

HAINAN

CPU : Intel Yonah -2M
Chip Set : Intel Calistoga & ICH7-M
Remarks : Mobility Platform

Model Name : HAINAN
PBA Name : MAIN
PCB Code : BA41-00574A
Dev. Step : PR
Revision : 1.0
T.R. Date : 2005.11.28

DRAW	CHECK	APPROVAL
KI IM	SS BAIK	KK BIN

Owner : SEC Mobile R & D Signature : X

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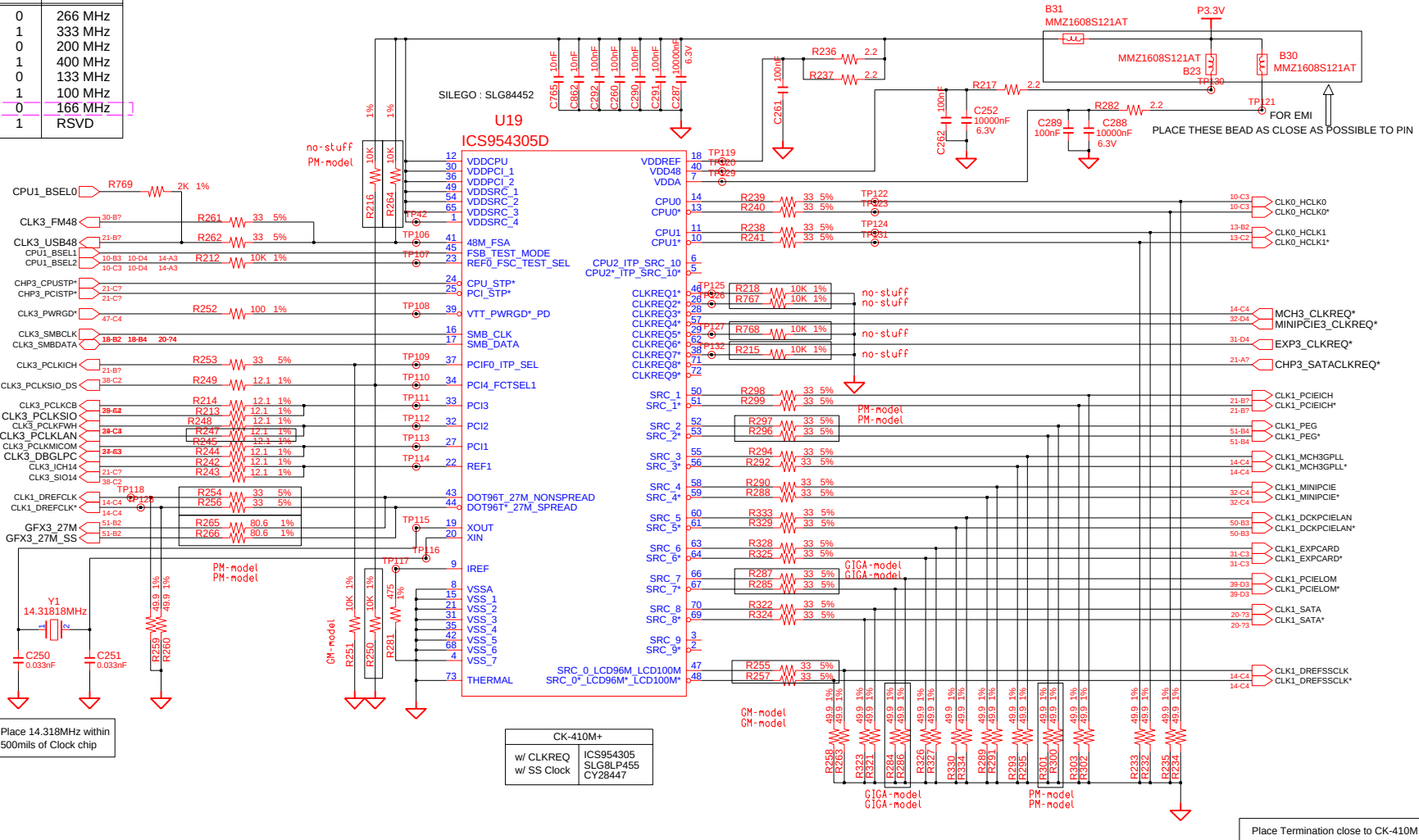
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CHECK	SS BAIK	DEV. STEP	PV			
APPROVAL	KK BIN	REV	1.0		COVER	PART NO.
MODULE CODE		LAST EDIT	September 15, 2005 10:33:16 PM	PAGE	1	OF 55

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PCI4_FCTSEL1(PIN34)	PIN 43, 44	PIN 47, 48
0	DOT96	LCD96/100
1	27MHZ	SRC0

CPU	FSA BSEL0	FSB BSEL1	FSC BSEL2	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

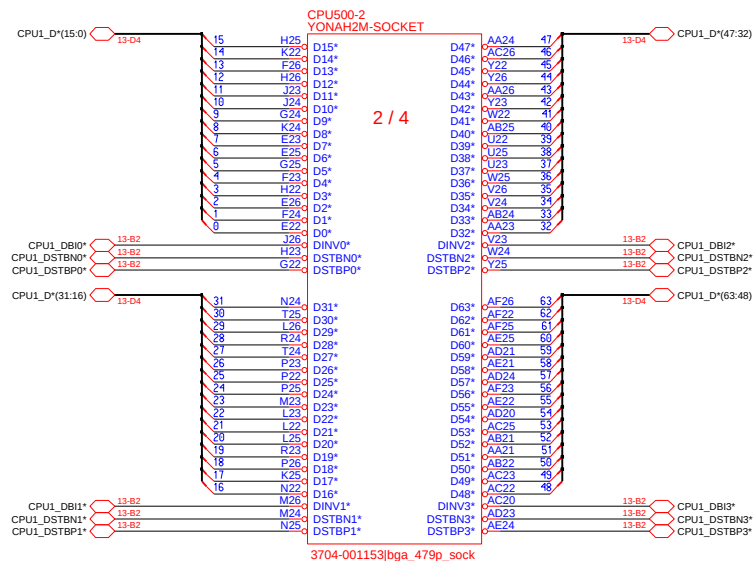
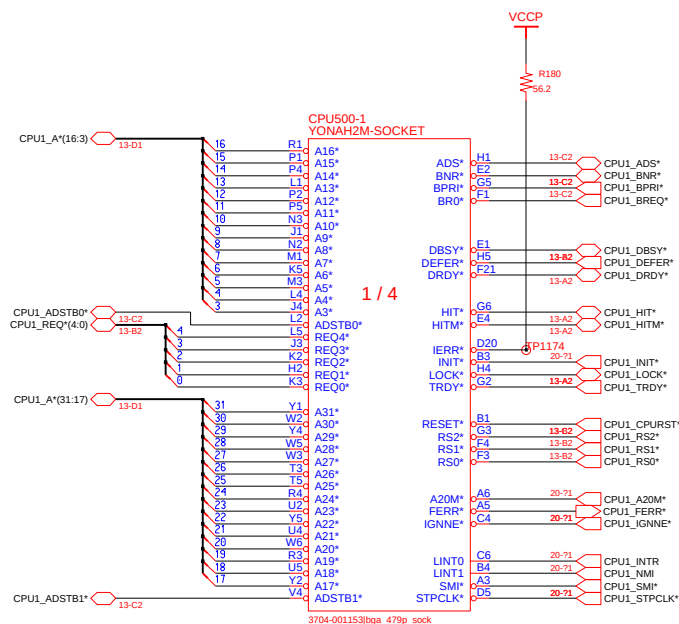


DRAW	K1 IM	DATE	7/19/2005	TITLE	HAINAN
CHECK	SS BAIK	DEV. STEP	DV		MAIN
APPROVAL	KK BIN	REV	1.0		CLOCK GENERATOR
MODULE CODE		LAST EDIT	July 19, 2005 8:53:48 AM	PAGE	8 OF 55

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PART NO. BA41-*****A

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DRAW	K1 IM	DATE	7/19/2005	TITLE	HAINAN
CHECK	SS BAIK	DEV. STEP	DV	MAIN	
APPROVAL	KK BIN	REV	1.0	YONAH CPU (1/3)	
MODULE CODE		LAST EDIT			

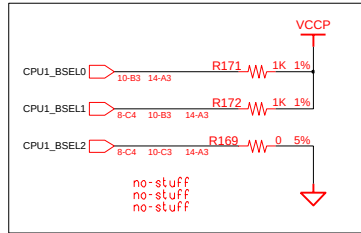
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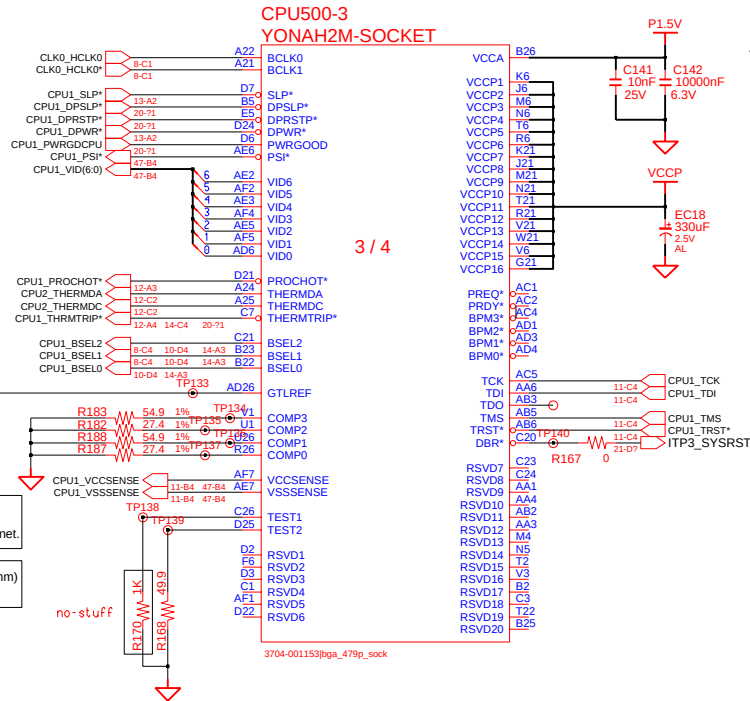
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FSB 533 MHz	Pull-up	Pull-down
FSB 667 MHz	BSEL0, BSEL1	BSEL1, BSEL2 BSEL2

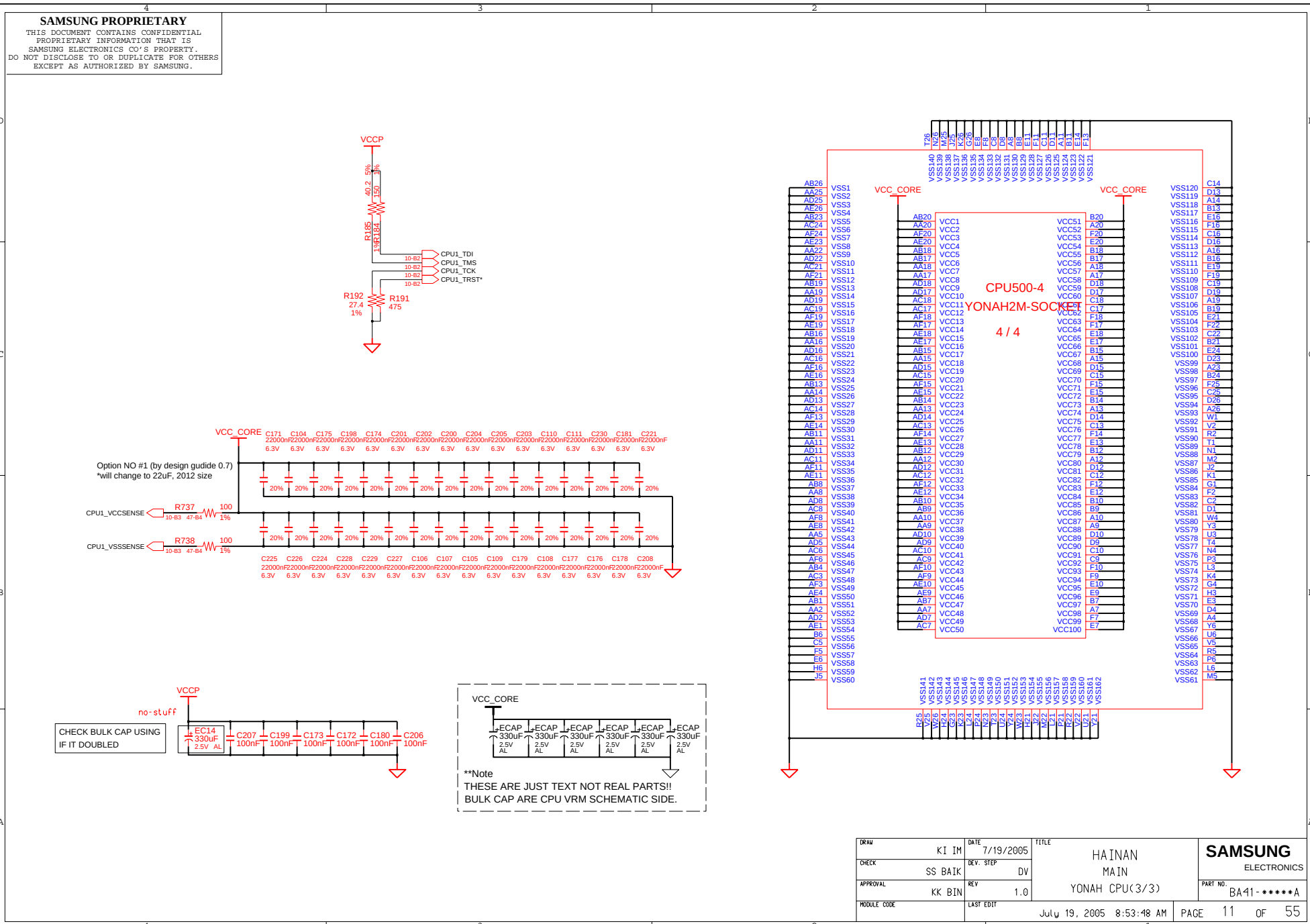


CPU Core Voltage Table IMVP-6

Active Mode		Active/Deeper Sleep Dual Mode Region		Deeper Sleep/Extended Deeper Sleep Dual Mode Region	
VID(6:0)	Voltage	VID(6:0)	Voltage	VID(6:0)	Voltage
0 0 0 0 0 0 0	1.5000 V	0 1 0 1 0 0 0	1.0000 V	1 0 1 0 0 0 1	0.4875 V
0 0 0 0 0 0 1	1.4875 V	0 1 0 1 0 0 1	0.9875 V	1 0 1 0 0 0 1	0.4750 V
0 0 0 0 0 1 0	1.4750 V	0 1 0 1 0 1 0	0.9750 V	1 0 1 0 0 1 1	0.4625 V
0 0 0 0 0 1 1	1.4625 V	0 1 0 1 0 1 1	0.9625 V	1 0 1 0 1 0 0	0.4500 V
0 0 0 0 1 0 0	1.4500 V	0 1 0 1 1 0 0	0.9500 V	1 0 1 0 1 0 1	0.4375 V
0 0 0 0 1 0 1	1.4375 V	0 1 0 1 1 0 1	0.9375 V	1 0 1 0 1 1 0	0.4250 V
0 0 0 0 1 1 0	1.4250 V	0 1 0 1 1 1 0	0.9250 V	1 0 1 0 1 1 1	0.4125 V
0 0 0 0 1 1 1	1.4125 V	0 1 0 1 1 1 1	0.9125 V	1 0 1 1 0 0 0	0.4000 V
0 0 0 1 0 0 0	1.4000 V	0 1 1 0 0 0 0	0.9000 V	1 0 1 1 0 0 1	0.3875 V
0 0 0 1 0 0 1	1.3875 V	0 1 1 0 0 0 1	0.8875 V	1 0 1 1 0 1 0	0.3750 V
0 0 0 1 0 1 0	1.3750 V	0 1 1 0 0 1 0	0.8750 V	1 0 1 1 0 1 1	0.3625 V
0 0 0 1 0 1 1	1.3625 V	0 1 1 0 0 1 1	0.8625 V	1 0 1 1 1 0 0	0.3500 V
0 0 0 1 1 0 0	1.3500 V	0 1 1 0 1 0 0	0.8500 V	1 0 1 1 1 0 1	0.3375 V
0 0 0 1 1 0 1	1.3375 V	0 1 1 0 1 0 1	0.8375 V	1 0 1 1 1 1 0	0.3250 V
0 0 0 1 1 1 0	1.3250 V	0 1 1 0 1 1 0	0.8250 V	1 0 1 1 1 1 1	0.3125 V
0 0 0 1 1 1 1	1.3125 V	0 1 1 1 0 0 0	0.8125 V	1 1 0 0 0 0 0	0.3000 V
0 0 1 0 0 0 0	1.3000 V	0 1 1 1 0 0 1	0.8000 V	1 1 0 0 0 0 1	0.2875 V
0 0 1 0 0 0 1	1.2875 V	0 1 1 1 0 1 0	0.7875 V	1 1 0 0 0 1 0	0.2750 V
0 0 1 0 0 1 0	1.2750 V	0 1 1 1 0 1 1	0.7750 V	1 1 0 0 1 0 0	0.2625 V
0 0 1 0 0 1 1	1.2625 V	0 1 1 1 1 0 0	0.7625 V	1 1 0 0 1 0 1	0.2500 V
0 0 1 0 1 0 0	1.2500 V	0 1 1 1 1 0 1	0.7500 V	1 1 0 0 1 1 0	0.2375 V
0 0 1 0 1 0 1	1.2375 V	0 1 1 1 1 1 0	0.7375 V	1 1 0 0 1 1 1	0.2250 V
0 0 1 0 1 1 0	1.2250 V	0 1 1 1 1 1 1	0.7250 V	1 1 0 1 0 0 0	0.2125 V
0 0 1 0 1 1 1	1.2125 V	0 1 1 1 1 1 1	0.7125 V	1 1 0 1 0 0 1	0.2000 V
0 0 1 1 0 0 0	1.2000 V	1 0 0 0 0 0 0	0.7000 V	1 1 0 1 0 0 1	0.1875 V
0 0 1 1 0 0 1	1.1875 V	1 0 0 0 0 0 1	0.6875 V	1 1 0 1 0 1 0	0.1750 V
0 0 1 1 0 1 0	1.1750 V	1 0 0 0 0 1 0	0.6750 V	1 1 0 1 0 1 1	0.1625 V
0 0 1 1 0 1 1	1.1625 V	1 0 0 0 0 1 1	0.6625 V	1 1 0 1 1 0 0	0.1500 V
0 0 1 1 1 0 0	1.1500 V	1 0 0 0 1 0 0	0.6500 V	1 1 0 1 1 0 1	0.1375 V
0 0 1 1 1 0 1	1.1375 V	1 0 0 0 1 0 1	0.6375 V	1 1 0 1 1 1 0	0.1250 V
0 0 1 1 1 1 0	1.1250 V	1 0 0 0 1 1 0	0.6250 V	1 1 0 1 1 1 1	0.1125 V
0 0 1 1 1 1 1	1.1125 V	1 0 0 1 0 0 0	0.6125 V	1 1 1 0 0 0 0	0.1000 V
0 1 0 0 0 0 0	1.1000 V	1 0 0 1 0 0 1	0.6000 V	1 1 1 0 0 0 1	0.0875 V
0 1 0 0 0 0 1	1.0875 V	1 0 0 1 0 1 0	0.5875 V	1 1 1 0 0 1 0	0.0750 V
0 1 0 0 0 1 0	1.0750 V	1 0 0 1 0 1 1	0.5750 V	1 1 1 0 0 1 1	0.0625 V
0 1 0 0 0 1 1	1.0625 V	1 0 0 1 1 0 0	0.5625 V	1 1 1 0 1 0 0	0.0500 V
0 1 0 0 1 0 0	1.0500 V	1 0 0 1 1 0 1	0.5500 V	1 1 1 0 1 0 1	0.0375 V
0 1 0 0 1 0 1	1.0375 V	1 0 0 1 1 1 0	0.5375 V	1 1 1 0 1 1 0	0.0250 V
0 1 0 0 1 1 0	1.0250 V	1 0 0 1 1 1 1	0.5250 V	1 1 1 1 0 0 0	0.0125 V
0 1 0 0 1 1 1	1.0125 V	1 0 0 1 1 1 1	0.5125 V	1 1 1 1 0 0 1	0.0000 V
		1 0 0 1 1 1 1	0.5000 V	1 1 1 1 0 1 0	0.0000 V
				1 1 1 1 0 1 1	0.0000 V
				1 1 1 1 1 0 0	0.0000 V
				1 1 1 1 1 0 1	0.0000 V
				1 1 1 1 1 1 0	0.0000 V
				1 1 1 1 1 1 1	0.0000 V
				**11111111*: 0V power good asserted.	
DPRSLPVR	0	Active	Deeper SLP	DPRSLPVR	1
DPRSTP*	1			DPRSTP*	0
PSI2*	0 or 1			PSI2*	0 or 1

*Yonah Processor (2.33 GHz / 800 MHz : TBD)

DATE	7/19/2005	TITLE	HAINAN	SAMSUNG ELECTRONICS
CHECK	SS BAIK	DEV. STEP	MAIN	
APPROVAL	KK BIN	REV	YONAH CPU(2/3)	PART NO. BA41-*****A
MODULE CODE		LAST EDIT	July 19, 2005 8:53:48 AM	PAGE 10 OF 55



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CPU / DDR2 Thermal Sensor

Refer To Thermal Sensor Layout Guidelines.

- Place the Thermal Sensor close to a remote diode.
- Keep traces away from high voltage (+12V bus).
- Keep traces away from fast data buses and CRT signal.
- Use recommended trace widths and spacings (10mil)
- Place a ground plane under the traces.
- Use guard traces flanking DXP and DXN and connecting to GND

Place the middle
 of CPU & GMCH

$V_{set} = (T_p - 75) / 16$
 Guardian Temp-tolerance = $\pm 3^\circ\text{C}$

1) $T_p = 88^\circ\text{C}$, $\Rightarrow V_{set} = 0.9375$

$$\frac{0.9375}{3.3} = \frac{x}{x+y} \quad x : y = 1 : 2.52$$

when $y = 30\text{Kohm}$, $\Rightarrow x = 11.91\text{Kohm}$

2) $x = 12\text{Kohm}$, $y = 30.1\text{Kohm}$

$$V_{set} = 3.3 \times \frac{12.0}{12.0 + 30.1}$$

$T_p = V_{set} \times 16 + 75 = 90.0496^\circ\text{C} \pm 3$

Guardian Temp-tolerance = $\pm 3^\circ\text{C}$

PLACE NEAR TO DDR2 SODIMM

PLACE THIS AT THE OPPOSITE SIDE OF CPU

PLACE THIS AROUND MEMORY SODIMM

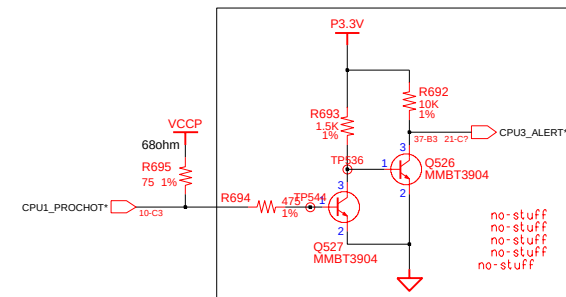
THERMISTOR - NTC : 10Kohm 1%

1. ERTJ1VG103FA - Panasonic
2. TH11-3H103FT - Mitsubishi

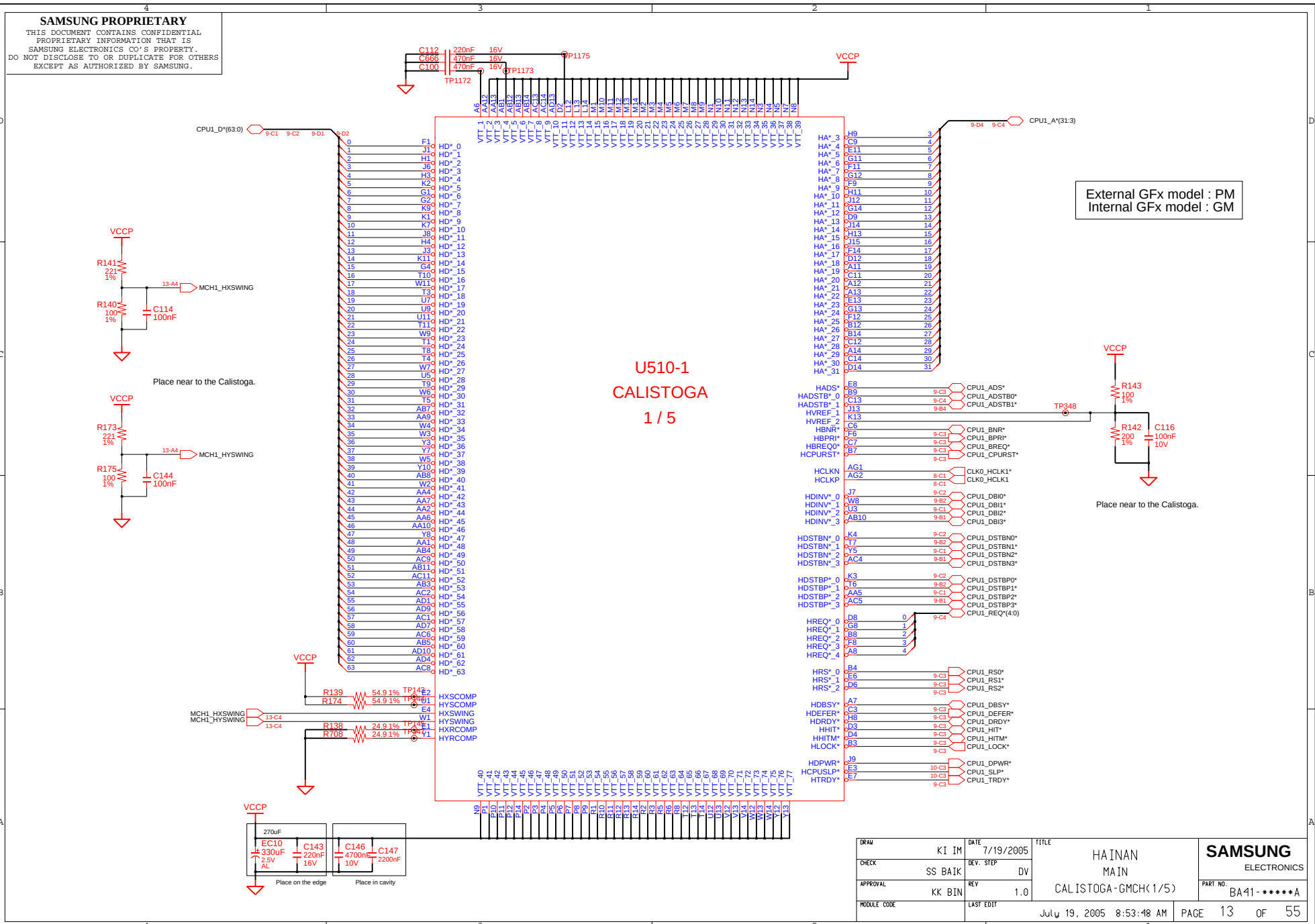
- Resistance ratios to R25 at each temperature

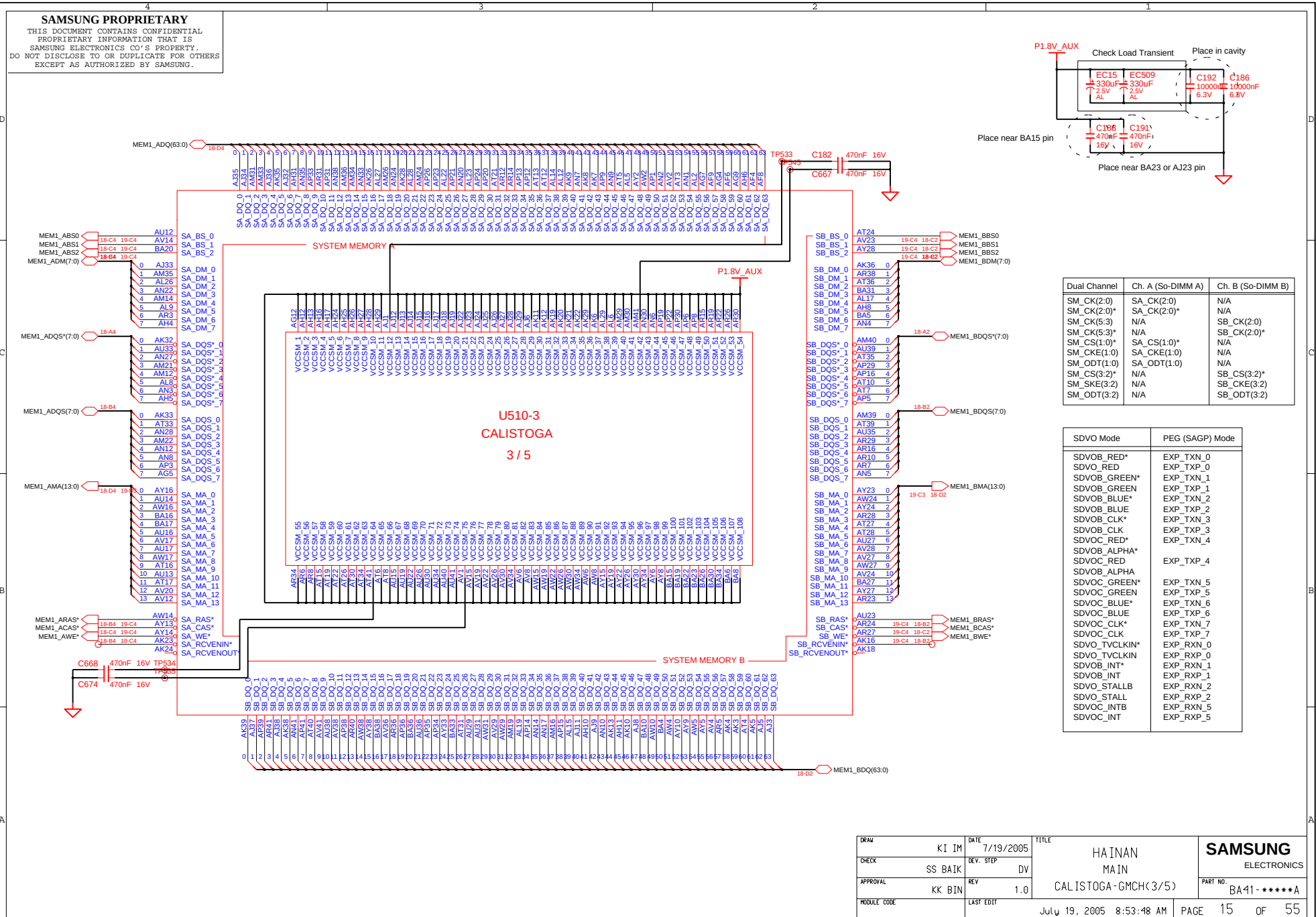
Temp(C)	Ratio	Temp(C)	Ratio
-40	20.238	40	0.5826
-30	11.669	50	0.4164
-20	6.984	60	0.3027
-10	4.322	70	0.2233
0	2.755	80	0.1670
10	1.803	90	0.1260
20	1.210	100	0.09570
25	1	110	0.07338
30	0.8309	120	0.05678
35	0.6941	125	0.05011

VCP voltage = $5V \times TH1 / (TH1 + 2.21K)$
 When TH1 is 10Kohm, VCP is 4.1V.
 If TH1 is 1Kohm, VCP is 1.56V.



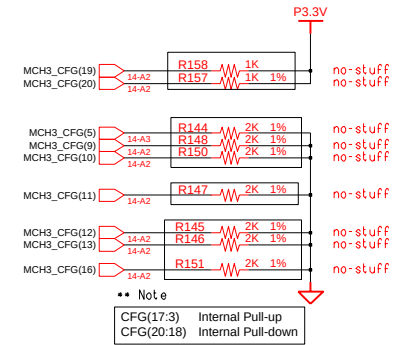
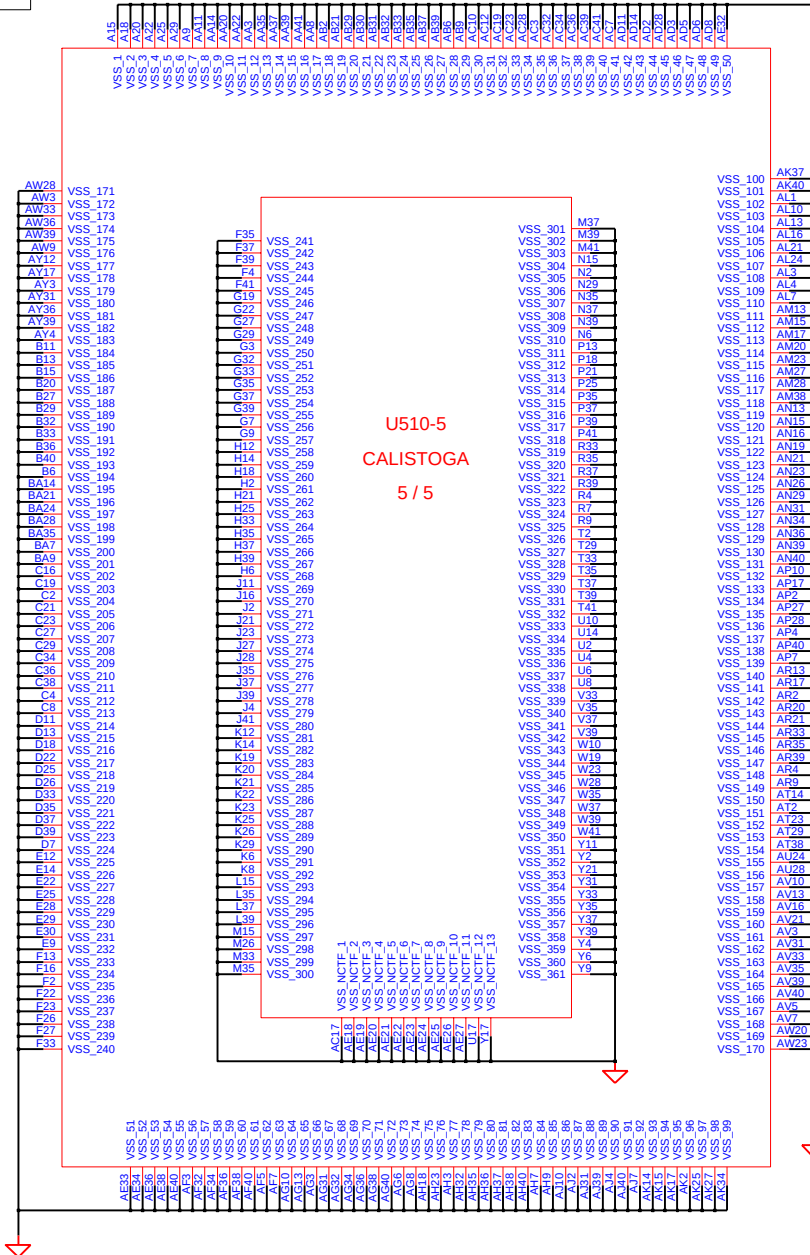
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CHECK	SS BAIK	REV. STEP	DV	MAIN	MAIN	ELECTRONICS
APPROVAL	BIN, KK	REV	1.0	THERMAL SENSOR	PART NO.	BA41-*****A
MODULE CODE		LAST EDIT	July 19, 2005 8:53:48 AM	PAGE	12	OF 12





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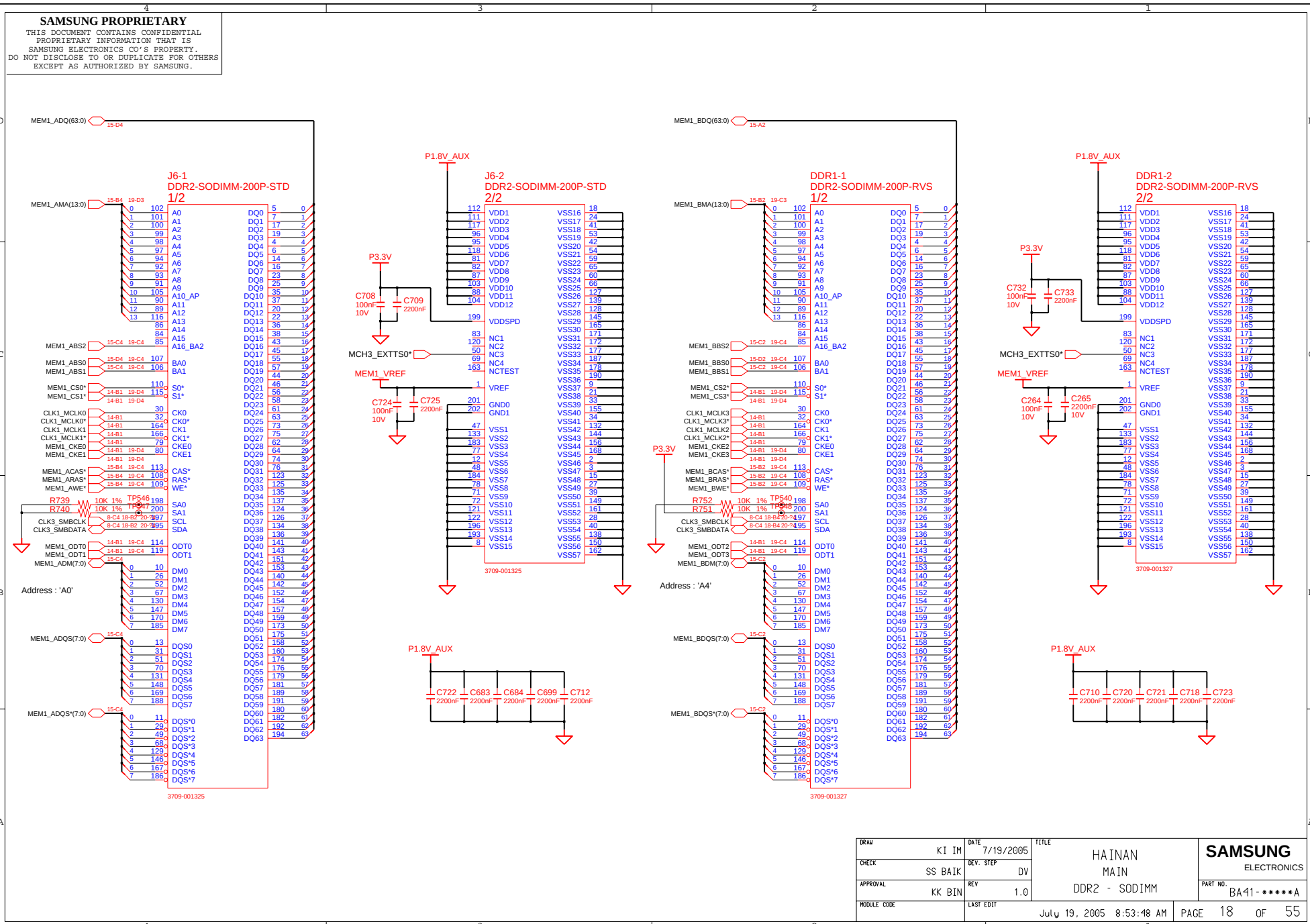


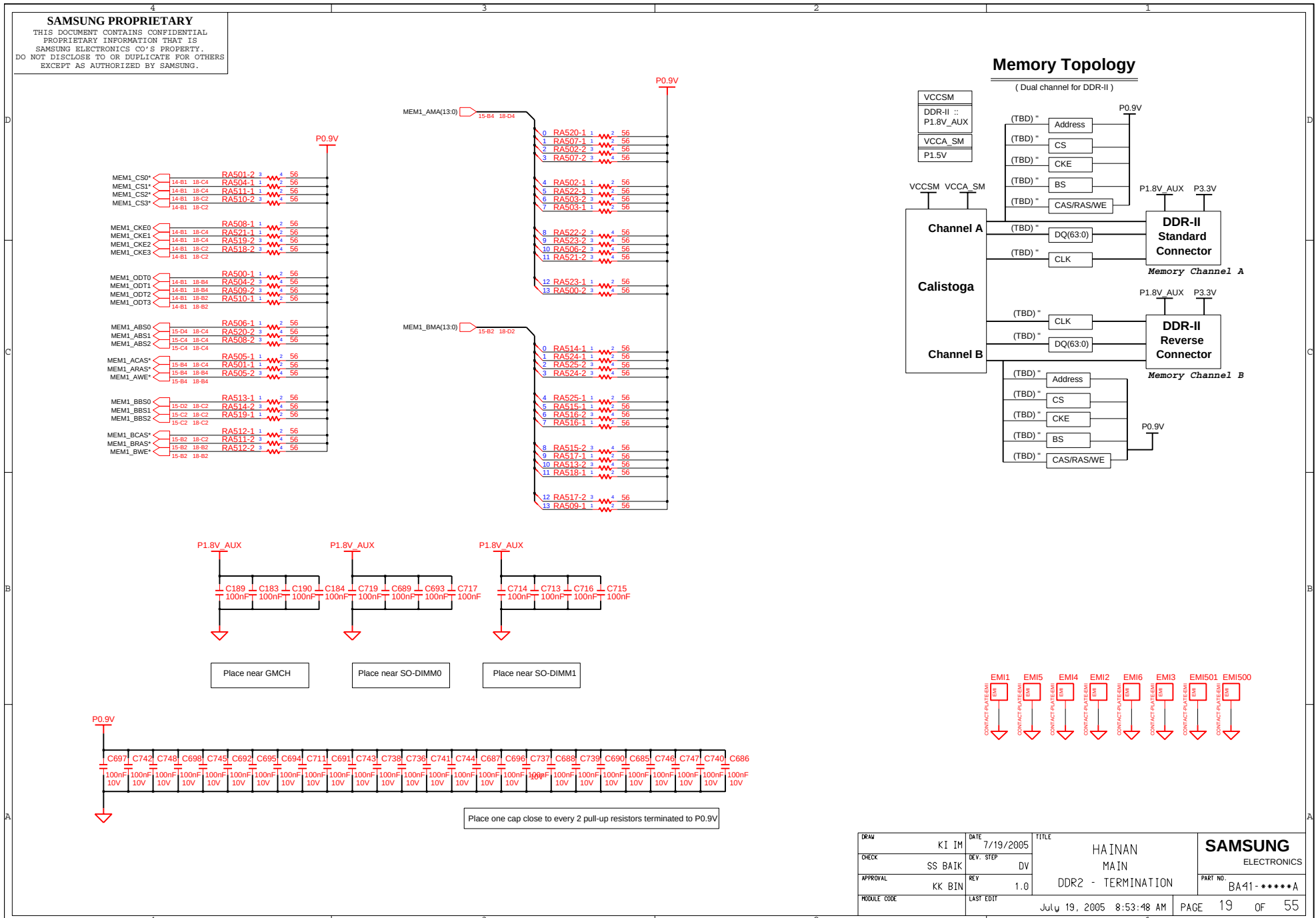
When CFG13:12 are pulled down to '00', certain clocks within Calistoga will become free-running clocks. This will lead to a rise in avg. power, but eliminates any possible clock-timing marginalities involved in clockpower-up/power-down.
 Intel strongly recommends leaving CFG13:12=NC (Internal PU to '11') to ensure low avg.

•• Note *POCAFE2-10 Only (Remove in MP Model)

Current Setting (def.: default Option)		
CFG#	Low	High
CFG(5)	DMix2	DMix4 (def.)
CFG(6)	Reserved	DDR-II (def.)
CFG(7)	DT/Transportable	Mobile CPU (def.)
CFG(9)	PEG Reversal	Normal
CFG(16)	Dynamic ODT Disabled	Dynamic ODT Enabled (def.)
CFG(18)	VCC 1.05V (def.)	VCC 1.5V
CFG(19)	DMI Lane Normal	DMI Lane Reversal
CFG(20)	SDVO or PCIE X1 Only(def.)	SDVO and PCIE X1 Simultaneously

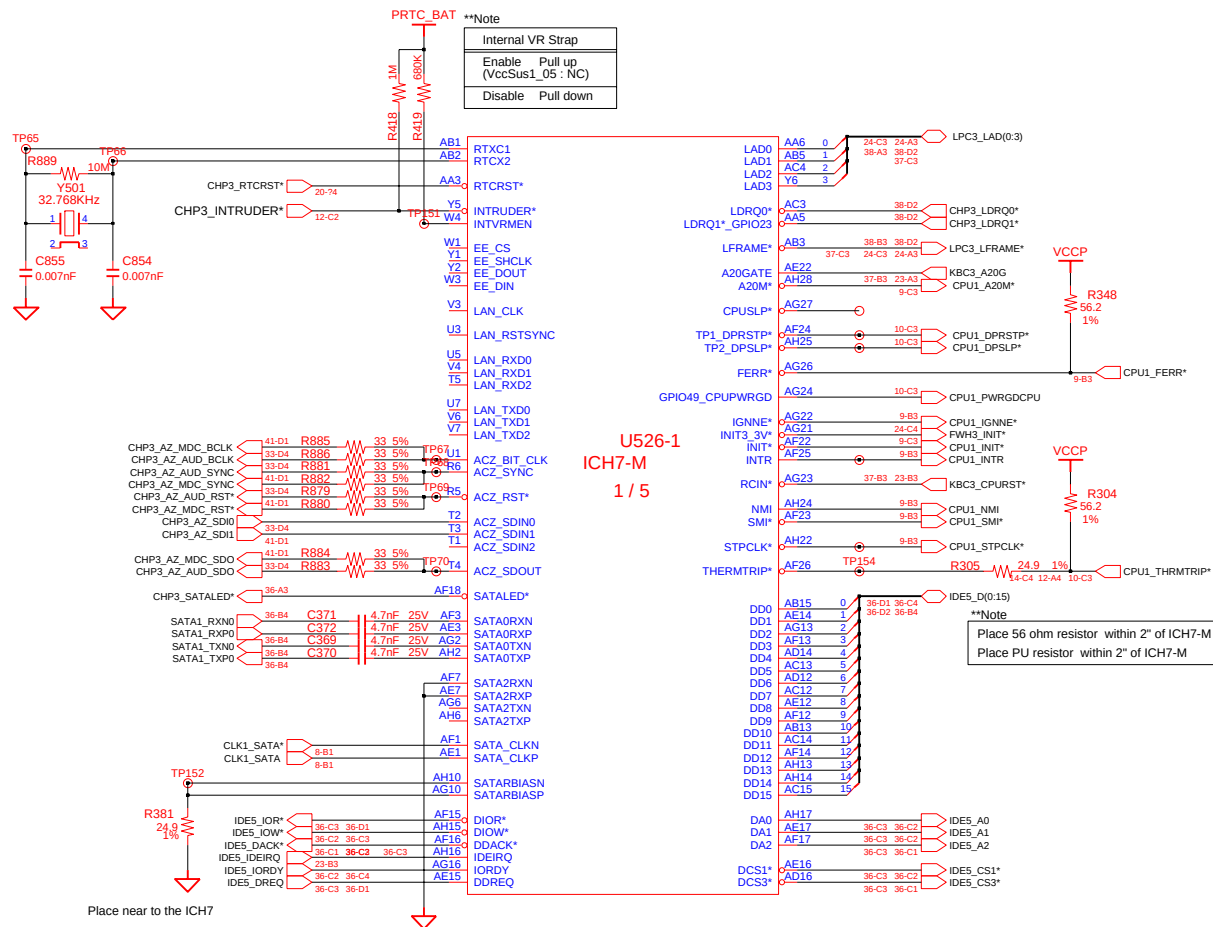
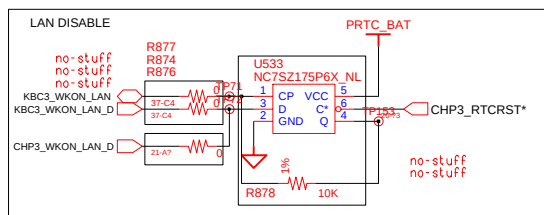
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CHECK	SS BAIK	DEV. STEP	DV	MAIN		
APPROVAL	KK BIN	REV	1.0	CALISTOGA-GMCH(5/5)		PART NO. BA41-*****A
MODULE CODE		LAST EDIT	July 19, 2005 8:53:48 AM	PAGE	17	OF 55



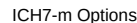


DRAW	K1 IM	DATE	7/19/2005	TITLE	HAINAN MAIN DDR2 - TERMINATION	SAMSUNG ELECTRONICS
CHECK	SS BAIK	DEV. STEP	DV			PART NO. BA41-*****A
APPROVAL	KK BIN	REV	1.0			
MODULE CODE		LAST EDIT	July 19, 2005 8:53:48 AM	PAGE	19	OF 55

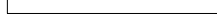
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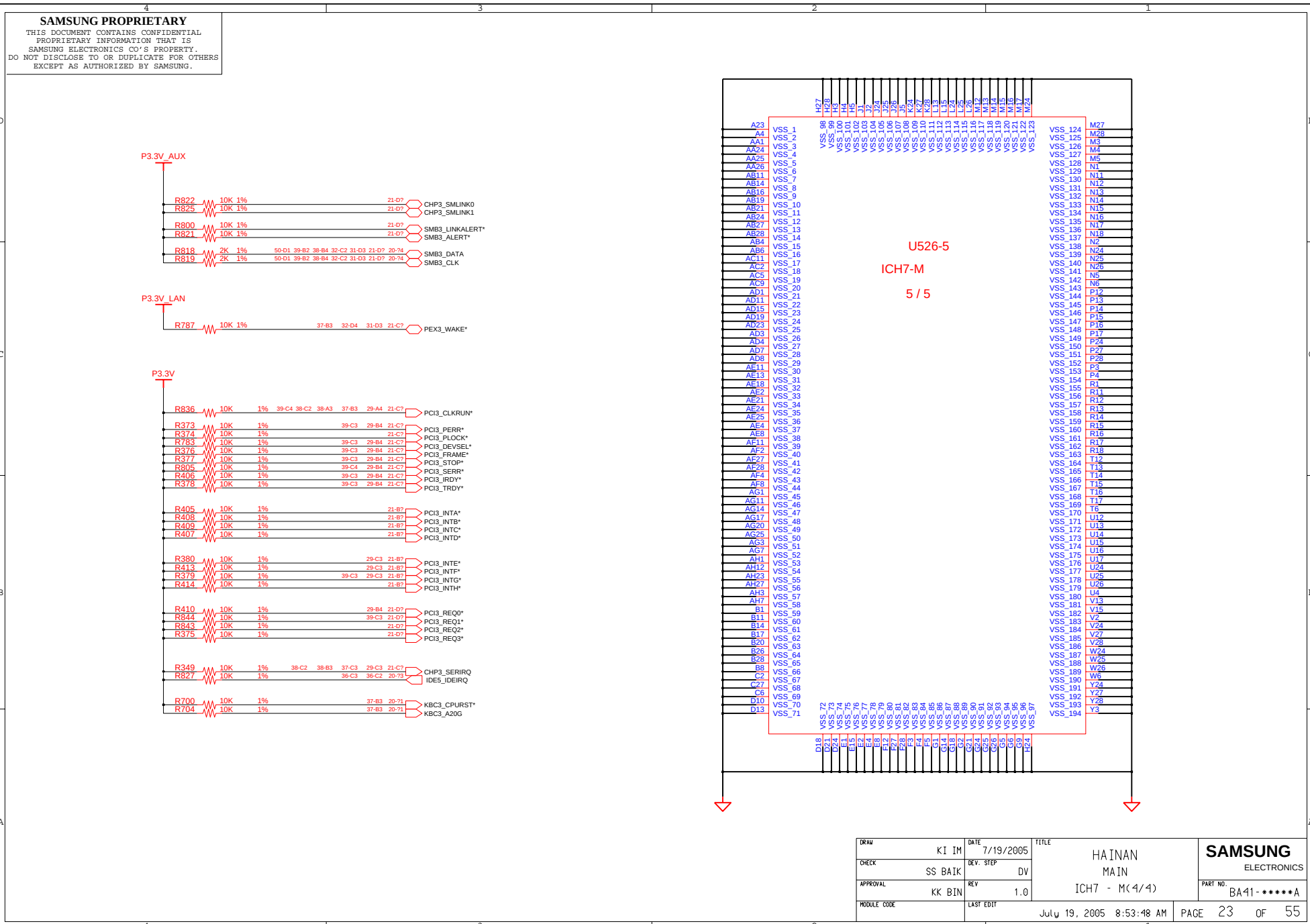
DRAM	KI IM	DATE	7/19/2005	TITLE	HAINAN MAIN ICH7 - M(1/4)	
CHECK	SS BAIK	DEV. STEP	DV			
APPROVAL	KK BIN	REV	1.0			
MODULE CODE	LAST EDIT		July 19, 2005 8:53:48 AM			
				PART NO.	BA41-*****A	



	Function	Default
CHP3_SPKR	No Reboot	No Stuff
CHP3_GNT3	A16 swap override	No Stuff
AC97_SDOUT	Safe Mode	TBD
CHP3_GNT(5:4)	Boot BIOS Option	



d:/wpa/moblie22/memlog/theinner/theinner



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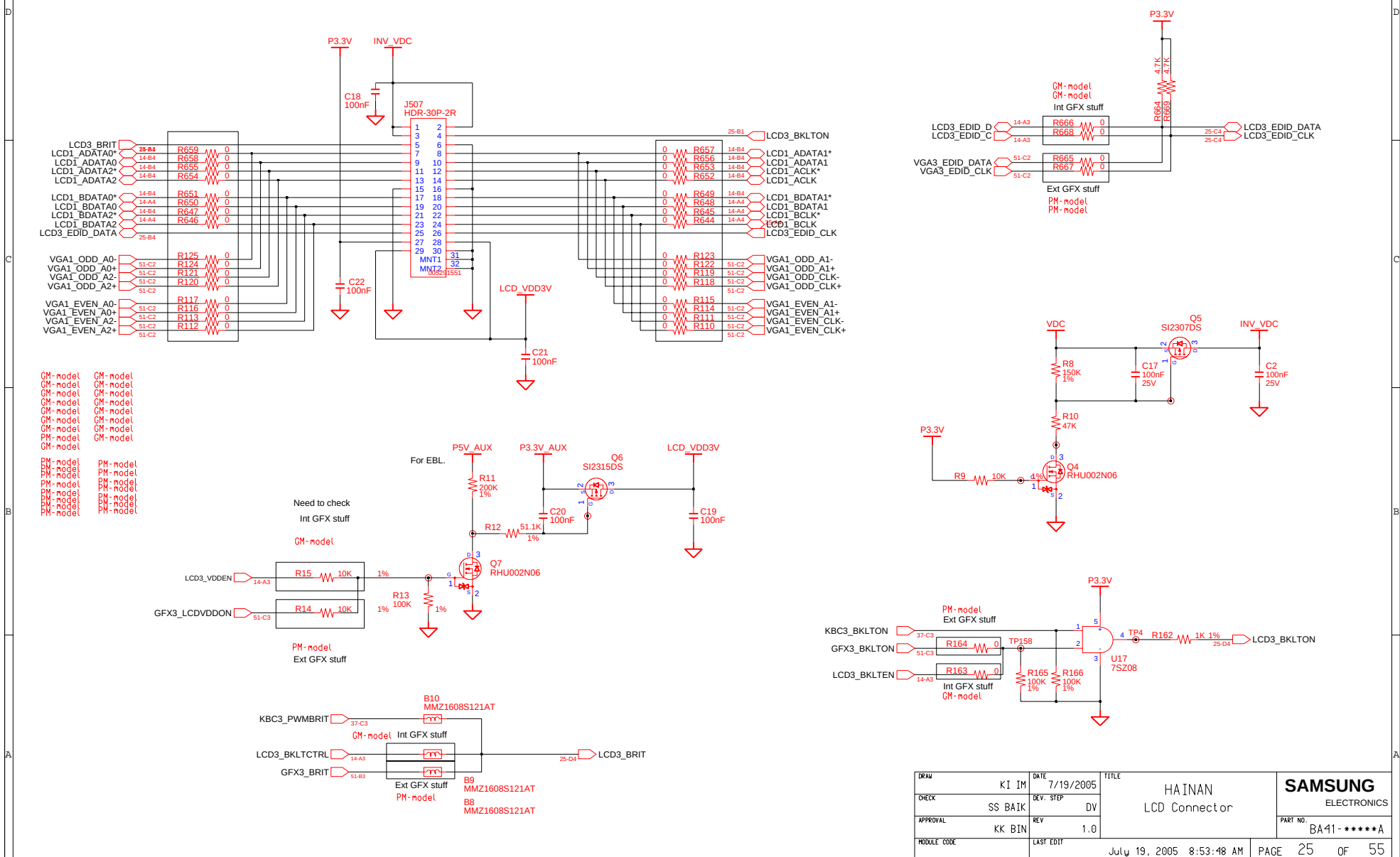


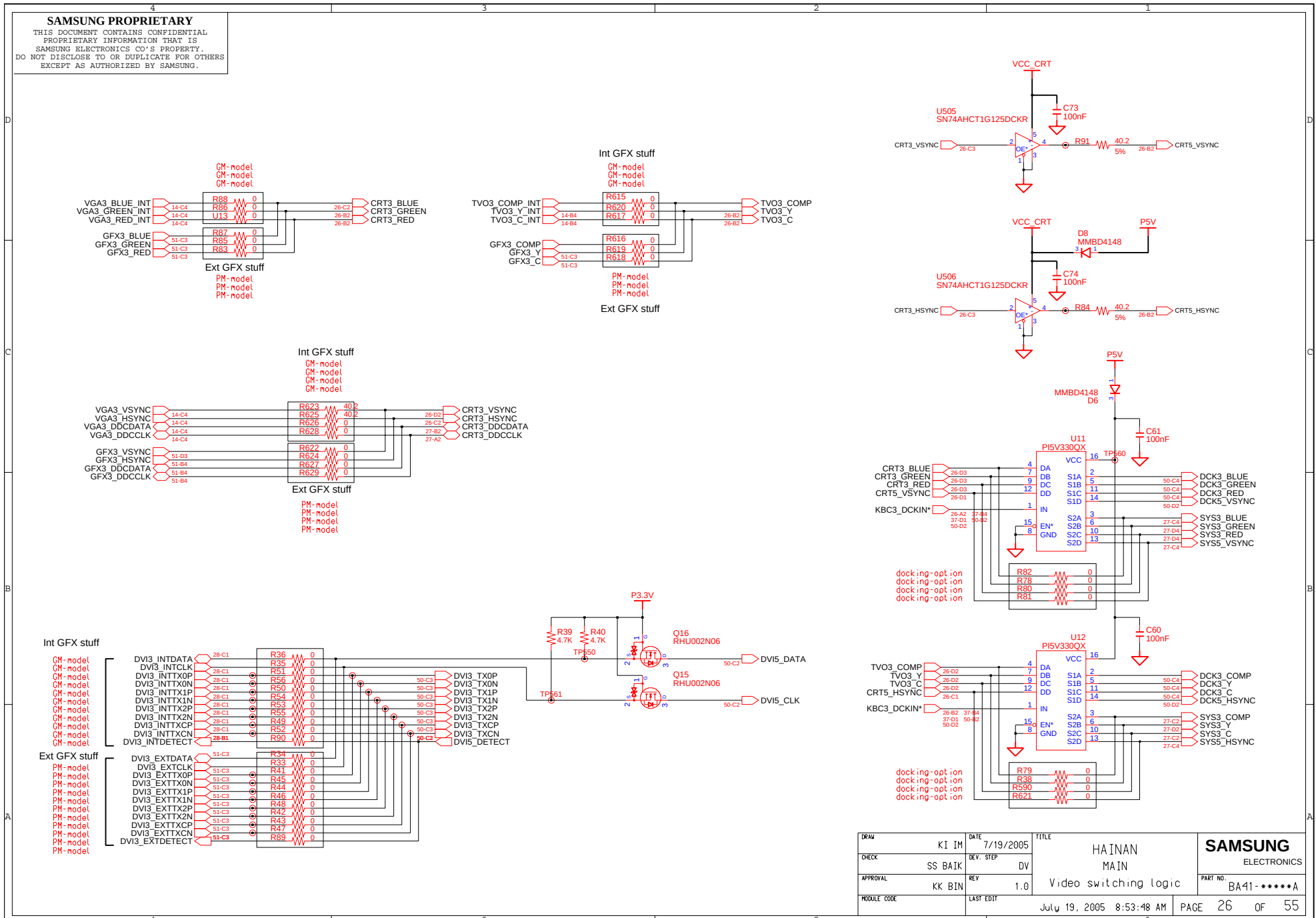
COM-22C-015(1996.6.5) REV. 3

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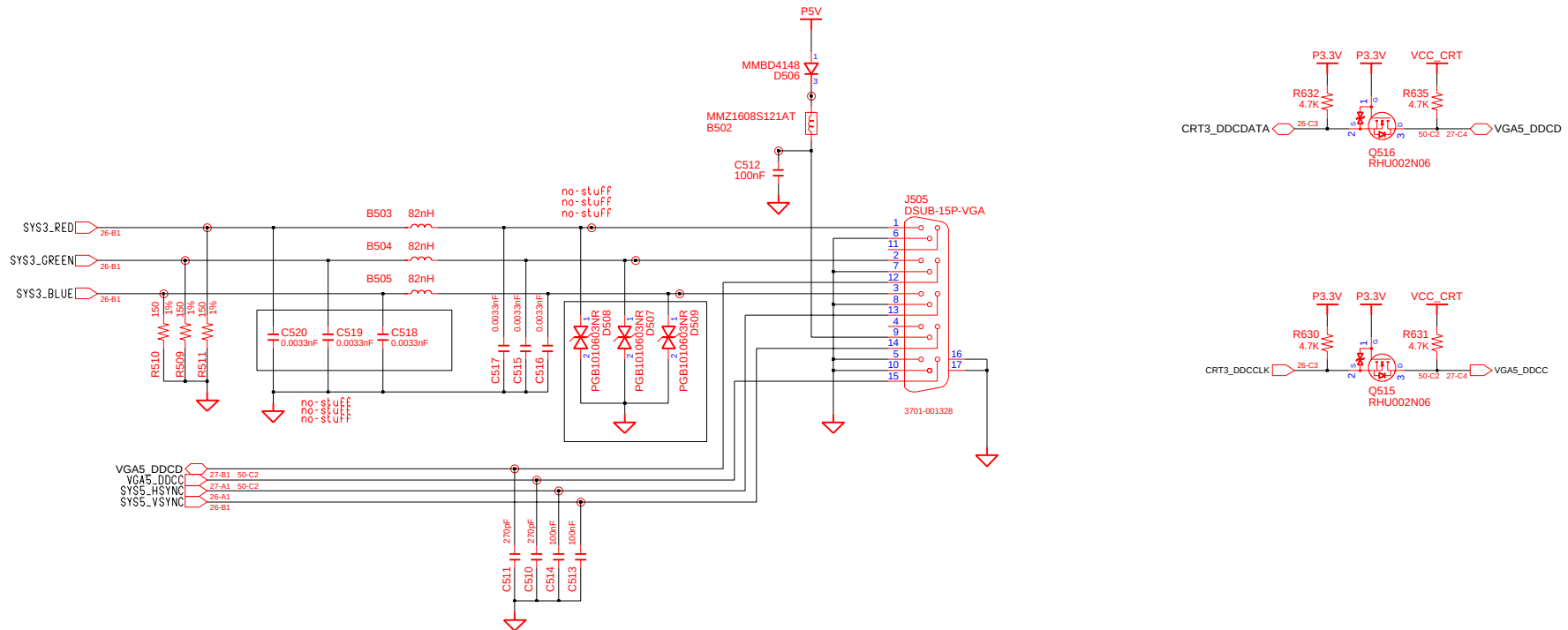
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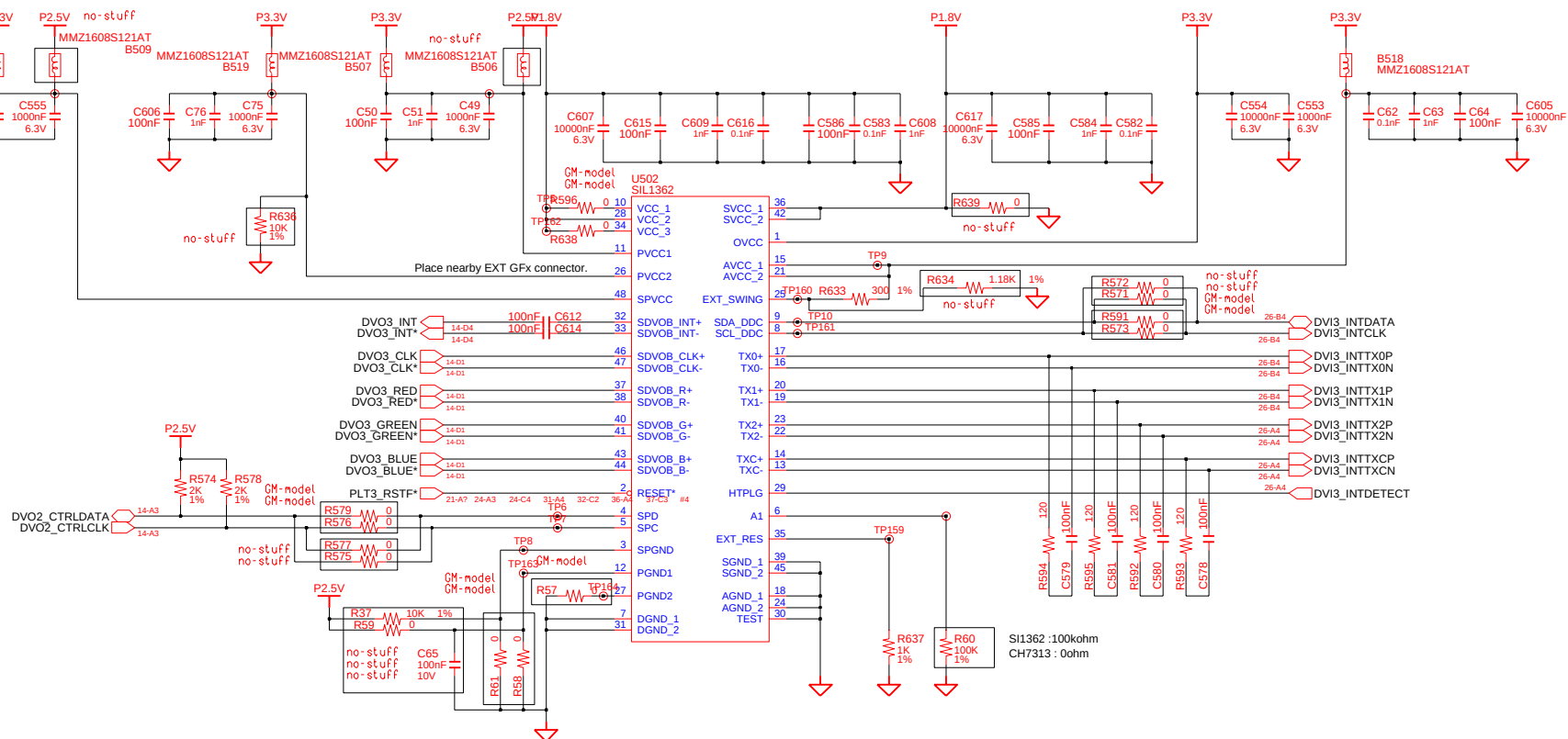
CRT CONNECTOR



DRAW	IM, KI	DATE	7/19/2005	TITLE	HAINAN POWER CRT connector	SAMSUNG ELECTRONICS
CHECK	BAIK, SS	DEV. STEP	DV			PART NO. BA41-*****A
APPROVAL	BIN, KK	REV	1.0			
MODULE CODE		LAST EDIT	July, 19, 2005 8:59:59 AM	PAGE	27 OF 27	

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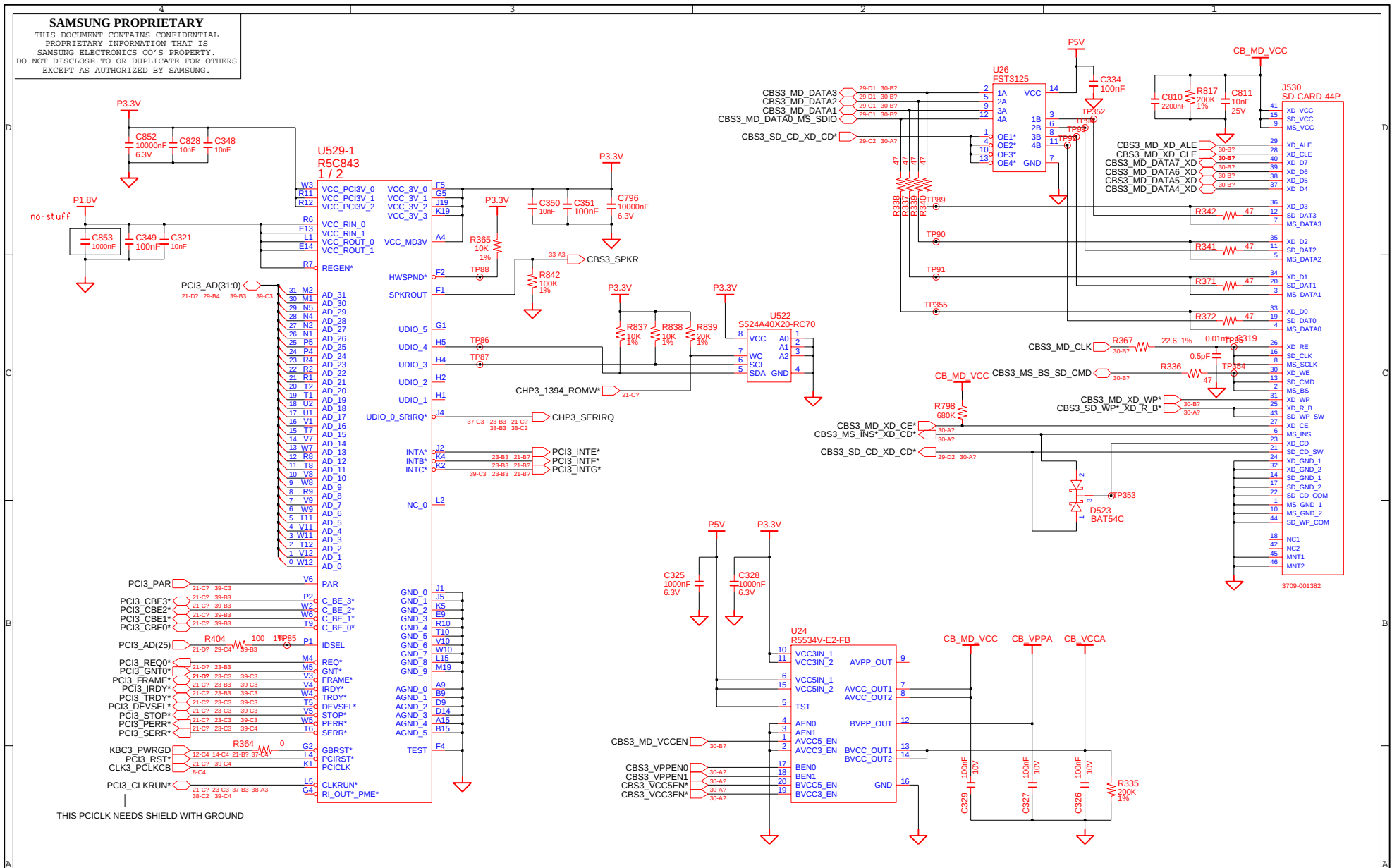
GM-model



DRAM	KI IM	DATE	7/19/2005	TITLE	HAINAN POWER DVI transmitter	SAMSUNG ELECTRONICS
CHECK	SS BAIK	DEV. STEP	DV			
APPROVAL	KK BIN	REV	1.0			
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				PART NO.	BA41-*****A	

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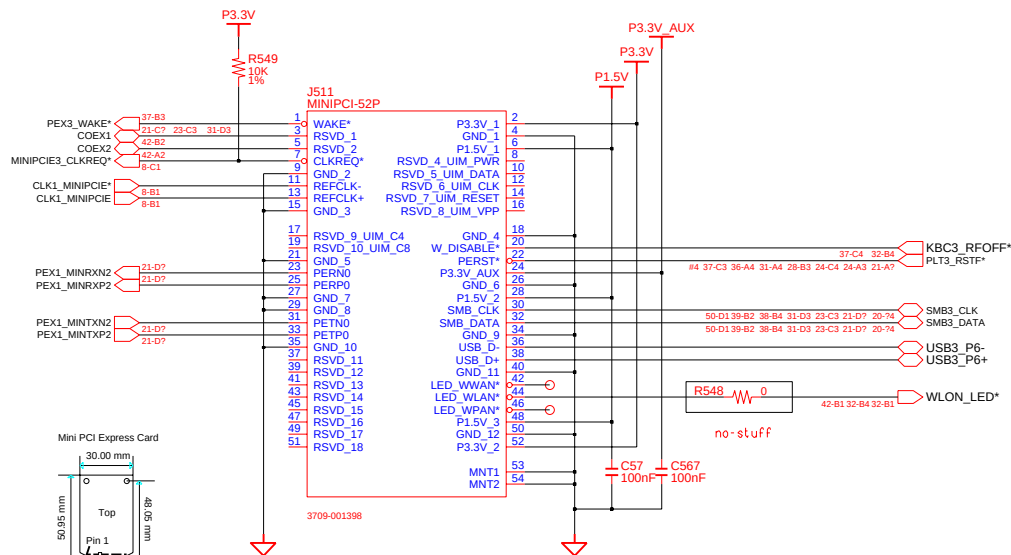
THIS PCLK NEEDS SHIELD WITH GROUND

DRAW	K1 IM	DATE	7/19/2005	TITLE	HAINAN	SAMSUNG
CHECK	SS BAIK	DEV. STEP	DV	MAIN	ELECTRONICS	
APPROVAL	KK BIN	REV	1.0	CARDBUS / 1394 (1/2)	PART NO.	BA41-*****A
MODULE CODE		LAST EDIT	July 19, 2005 8:53:48 AM	PAGE	29	OF 55

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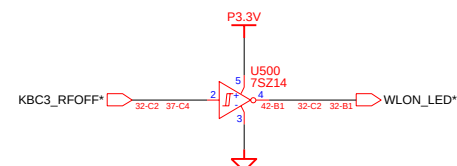
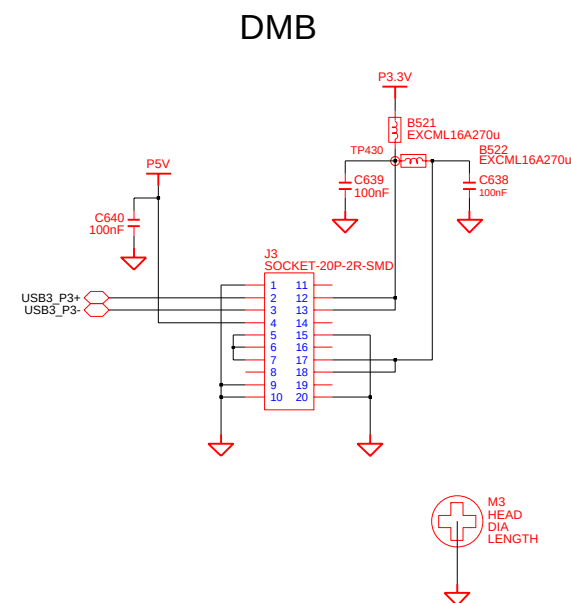
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Mini PCI Express

PCI Express Mini Card ElectroMechanical Spec. 1.0



DRAW	IM, KI	DATE	7/19/2005	TITLE	HAINAN
CHECK	BAIK, SS	DEV. STEP	DV	MAIN	
APPROVAL	BIN, KK	REV	1.0	MINI PCIEX & DMB & IR	
MODULE CODE		LAST EDIT	Jul, 19, 2005 9:01:07 AM	PAGE	32 OF 32

SAMSUNG
ELECTRONICS

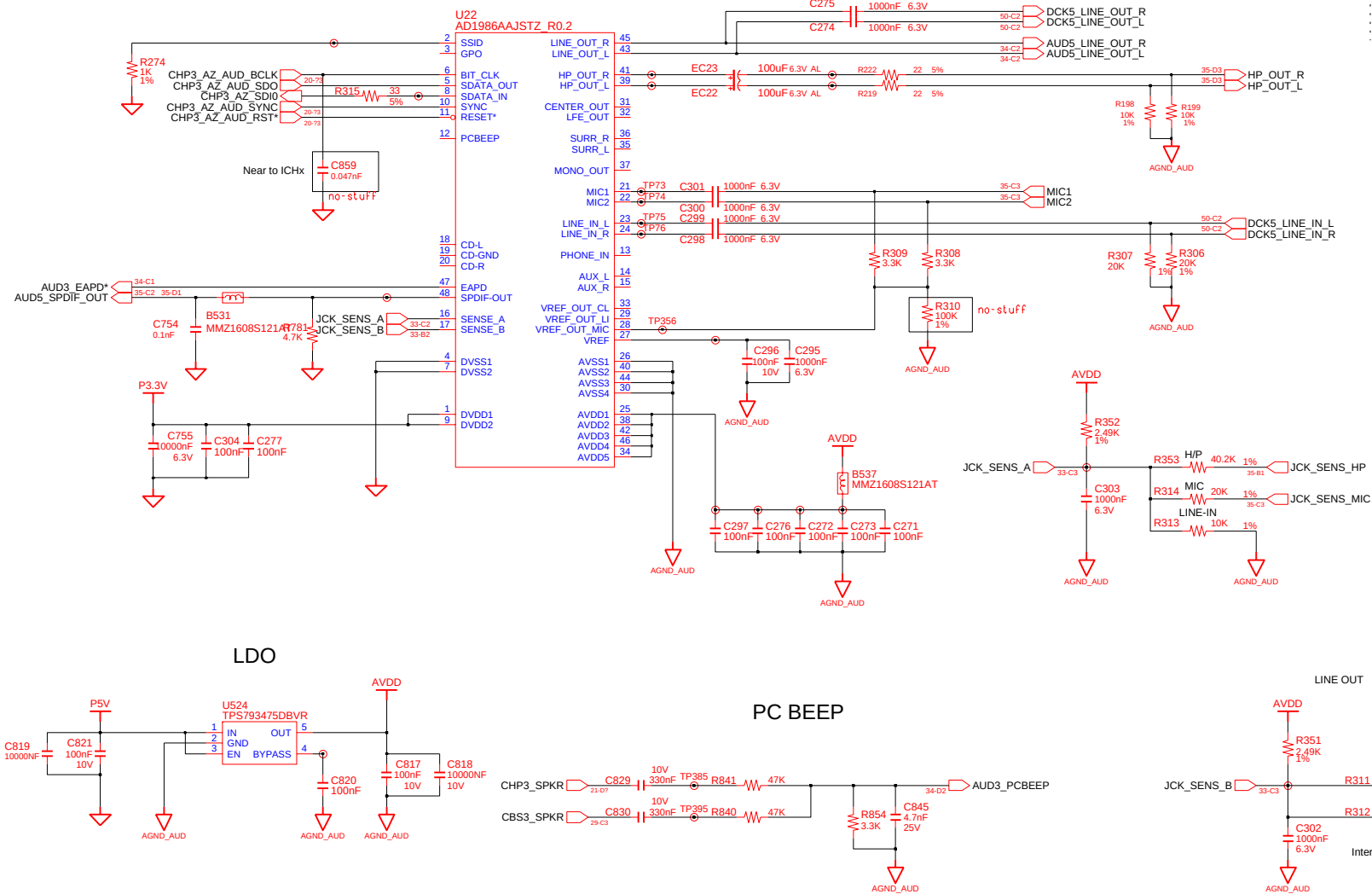
PART NO. BA41-*****A

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

ALL TYPE IS 1608

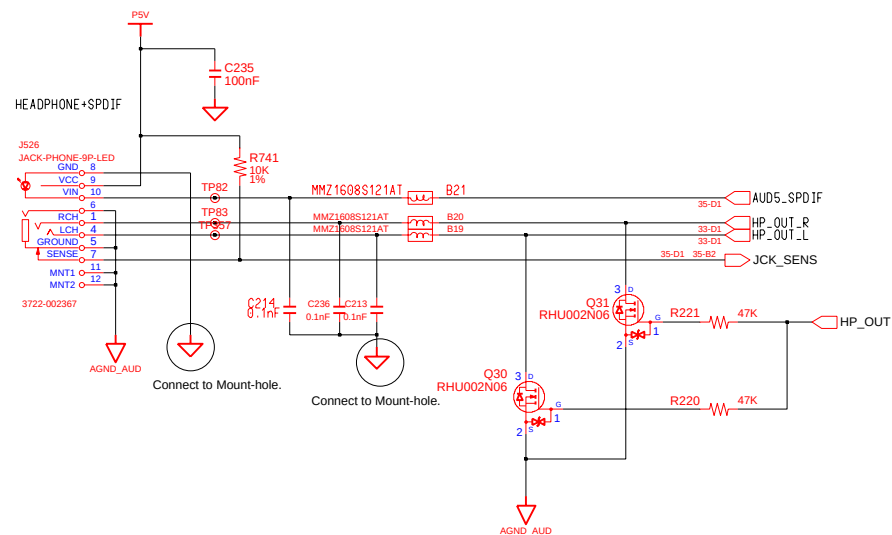


DRAW	K1 IM	DATE	7/19/2005	TITLE	HAINAN MAIN AUDIO CODEC	SAMSUNG ELECTRONICS
CHECK	SS BAIK	DEV. STEP	DV			PART NO. BA41-*****A
APPROVAL	KK BIN	REV	1.0			
MODULE CODE	undefined	LAST EDIT	July 19, 2005 8:53:48 AM	PAGE	33	OF 55

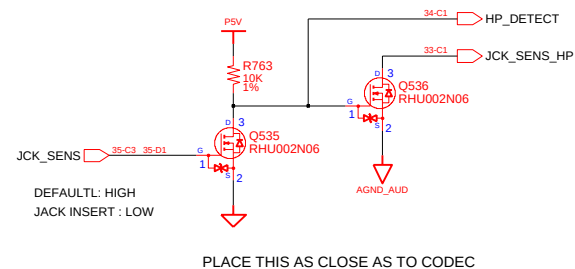
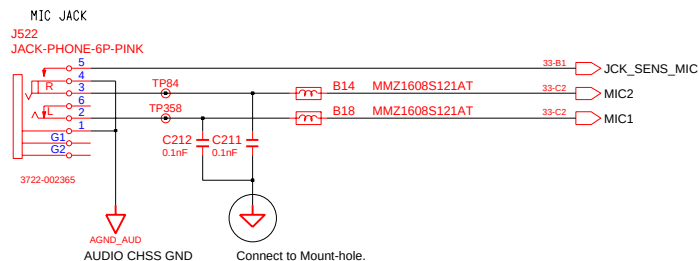
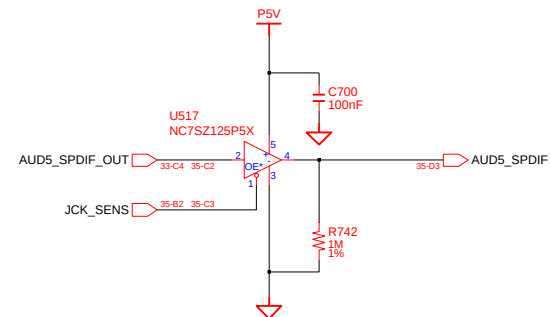
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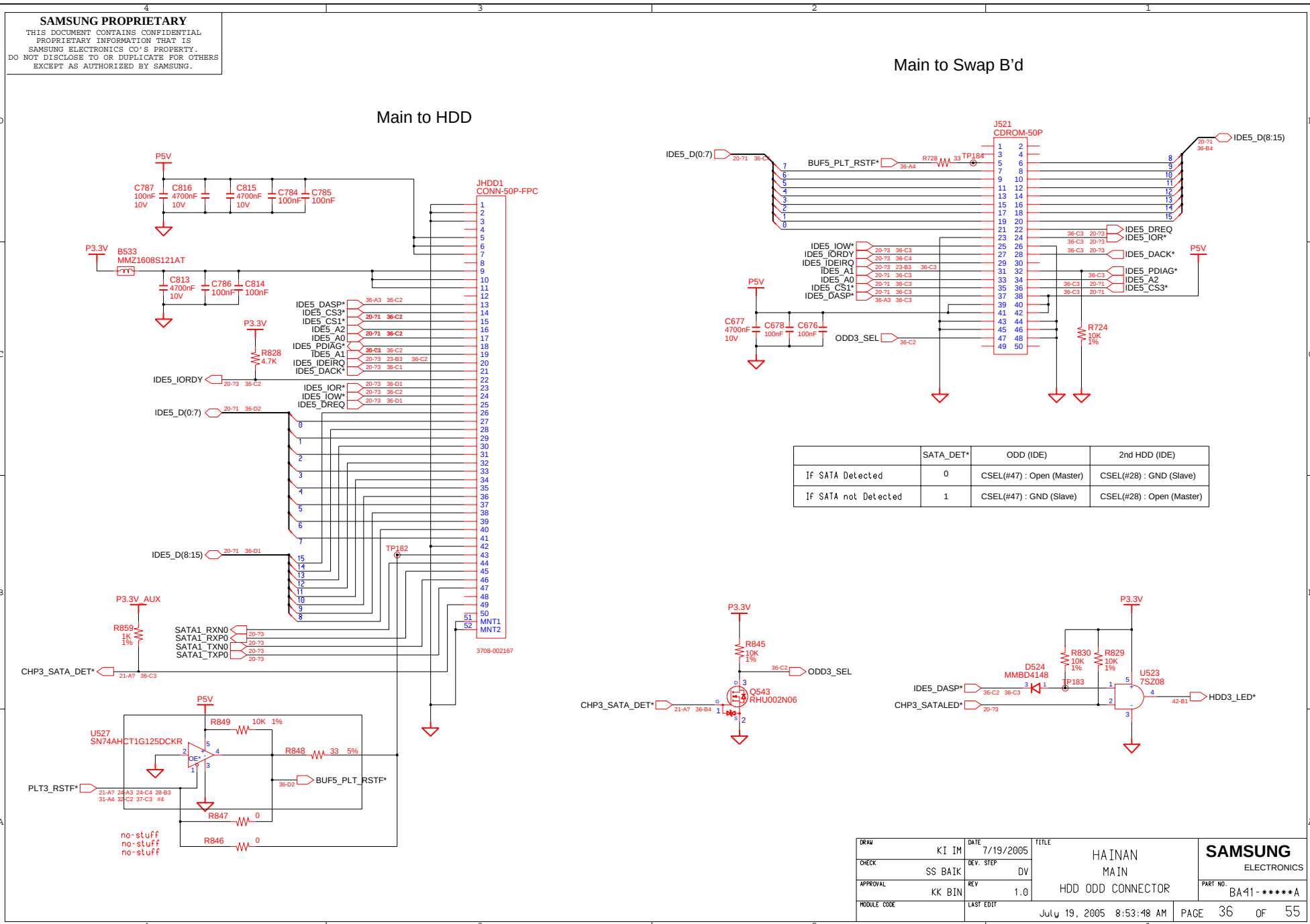
Default: 5-7-6 open
 STEREO JACK: 5-7-6 SHORT
 S/PDIF 5-7 SHORT

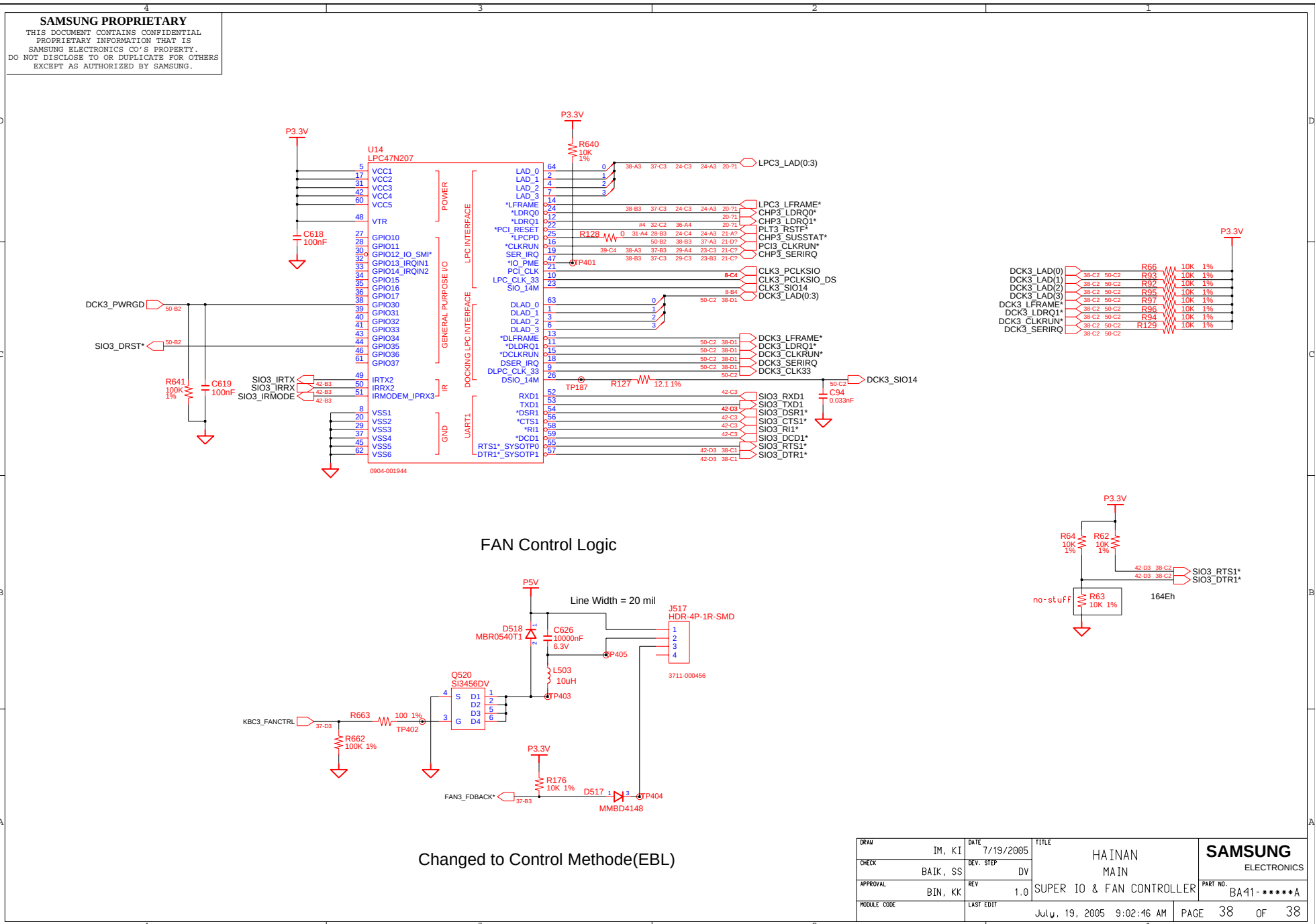


SPDIF DETECT

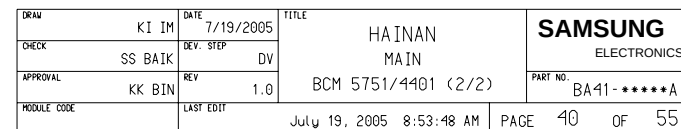


DRAW	K1 IM	DATE	7/19/2005	TITLE	HAINAN MAIN Headphone & MIC jack	SAMSUNG ELECTRONICS
CHECK	SS BAIK	DEV. STEP	DV			PART NO. BA41-*****A
APPROVAL	KK BIN	REV	1.0			
MODULE CODE		LAST EDIT	July 19, 2005 8:53:48 AM	PAGE	35	OF 55





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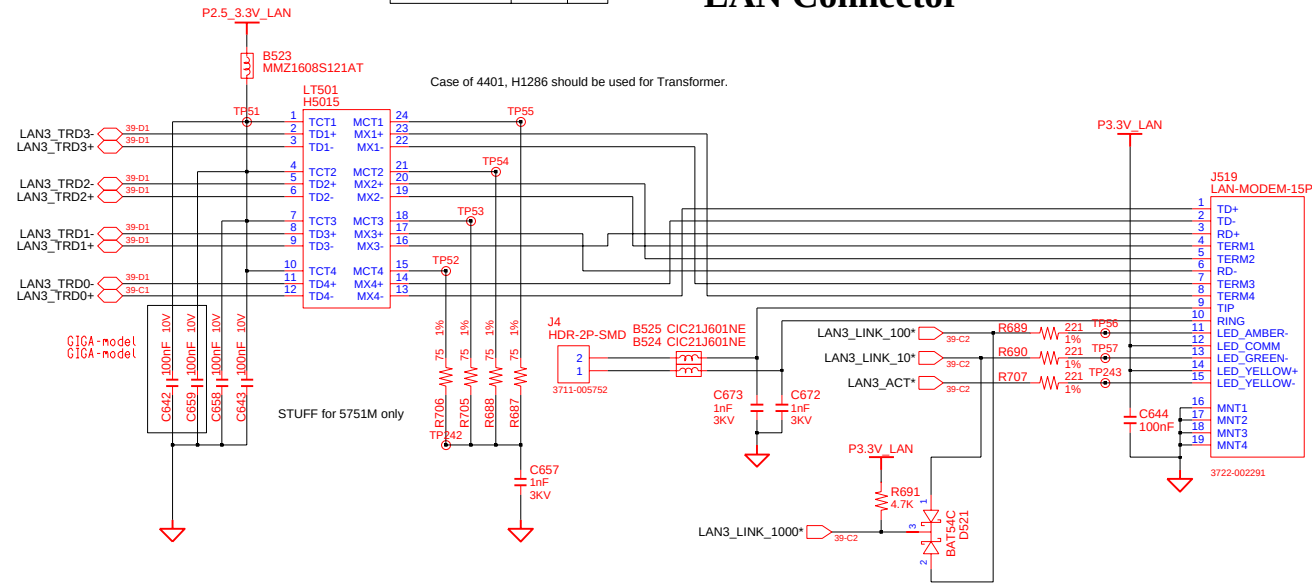


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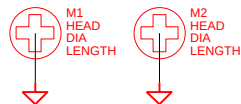
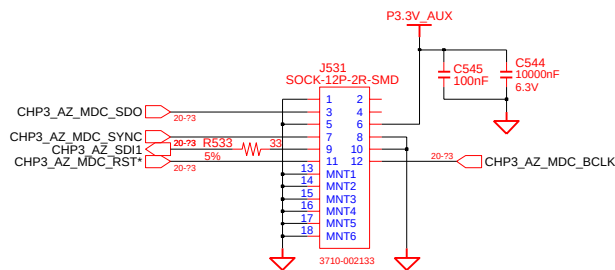
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LAN CONTROLLER	4401E	5751
TRANSFORMER	H1321NL	H5015

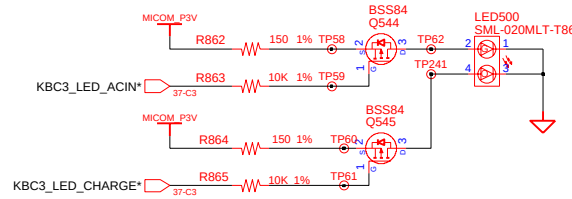
LAN Connector



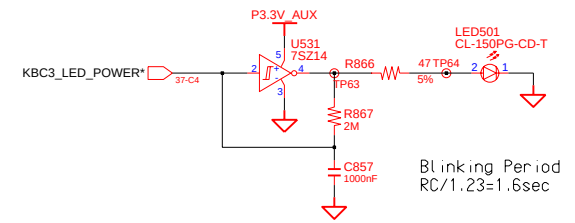
MDC Connector



ADAPTERIN/CHARGING LED



POWER_ON / LB LED



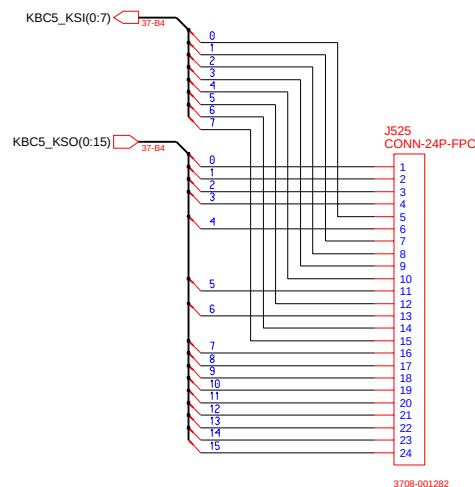
Blinking Period
RC/1.23=1.6sec

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CHECK	BAIK, SS	REV.	STEP	DV	MAIN	
APPROVAL	BIN, KK	REV.	1.0	LAN MODEM Conn & LED.		
MODULE CODE	LAST EDIT		July, 19, 2005 9:04:06 AM		PAGE 41 OF 41	

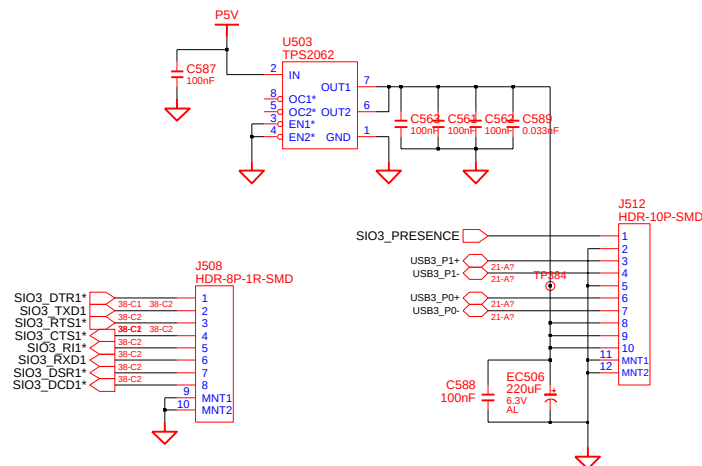
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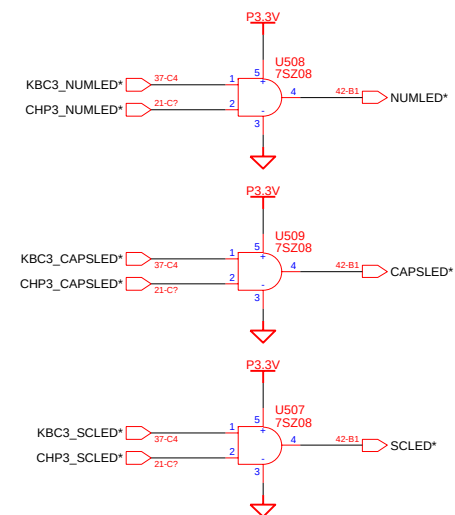
KEYBOARD



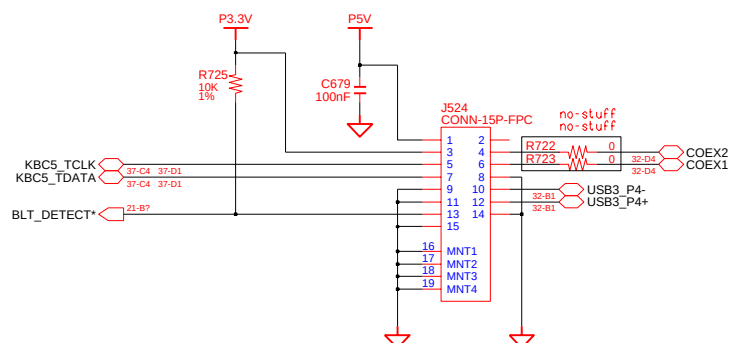
USB_SIO BOARD



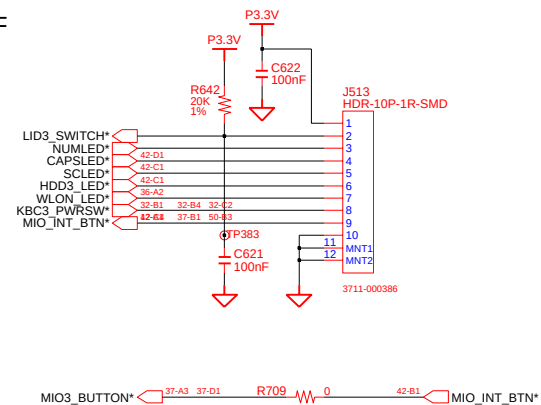
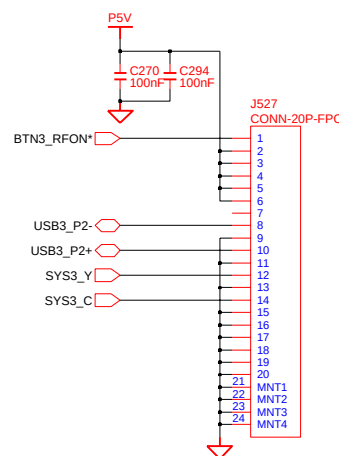
LED BOARD



TOUCHPAD BLUETOOTH I/F

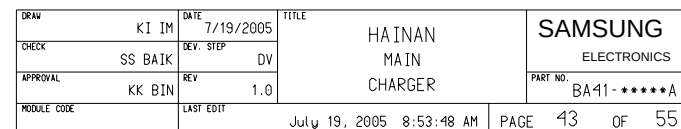


USB_SVHS_RF OFF SWITCH I/F

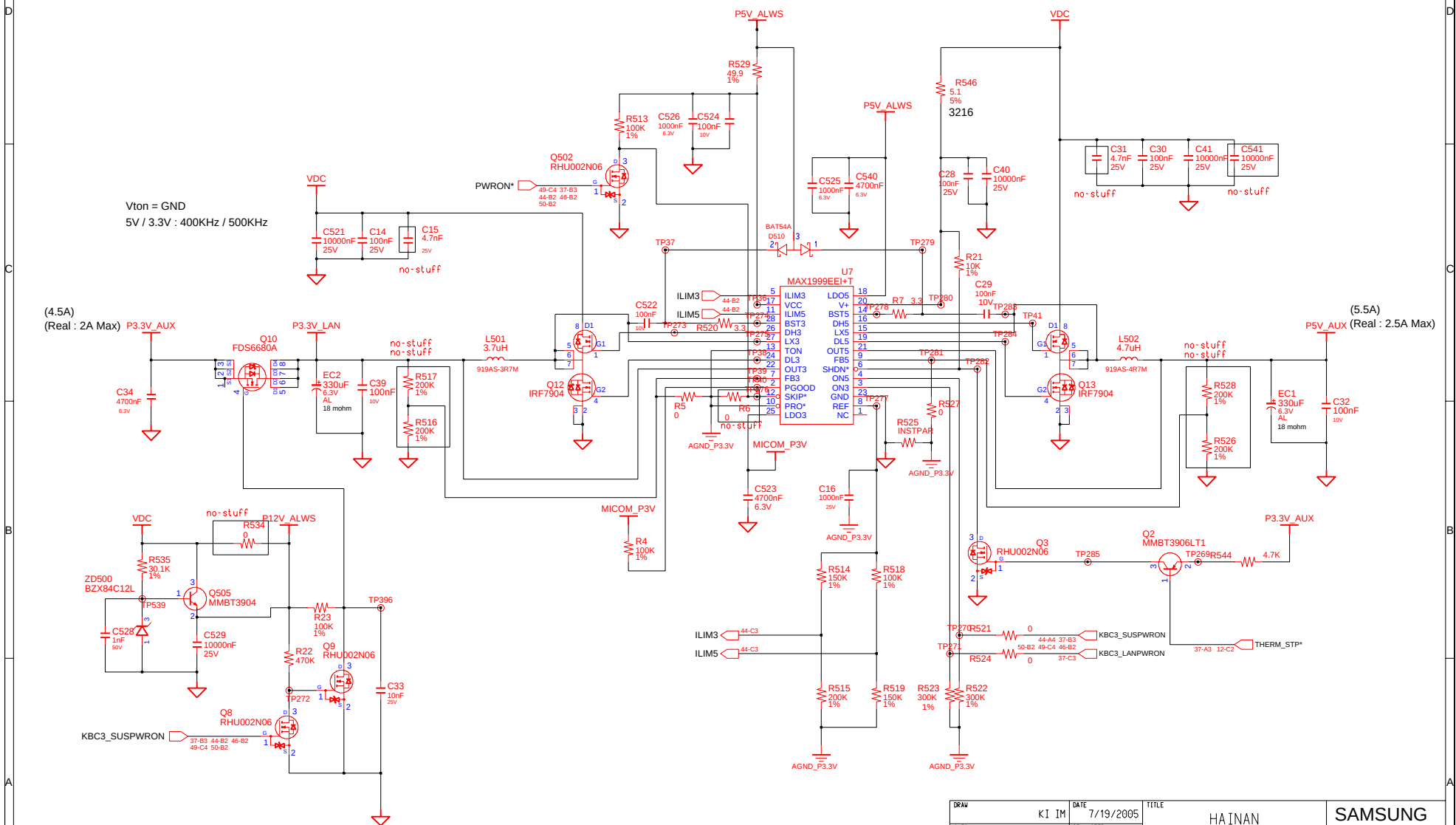


DRAW	K1 IM	DATE	7/19/2005	TITLE	HAINAN	SAMSUNG ELECTRONICS
CHECK	SS BAIK	DEV. STEP	DV	MAIN	MAIN	
APPROVAL	KK BIN	REV	1.0	SUB B'D CONNECTOR	PART NO.	BA41-*****A
MODULE CODE		LAST EDIT	July 19, 2005 8:53:48 AM	PAGE	42	OF 55

CHARGER & POWER MANAGEMENT



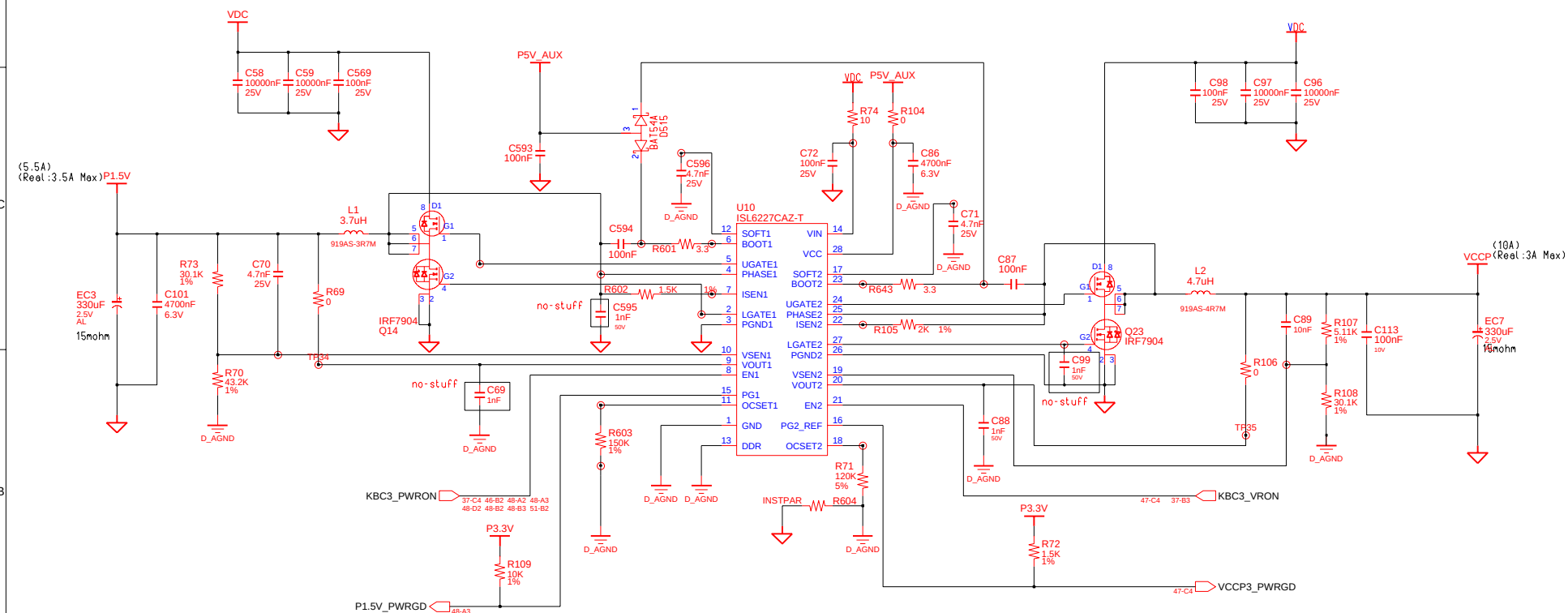
P3.3V_LAN/AUX & P5V_AUX



DRAW	K1 IM	DATE	7/19/2005	TITLE	HAINAN POWER P3.3V LAN & P5V_AUX	SAMSUNG ELECTRONICS
CHECK	SS BAIK	REV.	STEP	DV		PART NO. BA41-*****A
APPROVAL	KK BIN	REV	1.0			
MODULE CODE		LAST EDIT	July 19, 2005 8:53:48 AM	PAGE	44	OF 55

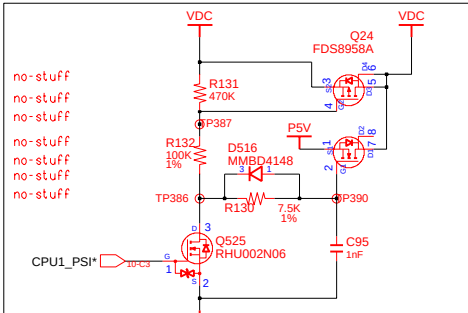
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P1.5V & VCCP (1.05V)



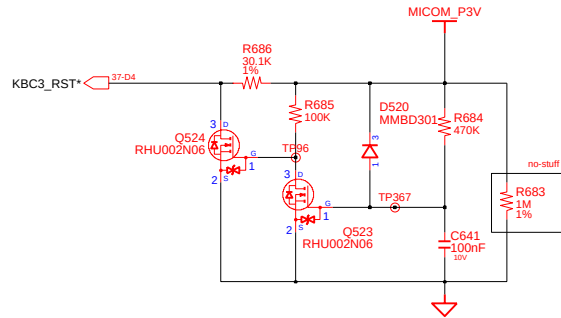
DRAW	KI IM	DATE	7/19/2005	TITLE	HAINAN POWER P1.5V & VCCP	SAMSUNG ELECTRONICS
CHECK	SS BAIK	DEV. STEP	DV			PART NO. BA41-*****A
APPROVAL	KK BIN	REV	1.0			
MODULE CODE		LAST EDIT	July 19, 2005 8:53:48 AM	PAGE	45	OF 55

1.

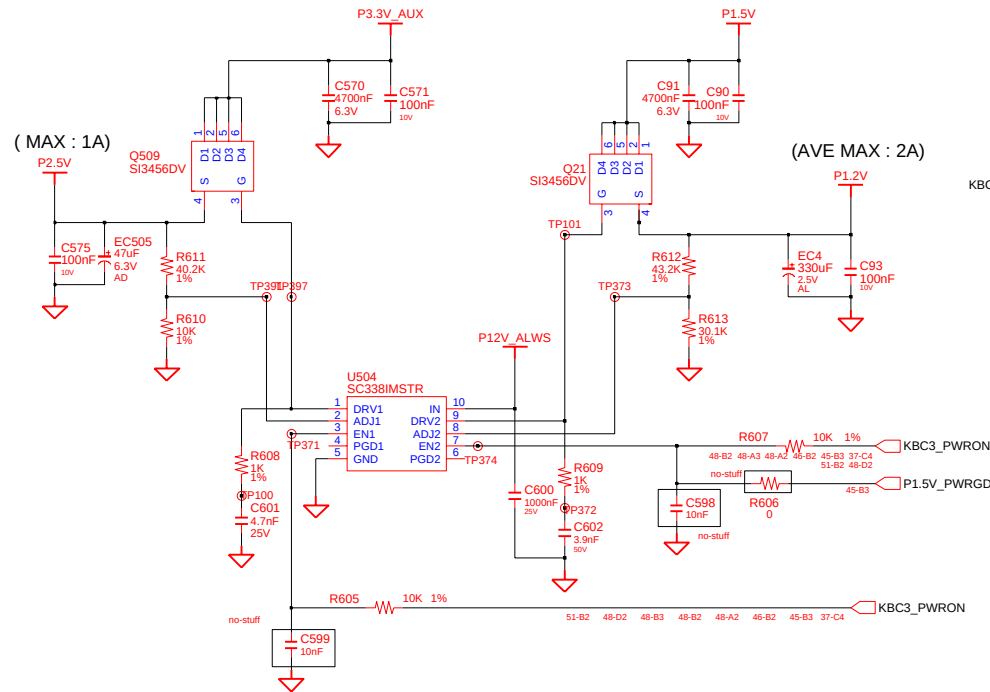
COM-22C-015(1996.6.5) REV. 3

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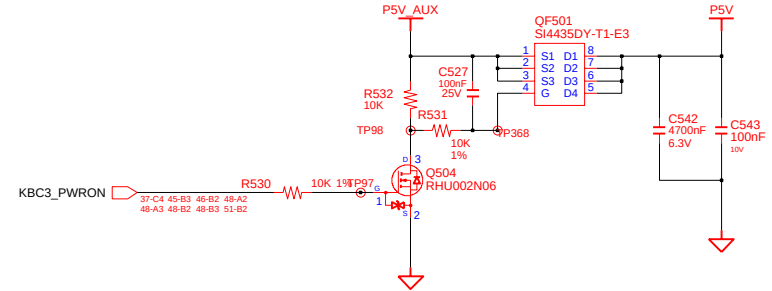
MICOM RESET



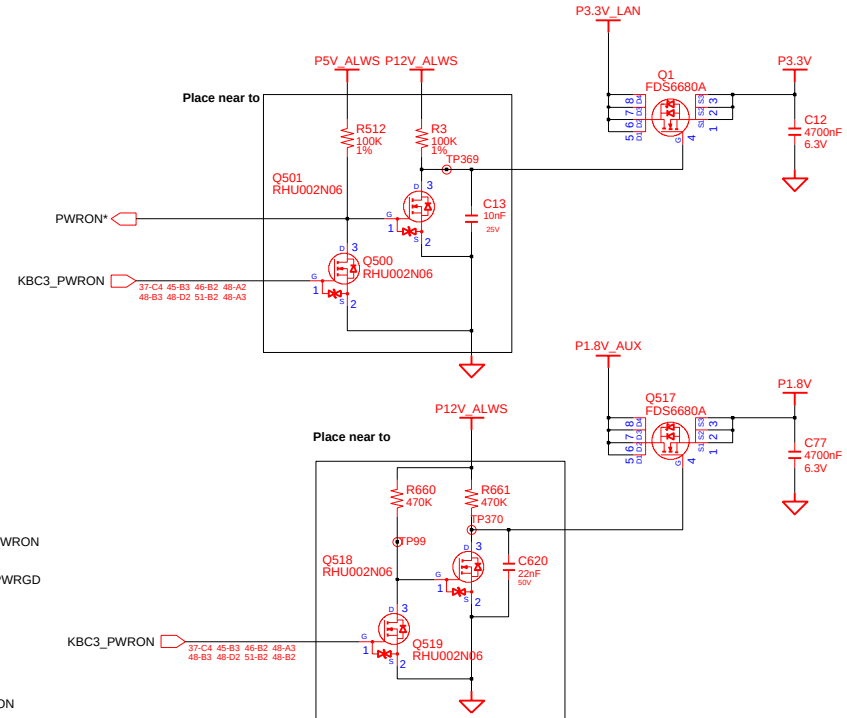
P1.2V / P2.5V POWER



Switched Power On (P5V)

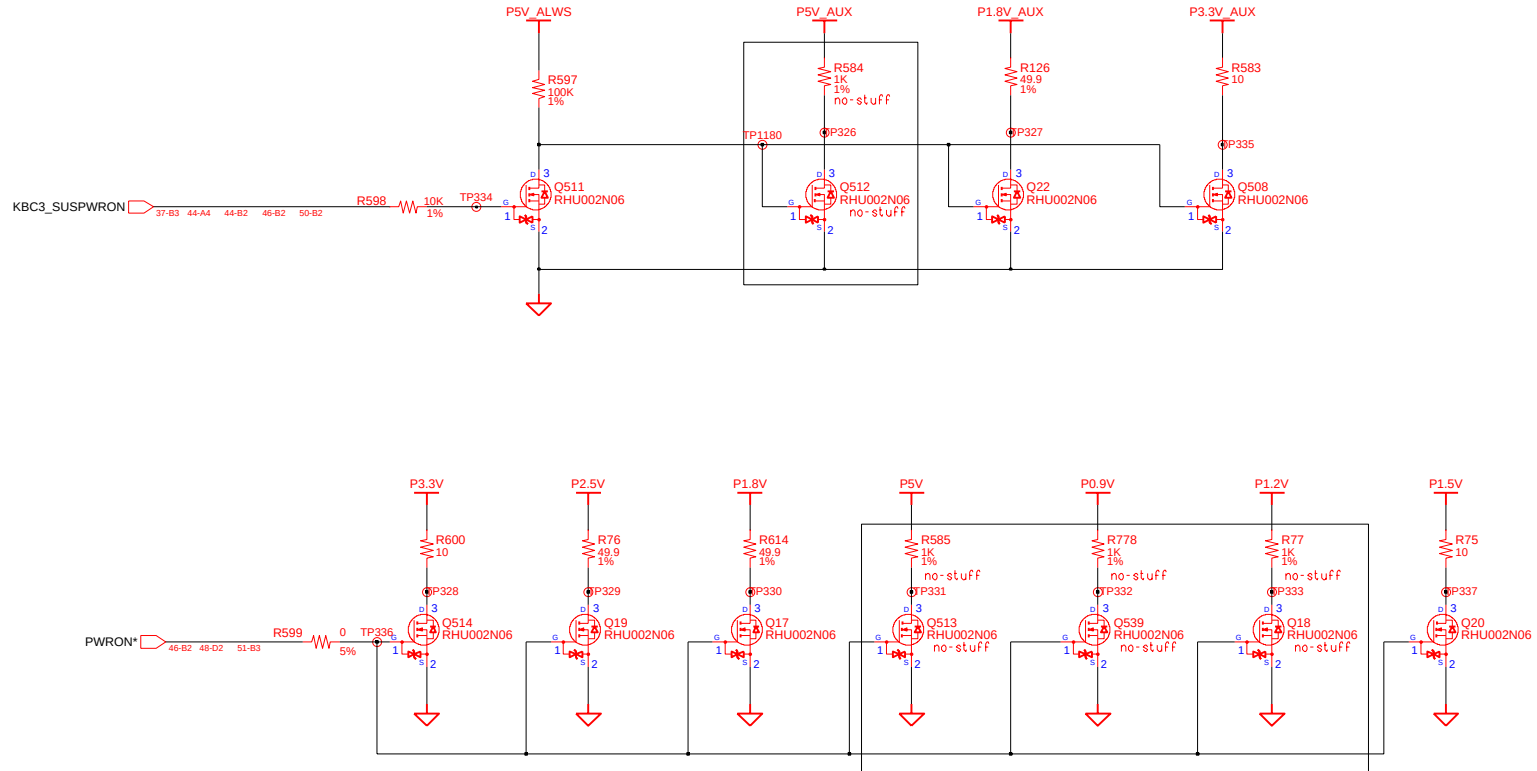


Switched Power On (P3.3V & 1.8V)



DATE	7/19/2005	TITLE	HAINAN MAIN MICOM & SWITCHED POWER	SAMSUNG ELECTRONICS
CHECK	SS BAIK	REV. STEP	DV	PART NO. BA41-*****A
APPROVAL	KK BIN	REV	1.0	
MODULE CODE		LAST EDIT	July 19, 2005 8:53:48 AM	PAGE 48 OF 55

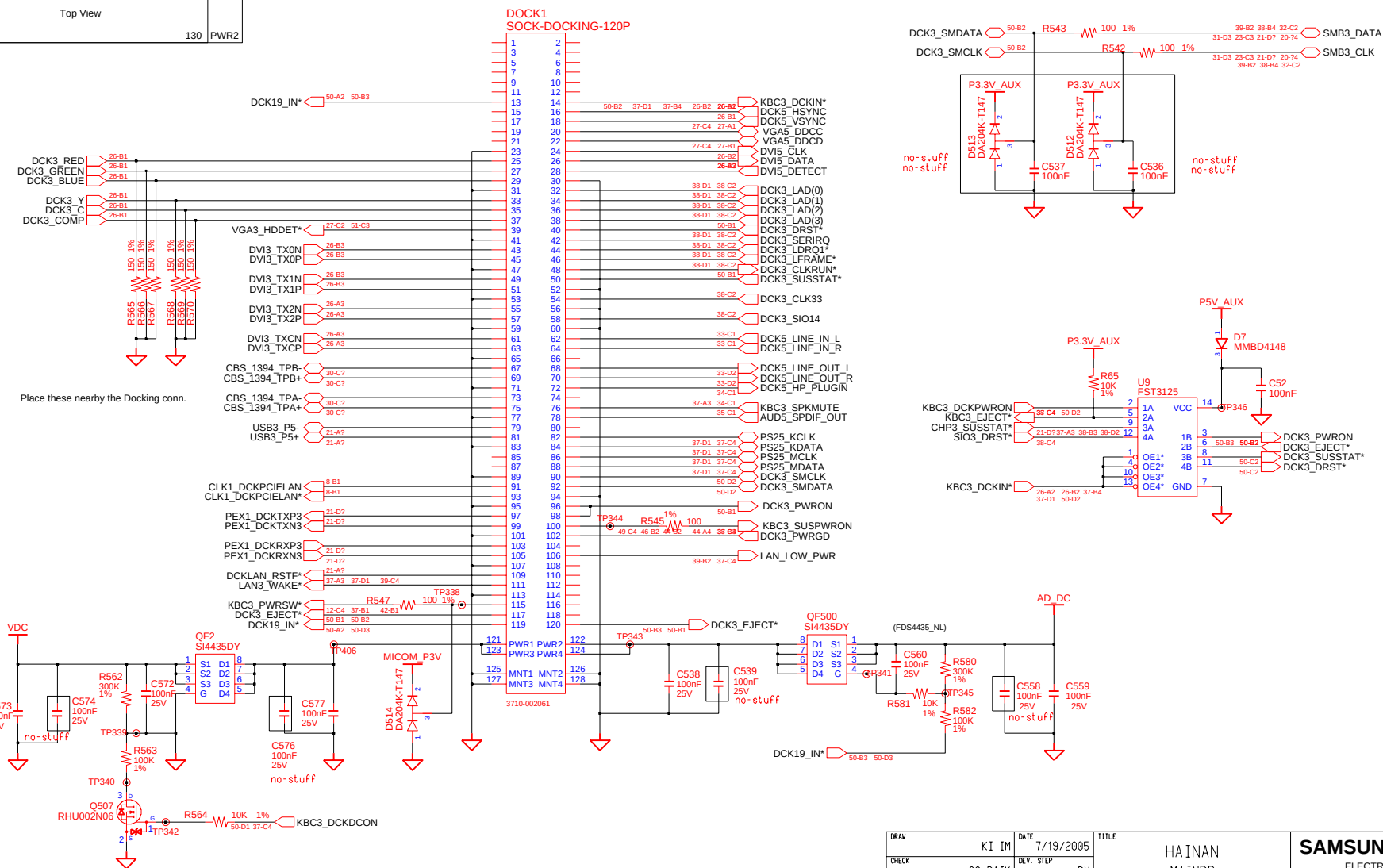
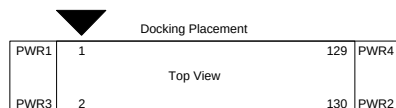
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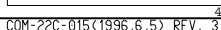
DRW	KI IM	DATE	7/19/2005	TITLE	HAINAN	SAMSUNG ELECTRONICS PART NO. BA41-*****A
CHECK	SS BAIK	DEV. STEP	DV	GFX POWER		
APPROVAL	KK BIN	REV	1.0	Discharging Logic		
MODULE CODE		LAST EDIT	July 19, 2005 8:53:48 AM	PAGE 49 OF 55		

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DOCKING CONNECTOR (130PIN)



DRAW	KI IM	DATE	7/19/2005	TITLE	SAMSUNG	
CHECK	SS BAIK	DEV. STEP	DV	HAINAN MAINBD Docking connector	ELECTRONICS	
APPROVAL	KK BIN	REV	1.0		PART NO.	BA41-*****A
MODULE CODE	LAST EDIT			July 19, 2005 8:53:48 AM	PAGE	50 OF 55



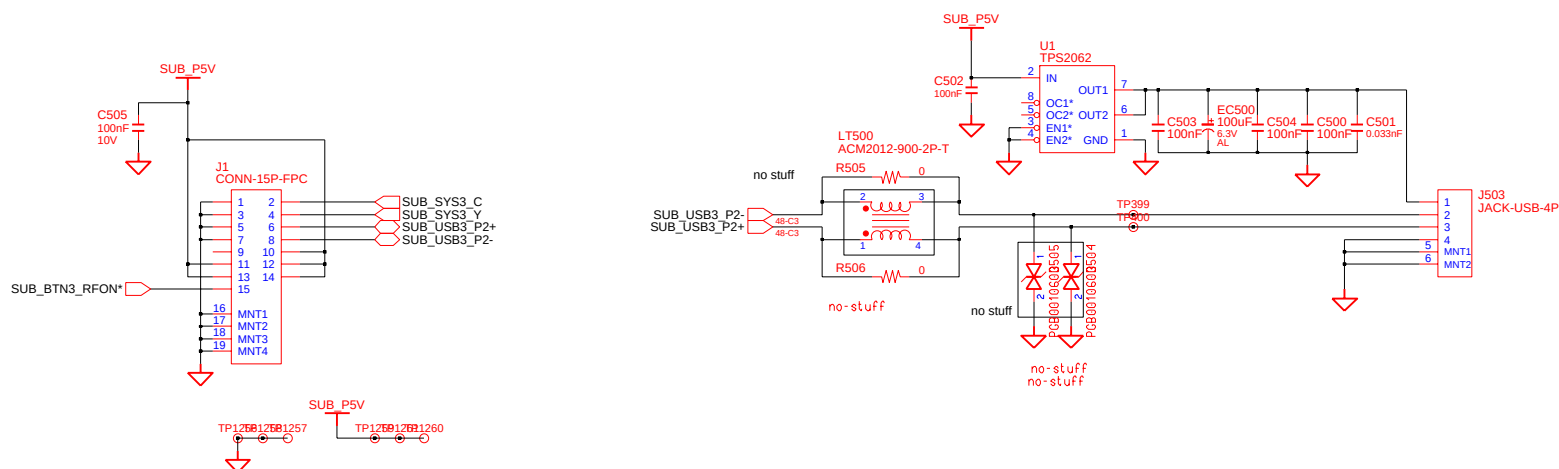
DRAW	KI IM	DATE	7/19/2005	TITLE	HAINAN		SAMSUNG	
CHECK	SS BAIK	REV. STEP	DV	MAIN		ELECTRONICS		
APPROVAL	KK BIN	REV	1.0	Ext Gfx connector		PART NO.	BA41-*****A	
MODULE CODE	LAST EDIT		July 19, 2005 8:53:48 AM			PAGE	51	OF 55

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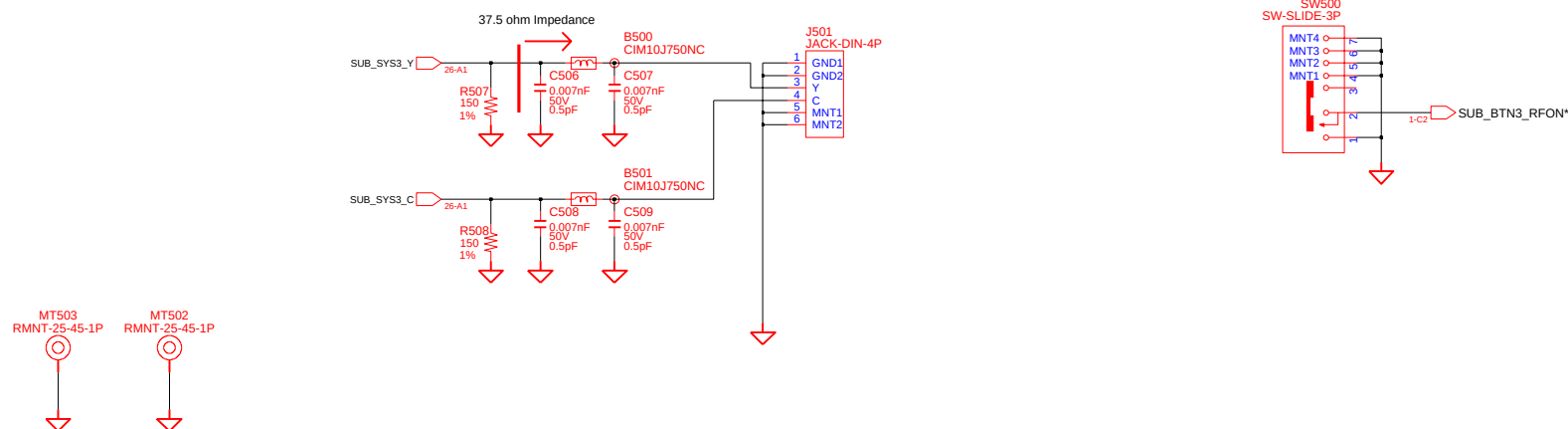
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USB Connector

USB_SVHS_SLIDE SWITCH BOARD



TV-OUT(S-VHS,COMPONENT)

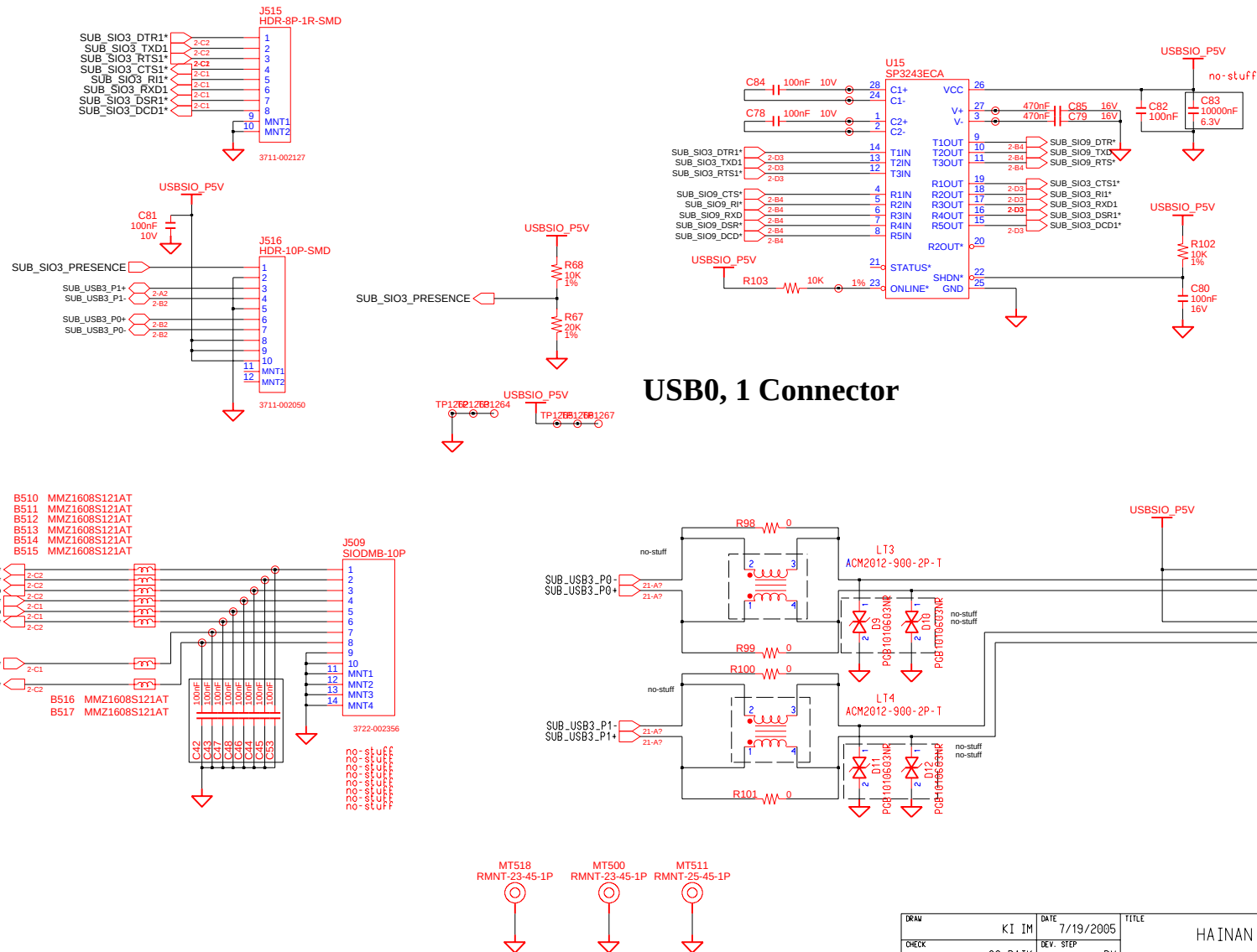


DRAW	KI IM	DATE	7/19/2005	TITLE	HAINAN POWER Audio Sub B'd	SAMSUNG ELECTRONICS
CHECK	SS BAIK	DEV. STEP	DV			PART NO. BA41-*****A
APPROVAL	KK BIN	REV	1.0			
MODULE CODE	undefined	LAST EDIT	July 19, 2005 8:53:48 AM	PAGE	52	OF 55

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USB_SIO BOARD

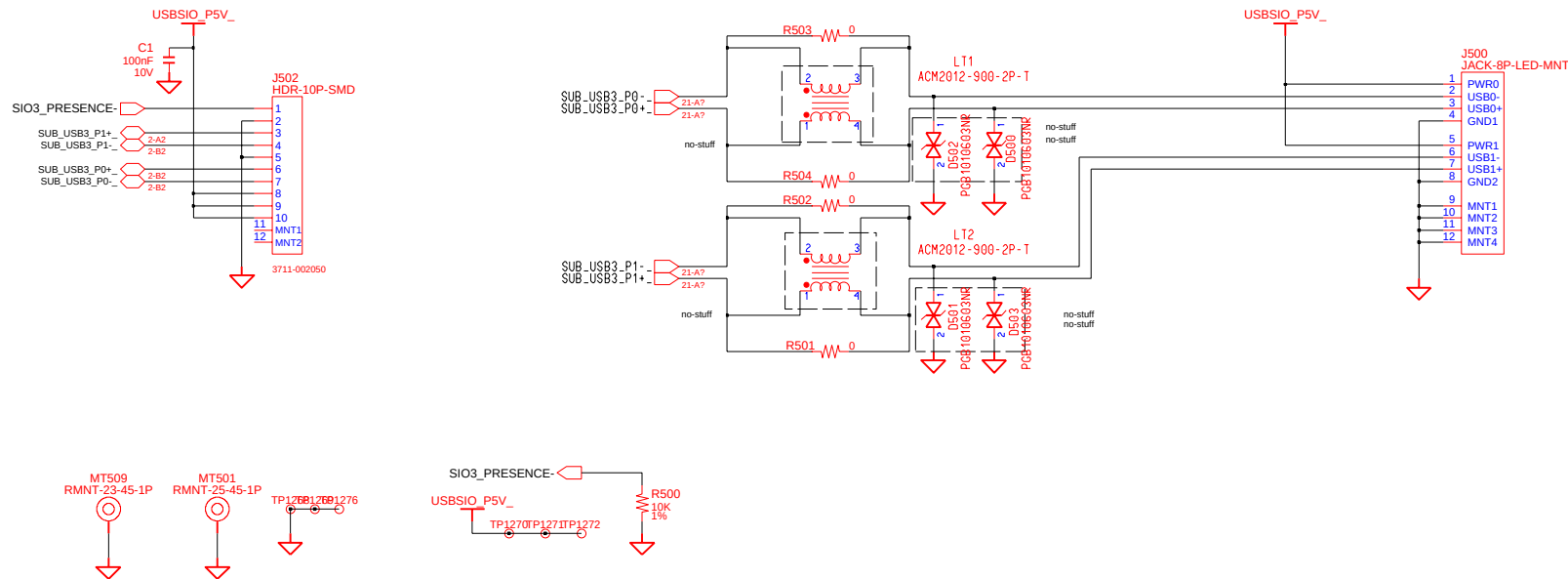


DRAW	KI IM	DATE	7/19/2005	TITLE		HAINAN		SAMSUNG ELECTRONICS	
CHECK	SS BAIK	DEV. STEP	DV						
APPROVAL	KK BIN	REV	1.0	REVISION HISTORY		PART NO.		BA41-*****A	
MODULE CODE		LAST EDIT				July 19, 2005 8:53:48 AM		PAGE	53

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USB & DMB SUBBOARD

USB0, 1 Connector



DRAW	KI IM	DATE	7/19/2005	TITLE	HAINAN POWER AUDIO SUB B'D	SAMSUNG ELECTRONICS
CHECK	SS BAIK	DEV. STEP	DV			PART NO. BA41-*****A
APPROVAL	KK BIN	REV	1.0			
MODULE CODE		LAST EDIT	July 19, 2005 8:53:48 AM	PAGE	54 OF 55	

EXT GFx

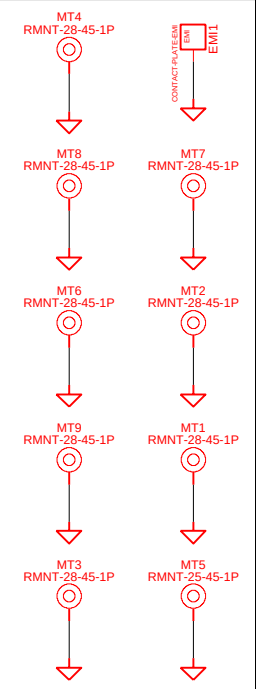
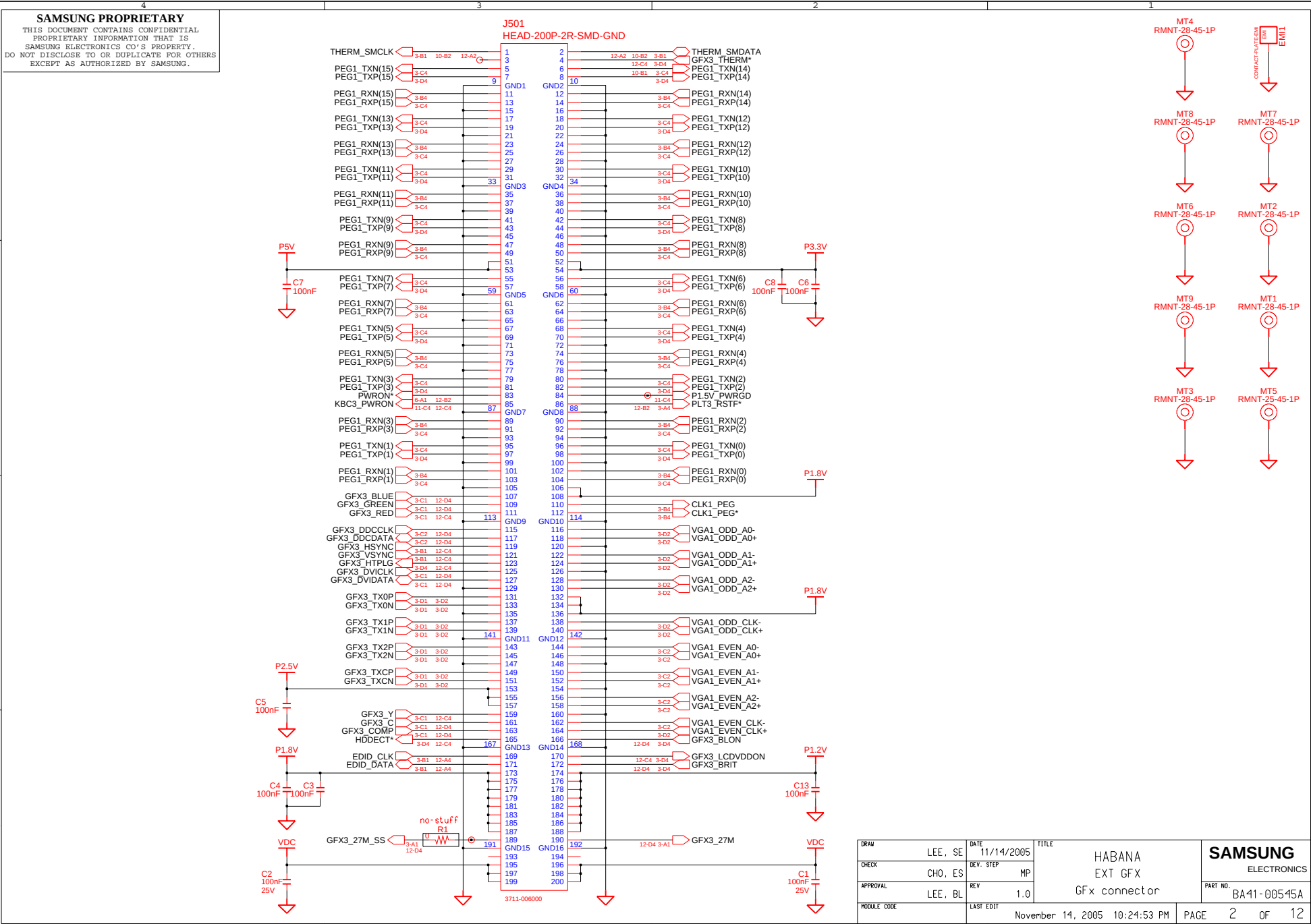
CPU :
Chip Set : NVIDIA 7X series
Remarks :

Model Name : HABANA EXT GFx
PBA Name :
PCB Code :
Dev. Step : MP
Revision : 1.0
T.R. Date : 2005.11.14

DRAW	CHECK	APPROVAL
SE LEE	ES CHO	BL LEE

Sheet 1. COVER
Sheet 2. GFX CONNECTOR
Sheet 3~6. GFX CHIP (G73M)
Sheet 7. GFX STRAP OPTION
Sheet 8~9. GDDR3 MEMORY
Sheet 10. GDDR3 TERMINATION, THERMAL SENSOR, HDCP ROM
Sheet 11. GFX CORE REGULATOR

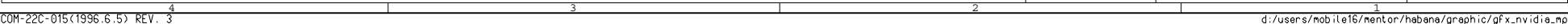
DRAW	LEE, SE	DATE	11/14/2005	TITLE	HABANA EXT GFX COVER	PART NO.	SAMSUNG ELECTRONICS BA41-00545A
CHECK	CHO, ES	DEV. STEP	MP				
APPROVAL	LEE, BL	REV	1.0				
MODULE CODE	LAST EDIT			November 14, 2005 10:24:53 PM	PAGE	1	OF 12

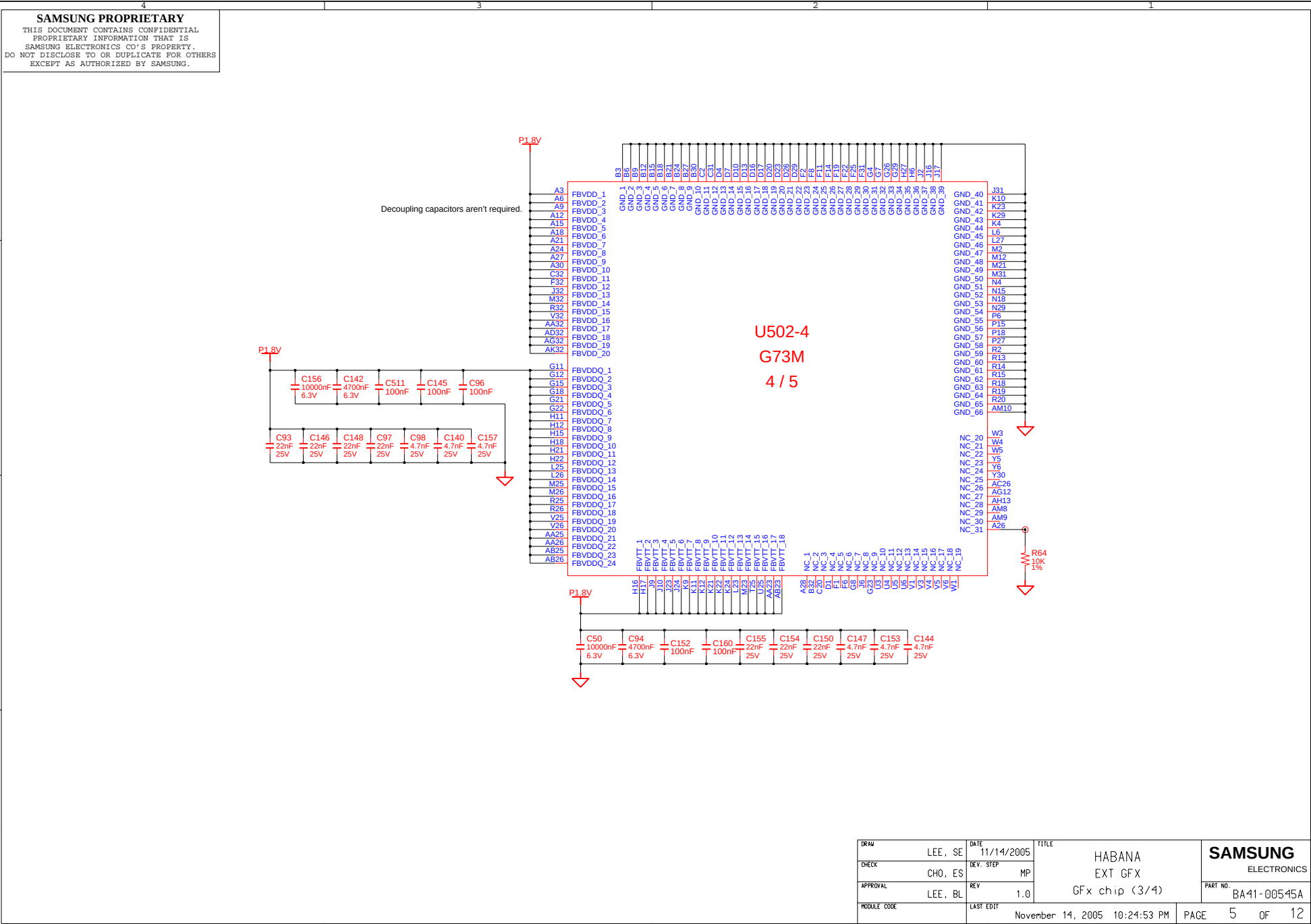


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CHECK	CHO, ES	DEV. STEP	MP			
APPROVAL	LEE, BL	REV	1.0			
MODULE CODE		LAST EDIT	November 14, 2005 10:24:53 PM	PAGE	2 OF 12	

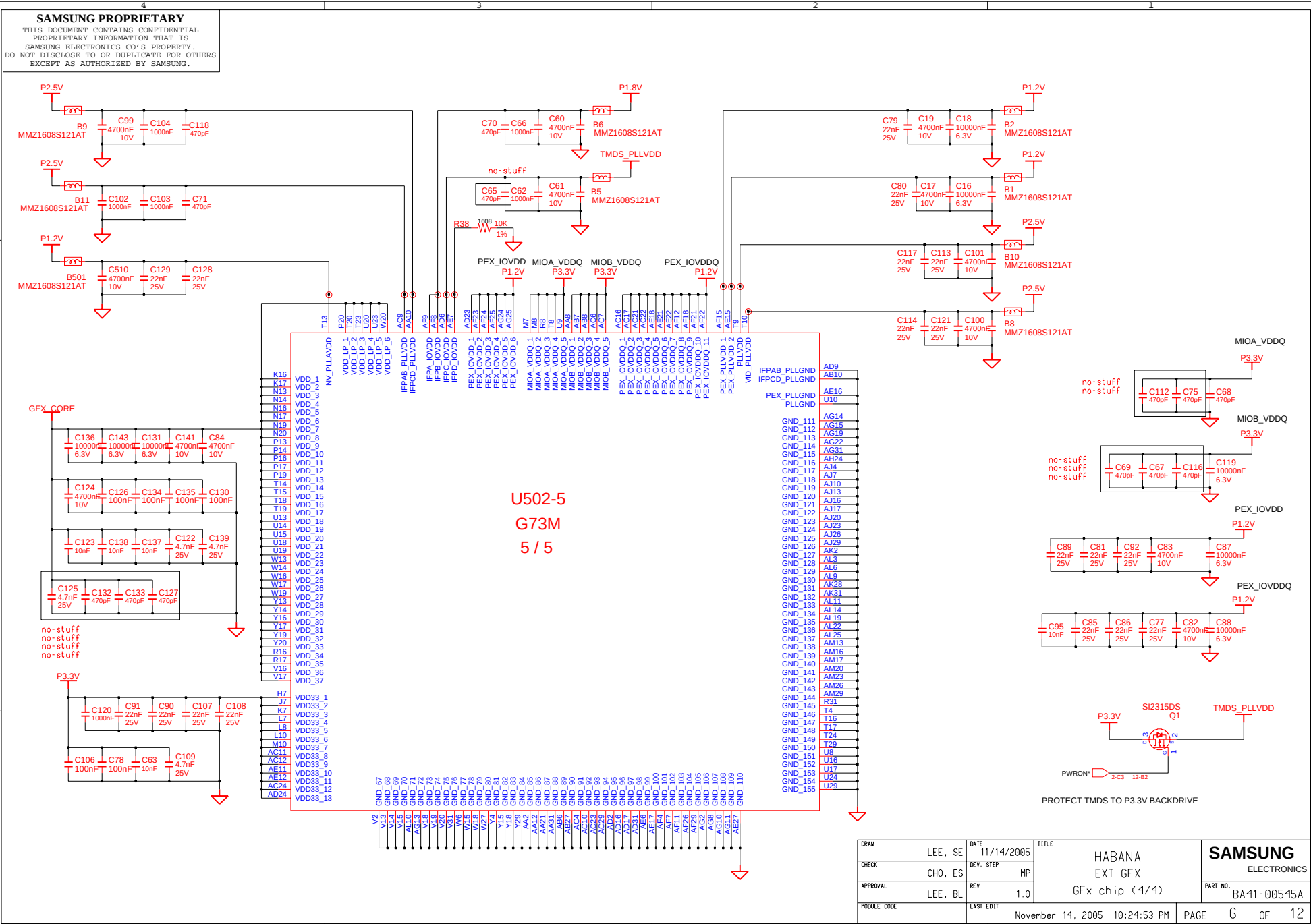
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DRAW	LEE, SE	DATE	11/14/2005	TITLE	HABANA EXT GFX	SAMSUNG ELECTRONICS
CHECK	CHO, ES	DEV. STEP	MP			PART NO. BA41-00545A
APPROVAL	LEE, BL	REV	1.0		Gfx chip (3/4)	
MODULE CODE		LAST EDIT	November 14, 2005 10:24:53 PM	PAGE	5 OF 12	



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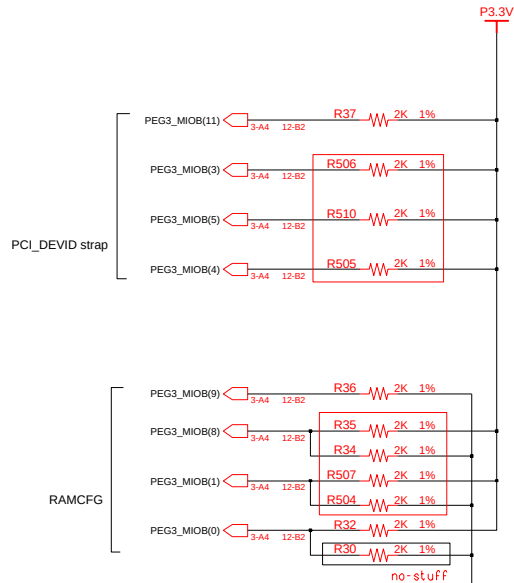
U502-5
G73M
5 / 5

DRAW	LEE, SE	DATE	11/14/2005	TITLE	HABANA EXT GFX	SAMSUNG ELECTRONICS PART NO. BA41-00545A
CHECK	CHO, ES	DEV. STEP	MP	REV	Gfx chip (4/4)	
APPROVAL	LEE, BL	REV	1.0	LAST EDIT	November 14, 2005 10:24:53 PM	
MODULE CODE					PAGE 6 OF 12	

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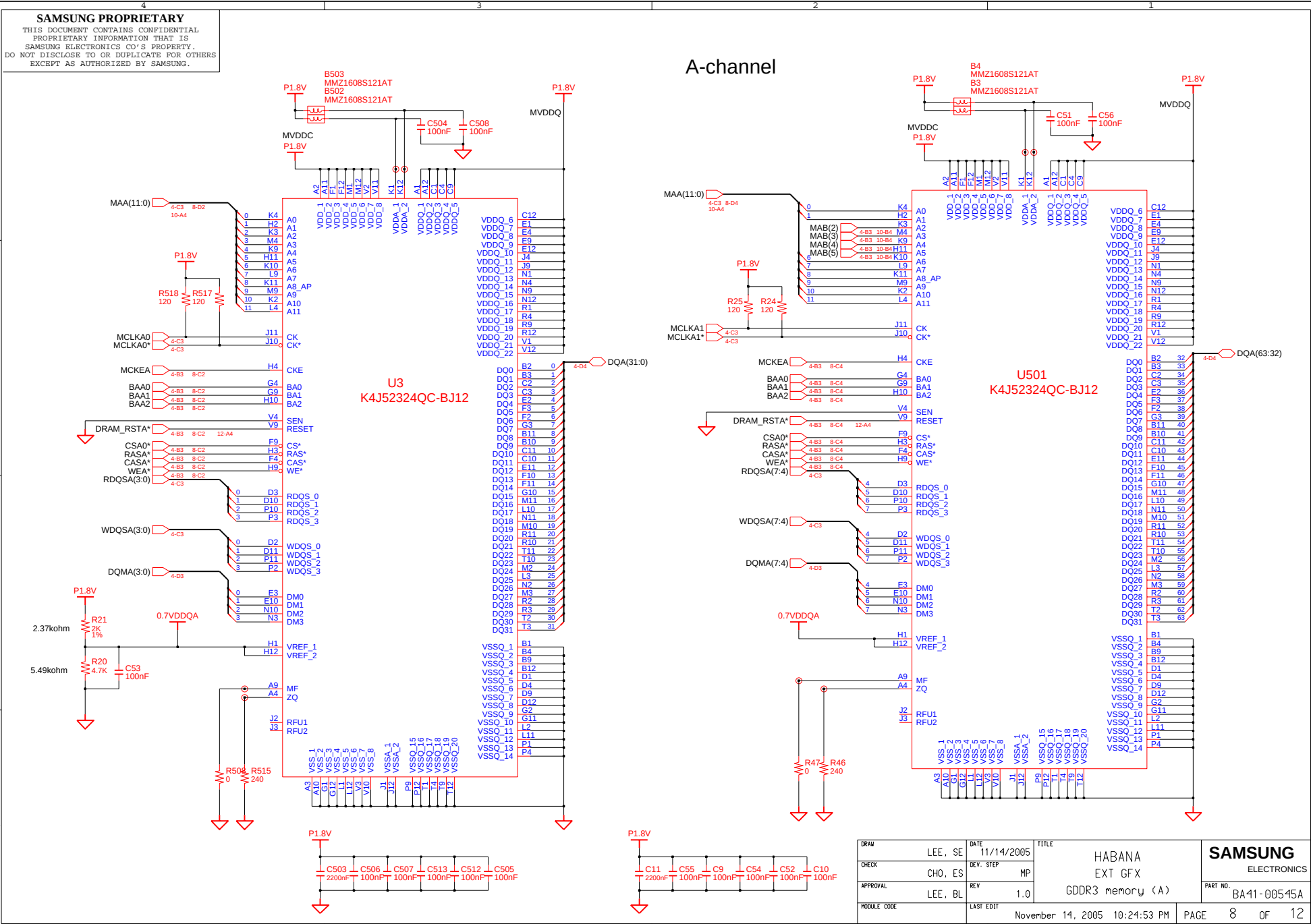
	R37	R506	R510	R505
72M-V	no-stuff	stuff	stuff	stuff
72M	stuff	no-stuff	no-stuff	no-stuff
73M	stuff	no-stuff	no-stuff	no-stuff

	R35	R34	R507	R504
SS 256Mb	stuff	no-stuff	stuff	no-stuff
INF 256Mb	stuff	no-stuff	no-stuff	stuff
SS 512Mb	no-stuff	stuff	stuff	no-stuff
INF 512Mb	no-stuff	stuff	no-stuff	stuff



Straps	Pin # (Rev.A02)	Descriptions
SUB_VENDOR	MIOAD(1)	0 : No BIOS 1 : Read from BIOS(Default)
RAMCFG(3:0) [9,8,1,0]	MIOB(9) MIOB(8) MIOB(1) MIOB(0)	0111 : samsung GDDR3 256Mbit 0101 : infineon GDDR3 256Mbit 0011 : samsung GDDR3 512Mbit 0001 : infineon GDDR3 512Mbit
CRYSTAL(1:0)	MIOB(2) MIOB(6)	01 : 14.318 MHz 10 : 27 MHz (Default) 11 : Unknown 00 : 13.5 MHz
TV_MODE(1:0)	MIOAD(7) MIOAD(10)	00 : SECAM 01 : NTSC (Default) 10 : PAL 11 : CRT
PCI_DEVID(3:0) [11,3,5,4]	MIOB(11) MIOB(3) MIOB(5) MIOB(4)	72M : 0X01D8 72M-V : 0X01D7 73M : 0X0398
ROM_TYPE(1:0)	MIOB(10) MIOBVSYN	No ROM (NC)
USER STRAP	MIOAD(2:5)	EDID

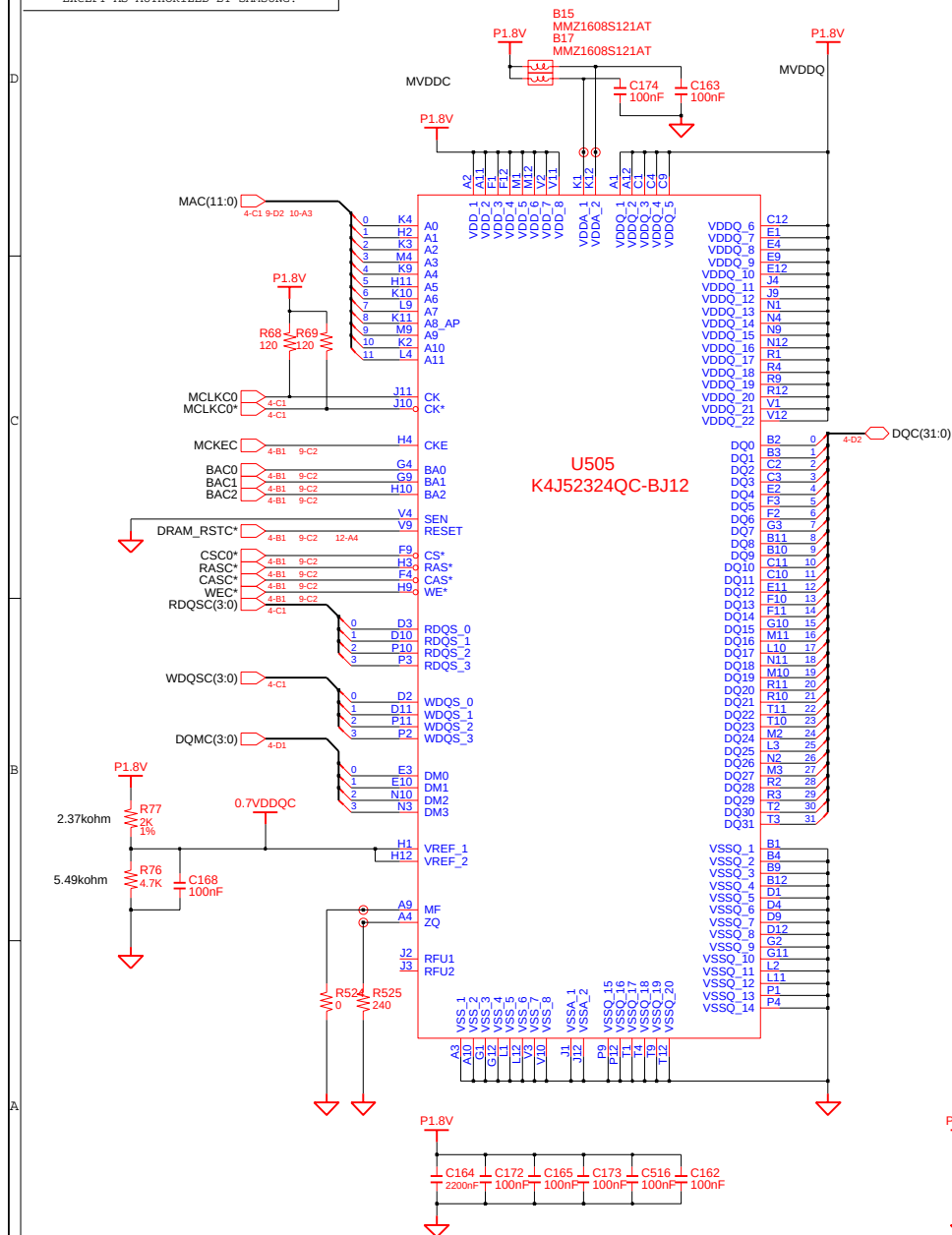
DRAM	LEE, SE	DATE	11/14/2005	TITLE	HABANA EXT GFX Gfx strap option	SAMSUNG ELECTRONICS		
CHECK	CHO, ES	DEV. STEP	MP					
APPROVAL	LEE, BL	REV	1.0				PART NO.	BA41-00545A
MODULE CODE	LAST EDIT		November 14, 2005 10:24:53 PM				PAGE 7 OF 12	



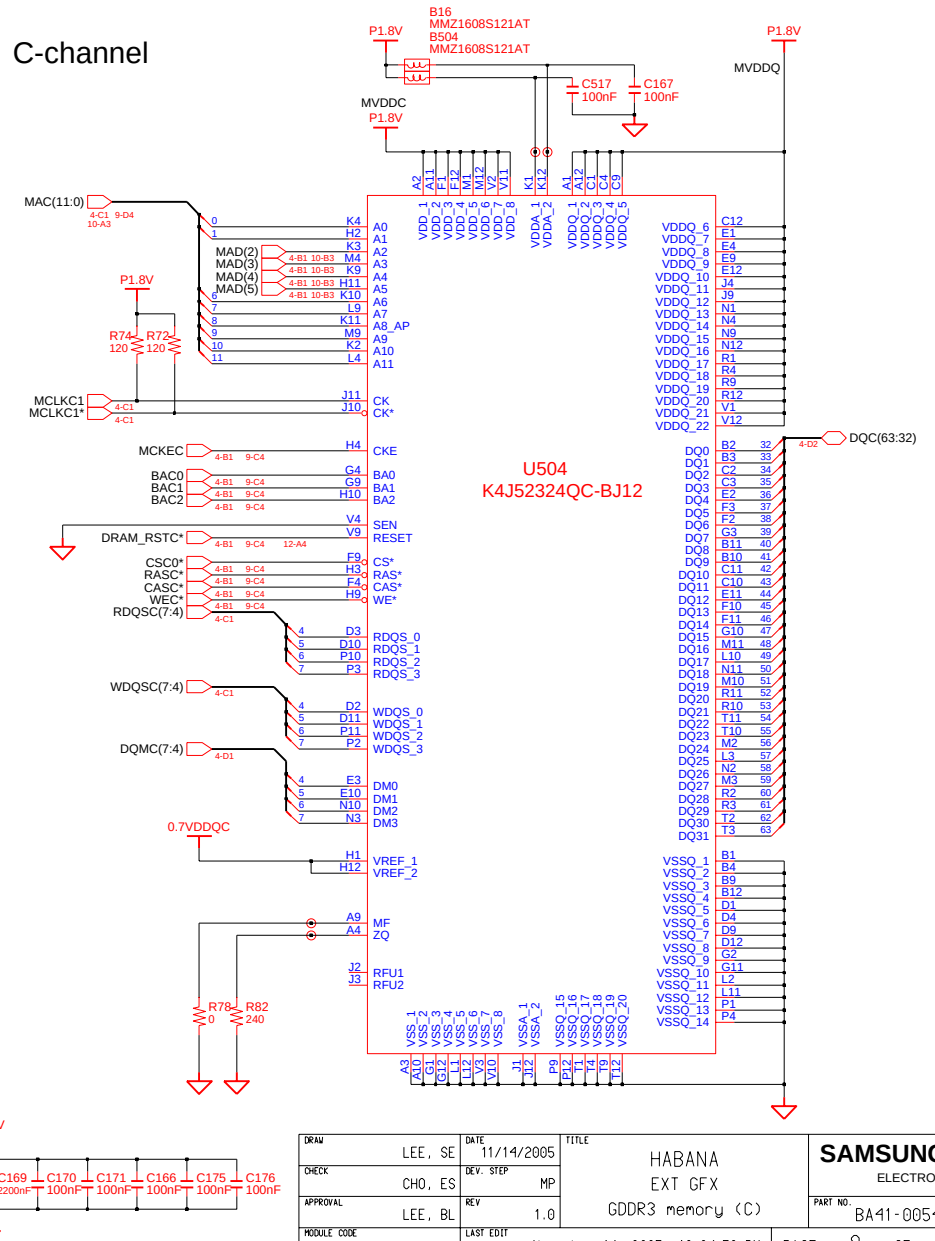
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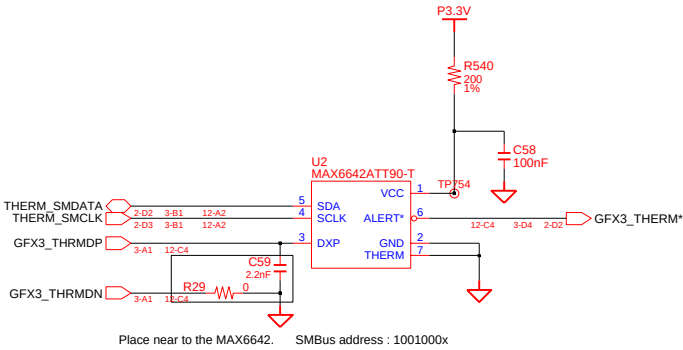
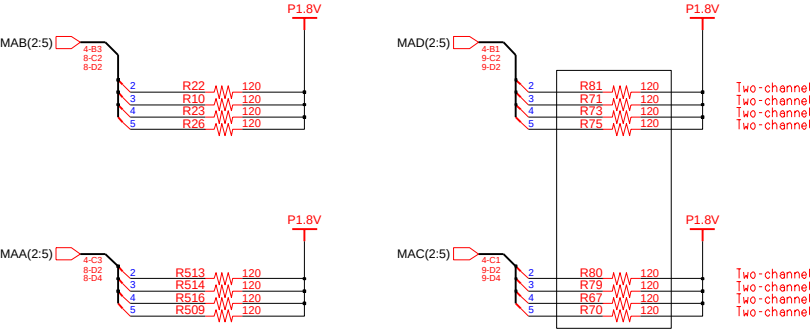
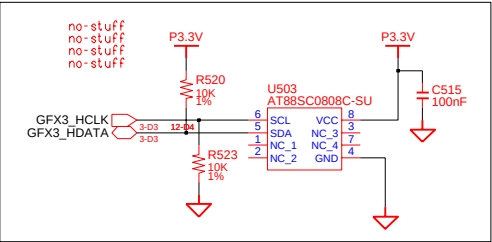
C-channel



DRAW	LEE, SE	DATE	11/14/2005	TITLE	HABANA EXT GFX	SAMSUNG ELECTRONICS
CHECK	CHO, ES	DEV. STEP	MP	REV	1.0	
APPROVAL	LEE, BL	LAST EDIT	November 14, 2005 10:24:53 PM	PAGE	9 OF 12	PART NO. BA41-00545A
MODULE CODE						

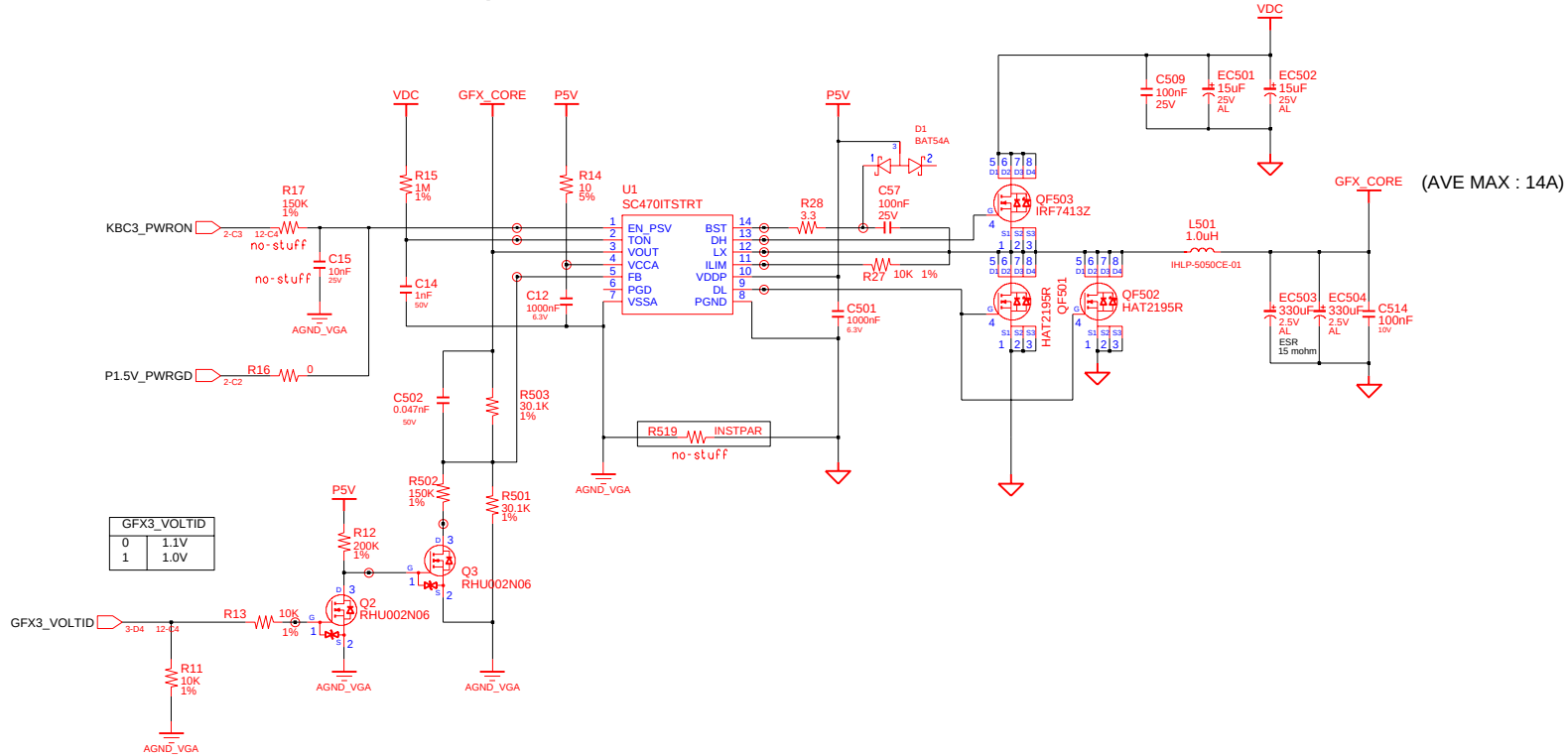
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DRAW	LEE, SE	DATE	11/14/2005	TITLE	HABANA EXT GFX	SAMSUNG ELECTRONICS PART NO. BA41-00545A
CHECK	CHO, ES	DEV. STEP	MP			
APPROVAL	LEE, BL	REV	1.0	GDDR3 Term. Thermal sensor		
MODULE CODE		LAST EDIT	November 14, 2005 10:24:53 PM	PAGE	10 OF 12	

Graphic Core Power



GFX3_VOLTID	
0	1.1V
1	1.0V

DRAW	LEE, SE	DATE	11/14/2005	TITLE	HABANA EXT GFX	SAMSUNG ELECTRONICS
CHECK	CHO, ES	DEV. STEP	MP	REV	1.0	PART NO. BA41-00545A
APPROVAL	LEE, BL	LAST EDIT	November 14, 2005 10:24:53 PM	PAGE	11 OF 12	
MODULE CODE						

