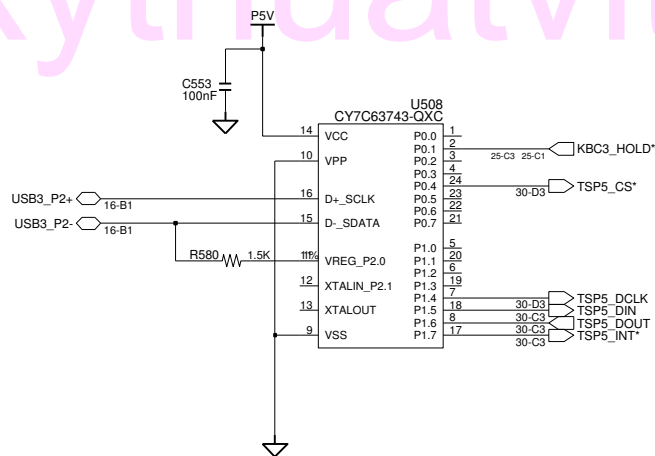
Main to Subboard(Right)



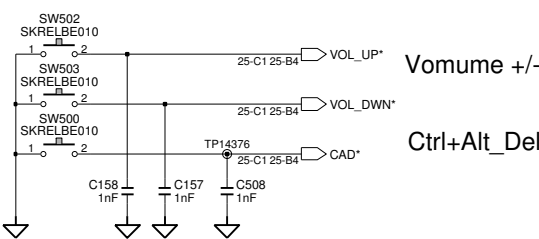
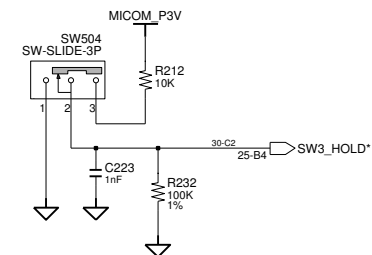
POWER & MIO S/W



TSP

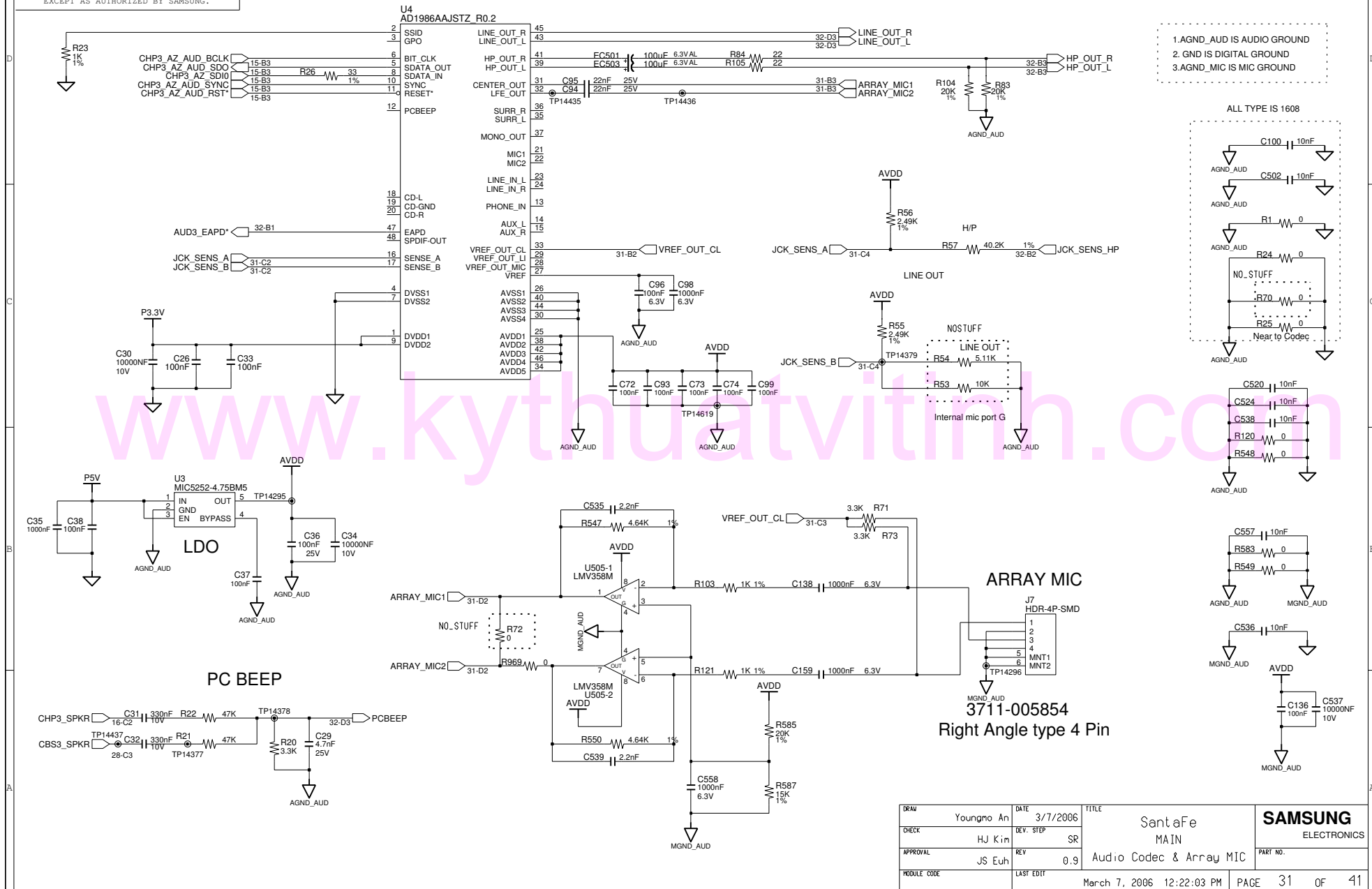


HOLD S/W

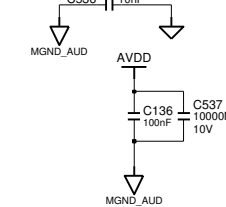
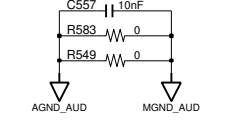
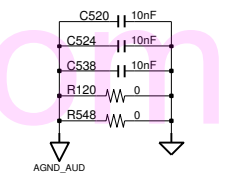
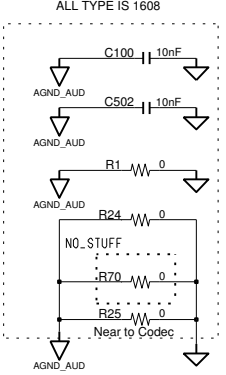


DRAW	Youngmo An	DATE	3/7/2006	TITLE	SantaFe MAIN	SAMSUNG ELECTRONICS
CHECK	HJ Kim	DEV. STEP	SR	TSP & SUB B'D Conn. & S/W		
APPROVAL	JS Euh	REV	0.9	PART NO.		
MODULE CODE		LAST EDIT	March 7, 2006 12:22:03 PM	PAGE	30	OF 41

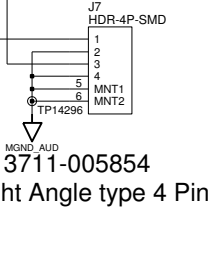
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- 1. AGND_AUD IS AUDIO GROUND
- 2. GND IS DIGITAL GROUND
- 3. AGND_MIC IS MIC GROUND



ARRAY MIC

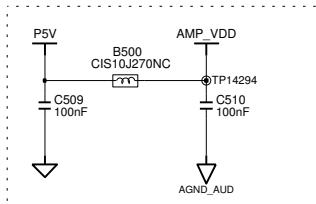


DRAW	Youngmo An	DATE	3/7/2006	TITLE	SantaFe MAIN Audio Codec & Array MIC	SAMSUNG ELECTRONICS PART NO.
CHECK	HJ Kim	DEV. STEP	SR			
APPROVAL	JS Euh	REV	0.9			
MODULE CODE		LAST EDIT	March 7, 2006 12:22:03 PM	PAGE	31	OF 41

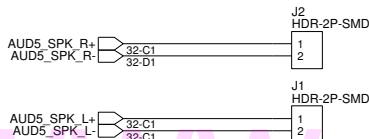
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AMP_VDD



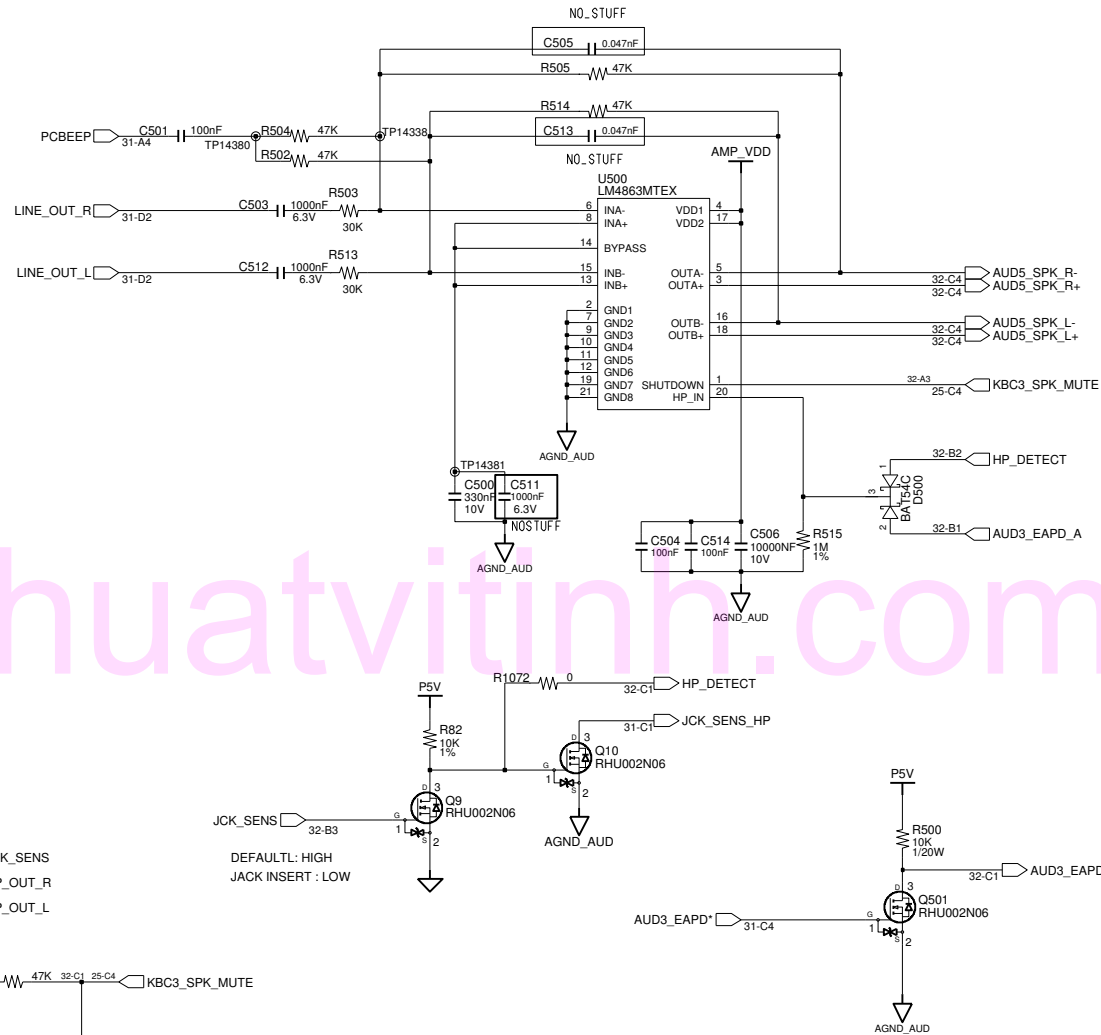
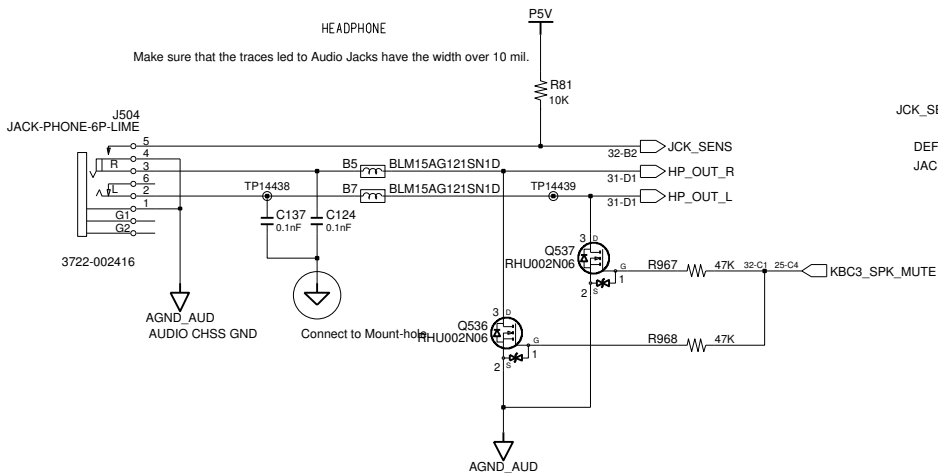
INTERNAL STEREO SPEAKERS



3711-005752

HEADPHONE

Make sure that the traces led to Audio Jacks have the width over 10 mil.



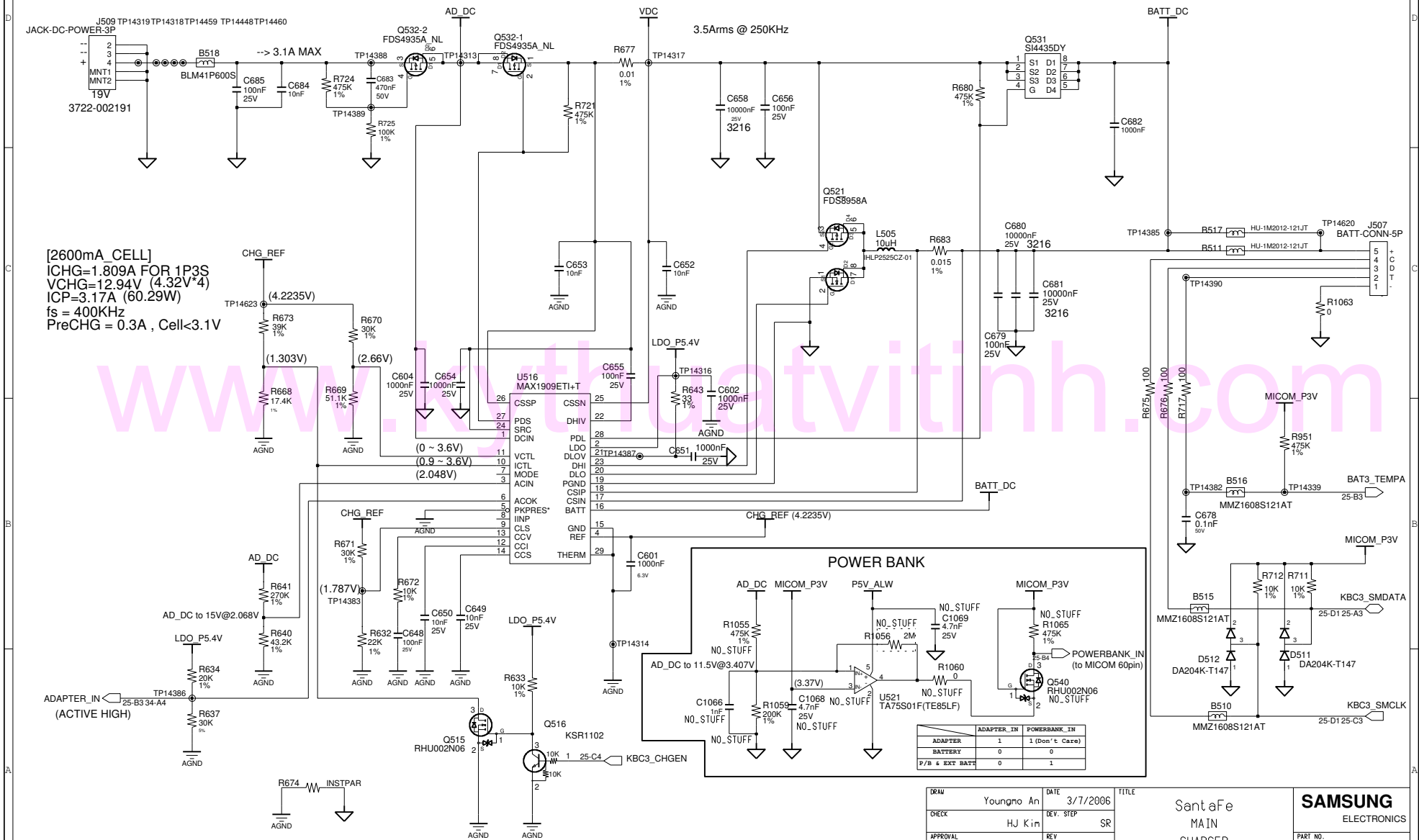
DRAW	Youngmo An	DATE	3/7/2006	TITLE	SantaFe	SAMSUNG ELECTRONICS
CHECK	HJ Kim	DEV. STEP	SR		MAIN	
APPROVAL	JS Euh	REV	0.9	AMP & Spkr Conn & HP Jack		PART NO.
MODULE CODE		LAST EDIT	March 7, 2006 12:22:03 PM	PAGE	32	OF 41

0801-002143

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CHARGER & POWER MANAGEMENT



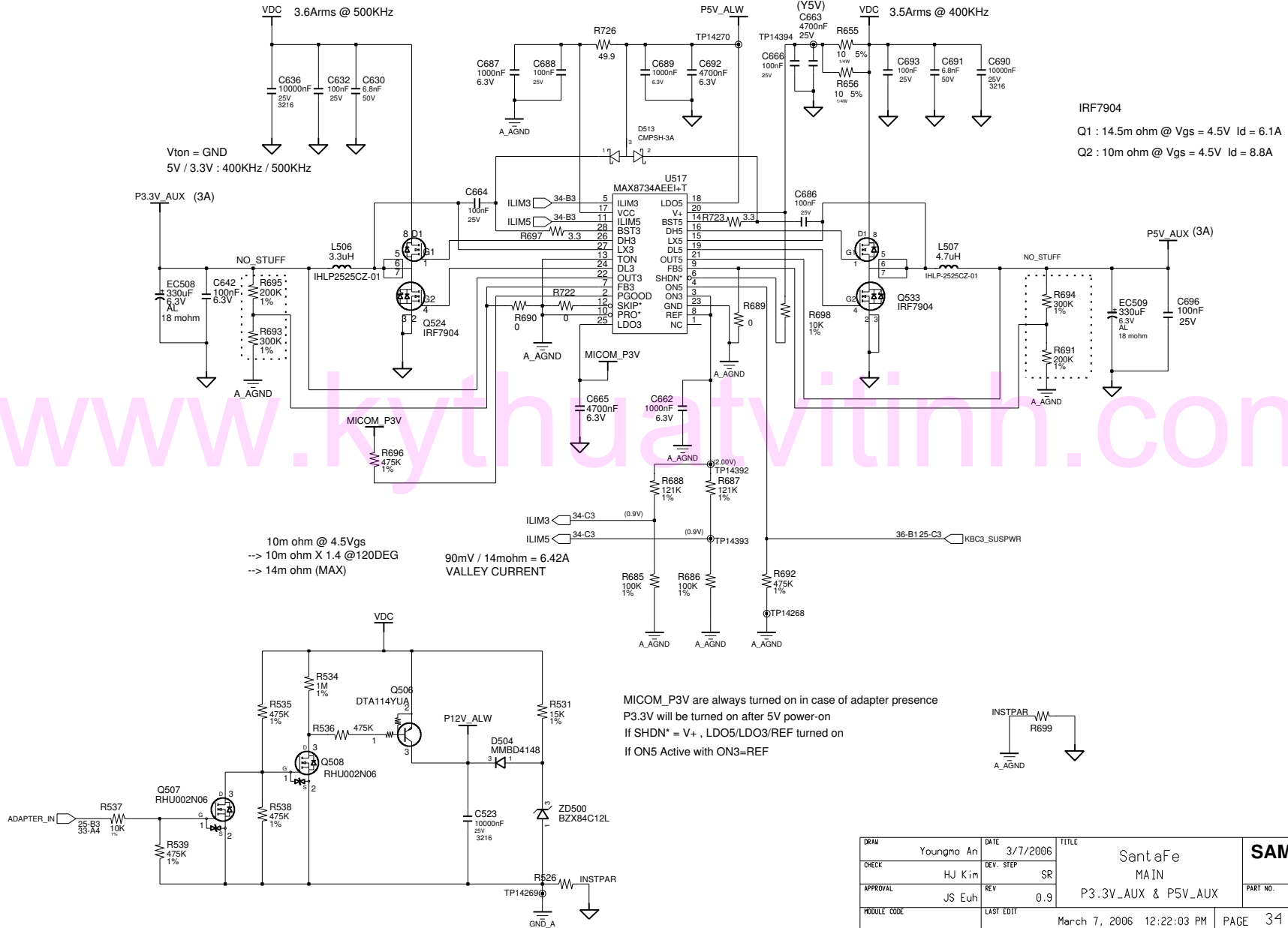
DRAW	Youngmo An	DATE	3/7/2006	TITLE	SantaFe MAIN CHARGER	SAMSUNG ELECTRONICS PART NO.
CHECK	HJ Kim	DEV. STEP	SR			
APPROVAL	JS Euh	REV	0.9			
MODULE CODE		LAST EDIT				

March 7, 2006 12:22:03 PM PAGE 33 OF 41

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P3.3V_AUX & P5V_AUX & MICOM_P3V



IRF7904
 Q1 : 14.5m ohm @ Vgs = 4.5V Id = 6.1A
 Q2 : 10m ohm @ Vgs = 4.5V Id = 8.8A

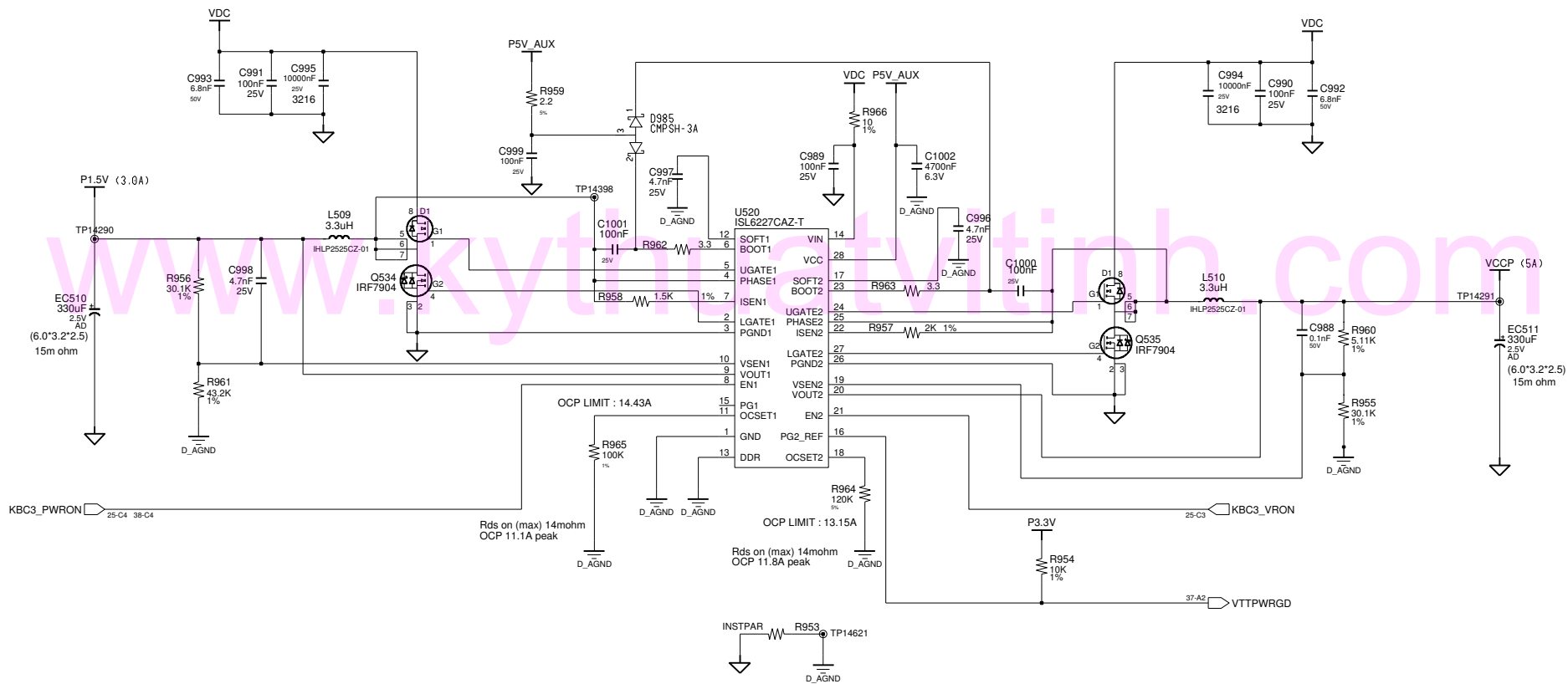
MICOM_P3V are always turned on in case of adapter presence
 P3.3V will be turned on after 5V power-on
 If SHDN* = V+ , LDO5/LDO3/REF turned on
 If ON5 Active with ON3=REF

DRAW	Youngmo An	DATE	3/7/2006	TITLE	SantaFe MAIN P3.3V_AUX & P5V_AUX	SAMSUNG ELECTRONICS
CHECK	HJ Kim	DEV. STEP	SR	PART NO.		
APPROVAL	JS Euh	REV	0.9			
MODULE CODE		LAST EDIT	March 7, 2006 12:22:03 PM	PAGE	34	OF 41

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P1.5V & VCCP (1.05V)

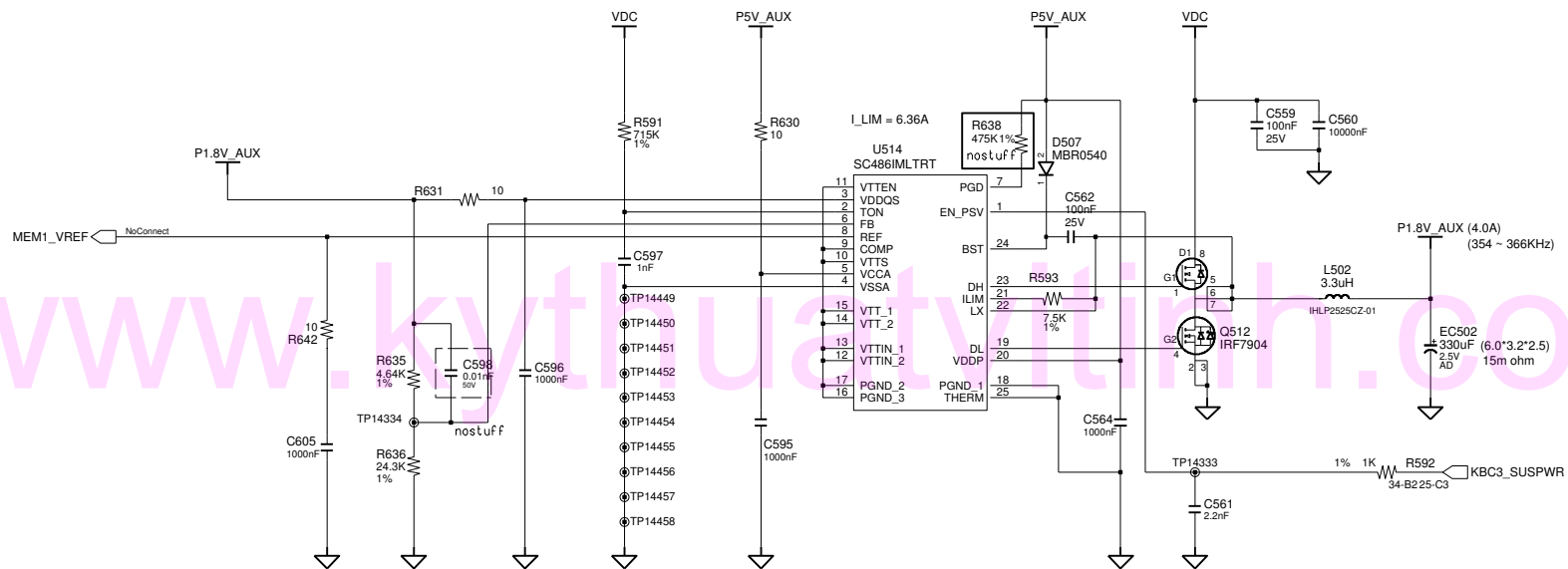


DRAW	Youngmo An	DATE	3/7/2006	TITLE	SantaFe MAIN P1.5V & VCCP	SAMSUNG ELECTRONICS
CHECK	HJ Kim	DEV. STEP	SR	PART NO.		
APPROVAL	JS Euh	REV	0.9			
MODULE CODE		LAST EDIT	March 7, 2006 12:22:03 PM	PAGE 35 OF 41		

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DDR2 Power

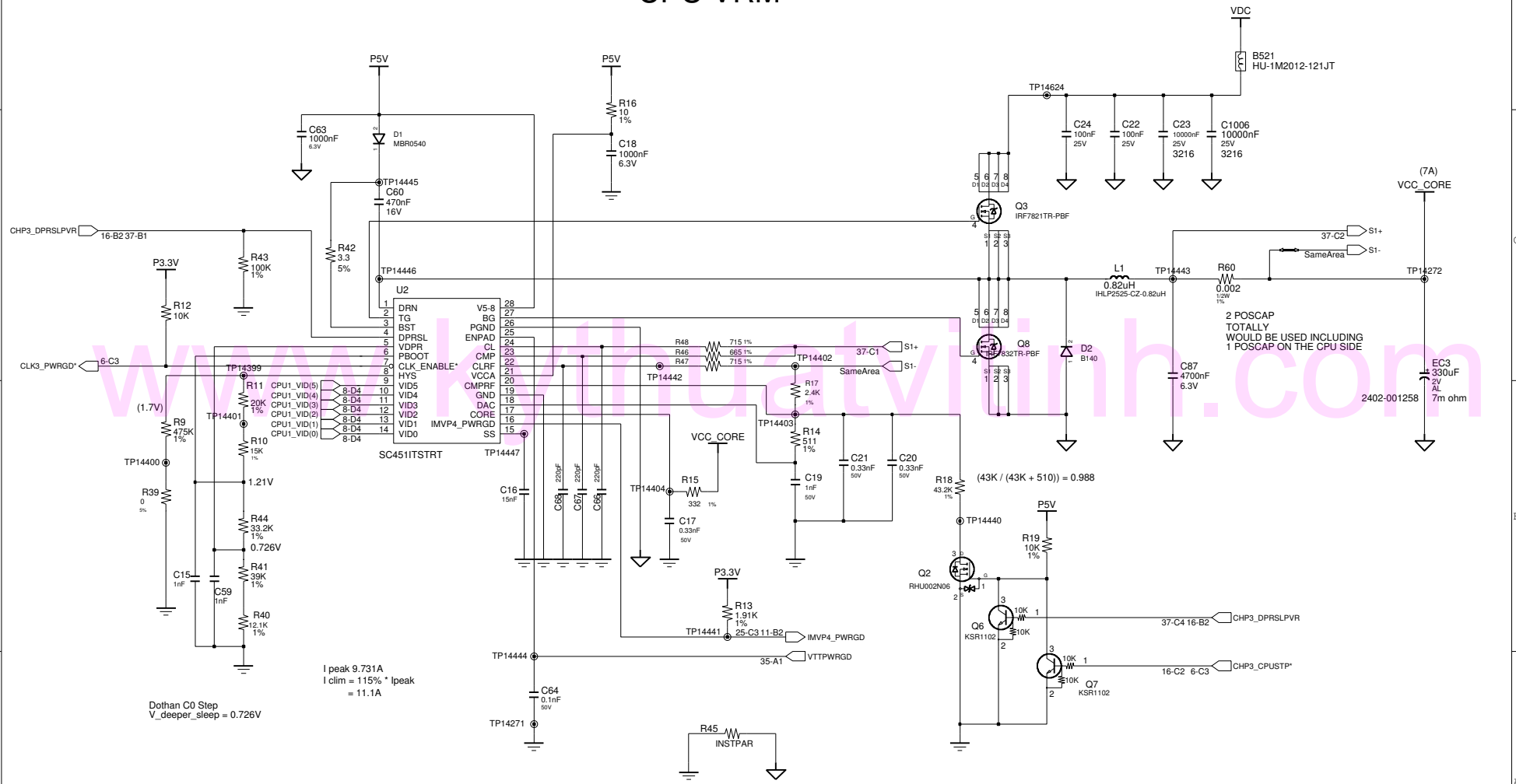


DRAW	Youngmo An	DATE	3/7/2006	TITLE	SantaFe MAIN DDR2 POWER	SAMSUNG ELECTRONICS PART NO.
CHECK	HJ Kim	DEV. STEP	SR			
APPROVAL	JS Euh	REV	0.9			
MODULE CODE		LAST EDIT	March 7, 2006 12:22:03 PM	PAGE	36 OF 41	

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CPU VRM

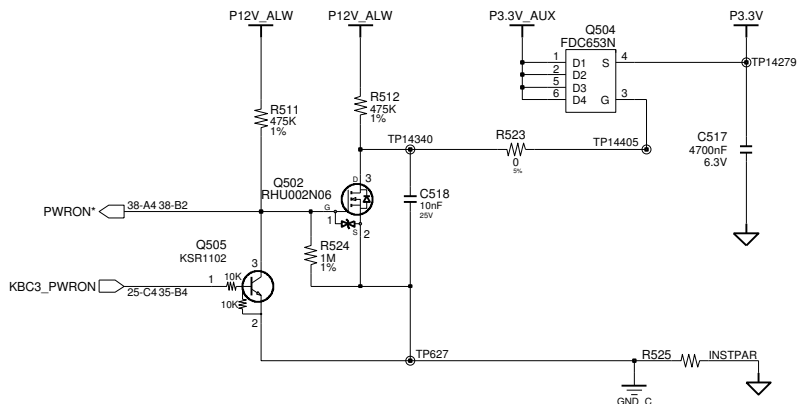


DRAW	Youngmo An	DATE	3/7/2006	TITLE	SantaFe MAIN CPU VRM	SAMSUNG ELECTRONICS
CHECK	HJ Kim	DEV. STEP	SR	PART NO.		
APPROVAL	JS Euh	REV	0.9			
MODULE CODE		LAST EDIT	March 7, 2006 12:22:03 PM	PAGE 37 OF 41		

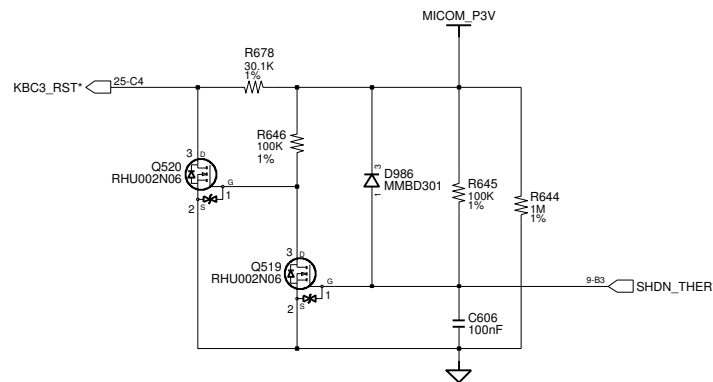
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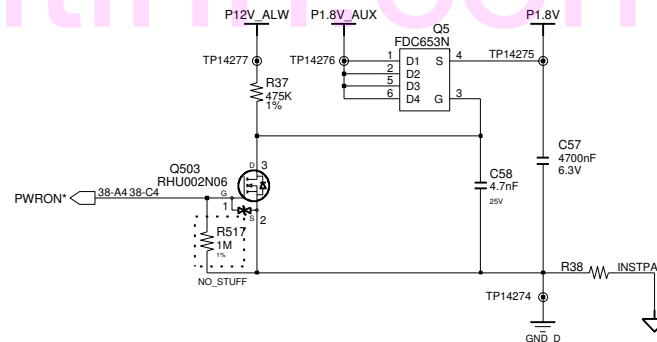
Switched Power On (P3.3V)



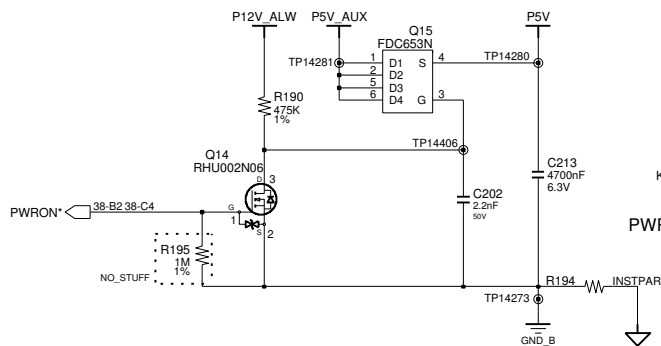
MICOM RESET



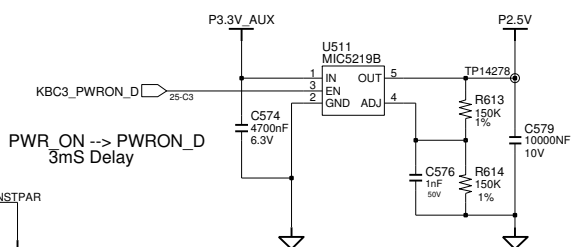
Switched Power On (P1.8V)



Switched Power On (P5V)



Switched Power On (P2.5V)

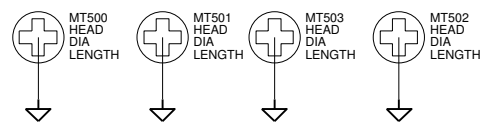
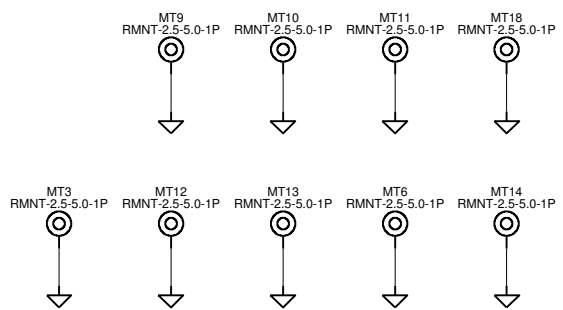


PWR_ON --> PWRON_D
3ms Delay

DRAW	Youngmo An	DATE	3/7/2006	TITLE	SantaFe MAIN Switched Power	SAMSUNG ELECTRONICS
CHECK	HJ Kim	DEV. STEP	SR	PART NO.		
APPROVAL	JS Euh	REV	0.9			
MODULE CODE		LAST EDIT	March 7, 2006 12:22:03 PM	PAGE	38	OF 41

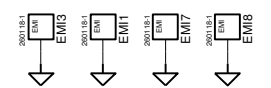
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RHE PEM(2mm): BA61-00955A

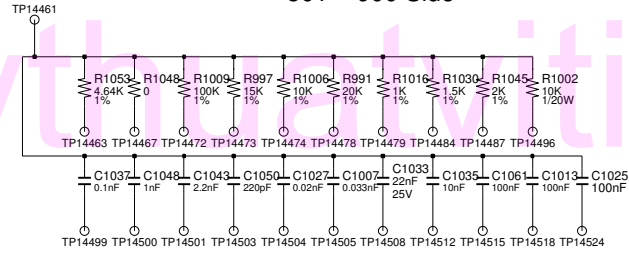
EMI FINGER : 005299021



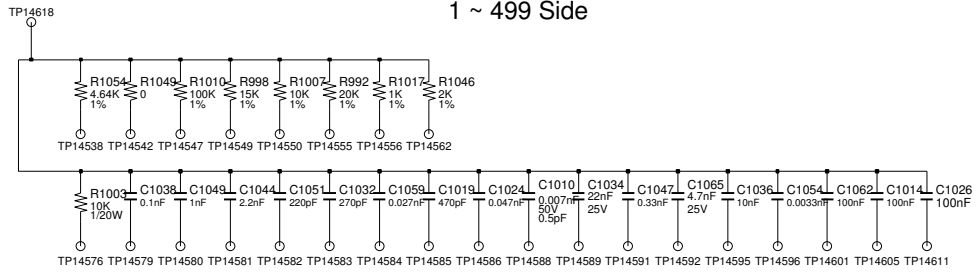
PCB REVISION CONTROL (ICT)				
NO	CONNECTION	DATE(Y/M/DD)	REVISION	STEP
1	N.C.			
2	1-2			
3	2-3			
4	3-1			
5	1-2-3			
6	N.C.			
7	1-2			
8	2-3			
9	3-1			
10	1-2-3			

REV500
1 O
2 O O3

501 ~ 900 Side



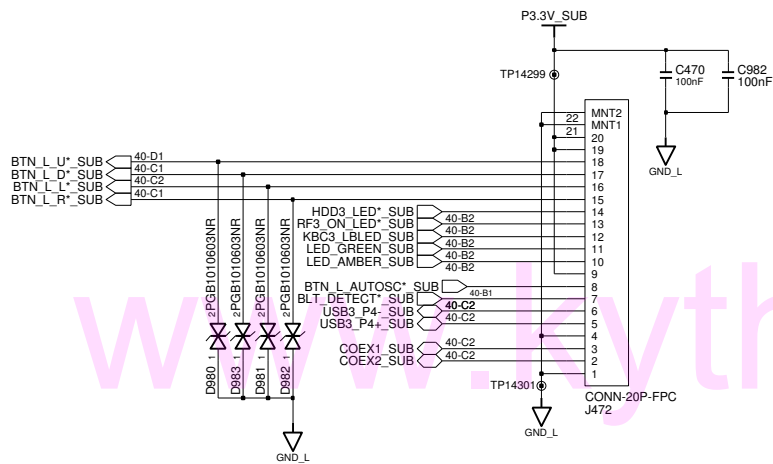
1 ~ 499 Side



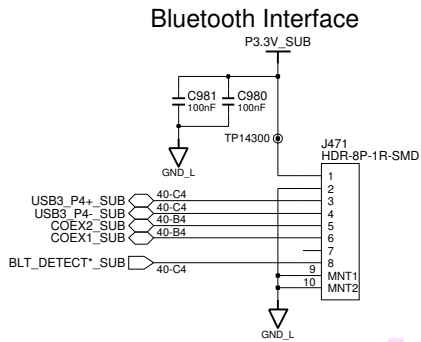
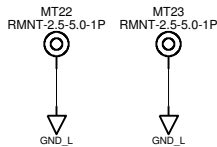
DRAW	Youngmo An	DATE	3/7/2006	TITLE	SantaFe MAIN Mount Hole	SAMSUNG ELECTRONICS PART NO.
CHECK	HJ Kim	DEV. STEP	SR			
APPROVAL	JS Euh	REV	0.9			
MODULE CODE		LAST EDIT				
				March 7, 2006 12:22:03 PM	PAGE	39 OF 41

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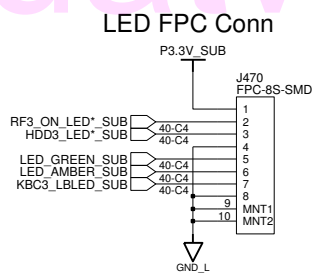
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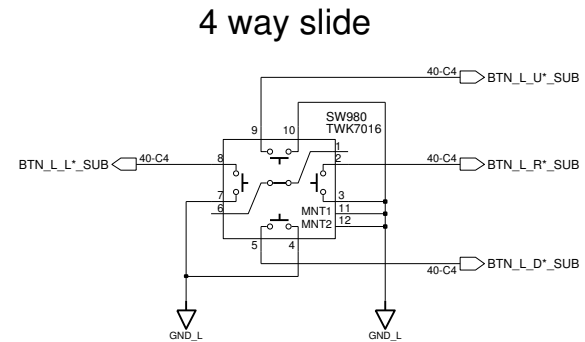
Main to Subboard(Left)



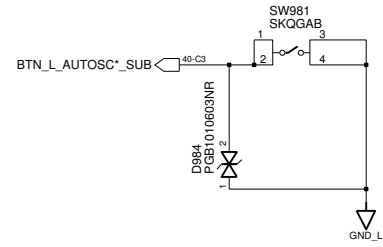
Bluetooth Interface



LED FPC Conn



4 way slide

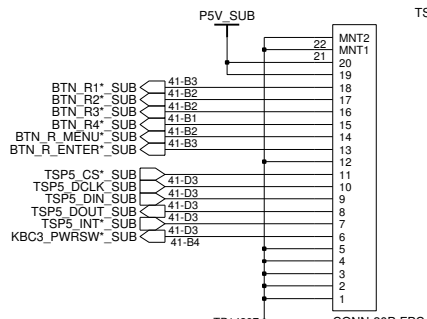


DRAW	YOUNGMO, AN	DATE	3/7/2006	TITLE	SantaFe MAIN SUB LEFT	SAMSUNG ELECTRONICS
CHECK	HJ, KIM	DEV. STEP	SR	PART NO.		
APPROVAL	JS, EUH	REV	0.9			
MODULE CODE		LAST EDIT	March 7, 2006 12:22:03 PM	PAGE 40 OF 41		

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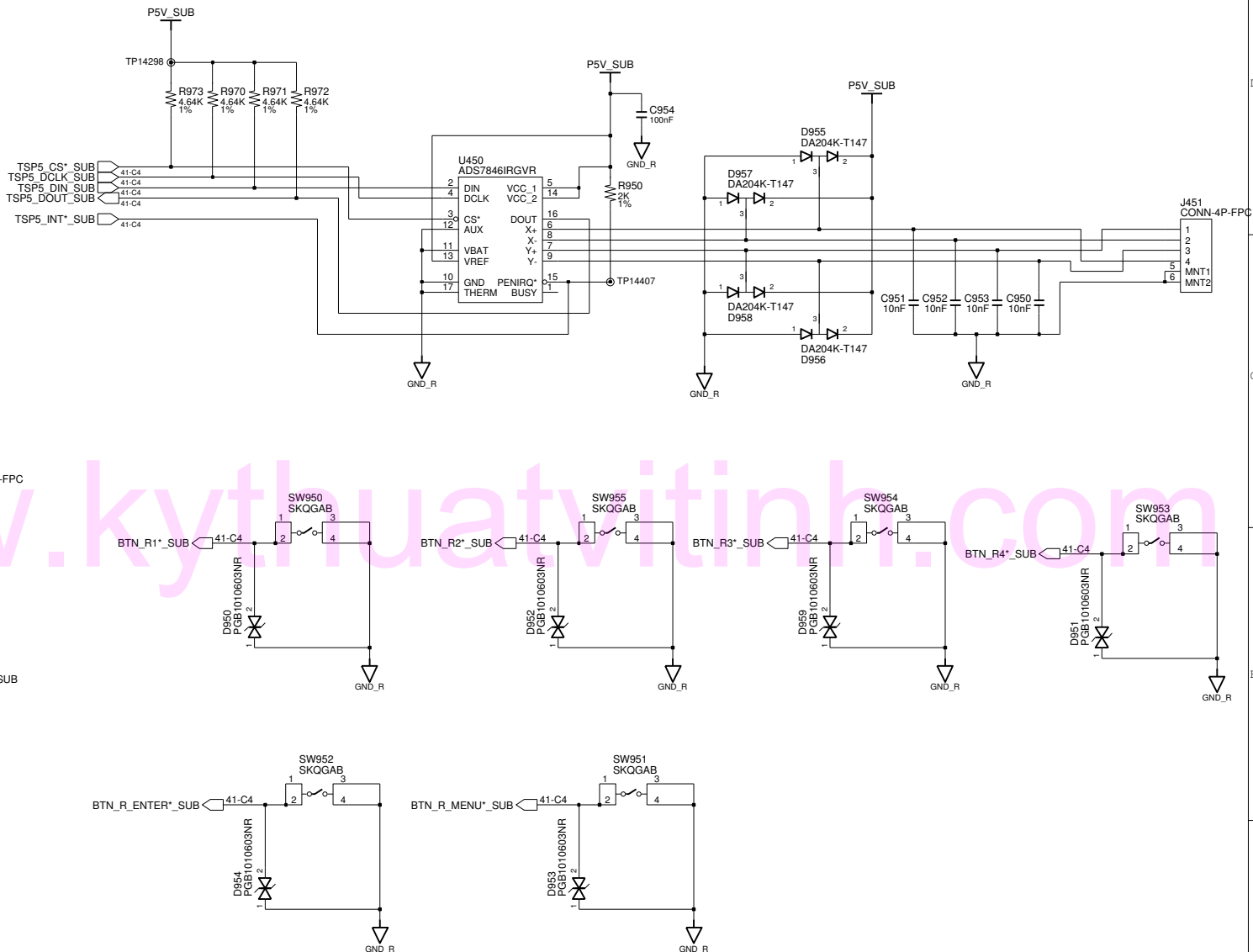
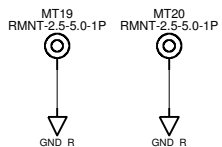
**Top contact
Main to Subboard(Right)**



CONN-20P-FPC J450

For FCT Jig

TP14267 41-C4 KBC3_PWRSW*_SUB



DRAW	YOUNGMO, AN	DATE	3/7/2006	TITLE	SantaFe MAIN SUB RIGHT	SAMSUNG ELECTRONICS
CHECK	HJ, KIM	DEV. STEP	SR	PART NO.		
APPROVAL	JS, EUH	REV	0.9			
MODULE CODE		LAST EDIT				
				March 7, 2006 12:22:03 PM	PAGE	41 OF 41