

Table of Contents

GENEVA 2 EXT

CPU : Penryn
Chip Set : Cantiga + ICH9M
Remarks : Mobility Platform

Model Name : GENEVA 2 EXT

PBA Name : MAIN

PCB Code : SGCE BA41-00930A
NAYA BA41-00936A

Dev. Step : PV1.0

Revision : 1.0

T.R. Date :

DRAW	CHECK	APPROVAL
SUN XIAO	WUSHIJIANG	BC.LEE

DRAW	SUN XIAO,	DATE	2/27/2008	TITLE	Gevena 2 ext	SAMSUNG
CHECK	WU SHIJIANG,	DEV. STEP	PV			ELECTRONICS
APPROVAL	BYEONGCHANG LEE,	REV	1.0	COVER		PART NO. BA41-####A
MODULE CODE	undefined	LAST EDIT	May 08, 2008 19:01:59 PM	PAGE	1	OF 23

[illegible]

BOARD INFORMATION

SCHEMATIC ANNOTATIONS AND BOARD INFORMATION

PCI Devices

Devices	IDSEL#	REQ/GNT#	Interrupts
Cardbus	AD25	3	B,C,D
DT PCI SLOT	AD22	1	B,C,D,C
MiniPCI SLOT	AD23	2	A,B
USB	AD29(internal)	-	USB2.0 #0 (USB0) : A USB2.0 #1 (USB1) : D USB2.0 #2 (USB4) : C USB2.0 #3 (USB5) : E USB2.0 #4 (EHCI) : H
Hub to PCI	AD30(internal)	-	-
LPC bridge/IDE/AC97/SMBUS	AD31(internal)	-	B
Internal MAC	AD24(internal)	-	E
AC Link	-	-	B
GLAN	-	-	F

Voltage Rails

VDC	Primary DC system power supply (7 to 21V)
VCC_CORE	Core Voltage for CPU
MCH_CORE	Core Voltage for CPU
ICH_CORE	Core Voltage for CPU
P1.05V (VCCP)	VTT for CPU, Crestline & ICH8-M
P1.05V_M	1.05V switched power rail for ME (on in M0/M1)
P1.25V_M	1.25V switched power rail for ME (on in M0/M1)
P3.3V_M	3.3V switched power rail for ME (on in M0/M1)
P3.3V_A	3.3V always power rail (by KBC3_ALWS_ON)
MICOM_P3V	3.3V always power rail (for Micom)
LAN_3.3V	3.3V always power rail (for LAN)
P1.5V	1.5V switched off power rail (off in S3-S5)
P1.5V_AUX	1.5V switched on power rail
P2.5V	2.5V switched off power rail (off in S3-S5)
P1.8V	1.8V switched off power rail (off in S3-S5)
P1.8V_AUX	1.8V power rail for DDR
P0.9V	0.9V power rail for DDR
P3.3V	3.3V switched off power rail (off in S3-S5)
P3.3V_AUX	3.3V switched on power rail
P5V	5.0V switched off power rail (off in S3-S5)
P5V_AUX	5.0V switched on power rail

USB PORT Assign

PORT #	ASSIGNED TO
0	SYSTEM PORT 0
1	SYSTEM PORT 1
2	DMB
3	Expresas Card
4	DOCKING PORT 0
5	Bluetooth
6	Mini PCI Express
7	Aux Display
8	Test Port (RSVD)
9	WWAN/WIBRO (TBD)

PCI Express Assign

PORT #	ASSIGNED TO
0	PCIE x1 Slot
1	Mini Card (Golan)
2	Mini Card (WIBRO : RSVD)
3	Expresas Card
4	DOCKING PORT 0
5	GLAN

Crystal / Oscillator

TYPE	FREQUENCY	DEVICE	USAGE
Crystal	32.768KHz	ICH8-M	Real Time Clock
Crystal	10MHz	MICOM	HD64F2169/2160
Crystal	14.318MHz	CLOCK-Generator	CK-505
Crystal	24.576MHz	Cardbus Controller	1394
Crystal	25MHz	LAN	Intel LAN
Crystal	27MHz (TBD)	VIDEO	PEG
Crystal	24.576MHz (TBD)	HD Audio	Audio

LCD Pannel Detect

(TBD)

Devices	Resolution	PANNEL_DETECT_0

I²C / SMB Address

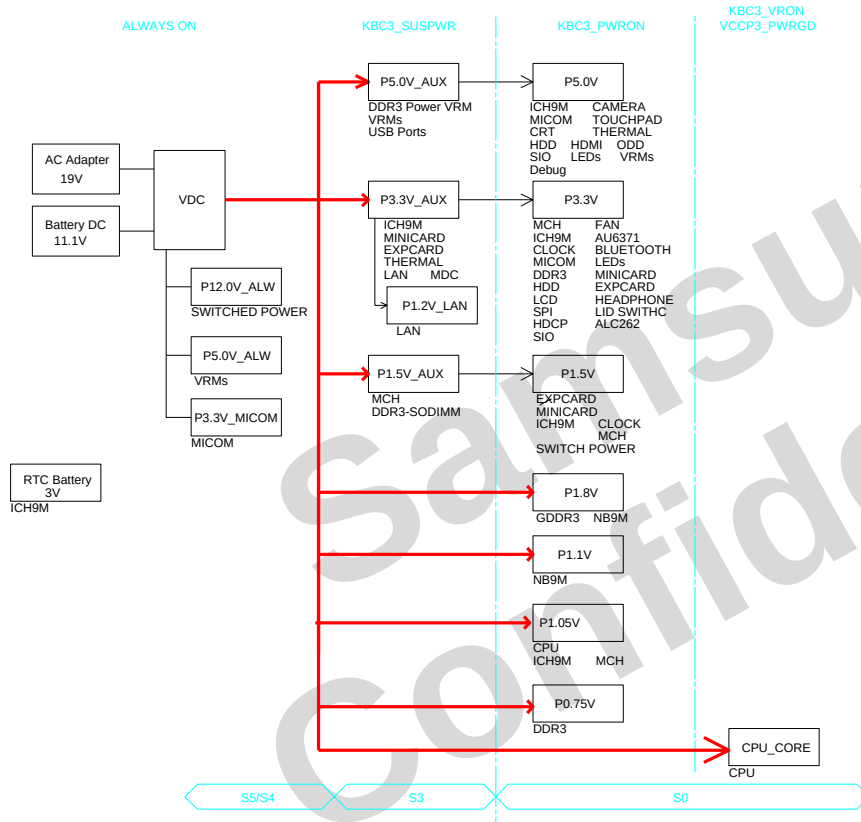
Devices	Address	Hex	Bus
ICH8-m	Master	-	SMBUS Master
CPU Thermal Sensor	1001 110x	9Ch	Thermal Sensor
SODIMM0	1010 000x	A0h	-
SODIMM1	1010 010x	A4h	-
Thermal Sensor on SODIMM0	0011 000x	30h	-
Thermal Sensor on SODIMM1	0011 010x	34h	-
CK-505M (Clock Generator)	1101 001x	D2h	Clock, Unused Clock Output Disable
DB400 (PCI Express Clocks)	1101 110x	DCh	Clock Buffer for PCI Express
TBD	0100 1100	4Ch	Thermal Sensor
TBD : (LVDS BackLight Inverter)	0101 1000	58h	-
TBD : (ALS)	0111 0010	72h	Ambient Light Sensor
TBD : (AUX DISPLAY)	0011 110x	3Ch	EMA
LAN	1100 1000	C8h	82566
PCI Express Docking	TBD	TBD	TBD
TPM	TBD	TBD	TBD

REVISION HISTORY

See rev notes for more information.

DRAW	SUN XIAO,	DATE	2/27/2008	TITLE	Geneva 2 ext	SAMSUNG ELECTRONICS
CHECK	WU SHIJIANG,	DEV. STEP	PV			
APPROVAL	BYEONGCHANG LEE,	REV	1.0	BOARD INFO		PART NO. BA41-####A
MODULE CODE		LAST EDIT			May 08, 2008 19:01:59 PM	PAGE 3 OF 23

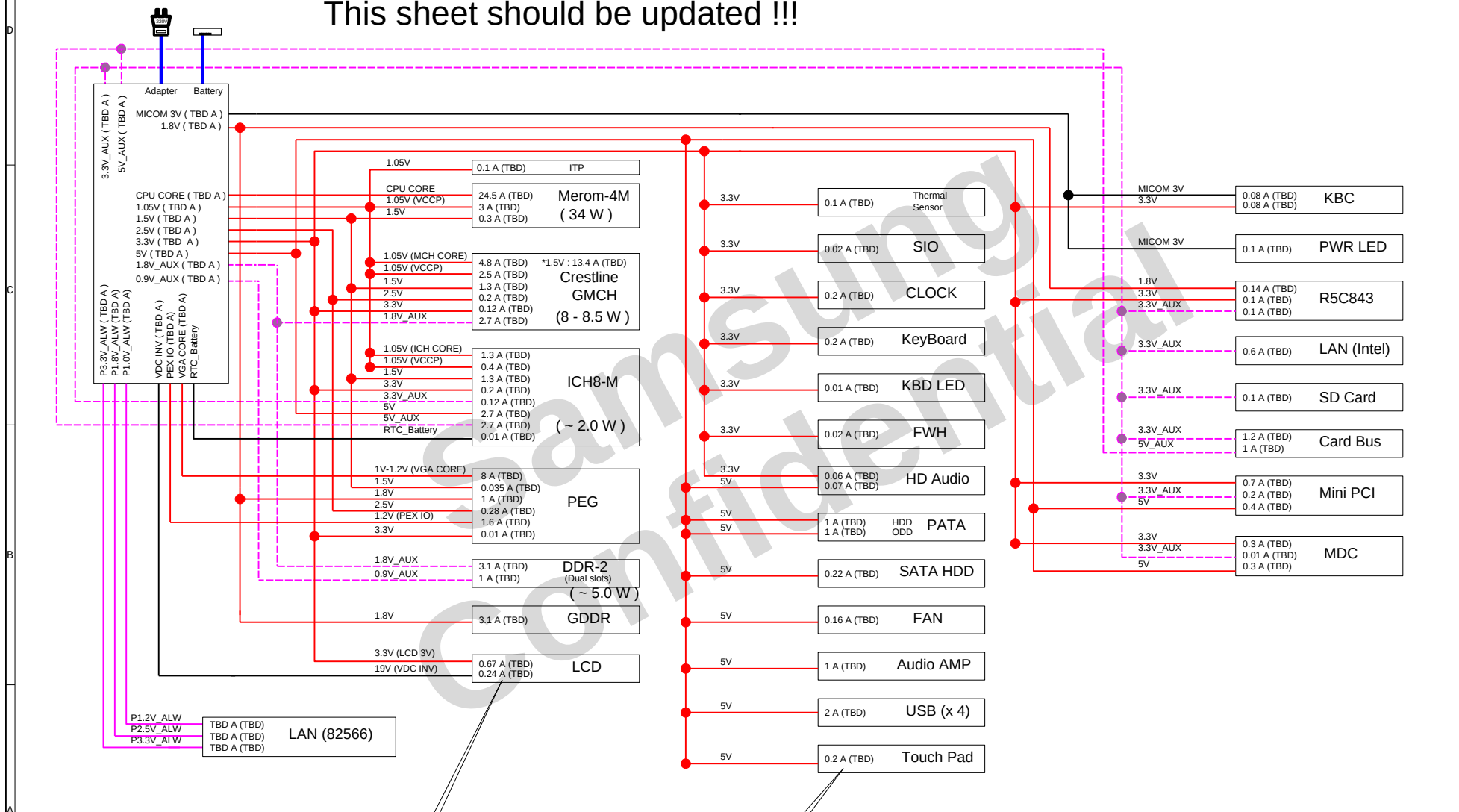
POWER DIAGRAM



State	Rail	+V*Always	+V*AUX	+V	SUSPWR	PWRON	VRON
Full On		ON	ON	ON	H	H	H
S3		ON	ON	OFF	H	L	L
S4		ON	OFF	OFF	H	L	L
S5		ON	OFF	OFF	L	L	L

DRAW	SUN XIAO,	DATE	2/27/2008	TITLE	Geneva 2 ext	SAMSUNG ELECTRONICS PART NO. BA41-####A
CHECK	WU SHIJIANG,	DEV. STEP	PV			
APPROVAL	BYEONGCHANG LEE,	REV	1.0	POWER DIAGRAM		
MODULE CODE		LAST EDIT	May 08, 2008 19:01:59 PM	PAGE	4 OF 23	

This sheet should be updated !!!

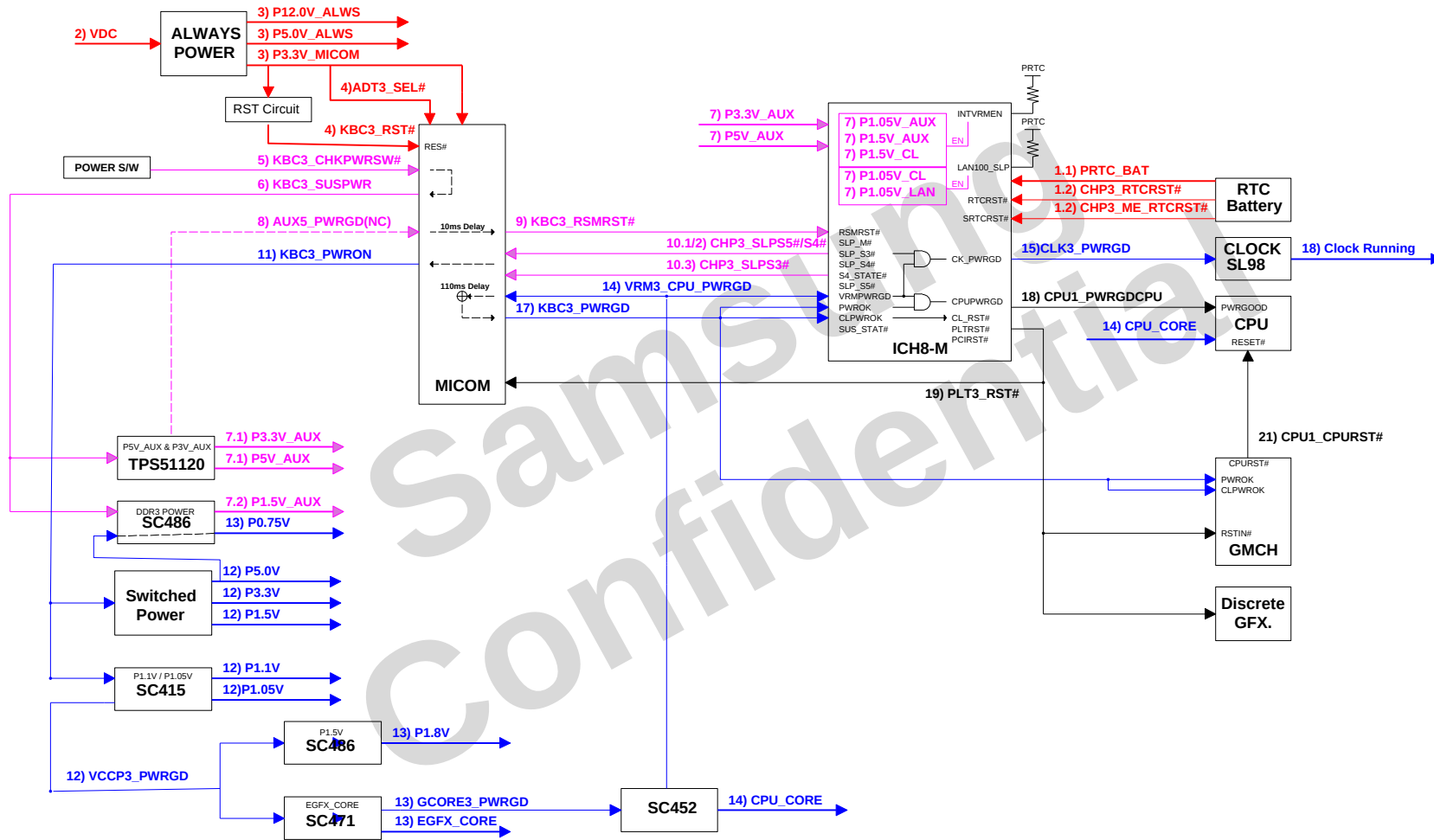


Value by Datasheet/Application notes (Value by measurement)

DRAW	SUN XIAO,	DATE	2/27/2008	Gevena 2 ext		SAMSUNG ELECTRONICS			
CHECK	WU SHUJIAN,	REV. STEP	PV						
APPROVAL	BYEONGCHANG LEE,	REV	1.0	POWER RAILS		PART NO. BA41-####A			
MODULE CODE	LAST EDIT								
				May 08, 2008 19:01:59 PM		PAGE	5	OF	23

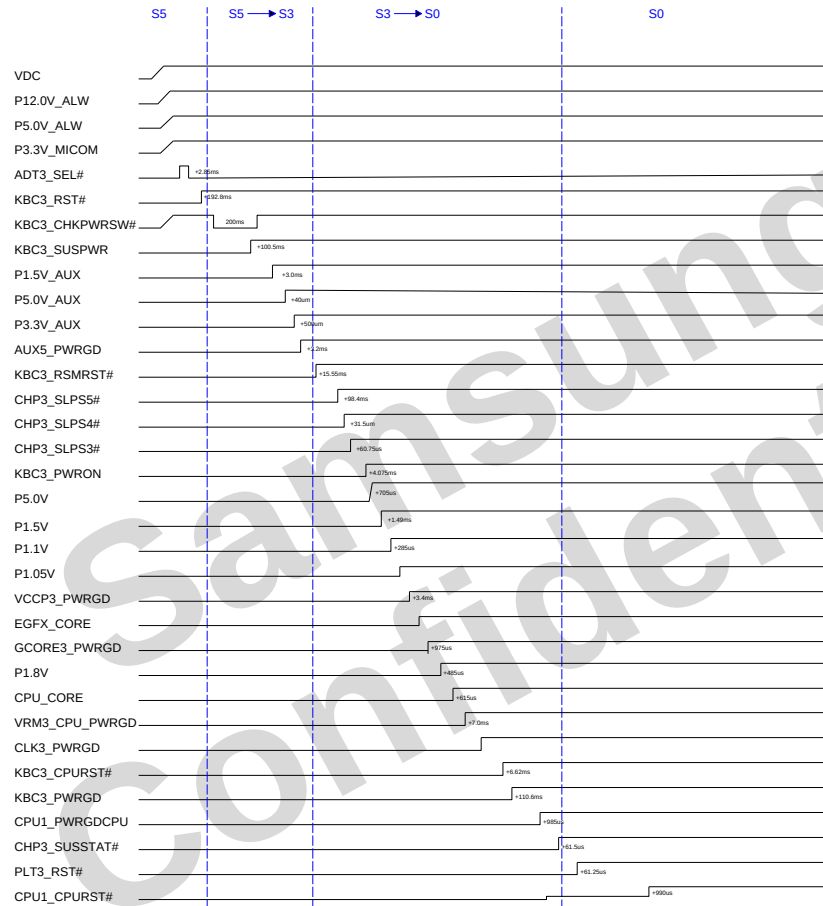
POWER SEQUENCE

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.



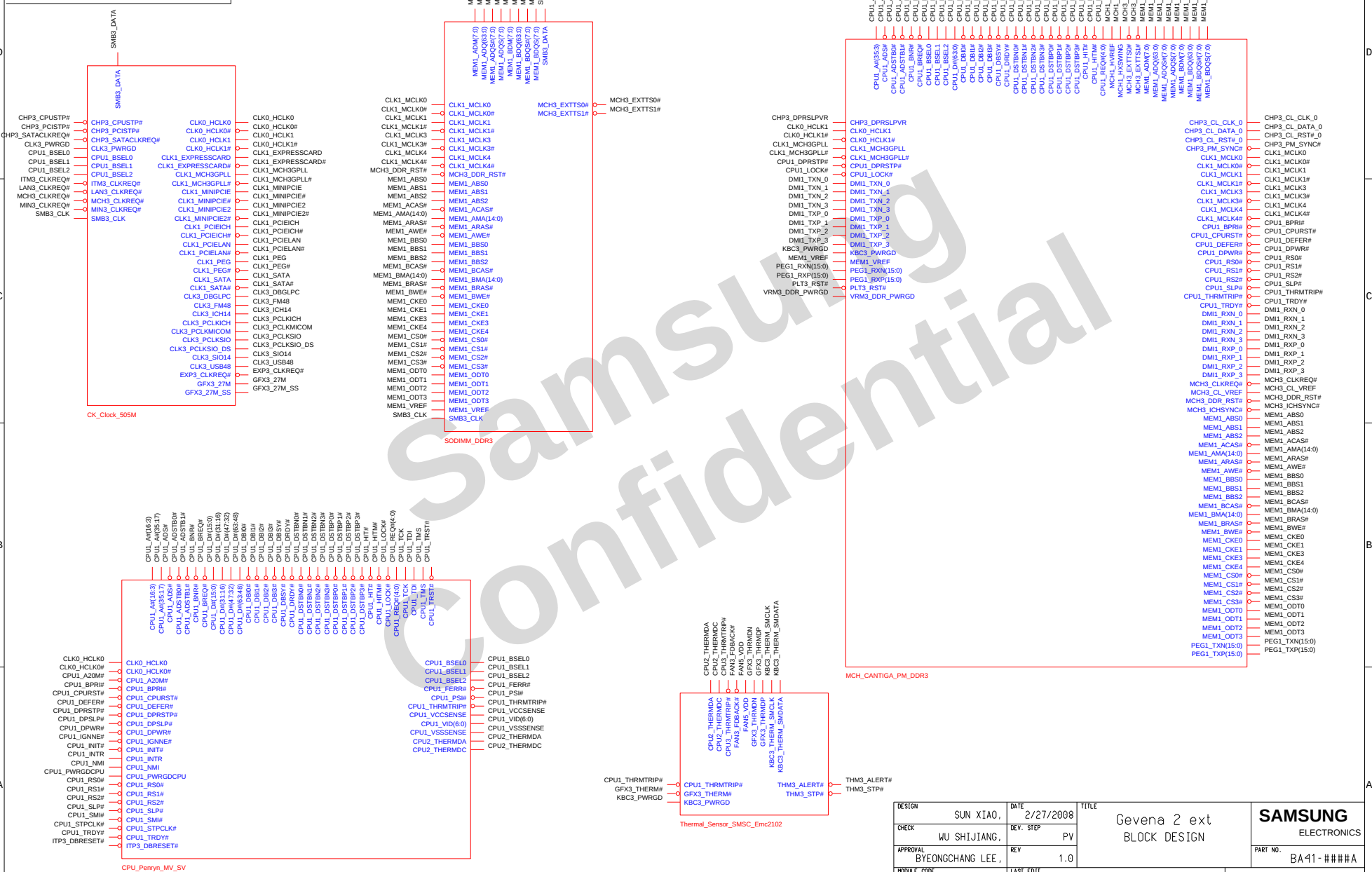
DRAW	SUN XIAO,	DATE	2/27/2008	TITLE	Geneva 2 ext	SAMSUNG
CHECK	WU SHIJIANG,	DEV. STEP	PV			ELECTRONICS
APPROVAL	BYEONGCHANG LEE,	REV	1.0	POWER SEQUENCE	PART NO.	BA41-####A
MODULE CODE		LAST EDIT	May 08, 2008 19:01:59 PM	PAGE	6	OF 23

Timing Diagram, Power ON Rev. 1.0 2008-05--5

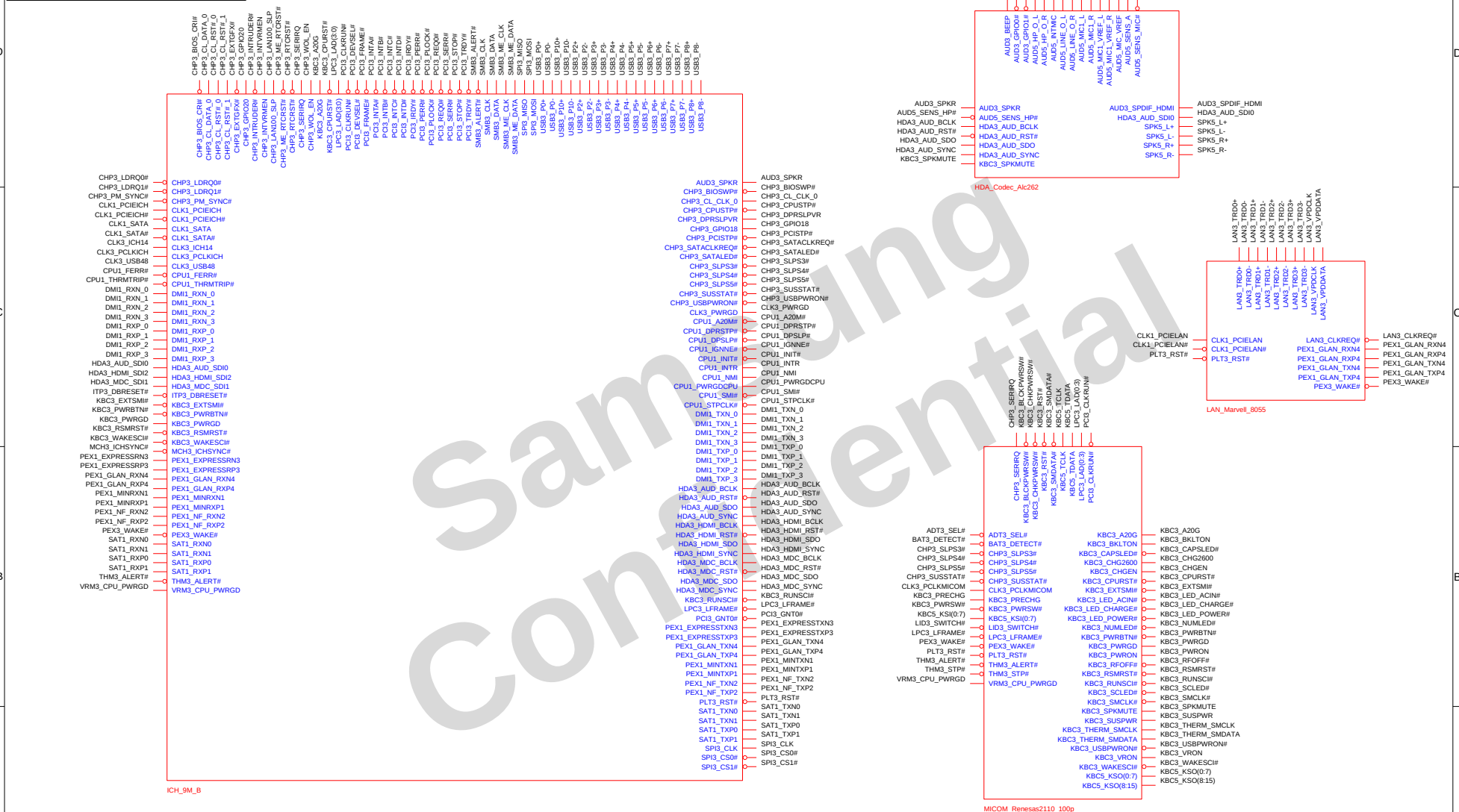


DRAW	SUN XIAO,	DATE	2/27/2008	TITLE	Gevena 2 ext	SAMSUNG
CHECK	WU SHIJIANG,	DEV. STEP	PV			ELECTRONICS
APPROVAL	BYEONGCHANG LEE,	REV	1.0	CLOCK DIAGRAM		PART NO. BA41-####A
MODULE CODE		LAST EDIT	May 08, 2008 19:01:59 PM	PAGE	7	OF 23

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.

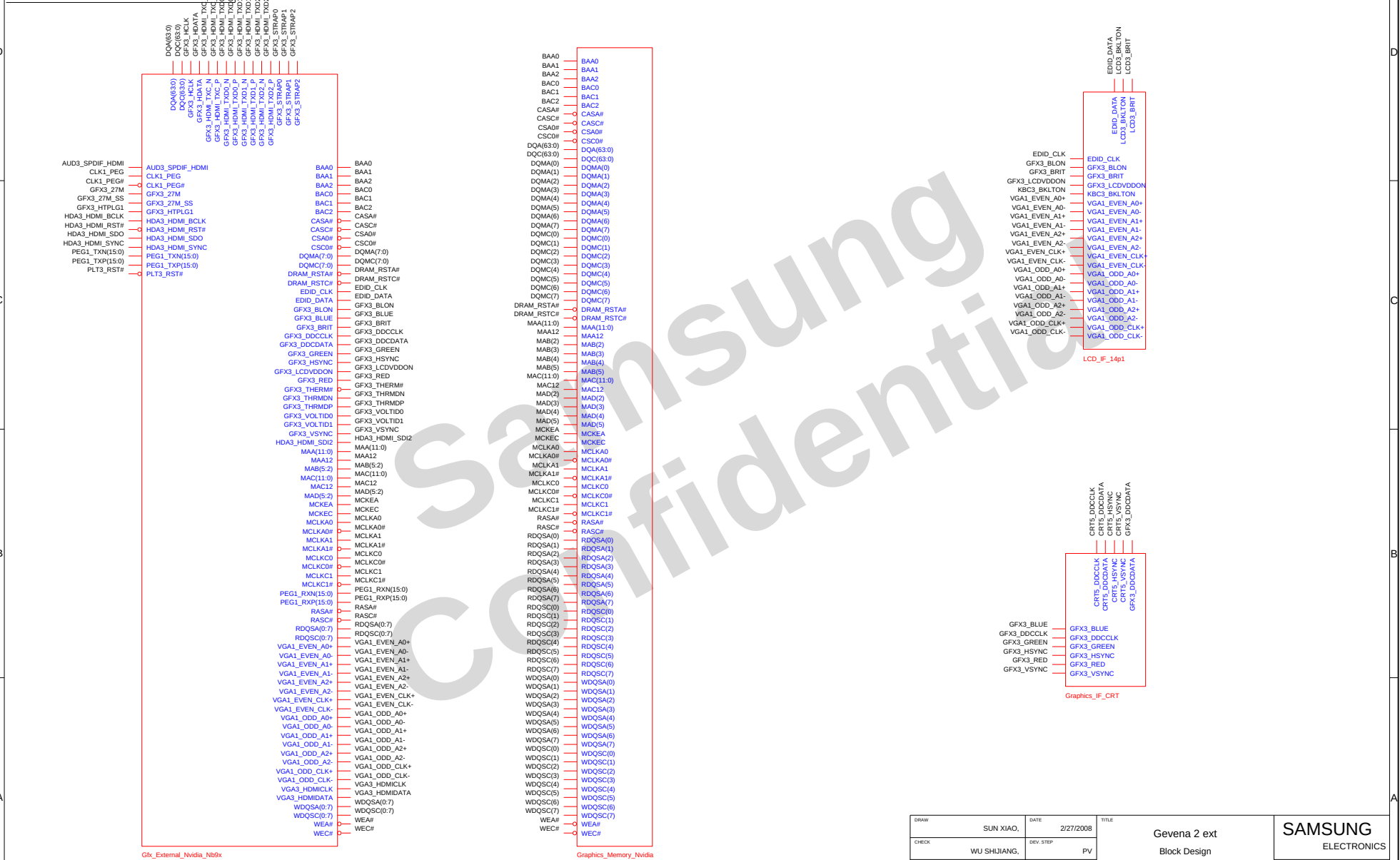


SAMSUNG PROPRIETARY
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.



DRAWN	SUN XIAO,	DATE	2/23/2008	Gevena 2 ext Block design	SAMSUNG ELECTRONICS		
CHECK	WU SHIJIANG,	REV. STEP	PV		PART NO.		
APPROVAL	BYEONGCHANG LEE,	REV	1.0		BA41-####A		
MODULE CODE		LAST EDIT			May 08, 2008 19:01:59 PM	PAGE	9 OF 23

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.



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.

```

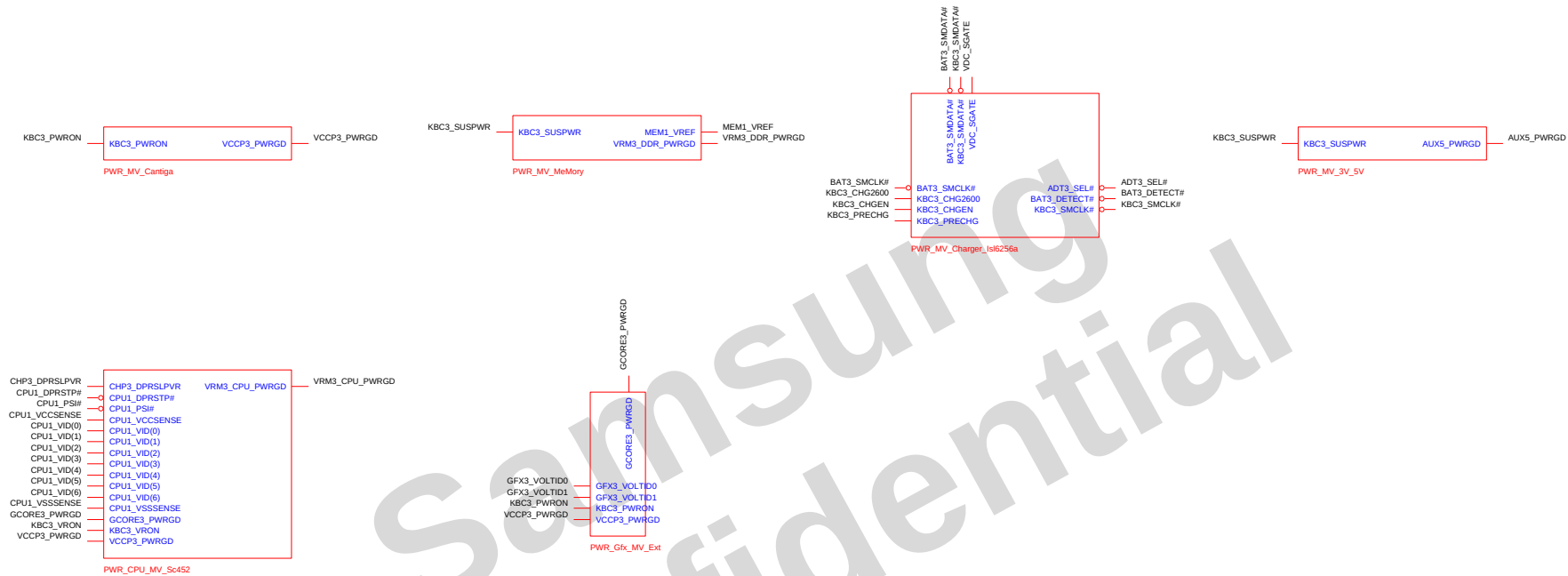
graph LR
    BT[Bluetooth_IF_Conn] --- P5[USB3_P5-  
USB3_P5+]
    Cam[Camera_IF_Conn] --- P8[USB3_P8+  
USB3_P8-]
    TP[Touchpad_IF_Conn] --- TBL[TOUCHPAD_BUTTON_L  
TOUCHPAD_BUTTON_R]
    KBD[KBD_IF_Conn] --- KS0[KBC5_KSO(0:15)  
KBC5_KSI(0:7)]
    LID[LID_Switch] --- LS[LID_SWITCH#]
    
    HDA[HDA_Modem] --- HDA_MDC_BCLK[HDA3_MDC_BCLK  
HDA3_MDC_RST#  
HDA3_MDC_SDO  
HDA3_MDC_SYNC]
    HDA --- HDA_MDC_SDII[HDA3_MDC_SDII]
    
    USB1[USB_1Port] --- USB1_PWRON[USB3_PWRON#]
    USB1 --- CHP3[CHP3_USBPWRON#  
KBC3_USBPWRON#]
    USB1 --- USB1_P2[USB3_P2+  
USB3_P2-]
    
    USB2[USB_2Port] --- USB2_PWRON[USB3_PWRON#]
    USB2 --- USB2_P0[USB3_P0+  
USB3_P0-  
USB3_P6+  
USB3_P6-]
    
    Robson[Robson_PCIE] --- CLK1[CLK1_MINIPCE2  
CLK1_MINIPCE2#  
PEX1_NF_TXN2  
PEX1_NF_TXP2  
PEX3_WAKE#  
PLT3_RST#]
    Robson --- ITM3[ITM3_CLKREQ#  
PEX1_NF_RXN2  
PEX1_NF_RXP2]
    
    PCIE[PCIE_Minicard_Slot] --- CLK1_MINIPCE[CLK1_MINIPCE  
CLK1_MINIPCE#  
KBC3_RFOFF#  
PEX1_MINTXN1  
PEX1_MINTXP1  
PLT3_RST#]
    PCIE --- MIN3[MIN3_CLKREQ#  
PEX1_MINRXN1  
PEX1_MINRXP1  
PEX3_WAKE#  
WLON_LED#]
    
    LPC[LPC3_LAD0  
LPC3_LAD1  
LPC3_LAD2  
LPC3_LAD3  
LPC3_LFRAME#]
    LPC --- DBGLPC[CLK3_DBG LPC  
PLT3_RST#]
    LPC --- OtherDebug[Other_Debug_80]
    
    KBC[KBC5_TCLK  
KBC5_TDATA]
    KBC --- HDA_MDC_BCLK
    KBC --- HDA_MDC_RST#
    KBC --- HDA_MDC_SDO
    KBC --- HDA_MDC_SYNC
  
```

DRAW	SUN XIAO,	DATE	2/27/2008	TITLE		
CHECK	WU SHUJIANG,	DEV. STEP	PV	Gevena 2 ext Block Design		
APPROVAL	BYEONGCHANG LEE,	REV	1.0			
MODULE CODE				LAST EDIT	May 08, 2008 19:01:59 PM	PAGE 11 OF 23

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

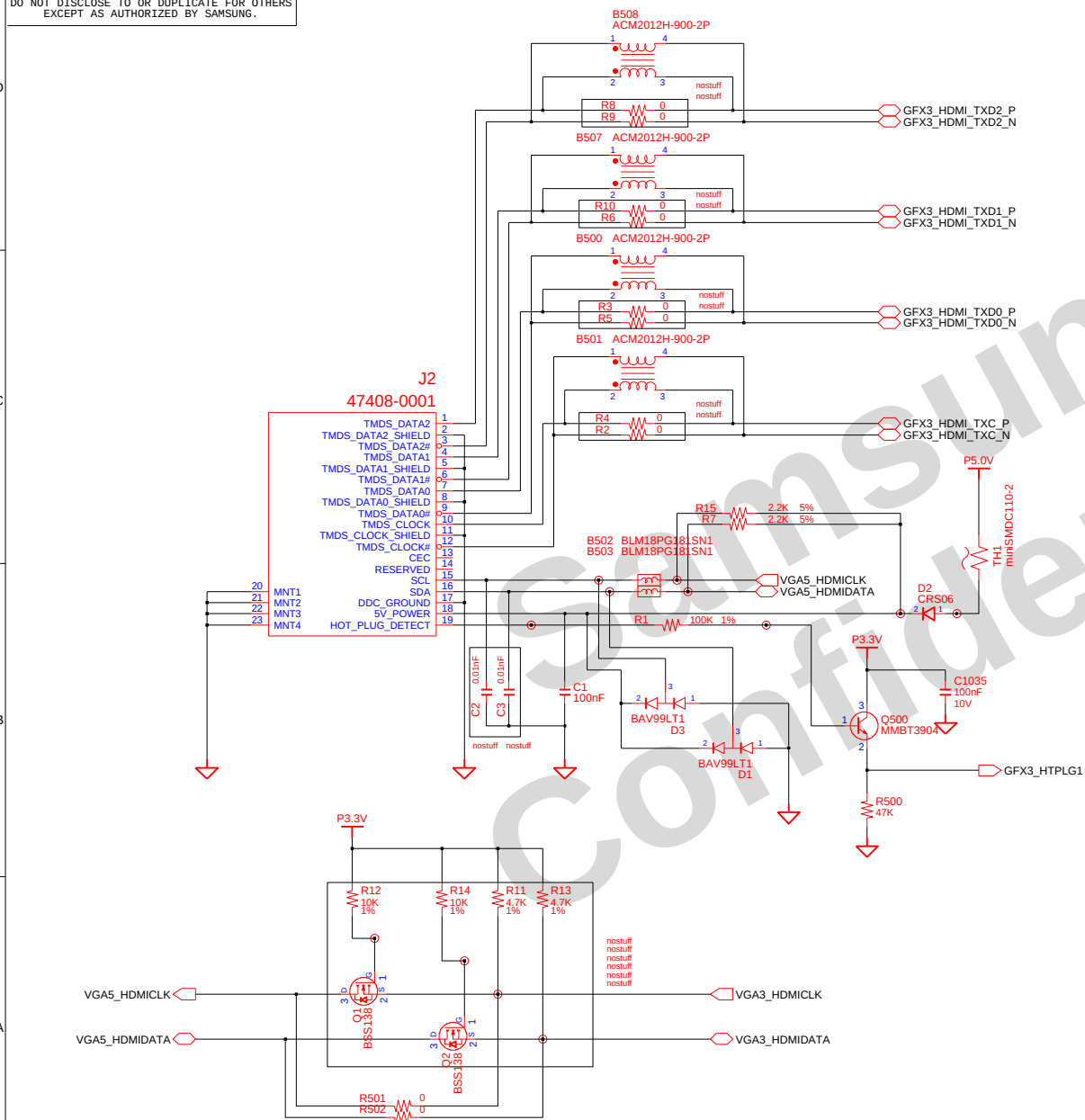
COM-22C-015(1996.6.5) REV. 3 D:\hantor\Geneva2\Geneva2_ext.PV_0501
SRP Sheet Number: 11 of 78

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.



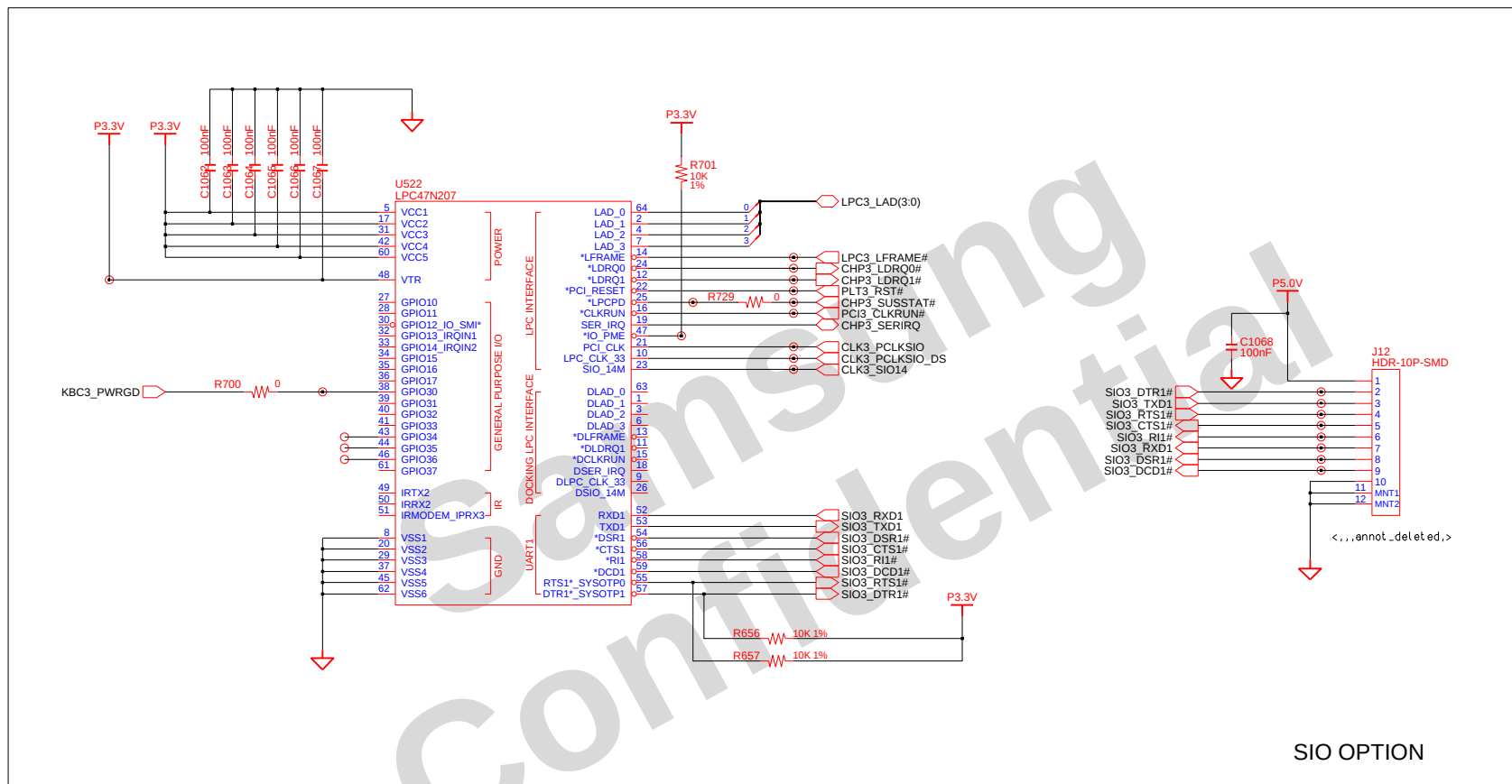
DRAW	SUN XIAO,	DATE	2/27/2008	Gevena 2 ext Block Design Power Block		SAMSUNG ELECTRONICS	
CHECK	WU SHIJIANG,	DEV. STEP	PV				
APPROVAL	BYEONGCHANG LEE,	REV	1.0				
				PART NO.		BA41-####A	
MODULE CODE	undefined	LAST EDIT		May 08, 2008 19:01:59 PM		PAGE	12 OF 23

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.



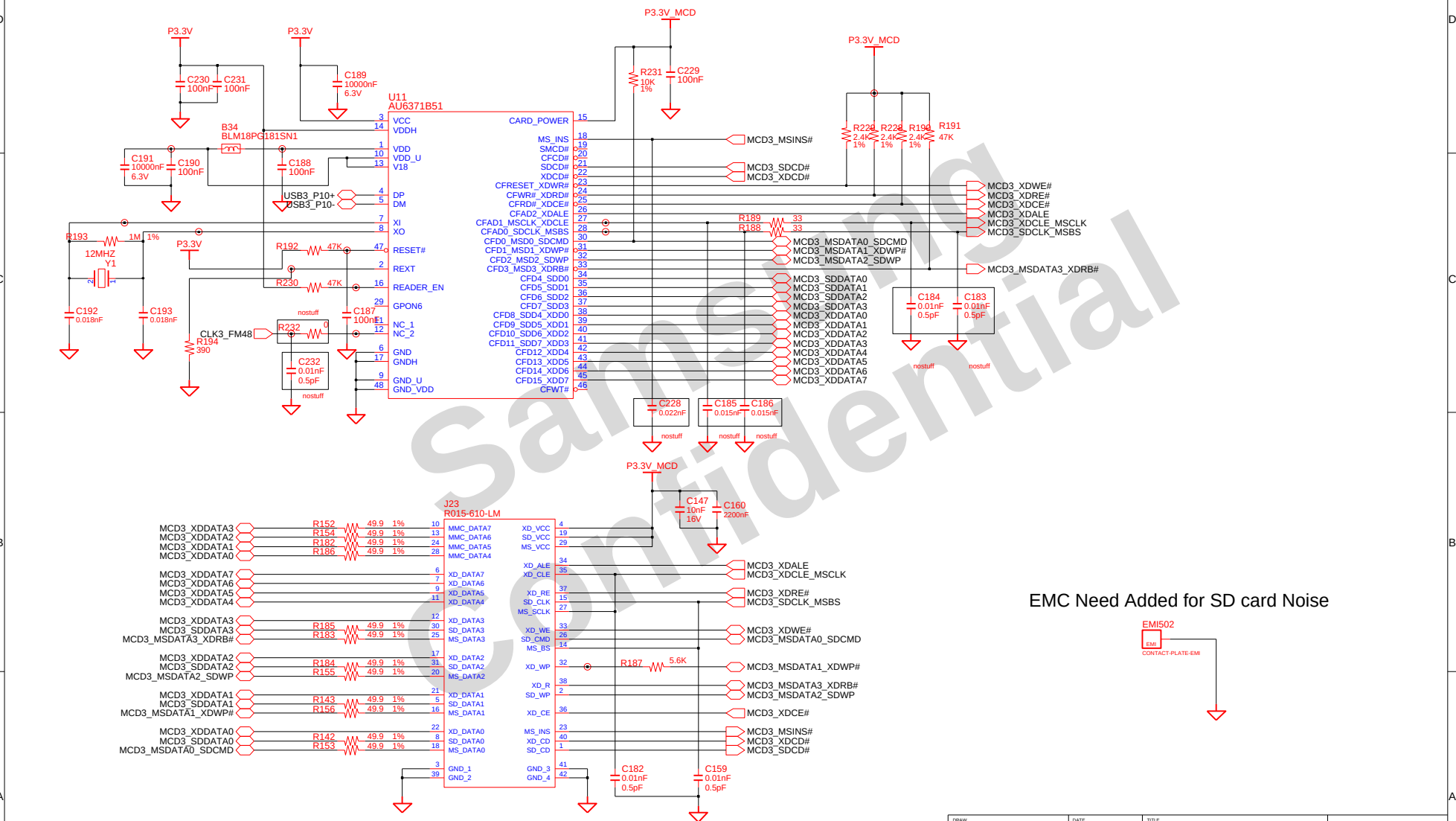
DRW	SUN XIAO,	DATE	2/27/2008	TITLE	Gevena 2 ext HDMI CONN	SAMSUNG ELECTRONICS
CHECK	WU SHIJIANG,	DEV. STEP	PV			PART NO. BA41-####A
APPROVAL	BYEONGCHANG LEE,	REV	1.0			
MODULE CODE		LAST EDIT	May 08, 2008 19:01:59 PM	PAGE	30	OF

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.



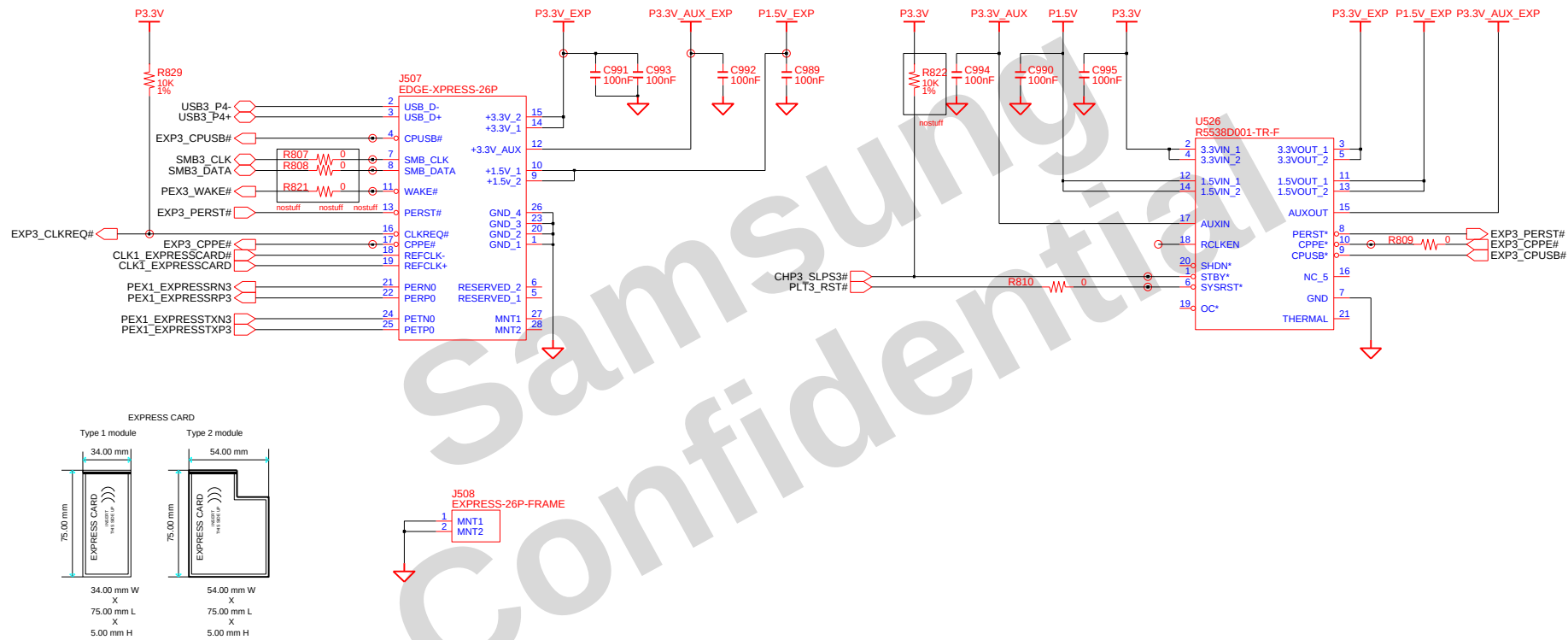
DRAW	SUN XIAO,	DATE	2/27/2008	TITLE	Gevena 2 ext SIO CHIPSET	SAMSUNG ELECTRONICS
CHECK	WU SHIJIANG,	DEV. STEP	PV			PART NO. BA41-####A
APPROVAL	BYEONGCHANG LEE,	REV	1.0			
MODULE CODE		LAST EDIT	May 08, 2008 19:01:59 PM	PAGE	14	OF 63

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	SUN XIAO,	DATE	2/27/2008	TITLE	Geneva 2 ext	SAMSUNG
CHECK	WU SHIJIANG,	DEV. STEP	PV		CARDREADER 7 IN 1	ELECTRONICS
APPROVAL	BYEONGCHANG LEE,	REV	1.0			PART NO.
MODULE CODE		LAST EDIT	May 08, 2008 19:01:59 PM			BA41-####A
					PAGE	15 OF 623

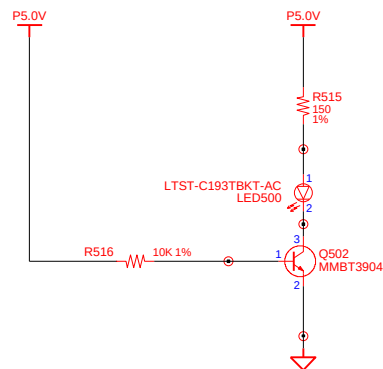
SAMSUNG PROPRIETARY
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.



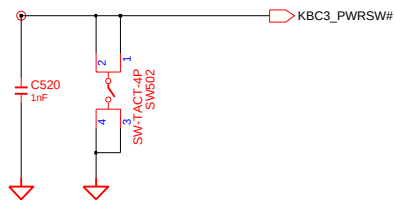
DRAW	SUN XIAO,	DATE	2/27/2008	TITLE	Gevena 2 ext MIO BOARD EXPRESS CARD	SAMSUNG ELECTRONICS PART NO. BA41-####A
CHECK	WU SHIJIANG,	DEV. STEP	PV			
APPROVAL	BYEONGCHANG LEE,	REV	1.0			
MODULE CODE		LAST EDIT	May 08, 2008 19:01:59 PM	PAGE	16 OF 60	

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.

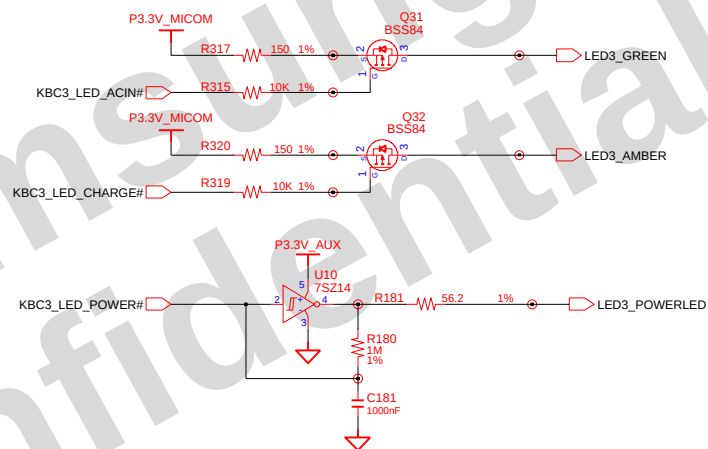
POWER ON LED



POWER ON SW BUTTON



ADAPTERIN/CHARGING LED

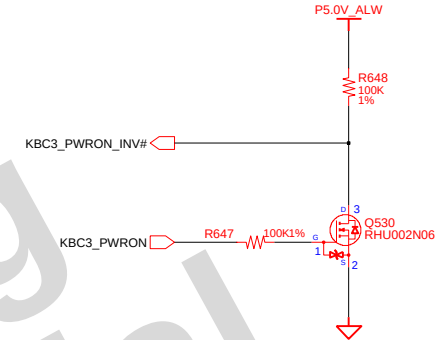
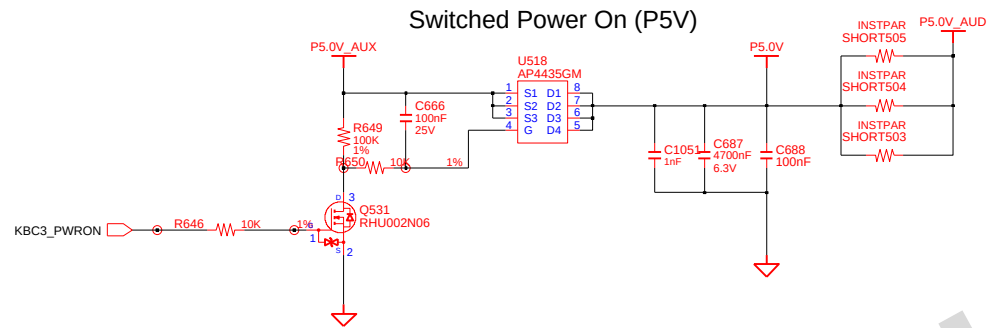


DRAW	SUN XIAO,	DATE	2/27/2008	Gevena 2 ext MICOM MICOM LOGIC SCH		SAMSUNG ELECTRONICS	
CHECK	WU SHIJANG,	DEV. STEP	PV				
APPROVAL	BYEONGCHANG LEE,	REV	1.0				
				PART NO.		BA4I-####A	
MODULE CODE	LAST EDIT			May 08, 2008 19:01:59 PM		PAGE	17 OF 23

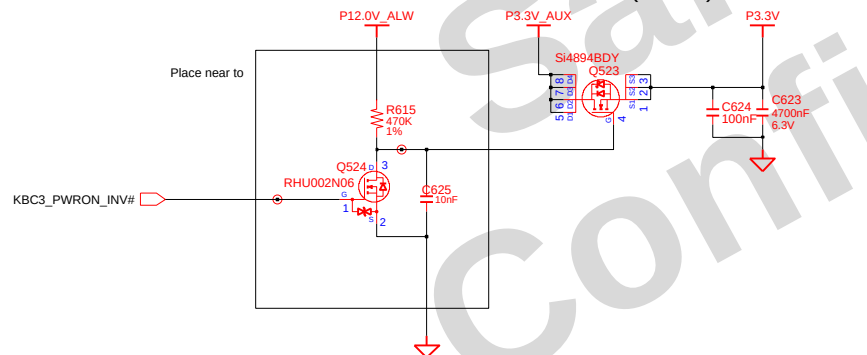
SAMSUNG PROPRIETARY
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

SIGNAL SWITCH

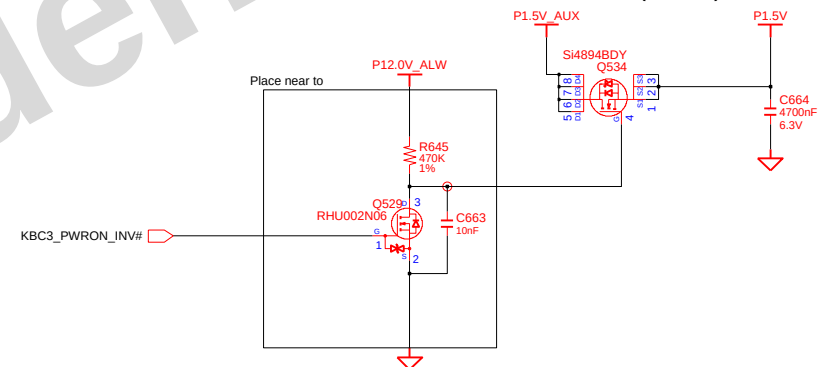
Switched Power On (P5V)



Switched Power On (P3.3V)



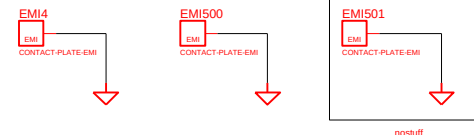
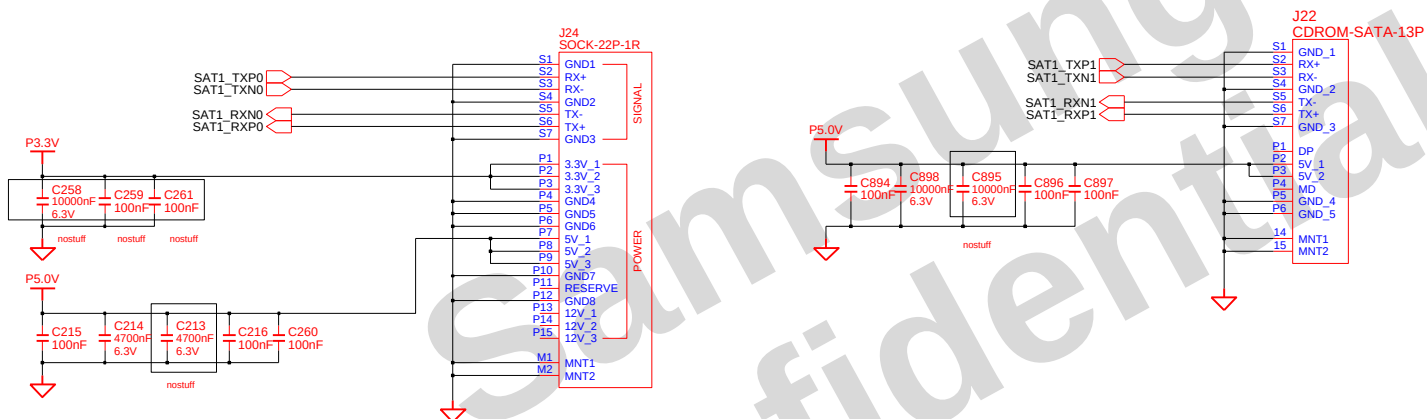
Switched Power On (P1.5V)



DRAW	SUN XIAO,	DATE	2/27/2008	Gevena 2 ext MAIN SWITCH POWER P1.5V		SAMSUNG	
CHECK	WU SHIJIAN,	DEV. STEP	PV			ELECTRONICS	
APPROVAL	BYEONGCHANG LEE,	REV	1.0			PART NO.	BA41-####A
MODULE CODE	LAST EDIT			May 08, 2008 19:01:59 PM	PAGE	18	OF 23

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.

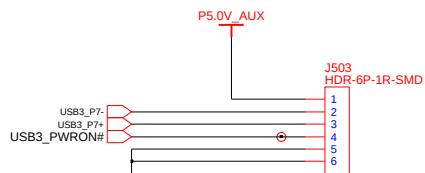
Main to HDD



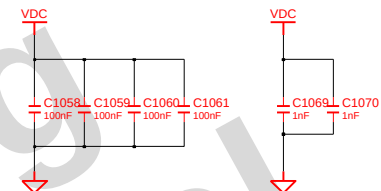
DRAW	SUN XIAO,	DATE	2/27/2008	TITLE	Gevena 2 ext CONNECTOR	SAMSUNG ELECTRONICS
CHECK	WU SHIJIANG,	DEV. STEP	PV			PART NO. BA41-####A
APPROVAL	BYEONGCHANG LEE,	REV	1.0		HDD & ODD CONNECTOR	
MODULE CODE		LAST EDIT		May 08, 2008 19:01:59 PM	PAGE 19 OF 23	

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.

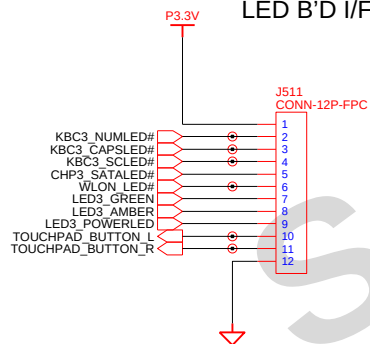
USB I/F B'D



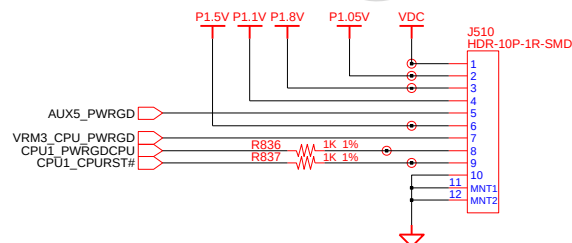
EMC ADD decap CAP



LED B'D I/F



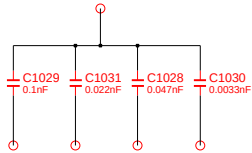
ICT PORT



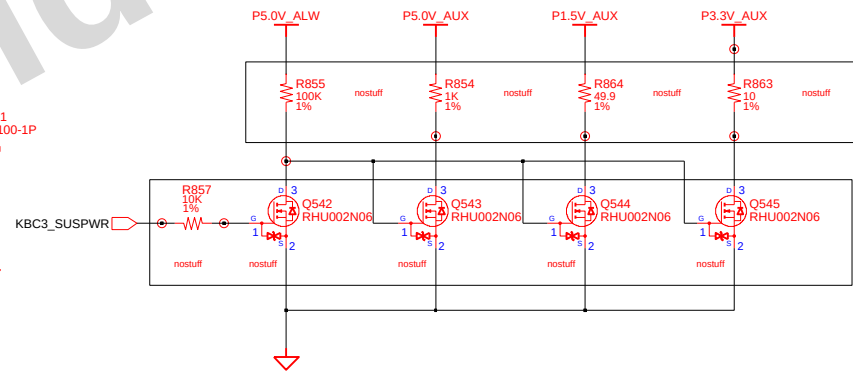
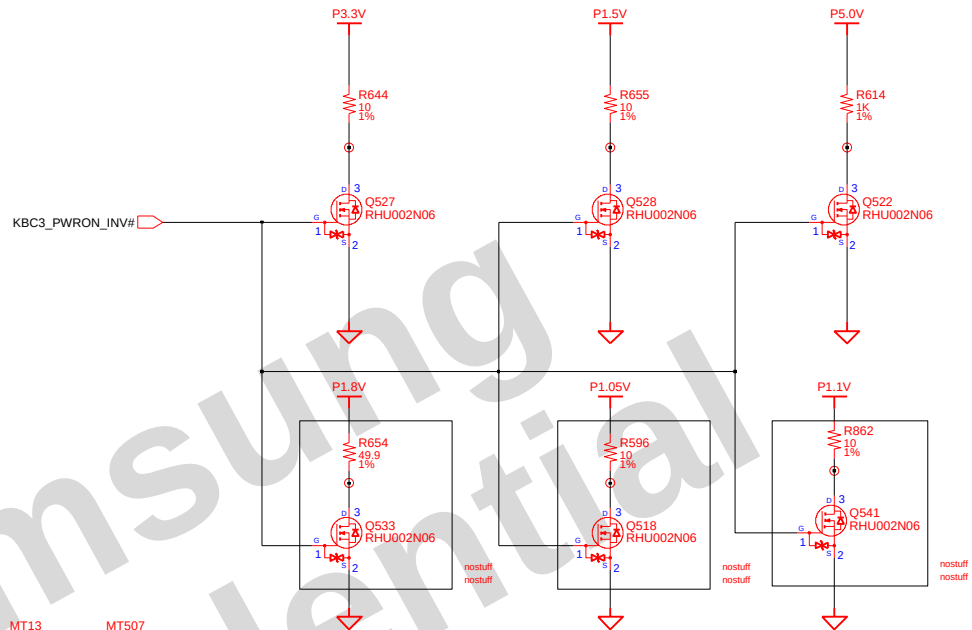
DRAW	SUN XIAO,	DATE	2/27/2008	TITLE	Gevena 2 ext	SAMSUNG ELECTRONICS
CHECK	WU SHIJIAN,	DEV. STEP	PV	KEYBOARD 80PORT ICT PORT		
APPROVAL	BYEONGCHANG LEE,	REV	1.0	LID SWITCH LED B'D USB I/O B'D	PART NO.	BA41-####A
MODULE CODE		LAST EDIT		May 08, 2008 19:01:59 PM	PAGE	20 OF 23

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 SIDE



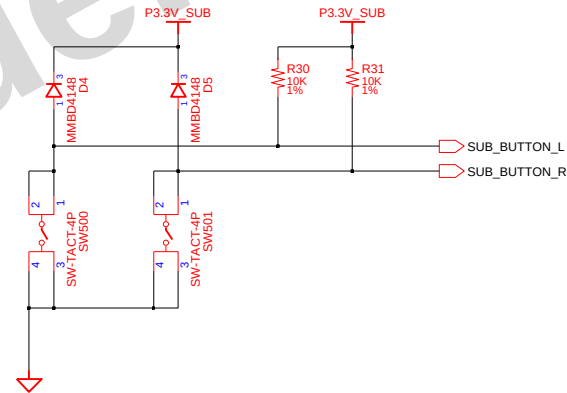
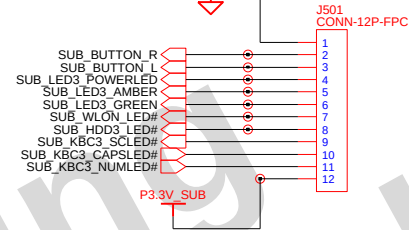
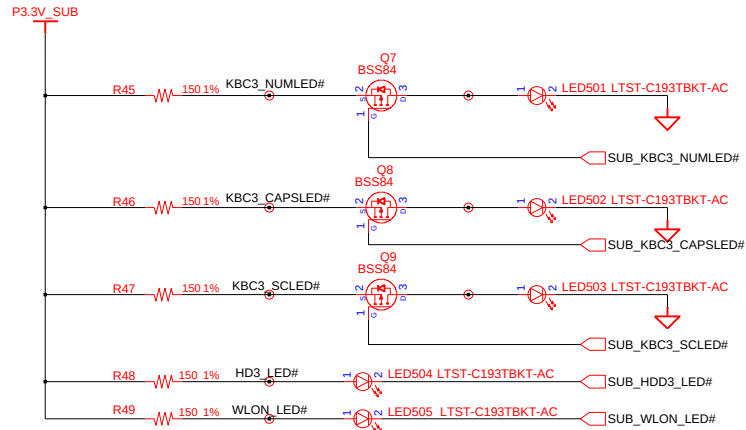
BOTTOM SIDE



DRAW	SUN XIAO,	DATE	2/27/2008	TITLE	Gevena 2 ext OTHERS	SAMSUNG ELECTRONICS PART NO. BA41-####A
CHECK	WU SHIJIANG,	DEV. STEP	PV	REV	1.0	
APPROVAL	BYEONGCHANG LEE,	LAST EDIT	May 08, 2008 19:01:59 PM	PAGE	21 OF 23	
MODULE CODE						

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.

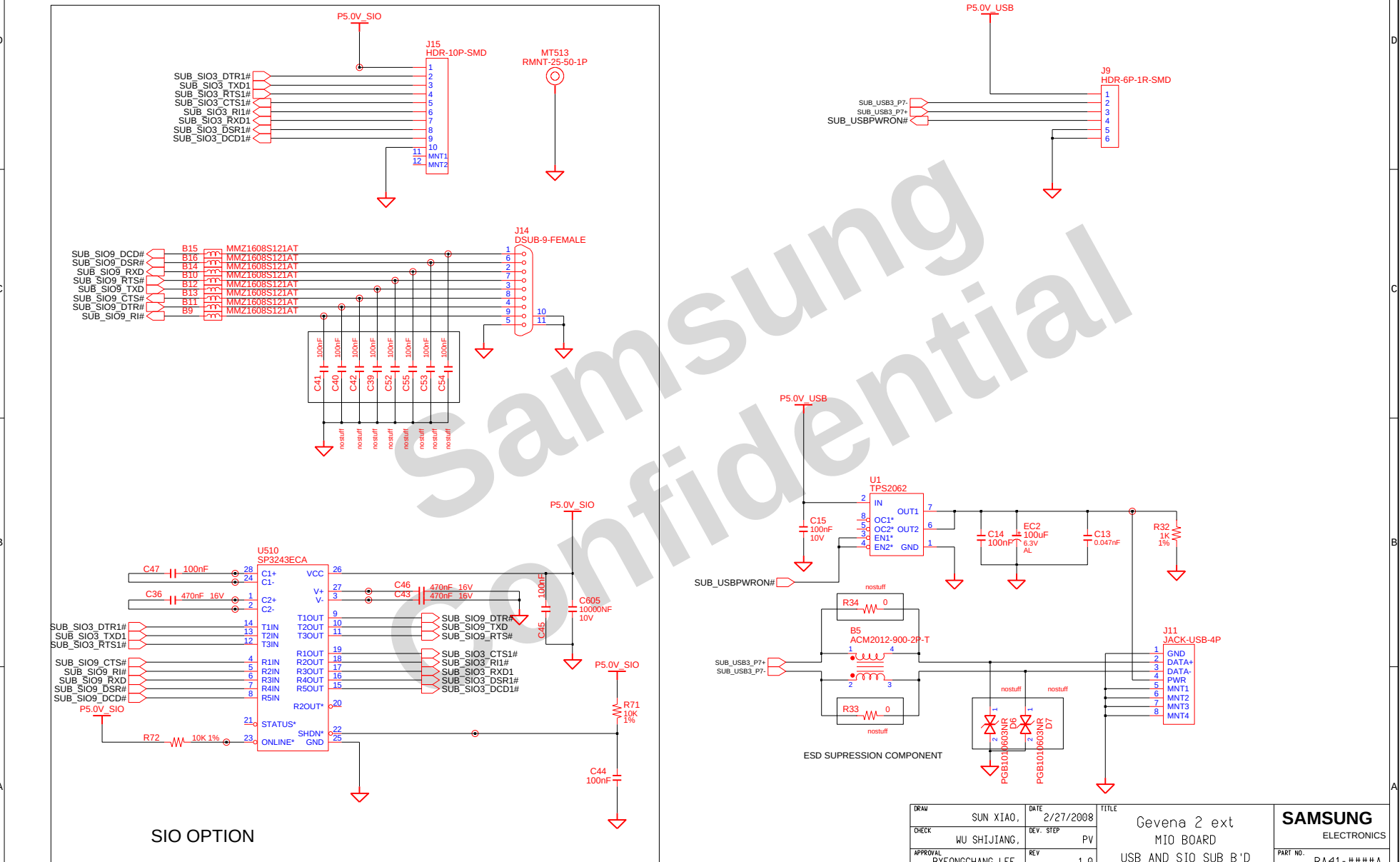
TOUCHPAD AND LED B'D



DRAW	SUN XIAO,	DATE	2/27/2008	TITLE	Gevena 2 ext TOUCHPAD AND LED B'D	SAMSUNG ELECTRONICS PART NO. BA41-####A
CHECK	WU SHIJIANG,	DEV. STEP	PV	REV	1.0	
APPROVAL	BYEONGCHANG LEE,	REV	1.0	LAST EDIT	May 08, 2008 19:01:59 PM	
MODULE CODE						
PAGE 22 OF 60						

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.

SIO AND USB SUB B'D



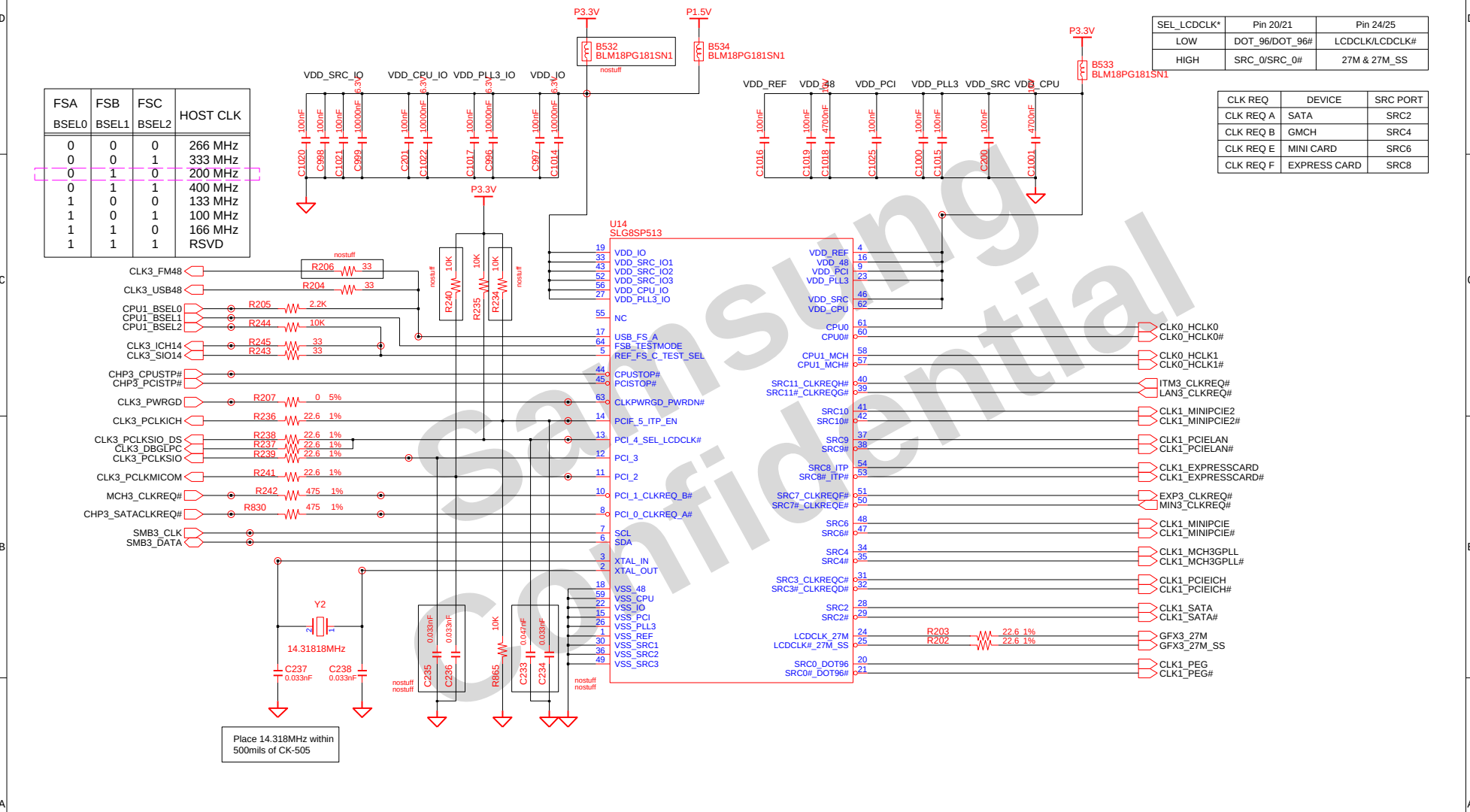
DRAW	SUN XIAO,	DATE	2/27/2008	TITLE	Geneva 2 ext MIO BOARD USB AND SIO SUB B'D	SAMSUNG ELECTRONICS
CHECK	WU SHIJIANG,	DEV. STEP	PV			PART NO. BA41-####A
APPROVAL	BYEONGCHANG LEE,	REV	1.0			
MODULE CODE		LAST EDIT				
				May 08, 2008 19:01:59 PM	PAGE 23	OF 60

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.

FSA	FSB	FSC	HOST CLK
BSEL0	BSEL1	BSEL2	
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

SEL_LCDCCLK*	Pin 20/21	Pin 24/25
LOW	DOT_96/DOT_96#	LCDCCLK/LCDCCLK#
HIGH	SRC_0/SRC_0#	27M & 27M_SS

CLK REQ	DEVICE	SRC PORT
CLK REQ A	SATA	SRC2
CLK REQ B	GMCH	SRC4
CLK REQ E	MINI CARD	SRC6
CLK REQ F	EXPRESS CARD	SRC8

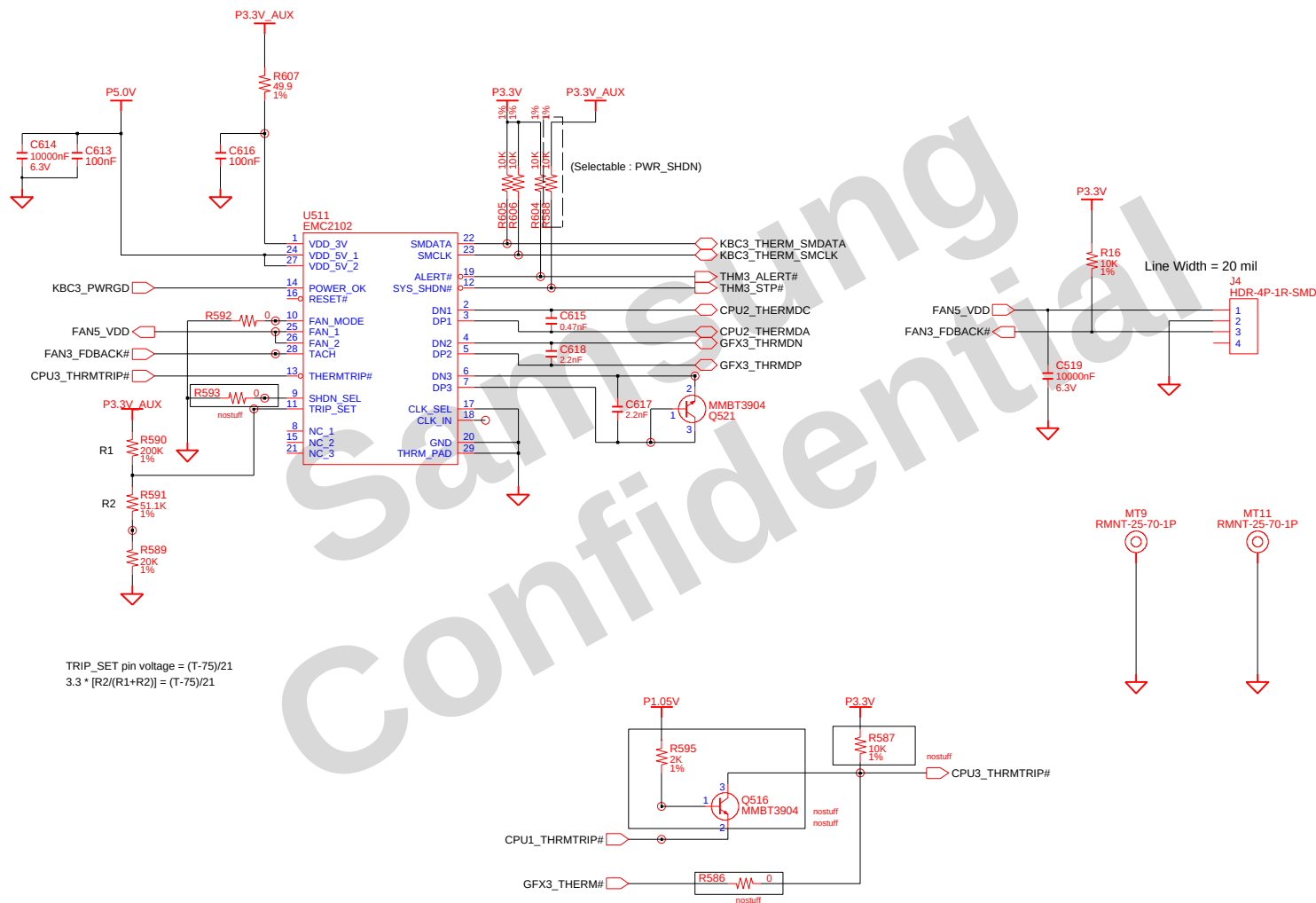


DRAW	SUN XIAO,	DATE	2/27/2007	TITLE	Gevena 2 ext Main_Clock_Circuit CK-Clock_505M	SAMSUNG ELECTRONICS PART NO. BA41-####A
CHECK	WU SHIJIANG,	DEV. STEP	PV			
APPROVAL	BYEONGCHANG LEE,	REV	1.0			
MODULE CODE	undefined	LAST EDIT	May 08, 2008 19:01:59 PM	PAGE	1 OF 1	

SAMSUNG PROPRIETARY

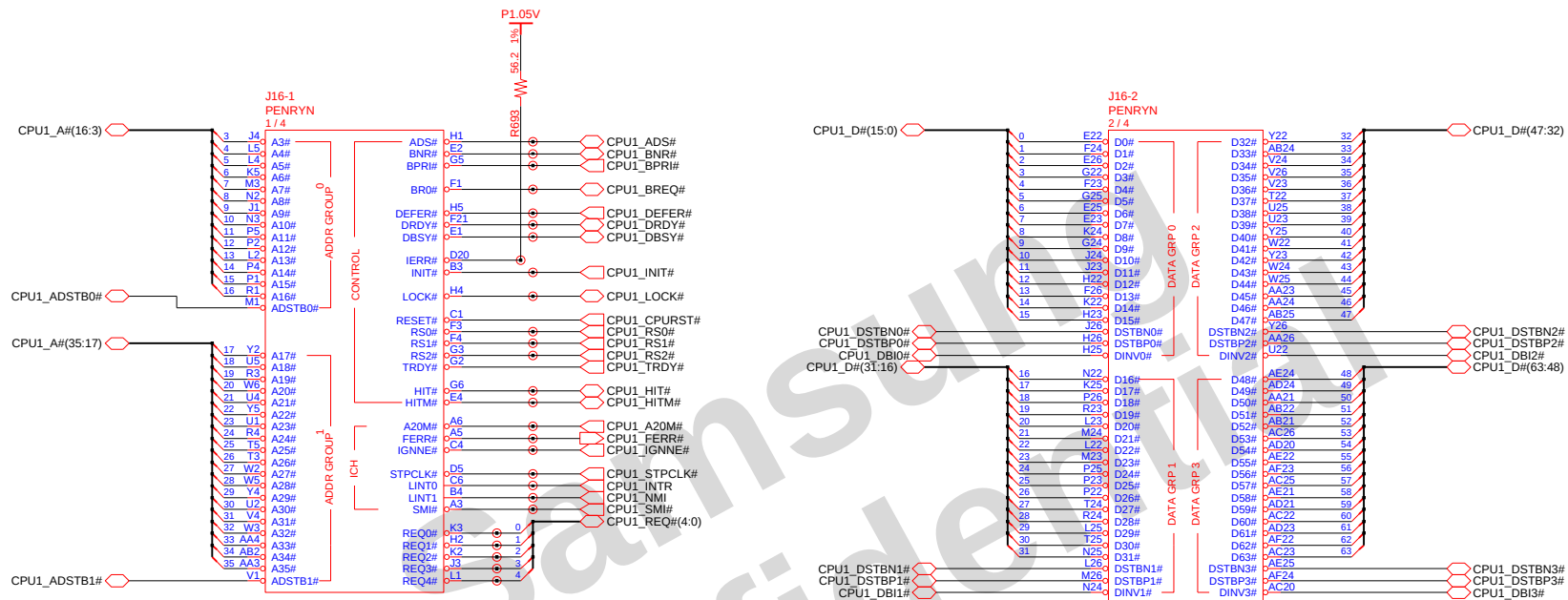
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

THERMAL SENSOR & FAN CONTROL

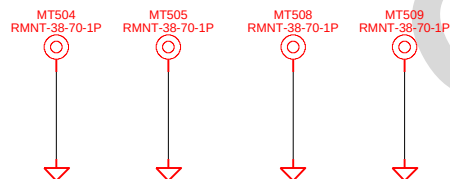


DESIGN	SUN XIAO,	DATE	2/27/2008	TITLE	Gevena 2 ext	SAMSUNG ELECTRONICS
CHECK	WU SHIJIANG,	DEV. STEP	PV	THERMAL_SENSOR_SMSC_EMC2102		
APPROVAL	BYEONGCHANG LEE,	REV	1.0	THERMAL_SENSOR_SMSC_EMC2102		
MODULE CODE		LAST EDIT	May 08, 2008 19:01:59 PM			
PAGE 1 OF 1						SRP Sheet Number: 25 of 78

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.

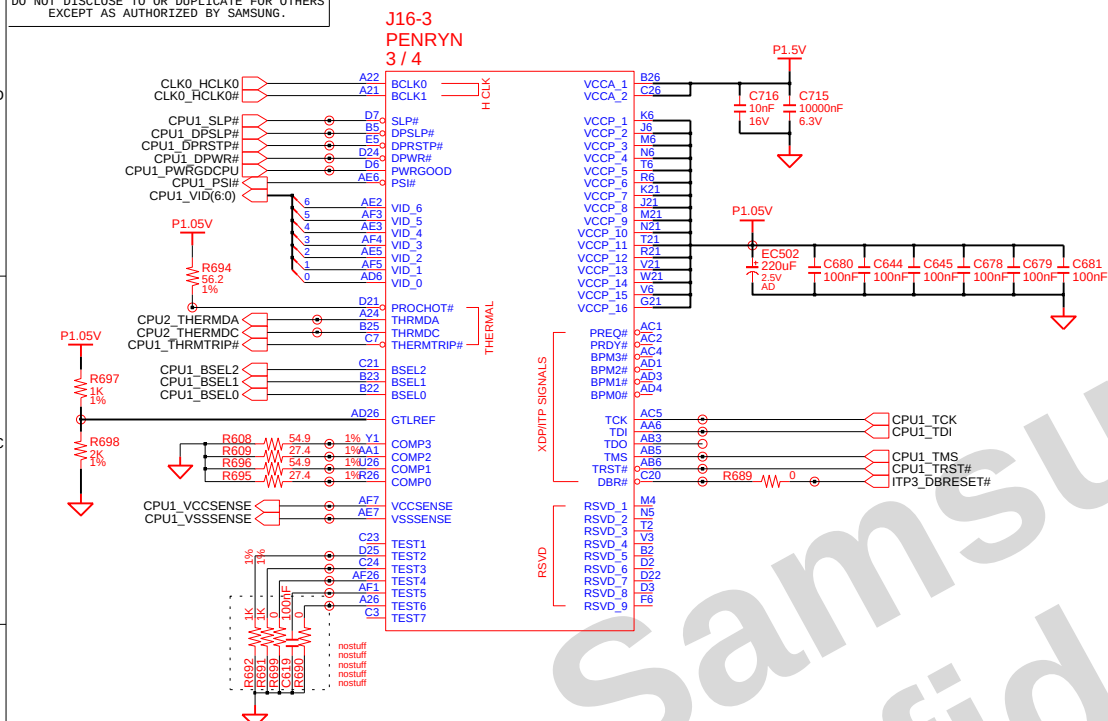


CPU CONNECTOR P/N 3704-001153



DRAW	SUN XIAO,	DATE	2/27/2008	TITLE	Gevena 2 ext CPU PENRYN (1/3)	SAMSUNG ELECTRONICS
CHECK	WU SHIJIANG,	DEV. STEP	PV			PART NO. BA41-####A
APPROVAL	BYEONGCHANG LEE,	REV	1.0			
MODULE CODE	undefined	LAST EDIT	May 08, 2008 19:01:59 PM	PAGE	1 OF 3	

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 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 0	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 0	0.4625 V
0 0 0 0 0 1 1	1.4625 V	0 1 0 1 1 0 0	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 1	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 1 0	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 1	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 1 0 0 0 0	0.9000 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 1	0.8875 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 1 0	0.8750 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 1	0.8625 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 1 0 0	0.8500 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 1	0.8375 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 1 0	0.8250 V	1 0 1 1 1 1 0	0.3250 V
0 0 0 1 1 1 0	1.3250 V	0 1 1 1 0 0 0	0.8125 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 1	0.8000 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	0.7875 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	0.7750 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	0.7625 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	0.7500 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	0.7375 V	1 1 0 0 1 1 0	0.2250 V
0 0 1 0 1 0 1	1.2375 V	0 1 1 1 1 1 0	0.7250 V	1 1 0 0 1 1 1	0.2125 V
0 0 1 0 1 1 0	1.2250 V	0 1 1 1 1 1 1	0.7125 V	1 1 0 1 0 0 0	0.2000 V
0 0 1 0 1 1 1	1.2125 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 0	1.2000 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 0 1	1.1875 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 0	1.1750 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 0 1 1	1.1625 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 0	1.1500 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 0 1	1.1375 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 0	1.1250 V	1 0 0 0 1 1 1	0.6125 V	1 1 1 0 0 0 0	0.1000 V
0 0 1 1 1 1 1	1.1125 V	1 0 0 1 0 0 0	0.6000 V	1 1 1 0 0 0 1	0.0875 V
0 1 0 0 0 0 0	1.1000 V	1 0 0 1 0 0 1	0.5875 V	1 1 1 0 0 1 0	0.0750 V
0 1 0 0 0 0 1	1.0875 V	1 0 0 1 0 1 0	0.5750 V	1 1 1 0 0 1 1	0.0625 V
0 1 0 0 0 1 0	1.0750 V	1 0 0 1 0 1 1	0.5625 V	1 1 1 0 1 0 0	0.0500 V
0 1 0 0 0 1 1	1.0625 V	1 0 0 1 1 0 0	0.5500 V	1 1 1 0 1 0 1	0.0375 V
0 1 0 0 1 0 0	1.0500 V	1 0 0 1 1 0 1	0.5375 V	1 1 1 0 1 1 0	0.0250 V
0 1 0 0 1 0 1	1.0375 V	1 0 0 1 1 1 0	0.5250 V	1 1 1 0 1 1 1	0.0125 V
0 1 0 0 1 1 0	1.0250 V	1 0 0 1 1 1 1	0.5125 V	1 1 1 1 0 0 0	0.0000 V
0 1 0 0 1 1 1	1.0125 V	1 0 1 0 0 0 0	0.5000 V	1 1 1 1 0 0 1	0.0000 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

Active
DPRSLPVR 0
DPRSTP* 1
PSI2* 0 or 1

Deeper Stp
DPRSLPVR 1
DPRSTP* 0
PSI2* 0 or 1

***11111111: 0V power good asserted.

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

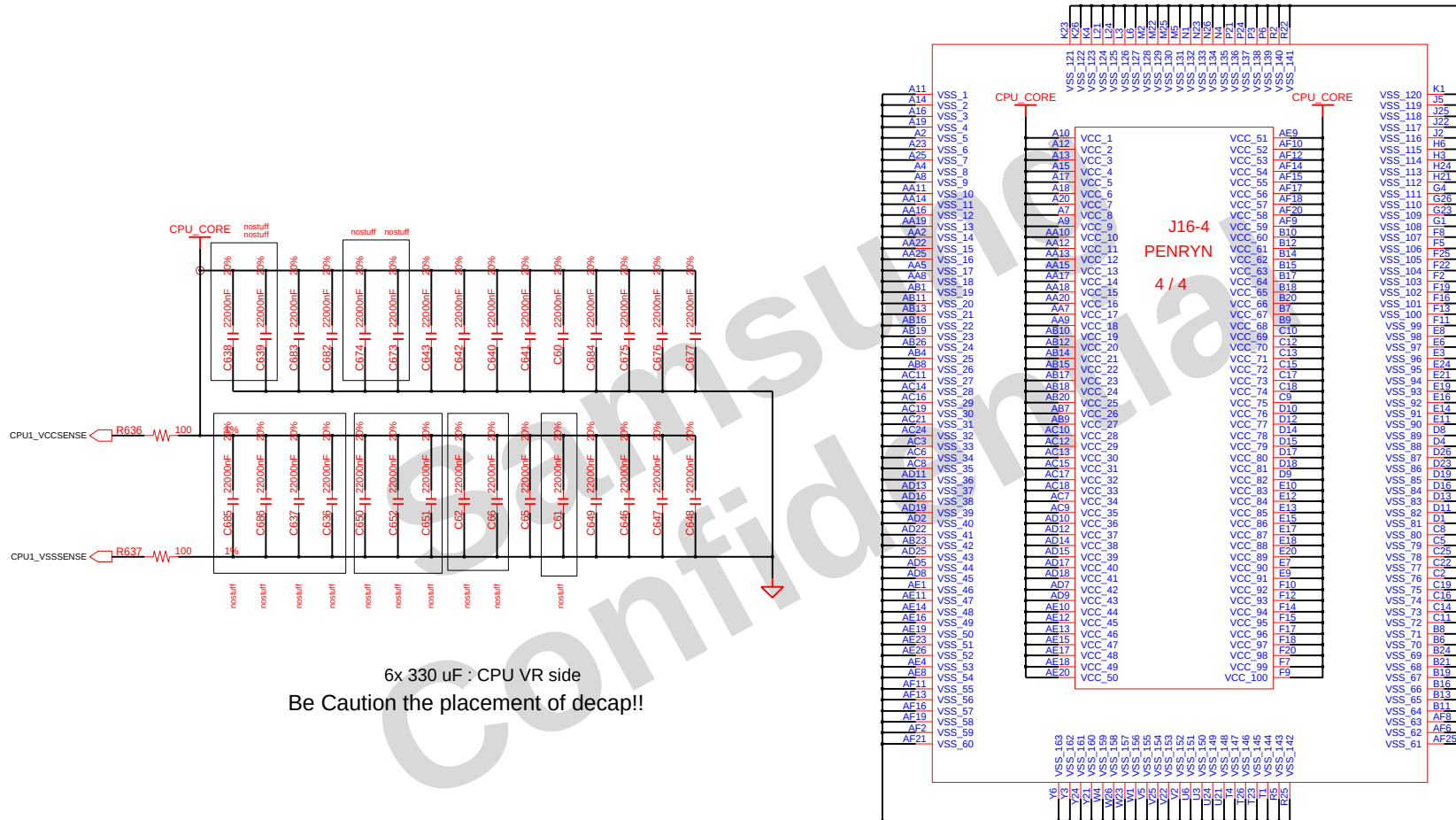
GTLREF : Keep the Voltage divider within 0.5"
of the first GTLREF pin with Zo=55ohm trace.
Minimize coupling of any switching signals to this net.

COMP0,2(COMP1,3) should be connected with Zo=27.4ohm(55ohm)
trace shorter than 1/2" to their respective Banias socket pins.

GND test points within 100mil of the VCC/VSSsense at the end of the line.
Route the VCC/VSSsense as a Zo=55ohm traces with equal length.
Observe 3:1 spacing b/w VCC/VSSsense lines and 25mil away
(preferred 50mil) from any other signal. And GND via 100mil away
from each of the VCC/VSS test point vias.

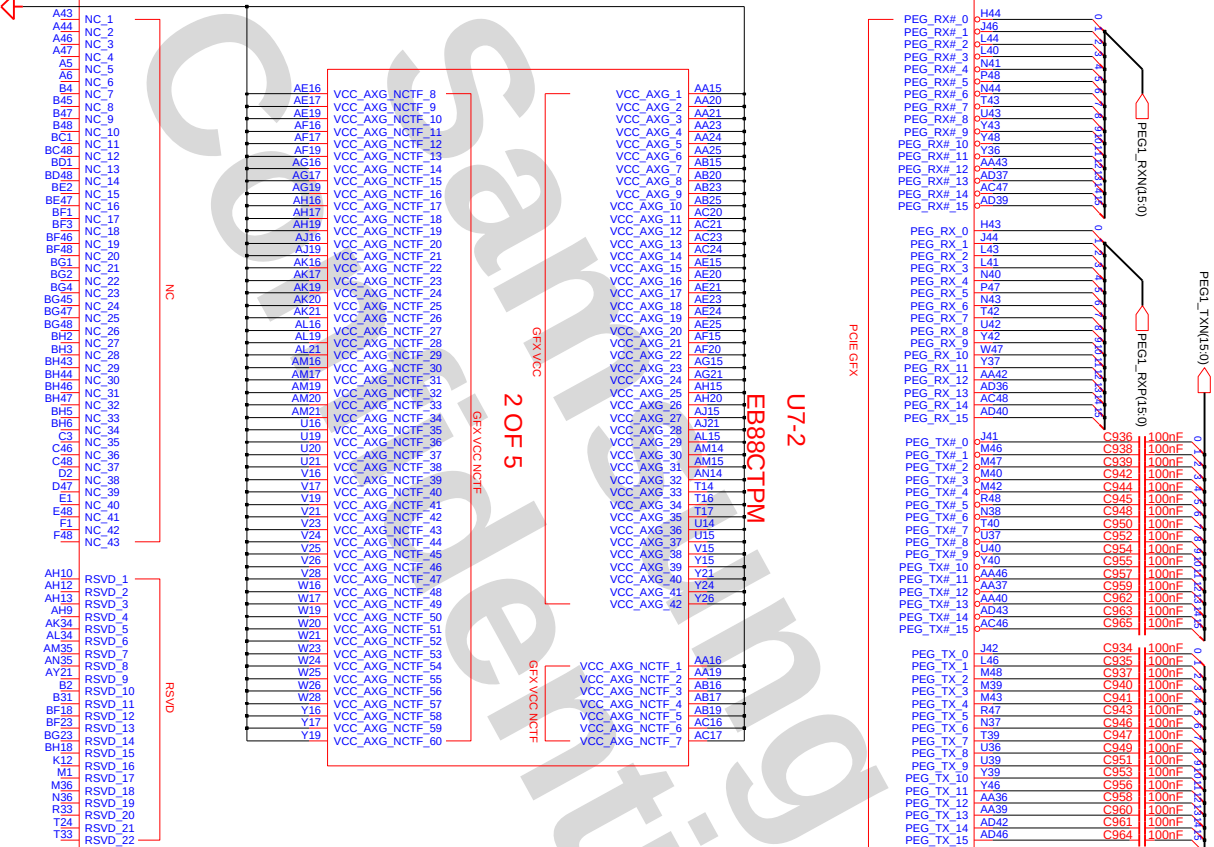
DRAW	SUN XIAO,	DATE	2/27/2008	TITLE	Gevena 2 ext CPU	SAMSUNG ELECTRONICS
CHECK	WU SHIJIANG,	DEV. STEP	PV			PART NO.
APPROVAL	BYEONGCHANG LEE,	REV	1.0	PENRYN (<2/3)		BA41-####A
MODULE CODE	undefined	LAST EDIT	May 08, 2008 19:01:59 PM	PAGE	2	OF 3

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.



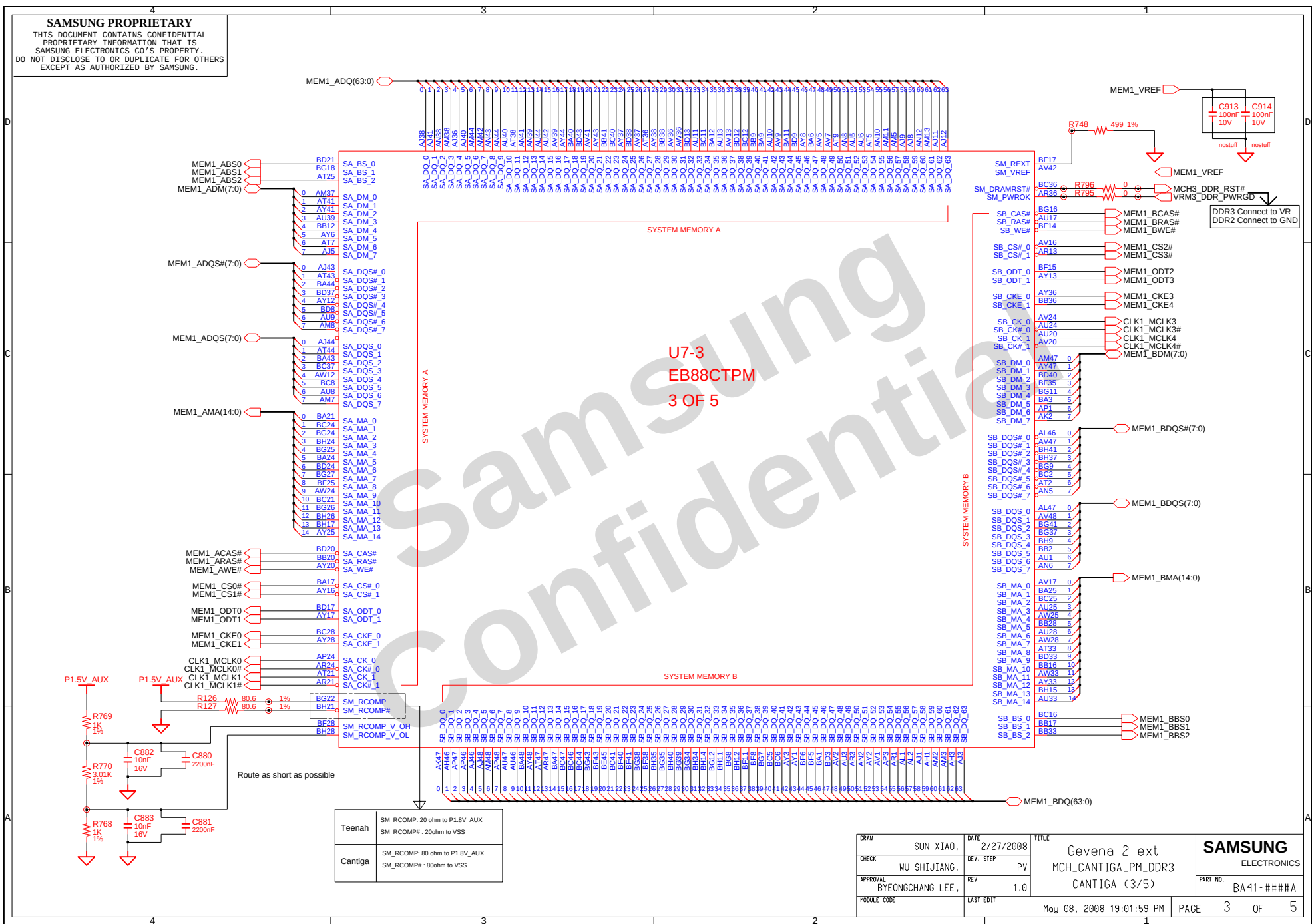
DRAW	SUN XIAO,	DATE	2/27/2008	TITLE	Gevena 2 ext
CHECK	WU SHIJIANG,	DEV. STEP	PV	CPU	
APPROVAL	BYEONGCHANG LEE,	REV	1.0	PENRYN (3/3)	
MODULE CODE	undefined	LAST EDIT	May 08, 2008 19:01:59 PM	PAGE	3 OF 3

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

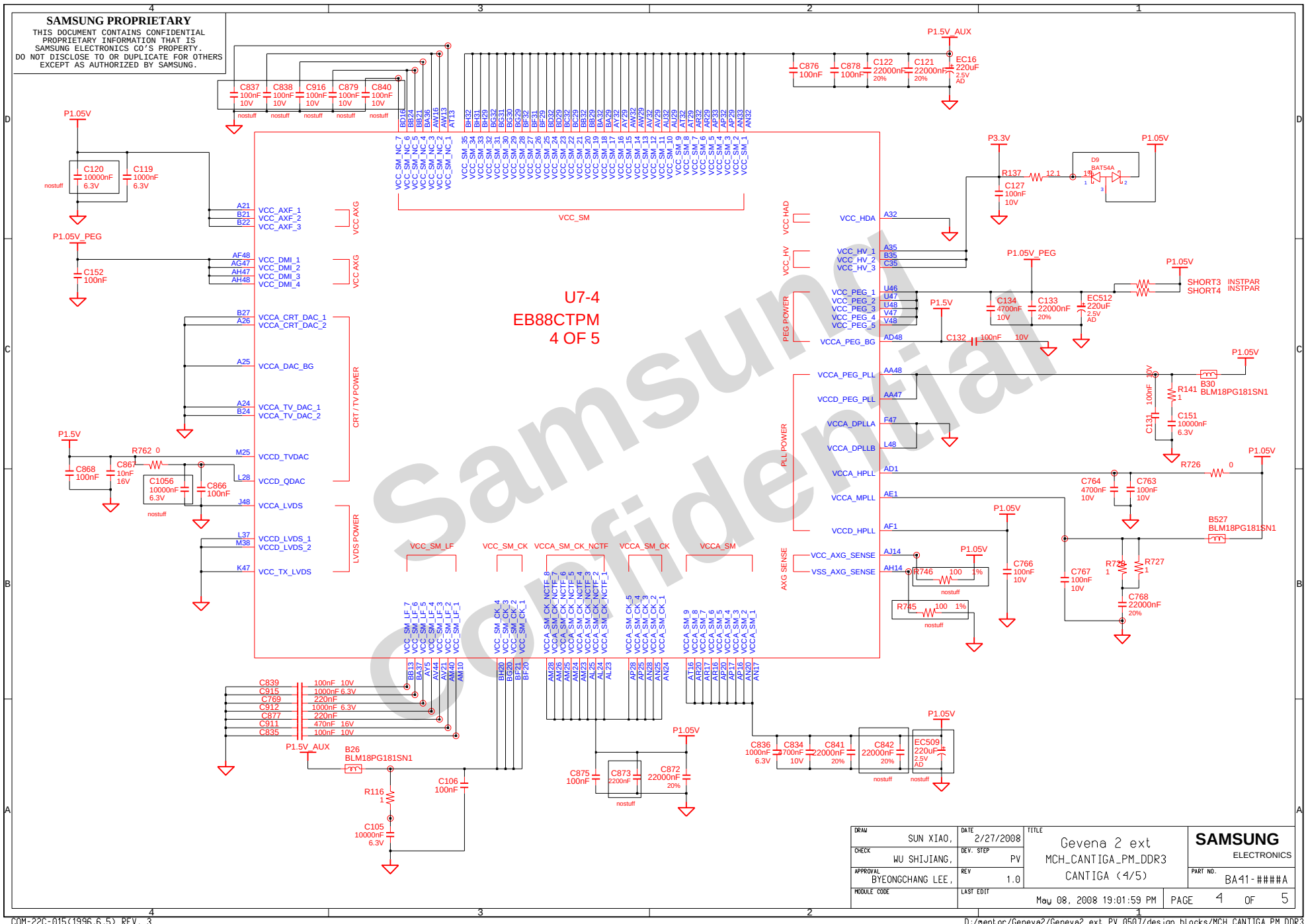


DESIGN		DATE	TITLE	SAMSUNG	
DESIGN	SUN, XIAO,	2/27/2008	Gervena 2 ext1	ELECTRONICS	
CHECK	WU, SHIJIANG,	REV. 0100	MCH.CANTIGA.PM.DDR3	PART NO.	
APPROVAL	BYRONCHANG, LEE,	REV	MCH.CANTIGA.PM.DDR3(2/5)	BA-41-####A	
MODIFY DATE	1.0	LAST EDIT	May 08, 2008 19:01:55 PM	PAGE	2 OF 5

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.



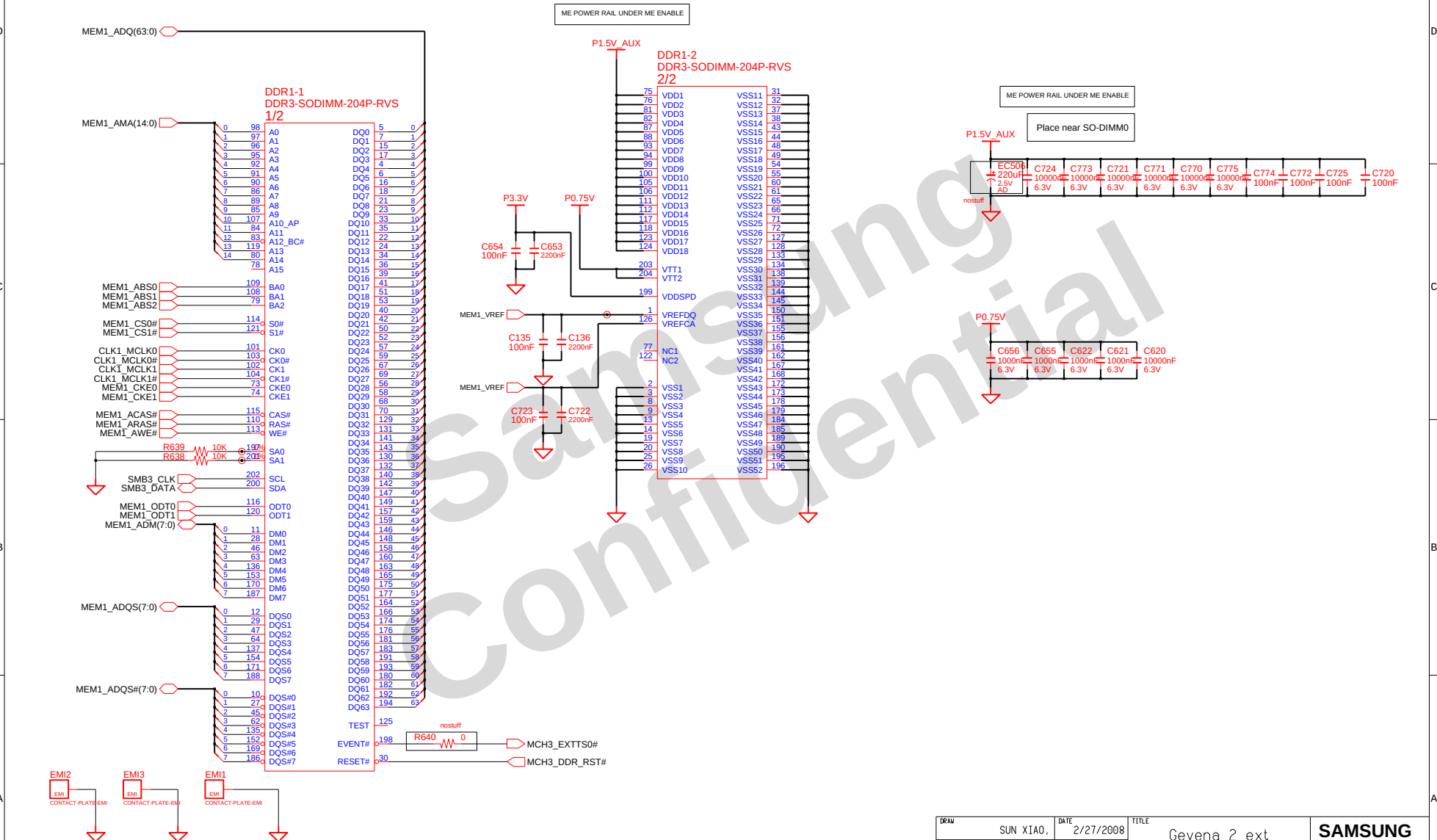
SAMSUNG PROPRIETARY
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.



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.

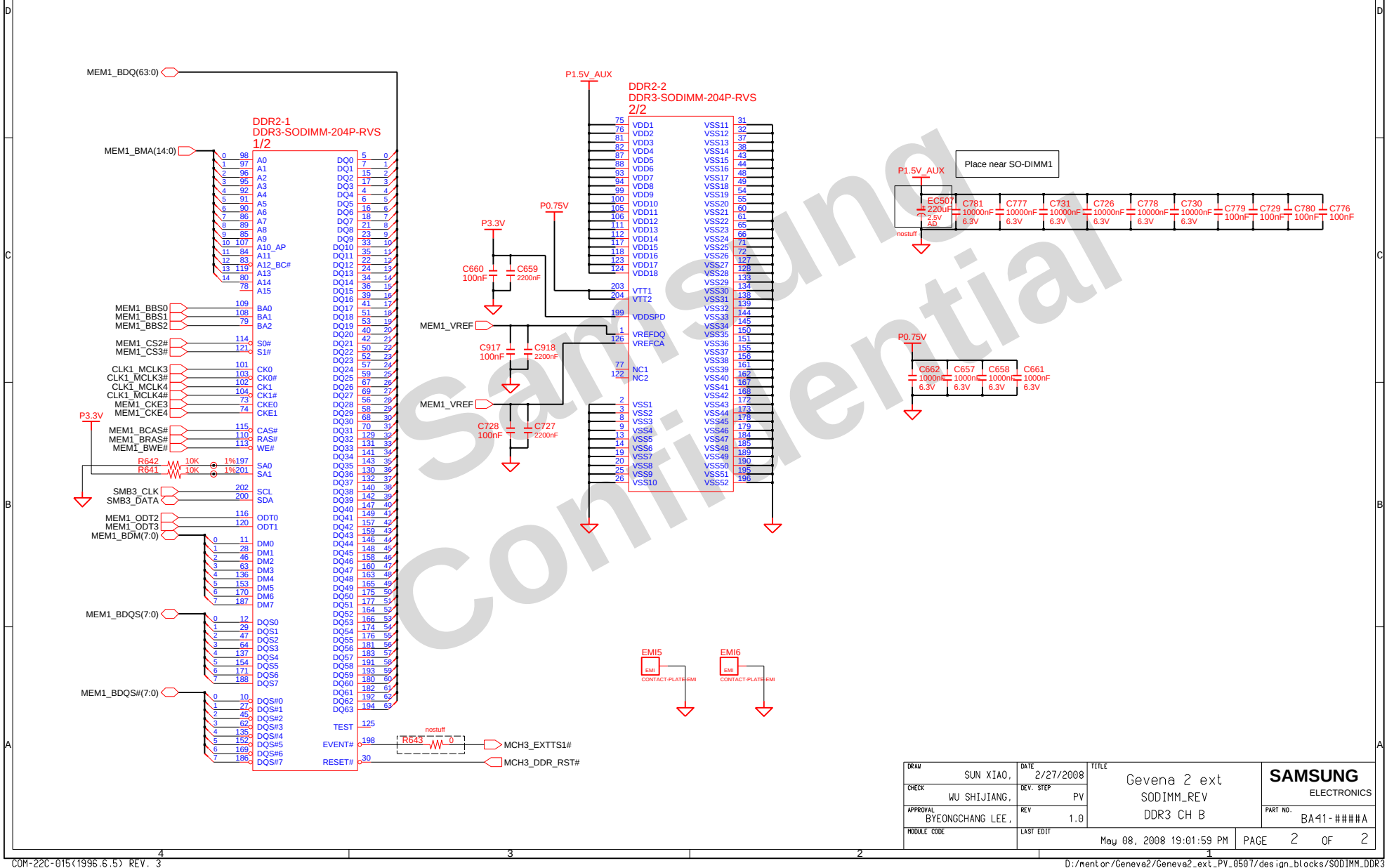


SAMSUNG PROPRIETARY
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.



DRAW	SUN XIAO,	DATE	2/27/2008	TITLE	Geneva 2 ext SODIMM_REV DDR3 CH A	SAMSUNG ELECTRONICS PART NO. BA41-####A
CHECK	WU SHIJIANG,	DEV. STEP	PV			
APPROVAL	BYEONGCHANG LEE,	REV	1.0			
MODULE CODE		LAST EDIT	May 08, 2008 19:01:59 PM	PAGE	1 OF 2	

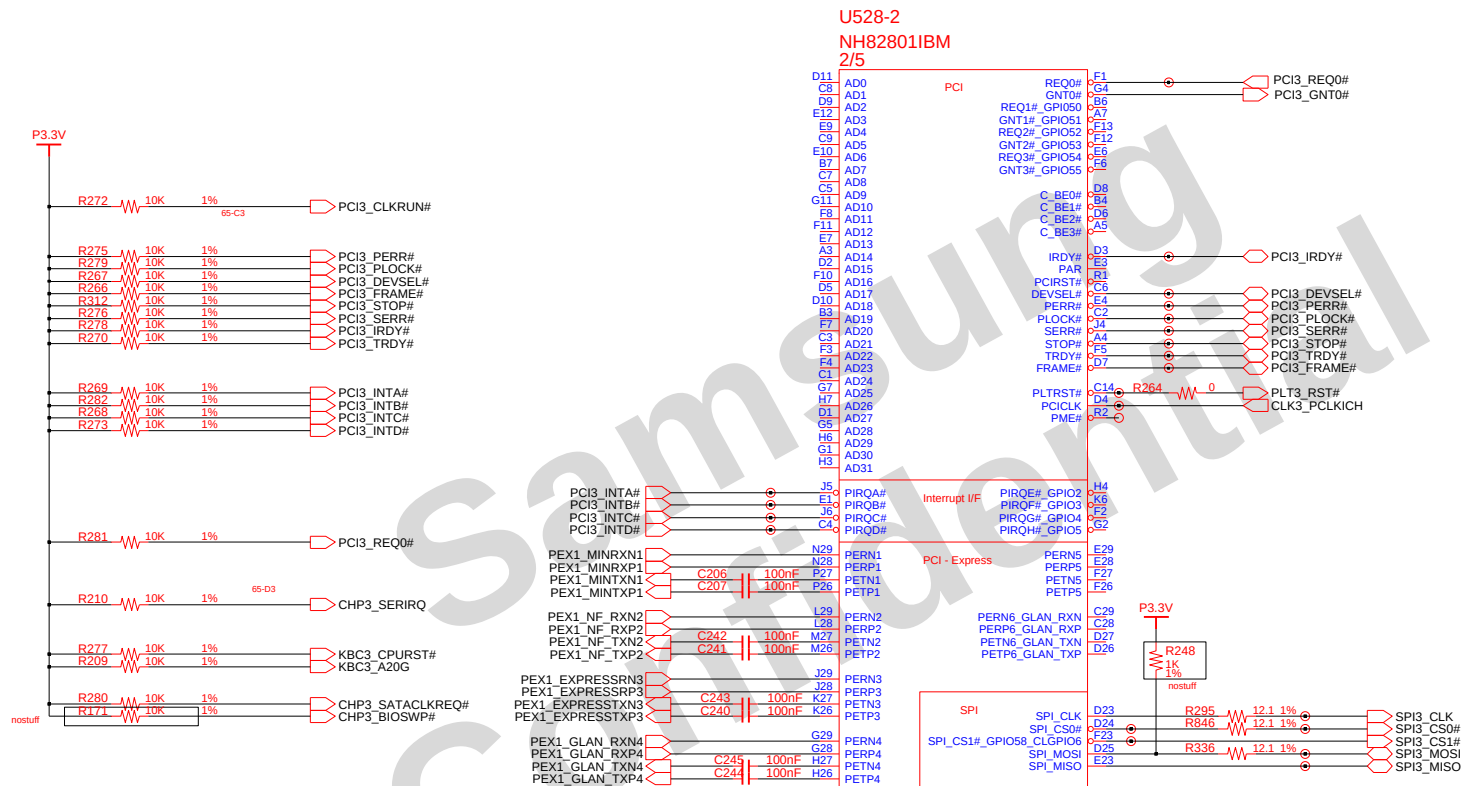
DDR SO-DIMM #1



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

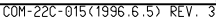
D:/mentor/Geneva2/Geneva2_ext_PV_0507/design_blocks/ICH_9M_F

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.

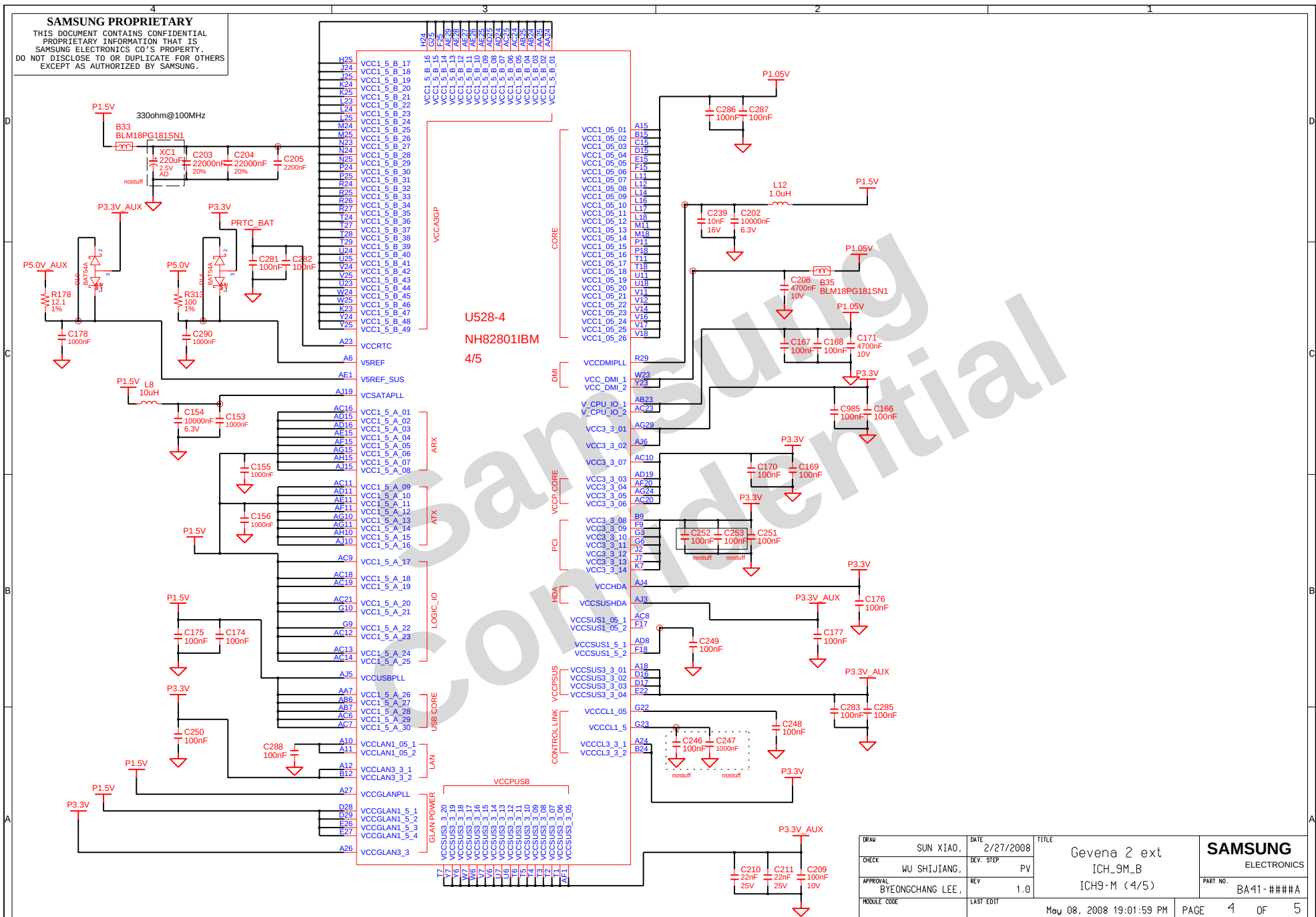


DRAW	SUN XIAO,	DATE	2/27/2008	TITLE	Geneva 2 ext ICH_9M_B	SAMSUNG ELECTRONICS
CHECK	WU SHIJIANG,	DEV. STEP	PV		ICH9-M (2/5)	PART NO. BA41-####A
APPROVAL	BYEONGCHANG LEE,	REV	1.0			
MODULE CODE	undefined	LAST EDIT	May 08, 2008 19:01:59 PM	PAGE	2 OF 5	

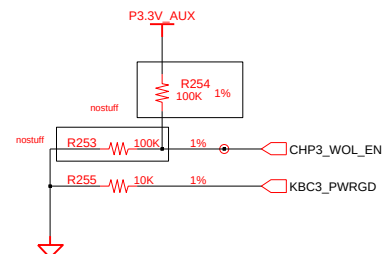
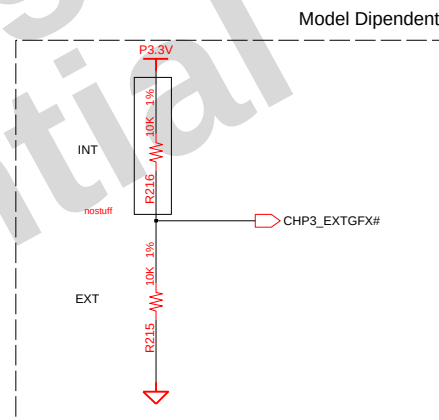
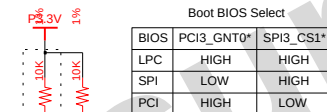
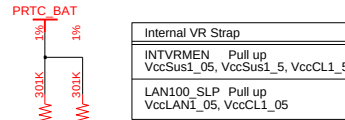
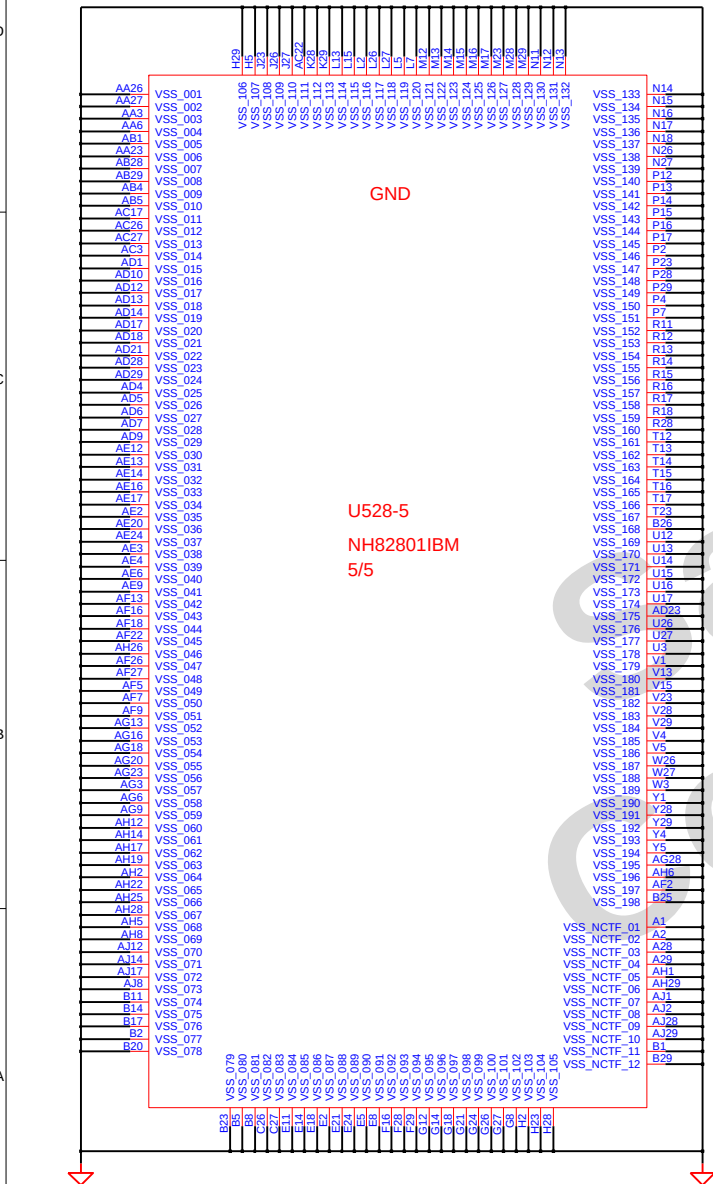
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.



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.

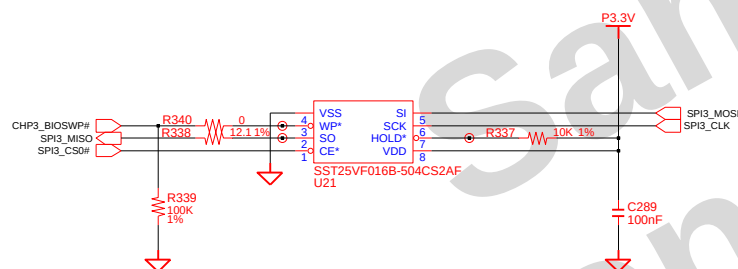


SAMSUNG PROPRIETARY
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.



DRAW	SUN XIAO,	DATE	2/27/2008	TITLE	Geneva 2 ext	SAMSUNG ELECTRONICS PART NO. BA41-####A
CHECK	WU SHIJIANG,	DEV. STEP	PV		ICH9M_B	
APPROVAL	BYEONGCHANG LEE,	REV	1.0		ICH9-M (5/5)	
MODULE CODE		LAST EDIT				
May 08, 2008 19:01:59 PM						PAGE 5 OF 5

- ▶ Macronix - MX25L8005M2C-15G
- ▶ STM - M25PE80
- ▶ ATMEL - AT26DF081A-SU
- SST - 25VF080B-50-4C-S2AF
- WINBOND - W25X80-VSS1-G

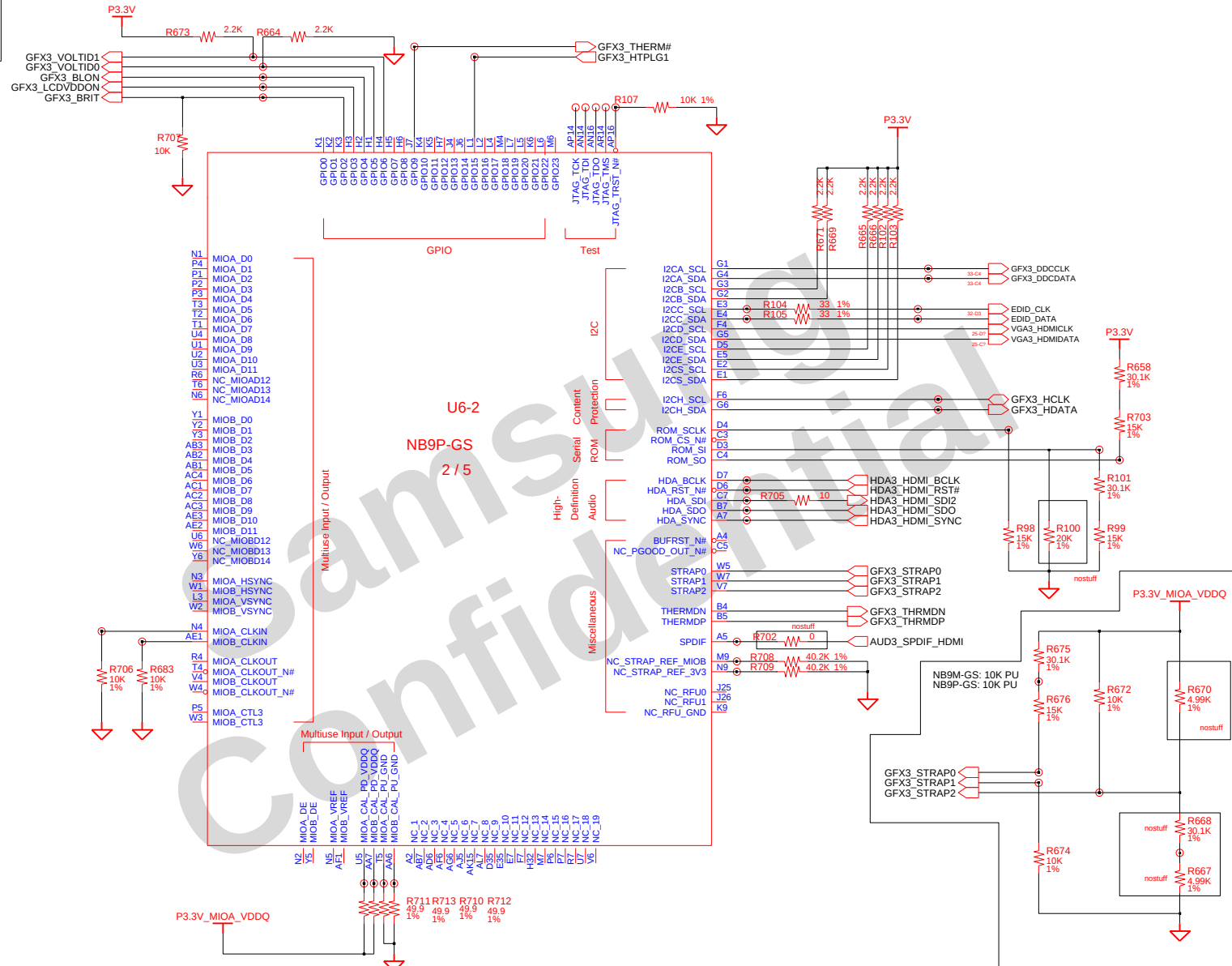


02	VERIFY REAL MODE	66	CONFIGURE ADVANCE CACHE REG.
03	DISABLE NMI	6A	DISPLAY EXTERNAL CACHE SIZE
04	GET CPU TYPE	6C	DISPLAY SHADOW MESSAGE
06	INIT. SYSTEM H/W	6E	DISPLAY NON-DISPOSABLE SEGMENT
08	INIT. CHIPSET REG.	70	DISPLAY ERROR MESSAGE
09	SET IN POST FLAG	72	CHECK FOR CONFIGURATION ERROR
0A	INIT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

NAME	SUN XIAO,	DATE	2/27/2008	TITLE	Gevena 2 ext SPI.BIOS_ROM SPI.BIOS_ROM	SAMSUNG ELECTRONICS
CHECK	WU SHIJIANG,	DEV. STEP	PV			
APPROVAL	BYEONGCHANG LEE,	REV	1.0			
MODULE CODE	LAST EDIT		May 08, 2008 19:01:59 PM			
				PAGE	1	OF 1

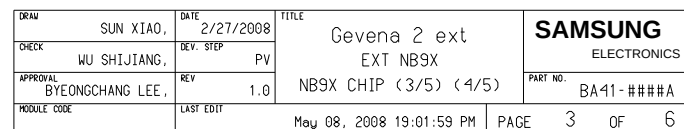
[illegible]

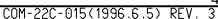
SAMSUNG PROPRIETARY
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.



DRAW	SUN XIAO,	DATE	2/27/2008	TITLE	Gevena 2 ext EXT NB9X NB9X CHIP (2/5)	SAMSUNG ELECTRONICS
CHECK	WU SHIJIANG,	DEV. STEP	PV			PART NO.
APPROVAL	BYEONGCHANG LEE,	REV	1.0			BA41-####A
MODULE CODE		LAST EDIT	May 08, 2008 19:01:59 PM	PAGE	2	OF 6

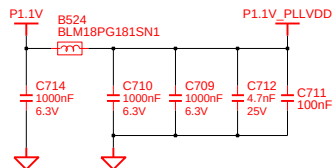
Graphic Memory I/F
(Using FBC Channel)



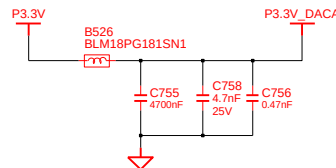


SAMSUNG PROPRIETARY
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

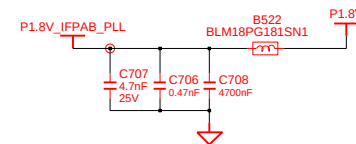
PLL_VDD



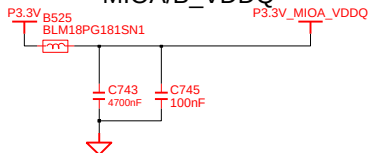
DACA/B/C



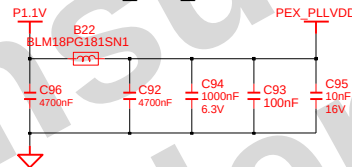
IFPAB_PLLVDD



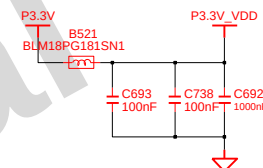
MIOA/B_VDDQ



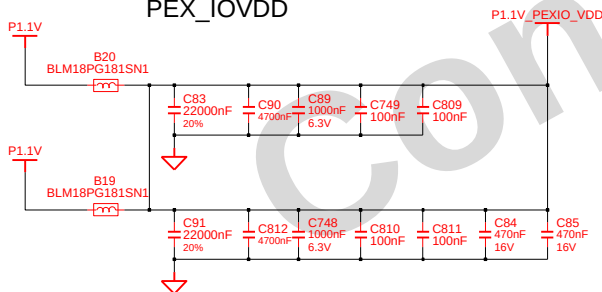
PEX_PLL_VDD



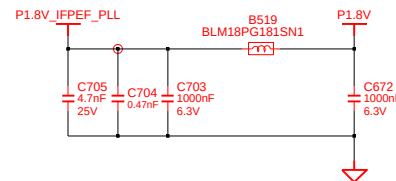
3.3V_VDD



PEX_IOVDD



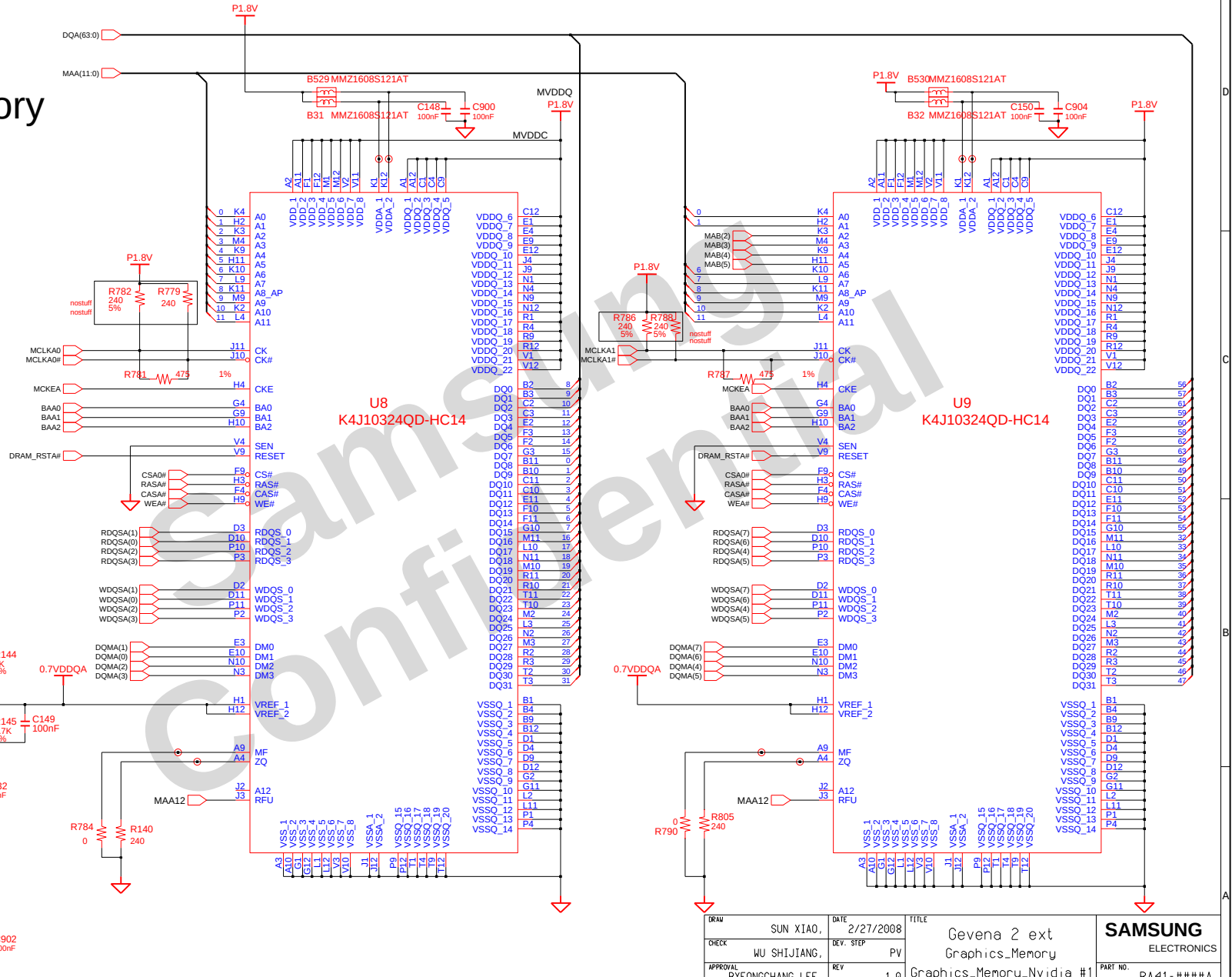
IFPEF_PLLVDD



DRAW	SUN XIAO,	DATE	2/27/2008	TITLE	Gevena 2 ext EXT NB9X NB9X POWER RAIL	SAMSUNG ELECTRONICS
CHECK	WU SHIJIANG,	DEV. STEP	PV			PART NO. BA41-####A
APPROVAL	BYEONGCHANG LEE,	REV	1.0			
MODULE CODE		LAST EDIT				
				May 08, 2008 19:01:59 PM	PAGE 5 OF 6	



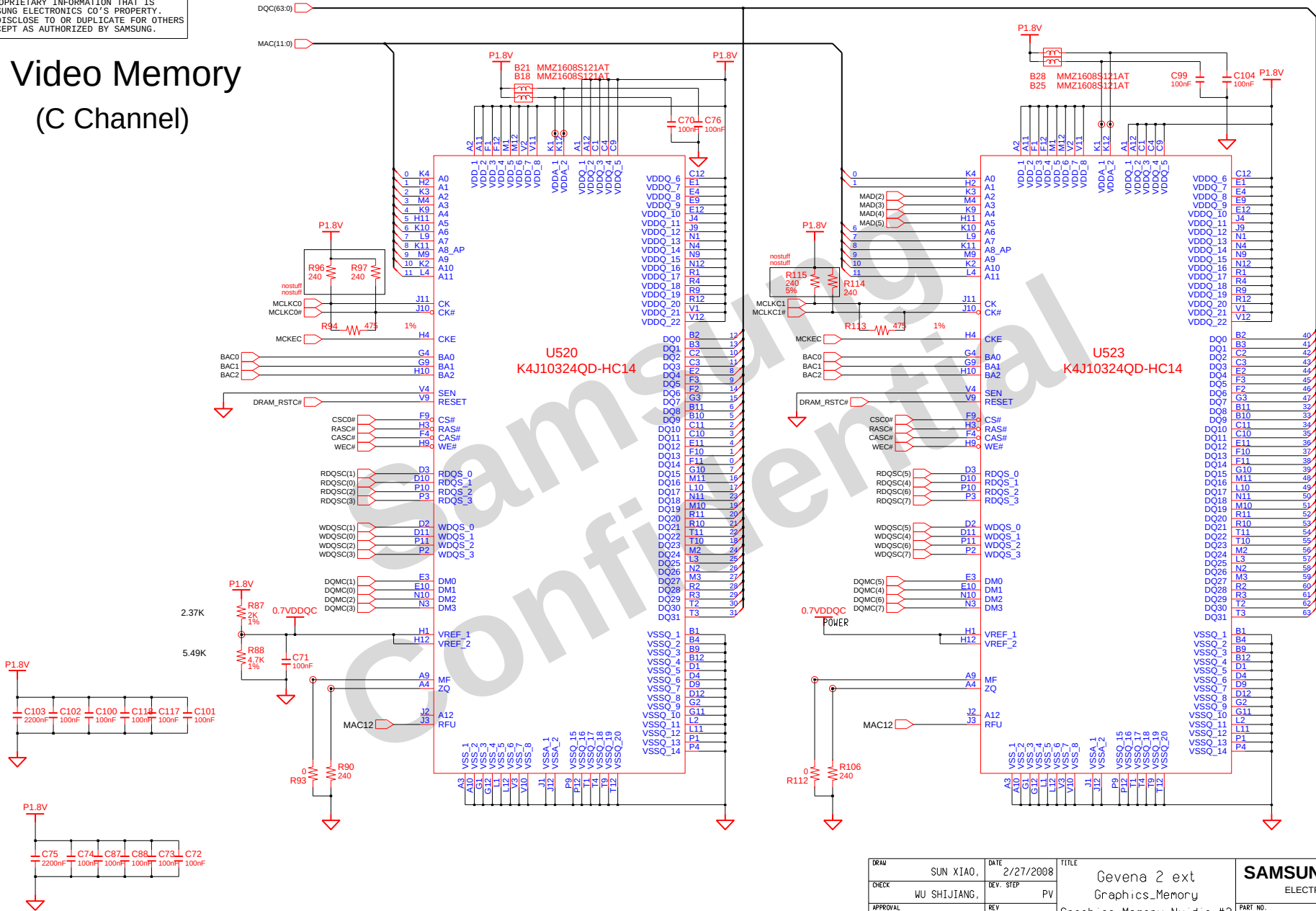
Video Memory (A Channel)



DRAM	SUN XIAO,	DATE	2/27/2008	TITLE	Gevena 2 ext	SAMSUNG ELECTRONICS PART NO. BA41-####A
CHECK	WU SHIJIANG,	DEV. STEP	PV		Graphics_Memory	
APPROVAL	BYEONGCHANG LEE,	REV	1.0		Graphics_Memory.Nvidia #1	
MODULE CODE		LAST EDIT				
May 08, 2008 19:01:59 PM						PAGE 1 OF 2

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.

Video Memory (C Channel)



DRAW	SUN XIAO,	DATE	2/27/2008	TITLE	Gevena 2 ext	SAMSUNG ELECTRONICS PART NO. BA41-####A
CHECK	WU SHIJIANG,	DEV. STEP	PV		Graphics_Memory	
APPROVAL	BYEONGCHANG LEE,	REV	1.0		Graphics_Memory_Nvidia #2	
MODULE CODE		LAST EDIT				
May 08, 2008 19:01:59 PM						PAGE 2 OF 2

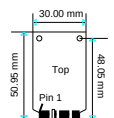
SAMSUNG PROPRIETARY
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.



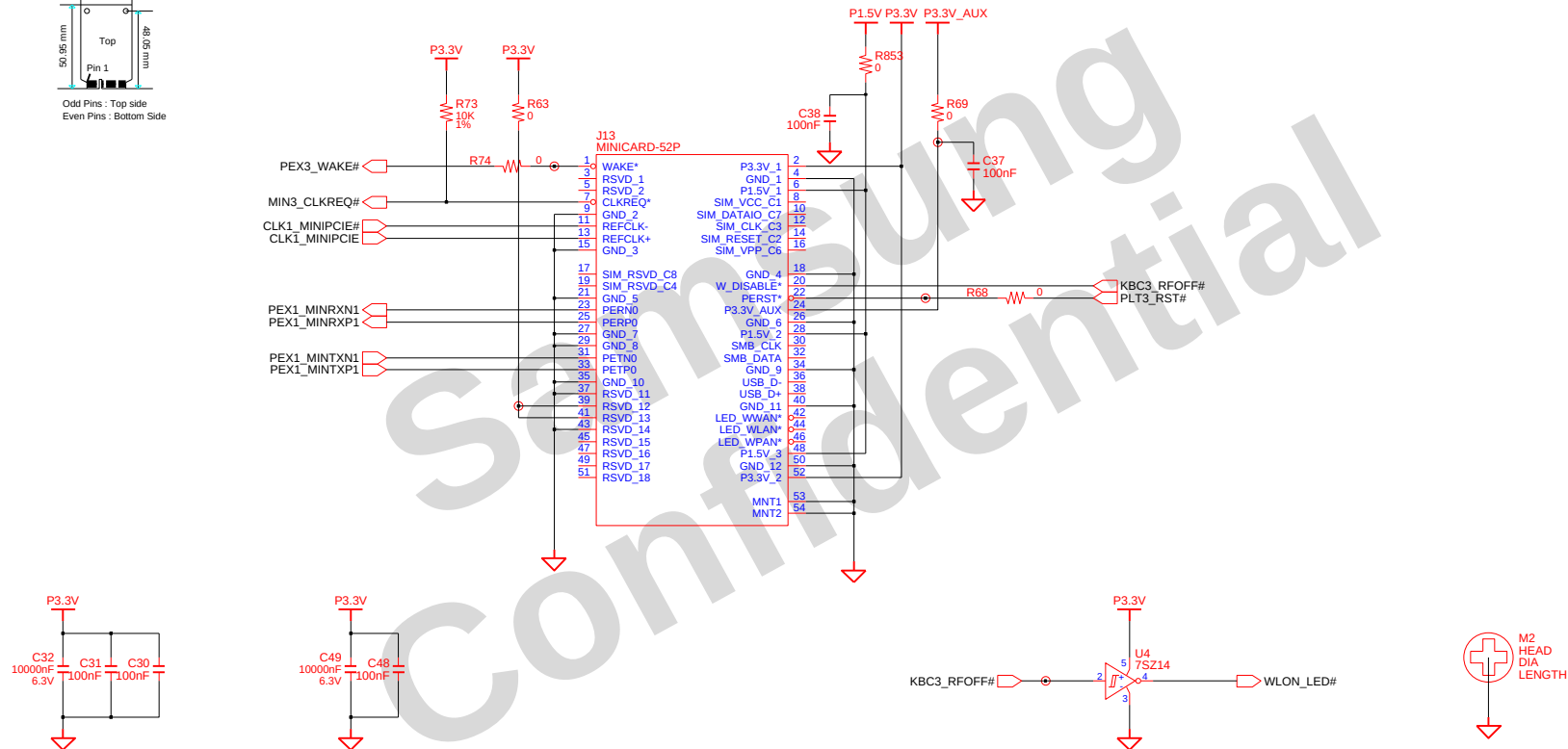
DRAW	SUN XIAO,	DATE	2/27/2008	TITLE Gevena 2 ext Graphics_Memory Graphics_Memory_Nvidia #3		SAMSUNG ELECTRONICS PART NO. BA41-####A		
CHECK	WU SHIJIANG,	DEV. STEP	PV					
APPROVAL	BYEONGCHANG LEE,	REV	1.0					
MODULE CODE	LAST EDIT							
				May 08, 2008 19:01:59 PM	PAGE	3	OF	3

Mini Card

Mini PCI Express Card

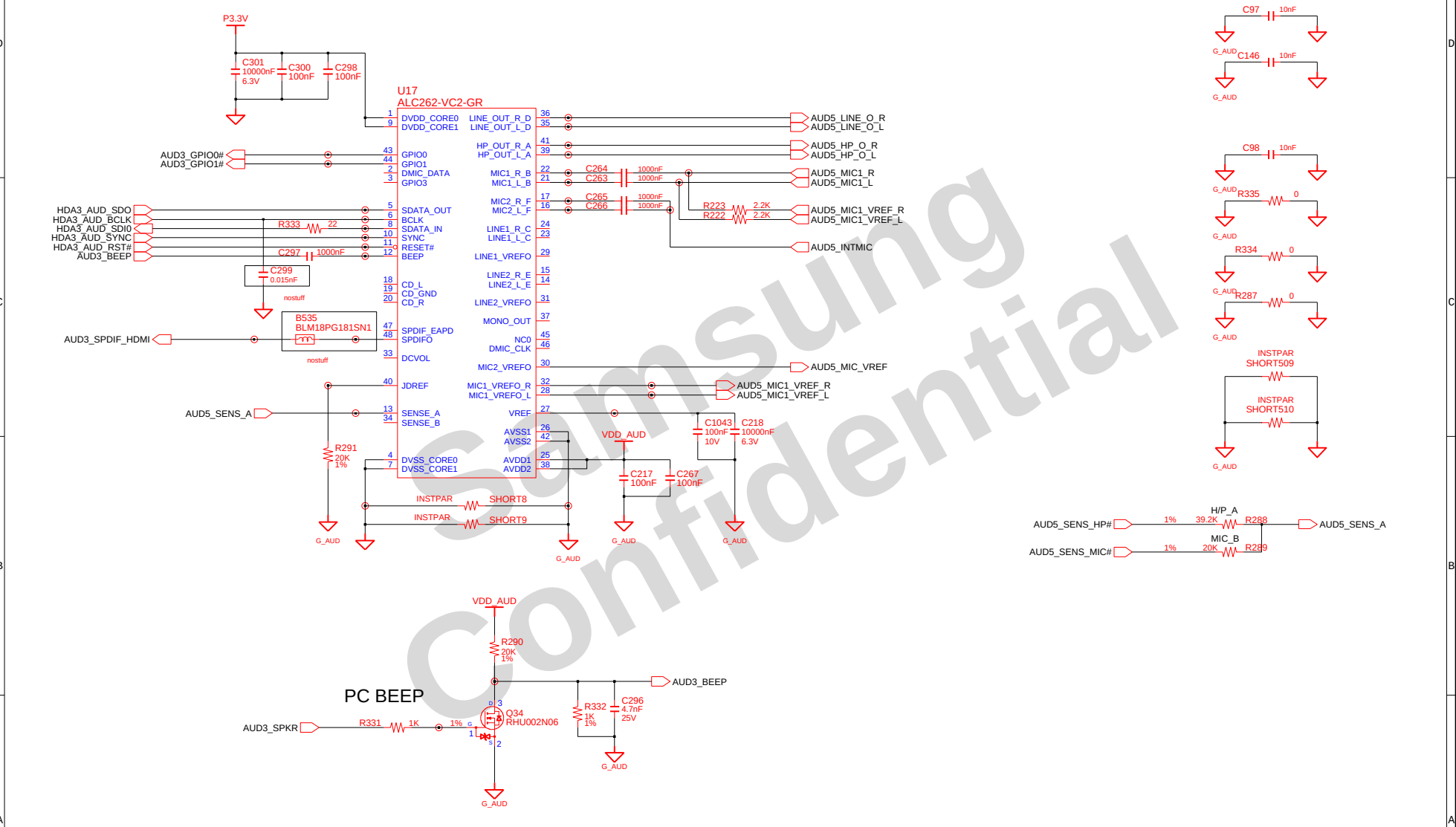


Odd Pins : Top side
Even Pins : Bottom Side



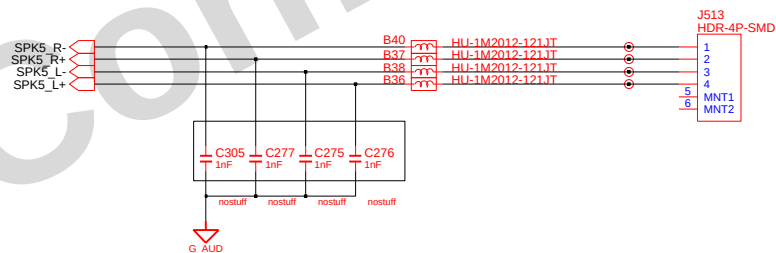
DRAW	SUN XIAO,	DATE	2/27/2008	TITLE	Geneva 2 ext PCIE_Minicard_Slot	SAMSUNG ELECTRONICS PART NO. BA41-####A
CHECK	WU SHIJIANG,	DEV. STEP	PV		PCIE_Minicard_Slot	
APPROVAL	BYEONGCHANG LEE,	REV	1.0			
MODULE CODE	undefined	LAST EDIT	May 08, 2008 19:01:59 PM	PAGE	1 OF 1	

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	SUN XIAO,	DATE	2/27/2008	TITLE	Geneva 2 ext	SAMSUNG ELECTRONICS PART NO. BA41-####A
CHECK	WU SHIJIANG,	DEV. STEP	PV		HDA_Codec_Alc262	
APPROVAL	BYEONGCHANG LEE,	REV	1.0		HDA_Codec_Alc262 #1	
MODULE CODE	undefined	LAST EDIT	May 08, 2008 19:01:59 PM			
PAGE 1 OF 5						

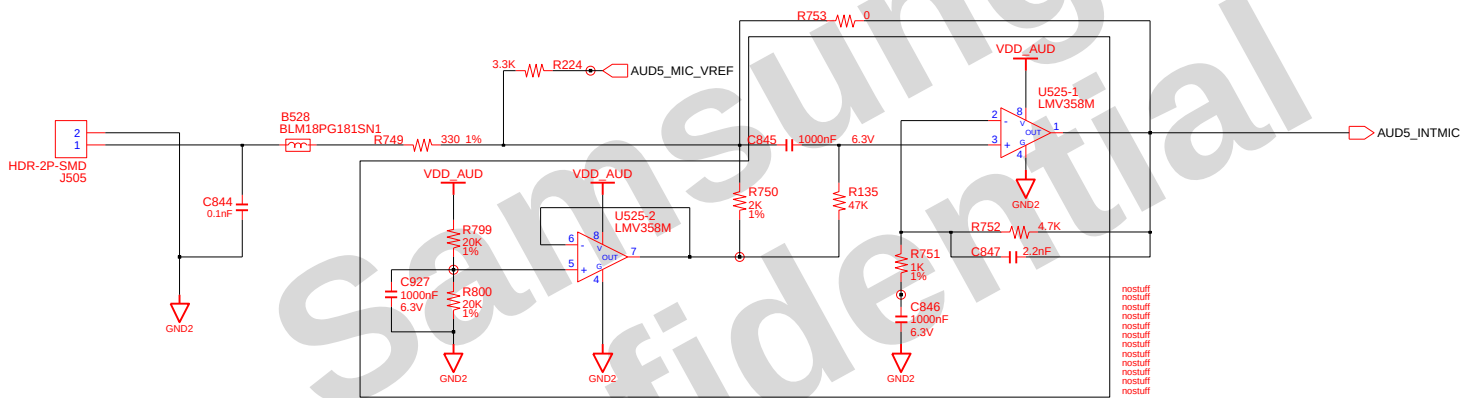
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.



DRAW	SUN XIAO,	DATE	2/27/2008	TITLE	Gevena 2 ext		SAMSUNG	
CHECK	WU SHIJIANG,	DEV. STEP	PV	HDA_Codec_Alc262		ELECTRONICS		
APPROVAL	BYEONGCHANG LEE,	REV	1.0	HDA_Codec_Alc262 #2		PART NO.	BA14-####A	
MODULE CODE	LAST EDIT			May 08, 2008 19:01:59 PM		PAGE	2	OF 5

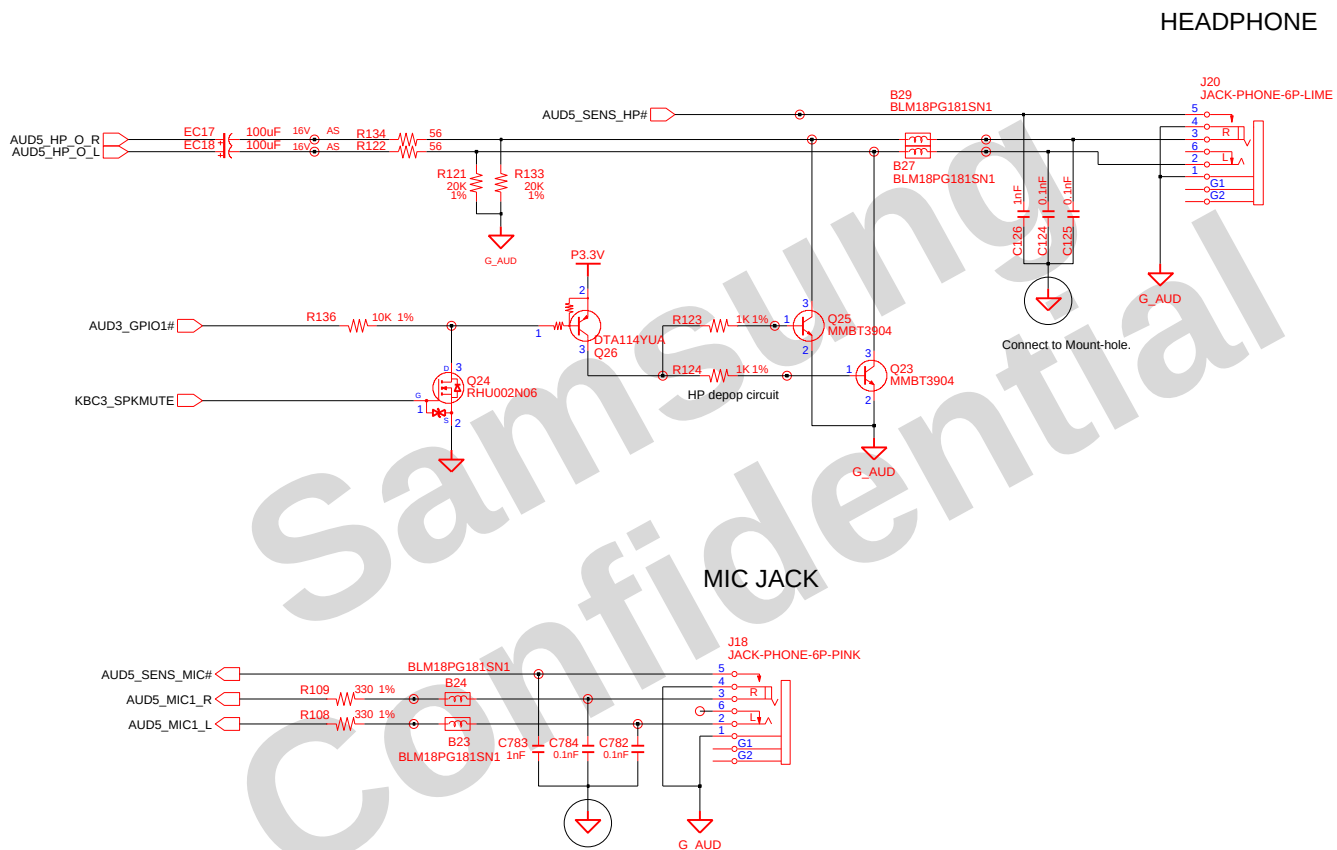
SAMSUNG PROPRIETARY
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

Internal MIC



DRAW	SUN XIAO,	DATE	2/27/2008	TITLE	Gevena 2 ext	SAMSUNG ELECTRONICS PART NO. BA41-####A
CHECK	WU SHIJIANG,	DEV. STEP	PV		HDA_Codec_Alc262	
APPROVAL	BYEONGCHANG LEE,	REV	1.0		HDA_Codec_Alc262 #3	
MODULE CODE	undefined	LAST EDIT	May 08, 2008 19:01:59 PM	PAGE	3 OF 5	

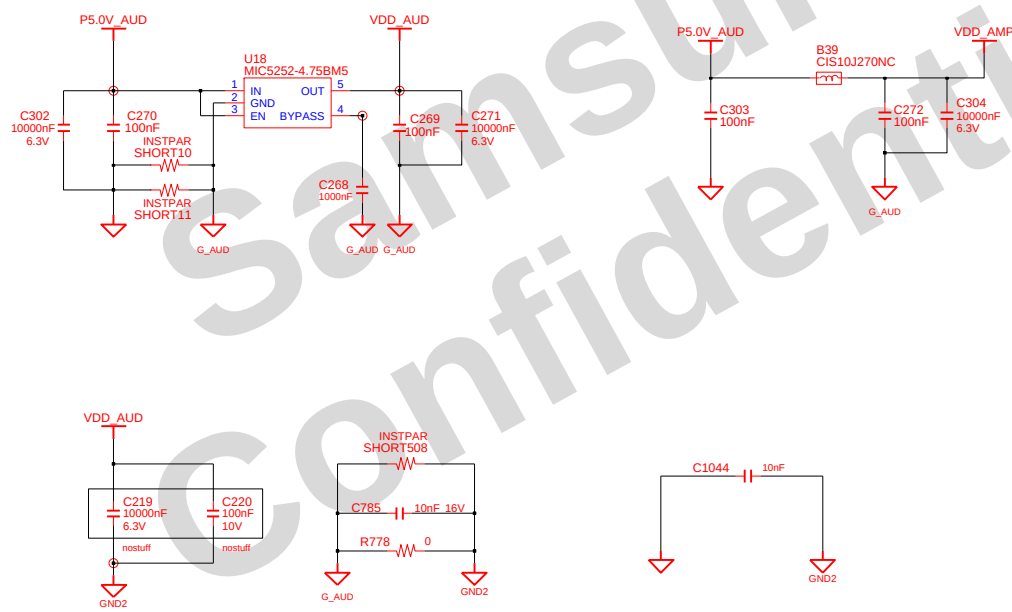
SAMSUNG PROPRIETARY
 THIS DOCUMENT CONTAINS CONFIDENTIAL
 PROPRIETARY INFORMATION THAT IS
 SAMSUNG ELECTRONICS CO.'S PROPERTY.
 DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
 EXCEPT AS AUTHORIZED BY SAMSUNG.



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

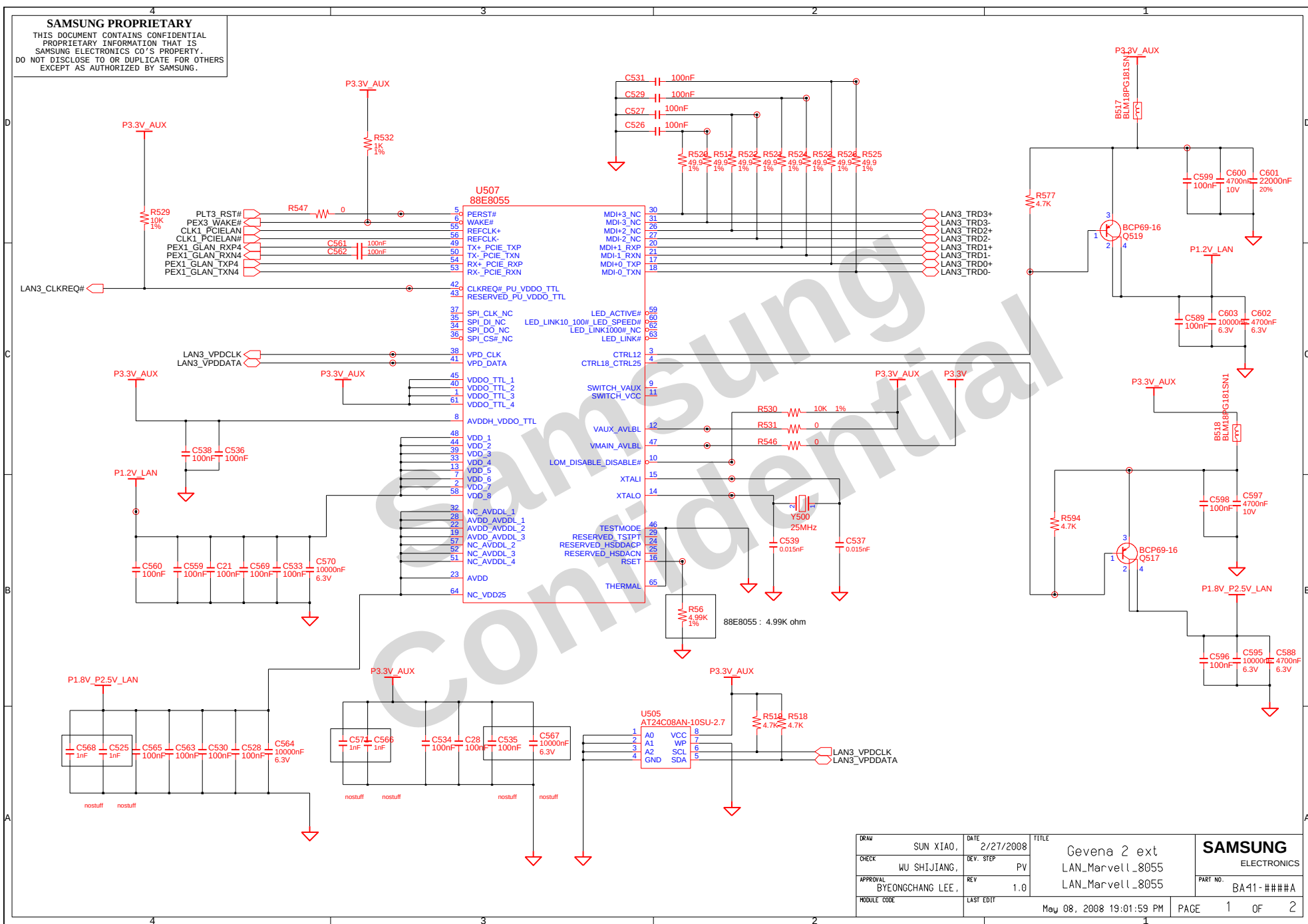
DRAW	SUN XIAO,	DATE	2/27/2008	TITLE	Gevena 2 ext	SAMSUNG ELECTRONICS PART NO. BA41-####A
CHECK	WU SHIJIANG,	DEV. STEP	PV		HDA_Codec_Alc262	
APPROVAL	BYEONGCHANG LEE,	REV	1.0		HDA_Codec_Alc262 #4	
MODULE CODE		LAST EDIT				
May 08, 2008 19:01:59 PM						PAGE 4 OF 5

AUDIO POWER



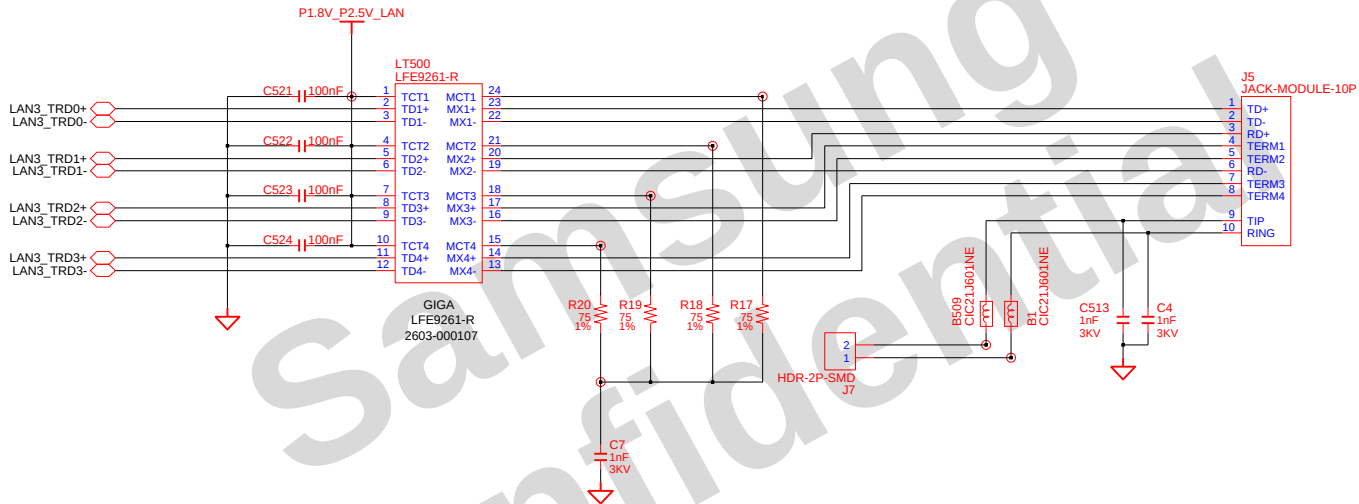
DRAW	SUN XIAO,	DATE	2/27/2008	TITLE	Geneva 2 ext	SAMSUNG ELECTRONICS PART NO. BA41-####A
CHECK	WU SHIJIANG,	DEV. STEP	PV		HDA_Codec_Alc262	
APPROVAL	BYEONGCHANG LEE,	REV	1.0		HDA_Codec_Alc262 #5	
MODULE CODE	undefined	LAST EDIT	May 08, 2008 19:01:59 PM	PAGE	5 OF 5	

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.



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.

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



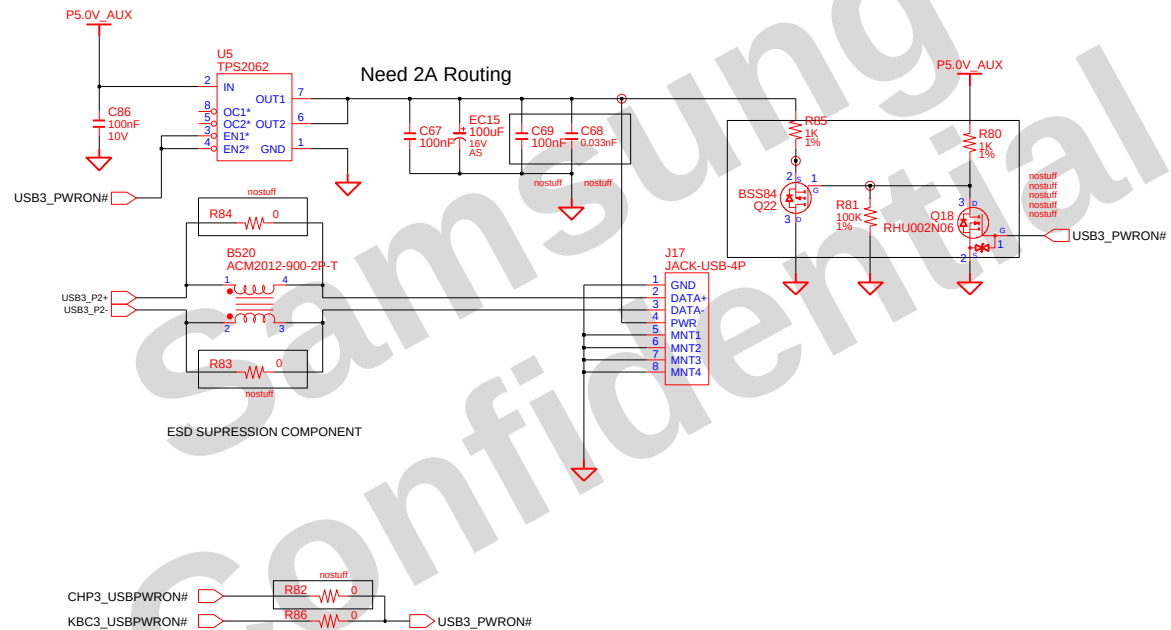
DRAW	SUN XIAO,	DATE	2/27/2008	TITLE	Gevena 2 ext	SAMSUNG ELECTRONICS PART NO. BA41-####A
CHECK	WU SHIJIANG,	DEV. STEP	PV		LAN_Marvell_8055	
APPROVAL	BYEONGCHANG LEE,	REV	1.0		LAN_Marvell_8055	
MODULE CODE		LAST EDIT				
May 08, 2008 19:01:59 PM						PAGE 2 OF 2

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.

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

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 PORT USB CONNECTOR

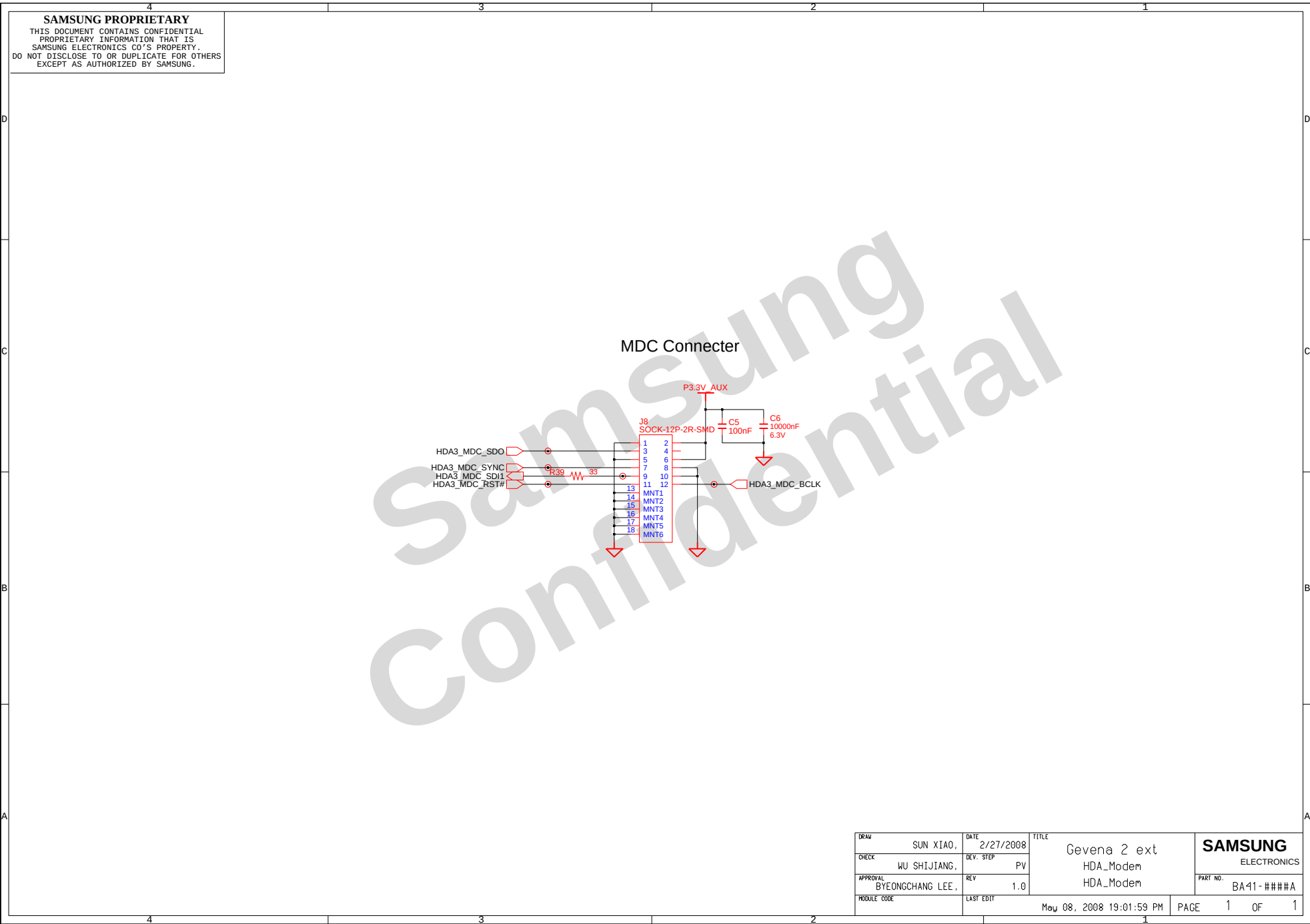


DRAW	SUN XIAO,	DATE	2/27/2008	TITLE	Gevena 2 ext	SAMSUNG ELECTRONICS PART NO. BA41-####A
CHECK	WU SHIJIANG,	DEV. STEP	PV	USB_1Port	USB_1Port	
APPROVAL	BYEONGCHANG LEE,	REV	1.0	USB_1Port		
MODULE CODE		LAST EDIT	May 08, 2008 19:01:59 PM	PAGE	1 OF 1	

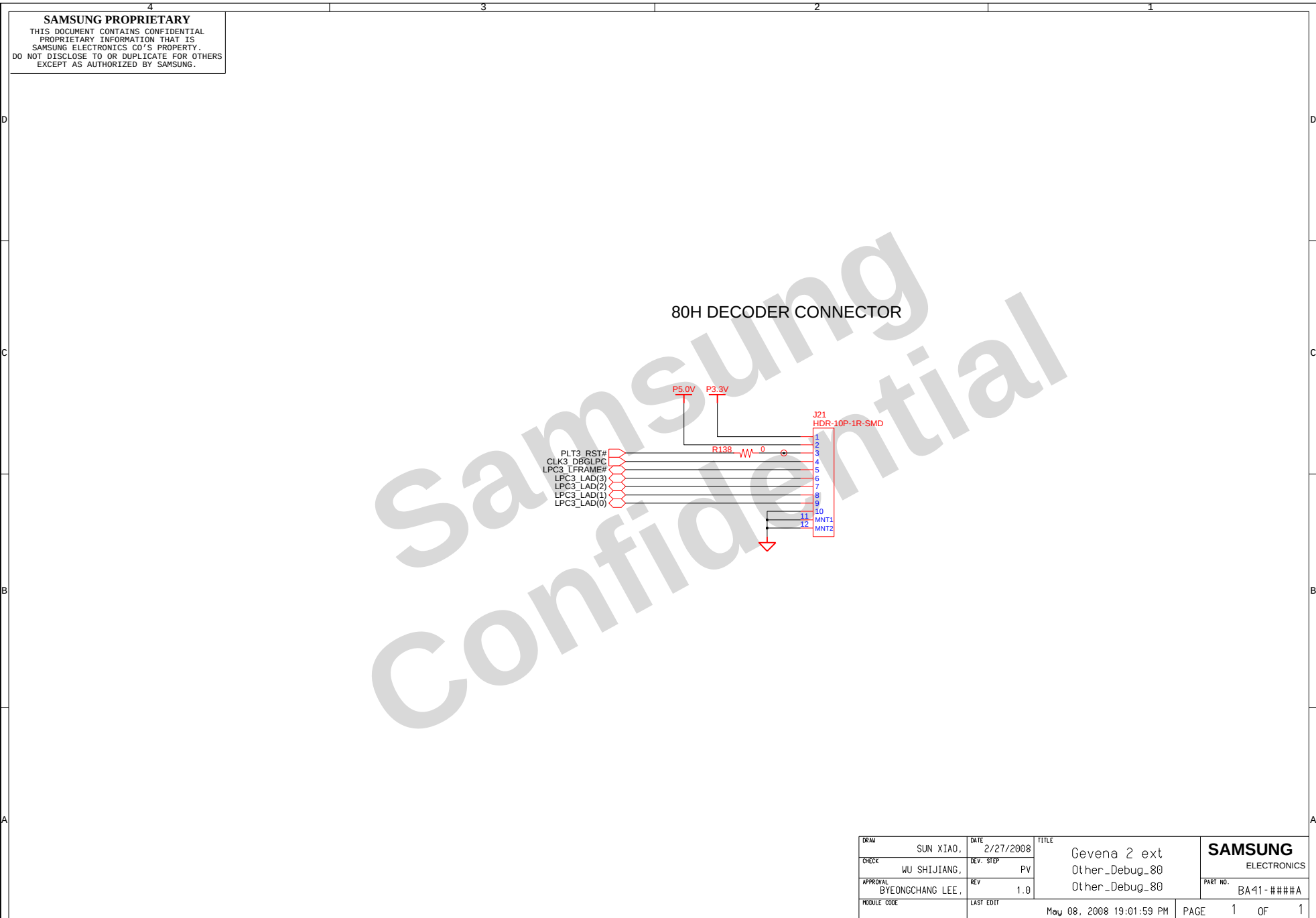
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

[illegible]

DRAM	SUN XIAO,	DATE	2/27/2008	TITLE Gevena 2 ext USB_2Port USB_2Port	SAMSUNG ELECTRONICS
CHECK	WU SHIJIANG,	DEV. STEP	PV		
APPROVAL	BYEONGCHANG LEE,	REV	1.0		
MODULE CODE				LAST EDIT	PART NO. BA14-#### May 08, 2008 19:01:59 PM
				PAGE	1 OF 1

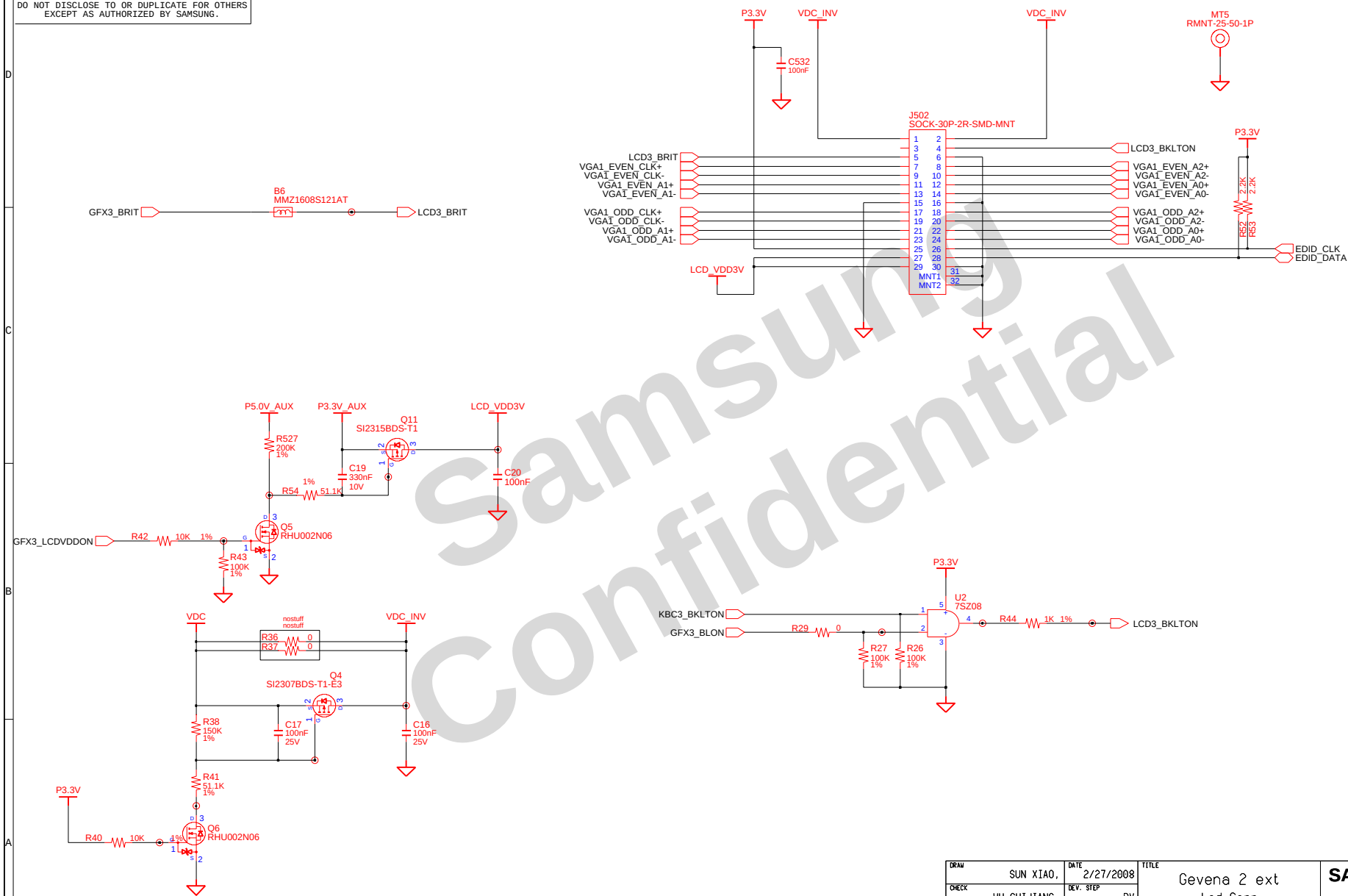


DRAW	SUN XIAO,	DATE	2/27/2008	TITLE	Geneva 2 ext	SAMSUNG ELECTRONICS PART NO. BA41-####A
CHECK	WU SHIJIANG,	DEV. STEP	PV		HDA_Modem	
APPROVAL	BYEONGCHANG LEE,	REV	1.0		HDA_Modem	
MODULE CODE		LAST EDIT	May 08, 2008 19:01:59 PM	PAGE	1 OF 1	



SAMSUNG PROPRIETARY

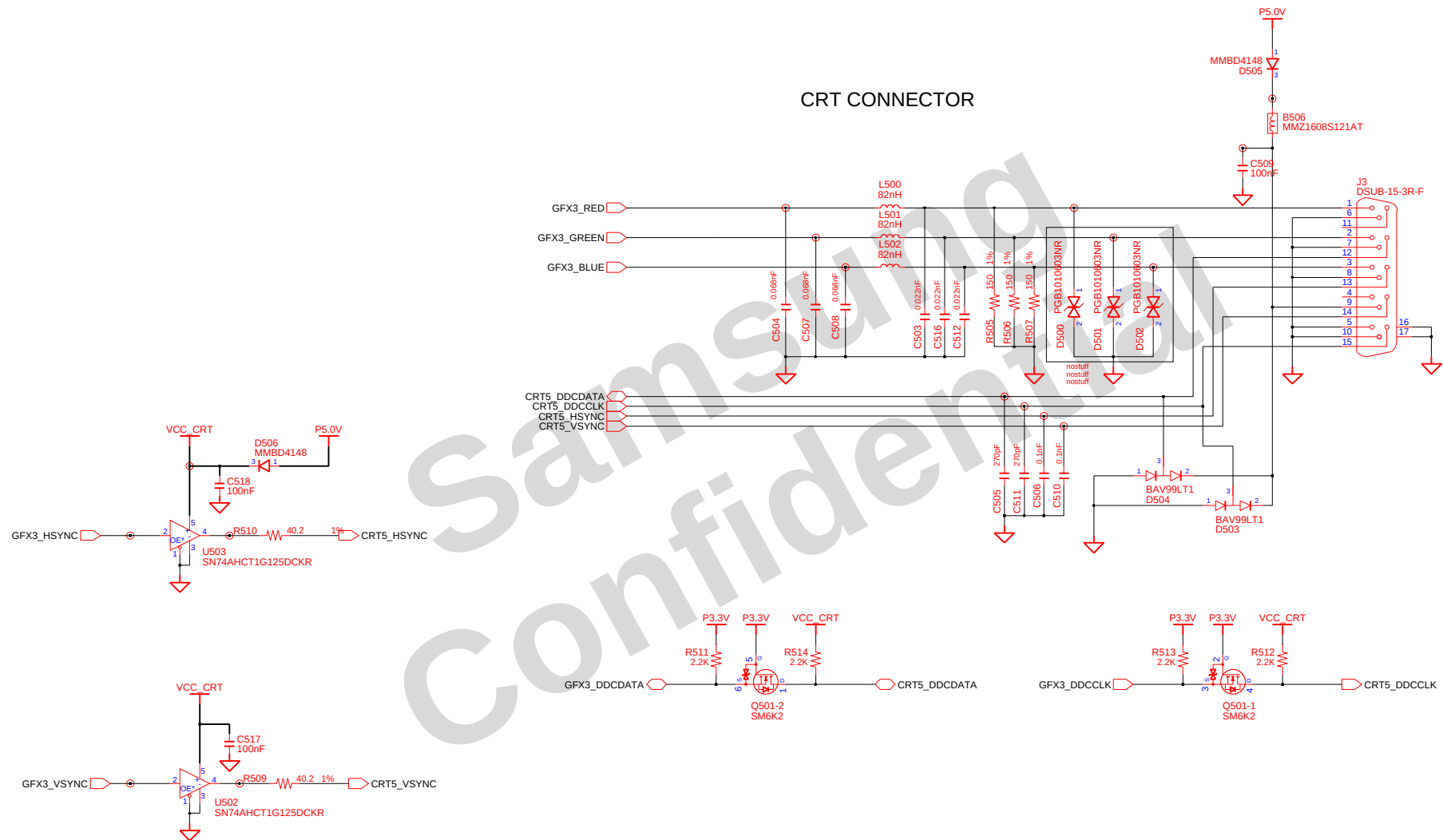
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.



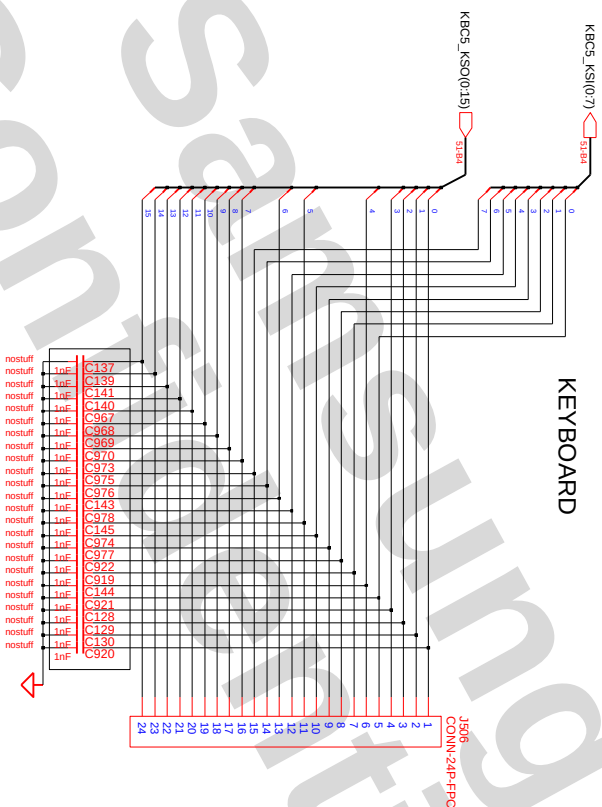
DRAW	SUN XIAO,	DATE	2/27/2008	TITLE	Gevena 2 ext Lcd Conn	SAMSUNG ELECTRONICS PART NO. BA41-####A
CHECK	WU SHIJIANG,	DEV. STEP	PV			
APPROVAL	BYEONGCHANG LEE,	REV	1.0			
MODULE CODE	undefined	LAST EDIT	May 08, 2008 19:01:59 PM	PAGE	1 OF 1	

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.

CRT CONNECTOR



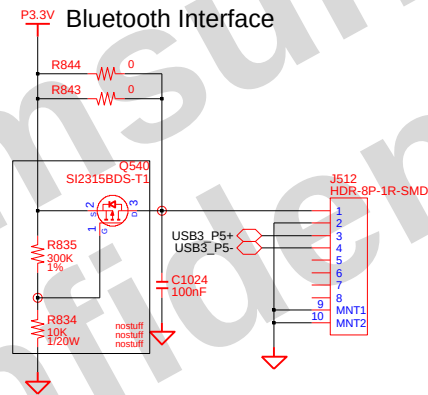
DRAW	SUN XIAO,	DATE	2/27/2008	TITLE	Gevena 2 ext Interface_Circuit Graphics_IF_CRT	SAMSUNG ELECTRONICS PART NO. BA41-####A
CHECK	WU SHIJIANG,	DEV. STEP	PV			
APPROVAL	BYEONGCHANG LEE,	REV	1.0			
MODULE CODE		LAST EDIT	May 08, 2008 19:01:59 PM	PAGE	1 OF 1	



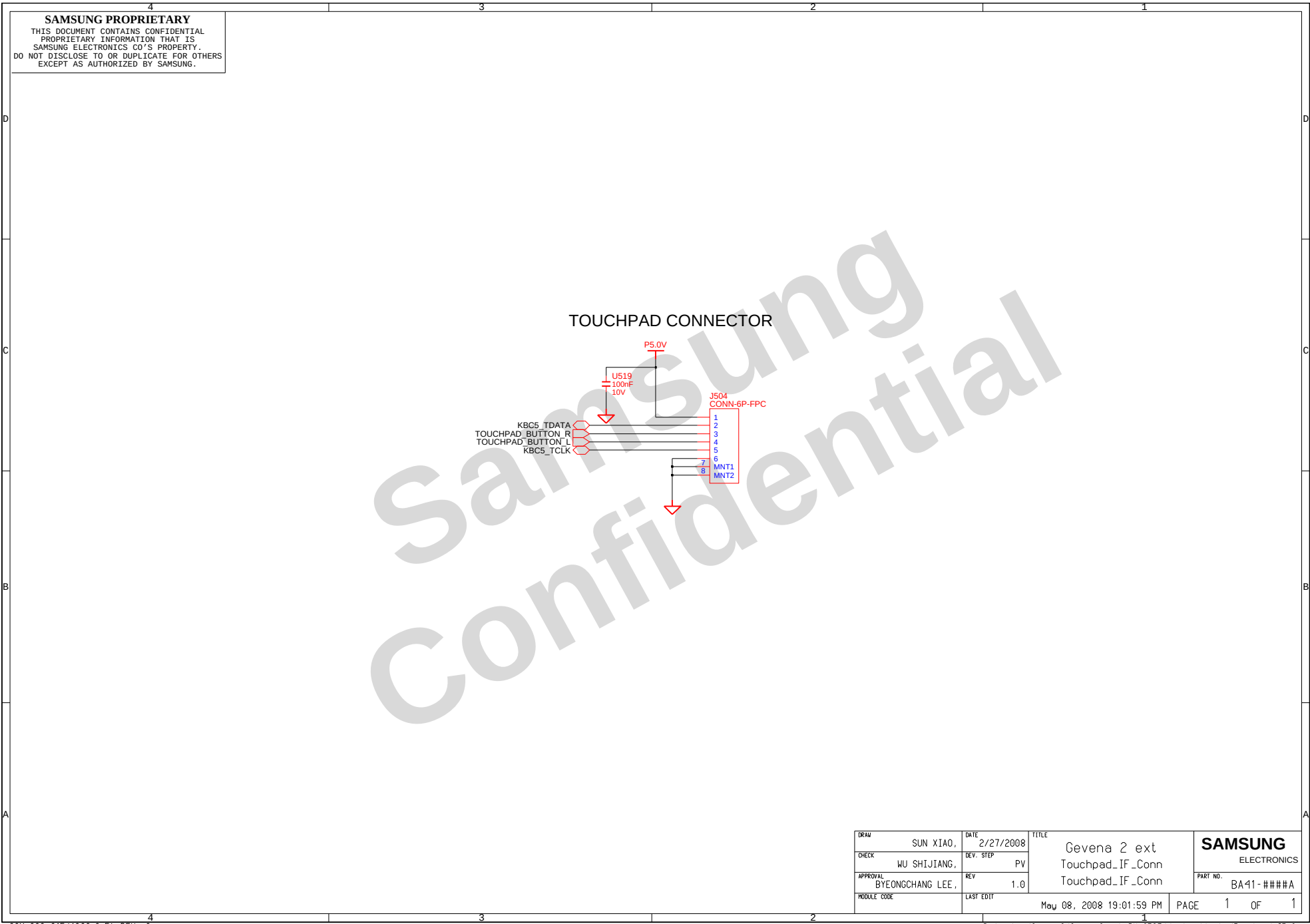
DRAW		DATE		TITLE		SAMSUNG	
SUN XIAO,		2/27/2008		Geneva 2 ext		ELECTRONICS	
MU SHIJIANG,		REV. STEP		KBD_IF_Conn		PART NO.	
BYEONCHANG LEE,		PV		KBD_IF_Conn		BA-11-####A	
ROUTE CODE		REV		1.0			
		LAST EDIT		May 08, 2008 19:01:59 PM		PAGE	
						1 OF 1	

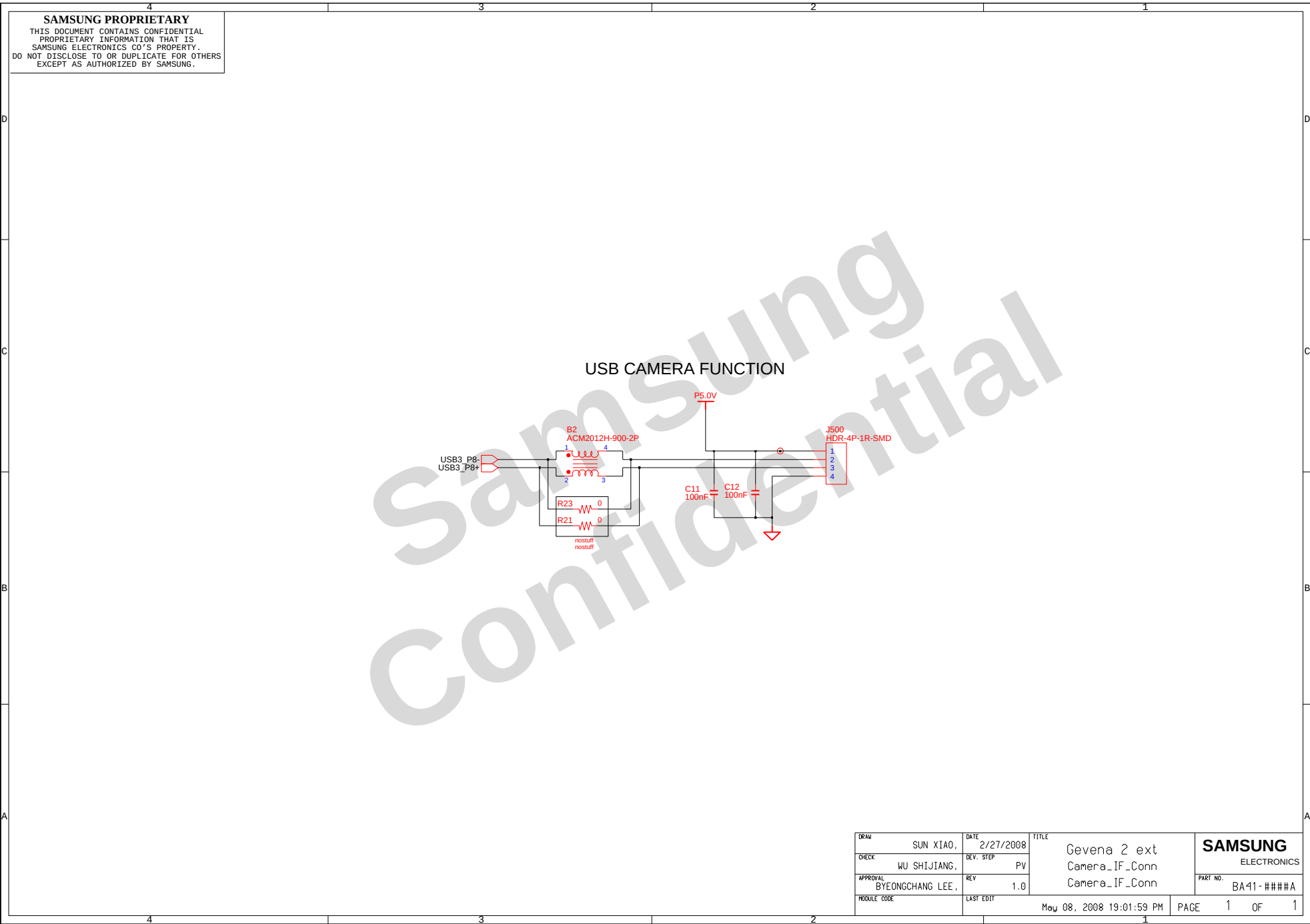
SAMSUNG PROPRIETARY
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

Bluetooth Interface



DRAW	SUN XIAO,	DATE	2/27/2008	TITLE	Gevena 2 ext Bluetooth_IF_Conn Bluetooth_IF_Conn	SAMSUNG ELECTRONICS PART NO. BA41-####A
CHECK	WU SHIJIANG,	DEV. STEP	PV			
APPROVAL	BYEONGCHANG LEE,	REV	1.0			
MODULE CODE		LAST EDIT	May 08, 2008 19:01:59 PM	PAGE	1 OF 1	

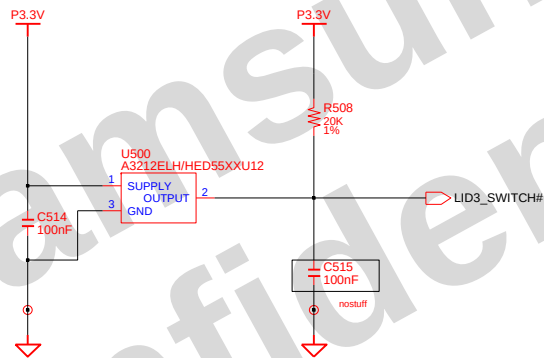




DRAW	SUN XIAO,	DATE	2/27/2008	TITLE	Gevena 2 ext Camera_IF_Conn	SAMSUNG ELECTRONICS PART NO. BA41-####A
CHECK	WU SHIJIANG,	DEV. STEP	PV		Camera_IF_Conn	
APPROVAL	BYEONGCHANG LEE,	REV	1.0			
MODULE CODE		LAST EDIT	May 08, 2008 19:01:59 PM	PAGE	1 OF 1	

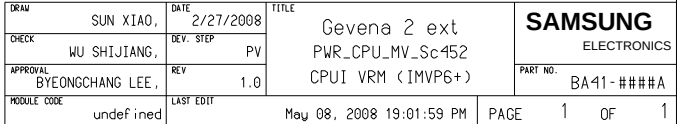
SAMSUNG PROPRIETARY
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

LID_SWITCH



DRAW	SUN XIAO,	DATE	2/27/2008	TITLE	Gevena 2 ext LID_Switch LID_Switch	SAMSUNG ELECTRONICS
CHECK	WU SHIJIANG,	DEV. STEP	PV			
APPROVAL	BYEONGCHANG LEE,	REV	1.0			
MODULE CODE				LAST EDIT	May 08, 2008 19:01:59 PM	PART NO. BA41-####A
					PAGE	1 OF 1

CPU VRM [SEMTECH]



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.

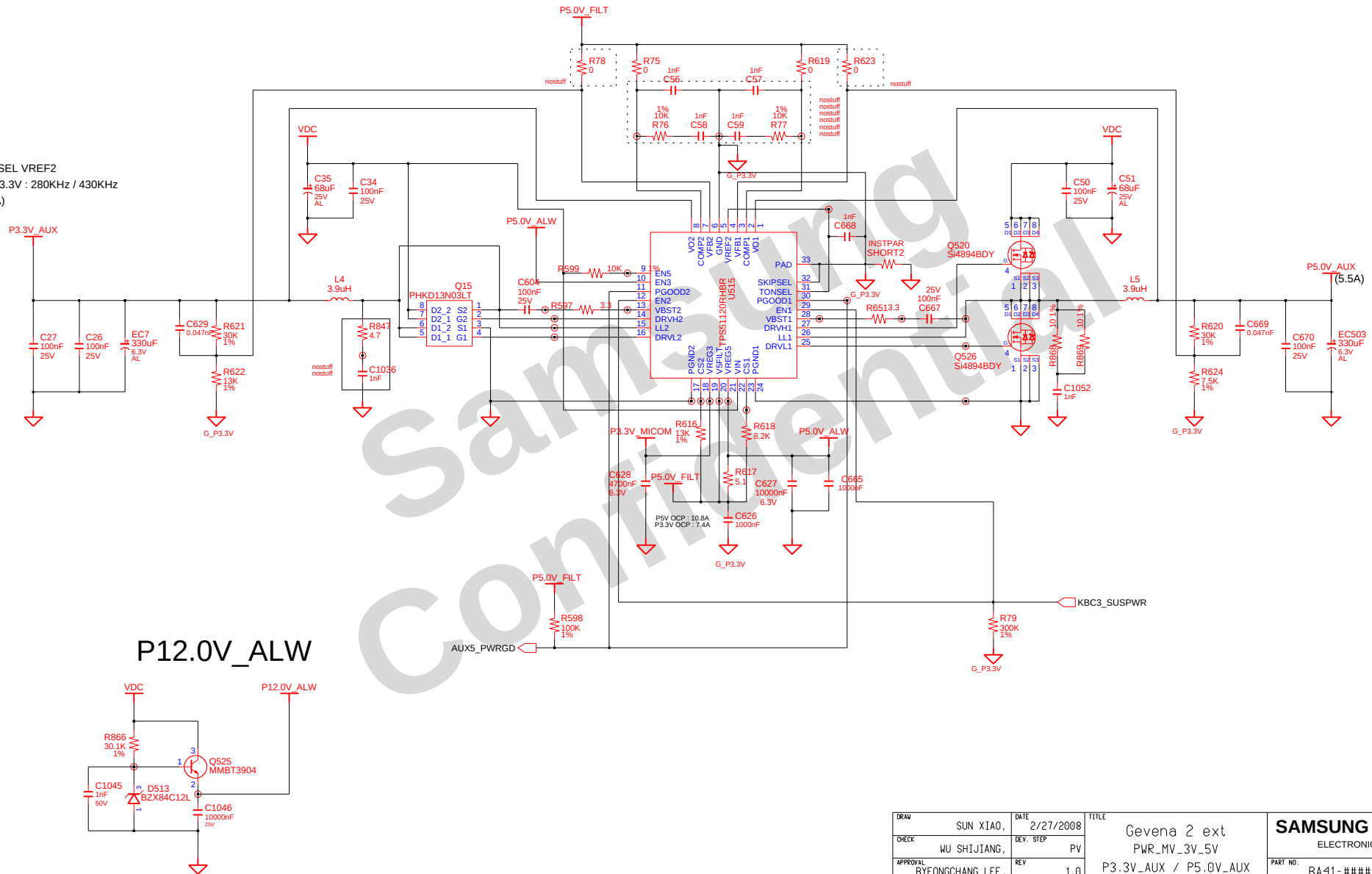
[illegible]

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

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 & P5.0V_AUX

TONSEL VREF2
 5V / 3.3V : 280KHz / 430KHz
 (4.5A)



P12.0V_ALW

DRAW	SUN XIAO,	DATE	2/27/2008	TITLE	Gevena 2 ext	SAMSUNG ELECTRONICS PART NO. BA41-####A
CHECK	WU SHIJIANG,	DEV. STEP	PV		PWR_MV_3V_5V	
APPROVAL	BYEONGCHANG LEE,	REV	1.0		P3.3V_AUX / P5.0V_AUX	
MODULE CODE	undefined	LAST EDIT	May 08, 2008 19:01:59 PM	PAGE	1 OF 1	

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.

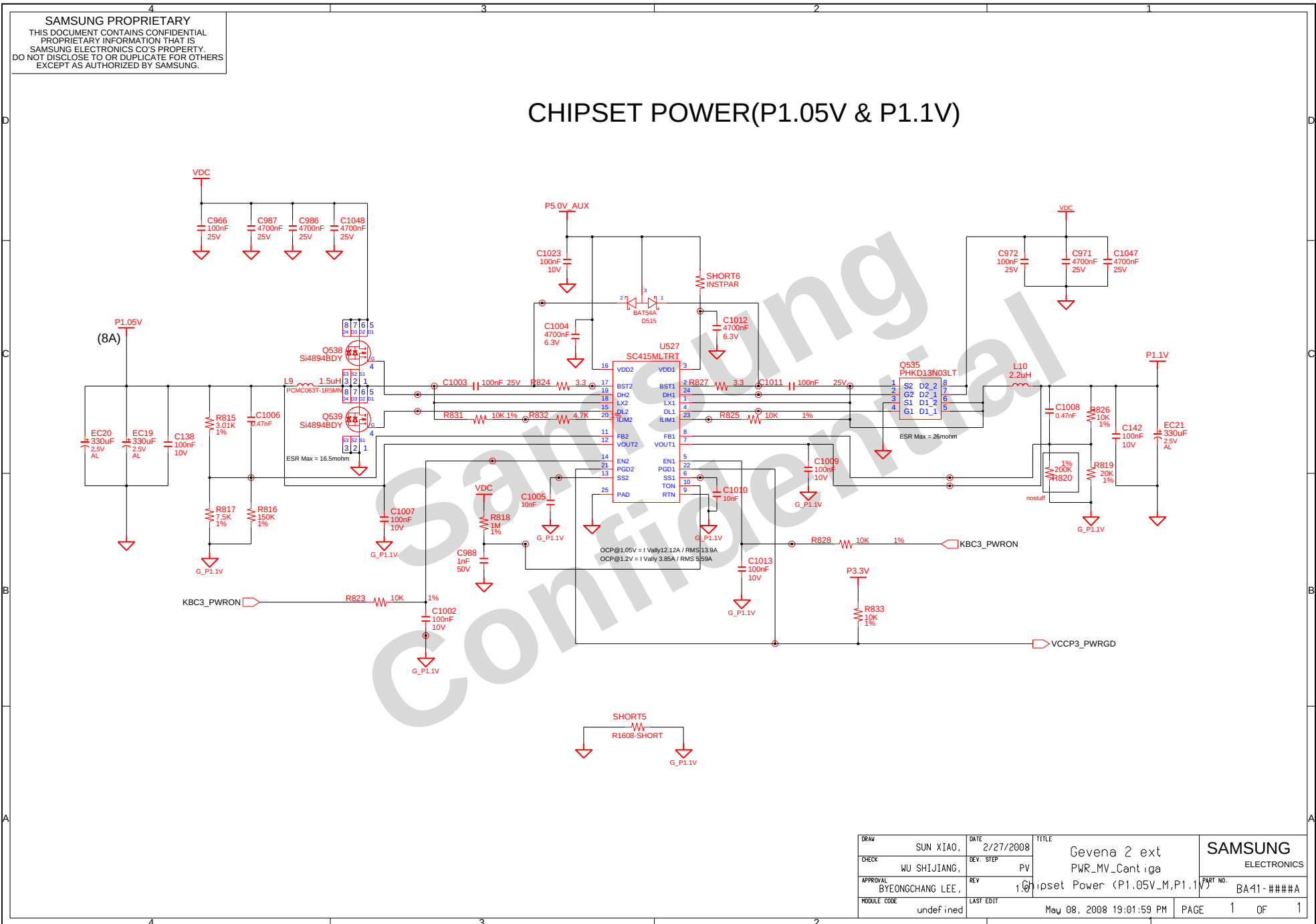
CHIPSET POWER(P1.05V & P1.1V)

DRW	SUN XIAO,	DATE	2/27/2008	TITLE	Gevena 2 ext	SAMSUNG ELECTRONICS			
CHECK	WU SHIJIANG,	DEV. STEP	PV		PWR_MV_Cantiga				
APPROVAL	BYEONGCHANG LEE,	REV	1.0		Chipset Power (P1.05V_M, P1.1V)				
MODULE CODE	undefined	LAST EDIT							
May 08, 2008 19:01:59 PM						PAGE	1	OF	1

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.

CHIPSET POWER(P1.05V & P1.1V)

DRW	SUN XIAO,	DATE	2/27/2008	TITLE	Gevena 2 ext	SAMSUNG ELECTRONICS			
CHECK	WU SHIJIANG,	DEV. STEP	PV		PWR_MV_Cantiga				
APPROVAL	BYEONGCHANG LEE,	REV	1.0		Chipset Power (P1.05V_M,P1.1V)				
MODULE CODE	undefined	LAST EDIT							
May 08, 2008 19:01:59 PM						PAGE	1	OF	1



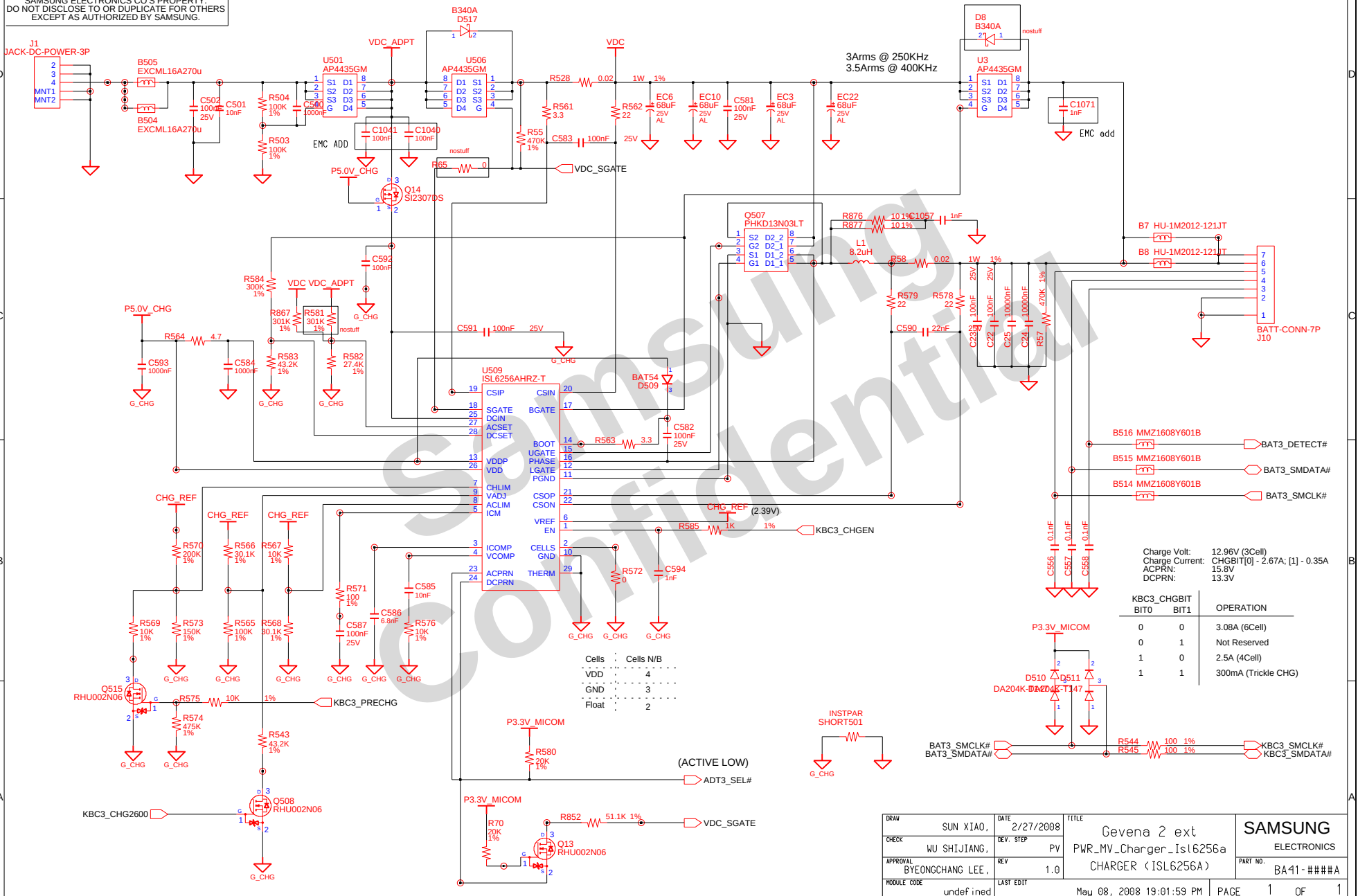
SAMSUNG PROPRIETARY
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

CHIPSET POWER(P1.05V & P1.1V)

DRW	SUN XIAO,	DATE	2/27/2008	TITLE	Gevena 2 ext	SAMSUNG ELECTRONICS			
CHECK	WU SHIJIANG,	DEV. STEP	PV		PWR_MV_Cantiga				
APPROVAL	BYEONGCHANG LEE,	REV	1.0		Chipset Power (P1.05V_M,P1.1V)				
MODULE CODE	undefined	LAST EDIT							
May 08, 2008 19:01:59 PM						PAGE	1	OF	1

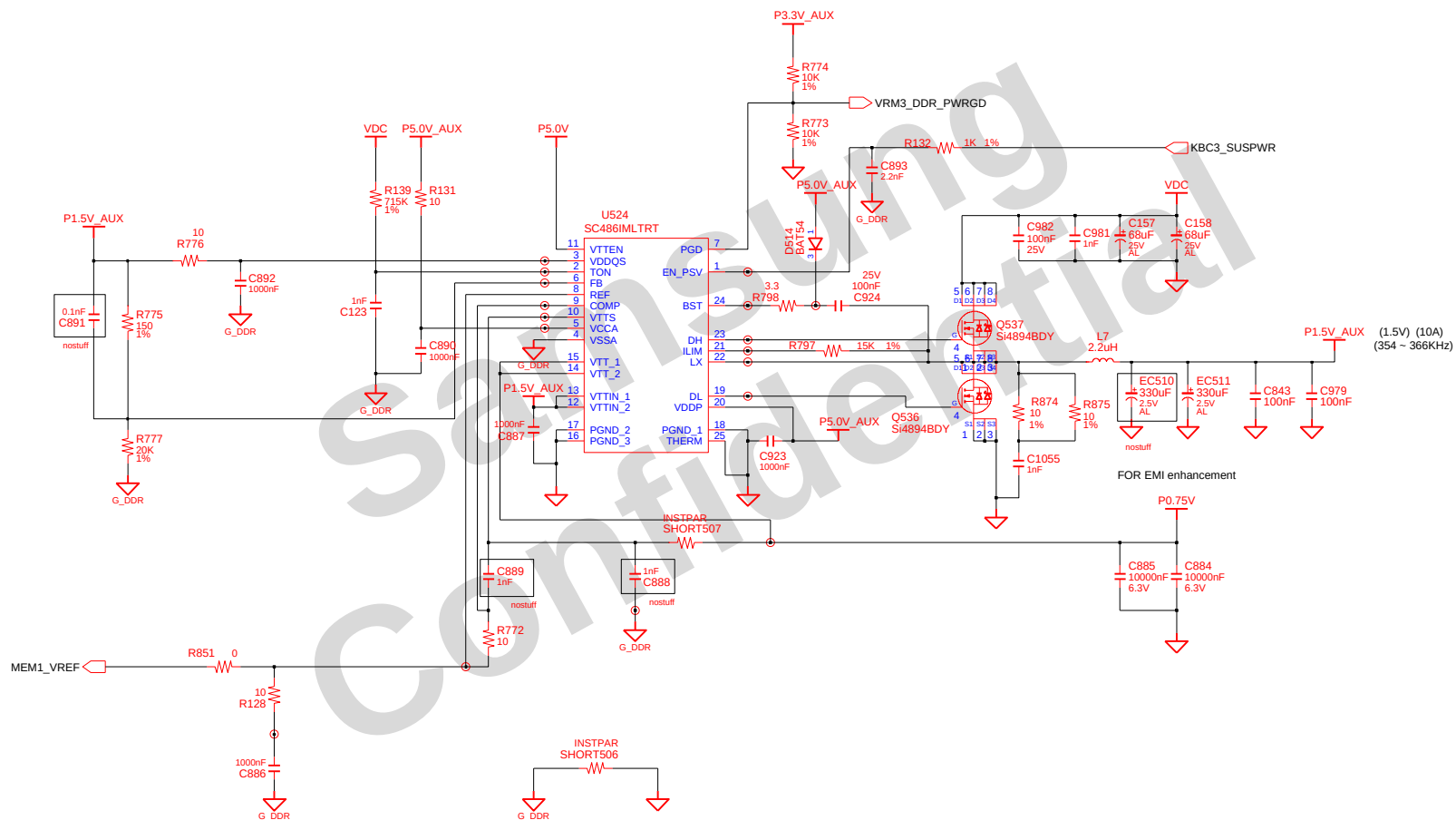
SAMSUNG PROPRIETARY
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

CHARGER & POWER MANAGEMENT



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.

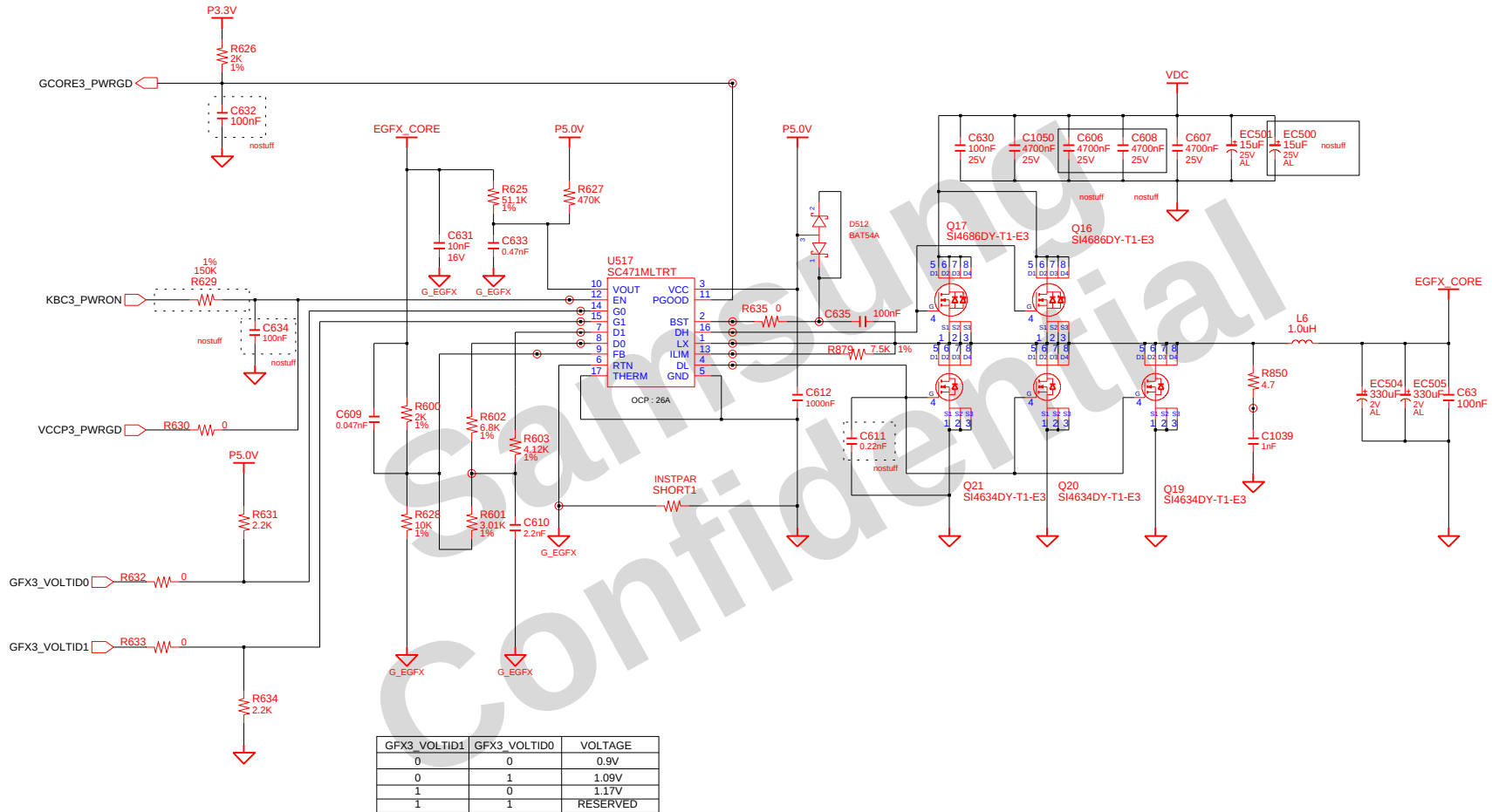
DDR3 Power



DRAW	SUN XIAO,	DATE	2/27/2008	TITLE	Gevena 2 ext	SAMSUNG ELECTRONICS PART NO. BA41-####A
CHECK	WU SHIJIANG,	DEV. STEP	PV		PWR_MV_Memory	
APPROVAL	BYEONGCHANG LEE,	REV	1.0		DDR3 POWER (P1.5V_AUX)	
MODULE CODE	undefined	LAST EDIT	May 08, 2008 19:01:59 PM	PAGE	1 OF 1	

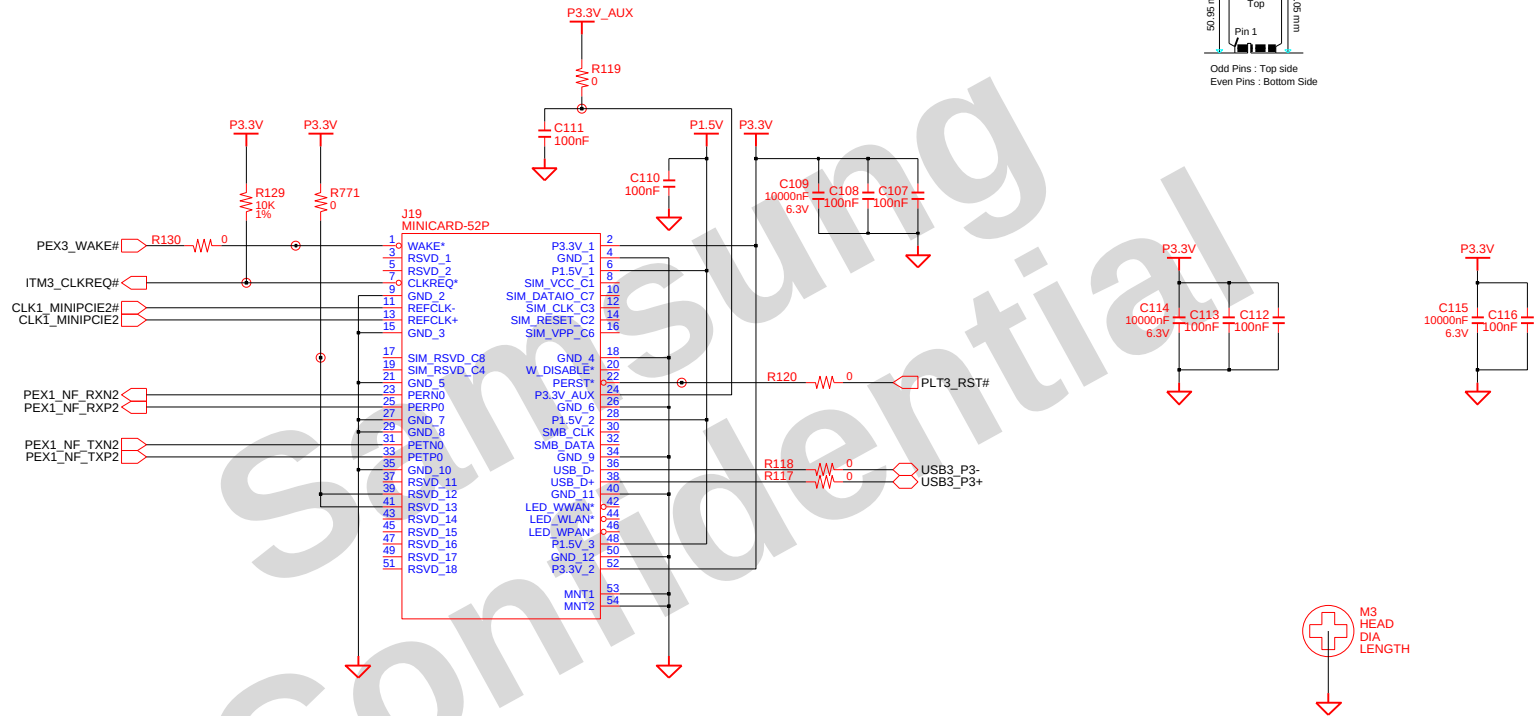
SAMSUNG PROPRIETARY
THIS DOCUMENT CONTAINS CONFIDENTIAL
PROPRIETARY INFORMATION THAT IS
SAMSUNG ELECTRONICS CO.'S PROPERTY.
DO NOT DISCLOSE TO OR DUPLICATE FOR OTHERS
EXCEPT AS AUTHORIZED BY SAMSUNG.

Graphic Core Power



DRAW	SUN XIAO,	DATE	2/27/2008	TITLE	Gevena 2 ext	SAMSUNG ELECTRONICS PART NO. BA41-####A
CHECK	WU SHIJIANG,	DEV. STEP	PV		PWR_Gfx_MV_Ext	
APPROVAL	BYEONGCHANG LEE,	REV	1.0		Ext Gfx Core(SC471)	
MODULE CODE		LAST EDIT				
May 08, 2008 19:01:59 PM						PAGE 2 OF 2

MINI CARD FOR ROBSON



DRAW	SUN XIAO,	DATE	2/27/2008	TITLE	Gevena 2 ext Robson_PCIE Robson_PCIE	SAMSUNG ELECTRONICS
CHECK	WU SHIJIANG,	DEV. STEP	PV			PART NO. BA41-####A
APPROVAL	BYEONGCHANG LEE,	REV	1.0			
MODULE CODE		LAST EDIT				
				May 08, 2008 19:01:59 PM	PAGE 1 OF 1	

Index_Page

Sheet1 -----	Root[sheet1]	Sheet51 -----	PCIE_Minicard_Slot[sheet1]
Sheet2 -----	Root[sheet2]	Sheet52 -----	HDA_Codec_Alc262[sheet1]
Sheet3 -----	Root[sheet3]	Sheet53 -----	HDA_Codec_Alc262[sheet2]
Sheet4 -----	Root[sheet4]	Sheet54 -----	HDA_Codec_Alc262[sheet3]
Sheet5 -----	Root[sheet5]	Sheet55 -----	HDA_Codec_Alc262[sheet4]
Sheet6 -----	Root[sheet6]	Sheet56 -----	HDA_Codec_Alc262[sheet5]
Sheet7 -----	Root[sheet7]	Sheet57 -----	LAN_Marvell_8055[sheet1]
Sheet8 -----	Root[sheet8]	Sheet58 -----	LAN_Marvell_8055[sheet2]
Sheet9 -----	Root[sheet9]	Sheet59 -----	MICOM_Renesas2110_100p[sheet1]
Sheet10 -----	Root[sheet10]	Sheet60 -----	USB_1Port[sheet1]
Sheet11 -----	Root[sheet11]	Sheet61 -----	USB_2Port[sheet1]
Sheet12 -----	Root[sheet12]	Sheet62 -----	HDA_Modem[sheet1]
Sheet13 -----	Root[sheet13]	Sheet63 -----	Other_Debug_80[sheet1]
Sheet14 -----	Root[sheet14]	Sheet64 -----	LCD_IF_14p1[sheet1]
Sheet15 -----	Root[sheet15]	Sheet65 -----	Graphics_IF_CRT[sheet1]
Sheet16 -----	Root[sheet16]	Sheet66 -----	KBD_IF_Conn[sheet1]
Sheet17 -----	Root[sheet17]	Sheet67 -----	Bluetooth_IF_Conn[sheet1]
Sheet18 -----	Root[sheet18]	Sheet68 -----	Touchpad_IF_Conn[sheet1]
Sheet19 -----	Root[sheet19]	Sheet69 -----	Camera_IF_Conn[sheet1]
Sheet20 -----	Root[sheet20]	Sheet70 -----	LID_Switch[sheet1]
Sheet21 -----	Root[sheet21]	Sheet71 -----	PWR_CPU_MV_Sc452[sheet1]
Sheet22 -----	Root[sheet22]	Sheet72 -----	PWR_Gfx_MV_Ext[sheet1]
Sheet23 -----	Root[sheet23]	Sheet73 -----	PWR_MV_3V_5V[sheet1]
Sheet24 -----	CK_Clock_505M[sheet1]	Sheet74 -----	PWR_MV_Cantiga[sheet1]
Sheet25 -----	Thermal_Sensor_SMSC_Emc2102[sheet1]	Sheet75 -----	PWR_MV_Charger_Isl6256a[sheet1]
Sheet26 -----	CPU_Penryn_MV_SV[sheet1]	Sheet76 -----	PWR_MV_MeMory[sheet1]
Sheet27 -----	CPU_Penryn_MV_SV[sheet2]	Sheet77 -----	PWR_Gfx_MV_Ext[sheet2]
Sheet28 -----	CPU_Penryn_MV_SV[sheet3]	Sheet78 -----	Robson_PCIE[sheet1]
Sheet29 -----	MCH_CANTIGA_PM_DDR3[sheet1]		
Sheet30 -----	MCH_CANTIGA_PM_DDR3[sheet2]		
Sheet31 -----	MCH_CANTIGA_PM_DDR3[sheet3]		
Sheet32 -----	MCH_CANTIGA_PM_DDR3[sheet4]		
Sheet33 -----	MCH_CANTIGA_PM_DDR3[sheet5]		
Sheet34 -----	SODIMM_DDR3[sheet1]		
Sheet35 -----	SODIMM_DDR3[sheet2]		
Sheet36 -----	ICH_9M_B[sheet1]		
Sheet37 -----	ICH_9M_B[sheet2]		
Sheet38 -----	ICH_9M_B[sheet3]		
Sheet39 -----	ICH_9M_B[sheet4]		
Sheet40 -----	ICH_9M_B[sheet5]		
Sheet41 -----	SPI_BIOS_ROM[sheet1]		
Sheet42 -----	Gfx_External_Nvidia_Nb9x[sheet1]		
Sheet43 -----	Gfx_External_Nvidia_Nb9x[sheet2]		
Sheet44 -----	Gfx_External_Nvidia_Nb9x[sheet3]		
Sheet45 -----	Gfx_External_Nvidia_Nb9x[sheet4]		
Sheet46 -----	Gfx_External_Nvidia_Nb9x[sheet5]		
Sheet47 -----	Gfx_External_Nvidia_Nb9x[sheet6]		
Sheet48 -----	Graphics_Memory_Nvidia[sheet1]		
Sheet49 -----	Graphics_Memory_Nvidia[sheet2]		
Sheet50 -----	Graphics_Memory_Nvidia[sheet3]		