

SAMSUNG PROPRIETARY
 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.

RIO

CPU : C7-M
 Chip Set : VIA VX700
 Remarks : 7" LCD & Wibro

Model Name : RIO
 PBA Name : BA92-04225B
 Dev. Step : PR
 Revision : 1.0
 T.R. Date : 2006.05.16

DRAW	CHECK	APPROVAL
S.Y. Kim	S.K.Park	J.S Euh

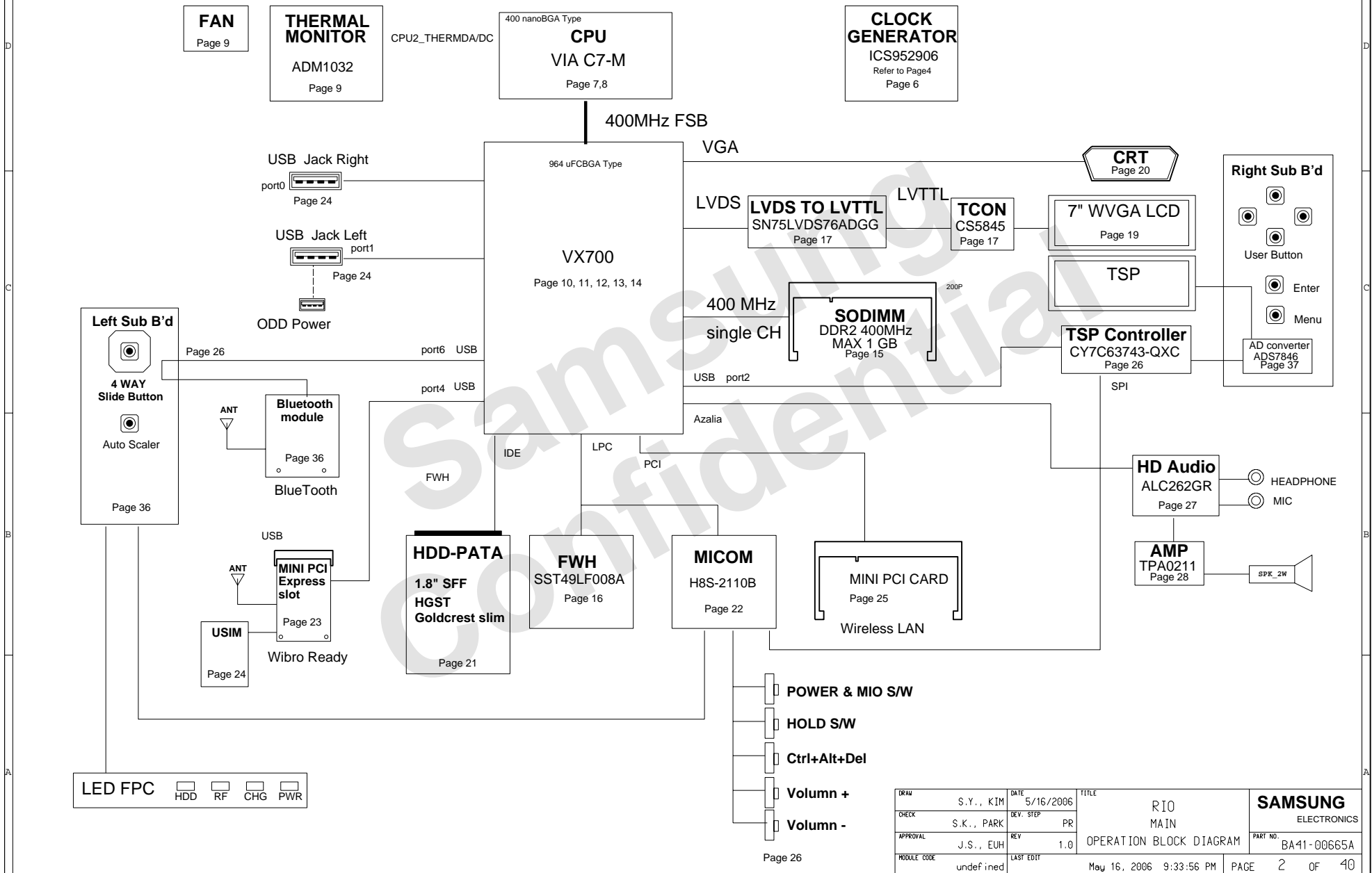
Table of Contents

Page. 1	----	Cover
Page. 2	----	Operation Block diagram
Page. 3	----	Power Sequence
Page. 4	----	Clock distribution
Page. 5	----	Board Information
Page. 6	----	Clock Generator
Page. 7~8	----	CPU
Page. 9	----	THERMAL SENSOR & FAN
Page. 10~14	----	VIA VX700
Page. 15	----	DDR-2 SODIMM
Page. 16	----	FWH
Page. 17	----	LVDS to LVTTTL & Tcon
Page. 18	----	LCD ANALOG POWER
Page. 19	----	LCD GAMMA & CONNECTOR & INVERTER POWER
Page. 20	----	VGA CONNECTOR & LEVEL SHIFT
Page. 21	----	HDD CONNECTOR
Page. 22	----	MICOM
Page. 23	----	WIBRO Conn.
Page. 24	----	SIM CONN. & USB
Page. 25	----	MINI PCI Conn.
Page. 26	----	TSP CONTROLLER & SUB B'D CONN. & SWITCH
Page. 27	----	AUDIO CODEC(Realtek) & ARRAY MIC
Page. 28	----	AMP & HP & SPEAKER
Page. 29	----	CHARGER
Page. 30	----	P3.3V_AUX & P5V_AUX
Page. 31	----	P1.5V & VCCP
Page. 32	----	DDR2 POWER
Page. 33	----	CPU VRM
Page. 34	----	SWTICED POWER
Page. 35	----	MOUNT HOLE & RHE PEM & EMI FINGER & TP
Page. 36	----	SUB BOARD LEFT
Page. 37	----	SUB BOARD RIGHT
Page. 38	----	POWER DIAGRAM
Page. 39	----	TEST POINTS
Page. 40	----	POWER RAIL STAGE

DRAW	S.Y., KIM	DATE	5/16/2006	TITLE	RIO	SAMSUNG ELECTRONICS
CHECK	S.K., PARK	DEV. STEP	PR	COVER	PART NO.	
APPROVAL	J.S., EUH	REV	1.0			BA41-00665A
MODULE CODE	undef ined	LAST EDIT	May 16, 2006 9:33:56 PM	PAGE	1 OF 40	

SAMSUNG PROPRIETARY
 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.

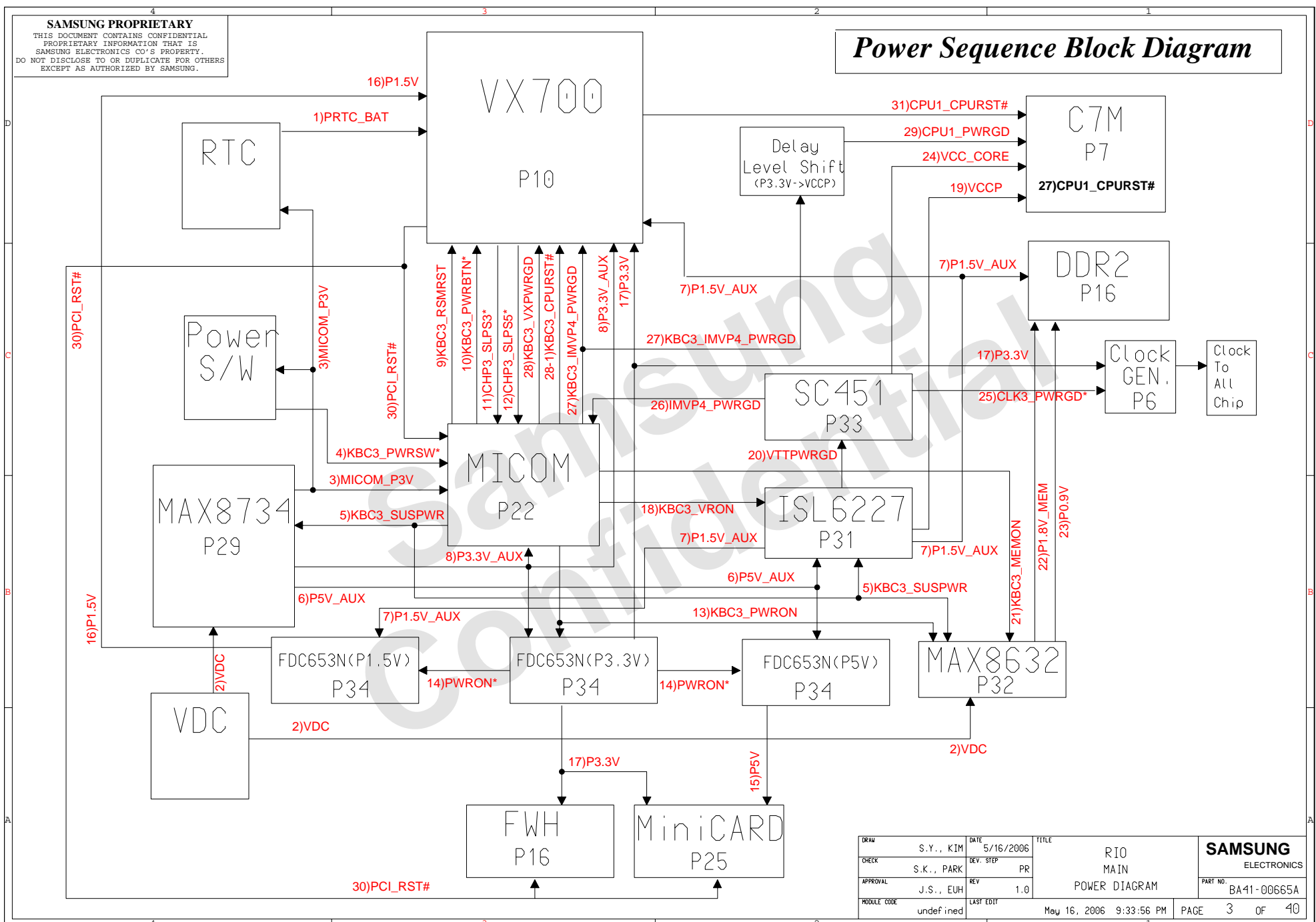
OPERATION BLOCK DIAGRAM



DRAW	S.Y., KIM	DATE	5/16/2006	TITLE	RIO	SAMSUNG ELECTRONICS
CHECK	S.K., PARK	DEV. STEP	PR	MAIN	PART NO.	
APPROVAL	J.S., EUH	REV	1.0	OPERATION BLOCK DIAGRAM	BA41-00665A	
MODULE CODE	undef ined	LAST EDIT	May 16, 2006 9:33:56 PM	PAGE	2 OF 40	

SAMSUNG PROPRIETARY
 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.

Power Sequence Block Diagram

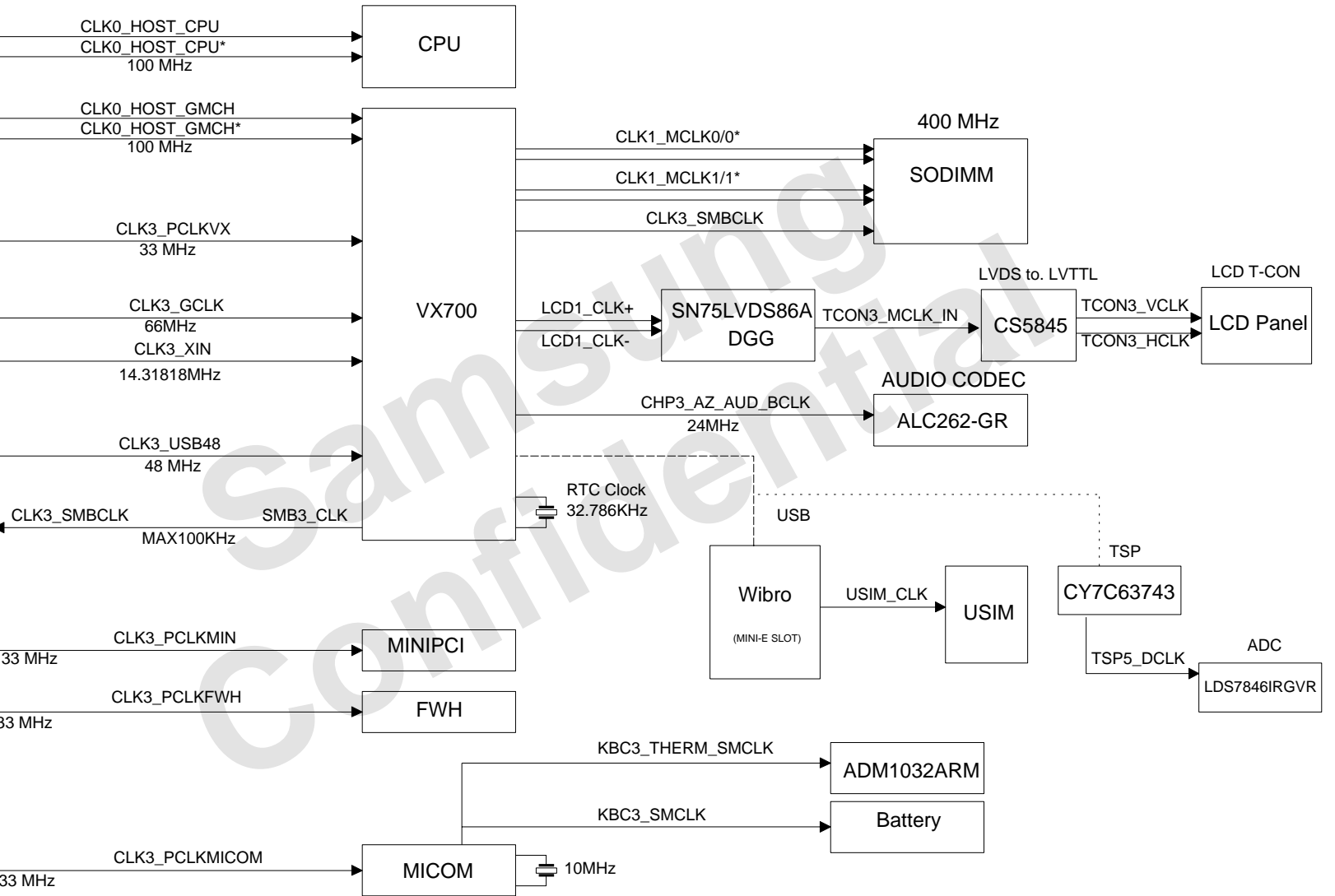


DRAW	S.Y., KIM	DATE	5/16/2006	TITLE	RIO MAIN	SAMSUNG ELECTRONICS
CHECK	S.K., PARK	DEV. STEP	PR	POWER DIAGRAM	PART NO.	
APPROVAL	J.S., EUH	REV	1.0		BA41-00665A	
MODULE CODE	undef ined	LAST EDIT		May 16, 2006 9:33:56 PM	PAGE	3 OF 40

SAMSUNG PROPRIETARY
 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.

CLOCK DISTRIBUTION

CLOCK GENERATOR
CK-410M
CY28411 or ICS954201
 Page 6



DRAW	S.Y., KIM	DATE	5/16/2006	TITLE	RIO	SAMSUNG ELECTRONICS
CHECK	S.K., PARK	DEV. STEP	PR	MAIN		
APPROVAL	J.S., EUH	REV	1.0	CLOCK DISTRIBUTION	PART NO.	BA41-00665A
MODULE CODE	undef ined	LAST EDIT	May 16, 2006 9:33:56 PM	PAGE	4	OF 40

SAMSUNG PROPRIETARY

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.

BOARD INFORMATION

SCHEMATIC ANNOTATIONS AND BOARD INFORMATION

PCI Devices

Devices	IDSEL#	REQ/GNT#	Interrupts
MINI PCI	AD20 (14h)	3	B, C
EIDE	AD15 (0Fh)] Programmable	
USB	AD16 (10h)		
LPC	AD17 (11h)		
PCI to PCI	AD19 (13h)		

I²C / SMB Address

Devices	Address	Hex	Bus
VX700	Master	-	SMBUS Master
CK-410M (Clock Generator)	1101 001x	D2h	Clock, Unused Clock Output Disable
SODIMMO	1010 000X	A0h	
MICOM	Master		
BATTERY	0001 011h	16h	-
THERMAL MORNIOR	x100 1100	4Ch	-

USB PORT Assign

PORT 0	RIGHT SIDE USB PORT
PORT 1	LEFT SIDE USB PORT
PORT 2	TSP CONTROLLER
PORT 3	BLUETOOTH
PORT 4	WIBRO
PORT 5	EMPTY

System Power States

Power Rail	Devices (Page Number)
P5V	Fan(9), HDD(21), Mini-PCI(25), Audio Amp(28) , TSP(37)
P3.3V	CLOCK(6), Thermal sensor(9), VX700(10), SODIMM(14), FWH(16), HDD(21), MICOM(22) Wibro(23), Mini_PCI(25), Audio Codec(27)
P1.5V	CPU(8), VX700(10), Wibro(23)
P5V_AUX	TPS2062, P5V_SWICH, OTHERS LOGIC
P3.3V_AUX	VX700(14), MICOM(22), PWRON_LED(22), Wibro(23), Mini-PCI(25)
P1.5V_AUX	VX700(14)
P1.8V_MEM	VX700(11), SODIMM(15)
VCCP	C7-M(7), VX700
VCC_CORE	C7-M(8)

Voltage Rails

Power Rail	Descriptions
PRTC_BAT	3.3V (can drop to 2.0V min. in G3 state) supply for the RTC well.
VDC	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)
P1.5V_AUX	VX700 Power Source(off in S4-S5)
P1.8_MEM	DDR2 Memory Power(off in S4-S5)
P0.9V	0.9V DDR II Reference(off in S3-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 for VIA C7-M, VX700
VCC_CORE	Core voltage for VIA C7-M CPU
MICOM_P3V	3.3V for MICOM
INV_VDC	DC power (Inverter)
LCD_VDD3V	3.3V (LCD)
VCC_VDD	5V (CRT)
AUD_P5V	5V Audio Voltage
A_VDD	4.75V (Audio AMP)
AMP_VDD	5V (Audio AMP)
3.3V_SUB	3.3V for BLUETOOTH
5.5V_SUB	5.5V for Touch_Screen

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	1.676 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	0.940 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	0	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

C7-M-ULV
HIGH FREQUENCY MODE

C7-M-ULV
LOW FREQUENCY MODE

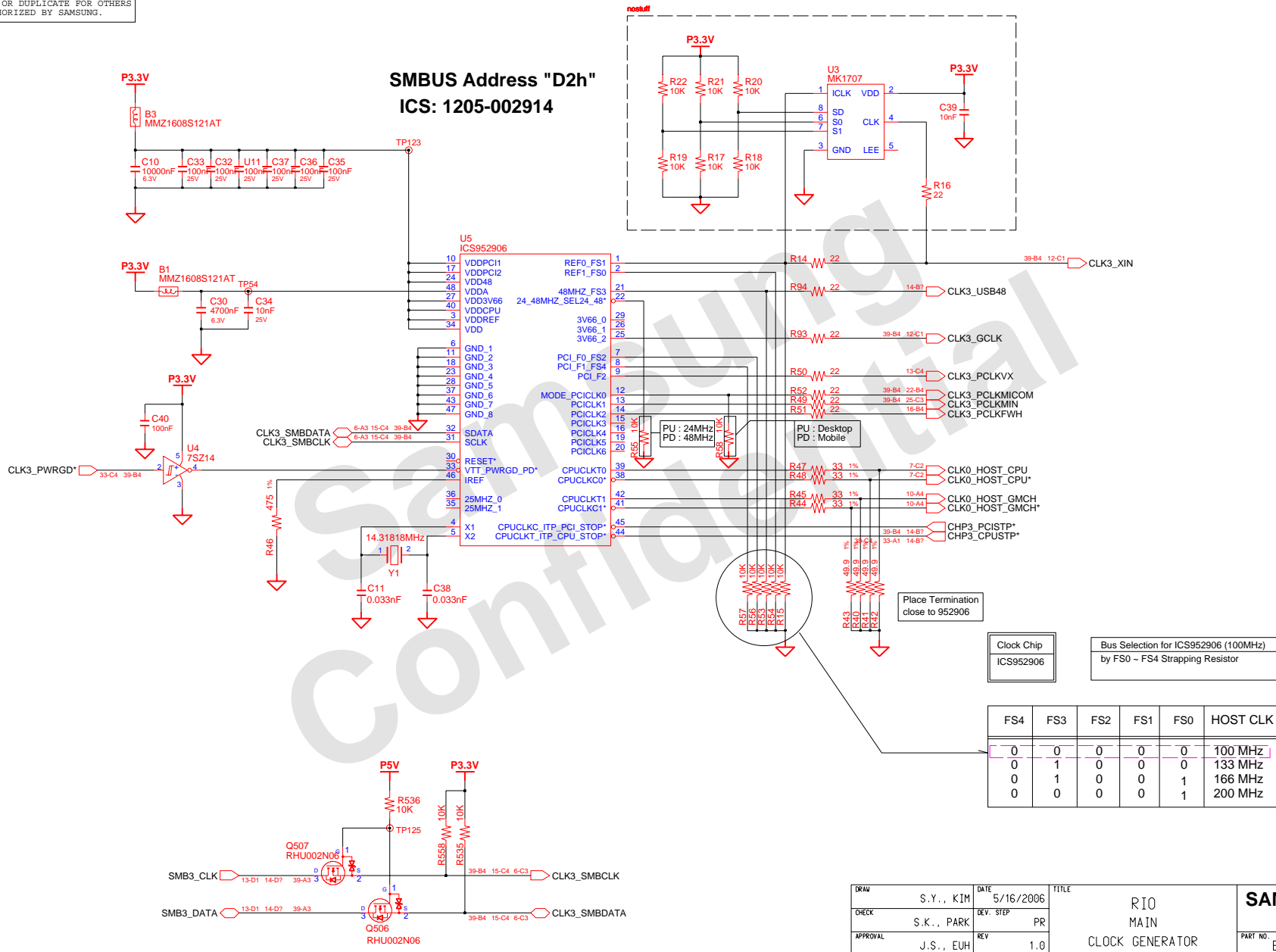
C7-M-ULV
DEEPER SLEEP MODE
0.724 V

DRAW	S.Y., KIM	DATE	5/16/2006	TITLE	RIO	SAMSUNG ELECTRONICS
CHECK	S.K., PARK	DEV. STEP	PR	MAIN		
APPROVAL	J.S., EUH	REV	1.0	BOARD INFORMATION	PART NO.	BA41-00665A
MODULE CODE	undef ined	LAST EDIT	May 16, 2006 9:33:56 PM	PAGE	5	OF 40

SAMSUNG PROPRIETARY

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.

**SMBUS Address "D2h"
ICS: 1205-002914**



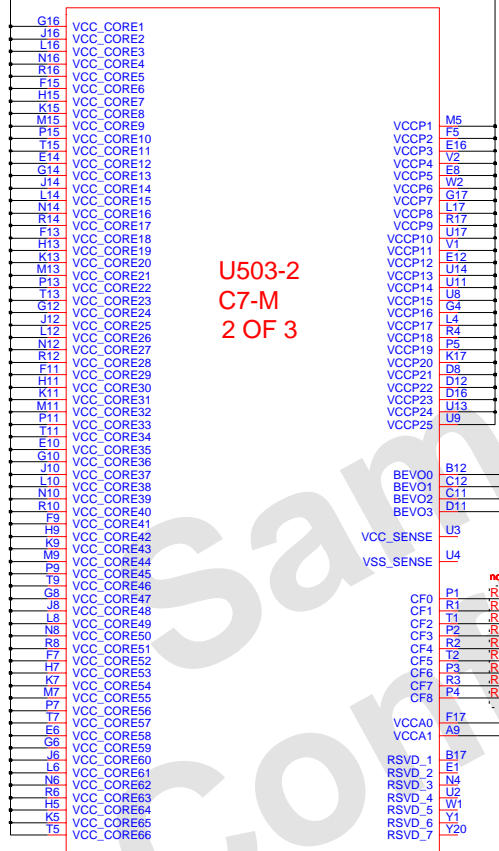
DRAW	S.Y., KIM	DATE	5/16/2006	TITLE	RIO MAIN	SAMSUNG ELECTRONICS
CHECK	S.K., PARK	DEV. STEP	PR	CLOCK GENERATOR		
APPROVAL	J.S., EUH	REV	1.0			PART NO. BA41-00665A
MODULE CODE	undef ined	LAST EDIT	May 16, 2006 9:33:56 PM	PAGE	6	OF 40

SAMSUNG PROPRIETARY

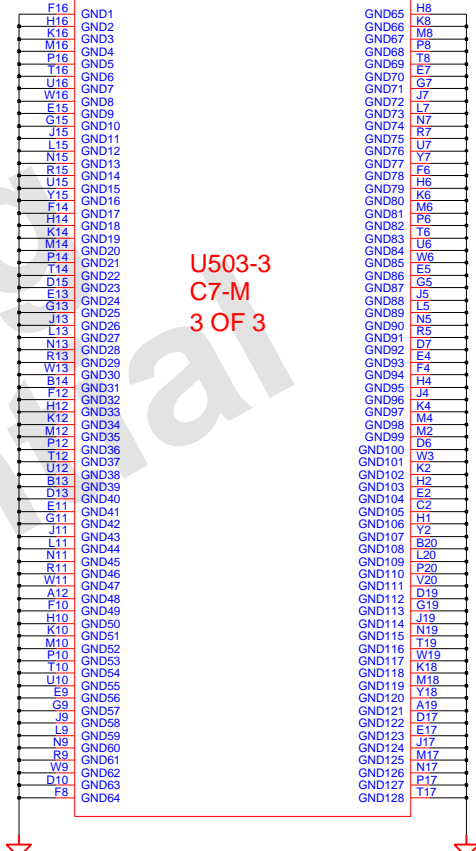
THIS DOCUMENT CONTAINS CONFIDENTIAL PROPRIETARY INFORMATION THAT IS SAMSUNG ELECTRONICS CO.'S PROPERTY. DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS EXCEPT AS AUTHORIZED BY SAMSUNG.

VCC_CORE

VCCP



U503-2
C7-M
2 OF 3



U503-3
C7-M
3 OF 3

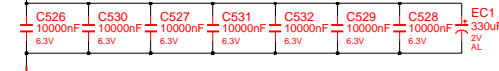
VCCP

noisefl

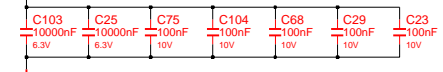
P1.5V

P1.5V

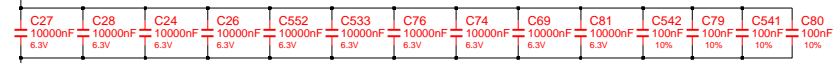
VCC_CORE



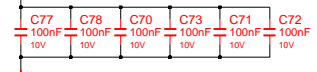
VCCP



VCC_CORE



VCC_CORE



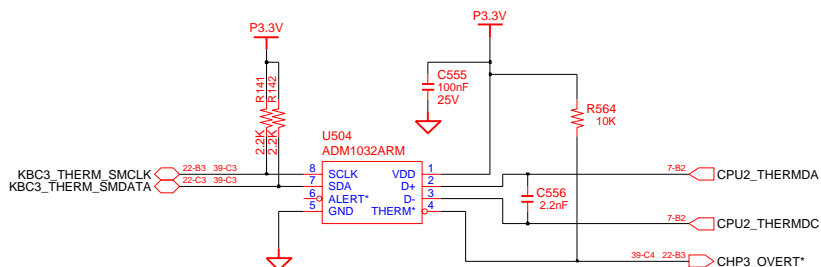
DRAW	S.Y., KIM	DATE	5/16/2006	TITLE	RIO	SAMSUNG ELECTRONICS
CHECK	S.K., PARK	DEV. STEP	PR		MAIN	
APPROVAL	J.S., EUH	REV	1.0		VIA C7-M CPU (2/2)	PART NO. BA41-00665A
MODULE CODE	undef ined	LAST EDIT	May 16, 2006 9:33:56 PM	PAGE	8	OF 40

SAMSUNG PROPRIETARY

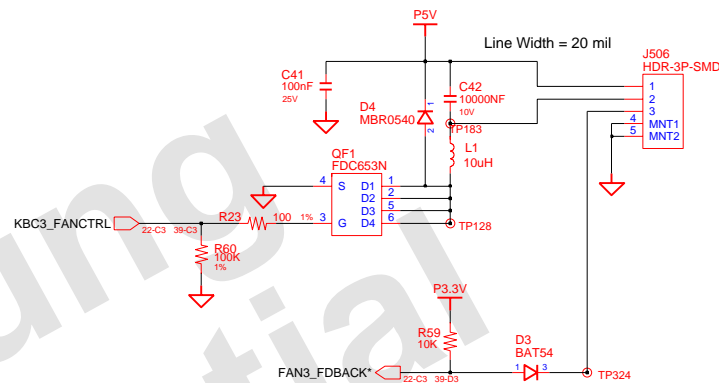
THIS DOCUMENT CONTAINS CONFIDENTIAL PROPRIETARY INFORMATION THAT IS SAMSUNG ELECTRONICS CO.'S PROPERTY. DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS EXCEPT AS AUTHORIZED BY SAMSUNG.

CPU Thermal Sensor Logic

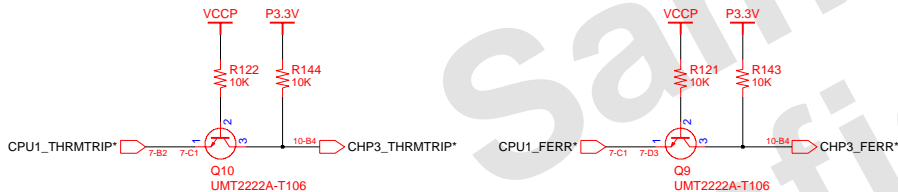
SMBUS Addr"4Ch"(x100 1100)
Put this sensor between CPU and MCH



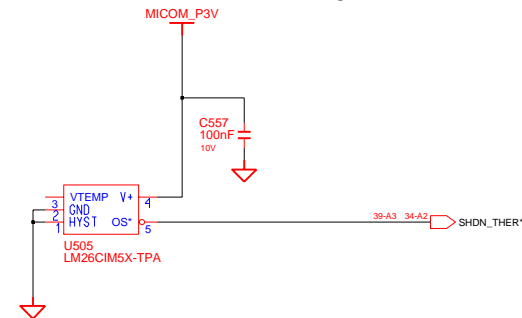
FAN Control Logic



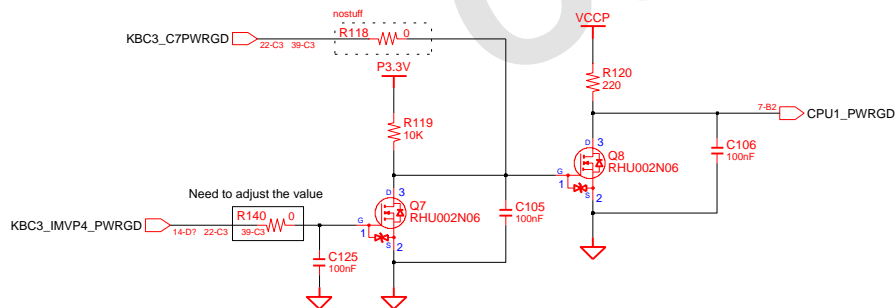
Level Shift Logic



Shutdown Logic



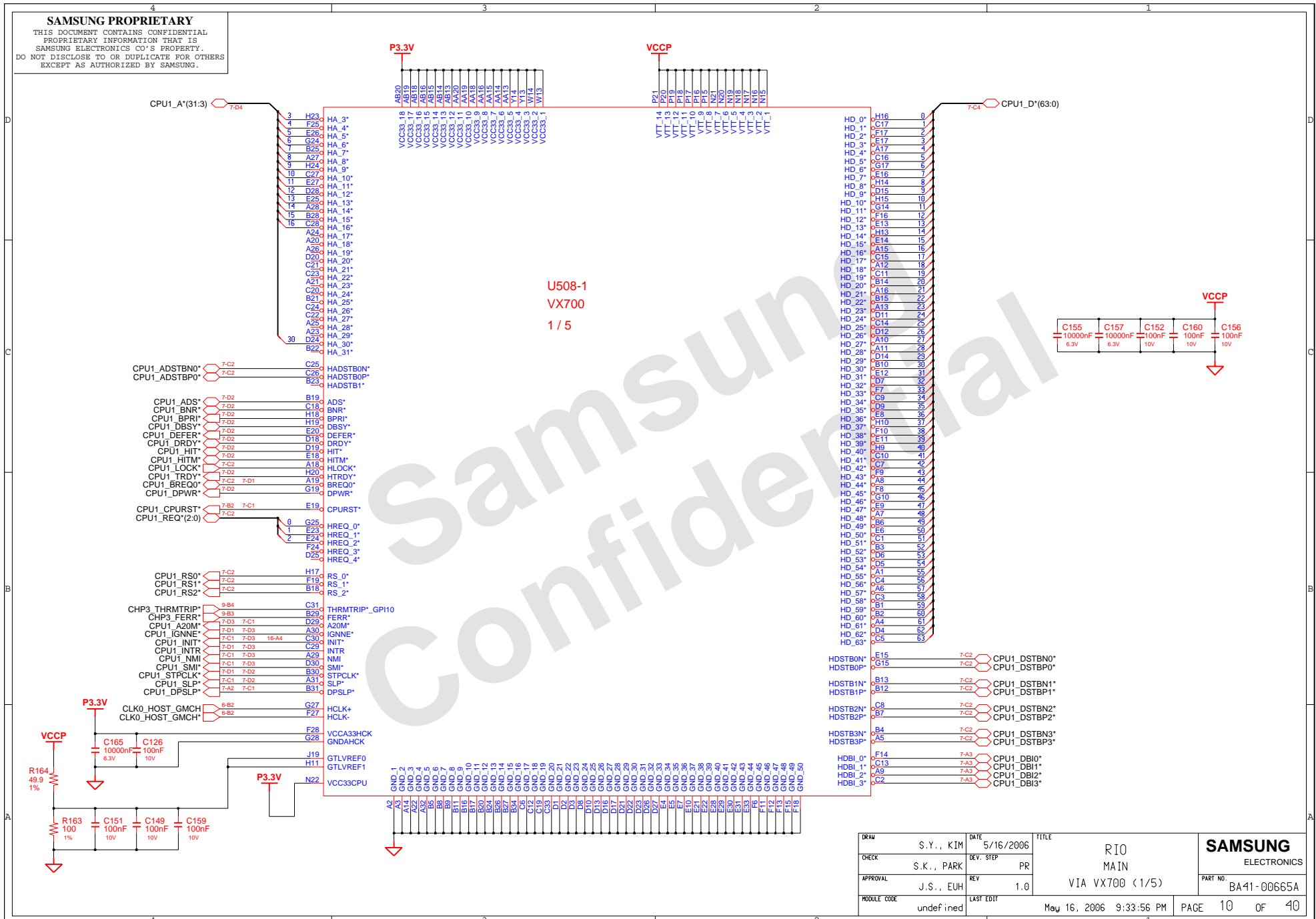
CPU Power Good Logic



DRAW	S.Y., KIM	DATE	5/16/2006	TITLE	RIO	SAMSUNG ELECTRONICS
CHECK	S.K., PARK	DEV. STEP	PR	MAIN		
APPROVAL	J.S., EUH	REV	1.0	THERMAL SENSOR/FAN CONTRL	PART NO.	BA41-00665A
MODULE CODE	undefined	LAST EDIT	May 16, 2006 9:33:56 PM	PAGE	9	OF 40

SAMSUNG PROPRIETARY

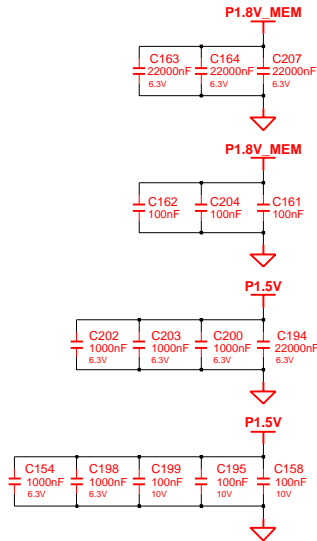
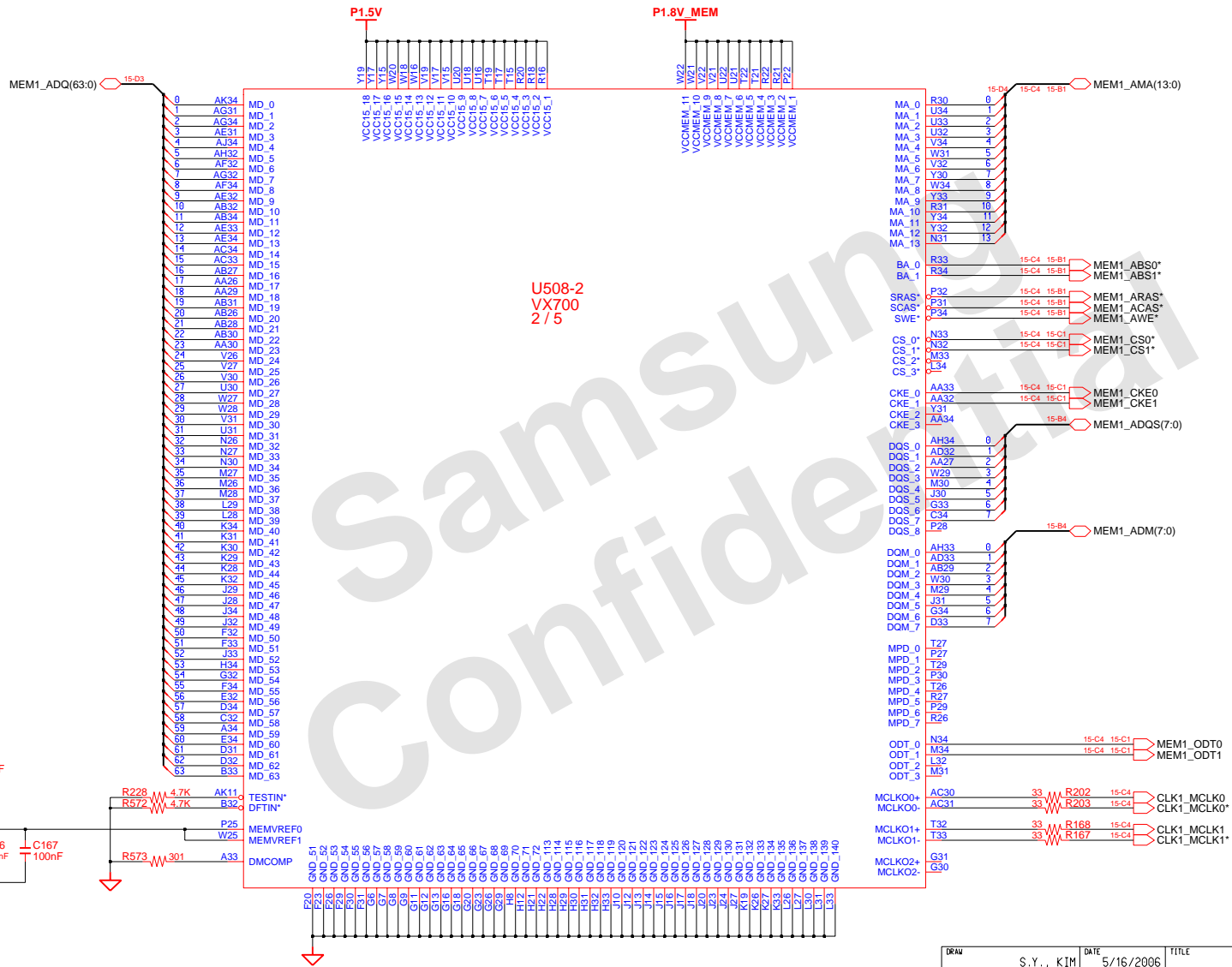
THIS DOCUMENT CONTAINS CONFIDENTIAL PROPRIETARY INFORMATION THAT IS SAMSUNG ELECTRONICS CO.'S PROPERTY. DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS EXCEPT AS AUTHORIZED BY SAMSUNG.



DRAW	S.Y., KIM	DATE	5/16/2006	TITLE	RIO	SAMSUNG ELECTRONICS
CHECK	S.K., PARK	DEV. STEP	PR	MAIN		
APPROVAL	J.S., EUH	REV	1.0	VIA VX700 (1/5)	PART NO.	BA41-00665A
MODULE CODE	undef ined	LAST EDIT	May 16, 2006 9:33:56 PM	PAGE	10	OF 40

SAMSUNG PROPRIETARY

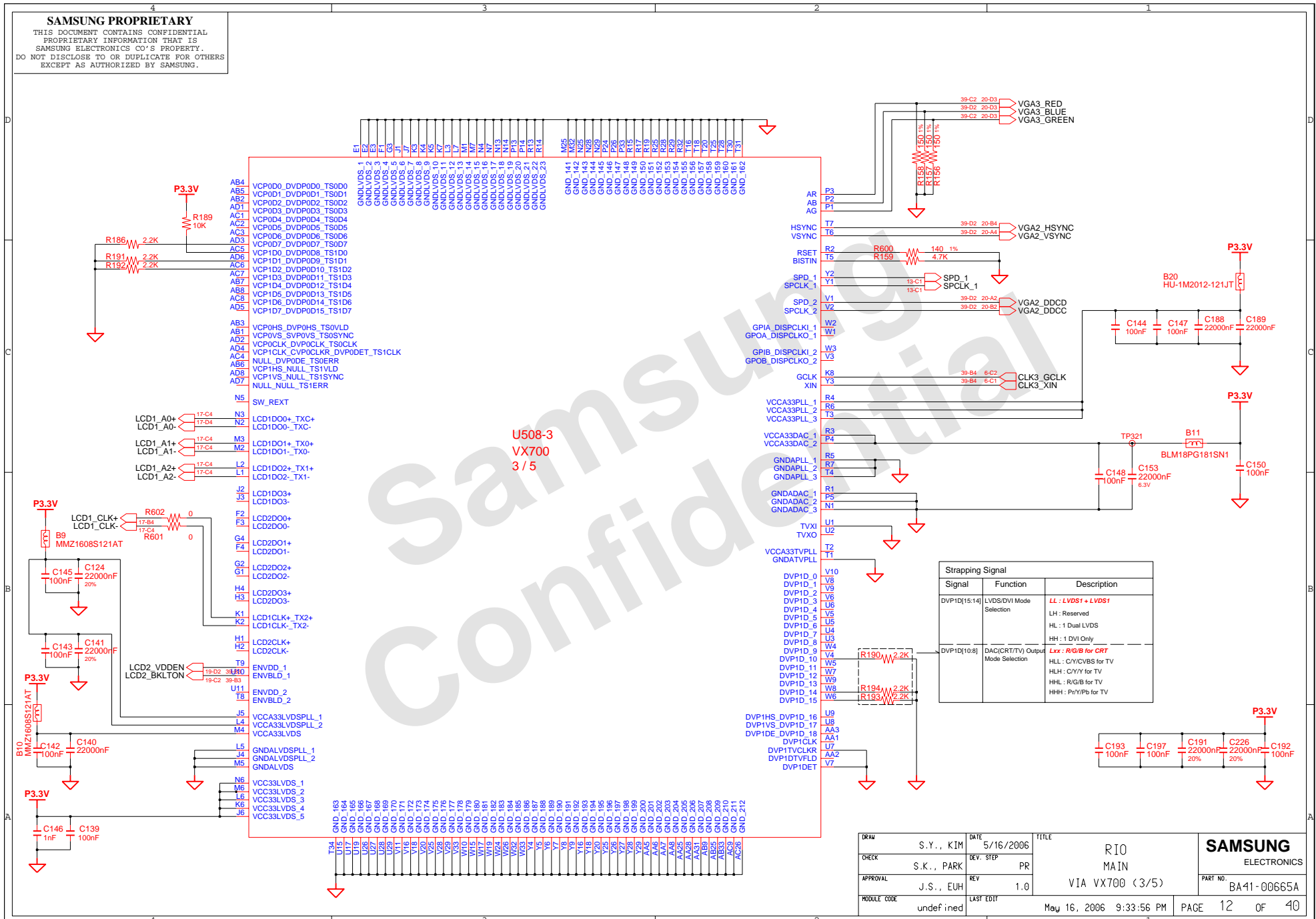
THIS DOCUMENT CONTAINS CONFIDENTIAL PROPRIETARY INFORMATION THAT IS SAMSUNG ELECTRONICS CO.'S PROPERTY. DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS EXCEPT AS AUTHORIZED BY SAMSUNG.



DRAW	S.Y., KIM	DATE	5/16/2006	TITLE	RIO MAIN	SAMSUNG ELECTRONICS
CHECK	S.K., PARK	DEV. STEP	PR			
APPROVAL	J.S., EUH	REV	1.0		VIA VX700 (2/5)	PART NO. BA41-00665A
MODULE CODE	undef ined	LAST EDIT	May 16, 2006 9:33:56 PM	PAGE	11	OF 40

SAMSUNG PROPRIETARY

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.

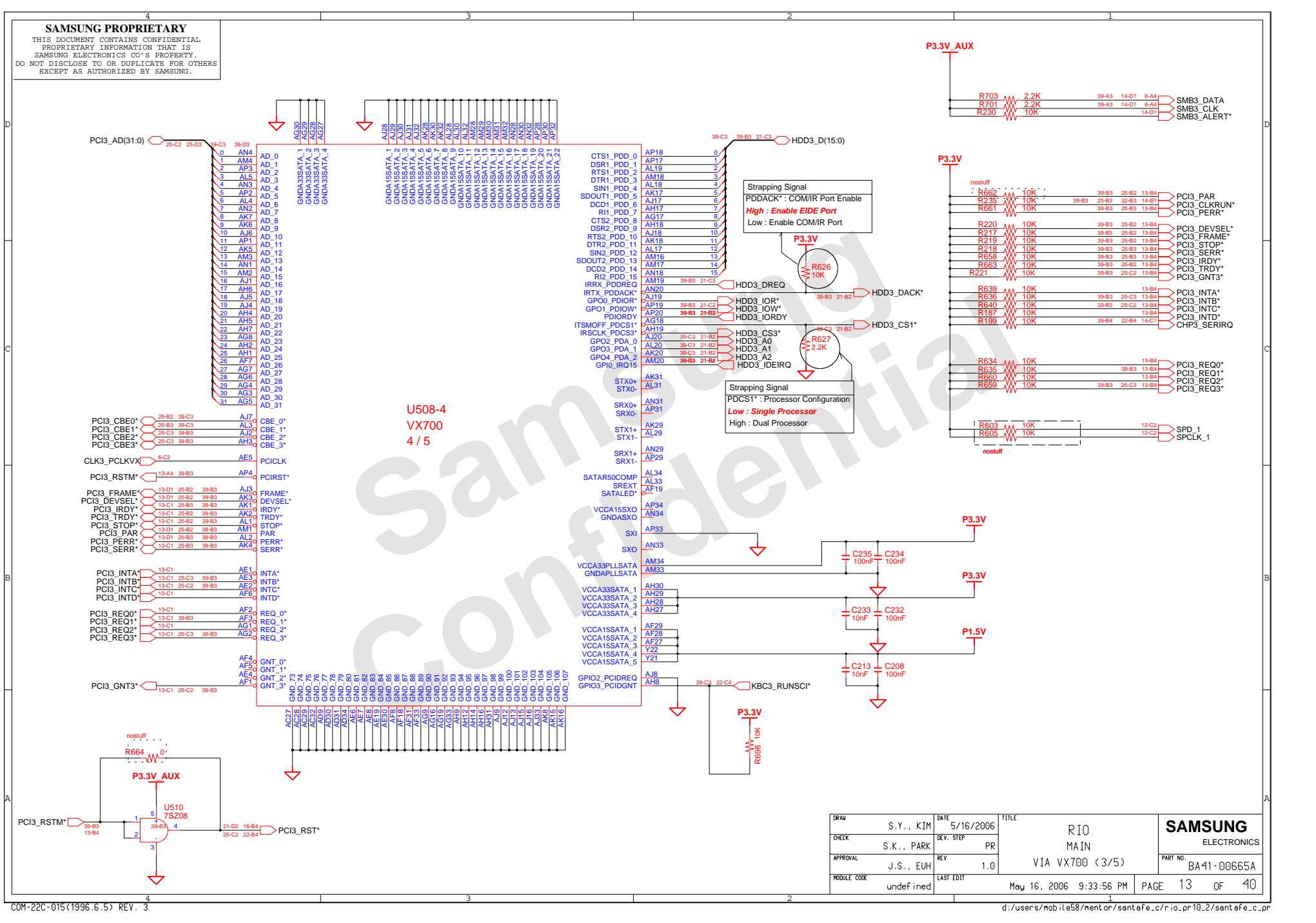


Samsun
Confid

U508-3
VX700
3/5

DRAW	S.Y., KIM	DATE	5/16/2006	TITLE	RIO MAIN VIA VX700 (3/5)	SAMSUNG ELECTRONICS PART NO. BA41-00665A
CHECK	S.K., PARK	DEV. STEP	PR			
APPROVAL	J.S., EUH	REV	1.0			
MODULE CODE	undef ined	LAST EDIT	May 16, 2006 9:33:56 PM	PAGE	12 OF 40	

SAMSUNG PROPRIETARY
 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.



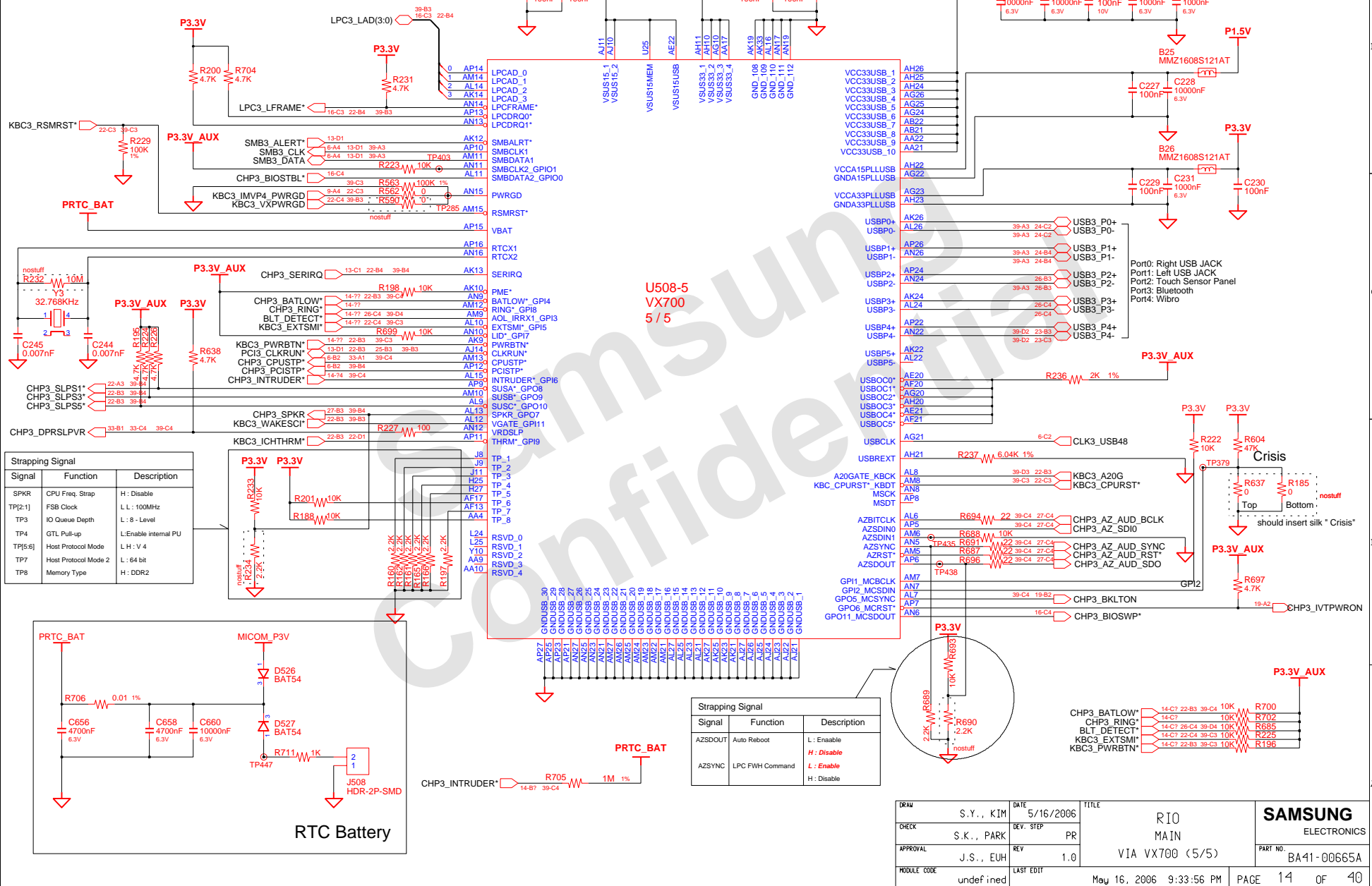
U508-4
 VX700
 4 / 5

Strapping Signal
 PDDACK*: COM/IR Port Enable
 High : Enable EIDE Port
 Low : Enable COM/IR Port

Strapping Signal
 PDCS1*: Processor Configuration
 Low : Single Processor
 High : Dual Processor

DRAW	S.Y., KIM	DATE	5/16/2006	TITLE	RIO MAIN	SAMSUNG ELECTRONICS
CHECK	S.K., PARK	DEV. STEP	PR	VIA VX700 (3/5)		
APPROVAL	J.S., EUH	REV	1.0	May 16, 2006 9:33:56 PM		PART NO. BA41-00665A
MODULE CODE	undef ined	LAST EDIT		PAGE	13	OF 40

SAMSUNG PROPRIETARY
 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.



U508-5
 Vx700
 5 / 5

Signal	Function	Description
SPKR	CPU Freq. Strap	H : Disable
TP1(2-1)	FSB Clock	L : 100MHz
TP3	IO Queue Depth	L : 8 - Level
TP4	GTL Pull-up	L: Enable internal PU
TP5[6]	Host Protocol Mode	L : H : V 4
TP7	Host Protocol Mode 2	L : 64 bit
TP8	Memory Type	H : DDR2

Signal	Function	Description
AZSDOUT	Auto Reboot	L : Enable H : Disable
AZSYNC	LPC FW Command	L : Enable H : Disable

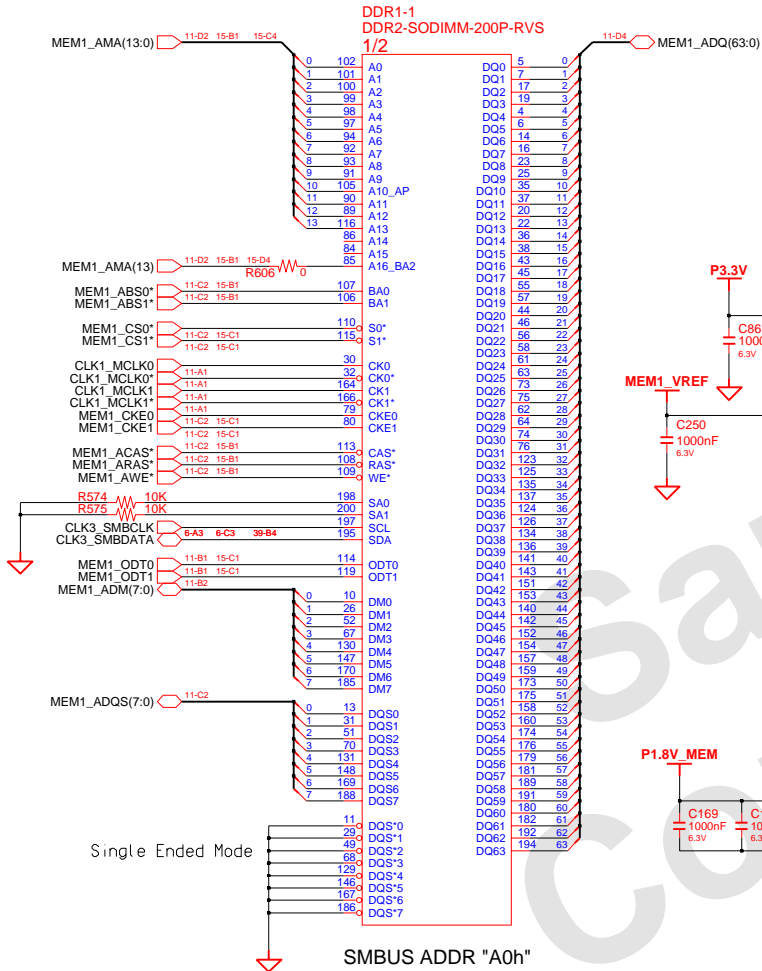
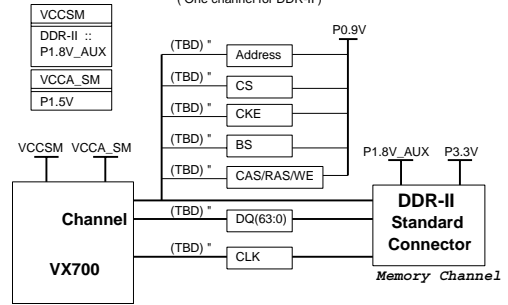
DRAW	S.Y., KIM	DATE	5/16/2006	TITLE	RIO MAIN	SAMSUNG ELECTRONICS PART NO. BA41-00665A
CHECK	S.K., PARK	DEV. STEP	PR			
APPROVAL	J.S., EUH	REV	1.0		VIA Vx700 (5/5)	
MODULE CODE	undef ined	LAST EDIT	May 16, 2006 9:33:56 PM	PAGE	14	OF 40

SAMSUNG PROPRIETARY

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.

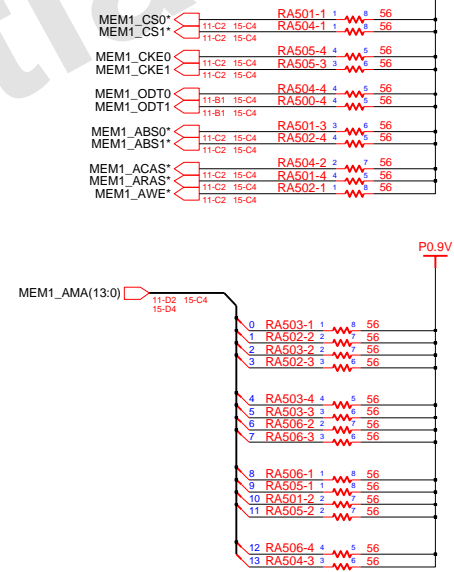
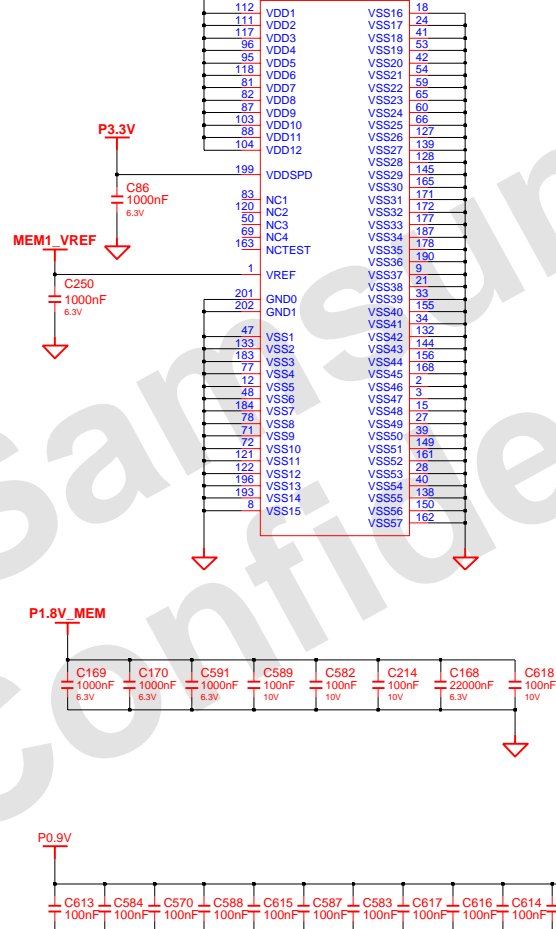
Memory Topology

(One channel for DDR-II)



**DDR1-1
DDR2-200P-RVS
1/2**

**DDR2-2
DDR2-SODIMM-200P-RVS
2/2**

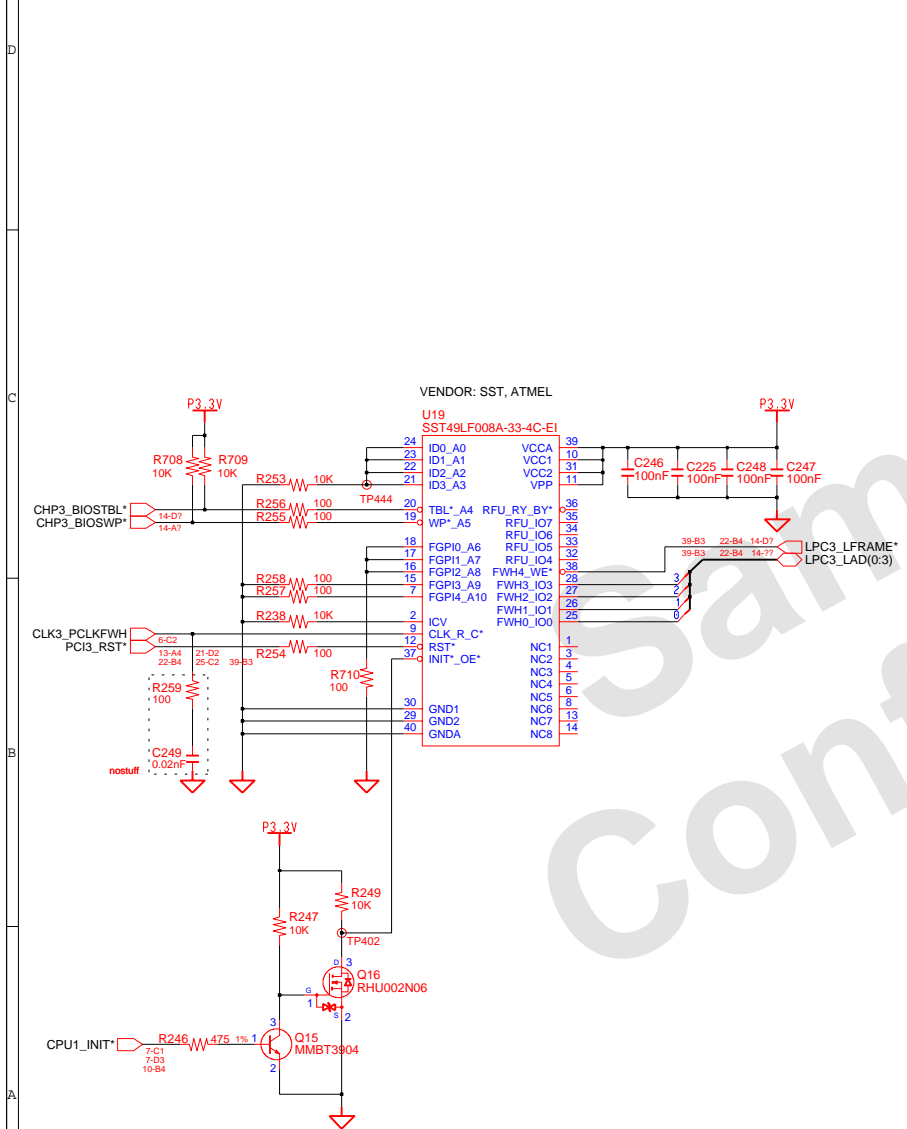


Place one cap close to every 2 pull-up resistors terminated to P0.9V

DRAW	S.Y., KIM	DATE	5/16/2006	TITLE	RIO	SAMSUNG ELECTRONICS
CHECK	S.K., PARK	DEV. STEP	PR		MAIN	
APPROVAL	J.S., EUH	REV	1.0		DDR2 Memory	PART NO. BA41-00665A
MODULE CODE	undef ined	LAST EDIT	May 16, 2006 9:33:56 PM	PAGE	15	OF 40

SAMSUNG PROPRIETARY

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.



```

02  VERIFY REAL MODE
03  DISABLE NMI
04  GET CPU TYPE
06  INIT. SYSTEM H/W
08  INIT. CHIPSET REG.
09  SET IN POST FLAG
0A  INIT CPU.REG
0B  CPU CACHE ON
0C  INIT.CACHE TO POST
0E  INIT. I/O VALUE
0F  ENABLE THE L-BUS IDE
10  INIT. POWER MANAGER
11  LOAD ALTERNATE REG.
13  PCI BUS MASTER RESET WITH INITIAL POST VALUE
14  INIT. KEYBOARD CONTROLLER
16  CHECK CHECKSUM
18  8254 TIMER INIT.
1A  8237 DMA CONTROLLER INIT.
1C  RESET INTERRUPT CONTROLLER
20  TEST DRAM REFRESH
22  TEST 8742 KEYBOARD CONTROLLER
24  SET ES SEGMENT REG. TO 4GB
26  ENABLE A20
28  AUTO SIZING DRAM
32  COMPUTE THE CPU SPEED
34  TESET CMOS RAM
38  SHADOW SYSTEM BIOS ROM
3A  AUTO SIZING CACHE
3C  CONFIGURE ADVANCED CHIPSET REG.
3D  LOAD ALTER REG. WITH CMOS VALUE
42  INIT. INTERRUPT VECTOR
44  INIT. BIOS INTERRUPT
46  CHECK ROM COPYRIGHT NOTICE
47  INIT. I20 SUPPORT IF INSTALLED
48  CHECK VIDEO CONFIGURE AGAINST CMOS
49  INIT. PCI BUS AND DEVICE
4A  INIT. ALL VIDEO BIOS ROM
4C  SHADOW VIDEO BIOS ROM
50  DISPLAY CPU TYPE AND SPEED
52  TEST KEYBOARD
54  SET KEYCLICK IF ENABLED
56  ENABLE KEYBOARD
58  TEST FOR UNEXPECTED INTERRUPTS
5A  DISPLAY " PRESS ..... SETUP"
5C  TEST RAM BETWEEN 512K AND 640K
60  TEST EXTENDED MEMORY
62  TEST EXTENDED MEMORY ADDRESS LINE
64  JUMP TO USER PATCH 1

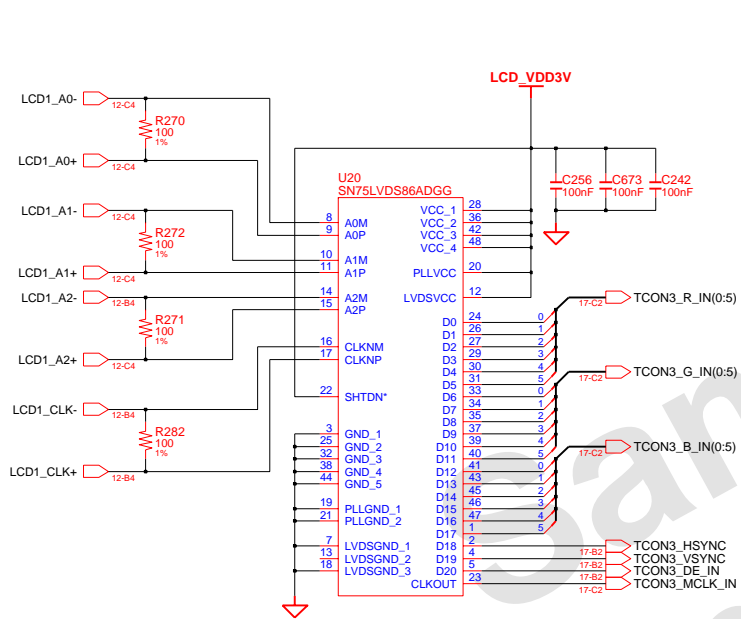
66  CONFIGURE ADVANCE CACHE REG.
6A  DISPLAY EXTERNAL CACHE SIZE
6C  DISPLAY SHADOW MESSAGE
6E  DISPLAY NON-DISPOSABLE SEGMENT
70  DISPLAY ERROR MESSAGE
72  CHECK FOR CONFIGURATION ERROR
74  TEST REAL-TIME CLOCK
76  CHECK FOR KEYBOARD ERROR
7C  SETUP HARDWARE INTERRUPT VECTOR
7E  TEST COPROCESSER IF PRESENT
80  DISABLE ON-BOARD I/O PORT
82  DETECT AND INSTALL EXT.RS232C
84  DETECT AND INSTALL EXT.PARALLEL
86  RE-INIT. ON-BOARD I/O PORT
88  INIT. BIOS DATA ROM
8A  INIT.EXTENDED BIOS DATA AREA
8C  INIT. FDD CONTROLLER
9A  SHADOW OPTION ROMS
9C  SETUP POWER MANAGEMENT
9E  ENABLE H/W INTERRUPT
A0  SET TIME OF DAY
A4  INIT. TYPOMATIC RATE
A8  ERASE F2 PROMPT
AA  SCAN FOR F2 KEY STROKE
AC  ENTER SETUP
AE  CLEAR IN POST FLAG
B0  CHECK FOR ERRORS
B2  POST DONE-PREPARE TO BOOT O/S
B4  ONE BEEP
B6  CHECK PASSWORD (OPTION)
B7  ACPI INIT
BA  DMI INIT
BE  CLEAR SCREEN
C0  TRY BOOT WITH INT19
D0  INTERRUPT HANDLER ERROR
D2  UNKNOWN INTERRUPT ERROR
D4  PENDING INTERRUPT ERROR
D6  SHUTDOWN 5
D8  SHUTDOWN ERROR
DA  EXTENDED BLOCK MOVE
DC  SHUTDOWN 10
E0  SHUTDOWN 15
E2  SHUTDOWN 20
E4  SHUTDOWN 30
E6  SHUTDOWN 40
E8  SHUTDOWN 50
EA  SHUTDOWN 60
EC  SHUTDOWN 70
EE  SHUTDOWN 80
F0  SHUTDOWN 90
F2  SHUTDOWN 100
F4  SHUTDOWN 150
F6  SHUTDOWN 200
F8  SHUTDOWN 300
FA  SHUTDOWN 400
FC  SHUTDOWN 500
FE  SHUTDOWN 600

```

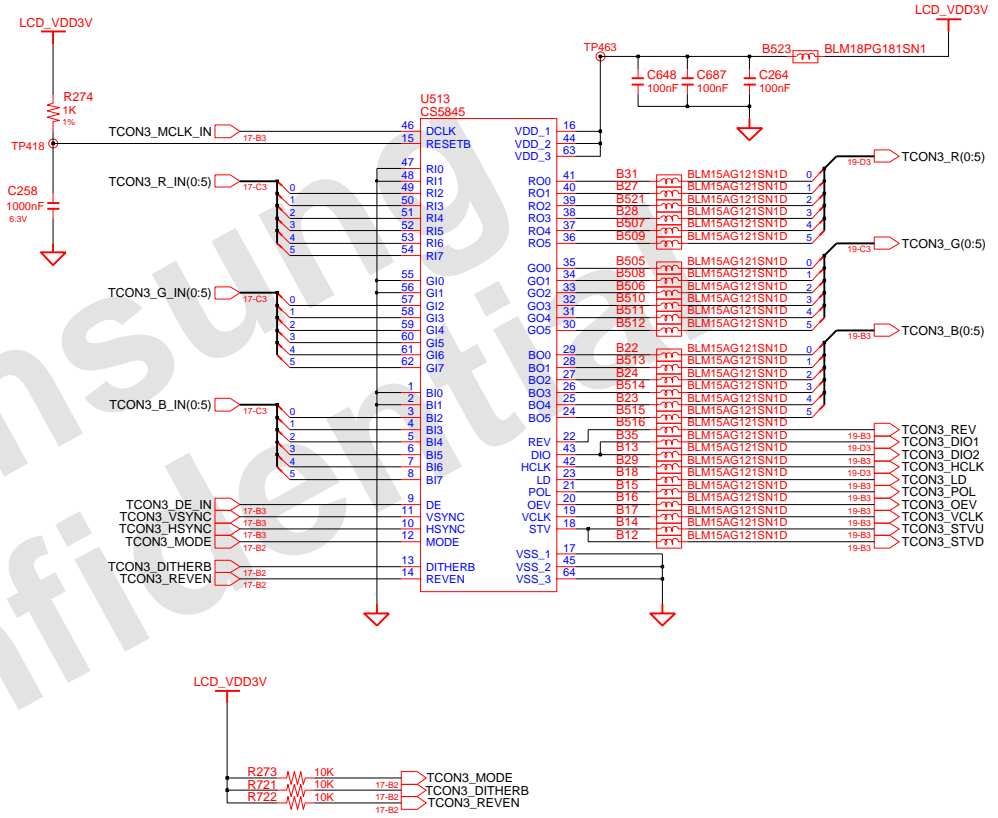
DRAW	S.Y., KIM	DATE	5/16/2006	TITLE	RIO	SAMSUNG ELECTRONICS
CHECK	S.K., PARK	DEV. STEP	PR		MAIN	
APPROVAL	J.S., EUH	REV	1.0		FWH & 80Port	PART NO. BA41-00665A
MODULE CODE	undef ined	LAST EDIT	May 16, 2006 9:33:56 PM	PAGE	16	OF 40

SAMSUNG PROPRIETARY
 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.

LVDS to LVTTTL



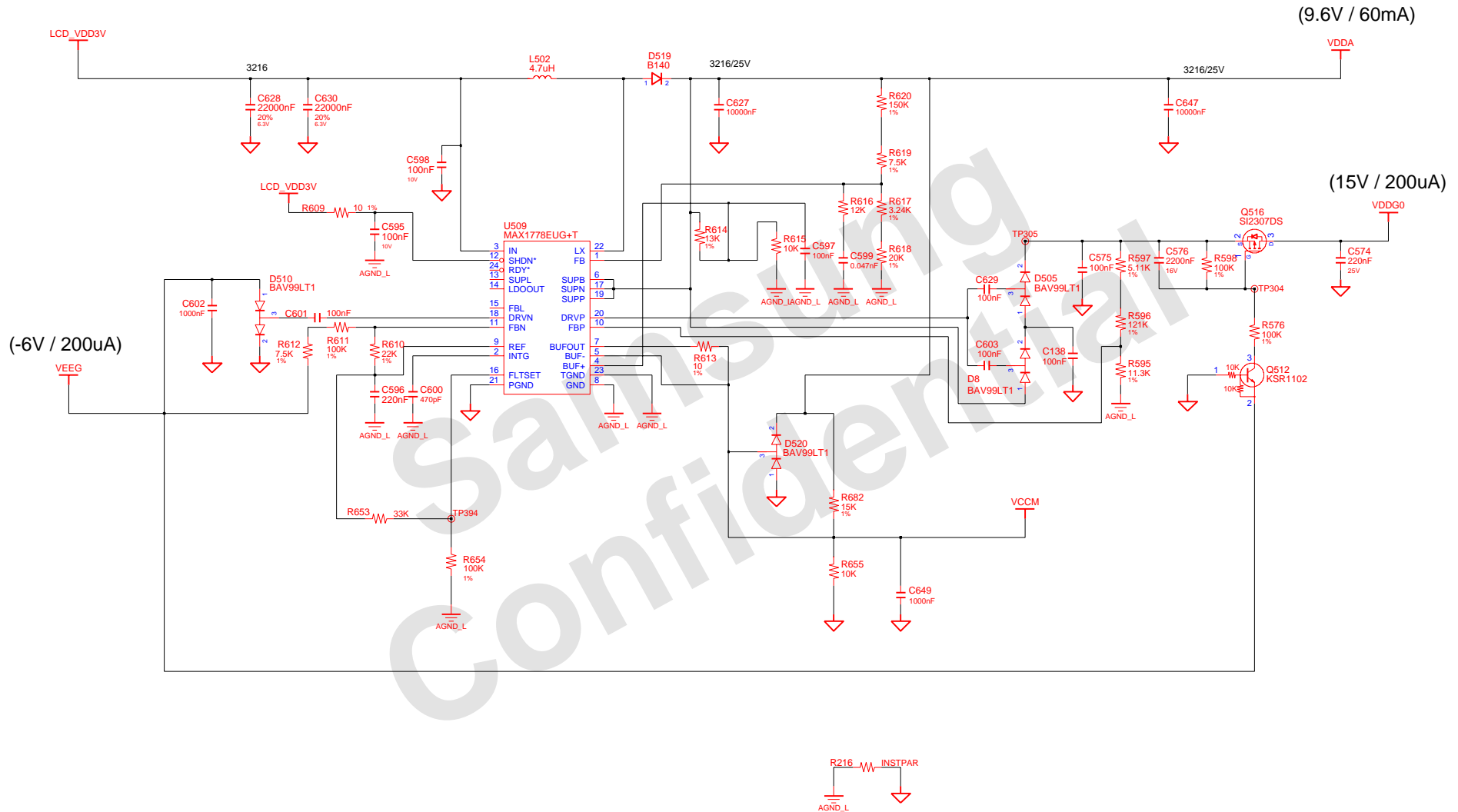
LCD Timing Controller



DRAW	S.Y., KIM	DATE	5/16/2006	TITLE	RIO MAIN	SAMSUNG ELECTRONICS PART NO. BA41-00665A
CHECK	S.K., PARK	DEV. STEP	PR	LVDS TO LVTTTL & Tcon		
APPROVAL	J.S., EUH	REV	1.0	May 16, 2006 9:33:56 PM		
MODULE CODE	undef ined	LAST EDIT		PAGE	17 OF 40	

SAMSUNG PROPRIETARY

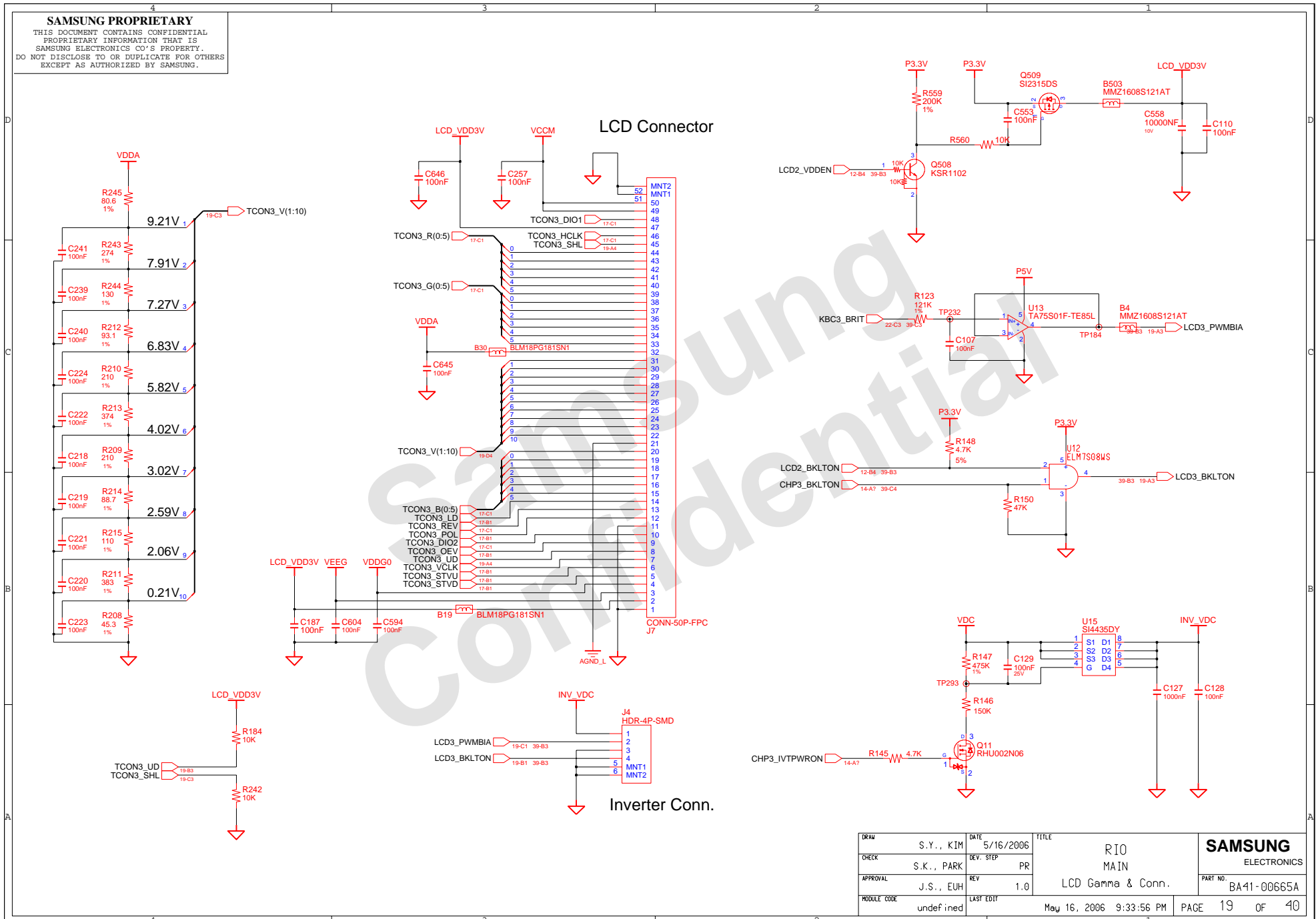
THIS DOCUMENT CONTAINS CONFIDENTIAL PROPRIETARY INFORMATION THAT IS SAMSUNG ELECTRONICS CO.'S PROPERTY. DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS EXCEPT AS AUTHORIZED BY SAMSUNG.



DRAW	S.Y., KIM	DATE	5/16/2006	TITLE	RIO MAIN	SAMSUNG ELECTRONICS PART NO. BA41-00665A
CHECK	S.K., PARK	DEV. STEP	PR	LCD Analog Power		
APPROVAL	J.S., EUH	REV	1.0			
MODULE CODE	undefined	LAST EDIT	May 16, 2006 9:33:56 PM	PAGE	18	OF 40

SAMSUNG PROPRIETARY

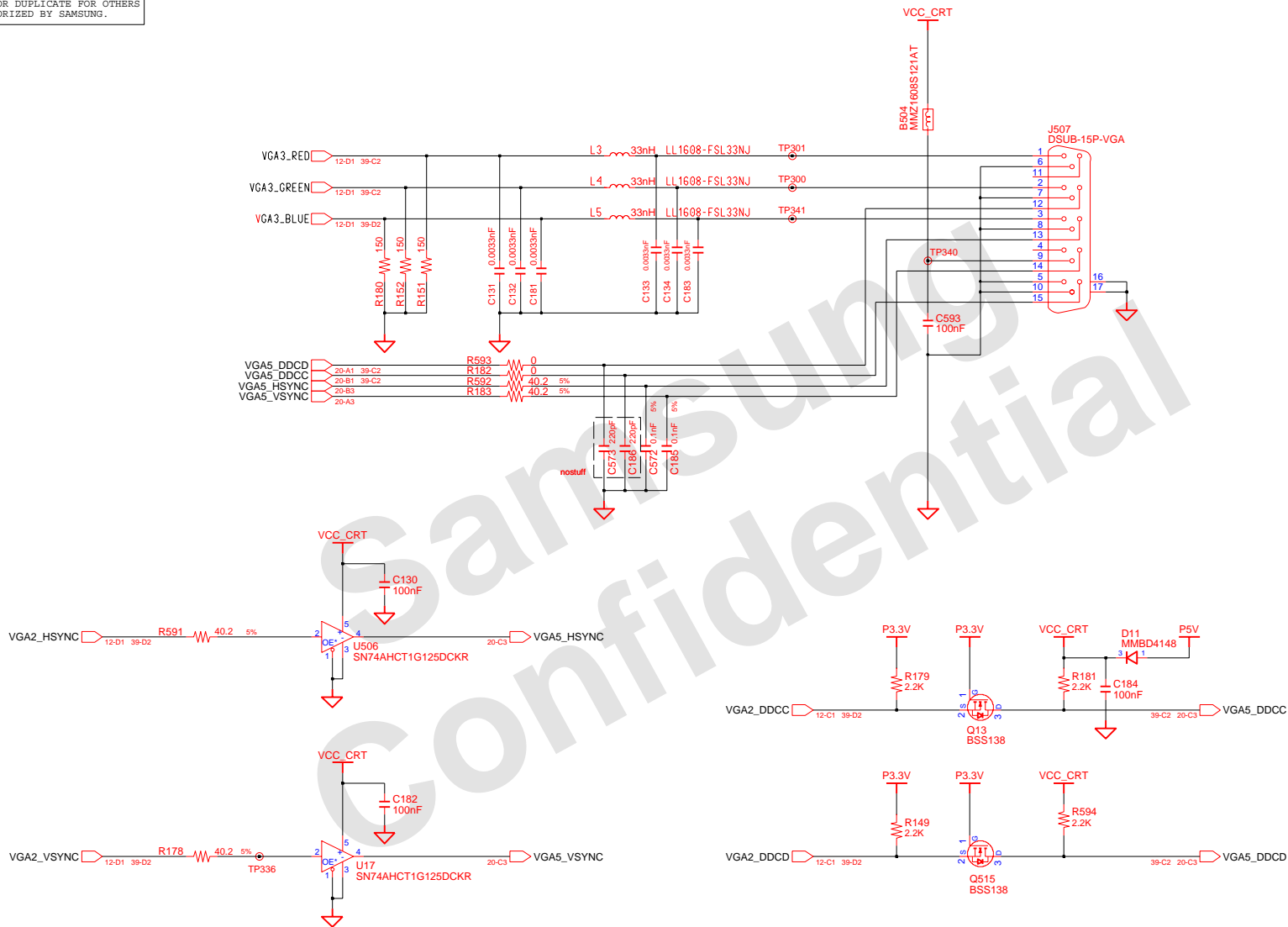
THIS DOCUMENT CONTAINS CONFIDENTIAL PROPRIETARY INFORMATION THAT IS SAMSUNG ELECTRONICS CO.'S PROPERTY. DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS EXCEPT AS AUTHORIZED BY SAMSUNG.



DRAW	S.Y., KIM	DATE	5/16/2006	TITLE	RIO	SAMSUNG ELECTRONICS
CHECK	S.K., PARK	DEV. STEP	PR		MAIN	
APPROVAL	J.S., EUH	REV	1.0		LCD Gamma & Conn.	PART NO. BA41-00665A
MODULE CODE	undef ined	LAST EDIT	May 16, 2006 9:33:56 PM	PAGE	19	OF 40

SAMSUNG PROPRIETARY

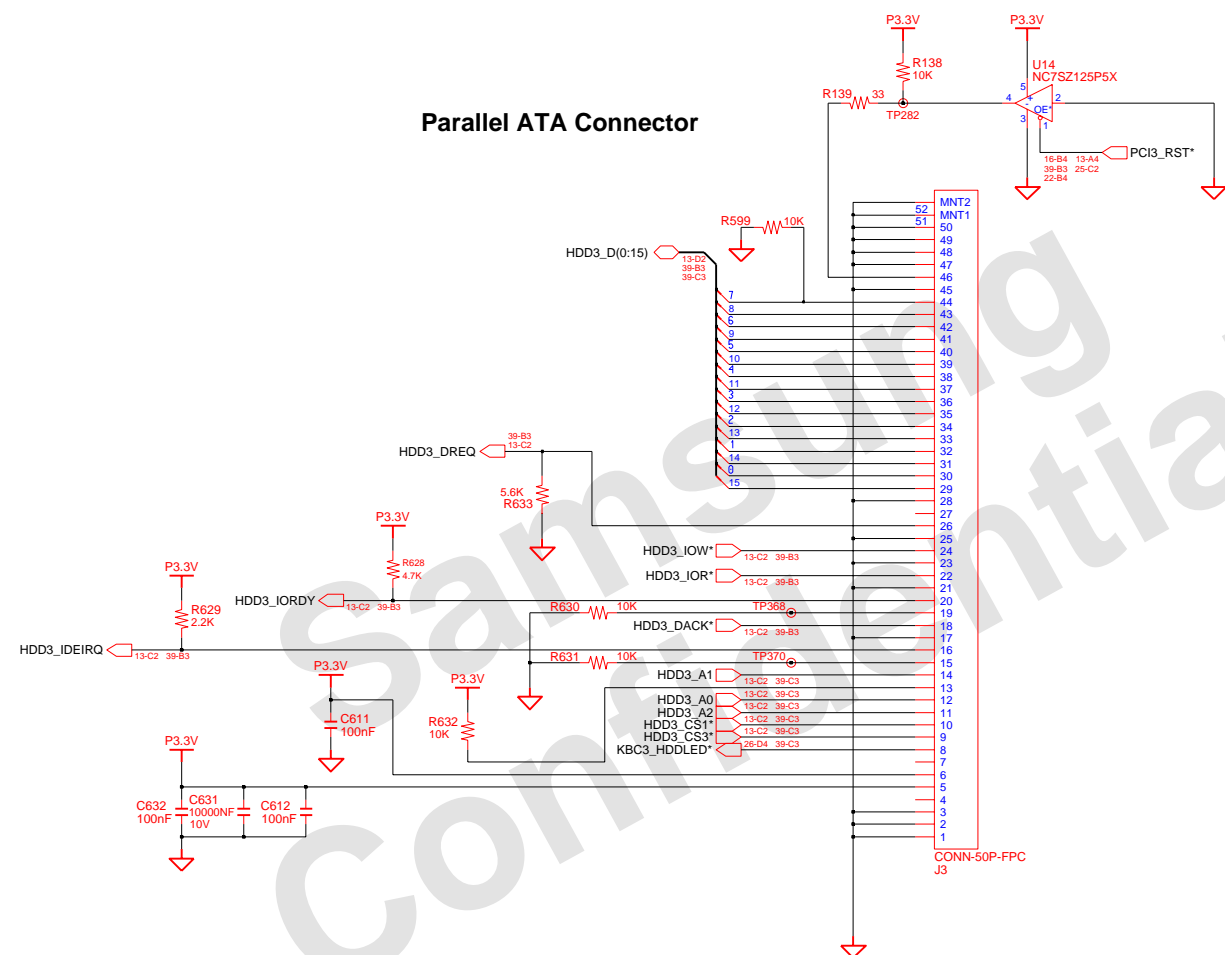
THIS DOCUMENT CONTAINS CONFIDENTIAL PROPRIETARY INFORMATION THAT IS SAMSUNG ELECTRONICS CO.'S PROPERTY. DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS EXCEPT AS AUTHORIZED BY SAMSUNG.



DRAW	S.Y., KIM	DATE	5/16/2006	TITLE	RIO	SAMSUNG ELECTRONICS
CHECK	S.K., PARK	DEV. STEP	PR	MAIN		
APPROVAL	J.S., EUH	REV	1.0	VGA Level Shift		PART NO. BA41-00665A
MODULE CODE	undef ined	LAST EDIT	May 16, 2006 9:33:56 PM	PAGE	20	OF 40

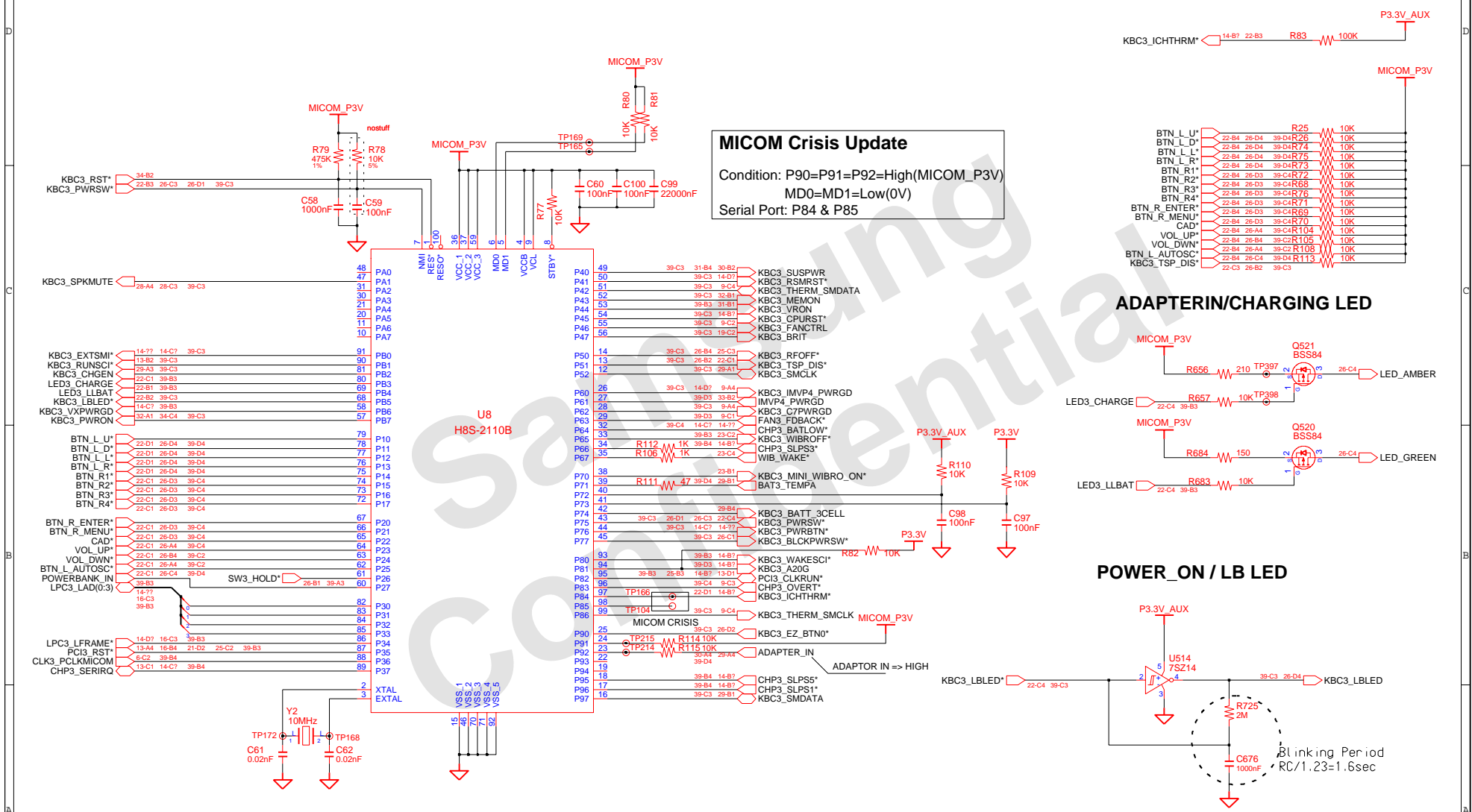
SAMSUNG PROPRIETARY
 THIS DOCUMENT CONTAINS CONFIDENTIAL
 PROPRIETARY INFORMATION THAT IS
 SAMSUNG ELECTRONICS CO.'S PROPERTY.
 DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
 EXCEPT AS AUTHORIZED BY SAMSUNG.

Parallel ATA Connector



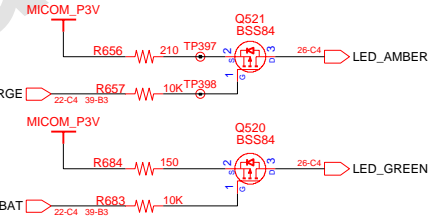
DRAW	S.Y., KIM	DATE	5/16/2006	TITLE	RIO MAIN HDD CONNECTOR	SAMSUNG ELECTRONICS PART NO. BA41-00665A
CHECK	S.K., PARK	DEV. STEP	PR			
APPROVAL	J.S., EUH	REV	1.0			
MODULE CODE	undefined	LAST EDIT	May 16, 2006 9:33:56 PM	PAGE	21 OF 40	

SAMSUNG PROPRIETARY
 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.

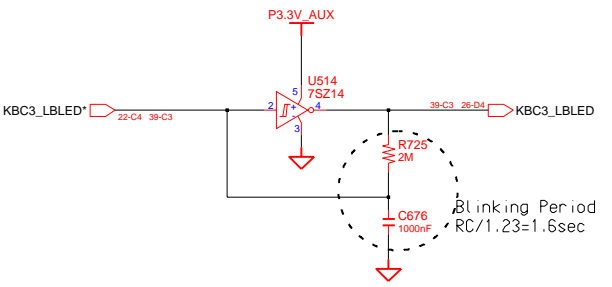


MICOM Crisis Update
 Condition: P90=P91=P92=High(MICOM_P3V)
 MD0=MD1=Low(OV)
 Serial Port: P84 & P85

ADAPTERIN/CHARGING LED



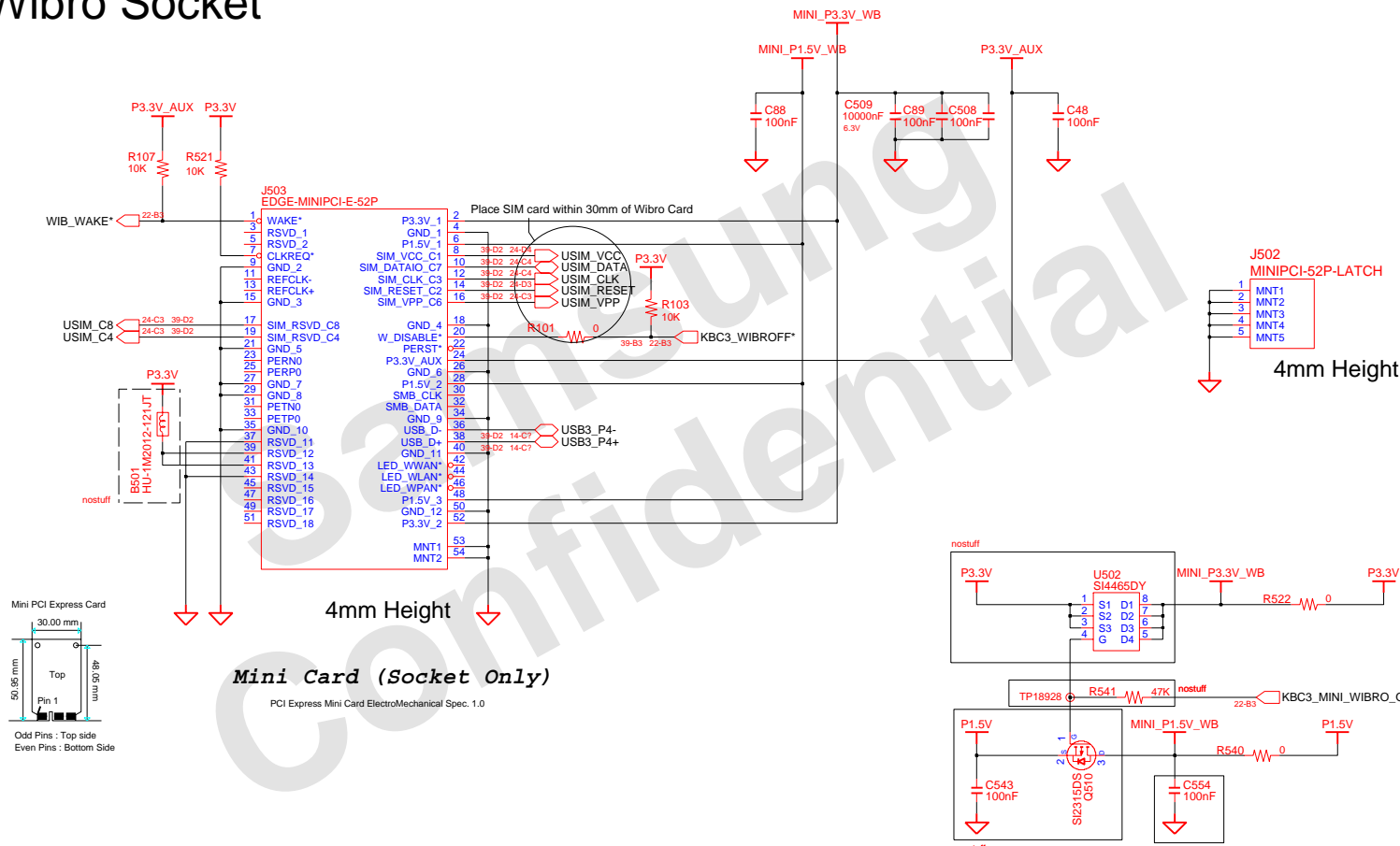
POWER_ON / LB LED



DRAW	S.Y., KIM	DATE	5/16/2006	TITLE	RIO MAIN MICOM	SAMSUNG ELECTRONICS PART NO. BA41-00665A
CHECK	S.K., PARK	DEV. STEP	PR			
APPROVAL	J.S., EUH	REV	1.0			
MODULE CODE	undef ined	LAST EDIT	May 16, 2006 9:33:56 PM	PAGE	22 OF 40	

SAMSUNG PROPRIETARY
 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.

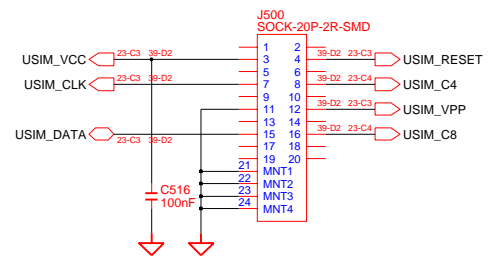
Wibro Socket



DRAW	S.Y., KIM	DATE	5/16/2006	TITLE	RIO	SAMSUNG ELECTRONICS PART NO. BA41-00665A
CHECK	S.K., PARK	DEV. STEP	PR	MAIN		
APPROVAL	J.S., EUH	REV	1.0	WIBRO		
MODULE CODE	undefined	LAST EDIT	May 16, 2006 9:33:56 PM	PAGE	23 OF 40	

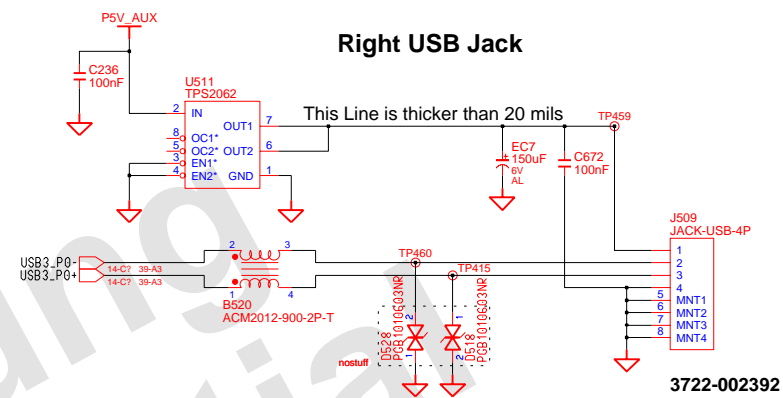
SAMSUNG PROPRIETARY
 THIS DOCUMENT CONTAINS CONFIDENTIAL
 PROPRIETARY INFORMATION THAT IS
 SAMSUNG ELECTRONICS CO.'S PROPERTY.
 DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
 EXCEPT AS AUTHORIZED BY SAMSUNG.

SIM Board I/F



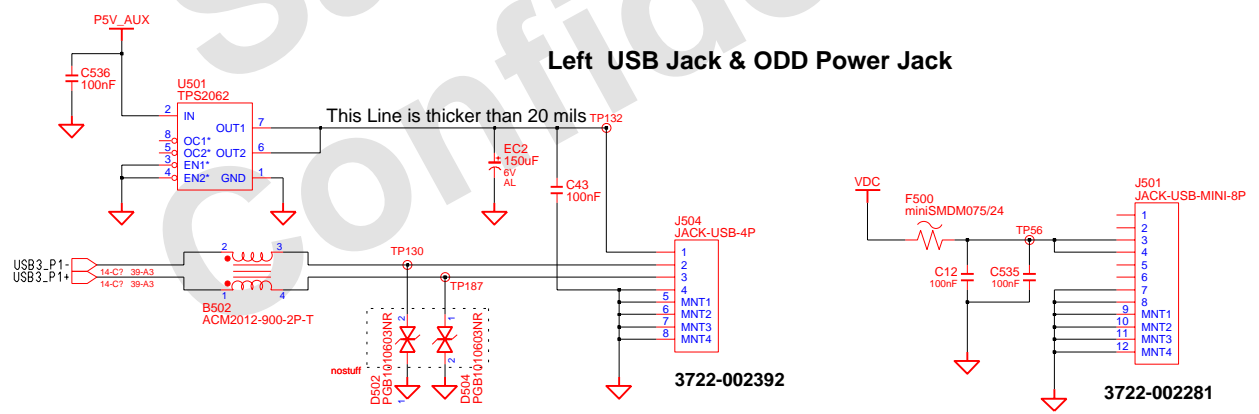
SIM Conn. 3710-002164

Right USB Jack



3722-002392

Left USB Jack & ODD Power Jack



3722-002392

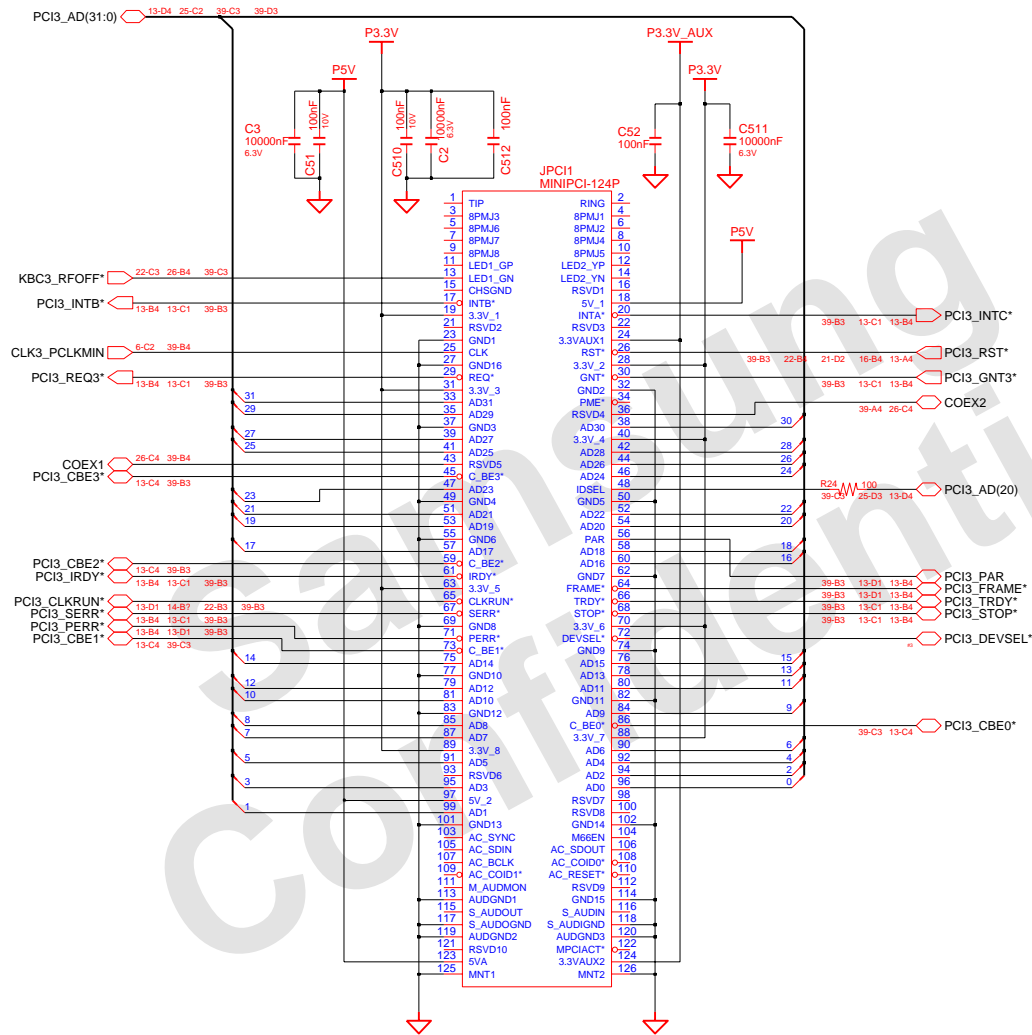
3722-002281

DRAW	S.Y., KIM	DATE	5/16/2006	TITLE	RIO	SAMSUNG ELECTRONICS PART NO. BA41-00665A
CHECK	S.K., PARK	DEV. STEP	PR	MAIN		
APPROVAL	J.S., EUH	REV	1.0	DMB & USB		
MODULE CODE	undef ined	LAST EDIT	May 16, 2006 9:33:56 PM	PAGE	24 OF 40	

SAMSUNG PROPRIETARY

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.

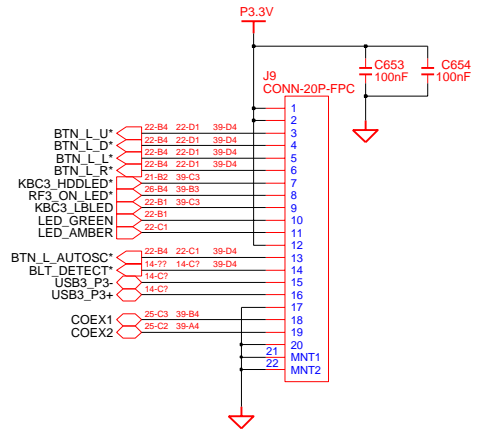
MINI PCI : Wireless LAN



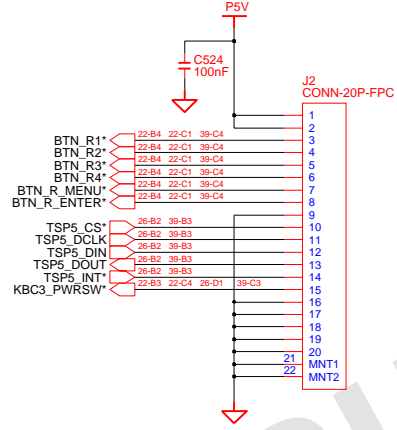
DRAW	S.Y., KIM	DATE	5/16/2006	TITLE	RIO	SAMSUNG ELECTRONICS
CHECK	S.K., PARK	DEV. STEP	PR	MAIN		
APPROVAL	J.S., EUH	REV	1.0	Mini PCI	PART NO.	BA41-00665A
MODULE CODE	undef ined	LAST EDIT	May 16, 2006 9:33:56 PM	PAGE	25	OF 40

SAMSUNG PROPRIETARY
 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.

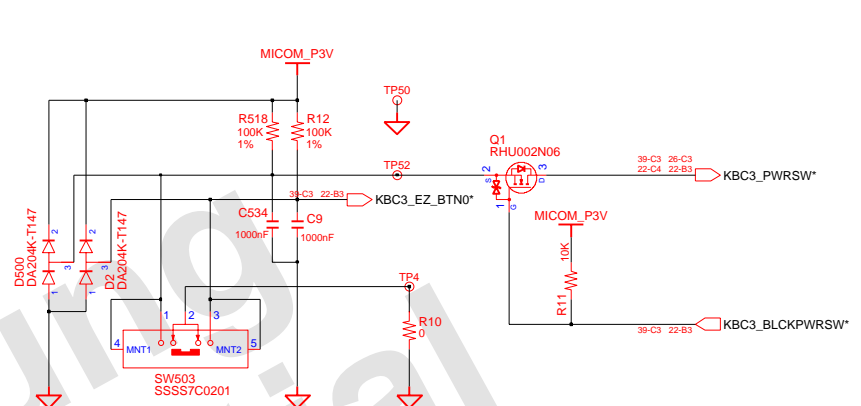
Main to Subboard(Left)



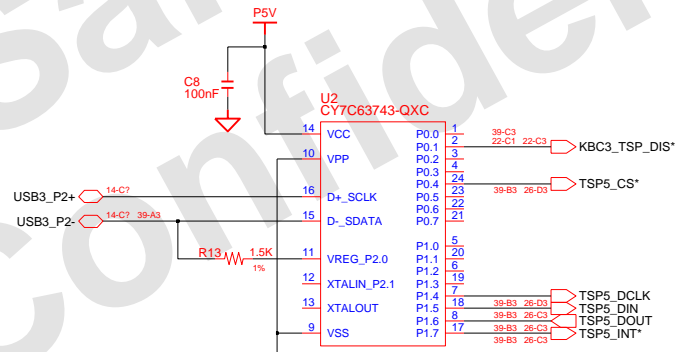
Main to Subboard(Right)



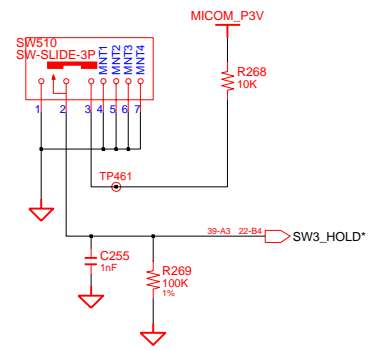
POWER & MIO S/W



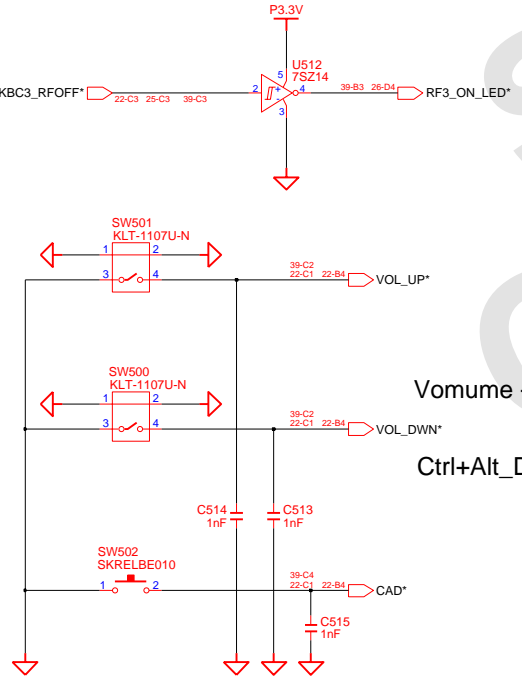
TSP



HOLD S/W



**Vomume +/-
Ctrl+Alt_Del**

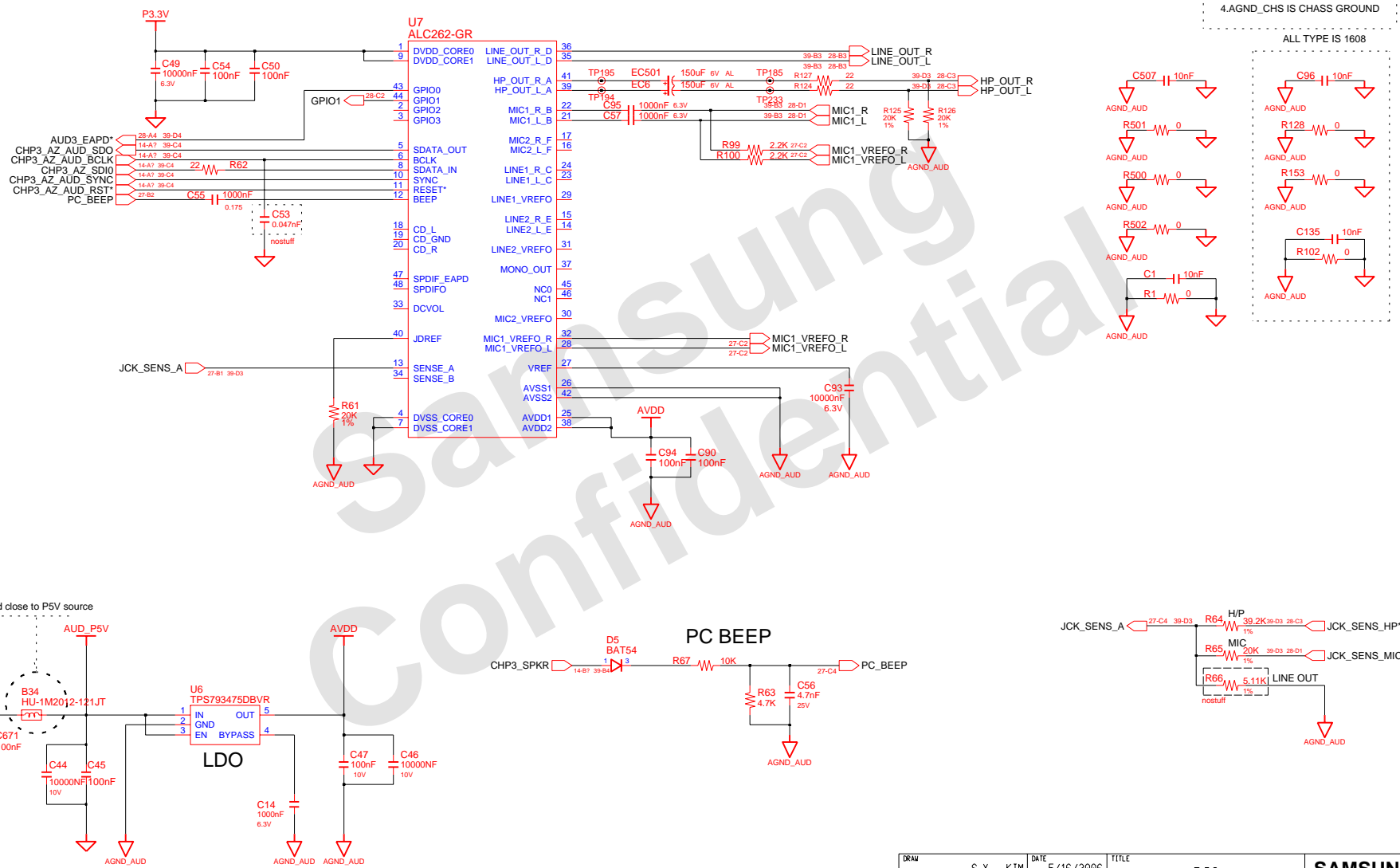


DRAW	S.Y., KIM	DATE	5/16/2006	TITLE	R10	SAMSUNG ELECTRONICS
CHECK	S.K., PARK	DEV. STEP	PR	MAIN		
APPROVAL	J.S., EUH	REV	1.0	TSP & SUB B'D Conn. & S/W		PART NO. BA41-00665A
MODULE CODE	undefined	LAST EDIT	May 16, 2006 9:33:56 PM	PAGE	26	OF 40

SAMSUNG PROPRIETARY

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.

- 1. AGND_AUD IS AUDIO GROUND
 - 2. GND IS DIGITAL GROUND
 - 3. AGND_MIC IS MIC GROUND
 - 4. AGND_CHS IS CHASSIS GROUND
- ALL TYPE IS 1608



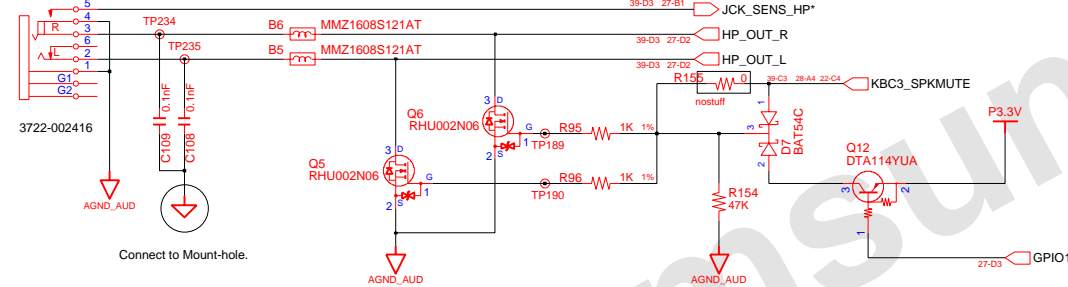
DRAW	S.Y., KIM	DATE	5/16/2006	TITLE	R10 MAIN Audio Codec	SAMSUNG ELECTRONICS PART NO. BA41-00665A
CHECK	S.K., PARK	DEV. STEP	PR			
APPROVAL	J.S., EUH	REV	1.0			
MODULE CODE	undefined	LAST EDIT	May 16, 2006 9:33:56 PM	PAGE	27 OF 40	

SAMSUNG PROPRIETARY

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.

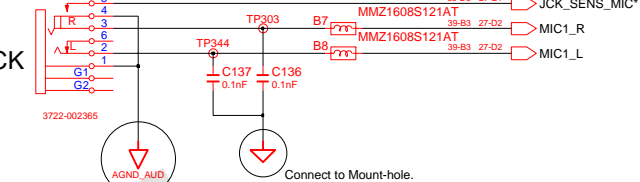
HEADPHONE

HP500 JACK-PHONE-6P-LIME

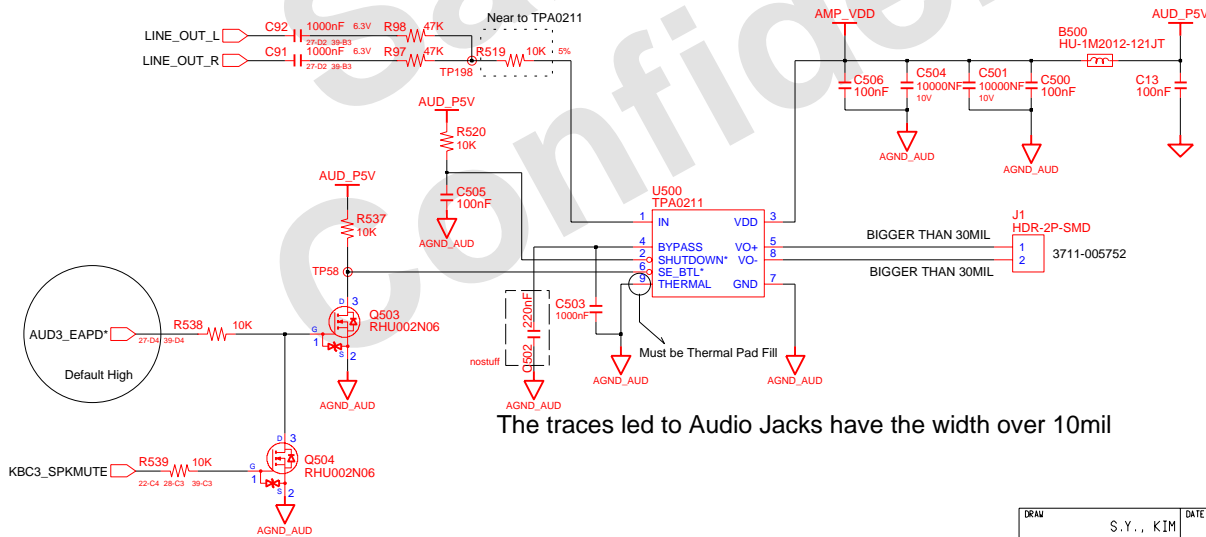


MIC JACK

J505 JACK-PHONE-6P-PINK



AMP_VDD



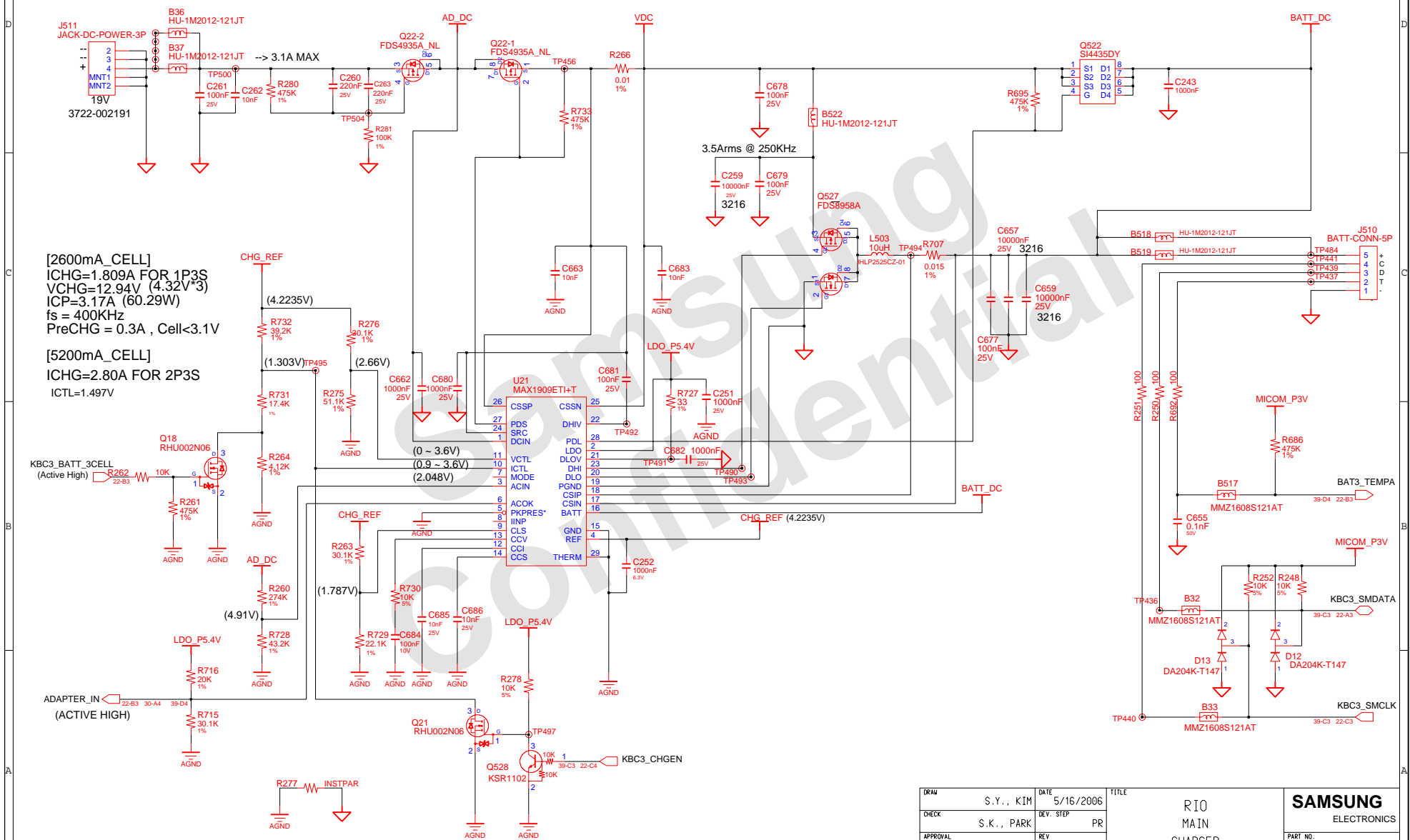
The traces led to Audio Jacks have the width over 10mil

DRAW	S.Y., KIM	DATE	5/16/2006	TITLE	RIO	SAMSUNG ELECTRONICS
CHECK	S.K., PARK	DEV. STEP	PR		MAIN	
APPROVAL	J.S., EUH	REV	1.0	AMP & Spkr Conn & HP Jack	PART NO.	BA41-00665A
MODULE CODE	undefined	LAST EDIT	May 16, 2006 9:33:56 PM	PAGE	28	OF 40

SAMSUNG PROPRIETARY

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.

CHARGER & POWER MANAGEMENT



[2600mA_CELL]
 ICHG=1.809A FOR 1P3S
 VCHG=12.94V (4.32V*3)
 ICP=3.17A (60.29W)
 fs = 400KHz
 PreCHG = 0.3A , Cell<3.1V

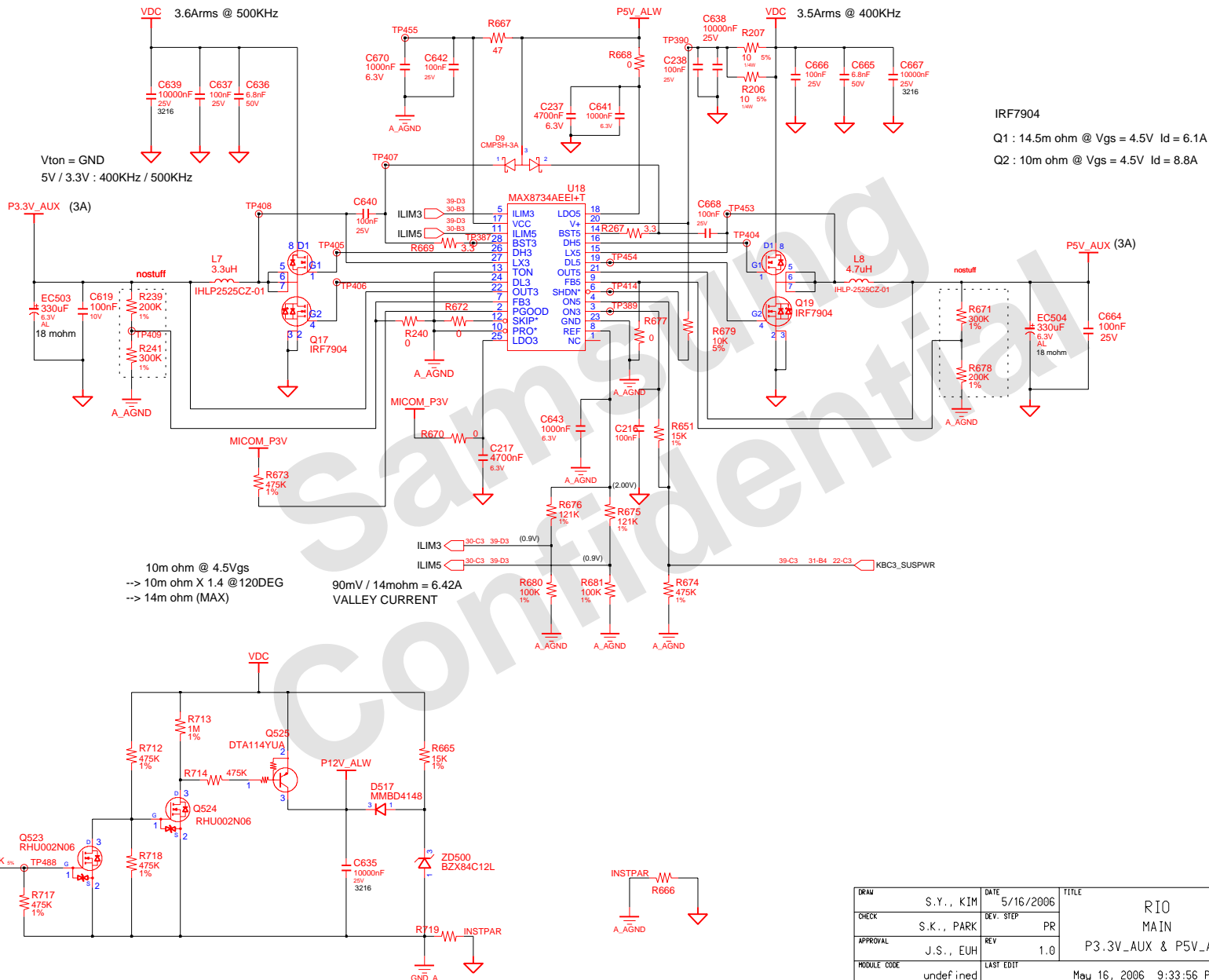
[5200mA_CELL]
 ICHG=2.80A FOR 2P3S
 ICTL=1.497V

DRAW	S.Y., KIM	DATE	5/16/2006	TITLE	RIO MAIN CHARGER	SAMSUNG ELECTRONICS
CHECK	S.K., PARK	DEV. STEP	PR			
APPROVAL	J.S., EUH	REV	1.0			PART NO. BA41-00665A
MODULE CODE	undef ined	LAST EDIT	May 16, 2006 9:33:56 PM	PAGE	29	OF 40

SAMSUNG PROPRIETARY

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.

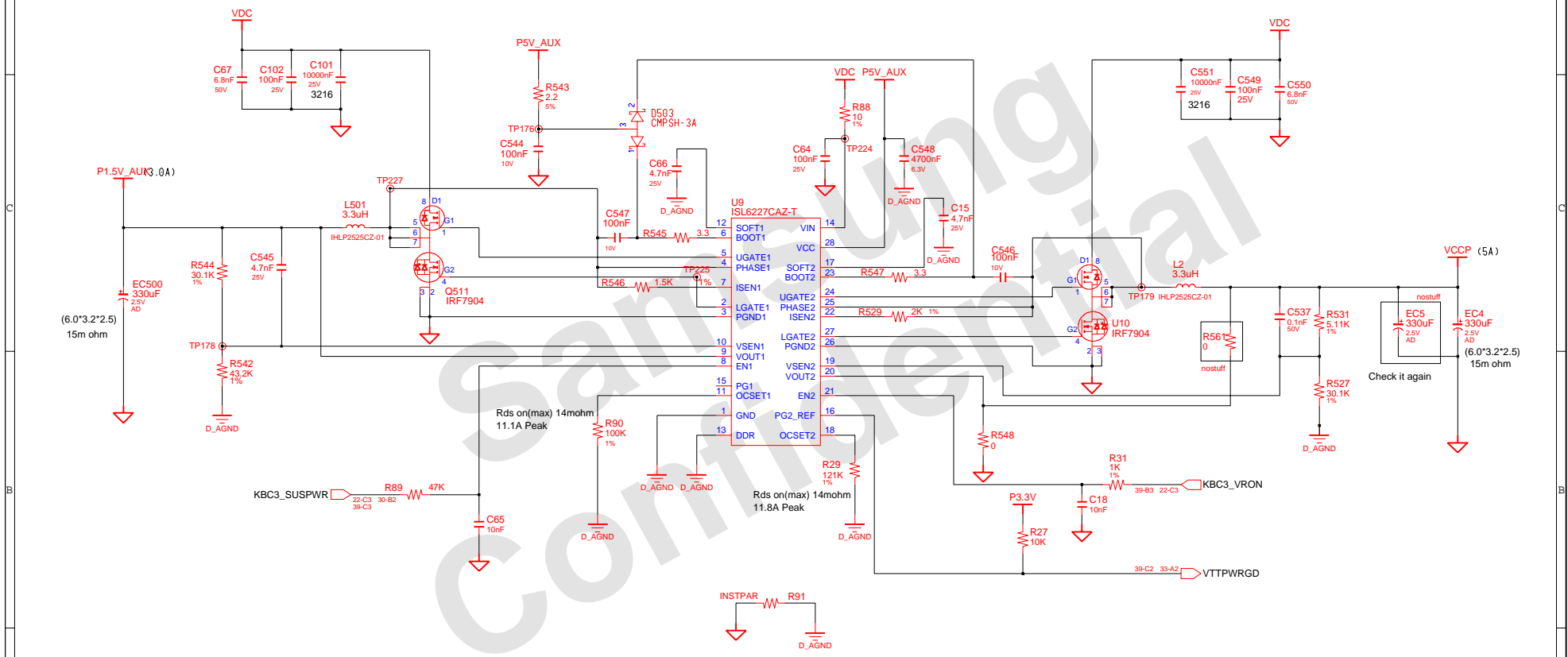
P3.3V_AUX & P5V_AUX & MICOM_P3V



DRAW	S.Y., KIM	DATE	5/16/2006	TITLE	RIO	SAMSUNG ELECTRONICS
CHECK	S.K., PARK	DEV. STEP	PR		MAIN	
APPROVAL	J.S., EUH	REV	1.0		P3.3V_AUX & P5V_AUX	PART NO. BA41-00665A
MODULE CODE	undef ined	LAST EDIT				
				May 16, 2006 9:33:56 PM	PAGE	30 OF 40

SAMSUNG PROPRIETARY
 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.

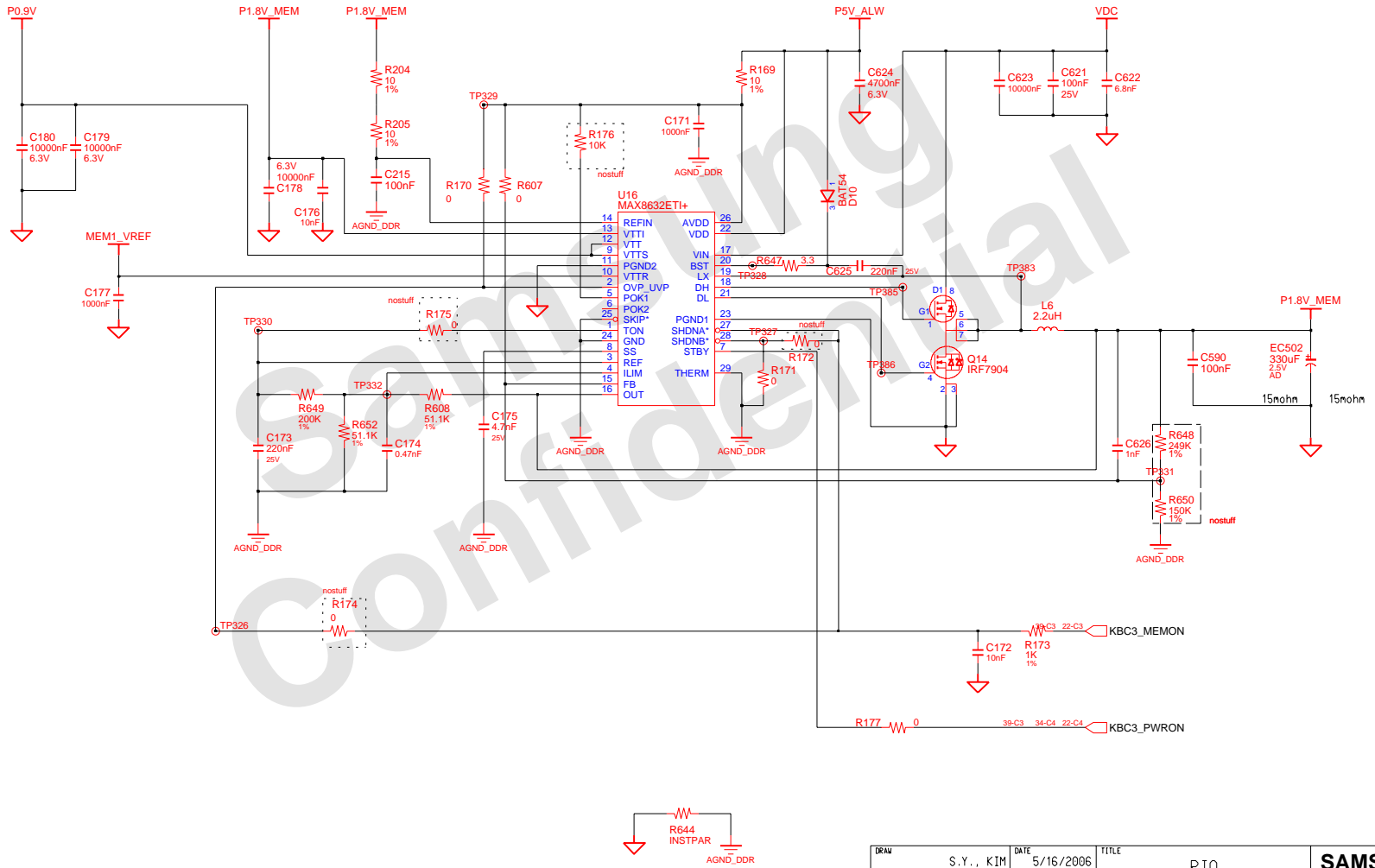
P1.5V_AUX & VCCP (1.05V)



DRAW	S.Y., KIM	DATE	5/16/2006	TITLE	R10	SAMSUNG ELECTRONICS PART NO. BA41-00665A
CHECK	S.K., PARK	DEV. STEP	PR		MAIN	
APPROVAL	J.S., EUH	REV	1.0		P1.5V & VCCP	
MODULE CODE	undef ined	LAST EDIT				
				May 16, 2006 9:33:56 PM	PAGE	31 OF 40

SAMSUNG PROPRIETARY
 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.

DDR2 Power

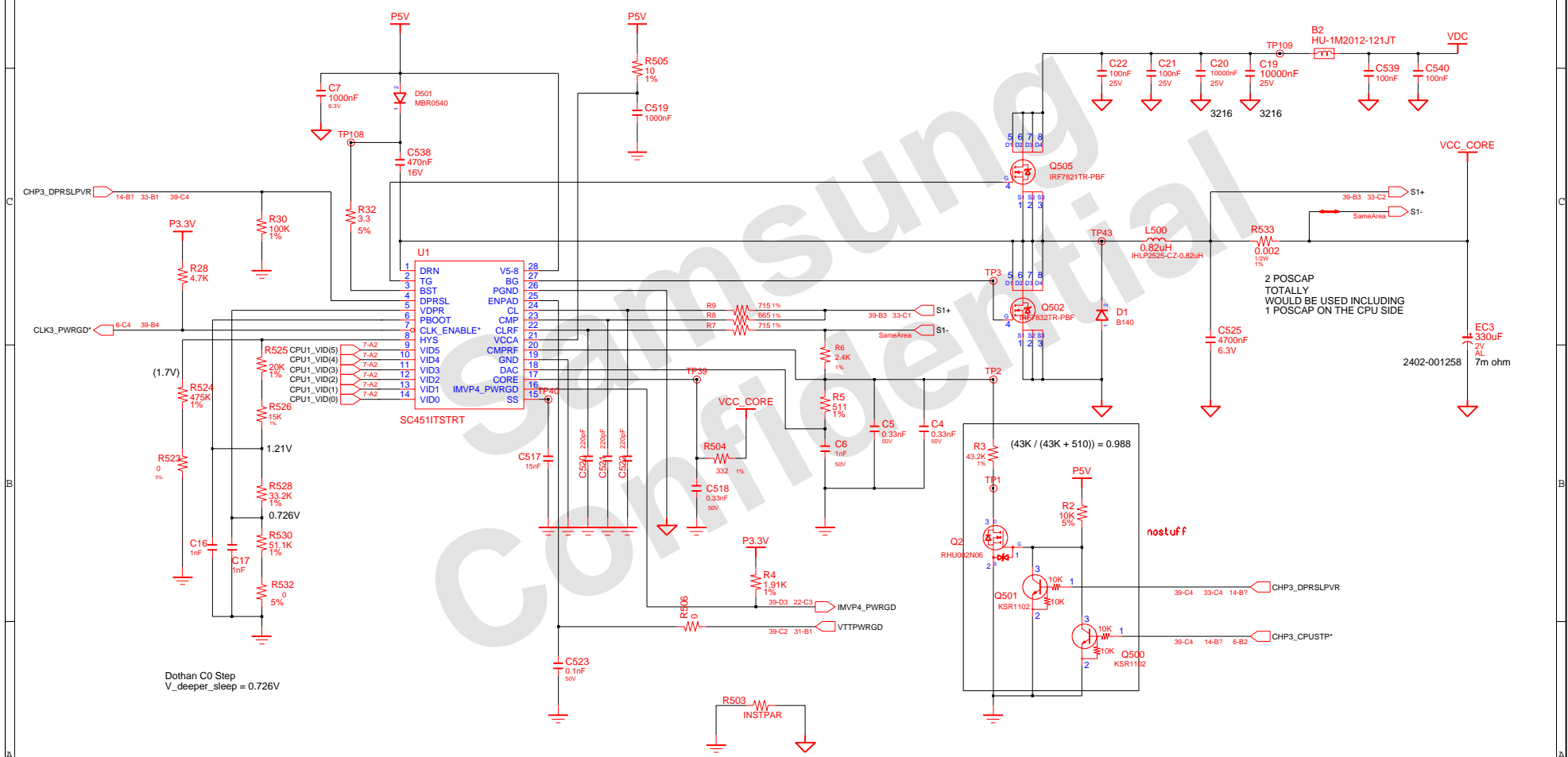


DRAW	S.Y., KIM	DATE	5/16/2006	TITLE	R10 MAIN	SAMSUNG ELECTRONICS
CHECK	S.K., PARK	DEV. STEP	PR	DDR2 POWER	PART NO.	
APPROVAL	J.S., EUH	REV	1.0		BA41-00665A	PAGE 32 OF 40
MODULE CODE	undef ined	LAST EDIT	May 16, 2006 9:33:56 PM			

SAMSUNG PROPRIETARY

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.

CPU VRM



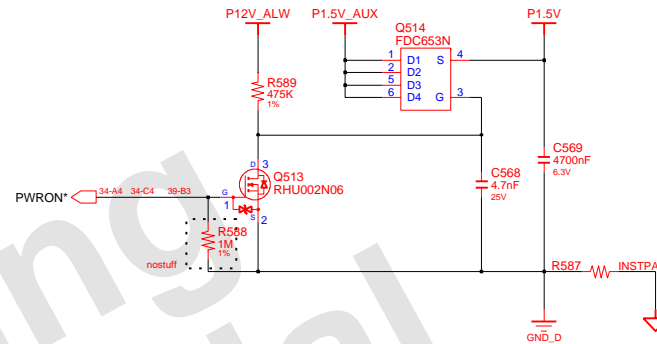
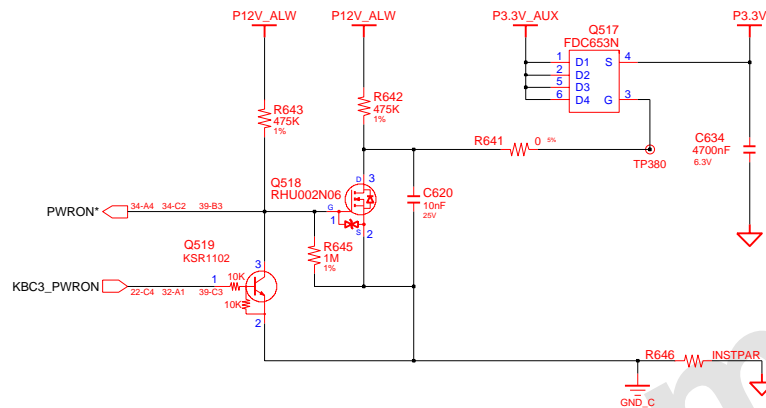
DRAW	S.Y., KIM	DATE	5/16/2006	TITLE	RIO MAIN CPU VRM	SAMSUNG ELECTRONICS PART NO. BA41-00665A
CHECK	S.K., PARK	DEV. STEP	PR			
APPROVAL	J.S., EUH	REV	1.0			
MODULE CODE	undef ined	LAST EDIT	May 16, 2006 9:33:56 PM	PAGE	33 OF 40	

SAMSUNG PROPRIETARY

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.

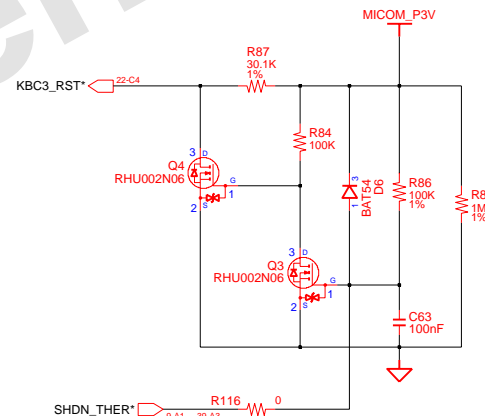
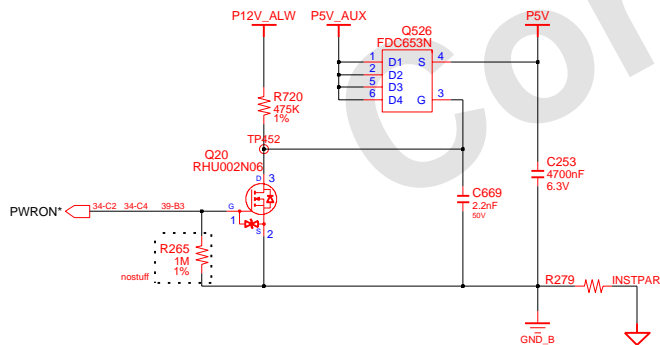
Switched Power On (P1.5V)

Switched Power On (P3.3V)



MICOM RESET

Switched Power On (P5V)

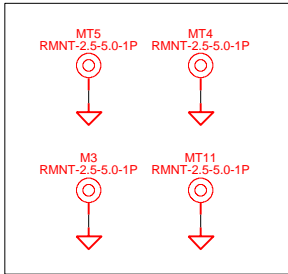


DRAW	S.Y., KIM	DATE	5/16/2006	TITLE	RIO MAIN	SAMSUNG ELECTRONICS
CHECK	S.K., PARK	DEV. STEP	PR	Switched Power		
APPROVAL	J.S., EUH	REV	1.0			PART NO. BA41-00665A
MODULE CODE	undefined	LAST EDIT	May 16, 2006 9:33:56 PM	PAGE	34	OF 40

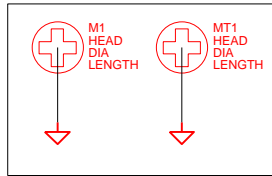
SAMSUNG PROPRIETARY

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.

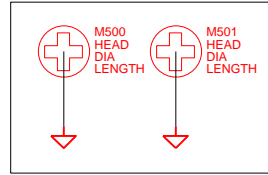
Heatsink PEM



FAN PEM



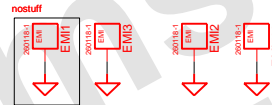
SIM Socket PEM



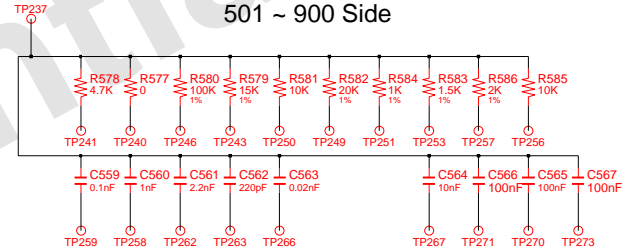
PCB REVISION CONTROL (ICT)				
NO	CONNECTION	DATE(Y/M/D)	REVISION	STEP
1	N.C.			
2	1-2			
3	2-3			
4	3-1			
5	1-2-3			
6	N.C.			
7	1-2			
8	2-3			
9	3-1			
10	1-2-3			

REV500
1 O
2 O 3

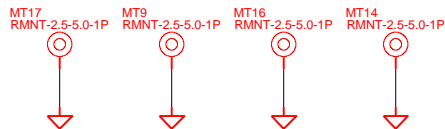
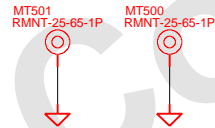
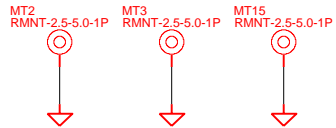
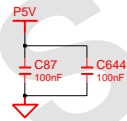
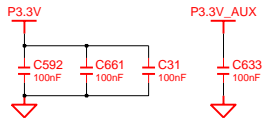
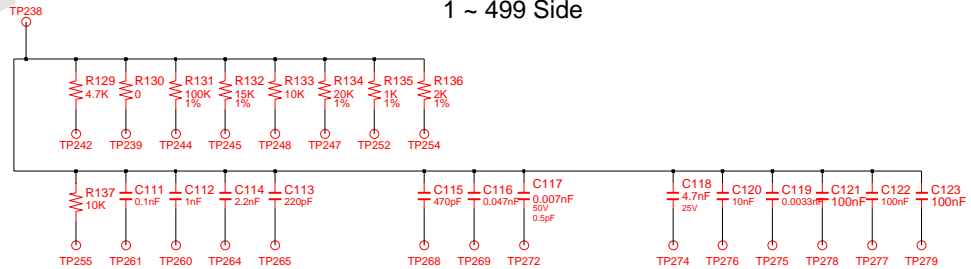
EMI FINGER : 005299021



501 ~ 900 Side



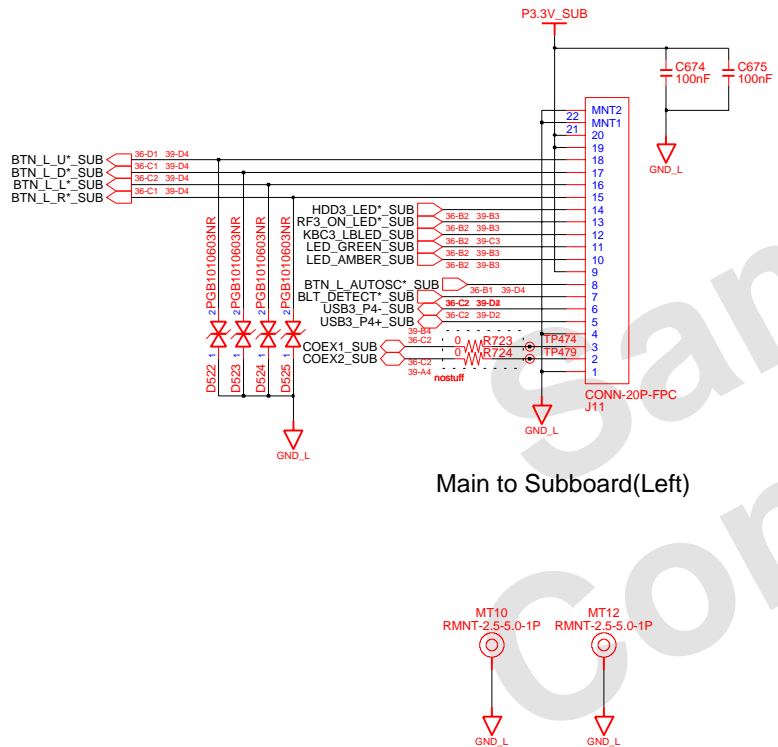
1 ~ 499 Side



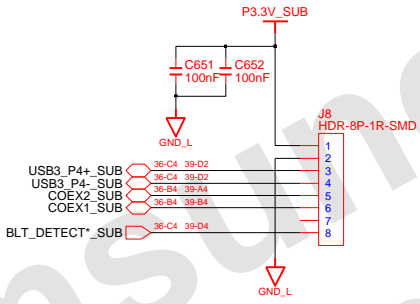
DRAW	S.Y., KIM	DATE	5/16/2006	TITLE	RIO	SAMSUNG ELECTRONICS
CHECK	S.K., PARK	DEV. STEP	PR		MAIN	
APPROVAL	J.S., EUH	REV	1.0		Mount Hole	PART NO. BA41-00665A
MODULE CODE	undef ined	LAST EDIT	May 16, 2006 9:33:56 PM	PAGE	35	OF 40

SAMSUNG PROPRIETARY

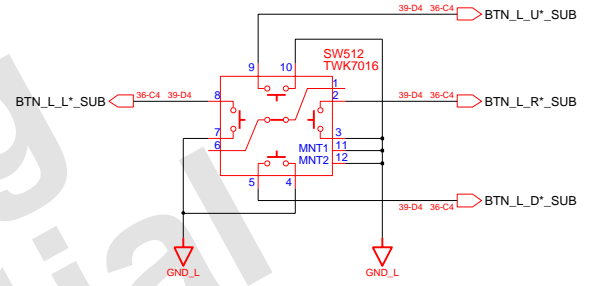
THIS DOCUMENT CONTAINS CONFIDENTIAL PROPRIETARY INFORMATION THAT IS SAMSUNG ELECTRONICS CO.'S PROPERTY. DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS EXCEPT AS AUTHORIZED BY SAMSUNG.



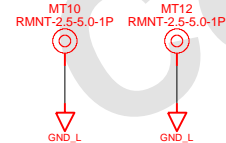
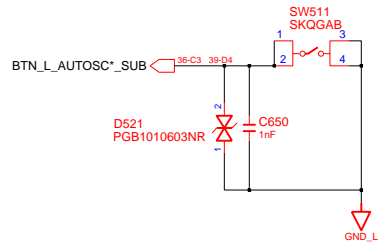
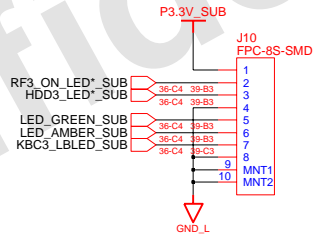
Bluetooth Interface



4 way slide



LED FPC Conn

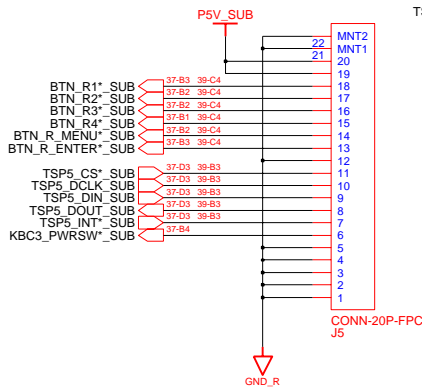


DRAW	S.Y., KIM	DATE	5/16/2006	TITLE	RIO	SAMSUNG ELECTRONICS
CHECK	S.K., PARK	DEV. STEP	PR		MAIN	
APPROVAL	J.S., EUH	REV	1.0		SUB LEFT	PART NO. BA41-00665A
MODULE CODE	undefined	LAST EDIT	May 16, 2006 9:33:56 PM	PAGE	36	OF 40

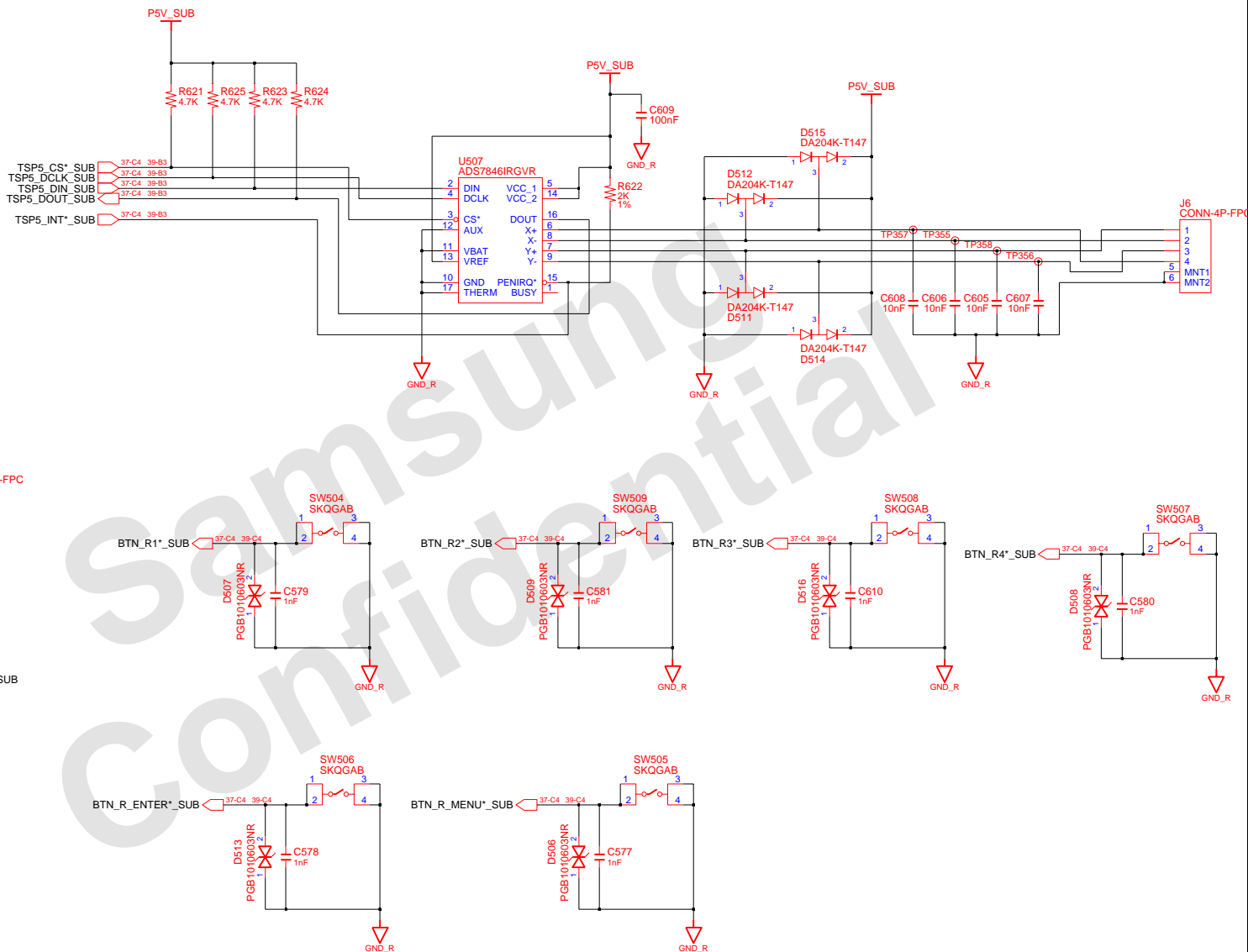
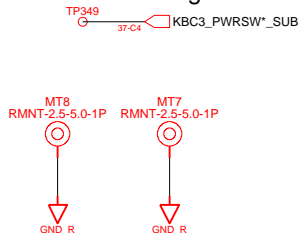
SAMSUNG PROPRIETARY

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.

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



For FCT Jig

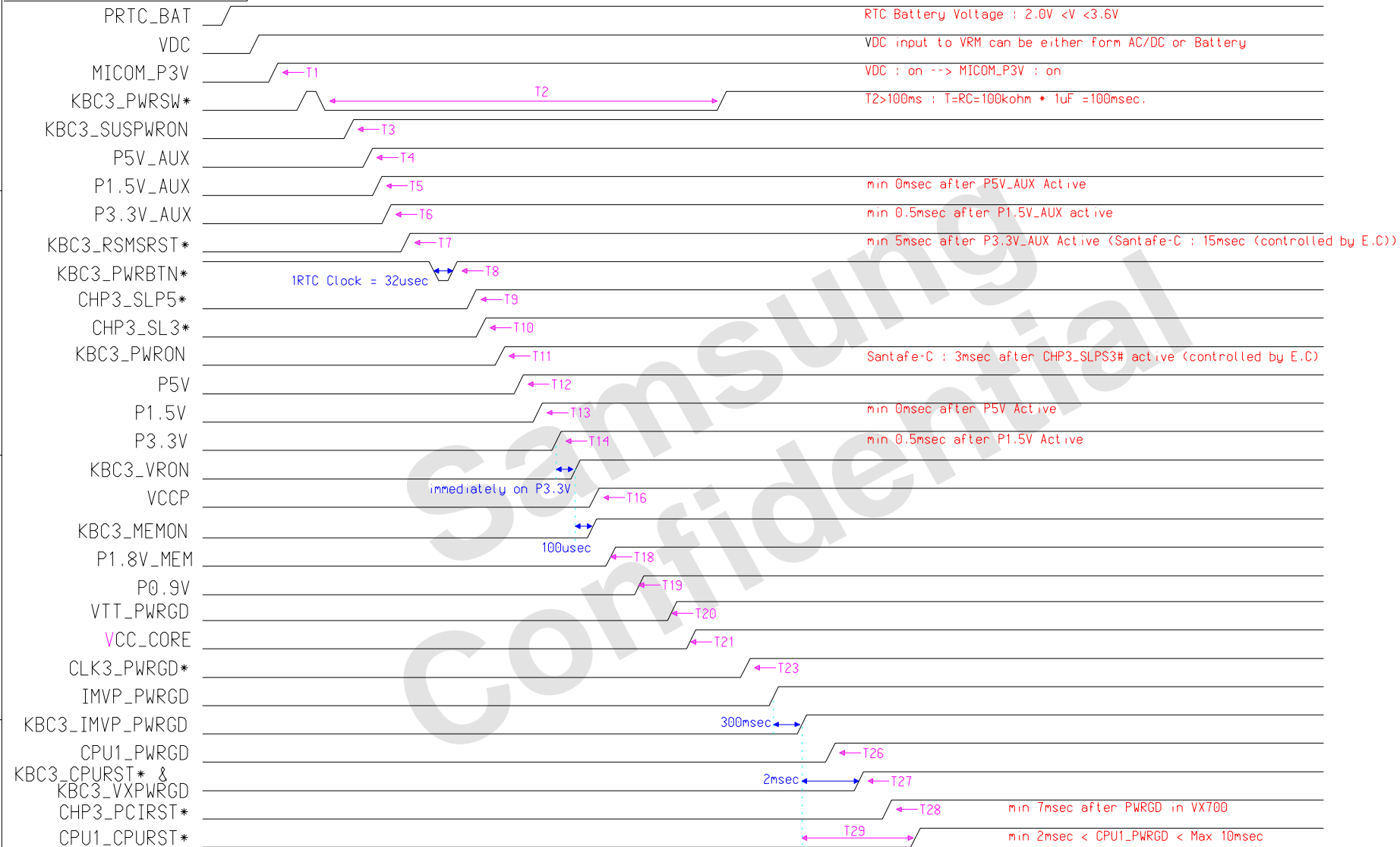


DRAW	S.Y., KIM	DATE	5/16/2006	TITLE	RIO	SAMSUNG ELECTRONICS
CHECK	S.K., PARK	DEV. STEP	PR		MAIN	
APPROVAL	J.S., EUH	REV	1.0		SUB RIGHT	PART NO. BA41-00665A
MODULE CODE	undef ined	LAST EDIT	May 16, 2006 9:33:56 PM	PAGE	37	OF 40

SAMSUNG PROPRIETARY

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.

Power Sequence Timing Diagram



DRAW	S.Y., KIM	DATE	5/16/2006	TITLE	RIO	SAMSUNG ELECTRONICS
CHECK	S.K., PARK	DEV. STEP	PR	MAIN		
APPROVAL	J.S., EUH	REV	1.0	POWER DIAGRAM		PART NO. BA41-00665A
MODULE CODE	undefined	LAST EDIT	May 16, 2006 9:33:56 PM	PAGE	38	OF 40

SAMSUNG PROPRIETARY

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.

TP219 OADAPTER_IN
 TP61 OAUD3_EAPD*
 TP433 OBAT3_TEMP
 TP432 OBL1_DETECT*
 TP476 OBL1_DETECT*_SUB
 TP212 OBTN_L_AUTOSC*
 TP419 OBTN_L_AUTOSC*_SUB
 TP431 OBTN_L_D*
 TP472 OBTN_L_D*_SUB
 TP430 OBTN_L_L*
 TP424 OBTN_L_L*_SUB
 TP152 OBTN_L_R*
 TP480 OBTN_L_R*_SUB
 TP429 OBTN_L_U*
 TP471 OBTN_L_U*_SUB
 TP148 OBTN_R1*
 TP308 OBTN_R1*_SUB
 TP150 OBTN_R2*
 TP311 OBTN_R2*_SUB
 TP146 OBTN_R3*
 TP360 OBTN_R3*_SUB
 TP147 OBTN_R4*
 TP309 OBTN_R4*_SUB
 TP151 OBTN_R_ENTER*
 TP307 OBTN_R_ENTER*_SUB
 TP149 OBTN_R_MENU*
 TP306 OBTN_R_MENU*_SUB
 TP32 OOAD*
 TP139 OCHP3_AZ_AUD_BCLK
 TP141 OCHP3_AZ_AUD_RS1*
 TP138 OCHP3_AZ_AUD_SDO
 TP140 OCHP3_AZ_AUD_SYNC
 TP70 OCHP3_AZ_SDJ0
 TP210 OCHP3_BAT1LQU*

TP298 OCHP3_BKLTON
 TP122 OCHP3_CPUSIP*
 TP375 OCHP3_DPRS_LPVR
 TP445 OCHP3_INTRUDER*
 TP288 OCHP3_OVERT*
 TP124 OCHP3_PCISIP*
 TP159 OCHP3_SERIRO
 TP106 OCHP3_SLPS1*
 TP211 OCHP3_SLPS3*
 TP164 OCHP3_SLPS5*
 TP143 OCHP3_SPKR

TP180 OCLK3_GCLK
 TP160 OCLK3_PCLKM1COM
 TP69 OCLK3_PCLKMIN
 TP120 OCLK3_PWRGD*
 TP182 OCLK3_SMBCLK
 TP121 OCLK3_SMBDATA

TP378 OCLK3_XIN
 TP400 OCODEX1
 TP477 OCODEX1_SUB
 TP74 OCODEX2
 TP478 OCODEX2_SUB

TP162 OFAN3_FDBACK*

TP186 OHP_OUT_L
 TP188 OHP_OUT_R
 TP411 OILIM3
 TP413 OILIM5
 TP34 OIMVP4_PWRGD

TP144 OJCK_SENS_A
 TP236 OJCK_SENS_HP*
 TP302 OJCK_SENS_MIC*
 TP174 OKBC3_A2GG
 TP51 OKBC3_BLCCKPWRSW*
 TP202 OKBC3_BRIT
 TP223 OKBC3_C7PWRGD
 TP207 OKBC3_CHGEN
 TP225 OKBC3_CPURST*
 TP163 OKBC3_EXTSMJ*
 TP45 OKBC3_EZ_BTNO*
 TP145 OKBC3_FANCTRL
 TP364 OKBC3_HDDLED*
 TP221 OKBC3_IMVP4_PWRGD
 TP481 OKBC3_LBLED*
 TP482 OKBC3_LBLED*_SUB
 TP420 OKBC3_LBLED*_SUB
 TP223 OKBC3_MEMON
 TP157 OKBC3_PWRBTN*
 TP204 OKBC3_PWRON
 TP171 OKBC3_PWRSH*
 TP77 OKBC3_RFOFF*
 TP154 OKBC3_RSMRST*

TP209 OKBC3_RUNSCI*
 TP218 OKBC3_SMCLK
 TP216 OKBC3_SMDATA
 TP131 OKBC3_SPKMUTE
 TP175 OKBC3_SUSPWR
 TP286 OKBC3_THERM_SMCLK
 TP287 OKBC3_THERM_SMDATA
 TP105 OKBC3_TSP_DIS*
 TP90 OKBC3_VRON
 TP85 OKBC3_VXPWRGD
 TP170 OKBC3_WAKESC1*
 TP65 OKBC3_WIBROFF*

TP294 OCLCD2_BKLTON
 TP191 OCLCD2_VDDEN
 TP289 OCLCD3_BKLTON
 TP291 OCLCD3_PWMBIA
 TP155 OLED3_CHARGE
 TP153 OLED3_LLBAT

TP467 OLED_AMBER_SUB

TP468 OLED_GREEN_SUB
 TP196 OLINE_OUT_L
 TP197 OLINE_OUT_R
 TP442 OLC3_LAD(0)
 TP206 OLC3_LAD(1)
 TP208 OLC3_LAD(2)
 TP161 OLC3_LAD(3)
 TP156 OLC3_LFRAME*

TP201 OMC1_L
 TP142 OMC1_R

TP102 OPC13_AD(0)
 TP101 OPC13_AD(1)
 TP26 OPC13_AD(10)
 TP86 OPC13_AD(11)
 TP94 OPC13_AD(12)
 TP95 OPC13_AD(13)
 TP27 OPC13_AD(14)
 TP92 OPC13_AD(15)
 TP84 OPC13_AD(16)
 TP17 OPC13_AD(17)
 TP83 OPC13_AD(18)
 TP86 OPC13_AD(19)
 TP167 OPC13_AD(2)
 TP81 OPC13_AD(20)
 TP15 OPC13_AD(21)
 TP79 OPC13_AD(22)
 TP13 OPC13_AD(23)
 TP78 OPC13_AD(24)
 TP11 OPC13_AD(25)
 TP76 OPC13_AD(26)
 TP12 OPC13_AD(27)
 TP75 OPC13_AD(28)
 TP10 OPC13_AD(29)
 TP103 OPC13_AD(3)
 TP72 OPC13_AD(30)
 TP72 OPC13_AD(31)
 TP100 OPC13_AD(4)
 TP31 OPC13_AD(5)
 TP98 OPC13_AD(6)
 TP97 OPC13_AD(7)
 TP29 OPC13_AD(8)
 TP96 OPC13_AD(9)
 TP96 OPC13_CBE0*
 TP28 OPC13_CBE1*
 TP16 OPC13_CBE2*
 TP14 OPC13_CBE3*
 TP20 OPC13_CLKRUN*
 TP91 OPC13_DEVSEL*
 TP87 OPC13_FRAME*
 TP71 OPC13_GNT3*

TP377 OPC13_INTB*
 TP67 OPC13_INTC*
 TP19 OPC13_IRDY*
 TP80 OPC13_PAR*
 TP24 OPC13_PERR*

TP401 OPC13_RE01*
 TP82 OPC13_REG3*
 TP158 OPC13_RS1*
 TP434 OPC13_RSTM*
 TP23 OPC13_SERR*
 TP89 OPC13_STOP*
 TP88 OPC13_TRDY*

TP487 OPOWERBANK_IN
 TP283 OPWRON*
 TP427 ORF3_ON_LED*
 TP480 ORF3_ON_LED*_SUB
 TP41 OSA1*
 TP222 OSHDN_THER*

TP181 OSMB3_CLK
 TP126 OSMB3_DATA
 TP462 OSW3_HOLD*

TP363 OHDD3_A0
 TP366 OHDD3_A1
 TP367 OHDD3_A2
 TP361 OHDD3_CS1*
 TP362 OHDD3_CS2*
 TP312 OHDD3_D(0)
 TP313 OHDD3_D(1)
 TP315 OHDD3_D(10)

TP314 OHDD3_D(12)
 TP318 OHDD3_D(13)
 TP319 OHDD3_D(14)
 TP320 OHDD3_D(15)
 TP316 OHDD3_D(3)

TP317 OHDD3_D(6)

TP372 OHDD3_DACK*
 TP374 OHDD3_DREQ*
 TP373 OHDD3_DEIRO
 TP365 OHDD3_IOR*
 TP369 OHDD3_IORDY
 TP371 OHDD3_IOW*

TP117 OISP5_CS*
 TP352 OISP5_CS*_SUB
 TP49 OISP5_DCLK
 TP353 OISP5_DCLK_SUB
 TP48 OISP5_DIN
 TP350 OISP5_DIN_SUB
 TP46 OISP5_DOUT
 TP351 OISP5_DOUT_SUB
 TP47 OISP5_INT*
 TP348 OISP5_INT*_SUB
 TP412 OUSB3_P0*
 TP458 OUSB3_P0*
 TP192 OUSB3_P1*
 TP133 OUSB3_P1*

TP53 OUSB3_P2-

TP134 OUSB3_P4+
 TP423 OUSB3_P4+_SUB
 TP138 OUSB3_P4-
 TP422 OUSB3_P4-_SUB
 TP36 OUSIM_C4
 TP35 OUSIM_C8
 TP62 OUSIM_CLK
 TP64 OUSIM_DATA
 TP38 OUSIM_VCC
 TP63 OUSIM_RESET
 TP9 OUSIM_VPP
 TP337 OVG42_DDCD
 TP295 OVG42_DDCD
 TP292 OVG42_HSYNC
 TP338 OVG42_VSYNC
 TP335 OVG43_BLUE
 TP286 OVG43_GREEN
 TP297 OVG43_RED
 TP342 OVG45_DDCD
 TP299 OVG45_DDCD

TP21 OVOL_DWN*
 TP25 OVOL_UP*
 TP107 OVTPWRGD

TP498 OAD_DC
 TP498 OAD_DC
 TP496 OACND

TP6 OAGND_AUD
 TP5 OAGND_AUD
 TP8 OAGND_AUD

TP325 OAGND_DDR
 TP395 OAGND_LL

TP7 OAMP_VDD

TP290 OINV_VDC

TP22 OAUD_P5V
 TP129 OAUD_P5V

TP200 OAVDD

TP410 OAGND

TP443 OBATT_DC

TP448 OCHC_REF

TP177 OD_AGND

TP37 OGD1

TP450 OGD_B

TP281 OGD_D

TP425 OGND_LL
 TP465 OGND_LL
 TP426 OGND_LL
 TP466 OGND_LL

TP310 OGND_R
 TP280 OGND_R
 TP346 OGND_R
 TP347 OGND_R

TP226 OGROUND
 TP57 OGROUND
 TP44 OGROUND
 TP42 OGROUND
 TP509 OGROUND
 TP426 OGROUND
 TP393 OGROUND
 TP382 OGROUND
 TP483 OGROUND
 TP502 OGROUND

TP290 OINV_VDC

TP508 OLCD_VDD3V
 TP396 OLCD_VDD3V
 TP464 OLCD_VDD3V

TP489 OCLD0_PS_4V

TP220 OCMICOM_P3V
 TP217 OCMICOM_P3V

TP334 OP0_9V

TP135 OP1_5V
 TP284 OP1_5V

TP391 OVDC
 TP416 OVDDA

TP229 OP1_5V_AUX
 TP228 OP1_5V_AUX

TP323 OP1_8V_MEM
 TP381 OP1_8V_MEM
 TP322 OP1_8V_MEM

TP345 OVEEC

TP376 OP12V_ALW

TP399 OP3_3V
 TP18 OP3_3V
 TP199 OP3_3V
 TP339 OP3_3V
 TP30 OP3_3V

TP193 OP3_3V_AUX
 TP137 OP3_3V_AUX
 TP173 OP3_3V_AUX
 TP68 OP3_3V_AUX
 TP475 OP3_3V_SUB
 TP470 OP3_3V_SUB

TP421 OP3_3V_SUB
 TP6 OP5V
 TP33 OP5V
 TP451 OP5V
 TP127 OP5V
 TP112 OP5V
 TP446 OP5V_ALW

TP384 OP5V_ALW

TP59 OP5V_AUX

TP80 OP5V_AUX
 TP449 OP5V_AUX
 TP354 OP5V_SUB
 TP359 OP5V_SUB

TP417 OVCCM

TP230 OVCCP
 TP119 OVCCP
 TP231 OVCCP

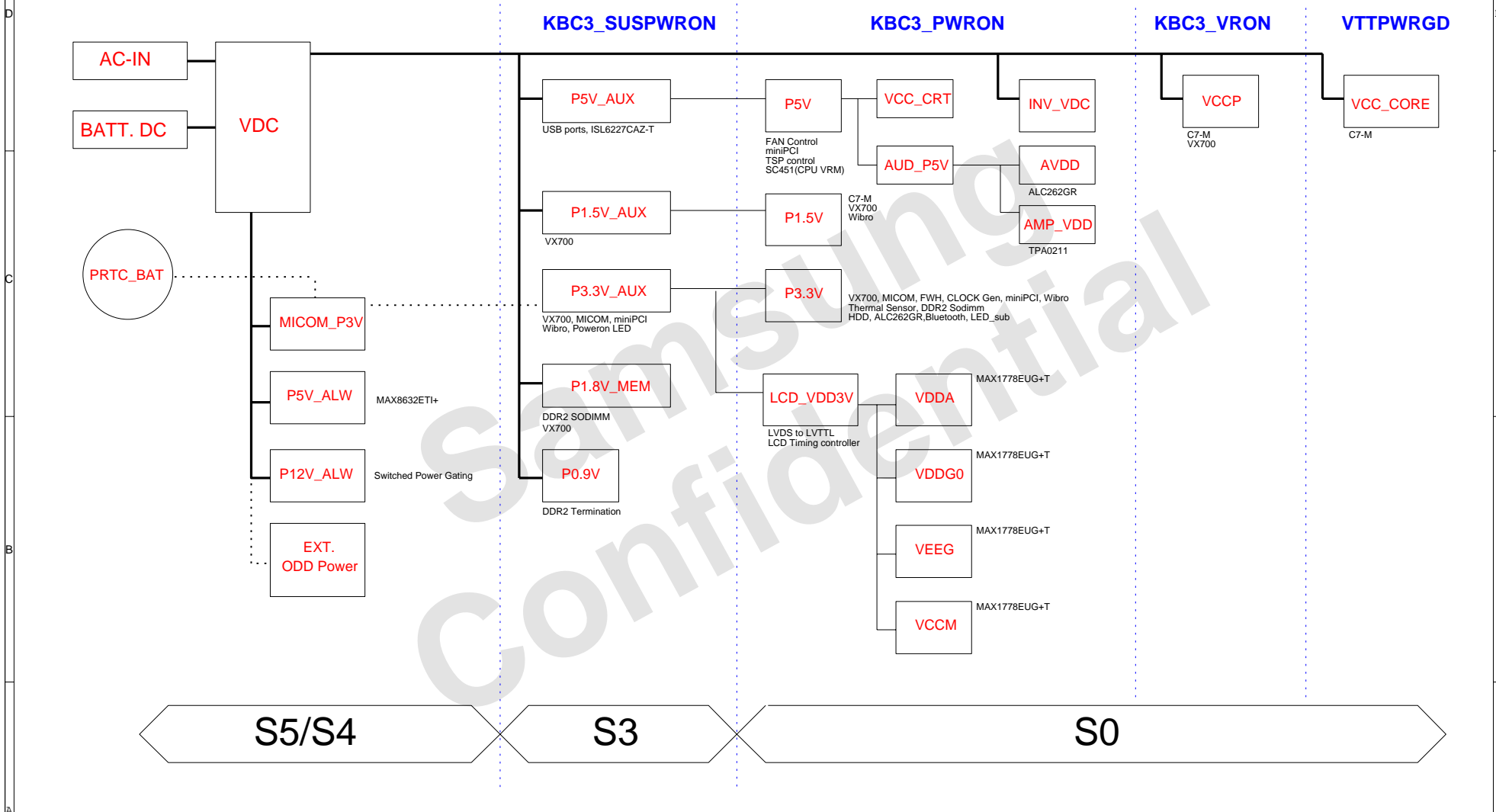
TP115 OVCC_CORE
 TP113 OVCC_CORE
 TP116 OVCC_CORE
 TP114 OVCC_CORE
 TP119 OVCC_CORE
 TP392 OVCC_CR1

TP55 OVDC
 TP111 OVDC
 TP110 OVDC
 TP457 OVDC

DRAW	S.Y., KIM	DATE	5/16/2006	TITLE	RIO	SAMSUNG ELECTRONICS
CHECK	S.K., PARK	DEV. STEP	PR	MAIN		
APPROVAL	J.S., EUH	REV	1.0	MODIFICATION HISTORY	PART NO.	BA41-00665A
MODULE CODE		LAST EDIT				
				May 16, 2006 9:33:56 PM	PAGE	39 OF 40

SAMSUNG PROPRIETARY
 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.

Power Rail Stage



DRAW	S.Y., KIM	DATE	5/16/2006	TITLE	RIO MAIN	SAMSUNG ELECTRONICS
CHECK	S.K., PARK	DEV. STEP	PR			
APPROVAL	J.S., EUH	REV	1.0			PART NO. BA41-00665A
MODULE CODE		LAST EDIT		May 16, 2006 9:33:56 PM	PAGE 40 OF 40	