3. Function

1) Construction of System

1 Status Indicators
Shows the operating status of the computer. The corresponding operating LED is lit when the corresponding function operates. p. 34

2 AV Now Button
Launches AVStation Now. p. 118

3 Speaker (L)
A device used to generate sound.

4 Power Button
Turns the computer on and off. p. 39

1 Status Indicators

5 Touchpad/Touchpad Buttons
The touchpad and touchpad buttons provide functions similar to the mouse ball and buttons. p. 44

6 Multi Card Slot
A card slot that supports Memory Stick, Memory Stick Pro, SD Card, MMC, MMC Plus and xD cards.

7 Keyboard
A device to enter data by pressing the keys. p. 41

3 Speaker (R)

8 LCD
The screen images are displayed here.

9 LCD Latch
This latch is used to open and close the LCD panel. To open the LCD panel, slide the latch to the right and then lift the LCD panel up.

3. Function

1 CD Drive*
Plays CD or DVD titles.
Since an ODD drive is optional, the installed drive depends on the computer model. p. 47

2 Modem Port*
A port to which a telephone cable is connected to in order to dial up to the Internet.

3 USB Port
You can connect USB devices to the USB port such as a keyboard/mouse, digital camera, etc.

2 Wired LAN Port*
Connect the Ethernet cable to this port. p. 83

6 PC Card Slot*
A slot into which a PC card is inserted. p. 52

1 Fan Vents
The internal heat of the computer is emitted through these holes.

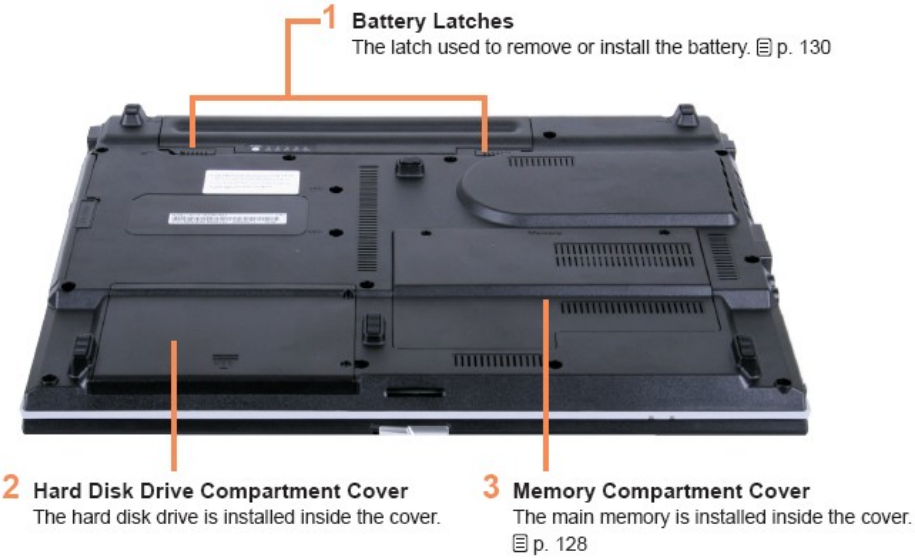
5 Headphone Jack
A jack used to connect the headphones.

4 Microphone Jack
A jack used to connect the microphone.

Caution
If the vents are blocked the computer may overheat. Avoid blocking the vents as this may be dangerous.

3. Function

6 DC Jack
A jack to connect the AC adapter that supplies power to the computer.
4 Monitor Port
A port used to connect a monitor, TV or projector supporting a 15pin D-SUB interface. p. 53
3 USB Port
You can connect USB devices to the USB port such as a keyboard/mouse, digital camera, etc.
2 Battery
This is a Lithium-Ion rechargeable battery that supplies power to the computer. p. 130
5 TV Output Port
A port used to connect a TV to display the computer screen on the TV. (S-Video Support)
1 Security Lock Port
You can connect a Kensington lock to the Security Lock Port to prevent the computer from being stolen.


1 Battery Latches
The latch used to remove or install the battery. p. 130
2 Hard Disk Drive Compartment Cover
The hard disk drive is installed inside the cover.
3 Memory Compartment Cover
The main memory is installed inside the cover. p. 128

3. Function

2) Keyboard

United Kingdom

United States

- This Document can not be used without Samsung's authorization -

Fn+	Name	Function
	REST (Sleep Mode)	Switches to Sleep mode. To wake the computer up, press the Power button.
	Gauge	Shows the remaining battery charge. You can only use this function when the Easy Display Manager program is installed.
	Euro	Enters the Euro monetary unit symbol. This key may not be provided depending on the keyboard type.
	CRT/LCD	Switches the screen output to the LCD or external monitor when an external monitor (or TV) is connected to the computer. p. 55
	Backlit	Turns the LCD backlight on or off.
	Mute	Mutes or cancels mute.
	Samsung Magic Doctor	System diagnosis, recovery and Internet consultation program, Samsung Magic Doctor, will be launched.
	Easy SpeedUp Manager	You can select operation mode when you need maximum system performance or low-noise/low power consumption with one-click. ■ Silent: Low-noise and low power consumption mode ■ Normal: Normal Mode ■ Speed: Maximum performance mode. The system operates in its maximum performance, and system resources are allocated to the currently active program with priority for maximum performance.
	Wireless LAN	Turns the wireless LAN function on or off in models with wireless LAN capability.
	Touchpad	Turns the Touchpad function on or off. When using an external mouse only, you can turn the Touchpad off.
	Num Lock	Turns the numeric keyboard on or off.
	Scroll Lock	If you turn the Scroll Lock on, you can scroll the screen up or down without changing the cursor location in some applications.

Screen Brightness Control

To adjust the LCD brightness press the **Fn** + ( ) key combination or the **Fn** + ( ) key combination. The changed screen brightness is displayed at the center of the screen for a moment.

Volume Control

To control the volume, press the **Fn** + ( ) key combination or the **Fn** + ( ) key combination.
You can mute the sound or cancel the mute function by clicking the **Fn** + ( ) key combination.

Numeric Key

The numbers are printed in blue on the numeric keys.
If Num Lock is turned on by pressing the **Fn** + ( ) key combination, you can use the numeric keys to enter digits.

Other Function Keys

- **Application Key ( )**
  Performs the right-click mouse function (touchpad).
- **Internet Explorer Quick Launch Key**
  Launches Internet Explorer.

3. Function

3) Multi Card Slot

Using the Multi Card Slot

Using the Multi-Card Slot, you can connect a Memory Stick, Memory Stick Pro, SD Card, MMC, High Speed MMC or xD Card. A memory card is used as a removable disk and is useful for exchanging data between a computer and a digital device such as a digital camera.

Memory Stick | Memory Stick Pro | SD Card | MMC | High Speed MMC | xD Card

A multi-card slot is optional and is not provided for some models.

Restrictions when Using Memory Cards

You can use memory cards for storing data only. Copyright protection function is not supported.

To insert and use a memory card

You should insert the memory card with the writing on the card facing downwards.

Inserting wrong side up may cause damage in the memory card and the computer.

1. Insert a memory card into the Multi Card Slot.

3. Function

2. Click **Start** > **My Computer**. The inserted memory card is displayed.

Example : Memory Stick

3. You can write data to the memory card. If the memory card is not formatted yet, format the memory card before use.

Since the memory card may be easily mislaid when moving your computer, keep the memory card separately.

To remove a memory card

1. Press the end of the memory card softly to pop it outward.
2. If the card pops out with a clicking sound, remove the card from the system.

3. Function

To format a memory card

You can use a memory card after the format operation. The procedures to format a memory card are described below.

Since format operation deletes all data in the memory card, please make sure that there is no important data in the memory card before formatting.

To protect the data in the memory card
Set the write protection tab of the Memory Stick or SD memory card to the Lock position.

1. Click **Start** > **My computer**.
2. Press the right touchpad button on the memory card drive, and select **Format** from the pop-up menu.
3. Click **Start** to start the format operation.

To use a memory card in both the computer and other digital device such as digital camera, it is recommended to format the memory card in the digital device. If you format the memory card in the computer, you may have to format the memory card in other digital device again to use the memory card in the digital device.

3. Function

5) PC Card Slot

To insert a PCMCIA card

Before using the PC Card slot, remove the slot protector.
Push the eject button of the PC card slot once to pop it out. Push the button again to eject the slot protector.

1. Insert a PCMCIA card into the PC card slot on the side of the computer.

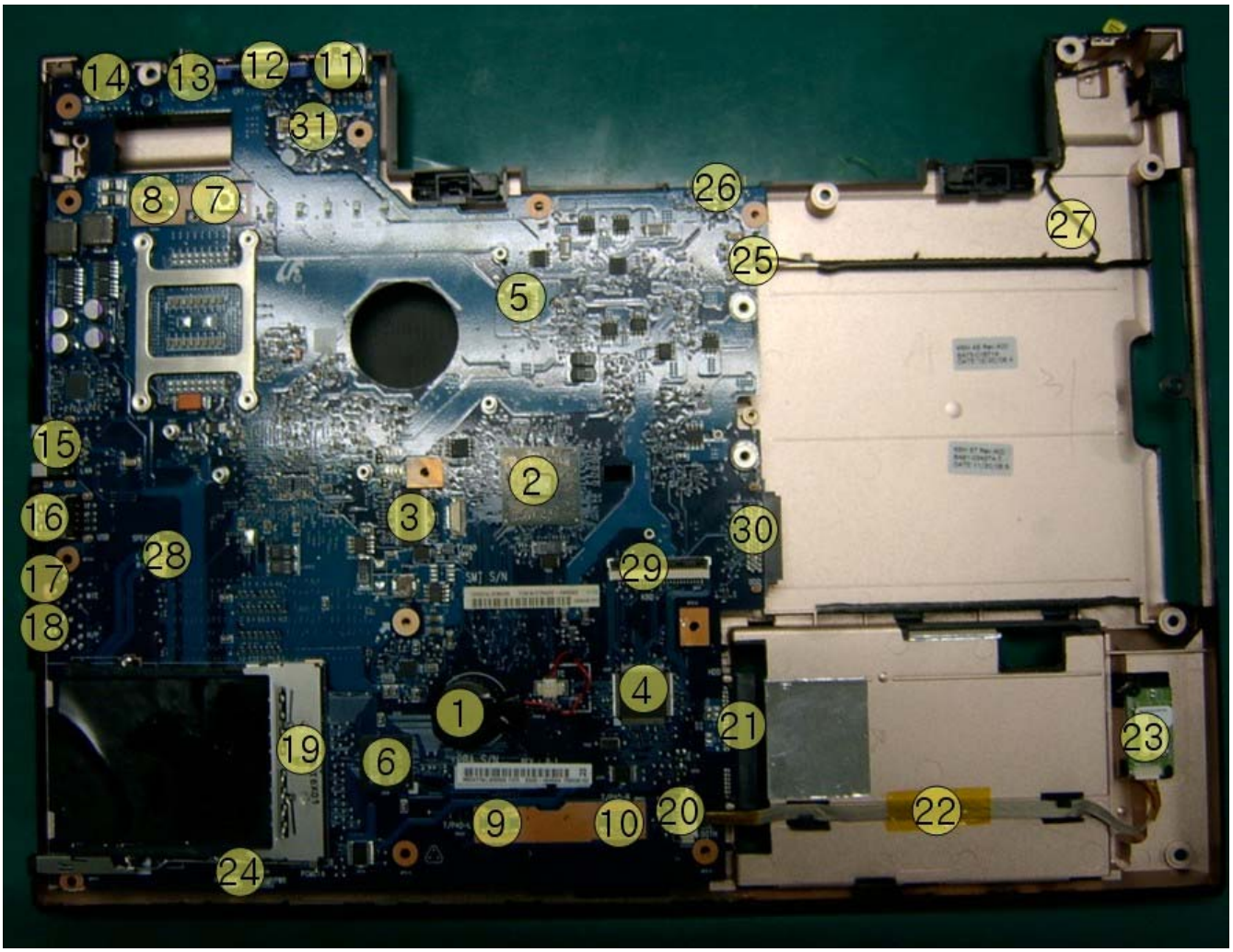
Ensure that the PCMCIA card is inserted the correct way, as incorrect insertion will damage the PC card slot.

2. Windows automatically installs the necessary driver for the card. If there is no available driver found by Windows, you have to install the driver using a disk supplied with the card.

3. Function

6) System Main board.

(1) TOP

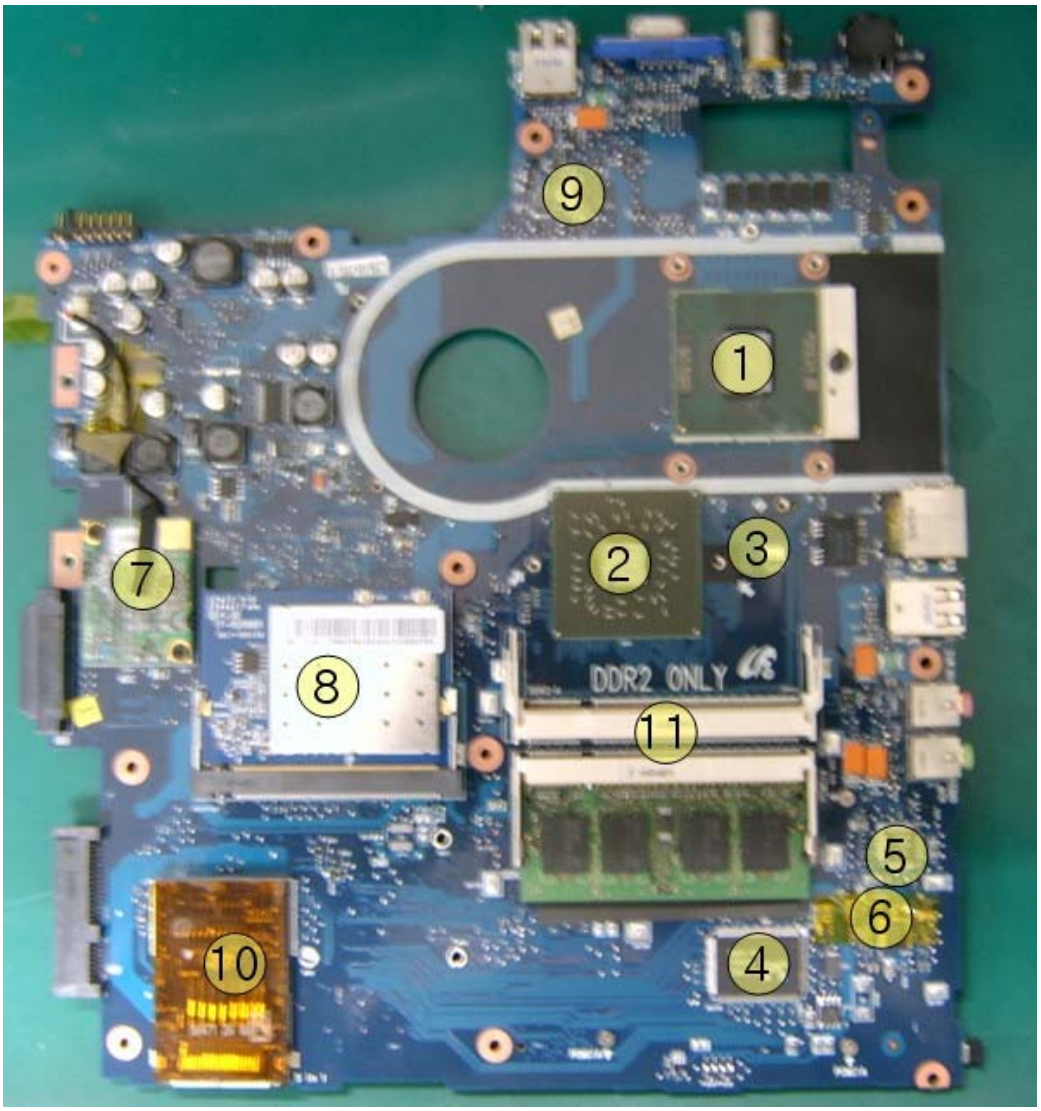


1	RTC BATTERY
2	SOUTH BRIDGE
3	CLOCK CHIPSET
4	MICOM
5	BIOS ROM
6	CARD BUS
7	MIO BUTTON
8	POWER BUTTON
9	TOUCHPAD BUTTON(LEFT)
10	TOUCHPAD BUTTON(RIGHT)
11	USB CONNECTOR X 2
12	CRT CONNECTOR
13	SVHS CONNECTOR

14	AC CONNECTOR
15	LAN CONNECTOR
16	USB CONNECTOR X 2
17	EXTERNAL MIC JACK
18	HEAD PHONE JACK
19	PCMCIA CONNECTOR
20	BLUETOOTH CONNECTOR(FACTORY OPTION)
21	HDD CONNECTOR
22	BLUETOOTH CABLE(FACTORY OPTION)
23	BLUETOOTH MODULE(FACTORY OPTION)
24	LEDs
25	MEDEM CABLE CONNECTOR
26	BATTERY CONNECTOR
27	RJ11 + MODEM CABLE
28	SPEAKER CONNECTOR
29	KEYBOARD CONNECTOR
30	ODD CONNECTOR

3. Function

(2) BOTTOM



1	CPU
2	NORTH BRIDGE
3	THERMAL SENSOR
4	LAN CONTROLLER
5	AUDIO CODEC
6	AUDIO AMP
7	MEDEM
8	WLAN(ATHEROS)
9	FAN CONNECTOR
10	6-IN-1 CONNECTOR
11	DDR2 SODIMM CONNECTOR

SENS R40 plus

FIRENZE2-R

NT-R40FYxx/xxx

NP-R40FYxx/xxx

SERVICE Manual

SAMSUNG R40

FEATURES

1. Simple & Essential Note PC
   - -. New ATI technology.
   - -. Wide and Gloss LCD (15.4")
2. High Performance &
   Convenient Management function.
   - -. High-Performance Dual Core
   - -. Powerful connectivity.

If there are the Contents not included in this book, please refer to K-zone Service Manual

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- Contents -

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   1) General After-Sales Service Precautions
   2) Safety Precautions
   3) Ground
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2. Introduction and Specification
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   2) Specification
   3) Specification comparison between R50 and R65.
   4) Wireless LAN Specification
   5) Option list
   6) The seperate sale list

3. Function
   1) Construction of System
   2) Keyboard
   3) MIO
   4) Multi Card Slot
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   6) Description of Main board

4. Disassembly and Reassembly
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5. Troubleshooting
   1) General
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   4) Hardware Troubleshooting
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   1) Exploded view of R40 plus

7. Schematic
   1) SYSTEM

8. System Block Diagram
   1) Block diagram

9. System Wire Diagram
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   2) LCD

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   1) SYSTEM

11. References
   1) Model Numbering Rule
   2) CPU Code table
   3) Glossary
   4) Hardware Upgrade

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2. Introduction and Specification

1) Introduction

(1) High Performance Note PC

- Intel® Core™ 2 Duo Processor
- Intel® Core™ Duo Processor
- Intel® Pentium Dual Core™ Processor
- Intel® Celeron® M Processor

- Wireless LAN (Option), Bluetooth (Option).

(2) Convenient AV

- Offer of Integrated Multi-Media Program, AVStation.
  Users can enjoy Music, Picture and Movie with AVStation conveniently.

(3) Prudent Design for easy use.

- MIO button and Hotkey to execute rapidly.
- Use of Various memory card through Multi card slot
- Good feeling and design through the Flat type touchpad.

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2. Introduction and Specification

2) Specification

Processor and Motherboard	***P50 / R65***
CPU	Intel® Core™ 2 Duo Processor Intel® Core™ Duo Processor ntel® Pentium Dual Core™ Processor Intel® Celeron® M Processor
	Intel® Core™ 2 Duo Processor Intel® Core™ Duo Processor Intel® Pentium Dual Core™ Processor Intel® Celeron® M Processor
Speed	4MB (Core2 Duo T7xxx) 2MB (Core2 Duo T5xxx ~ Core Duo T2xxx) 1MB (Pentium Dual Core, Celeron M)Intel Celeron M Processor (1.60GHz) Intel Dual Core Processor T2300(1.66GHz) ~ T2700(2.33GHz)
Cache	4MB (Core2 Duo T7xxx) 2MB (Core2 Duo T5xxx ~ Core Duo T2xxx) 1MB (Pentium Dual Core, Celeron M)
Chipset	RC410MD/ME + SB450
BIOS	8 Mbit, Flash upgradable
Thermal Design Performance	MAX. 38W
Memory	
Memory / Max. Memory	**512MB / Max.4GB**
Memory type	PC2-4200(533MHz) / PC2-5300(667MHz) DDR2 SODIMM
Memory Modules	256MB, 512MB, 1GB SODIMM
Sockets	2-slot SODIMM's
Display and Graphics	
LCD	**15.4" WXGA (Glare/Non-Glare)**
LCD Vendor	Samsung AMLCD (LTN154X3-L03)
	AU LCD(B154EW02)
	CPT LCD(CLAA154WB05A)
15.4" WXGA	
LCD Size	344 x 222 x 6.2mm (HxVxT)
LCD Viewable Area	331.2 x 207.0mm (HxV)
LCD Resolution	1,280 x 800 x 262,144 color (32bit)
Dot Pitch	0.25875 x 0.25875mm (HxV)
Contrast Ratio	typ. 300:1
Brightness	typ. 200 (cd/m2)
Weight	typ. 550g
Response time	typ. 25msec

2. Introduction and Specification

Graphics Controller	ATI Radeon Xpress 1250M
ATI	**ATI RS600ME**
Video Memory	32MB / 256MB
Max.Resolution for LFP LVDS	1,280 x 800 x 32Bits color (WXGA)
Max.Resolution for External Monitor	1,920 x 1,440 (CRT)
Max.Resolution for LFP LVDS	1400 * 1050 x 32Bits color (SXGA+)
Audio	
Sound	**Azalia**
Controller	Realtek ALC262C
Conversion	Built-in high performance 20-bit ADC & 24-bit DAC
Internal Interfaces	Embedded 2 stereo speakers
Speaker Power Rating	2 Speakers x 2 Watt with enclosure each
External Interfaces	Microphone, Headphone
Controls	Keyboard volume control, EDS enable / disable
Storage	
Hard Disk Drive	**9.5mmH 2.5" HDD, Removable**
Supports	SMART UltraDMA-33/66/100 support
Average Access Time	13m sec.
Speed	5400rpm/SATA
Capacity	60 / 80 / 100 / 120 / 160 GB (5400rpm, 9.5mmH 2.5" HDD SATA)
Optical Disk Drive	**DVD / Combo / Super Multi DUAL LAYER (12.7mm)**
Type	Fixed type (Factory Option)
S/W supplied	Power DVD Player , Burning function in Windows XP
Security	RPC-II Regional Encoding
Optical Driver Modules	
DVD ROM Drive 1	**Factory Option(ONLY FOR KOR)**
Module type	Fixed 12.7mm Slim
Speed	24x CD : *TEAC,* DV-28EN
Average Access Time	CD 110ms Typ
Weight	165g or less

2. Introduction and Specification

Combo Drive 2	**Factory Option**
Module type	Fixed 12.7mm Slim
Speed	8x DVD-ROM, 24x RW, 24x CD-R, 24x CD : *Teac, DW-224E-C*
Average Access Time	DVD 110ms Typ., CD 90ms Typ.
Weight	190g or less
S/W supplied	Power DVD Player (5.0), Nero Burning or equivalent S/W
Security	RPC-II Regional Encoding
Super Multi Dual Layer 1	**Factory Option**
Module type	Fixed 12.7mm Slim
Speed	5x DVD-RAM, 8x DVD±R 2.4x DVD+R DL, 4x DVD±RW,24x CD-R, 16x CD-RW, 8x DVD, 24x CD : TEAC DV-W28EA
Average Access time	DVD 130ms Typ., CD 130ms Typ.
Weight	190g or less
S/W supplied	Power DVD Player (5.0), Nero Burning or equivalent S/W
Security	RPC-II Regional Encoding
Super MultiDual Layer 2	**Factory Option**
Module type	Fixed 12.7mm Slim
Speed	5x DVD-RAM, 8x DVD±R 2.4x DVD+R DL, 4x DVD±RW,24x CD-R, 10x CD-RW, 8x DVD, 24x CD : Matsubshita UJ-840B
Average Access Time	DVD 180ms Typ., CD 150ms Typ.
Weight	190g± 10g
S/W supplied	Power DVD Player (5.0), Nero Burning or equivalent S/W
Security	RPC-II Regional Encoding
Network Tools	
Fax/Modem	**56Kbps / V.92 Azalia Modem**
Chipset	SV92A1
Features	RJ11 Output
LAN	**10/100 Ethernet UTP (Factory option)**
Chipset	Broadcom BCM4401
Features	RJ45 Output
802.11bg Wireless LAN	**Atheros**
Type	Minicard
Chipset	Atheros
Antenna	Integrated 1 Antenna
Bluetooth	**BCM92045NMD : Factory Option**
Type	USB daughter card with integrated PIFA antenna
Chipset	Broadcom BCM2045
Standard	version 2.0

2. Introduction and Specification

I/O Interface		
PC CardBus Slots	**1 PCMCIA Type II slot**	
Controller	Ricoh R5C843	
Support	32bit CardBus cards	
I/O Ports		
USB Port	4 (USB2.0)	
Video Port	1	
TV-out connector	S-VHS	
Audio Jacks	HeadPhone-out ,Optical S/PDIF, MIC-in	
Modem / LAN	RJ11, RJ45	
Power	1(5pie)	
Input Devices		
Key board	88KEY(KR/US), 89KEY(UK/FR/GM/SP)	
	Travel length 2.6mm/ Key Pitch 19.05mm	
Touchpad	Synaptics Touchpad (Plat type with Scroll area)	
Easy Button	User setting button (default AVS premium)	
Multi Memory Card Slot	1slot	
Controller	Ricoh R5C843	
Type	Memory stick / Memory stick pro / SD / xD / MMC (High speed MMC)	
Special Feature		
AV Station Premium		
OS	Windows XP / Windows VISTA	
Function	DVD player / MP3 player / Picture slide show	
Control Button	Keyboard & Touchpad, Easy Button for direct access	
Power and Power Management		
Battery		
Dimension	204 x 48 x 20mm	
Weight	350g (max)	
Recharge Time	2 hours to 100% with Windows on & off	
Battery Life	-	
Details of Cell	6cells (2Parallel 3Serial)	
Voltage	11.1Vdc	
Battery Capacity	4000mAh/cell	
Battery Rating	11.1V / 4000mAh (44.4Wh)	
AC Adapter	**AD-6019S**	AD-9019S
Output Power	60 Watts	90 Watts
Dimension	108 x 46.5 x 28mm	L126*W50*H30
Weight (AC Adapter)	320g (max)	
Worldwide Compatibility	Auto-sensing 100 - 240VAC	Auto-sensing 100 - 240VAC

Line Frequency	50 / 60Hz	50 / 60Hz
Adapter Rating - Input	100V - 240V, 1.4A	100V - 240V, 1.4A
Adapter Rating - Output	19.0VDC / 3.16A	19.0VDC / 4.74A
Power Management Features	ACPI 1.0b support, Standby(S3), Hibernate(S4)	ACPI 1.0b support, Standby(S3), Hibernate(S4)
System Dimensions		
Dimensions (W X D X H)	360 x 264.5 x 26.1~37.1mm	
Weight	**2.7kg**	
	Status : No options, 6cell battery, 15.4" LCD	
Materials	PC/ABS	

2. Introduction and Specification

3) Specification comparison between R50 and R40

Model name	R50	R40
Photo		
CPU	533MHz Pentium M	533/667MHz Pentium M (Merom,Yonah)
Chipset	Intel 915	ATI RS600ME
Memory	DDR2 400 / 533MHz	DDR2 533 / 667MHz (MAX 4GB)
Graphics	Intel 915GM	ATI Radeon Xpress 1250M (2nd Vendor Chipset)
LCD	15.4"	15.4"
HDD	PATA / SATA	2.5" SATA
ODD	12.7mm	12.7mm
Port	4 USB, IEEE1394, S-video, RJ45, RJ11, CRT, PC-card	4USB, SVHS, RJ45, RJ11, CRT, PC-card, BT(option)
Battery	6cell	신규 6cell

2. Introduction and Specification

4) Wireless LAN Specification

(1) Wireless LAN Standard (802.11BG card)

Atheros Wireless Network Adapter

Item		Detailed Specifications
Physical Specifications	Dimensions	(Width X Height) 59.75 X 44.70 mm
	operation temperature and humidity	Same as system operation
		Temperature: 0°C ~ 70°C Humidity: less than 85%
Power Specification	Power Saving Mode	70 mW
	Receiving Mode	0.825W
	Transmission Mode	1.25W
	Power	3.3V
Network Specifications	Compatibility	IEEE802.11b, IEEE802.11g
	Operating System	Microsoft Windows XP - NDIS5 Miniport Driver
	Media Access Protocol	CSMA/CA (Collision Avoidance) with Acknowledgement(ACK)
	Security	Wired Equivalent Privacy support (WEP) 64bit / 128bit WPA*, CCX*

* This piece of equipment supports the Wi-Fi wireless LAN security standard, WPA (Wi-Fi Protected Access) and CCX (Cisco Compatible eXtensions). To connect to a wireless network consisting of the WPA and CCX, certificates or PROSet may be required depending on the network settings. For driver update, visit www.samsung.com and for information on the PROSet installation, refer to "Wireless Network Setup Using the Wireless LAN Setup Program" (p67). For more information, ask your network administrator.

2. Introduction and Specification

Radio Specifications

RF Band	2.4GHz
Support Channels	Channels allowed per country.
Device	Transceiver
Standard Output Power	MAX 10mW
Transmission Method	11b mode: DSSS 11g mode: OFDM
Transmission Rate (Mbps) *	11b mode: 11, 5.5, 2, and 1 11g mode** : 54, 48, 36, 24, 18, 12, 9, and 6
Antenna Type	Internal Antenna 2 EA (Main/Aux)

* The transmission rate may differ from the actual transmission rate.
**11g mode is supported only when you are connected to an IEEE 802.11g device (e.g. An Access Point supporting IEEE 802.11g).

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2. Introduction and Specification

5) Option list

HDD

BA59-01946A	60G 5400rpm SATA	60G,MHV2060BH-PL,S63,H16,D16385,H9.5mm,2.5 INCH,SATA,60G/P,5400RPM,FDB
BA59-02084A	60G 5400rpm SATA	60G,MHW2060BH,S63,H16,D16385,H9.5mm,2.5 INCH,SATA,60G/P,5400RPM,FDB
BA59-01999A	60G 5400rpm SATA	60G,HTS541660J9SA00,S63,H16,D16385,H9.5mm,2.5INCH,Sata,80G/P,5400RPM,FDB
BA59-02038A	60G 5400rpm SATA	60G,HM060HI,S63,H16,D16385,H9.5mm,2.5INCH,Sata,60G/P,5400RPM,FDB
BA59-01947A	80G 5400rpm SATA	80G,MHV2080BH-PL,S63,H16,D16385,H9.5mm,2.5 INCH,SATA,60G/P,5400RPM,FDB
BA59-02085A	80G 5400rpm SATA	80G,MHW2080BH,S63,H16,D16385,H9.5mm,2.5 INCH,SATA,60G/P,5400RPM,FDB
BA59-01743A	80G 5400rpm SATA	80G,HTS541080G9SA00,S63,H16,C16383,H9.5,W100*L69.85mm,SATA,2.5INCH,50G/P,5400RPM
BA59-02001A	80G 5400rpm SATA	80G,HTS541680J9SA00,S63,H16,D16385,H9.5mm,2.5INCH,Sata,80G/P,5400RPM,FDB
BA59-01681A	80G 5400rpm SATA	80G,HM080JI,S63,H16,C77622,9.5mm,2.5INCH,SATA,40G/P,5400RPM,FDB
BA59-01951A	80G 5400rpm SATA	80G,HM080JI,S63,H16,D16385,H9.5mm,2.5 INCH,SATA,40G/P,5400RPM,FDB
BA59-01671A	100G 5400rpm SATA	100G,MHV2100BH,S63,H16,C16383,H9.5,W100*L70mm,Sata,2.5INCH,50G/P,5400RPM,FDB
BA59-01948A	100G 5400rpm SATA	100G,MHV2100BH-PL,S63,H16,D16385,H9.5mm,2.5 INCH,SATA,60G/P,5400RPM,FDB
BA59-02086A	100G 5400rpm SATA	100G,MHW2100BH,S63,H16,D16385,H9.5mm,2.5 INCH,SATA,60G/P,5400RPM,FDB
BA59-01742A	100G 5400rpm SATA	100G,HTS541010G9SA00,S63,H16,C16383,H9.5,W100*L69.85mm,SATA,2.5INCH,50G/P,5400RP
BA59-01957A	120G 5400rpm SATA	120G,MHV2120BH-PL,S63,H16,D16385,H9.5mm,2.5 INCH,SATA,60G/P,5400RPM,FDB
BA59-02087A	120G 5400rpm SATA	120G,MHW2120BH,S63,H16,D16385,H9.5mm,2.5 INCH,SATA,60G/P,5400RPM,FDB
BA59-02039A	120G 5400rpm SATA	120G,HM120JI,S63,H16,D16385,H9.5mm,2.5INCH,Sata,60G/P,5400RPM,FDB
BA59-02002A	120G 5400rpm SATA	120G,HTS541612J9SA00,S63,H16,D16385,H9.5mm,2.5INCH,Sata,80G/P,5400RPM,FDB
BA59-02003A	160G 5400rpm SATA	160G,HTS541616J9SA00,S63,H16,D16385,H9.5mm,2.5INCH,Sata,80G/P,5400RPM,FDB

ODD

BA96-03129A	S_MULTI(TS-L632D)	SEDONA,TSST,TS-L632D
BA96-03180A	S_MULTI(SSM-8515S)	SEDONA,HAINAN,HABANA,LITEON,SSM-8515S
BA96-03199A	S_MULTI(UJ850)	SEDONA+,S_MULTI,Matsushita,UJ850
BA96-03205A	S_MULTI(DV-W28EC)	SEDONA,S_MULTI,TEAC,DV-W28E-C
BA96-03003A	S_MULTI(DV-W28EA)	HABANA,SUPER_MULTI,DV-W28EA,TEAC
BA96-02999A	DVD-DV-28EN	HABANA,DVD-ROM,DV-28EN_8/24
BA96-03198A	DVD-TS-L332A	SEDONA+,DVD-ROM,TSST,TS-L332A
BA96-03194A	COMBO(SSC-2485K)	SEDONA+,COMBO,Liteon,SSC-2485K
BA96-03010A	COMBO(TS-L462C)	HAINAN,TSST TS-L462C,COMBO
BA96-03012A	COMBO(DW224E-R)	SEDONA/HAINAN,DW224E-R,TEAC,DVD-COMBO
BA96-03193A	COMBO(TS-L462D)	SEDONA+,COMBO,TSST,TS-L462D

2. Introduction and Specification

5) Option list

MEMORY

1105-001610	512M(SEC)	DDR2 533 512MB SO-DIMM M470T6554CZ3-CD5
1105-001610	512M(SEC)	DDR2 533Mhz 512MB M470T6554BG0-CD5
1105-001615	512M(IN)	DDR2 533Mhz 512MB HYS64T64020HDL-3.7-A
1105-001611	1GB(SEC)	DDR2 533Mhz 1GB M470T2953BS0-CD5
1105-001683	512M(SEC)	DDR2 667Mhz 512MB M470T6554CZ3-CE6
1105-001686	512M(IN)	DDR2 667Mhz 512MB HYS64T64020HDL-3S-A
1105-001684	1GB(SEC)	DDR2 667Mhz 1GB M470T2953CZ3-CE6
1105-001687	1GB(IN)	DDR2 667Mhz 1GB HYS64T128021HDL-3S-A

CPU

0902-002109	CEL440_1.86GHz	LF80538NE0361ME,1.86GHz,uFCPGA,478P,TR,Plastic,1.05V,27W,0to+100C,1MB,Intel Celeron M Processor, 440
0902-002110	CEL450_2.00GHz	LF80538NE0411ME,2.0GHz,uFCPGA,478P,TR,Plastic,1.05V,27W,0to+100C,1MB,Intel Celeron M Processor, 450
0902-002163	CEL520(1.6GHz)	LF80537NE0301M,1.6GHz,uFCPGA,478P,TR,Plastic,1.05V,30W,0to85C,1MB,Celeron 520, 1.6GHz, 1M L2 Cache
0902-002001	Mcel-430(1.73G)	LF80538NE0301M,1.73GHz,u-FCPGA,478P,TR,Plastic,1.05V,31W,0to70,1MB,FSB 533MHz
0902-002088	T2050 (1.60GHz)	LF80539GE0252M,1.6GHz,uFCPGA,478P,TR,PLASTIC,1.05V,31W,0to+85C,2MB,YONAH T2050 Tj85,FSB533,dual
0902-002162	T2060(1.6GHz)	LF80539GE0251M,1.6GHz,uFCPGA,478P,TR,Plastic,1.05V,31W,0to+85C,1MB,T2060, 1.60GHz, 1M L2 Cache
0902-002087	T2250 (1.73GHz)	LF80539GE0302M,1.73GHz,uFCPGA,478P,TR,PLASTIC,1.05V,31W,0to+85C,2MB,YONAH T2250 Tj85,FSB533,dual
0902-002176	T2350(1.86GHz)	LF80539GE0362ME,1.86GHz,uFCPGA,478P,TR,PLASTIC,1.05V,31W,0to+85C,2MB,YONAH T2350 Tj85,FSB533,dual
0902-002121	T5200_1.6GHz	LF80537GE0252M,1.60GHz,uFCPGA,478P,TR,Plastic,1.05V,34W,0to+85C,2MB,Merom TJ85, T5200, 1.6GHz B-2 CPU
0902-002102	T5500_(1.66)	LF80537GF0282M,1.66GHz,uFCPGA,478P,TR,PLASTIC,1.05V,34W,0to+100C,2MB,Merom T5500,FSB667,2M
0902-002103	T5600_1.83GHz	LF80537GF0342M,1.83GHz,uFCPGA,478P,TR,PLASTIC,1.05V,34W,0to+100C,2MB,Merom T5600,FSB667,2M
0902-002104	T7200(2.0GHz)	LF80537GF0414M,2.0GHz,uFCPGA,478P,TR,PLASTIC,1.05V,34W,0to+100C,4MB,Merom T7200,FSB667,4M
0902-002105	T7400(2.16GHz)	LF80537GF0484M,2.16GHz,uFCPGA,478P,TR,PLASTIC,1.05V,34W,0to+100C,4MB,Merom T7400,FSB667,4M

LCD PANNEL

BA59-01494A	15.4WXGA_GLARE	LTN154X3-L03-E
BA59-01720A	15.4WXGA_N/GLARE	LTN154X3-L03-T
BA59-01814A	15.4WXGA_GLARE	LTN154X3-L03-C/N
BA59-01923A	15.4WXGA_GLARE	LTN154X3-L01-N,
BA59-01937A	15.4WXGA_GLARE	B154EW02_V1
BA59-01998A	15.4WXGA_N/GLARE	B154EW02_V0

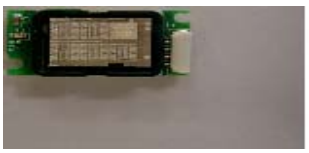
2. Introduction and Specification

5) Option list

BATTERY

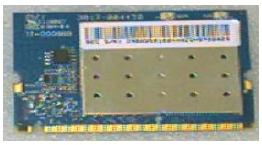
BA43-00149A	BATTERY(6CELL)	SDI Battery 6Cell
BA43-00150A	BATTERY(6CELL)	Sanyo Battery 6cell

BLUETOOTH



BA59-01691A	BLUETOOTH	BCM92045NMD
BA59-01916A	BLUETOOTH	BTO2P0B2SA

WLAN



BA59-01664A	802.11b/g	WLL3090

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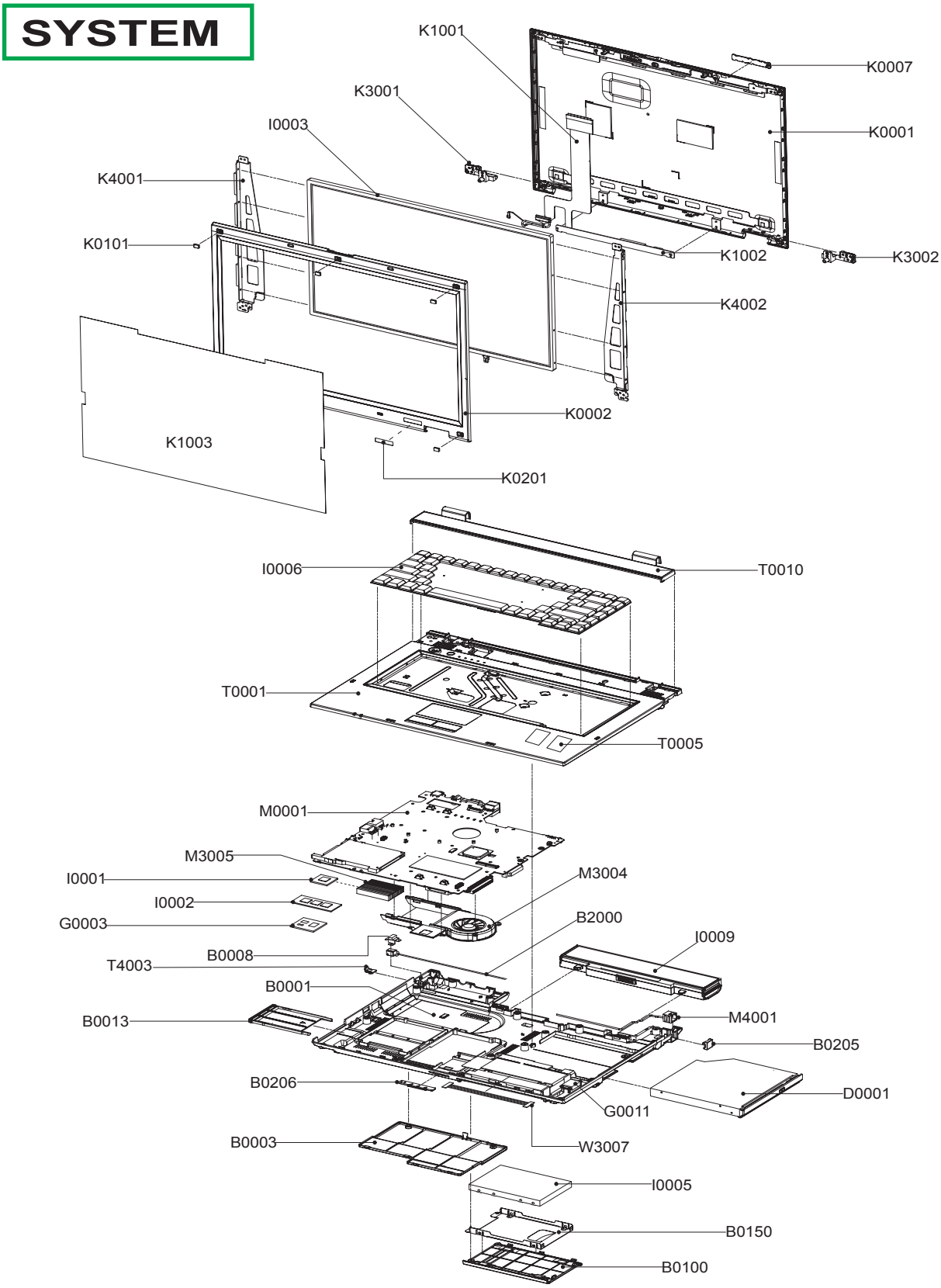
6. Exploded View and Part List



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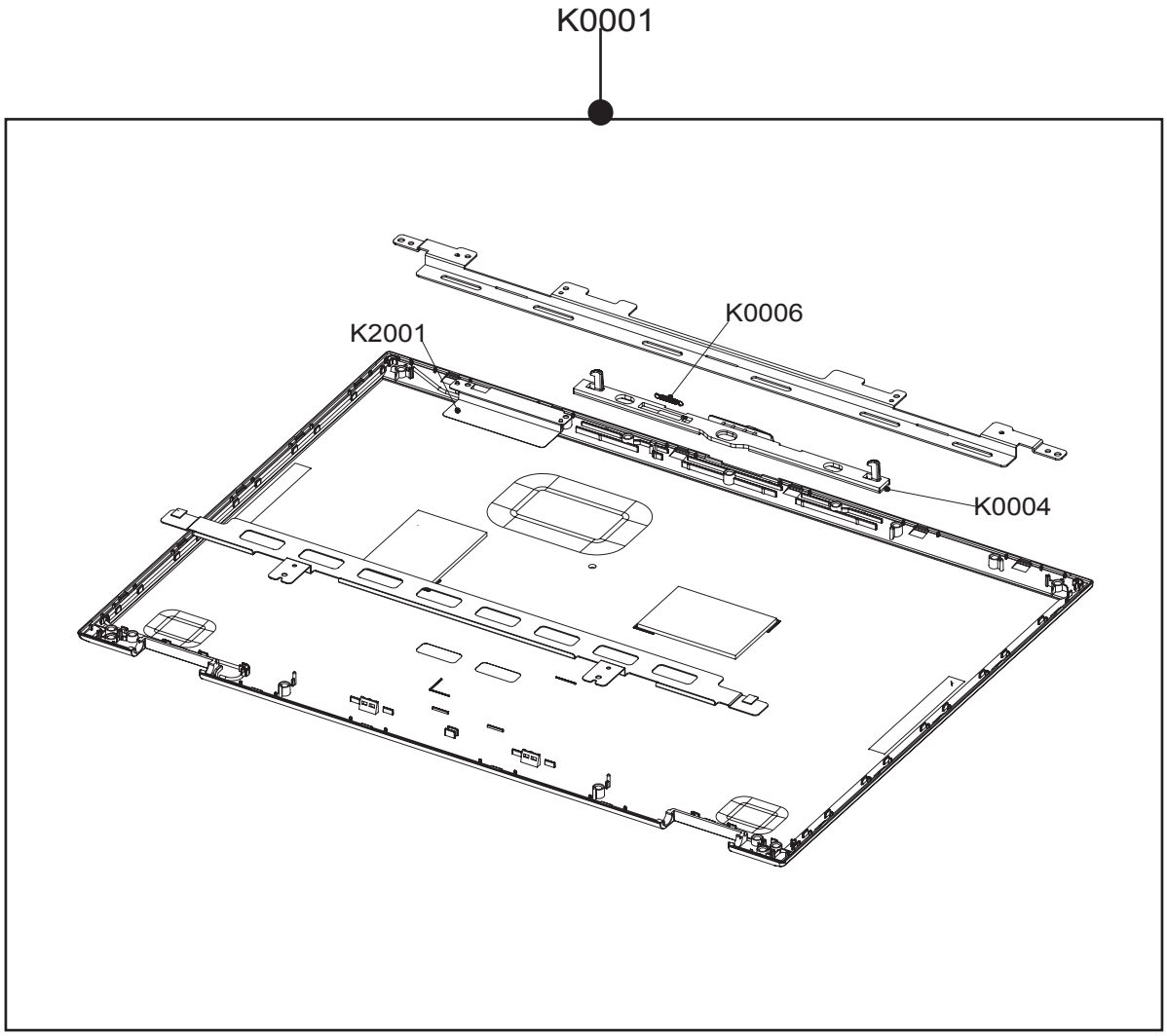
6. Exploded View and Part List

Unit-Housing-Back



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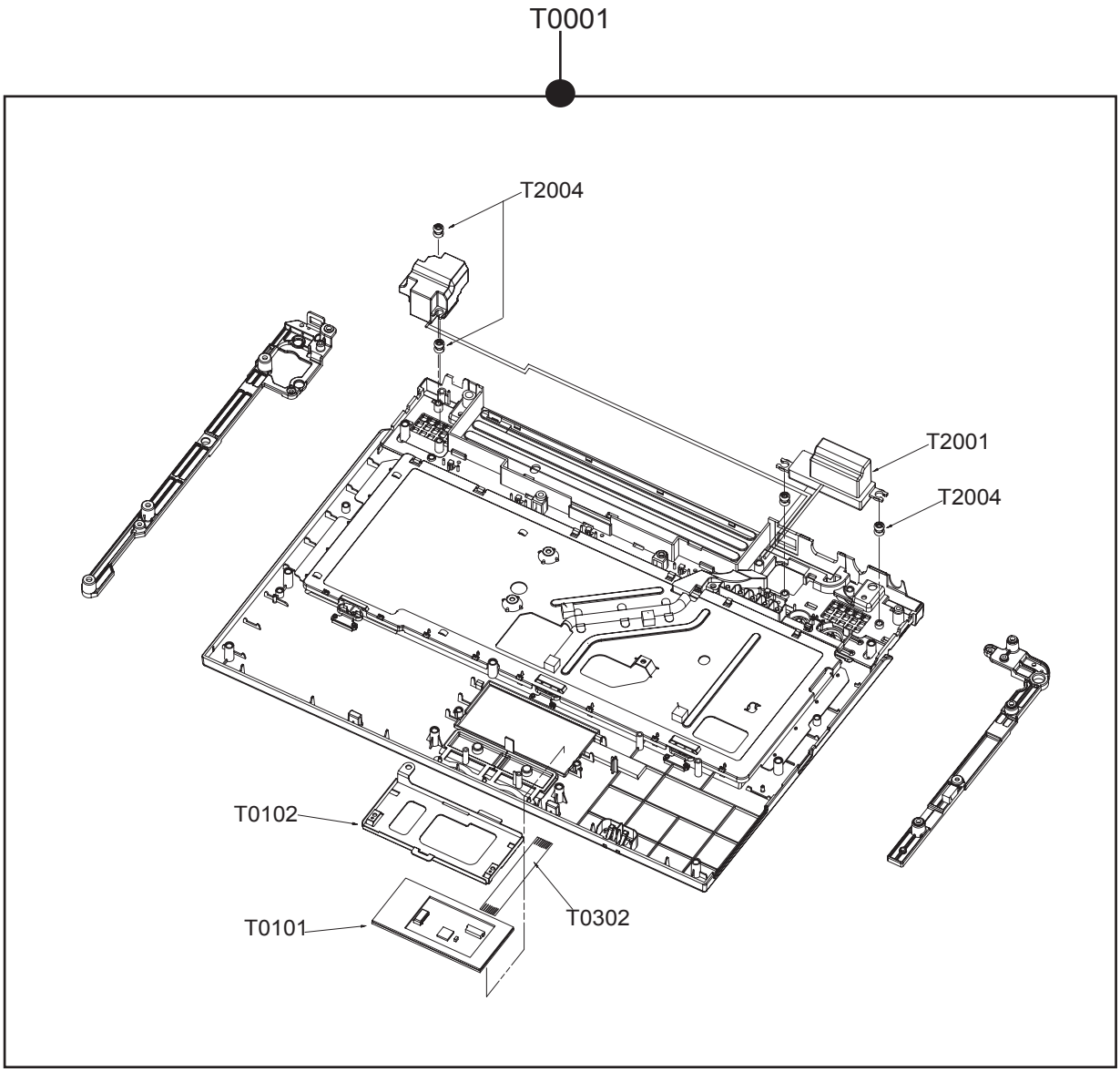
6. Exploded View and Part List

Unit-Housing-Top



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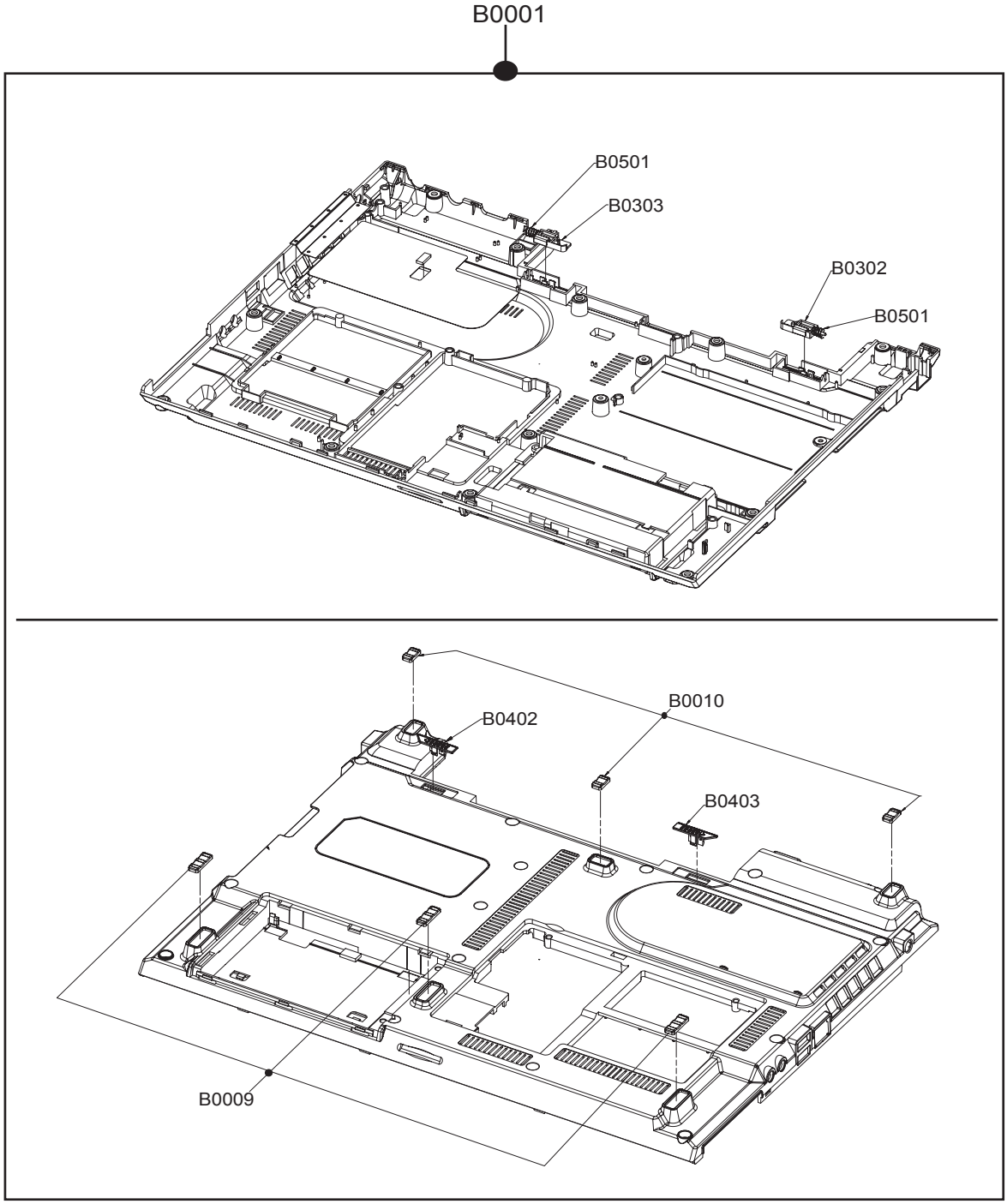
6. Exploded View and Part List

Unit-Housing-Bottom



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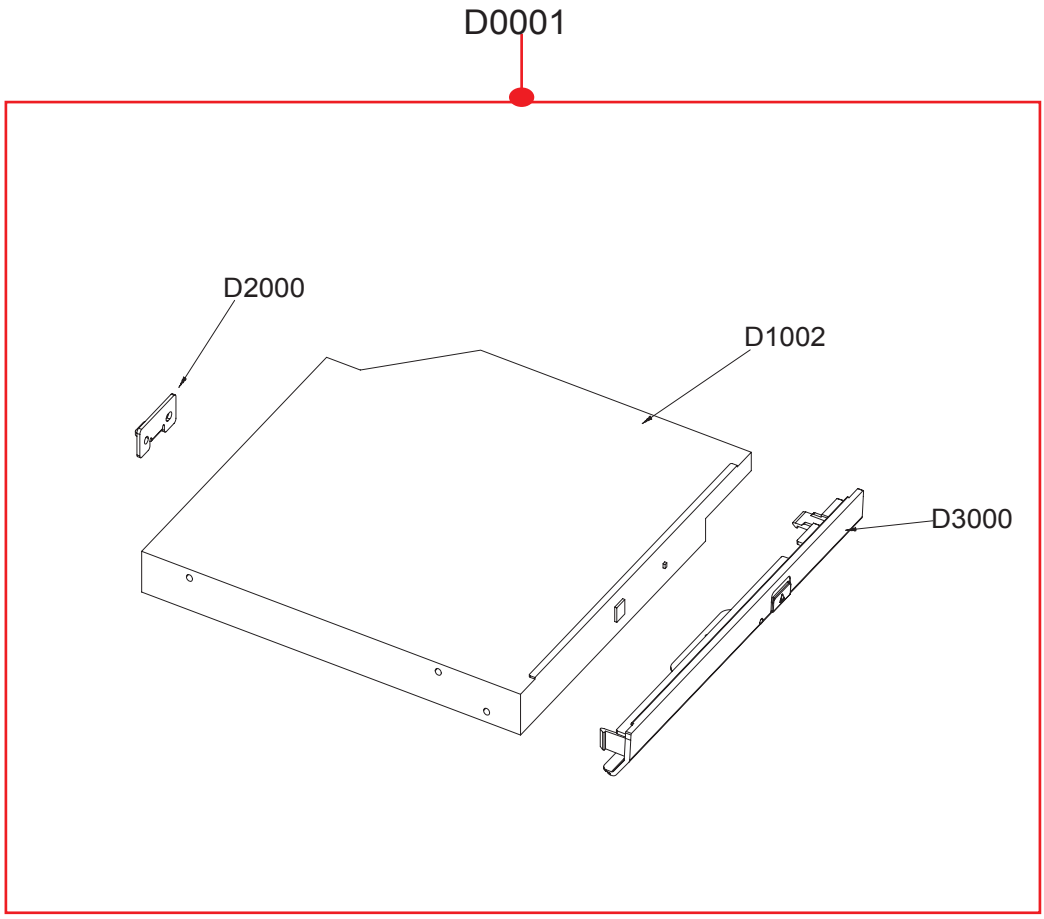
6. Exploded View and Part List

Unit-ODD



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6. Exploded View and Part List

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Location	Part Number	Parts Name & Specification	Q'ty	SA/SNA
A0010	3903-000055	CBF-POWER CORD;DT,EU,CP2/NO,E(IEC320 C7)	1	SA
A1001	BA46-05728A	S/W CD;RCD,NP/DT,VISTAHP,1.0,RUS,DVD,1/1	1	SA
A1001	BA46-06002A	S/W CD;UTILITY,FIRENZE2-R,WINVISTA,-,EXP	1	SA
B0001	BA75-01871A	UNIT-HOUSING_BOTTOM;FIRENZE2-R,SESC,PC+A	1	SA
B0001	BA75-01925A	UNIT-HOUSING_BOTTOM;FIRENZE2-R,SESC,PC+A	1	SA
B0003	BA75-01784A	UNIT-DOOR_MEMORY;FIRENZE2,SESC,PC+ABS,W1	1	SA
B0009	BA81-01774A	RUBBER-FOOT;FIRENZE,VIBRATHANE,W17.0*L6.	3	SA
B0010	BA81-02243A	RUBBER-FOOT_REAR;SEDONA,SR,W6*L11*H2.4mm	3	SA
B0013	BA61-00988B	DUMMY CARD-PCMCIA;OSLO,PC+ABS,T1.5,W54.0	1	SA
B0100	BA75-01783A	UNIT-DOOR_HDD;FIRENZE2,SESC,PC+ABS,W119*	1	SA
B0101	BA73-00262A	RUBBER-HDD_SUPPORT;AQUILA,PORON,W6*L10*T	4	SA
B0150	BA75-01788A	UNIT-BRKT_HDD;FIRENZE2,SESC,SUS T0.3,W10	1	SA
B0302	BA81-02795A	LINK-BATTERY_L;FIRENZE2,POM,L26.4*W10.8*	1	SA
B0303	BA81-02794A	LINK-BATTERY_R;FIRENZE2,POM,L26.4*W10.8*	1	SA
B0402	BA81-02806A	KNOB-BATTERY_L;FIRENZE2,PC/ABS,L25.3*W6.	1	SA
B0403	BA81-02807A	KNOB-BATTERY_R;FIRENZE2,PC/ABS,L25.3*W6.	1	SA
B0501	BA61-00780A	SPRING ETC-BATT;AQUILA-P,STS304,CD0.3,ID	2	SA
D0001	BA96-03003A	ASSY DVD-SUPERMULTI;HABANA,SUPER_MULTI,D	1	SA
D0001	BA96-03129A	ASSY DVD-SUPERMULTI;SEDONA,TSST,TS-L632D	1	SA
D0001	BA96-03180A	ASSY DVD-SUPERMULTI;SEDONA,HAINAN,HABANA	1	SA
D0001	BA96-03199A	ASSY DVD-SUPERMULTI;SEDONA+,S_MULTI,Mats	1	SA
D0001	BA96-03205A	ASSY DVD-SUPERMULTI;SEDONA,S_MULTI,TEAC,	1	SA
D1002	BA59-01624A	DVD-SUPERMULTI;DV-W28EA,8X,130ms,EIDE,2M	1	SA
D1002	BA59-01900A	DVD-SUPERMULTI;TS-L632D,8x,130ms,EIDE,2M	1	SA
D1002	BA59-01935A	DVD-SUPERMULTI;SSM-8515S,8X,130ms,E-IDE,	1	SA
D1002	BA59-01970A	DVD-SUPERMULTI;UJ-850,8X,180ms,E-IDE,2M,	1	SA
D1002	BA59-02020A	DVD-SUPERMULTI;DV-W28E-C,8X,110ms,E-IDE,	1	SA
D2000	BA81-02262A	BRACKET-ODD;SEDONA,STS304 1/2H,W20*L8.7*	1	SA
D3000	BA81-02253C	UNIT-BEZEL_SUPERMULTI;SEDONA,PC+ABS,W15.	1	SA
G0003	BA59-01664A	MODULE-WLAN;FIRENZE,WLL3090(LF),-,2.4GHz	1	SA
I0001	0902-002109	IC-MICROPROCESSOR;LF80538NE0361ME,1.86GH	1	SA
I0002	1105-001683	IC-DRAM MODULE;M470T6554,DDR2,512MByte,6	2	SA
I0002	1105-001783	IC-DRAM MODULE;NT512T64UH8B0FN-3C,DDR2,5	2	SA
I0003	BA59-01494A	LCD PANEL-15.4WXGA_GLARE;LTN154X3-L03-E,	1	SA
I0003	BA59-01814A	LCD PANEL-154WXGA;LTN154X3-L03-C/N,15.4W	1	SA

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6. Exploded View and Part List

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Location	Part Number	Parts Name & Specification	Q'ty	SA/SNA
I0003	BA59-01937A	LCD PANEL-15.4WXGA;B154EW02_V1,15.4WXGA,	1	SA
I0003	BA59-02147A	LCD PANEL-154WXGA;LTN154X3-L03-A,15.4WXG	1	SA
I0005	BA59-01957A	HDD;120G,MHV2120BH-PL,S63,H16,D16385,H9.	1	SA
I0005	BA59-02002A	HDD;120G,HTS541612J9SA00,S63,H16,D16385,	1	SA
I0005	BA59-02039A	HDD;120G,HM120JI,S63,H16,D16385,H9.5mm,2	1	SA
I0005	BA59-02087A	HDD;120G,MHW2120BH,S63,H16,D16385,H9.5mm	1	SA
I0006	BA59-02113C	KEYBOARD;FIRENZE2-R,88K,M/B,-,RUSSIAN,-,	1	SA
I0007	BA44-00162A	ADAPTOR;AD-6019(API1AD02),CORONA,-,90TO2	1	SA
I0007	BA44-00238A	ADAPTOR;0335C1960,AD-6019,AC/DC,90to264V	1	SA
I0007	BA44-00243A	ADAPTOR;ADP-60ZH A,AD-6019,AC/DC,90to264	1	SA
I0009	BA43-00155A	BATTERY;3UR18650Y-2-SDN-14,HABANA-C,Li-i	1	SA
I0009	BA43-00162A	BATTERY-PACK;P32R04-06-H01,Firenze2,Li-i	1	SA
I0016	BA39-00061A	CBF HARNESS;NP ALL,DEK501-64G/64-2100,60	1	SA
K0001	BA75-01905A	UNIT-HOUSING_LCD-BACK;FIRENZE2,SESC,PC+A	1	SA
K0002	BA75-01786A	UNIT-HOUSING_LCD-FRT;FIRENZE2,SESC,PC+AB	1	SA
K0004	BA81-02786A	KNOB-LATCH_LCD;FIRENZE2,PC/ABS,W147.4*L1	1	SA
K0006	BA61-00631A	SPRING ETC-KNOB_LCD;AQUILLA,STS304,T0.25	1	SA
K0007	BA64-00700E	LOGO-SAMSUNG;CICHLID2,NI,T0.95(W/Tape),W	1	SA
K0101	BA73-00381A	RUBBER-LCD_CAP;FIRENZE,VIBRATHANE,W6.93*	5	SA
K0201	BA68-03627B	LABEL-FRONT_R40PLUS;FIRENZE2,SESC,PC,T0.	1	SA
K0301	BA81-01824A	SPONGE-BACK_CENTER;FIRENZE,CR SPONGE,W50	1	SA
K1001	BA39-00635A	CBF HARNESS-LCD;Firenze2-R,PVC,UL10005,3	1	SA
K1001	BA39-00636A	CBF HARNESS-LCD;Firenze2-R,Teflon,UL1000	1	SA
K1002	BA44-00248A	INVERTER;OSLO,541180560003,DC,8.5to20V,1	1	SA
K1002	BA44-00250A	INVERTER;OSLO,VK.21209.202,DC,8.5to20V,1	1	SA
K1003	BA63-00472A	PROTECTOR-FILM_LCD154;ARGO,PET,T0.1mm,TR	1	SA
K2001	BA42-00167A	ANTENNA-MAIN;SS-03-03-085,Firenze2,2.4to	1	SA
K3001	BA61-00998A	HINGE-L;FIRENZE,ZAMAK2,T3.0mm,-,-,NTR,-,	1	SA
K3001	BA61-01096A	HINGE-L;FIRENZE,Mg,T3.0,W5.6,L21.9mm,NTR	1	SA
K3002	BA61-00999A	HINGE-R;FIRENZE,ZAMAK2,T3.0mm,-,-,NTR,-,	1	SA
K3002	BA61-01097A	HINGE-R;FIRENZE,Mg,T3.0,W5.6,L21.9mm,NTR	1	SA
K4001	BA61-01076A	BRACKET-LCD_L;FIRENZE2,SUS,T0.8,W255.7,L	1	SA
K4001	BA81-03538A	BRACKET-LCD_L;FIRENZE2,SUS, T0.8,W255.7,	1	SA
K4002	BA61-01077A	BRACKET-LCD_R;FIRENZE2,SUS,T0.8,W255.7,L	1	SA
K4002	BA81-03539A	BRACKET-LCD_R;FIRENZE2,SUS, T0.8,W255.7,	1	SA

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Location	Part Number	Parts Name & Specification	Q'ty	SA/SNA
L1004	BA68-20039A	LABEL-PPID_E;BLADE,-,PET,-,W50.8,L12.7mm	1.2	SA
L1005	BA68-20323A	LABEL CAUTION;NOTE PC,-,PET,T0.06,W30.0,	1	SA
M0001	BA92-04512A	ASSY MOTHER BD-TOP;FIRENZE2-R,YONAH,ATI	1	SA
M0006	BA39-00534A	WIRE HARNESS;TC05D37,AWG28,UL 1061,2PIN,	1	SA
M1004	2203-005052	C-CER,CHIP;0.0033nF,0.25pF,50V,NP0,1005	1	SA
M1004	2203-005918	C-CER,CHIP;1000nF,10%,6.3V,X7R,1608	1	SA
M1004	2203-006000	C-CER,CHIP;1NF,10%,3KV,X7R,TP,4520	1	SA
M1006	3709-001322	CONNECTOR-CARD EDGE;124P,0.8,SMD-A,TIN,M	1	SA
M1008	3708-002190	CONNECTOR-FPC/FFC/PIC;12,0.5,SMD-A,AUF,Y	1	SA
M1009	3711-002127	HEADER-BOARD TO CABLE;BOX,8P,1R,1.25mm,S	1	SA
M1009	3711-003609	HEADER-BOARD TO CABLE;BOX,2P,1R,1.25MM,S	1	SA
M1009	3711-004646	HEADER-BOARD TO BOARD;NOWALL,68P,2R,1.27	1	SA
M1013	2801-000111	CRYSTAL-SMD;0.032768MHz,20ppm,28-AAW,12.	1	SA
M1015	0404-000114	DIODE-SCHOTTKY;MMBD301,30V,200MA,SOT-23,	1	SA
M1016	0401-000132	DIODE-SWITCHING;BAV99,70V,50mA,SOT-23,TP	1	SA
M1016	0401-000191	DIODE-SWITCHING;MMBD4148,75V,200mA,SOT-2	1	SA
M1017	0403-000285	DIODE-ZENER;MMBZ5240B,5%,225mW,SOT-23,TP	1	SA
M1018	0505-001585	FET-SILICON;FDC653N,N,30V,5A,55mohm,1.6W	1	SA
M1018	0505-001648	FET-SILICON;IRF7811AV,N,30V,10.8A,11mohm	1	SA
M1024	0801-002195	IC-CMOS LOGIC;7S08,AND GATE,SOT-25,5P,63	1	SA
M1029	2007-000052	R-CHIP;10Kohm,1%,1/10W,TP,1608	1	SA
M1029	2007-000077	R-CHIP;470ohm,5%,1/10W,TP,1608	1	SA
M1029	2007-008299	R-CHIP;61.9ohm,1%,1/16W,TP,1005	1	SA
M1032	BA61-00784A	SUPPORT-VIDEO_BD;ARGO,CU ALLOY,T3.5,W3.5	1	SA
M1036	0504-001157	TR-DIGITAL;DTA114YUA,PNP,200mW,10K/47K,U	1	SA
M1059	1203-003480	IC-BATTERY;MAX1909,TQFN,28P,5x5mm,PLASTI	1	SA
M1063	0406-001141	DIODE-TVS;PGB1010603NR,-/-/1000V,0W,EIA-	1	SA
M2001	BA61-01083A	BRACKET-SUPPORT_CPU;FIRENZE2,SUS,T4.2,W3	1	SA
M2001	BA75-01891A	UNIT-BRACKET_CPU;FIRENZE2,SEC,SECC(EGI),	1	SA
M3004	BA31-00044A	FAN-CPU;MCF-913PAM05,FIRENZE2-R,Plastic,	1	SA
M3004	BA31-00044B	FAN-CPU;HY60J-05-801,FIRENZE2-R,Plastic,	1	SA
M3005	BA62-00434A	HEAT SINK-CPU;Hainan2,Copper,T8.8,W40,L5	1	SA
M3005	BA62-00434B	HEAT SINK-CPU;Hainan2,Copper,T8.8,W40,L5	1	SA
M4000	BA59-02036A	MODEM;1456VQL-T3(INT-RoHS),56Kbps,Agere	1	SA
M4000	BA59-02037A	MODEM;T60M951.07 LF,56Kbps,Agere 2 Chip,	1	SA

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Location	Part Number	Parts Name & Specification	Q'ty	SA/SNA
M4001	BA39-00593A	CBF HARNESS;FIRENZE2,WIRE,-,2,240mm,BLAC	1	SA
M9999	0402-001405	DIODE-SCHOTTKY;B340A,40V,3mA,SMA,TP	1	SA
M9999	0403-001047	DIODE-ZENER;BZX84C12L,5%,225mW,SOT-23,TP	1	SA
M9999	0501-000465	TR-SMALL SIGNAL;MMBT3904,NPN,350mW,SOT-2	1	SA
M9999	0505-000275	FET-SILICON;SI4435DY,P,-30V,+-8.0A,0.014	1	SA
M9999	0505-001049	FET-GAAS;BSS84,-50V,20V,-130mA,360mW,SOT	1	SA
M9999	0505-001386	FET-SILICON;FDS6680A,N,30V,12.5A,0.0095o	1	SA
M9999	0505-001955	FET-SILICON;Si4835DY,P,-30V,-8A,0.02ohm,	1	SA
M9999	0505-001972	FET-SILICON;IRF7904,N,30V,7.6A/11A,0.016	1	SA
M9999	0601-000189	LED;SMD,P-GRN,3.2X1.6X1.1MM,557NM,3.2X1.	1	SA
M9999	0601-001130	LED;SMD,RED/GRN,3.0X2.5MM,660/570NM,3.0X	1	SA
M9999	0801-002628	IC-CMOS LOGIC;7SZ08,2-INPUT AND GATE,SC7	1	SA
M9999	0801-002998	IC-CMOS LOGIC;74AHCT1G125,Single buffer,	1	SA
M9999	0903-001439	IC-MICROCOMPUTER;H8S/2110B,16Bit,TQFP,10	1	SA
M9999	0904-002063	IC-BUS CONTROLLER;R5C843,32Bit,CSP,208P,	1	SA
M9999	0904-002207	IC-MEMORY CONT.;216MEP6CLA14FG,FCBGA,120	1	SA
M9999	0904-002230	IC-I/O CONTROLLER;SB600,FcBGA,549P,23x23	1	SA
M9999	1001-001097	IC-ANALOG SWITCH;FST3125,BUS SWITCH,TSSO	1	SA
M9999	1103-001244	IC-EEPROM;93LC46B,1Kbit,64x16Bit,SOP,8P,	1	SA
M9999	1107-001646	IC-FLASH MEMORY;MX25L8005,8Mbit,8Mx1,SOP	1	SA
M9999	1201-001559	IC-AUDIO AMP;4863,TSSOP,20P,173MIL,DUAL,	1	SA
M9999	1203-002546	IC-POSI.FIXED REG.;MIC5258,SOT-23-5,5P,6	1	SA
M9999	1203-003476	IC-PWM CONTROLLER;ISL6227,SSOP,28P,9.9x3	1	SA
M9999	1203-003898	IC-POWER SUPERVISOR;SC452IMLTRT,MLP,44P,	1	SA
M9999	1203-004005	IC-PWM CONTROLLER;MAX8632ETI+T,QFN,28P,5	1	SA
M9999	1203-004108	IC-PWM CONTROLLER;MAX8734AEEI+T,QSOP,28P	1	SA
M9999	1205-002806	IC-SWITCH;R5534V-E2-FB,SSOP,20P,6.7x4.4m	1	SA
M9999	1205-002853	IC-CODEC;ALC262-GR,LQFP,48P,7x7mm,PLASTI	1	SA
M9999	1205-002941	IC-ETHERNET CONTROLLER;RTL8100CL-LF,LQFP	1	SA
M9999	1205-003157	IC-CLOCK GENERATOR;ICS951461,TSSOP,64P,1	1	SA
M9999	1209-001653	IC-TEMP. TRANSDUCER;W83L771W/G,TSSOP,8P,	1	SA
M9999	2007-000309	R-CHIP;10ohm,5%,1/10W,TP,1608	1	SA
M9999	2007-001341	R-CHIP;680KOHM,5%,1/16W,TP,1005	1	SA
M9999	2007-007382	R-CHIP;20Mohm,5%,1/10W,TP,1608	1	SA
M9999	2007-007441	R-CHIP;562ohm,1%,1/10W,TP,1608	1	SA

6. Exploded View and Part List

NP-R40FY02/SER

Location	Part Number	Parts Name & Specification	Q'ty	SA/SNA
M9999	2007-008789	R-CHIP;0.001ohm,1%,1W,TP,6432	1	SA
M9999	2203-002487	C-CER,CHIP;4.7nF,10%,25V,X7R,1005	1	SA
M9999	2203-006048	C-CER,CHIP;100nF,10%,10V,X7R,1005	1	SA
M9999	2203-006090	C-CER,CHIP;10000nF,10%,6.3V,X5R,2012	1	SA
M9999	2203-006474	C-CER,CHIP;22000nF,20%,6.3V,X5R,2012	1	SA
M9999	2402-001120	C-POLYMER AL CHIP;330uF,0.2,6.3V,-,TP,7.	1	SA
M9999	2402-001122	C-POLYMER AL CHIP;100uF,0.2,6.3V,-,TP,7.	1	SA
M9999	2603-000065	TRANS-MATCHING;-,-,-,8P:8P,11.81x8.64x2.	1	SA
M9999	3301-001772	BEAD-SMD;27ohm,1608,-,TP,30ohm/120MHz,48	1	SA
M9999	3404-001311	SWITCH-TACT;12VDC,50mA,100gf,6.0x6.0x5.0	1	SA
M9999	3701-001326	CONNECTOR-DSUB;15P,2R,FEMALE,ANGLE,NI	1	SA
M9999	3704-001153	SOCKET-IC;479P,PGA,AU,1.27mm	1	SA
M9999	3708-002166	CONNECTOR-FPC/FFC/PIC;25P,0.5mm,SMD-A,AU	1	SA
M9999	3709-001341	CONNECTOR-CARD EDGE;200P,0.6mm,SMD-A,AUF	1	SA
M9999	3709-001413	CONNECTOR-CARD EDGE;44P,0.8mm,SMD-A,AU,4	1	SA
M9999	3709-001425	CONNECTOR-CARD EDGE;-,-,-,Ni,PCMCIA Fram	1	SA
M9999	3709-001459	CONNECTOR-CARD EDGE;200P,0.6mm,SMD-A,Au,	1	SA
M9999	3710-002133	SOCKET-BOARD TO BOARD;12P,2R,0.8mm,SMD-A	1	SA
M9999	3710-002294	CONNECTOR-SOCKET;50P,2R,0.8mm,ANGLE,AU,B	1	SA
M9999	3710-002468	SOCKET-INTERFACE;7+15P,1R,1.27mm,ANGLE,A	1	SA
M9999	3711-000541	HEADER-BOARD TO CABLE;BOX,2P,1R,1.25mm,S	1	SA
M9999	3711-006059	HEADER-BATTERY;NOWALL,7P,1R,2.5,BATTERY,	1	SA
M9999	3722-002191	JACK-DC POWER;3P,5.6pi,Sn-P,Black	1	SA
M9999	3722-002251	JACK-VHS;7P,-,SN,YEL,-	1	SA
M9999	3722-002365	JACK-PHONE;6P,AUF,PINK	1	SA
M9999	3722-002382	JACK-USB;4P/2C,AUF,BLK,ANGLE-OFFSET,A TY	1	SA
M9999	3722-002390	JACK-MODULAR;8P/8C,REVERSE,YES,ANGLE-OFF	1	SA
M9999	3722-002416	JACK-PHONE;6P,AUF,LIME,ANGLE	1	SA
M9999	BA61-01082A	SUPPORT-KEYBOARD;FIRENZE2,CU ALLOY,T1.6,	1	SA
M9999	BA62-00389A	INSULATION-MEMORY;SEDONA,PC,T0.2,W64,L30	1	SA
M9999	BA63-00029A	GASKET-CPU;BLADE,71TS,T1.5,W4.0,L9.0mm,N	1	SA
M9999	BA81-02808A	INSULATOR-PCMCIA;FIRENZE2,PC,W72*L50*T0.	1	SA
M9999	BA81-02911A	INSULATOR-DUCT;FIRENZE2,PC,W26*L53.58*T0	1	SA
M9999	BA81-03069A	GASKET-BRKT_LCD;FIRENZE2,POLYURETHANE,W3	1	SA
T0001	BA75-01903A	UNIT-HOUSING_TOP;FIRENZE2-R,SESC,PC+ABS,	1	SA

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6. Exploded View and Part List

NP-R40FY02/SER

Location	Part Number	Parts Name & Specification	Q'ty	SA/SNA
T0005	BA68-02502A	LABEL-INTEL_CELERON-M;CETUS,ALL,-,-,W19.	1	SA
T0005	BA68-03686A	LABEL-LOGO_VISTA-PREMIUM;N/P ALL,VISTA P	1	SA
T0005	BA68-03770A	LABEL-ZAIGEN;FIRENZE2-R,CIS,PET,-,W100,L	1	SA
T0005	BA68-10191Y	LABEL-ATI_XPRESS1250;FIRENZE2-R,-,ART-PA	1	SA
T0010	BA75-01782C	UNIT-CAP_TOP;FIRENZE2,SEC,PC/ABS,W356*L4	1	SA
T0101	BA59-01801A	BOARD-TOUCHPAD;Hainan,TM-00379-003,BONGW	1	SA
T0102	BA61-01078B	BRACKET-TOUCHPAD;FIRENZE2,EGI,T0.5,W91,L	1	SA
T0302	BA41-00663A	FFC-TOUCHPAD;FIRENZE2,01,AU,12P,T0.3,W66	1	SA
T2001	BA96-03101A	ASSY SPEAKER;FIRENZE-2,L02514A-001,130/4	1	SA
T2004	BA81-00766A	RUBBER-SPEAKER;NEON,SILICON/HS40,W6.2*L6	4	SA
T9900	BA63-00296A	GASKET-LAN;FIRENZE2,CONDUCTIVE FABRIC,T6	1	SA
W3017	BA39-00485A	WIRE HARNESS-MODEM;CICHLID2,UL1571,-,2P,	1	SA
W4001	6001-001625	SCREW-MACHINE;BH,+,-,M2.6,L8,ZPC(BLK),SW	2	SA
W4002	6001-001406	SCREW-MACHINE;CH,+,M2.0,L6.0,NI PLT,SWRC	4	SA
W4002	6001-001480	SCREW-MACHINE;CH,+,M3,L4.0,ZPC(BLK),SWRC	4	SA
W4002	6001-001570	SCREW-MACHINE;CH,+,-,M2,L4,ZPC(BLK),SWRC	2	SA
Z8999	1209-001382	IC-TEMP. TRANSDUCER;ADM1032ARM,SOIC,8P,1	1	SA
Z8999	1209-001507	IC-ETC, LINEAR;LM26CIM5X-TPA,SOT-23,5P,2	1	SA
Z8999	2603-000048	TRANS-MATCHING;-,1:1,0mA,6P:6P,11.81x8.6	1	SA

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FIRENZE2-R

CPU : Intel Yonah/Merom (533/667MHz)
Chip Set : RS600ME & SB600
Remarks : Mobility Platform

Model Name : FIRENZE II R
PBA Name : MAIN
PCB Code : TPT : BA41-00714A
GCE : BA41-00715A
Dev. Step : MP (6-Layer)
Revision : 1.0
T.R. Date : 2006.01.11

DRAW	CHECK	APPROVAL
TERMI	HJ KIM	SJ PARK

■ ***Owner : SEC Mobile R & D*** ***Signature :*** ***X***

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DRAW: TERMI KWON	DATE: 1/11/2007	TITLE: FIRENZE2-R COVER	SAMSUNG ELECTRONICS
CHECK: HJ KIM	DEV. STEP: MP		
APPROVAL: SJ PARK	REV: 1.0		PART NO.: BA41-00714A
MODULE CODE:	LAST EDIT: January 11, 2007 8:27:44 PM	PAGE 1 OF 52	

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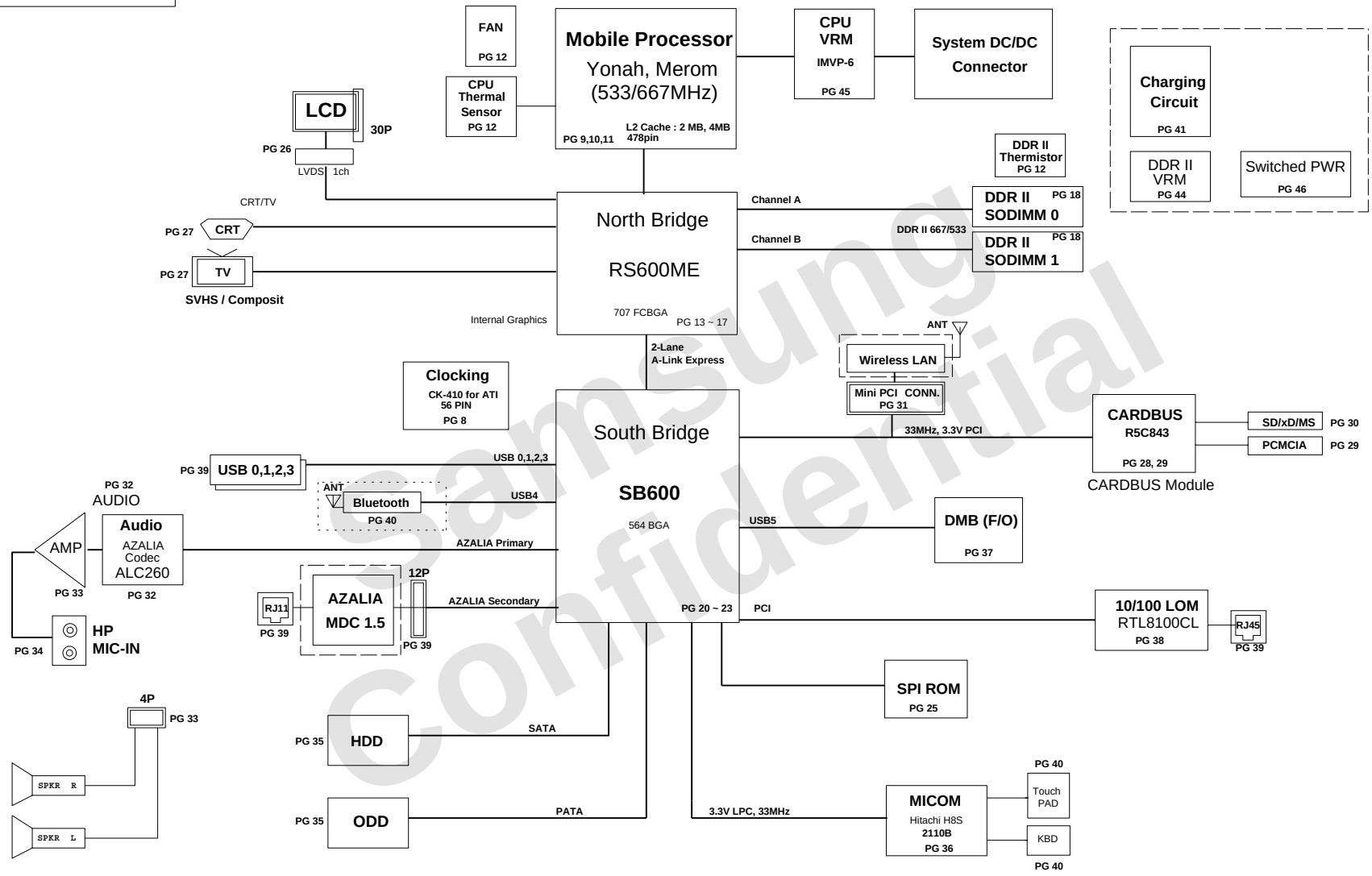

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DRAW: TERMI KWON	DATE: 1/11/2007	TITLE: FIRENZE2-R MAIN OPERATION BLOCK DIAGRAM	SAMSUNG ELECTRONICS
CHECK: HJ KIM	DEV. STEP: MP		
APPROVAL: SJ PARK	REV: 1.0		PART NO.: BA41-00714A
MODULE CODE:	LAST EDIT: January 11, 2007 8:27:44 PM	PAGE 2 OF 52	

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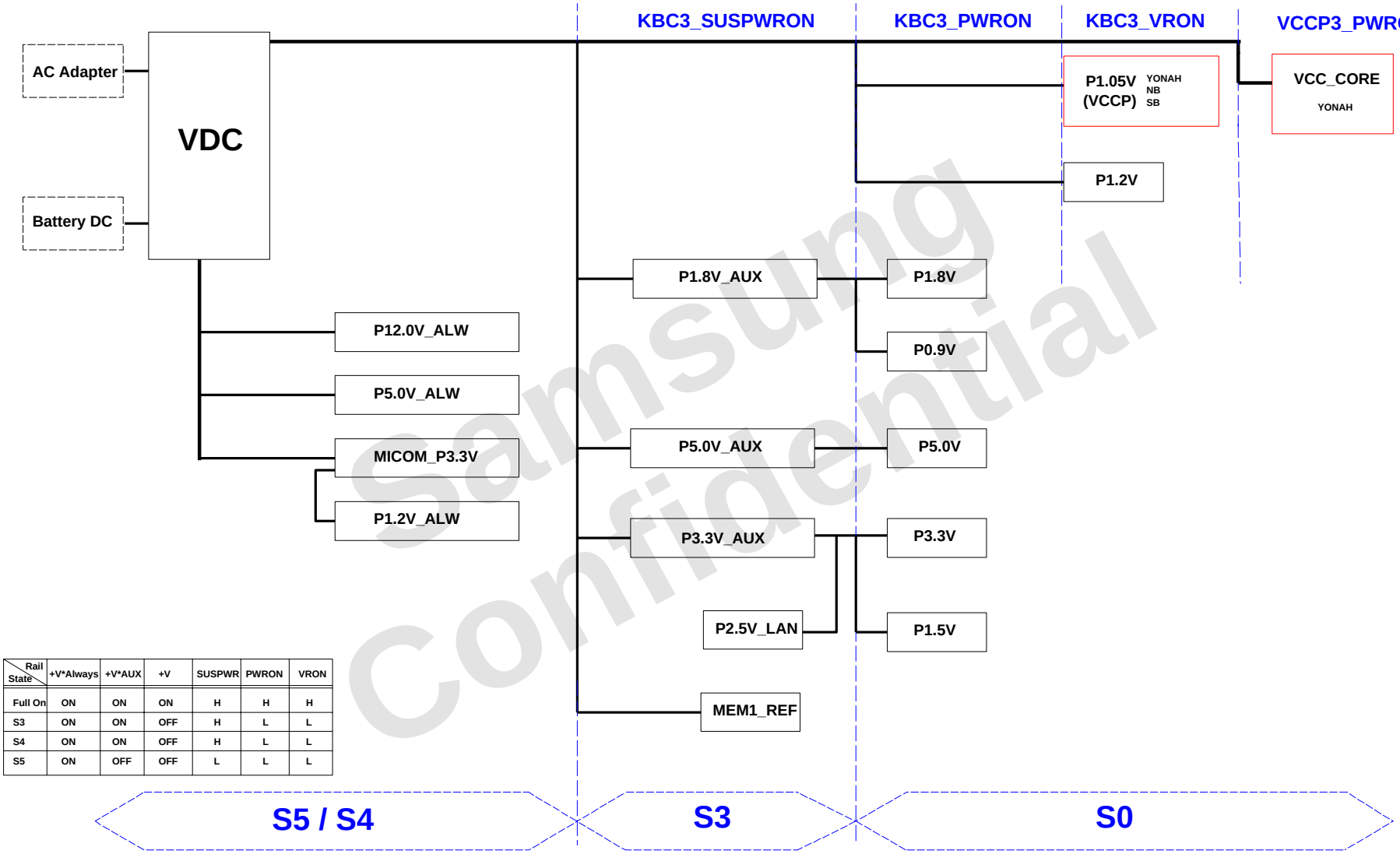
Power Diagram



Rail / State	+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	ON	OFF	H	L	L
S5	ON	OFF	OFF	L	L	L

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CHECK: HJ KIM	DEV. STEP: MP		
APPROVAL: SJ PARK	REV: 1.0		PART NO.: BA41-00714A
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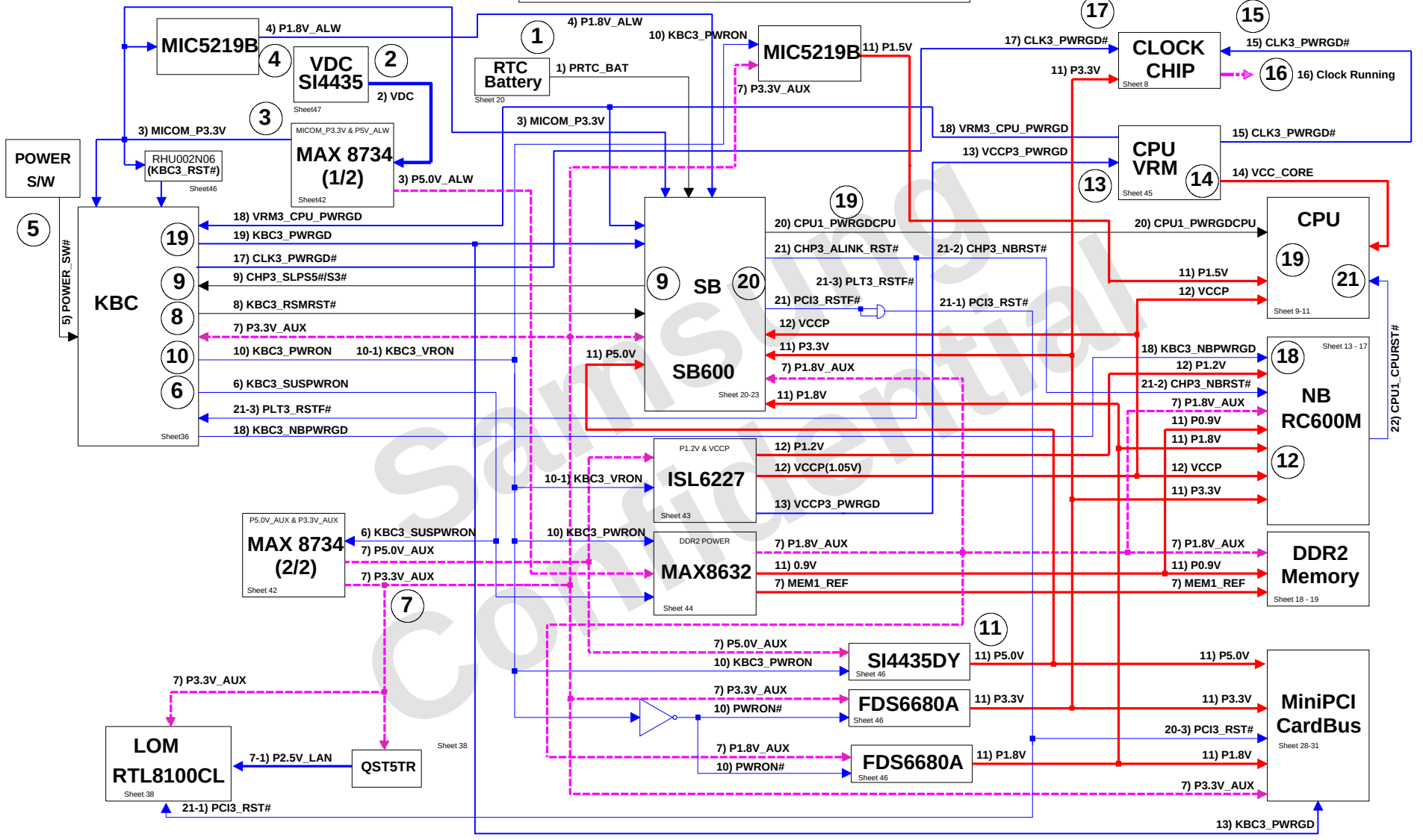
POWER SEQUENCE Rev. 0.1



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CHECK: HJ KIM	DEV. STEP: MP		
APPROVAL: SJ PARK	REV: 1.0	POWER SEQUENCE	PART NO.: BA41-00714A
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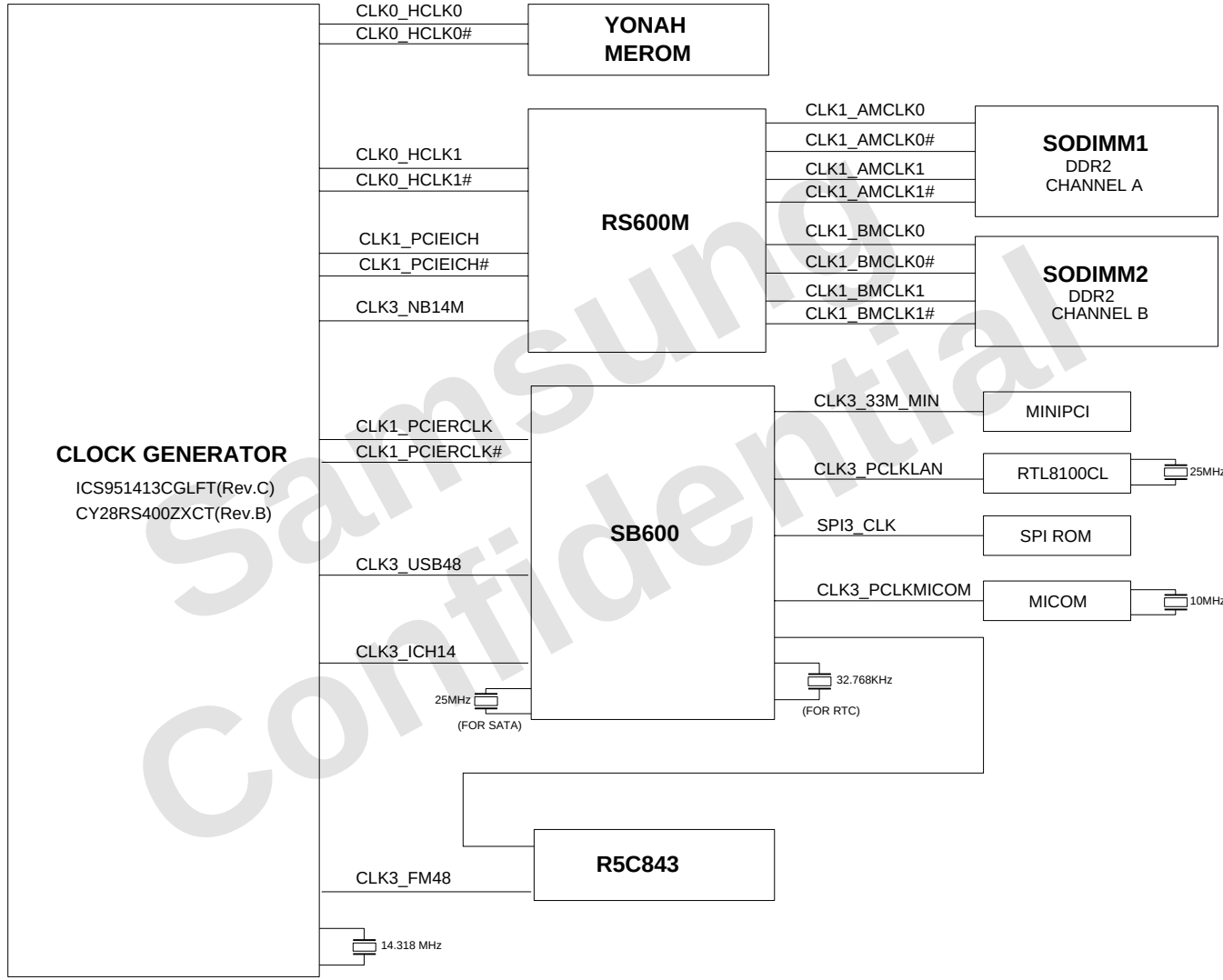

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DRAW: TERMI KWON	DATE: 1/11/2007	TITLE: FIRENZE2-R CLOCK DIAGRAM	SAMSUNG ELECTRONICS
CHECK: HJ KIM	DEV. STEP: MP		
APPROVAL: SJ PARK	REV: 1.0		PART NO.: BA41-00714A
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SCHEMATIC ANNOTATIONS AND BOARD INFORMATION

PCI Devices

Devices	IDSEL#	REQ/GNT#	Interrupts
Cardbus	AD25	0	A, B, C
LAN	AD21	1	D
MINIPCI	AD23	2	A,B
USB	AD30(internal)	-	-
			-
			-
Hub to PCI	AD31(internal)	-	-
LPC bridge/IDE/AC97/SMBUS	AD31(internal)	-	--
Internal MAC	AD31(internal)	-	-
AC Link	-	-	-

Voltage Rails

VDC	Primary DC system power supply (7 to 21V)
VCC_CORE	Core voltage for YONAH (0~1.5V)
VCCP	YONAH Processor System Bus(PSB) Termination (1.05V)
P0.9V	0.9V switched power rail (off in S3-S5)
P1.2V	1.2V switched power rail (off in S3-S5)
P1.5V	1.5V switched power rail (off in S3-S5)
P1.5V_AUX	1.5V power rail (off in S4-S5)
P1.8V	1.8V switched power rail (off in S3-S5)
P1.8V_AUX	1.8V power rail(off in S4-S5)
P1.8V_ALWS	1.8V power rail (Always On)
P2.5V_LAN	2.5V power rail (off in S4-S5)
MICOM_P3.3V	3.3V always on power rail for MICOM
P3.3V	3.3V switched power rail (off in S3-S5)
P3.3V_AUX	3.3V power rail (off in S4-S5)
P5V	5.0V switched power rail (off in S3-S5)
P5V_AUX	5.0V power rail (off in S4-S5)
P5.0V_ALWS	5.0V power rail (Always On)
P12V_ALWS	12V power rail (Always On)

I²C / SMB Address

Devices	Address	Hex	Bus
SB600	Master	-	SMBUS Master
SODIMM0	1010 0100	A4h	-
SODIMM1	1010 0110	A6h	-
CK-410 (Clock Generator)	1101 001x	D2h	Clock, Unused Clock Output Disable

USB PORT Assign

PORT NUMBER	ASSIGNED TO
0, 1	SYSTEM PORT A
2, 3	SYSTEM PORT B
4	BLUETOOTH
5	DMB

Crystal / Oscillator

TYPE	FREQUENCY	DEVICE	USAGE
Crystal	32.768KHz	SB600	Real Time Clock
Crystal	25MHz	SB600	SATA
Crystal	10MHz	MICOM	H8S-2110B
Crystal	14.318MHz	CLOCK-Generator	CK-410M
Crystal	25MHz	LAN	LOM

CPU Core Voltage Table

IMVP-6

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

*"1111111" : 0V power good asserted.

Active	
DPRSLPVR	0
DPRSTP*	1
PSI2*	0 or 1

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

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

System Power States

CHP3_SLPS1* S1, Powered-On-Suspend(POS) : In this state, all clocks(except the 32.768KHz clock) are stopped.
The system context is maintained in system DRAM. Power is maintained to PCI, the CPU, memory controller, memory, and all other criticial subsystems.
Note that this state does not preclude power being removed from non-essential devices, such as disk drives. During this state, CPU can be selected for either Deep Sleep or Deeper Sleep.
In Deeper Sleep, CPU voltage reduced in this state to reduce the leakage power.

CHP3_SLPS3* S3, Suspend-To-RAM(STR) : The system context is maintained in system DRAM, but power is shut off to non-critical circuits.
Memory is retained, and refreshes continue. All clocks stop except RTC clock.

CHP3_SLP4S* S4, Suspend-To-Disk(STD) : The Context of the system is maintained on the disk. All power is then shut off to the system except for the logic required to resume.
Externally appears same as S5, but may have different wake events.

CHP3_SLPS5* S5, Soft Off(SOFF) : System context is not maintained. All power is shut off except for the logic required to restart. A full boot is required when waking.

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DRAW: TERMI KWON	DATE: 1/11/2007	TITLE: FIRENZE2-R MAIN BOARD INFORMATION	SAMSUNG ELECTRONICS
CHECK: HJ KIM	DEV. STEP: MP		
APPROVAL: SJ PARK	REV: 1.0		PART NO.: BA41-00714A
MODULE CODE:	LAST EDIT: January 11, 2007 8:27:44 PM	PAGE 6 OF 52	

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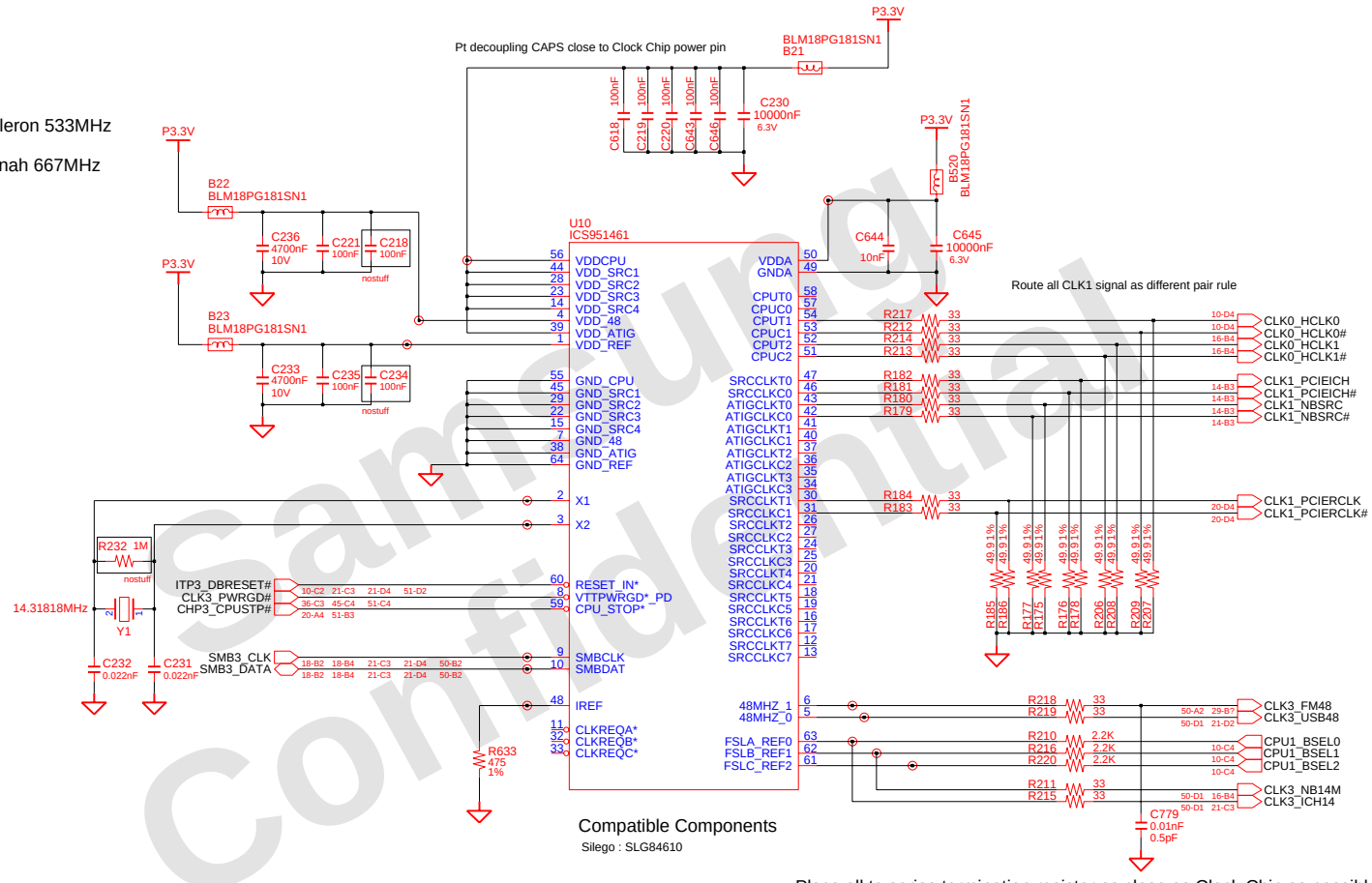
CPU	FSA BSEL0	FSB BSEL1	FSC BSEL2	HOST CLK	
	0	0	0	266 MHz	
	0	0	1	333 MHz	
	0	1	0	200 MHz	
	0	1	1	400 MHz	
	1	0	0	133 MHz	Celeron 533MHz
	1	0	1	100 MHz	
	1	1	0	166 MHz	Yonah 667MHz
	1	1	1	RSVD	



Compatible Components

Silego : SLG84610

Place all te serias termination resistor as close as Clock Chip as possible

FSA, FSB, FSC of Clock chip are low thershold inputs
Vih_fs_min = 0.7V
Vil_fs_max - 0.35V

DRAW: TERMI KWON	DATE: 1/11/2007	TITLE: FIRENZE2-R MAIN CLOCK GENERATOR	SAMSUNG ELECTRONICS
CHECK: HJ KIM	DEV. STEP: MP		PART NO.: BA41-00714A
APPROVAL: SJ PARK	REV: 1.0		
MODULE CODE:	LAST EDIT: January 11, 2007 8:27:44 PM	PAGE 8 OF 52	

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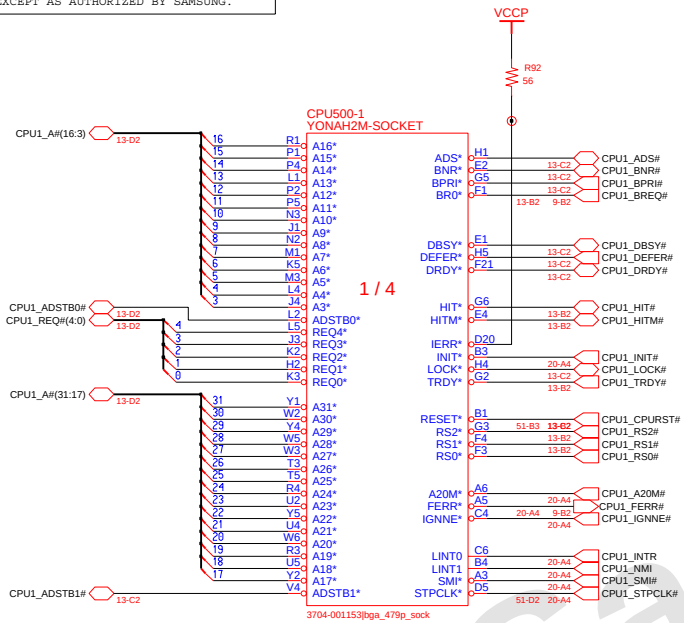

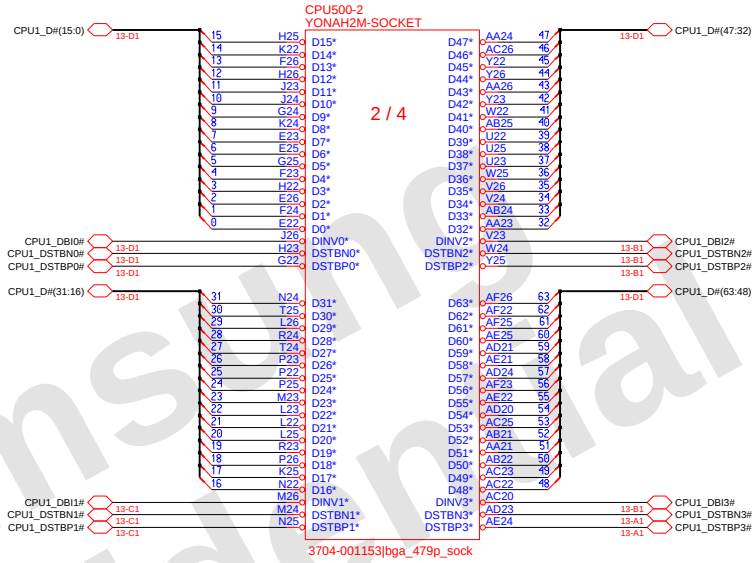

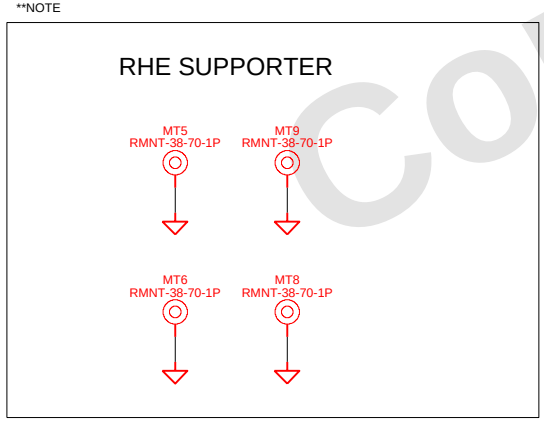

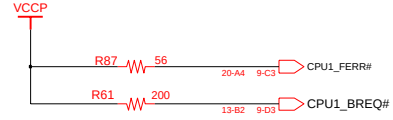

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CHECK: HJ KIM	DEV. STEP: MP		
APPROVAL: SJ PARK	REV: 1.0		PART NO.: BA41-00714A
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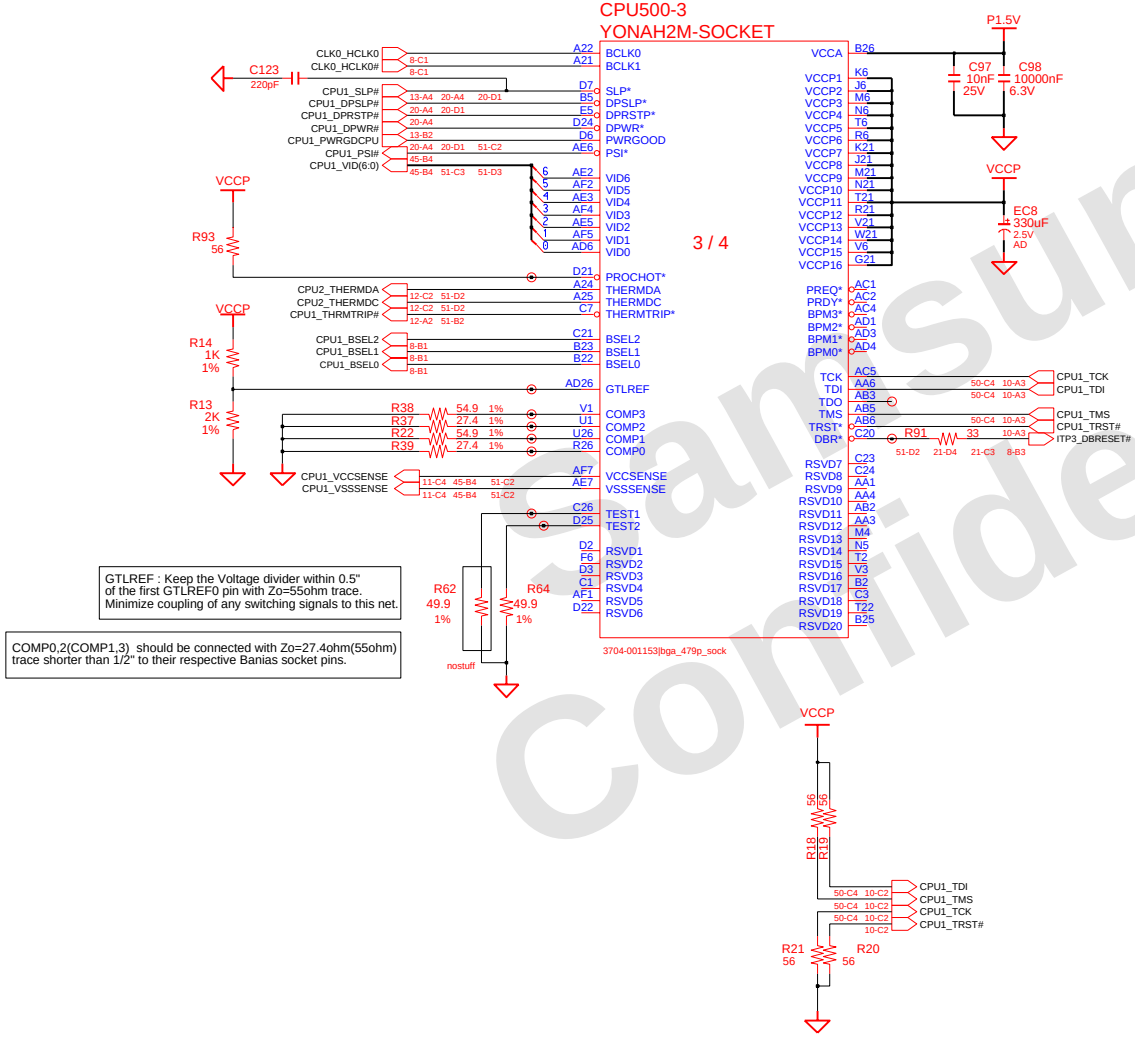

CPU Core Voltage Table

IMVP-6

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

Active	
DPRSLPVR	0
DPRSTP*	1
PSI2*	0 or 1

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

*"1111111" : 0V power good asserted.

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

DRAW	TERMI KWON	DATE	1/11/2007	TITLE	FIRENZE2-R MAIN YONAH CPU(2/3)
CHECK	HJ KIM	DEV. STEP	MP		
APPROVAL	SJ PARK	REV	1.0		
MODULE CODE		LAST EDIT	January 11, 2007 8:27:44 PM	PAGE	10 OF 52

SAMSUNG ELECTRONICS

PART NO. BA41-00714A

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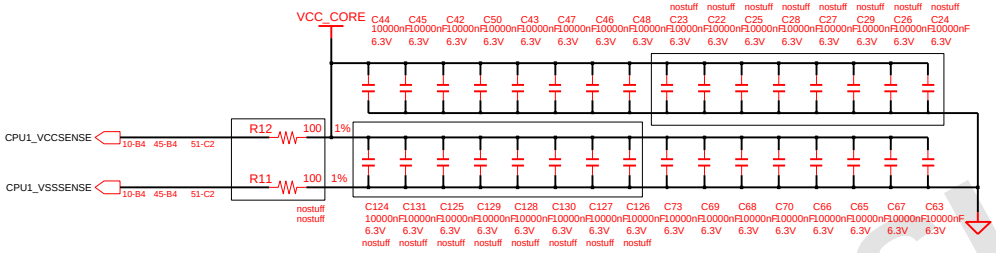

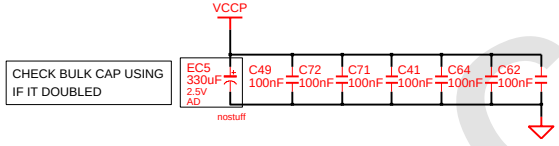

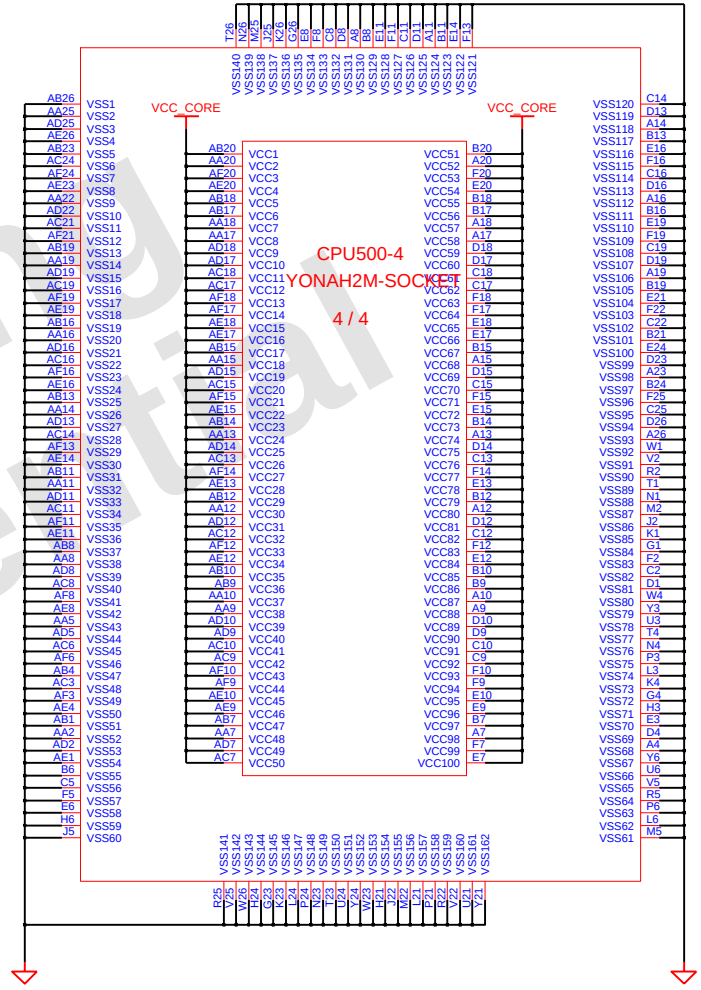

DRAW: TERMI KWON	DATE: 1/11/2007	TITLE: FIRENZE2-R MAIN YONAH CPU(3/3)	SAMSUNG ELECTRONICS
CHECK: HJ KIM	DEV. STEP: MP		PART NO.: BA41-00714A
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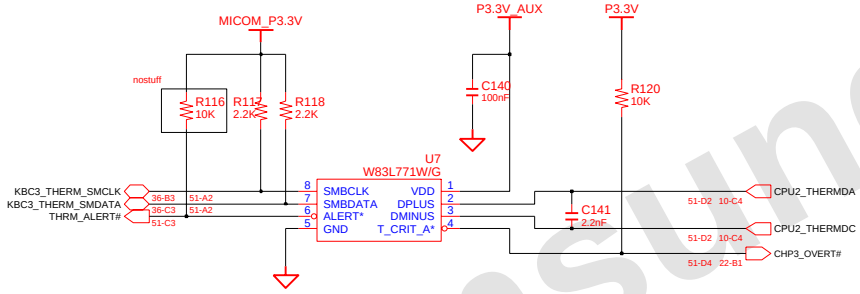
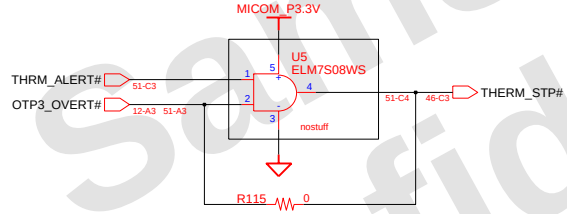
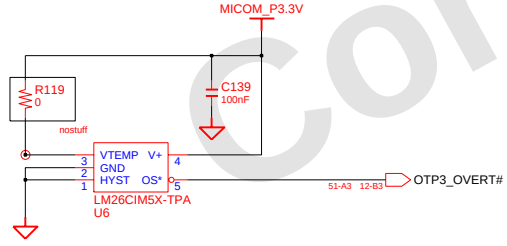
Refer To Thermal Sensor Layout Guidelines.

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

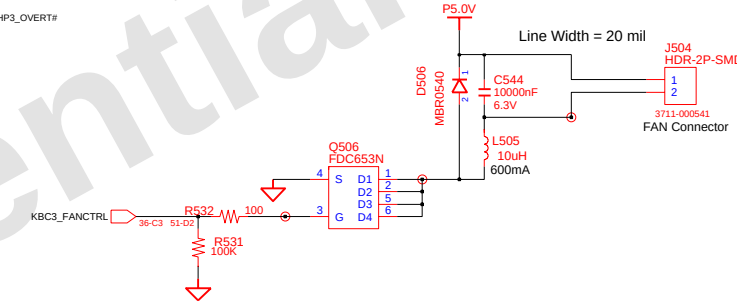
CPU Thermal Sensor

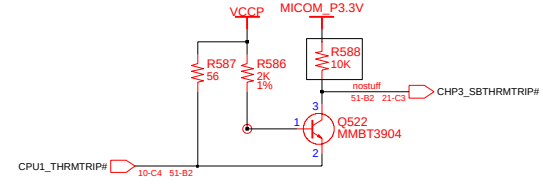






FAN Control Logic





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DRAW: TERMI KWON	DATE: 1/11/2007	TITLE: FIRENZE2-R MAIN THERMAL SENSOR/FAN CONTRL	SAMSUNG ELECTRONICS
CHECK: HJ KIM	DEV. STEP: MP		
APPROVAL: SJ PARK	REV: 1.0		PART NO. BA41-00714A
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DUCT + FAN SUPPORTER

M500 HEAD DIA LENGTH
M4 HEAD DIA LENGTH
M1 HEAD DIA LENGTH
M6 HEAD DIA LENGTH
M5 HEAD DIA LENGTH
M3 HEAD DIA LENGTH

U507-1
RS600ME
1 OF 5

P-4 AGTL + I/F

CPU1_A#(31:3) 9-C4 9-D4
CPU1_REQ#(4:0) 9-C4
CPU1_ADSTB0# 9-C4
CPU1_ADSTB1# 9-C4
CPU1_ADS# 9-D3
CPU1_BNR# 9-D3
CPU1_BPRI# 9-D3
CPU1_DEFER# 9-D3
CPU1_DRDY# 9-C3
CPU1_DBSY# 9-D3
CPU1_LOCK# 9-C3
CPU1_CPURST# 9-C3 51-B3
CPU1_RS2# 9-C3
CPU1_RS1# 9-C3
CPU1_RS0# 9-C3
CPU1_BREQ# 9-B2 9-D3
CPU1_TRDY# 9-C3
CPU1_HIT# 9-C3
CPU1_HITM# 9-C3 10-C4
CPU1_DPWR#

ADDR.GROUP 0: CPU_A3#, CPU_A4#, CPU_A5#, CPU_A6#, CPU_A7#, CPU_A8#, CPU_A9#, CPU_A10#, CPU_A11#, CPU_A12#, CPU_A13#, CPU_A14#, CPU_A15#, CPU_A16#, CPU_REQ0#, CPU_REQ1#, CPU_REQ2#, CPU_REQ3#, CPU_REQ4#, CPU_ADSTB0#

ADDR.GROUP 1: CPU_A17#, CPU_A18#, CPU_A19#, CPU_A20#, CPU_A21#, CPU_A22#, CPU_A23#, CPU_A24#, CPU_A25#, CPU_A26#, CPU_A27#, CPU_A28#, CPU_A29#, CPU_A30#, CPU_A31#, CPUA32#_NC, CPUA33#_NC, CPU_ADSTB1#, CPU_RESERVED

CONTROL: CPU_ADS#, CPU_BNR#, CPU_BPRI#, CPU_DEFER#, CPU_DRDY#, CPU_DBSY#, CPU_LOCK#, CPU_CPURST#, CPU_RS2#, CPU_RS1#, CPU_RS0#, CPU_BR0#, CPU_TRDY#, CPU_HIT#, CPU_HITM#, CPUDPWR#

MISC: SUS_STAT#, SYSRESET#, POWERGOOD, CPU_COMP_P, CPU_COMP_N, THERMALDIODE_P, THERMALDIODE_N, IOPLLVDD18, IOPLLVDD12, IOPLLVSS, CPUSLP#_RESERVED1, CPU_VREF, TESTMODE

DATA GROUP 0: CPU_D0#, CPU_D1#, CPU_D2#, CPU_D3#, CPU_D4#, CPU_D5#, CPU_D6#, CPU_D7#, CPU_D8#, CPU_D9#, CPU_D10#, CPU_D11#, CPU_D12#, CPU_D13#, CPU_D14#, CPU_D15#, CPU_DBI0#, CPU_DSTB0N#, CPU_DSTB0P#

DATA GROUP 1: CPU_D16#, CPU_D17#, CPU_D18#, CPU_D19#, CPU_D20#, CPU_D21#, CPU_D22#, CPU_D23#, CPU_D24#, CPU_D25#, CPU_D26#, CPU_D27#, CPU_D28#, CPU_D29#, CPU_D30#, CPU_D31#, CPU_DBI1#, CPU_DSTB1N#, CPU_DSTB1P#

DATA GROUP 2: CPU_D32#, CPU_D33#, CPU_D34#, CPU_D35#, CPU_D36#, CPU_D37#, CPU_D38#, CPU_D39#, CPU_D40#, CPU_D41#, CPU_D42#, CPU_D43#, CPU_D44#, CPU_D45#, CPU_D46#, CPU_D47#, CPU_DBI2#, CPU_DSTB2N#, CPU_DSTB2P#

DATA GROUP 3: CPU_D48#, CPU_D49#, CPU_D50#, CPU_D51#, CPU_D52#, CPU_D53#, CPU_D54#, CPU_D55#, CPU_D56#, CPU_D57#, CPU_D58#, CPU_D59#, CPU_D60#, CPU_D61#, CPU_D62#, CPU_D63#, CPU_DBI3#, CPU_DSTB3N#, CPU_DSTB3P#

CPU1_D#(63:0) 9-D3 9-D2 9-C3 9-C2

CPU1_DBI0# 9-C3
CPU1_DSTBN0# 9-C3
CPU1_DSTBP0# 9-C3
CPU1_DBI1# 9-C3
CPU1_DSTBN1# 9-C3
CPU1_DSTBP1# 9-B3
CPU1_DBI2# 9-C2
CPU1_DSTBN2# 9-C2
CPU1_DSTBP2# 9-C2
CPU1_DBI3# 9-C2
CPU1_DSTBN3# 9-C2
CPU1_DSTBP3# 9-B2

CHP3_SUSSTAT# 21-D3 36-B3
KBC3_NBPWRGD 36-C3 51-B3
CHP3_NBRST# 20-C1 51-A4

R128 0 nostuff
R145 0 nostuff
R173 4.7K nostuff
R129 1K 1%
R130 0
R121 49.9 1%
R122 24.9 1%
R107 4.7K
R105 20K 1%
R98 4.7K
R94 61.9 1%
R95 127 1%
C132 1000nF 6.3V
C133 220pF
C167 2200nF 10V
C617 2200nF 10V
B513 BLM18PG181SN1
B17 BLM18PG181SN1
Q29 RHU002N06
Q23 MMBT3904
Q22 MMBT3904 nostuff nostuff
R106 2.2K

P1.8V_AUX
P1.8V
P1.2V
VCCP
P3.3V_NB
CPU1_SLP# 10-D4 20-A4 20-D1

PLACE CLOSE TO NB
USE 10/10MIL WIDTH/SPACE

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CHECK: HJ KIM	DEV. STEP: MP		
APPROVAL: SJ PARK	REV: 1.0		PART NO. BA41-00714A
MODULE CODE	LAST EDIT: January 11, 2007 8:27:44 PM	PAGE 13 OF 52	

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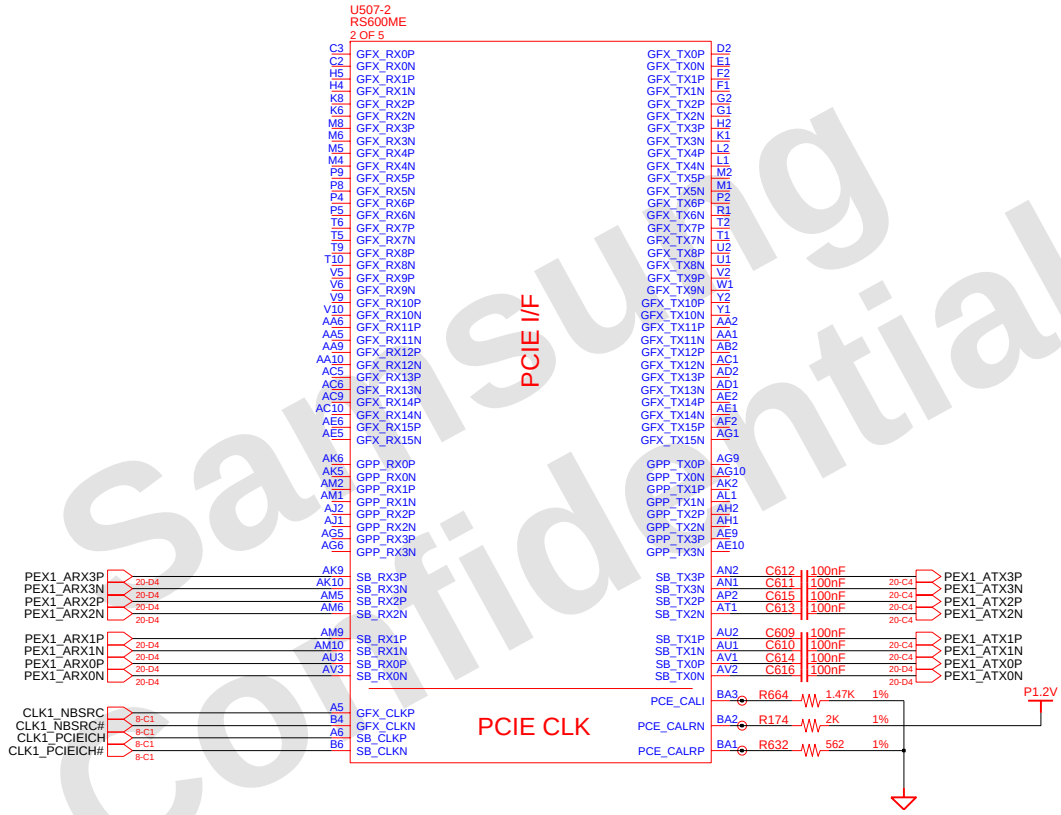

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CHECK: HJ KIM	DEV. STEP: MP		
APPROVAL: SJ PARK	REV: 1.0		PART NO.: BA41-00714A
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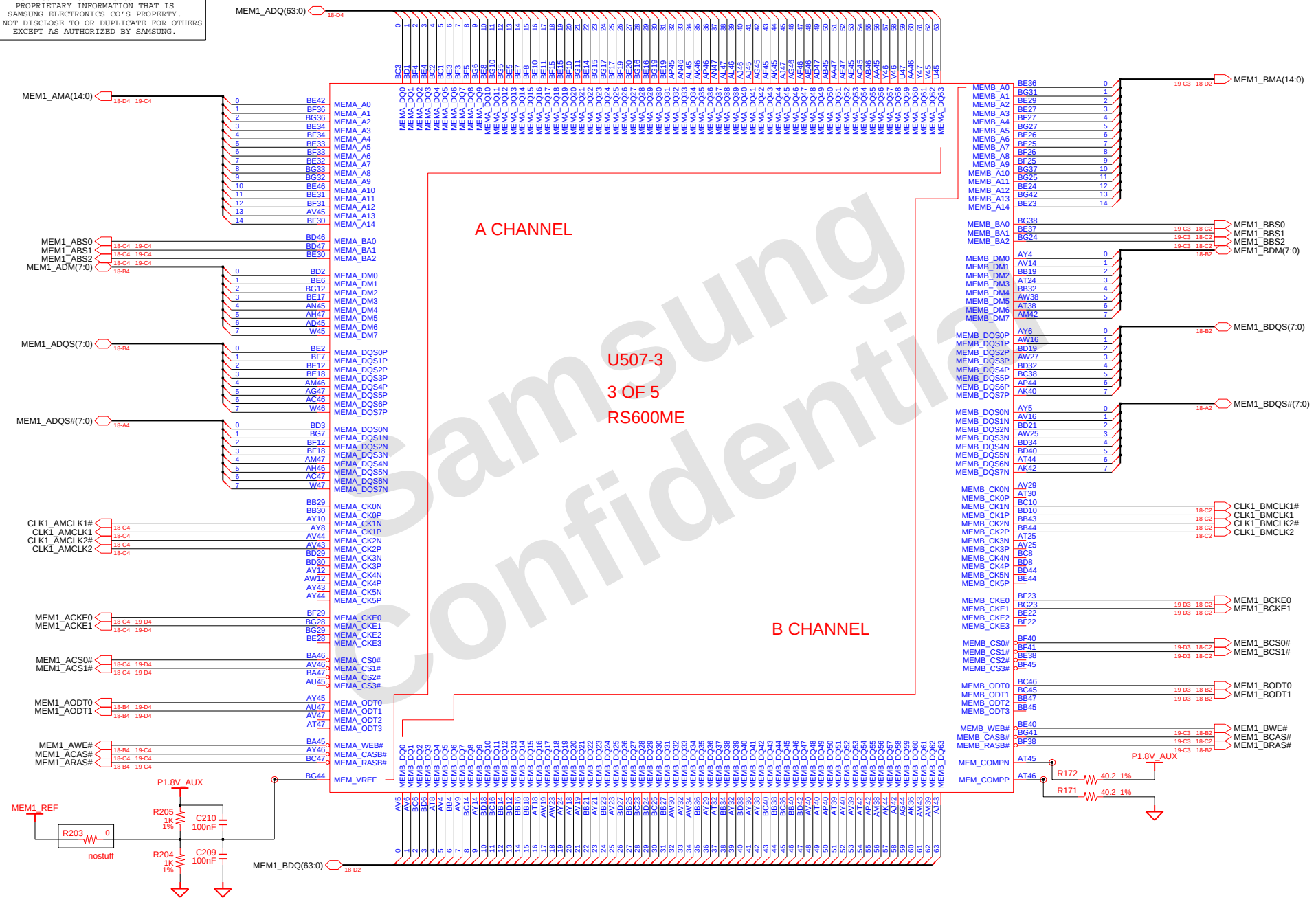

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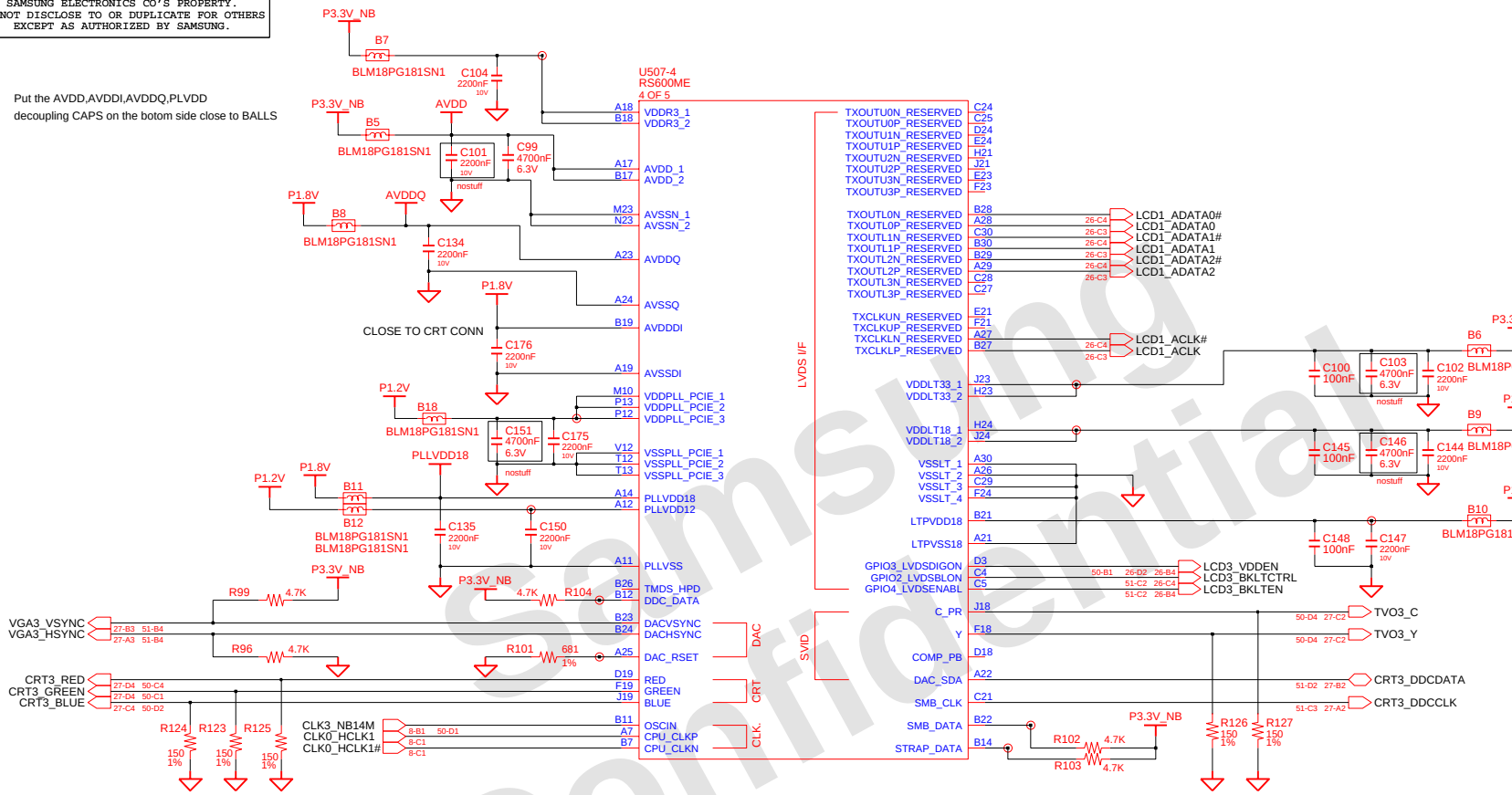
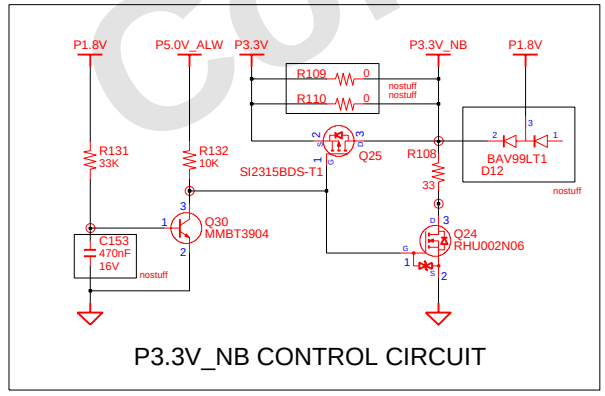
Put the AVDD,AVDDI,AVDDQ,PLVDD
decoupling CAPS on the botom side close to BALLS



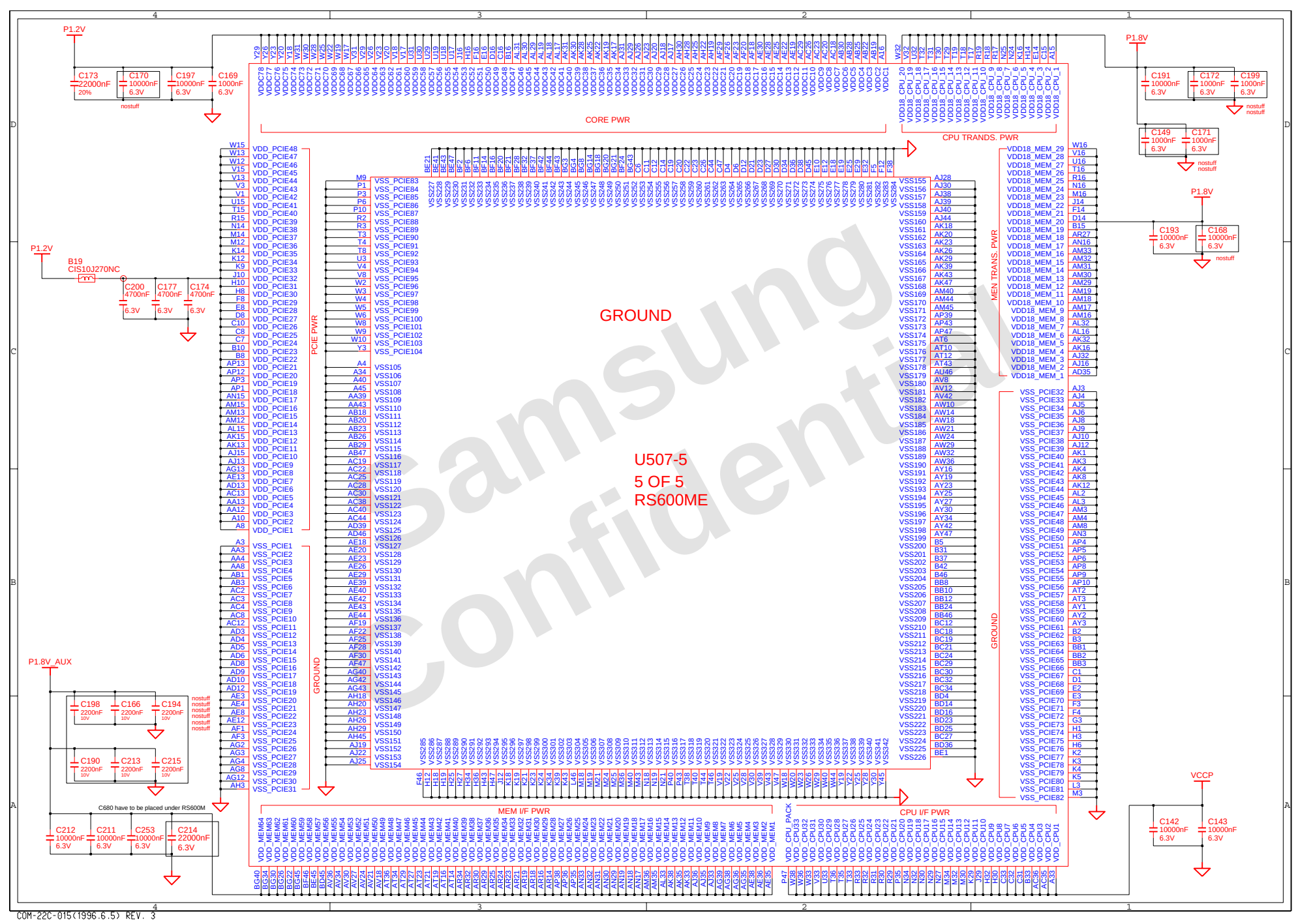


P3.3V_NB CONTROL CIRCUIT

STRAP DEFINITIONS FOR THE RS600M

STRAP PIN	DESCRIPTION
DACHSYNC	Enable/Disable integrated graphics. 0 : Enable integrated graphics 1 : Disable integrated graphics
STRP_DATA	Debug strap configuration. This strap should not be set to "0" on production boards. 0 : Select Memory Channel A to be a debug bus 1 : Read debug straps from an external EEPROM, or disable debug mode when an EEPROM is absent.
DACVSYNC	Select configuration of the integrated graphics engine. 0 : Reserved 1 : Required setting for the RS600M
DDC_DATA	Select DDR2 or DDR3 signalling level for the memory interface. 0 : DDR3. On DDR3, it is necessary to put an isolation FET in series with the pull-up resistor on this strap to separate it from the I2C circuit during an NB reset 1 : DDR2

DRAW: TERMI KWON	DATE: 1/11/2007	TITLE: FIRENZE2-R MAIN RS600M(4/5)	SAMSUNG ELECTRONICS
CHECK: HJ KIM	DEV. STEP: MP		PART NO.: BA41-00714A
APPROVAL: SJ PARK	REV: 1.0		
MODULE CODE:	LAST EDIT: January 11, 2007 8:27:44 PM	PAGE 16 OF 52	


GROUND
U507-5
5 OF 5
RS600ME
CORE PWR
CPU TRANDS. PWR
MEN TRANS. PWR
PCIE PWR
GROUND
MEM I/F PWR
CPU I/F PWR
P1.2V
P1.8V
P1.8V_AUX
B19
CIS10J270NC
C680 have to be placed under RS600M
nostuff
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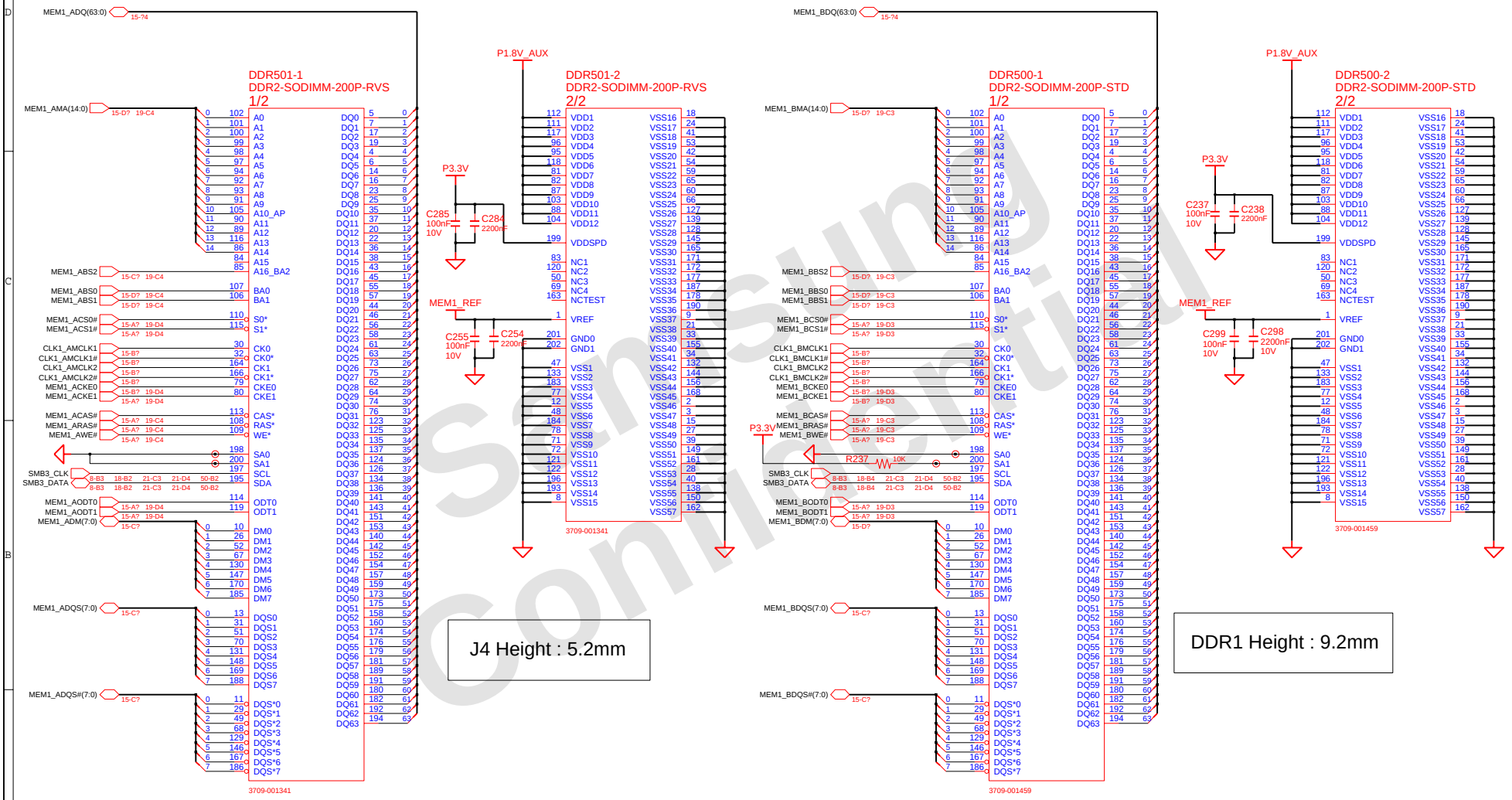

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CHECK: HJ KIM	DEV. STEP: MP		
APPROVAL: SJ PARK	REV: 1.0		PART NO.: BA41-00714A
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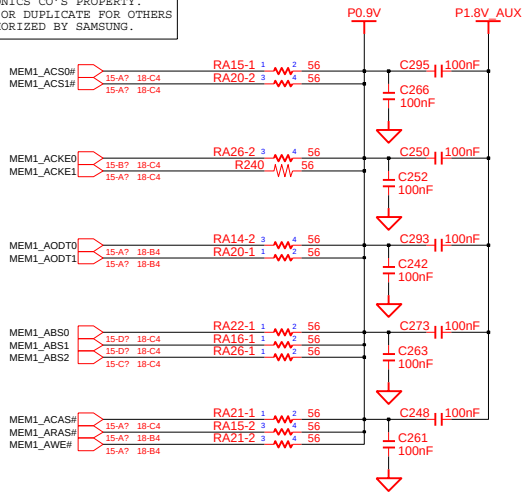
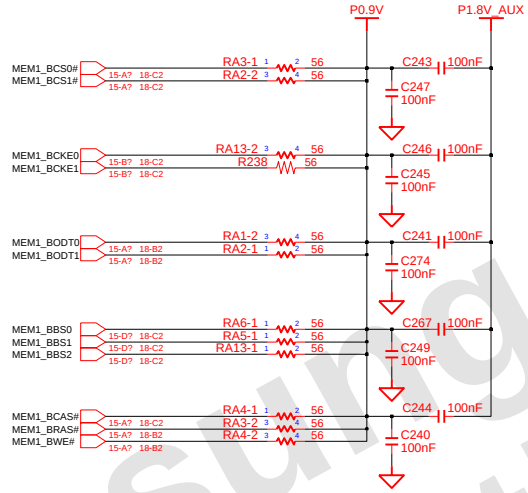
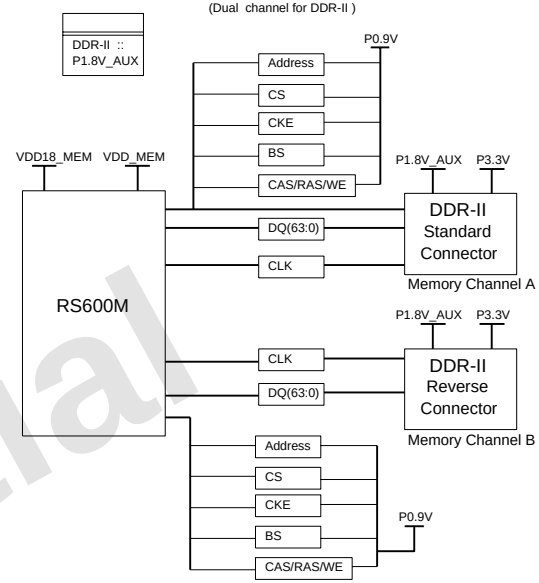
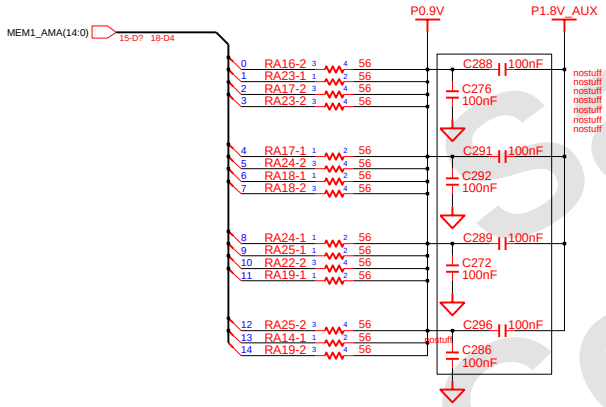


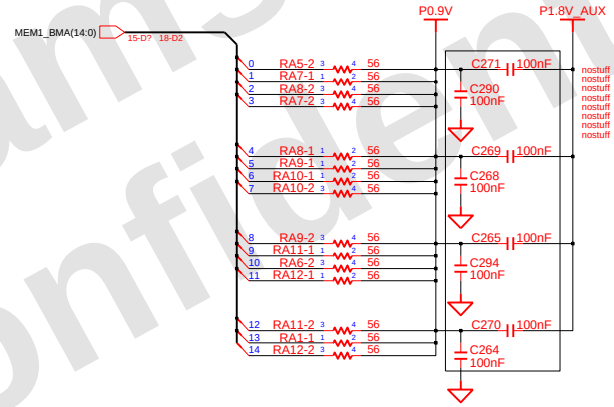


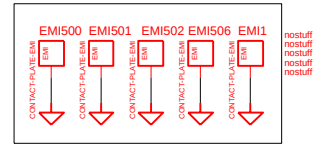
Memory Topology

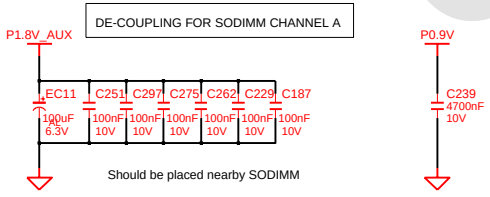
(Dual channel for DDR-II)

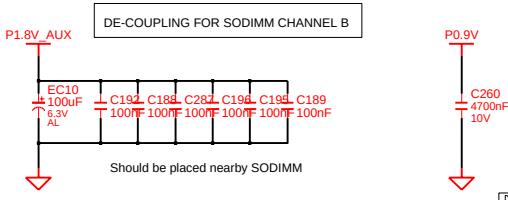












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CHECK: HJ KIM	DEV. STEP: MP		
APPROVAL: SJ PARK	REV: 1.0		PART NO.: BA41-00714A
MODULE CODE:	LAST EDIT: January 11, 2007 8:27:44 PM	PAGE 19 OF 52	

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U9-1
218S6ECLA21FG
1 / 4

CHP3_ALINK_RST#
R679 8.2K
A_RST*

CLK1_PCIERCLK
CLK1_PCIERCLK#
PCIE_RCLKP
PCIE_RCLKN

PEX1_ARX0P
PEX1_ARX0N
PEX1_ARX1P
PEX1_ARX1N
PEX1_ARX2P
PEX1_ARX2N
PEX1_ARX3P
PEX1_ARX3N
C203 C204 C178 C205 C180 C179 C182 C181 100nF 25V
PCIE_TX0P
PCIE_TX0N
PCIE_TX1P
PCIE_TX1N
PCIE_TX2P
PCIE_TX2N
PCIE_TX3P
PCIE_TX3N

PEX1_ATX0P
PEX1_ATX0N
PEX1_ATX1P
PEX1_ATX1N
PEX1_ATX2P
PEX1_ATX2N
PEX1_ATX3P
PEX1_ATX3N
PCIE_RX0P
PCIE_RX0N
PCIE_RX1P
PCIE_RX1N
PCIE_RX2P
PCIE_RX2N
PCIE_RX3P
PCIE_RX3N

PCIE_VDDR
R626 562 1%
R625 2K 1%
R627 0
PCIE_CALRP
PCIE_CALRN
PCIE_CALI

P1.2V
B517 BLM18PG181SN1
C641 10000nF 6.3V
C639 1000nF 6.3V
PCIE_PVDD
PCIE_PVSS

PCIE_VDDR_1
PCIE_VDDR_2
PCIE_VDDR_3
PCIE_VDDR_4
PCIE_VDDR_5
PCIE_VDDR_6
PCIE_VDDR_7
PCIE_VDDR_8
PCIE_VDDR_9
PCIE_VDDR_10
PCIE_VDDR_11
PCIE_VDDR_12
PCIE_VDDR_13

P1.2V
B516 BLM18PG181SN1
PCIE_VDDR
C637 22000nF 20%
C604 1000nF 6.3V
C640 1000nF 6.3V
C607 1000nF 6.3V
C605 100nF
C606 100nF

P3.3V_AUX
U11 ELM7S08WS
PCI3_RSTF#
R225 8.2K
R234 33
PCI3_RST#
R233 0

Y500 32.768KHz
R591 20M
R590 20M
C584 0.018nF
C583 0.018nF
D2
X1
C1
X2

CPU1_PWRGDCPU
CPU1_INTR
CPU1_NMI
CPU1_INIT#
CPU1_SMI#
CPU1_SLP#
CPU1_IGNNE#
CPU1_A20M#
CPU1_FERR#
CPU1_STPCLK#
CHP3_CPUSTP#
CPU1_DPSLP#
CHP3_DPRSLPVR
R773 475 1%
AC26 CPU_PG_LDT_PG
W26 INTR_LINT0
W24 NMI_LINT1
W25 INIT*
AA24 SMI*
AA23 SLP* LDT_STP*
AA22 IGNNE* SIC
AA26 A20M* SID
Y27 FERR*
AA25 STPCLK* ALLOW_LDTSTP
AH9 CPU_STP* DPSLP_3V*
B24 DPSLP_OD* GPIO37
W23 DPRSLPVR
AC25 LDT_RST* DPRSTP* PROCHOT*

VCCP
R304 4.7K
Q46
MMBT3904
R305 47K
ATI PA for Power on Fail (2007.01.05)
CPU1_DPRSTP#
R660 0

PCI CLKS
PCICLK0 PCICLK1 PCICLK2 PCICLK3 PCICLK4 PCICLK5 PCICLK6
R195 R641 R194 R640 R196 22
R197 10K nostuff
SPDIF_OUT_PCICLK7_GPIO41
CLK3_33M_MIN
CLK3_PCLKLAN
CLK3_PCLKCB
STRAP_USB48
C748 0.022nF
C747 0.022nF
CLK3_PCLKMICOM

PCIRST*
PCI3_RSTF#
PCI3_AD(31:0)

PCI EXPRESS INTERFACE

PCI INTERFACE
AD0_ROMA18 AD1_ROMA17 AD2_ROMA16 AD3_ROMA15 AD4_ROMA14 AD5_ROMA13 AD6_ROMA12 AD7_ROMA11 AD8_ROMA9 AD9_ROMA8 AD10_ROMA7 AD11_ROMA6 AD12_ROMA5 AD13_ROMA4 AD14_ROMA3 AD15_ROMA2 AD16_ROMD0 AD17_ROMD1 AD18_ROMD2 AD19_ROMD3 AD20_ROMD4 AD21_ROMD5 AD22_ROMD6 AD23_ROMD7 AD24 AD25 AD26 AD27 AD28 AD29 AD30 AD31
CBE0*_ROMA10 CBE1*_ROMA1 CBE2*_ROMWE* CBE3* FRAME* DEVSEL*_ROMA0 IRDY* TRDY*_ROMOE* PAR_ROMA19 STOP* PERR* SERR* REQ0* REQ1* REQ2* REQ3*_GPIO70 REQ4*_GPIO71 GNT0* GNT1* GNT2* GNT3*_GPIO72 GNT4*_GPIO73 CLKRUN* LOCK*
PCI3_CBE0# PCI3_CBE1# PCI3_CBE2# PCI3_CBE3# PCI3_FRAME# PCI3_DEVSEL# PCI3_IRDY# PCI3_TRDY# PCI3_PAR PCI3_STOP# PCI3_PERR# PCI3_SERR# PCI3_REQ0# PCI3_REQ1# PCI3_REQ2#
PCI3_GNT0# PCI3_GNT1# PCI3_GNT2# CHP3_BIOSWP#
PCI3_PLOCK# PCI3_CLKRUN#
INTE*_GPIO33 INTF*_GPIO34 INTG*_GPIO35 INTH*_GPIO36
PCI3_INTA# PCI3_INTB# PCI3_INTC# PCI3_INTD#

LPC
LAD0 LAD1 LAD2 LAD3 LFRAME* LDRQ0* LDRQ1*GNT5*_GPIO68 BMREQ*_REQ5*_GPIO65 SERIRQ
LPC3_LAD(3:0)
LPC3_LFRAME#
CHP3_SERIRQ

RTC
RTCCLK RTC_IRQ*_GPIO69 VBAT RTC_GND
RTC_CLK

PRTC_BAT
Move to RTC Battery Connector
1% 1K R268
C591 100nF 25V
C590 1000nF 25V

P3.3V
R224 10K R221 10K nostuff nostuff
CHP3_ALINK_RST#
R681 33
R680 33
PLT3_RSTF#
CHP3_NBRST#

PCI3_REQ0# PCI3_REQ1# PCI3_REQ2# PCI3_PLOCK#
PCI3_INTA# PCI3_INTB# PCI3_INTC# PCI3_INTD#
PCI3_FRAME# PCI3_TRDY# PCI3_IRDY# PCI3_DEVSEL# PCI3_STOP# PCI3_SERR# PCI3_PERR#
8.2K R223 R667 R262 R671 R703 R263 R668 R669 R702 R704 R261 R673 R243 R657 R260 nostuff

LPC3_LAD(0) LPC3_LAD(1) LPC3_LAD(2) LPC3_LAD(3)
R685 R686 R687 R688 100K
CHP3_SERIRQ R272 10K

P3.3V
R222 10K nostuff
PCI3_CLKRUN#

P3.3V
R226 R227 10K nostuff
R659 R609 10K nostuff

MICOM_P3.3V
D22 BAT54C
C647 1000nF 25V nostuff
C312 1000nF
PRTC_BAT
J6 HDR-2P-SMD 3711-000541
For CMOS Reset Place the bottom of memory door
RTC Battery Connector

DRAW: TERMI KWON	DATE: 1/11/2007	TITLE: FIRENZE2-R MAIN SB600(1/4)	SAMSUNG ELECTRONICS
CHECK: HJ KIM	DEV. STEP: MP		PART NO.: BA41-00714A
APPROVAL: SJ PARK	REV: 1.0		
MODULE CODE:	LAST EDIT: January 11, 2007 8:27:44 PM	PAGE 20 OF 52	

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U9-2
218S6ECLA21FG
2 / 4

USB Port 0, 1 : Rear side USB Port
USB Port 2, 3 : Left side USB Port
USB Port 4 : Bluetooth I/F
USB Port 5 : DMB I/F

Have to be checked in case of SB600

Add below Components to reduce EMI noise from SB450(060310) (R601, R628, R629, R630, B510, B511)

Place on the upper side

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DRAW: TERMI KWON	DATE: 1/11/2007	TITLE: FIRENZE2-R POWER SB600(2/4)	SAMSUNG ELECTRONICS
CHECK: HJ KIM	DEV. STEP: MP		PART NO.: BA41-00714A
APPROVAL: SJ PARK	REV: 1.0		
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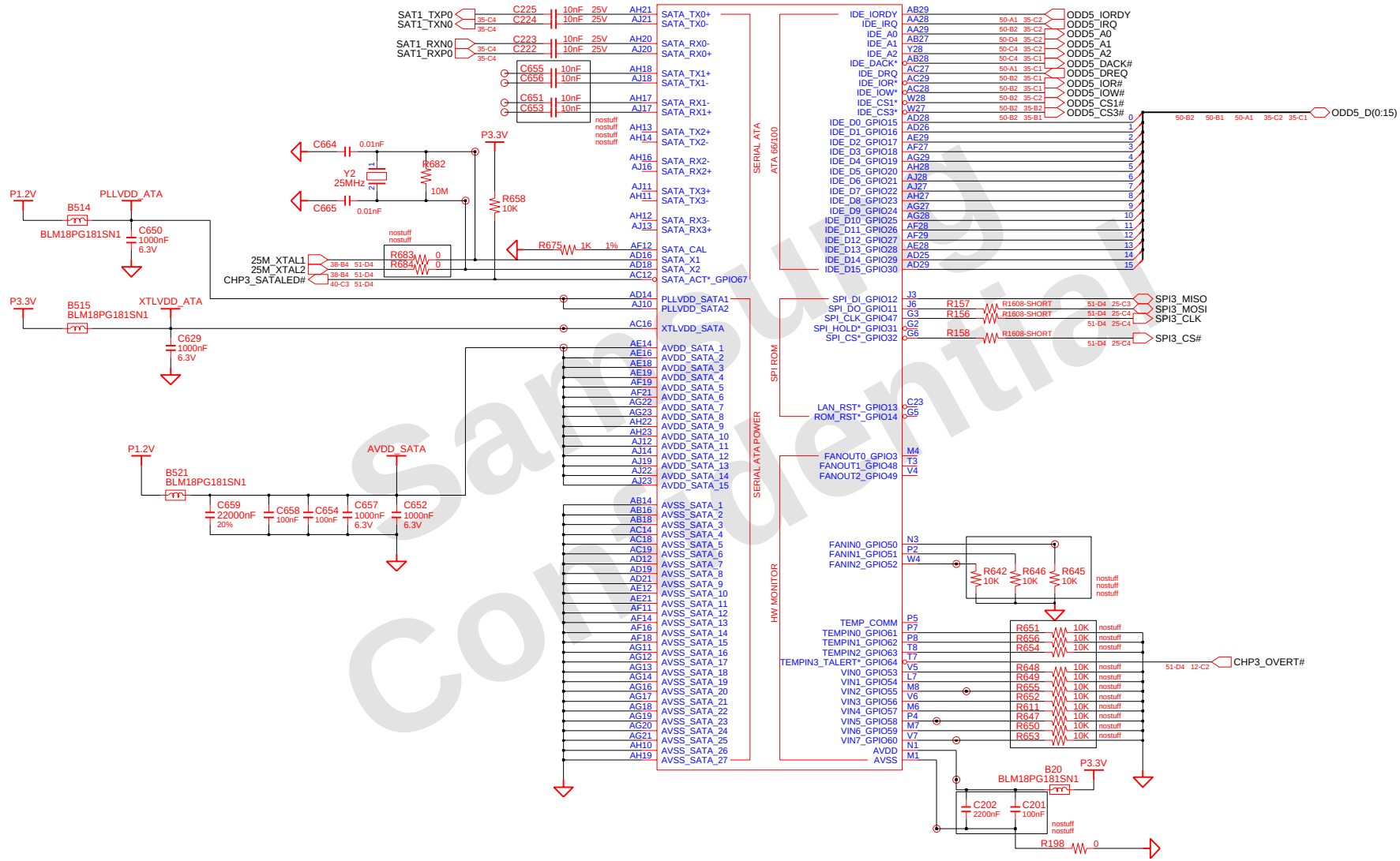
U9-3
218S6ECLA21FG
3 / 4



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DRAW: TERMI KWON	DATE: 1/11/2007	TITLE: FIRENZE2-R MAIN SB600(3/4)	SAMSUNG ELECTRONICS
CHECK: HJ KIM	DEV. STEP: MP		
APPROVAL: SJ PARK	REV: 1.0		PART NO.: BA41-00714A
MODULE CODE:	LAST EDIT: January 11, 2007 8:27:44 PM	PAGE 22 OF 52	

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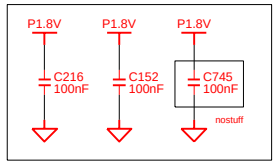

To Reduce EMI noise from SB450 (060310)

U9-4
218S6ECLA21FG
4 / 4

P3.3V
EC14 220uF 6.3V AL
C621 1000nF 6.3V
C624 1000nF 6.3V
C630 1000nF 6.3V
C634 1000nF 6.3V
C633 1000nF 6.3V
C625 1000nF 6.3V

P1.2V
C631 2200nF 16V
C632 1000nF 6.3V
C627 1000nF 6.3V
C626 1000nF 6.3V
C628 1000nF 6.3V

MICOM_P3.3V
C592 22000nF 6.3V
C593 1000nF 6.3V
C622 1000nF 6.3V

P1.2V_ALW
C594 100nF
C595 100nF
C620 100nF
C619 100nF

P1.2V
C600 1000nF 6.3V
C602 1000nF 6.3V
C603 1000nF 6.3V
C601 1000nF 6.3V

P5.0V
R674 1K 1%
P3.3V
MMBD4148 D515

VCCP
C636 100nF
C649 1000nF 6.3V

P3.3V
B16 BLM18PG181SN1
AVDDCK_3.3V
C162 2200nF

P1.2V
B15 BLM18PG181SN1
AVDDCK_1.2V
C161 2200nF

C160 100nF
C163 100nF
nostuff
nostuff

A25	VDDQ_1	VSS_1	A1
A28	VDDQ_2	VSS_2	A20
C29	VDDQ_3	VSS_3	A21
D24	VDDQ_4	VSS_4	A29
L9	VDDQ_5	VSS_5	B1
L21	VDDQ_6	VSS_6	B7
M5	VDDQ_7	VSS_7	B25
P3	VDDQ_8	VSS_8	C21
P9	VDDQ_9	VSS_9	C22
T5	VDDQ_10	VSS_10	C24
V9	VDDQ_11	VSS_11	D6
W2	VDDQ_12	VSS_12	E24
W6	VDDQ_13	VSS_13	F2
W21	VDDQ_14	VSS_14	F23
W29	VDDQ_15	VSS_15	G1
AA12	VDDQ_16	VSS_16	J1
AA16	VDDQ_17	VSS_17	J8
AA19	VDDQ_18	VSS_18	L6
AC4	VDDQ_19	VSS_19	L8
AC23	VDDQ_20	VSS_20	M9
AD27	VDDQ_21	VSS_21	M12
AE1	VDDQ_22	VSS_22	M15
AE9	VDDQ_23	VSS_23	M18
AE23	VDDQ_24	VSS_24	N13
AH29	VDDQ_25	VSS_25	N17
AJ2	VDDQ_26	VSS_26	P1
AJ6	VDDQ_27	VSS_27	P6
AJ26	VDDQ_28	VSS_28	P21
		VSS_29	R12
M13	VDD_1	VSS_30	R15
M17	VDD_2	VSS_31	R18
N12	VDD_3	VSS_32	T6
N15	VDD_4	VSS_33	T9
N18	VDD_5	VSS_34	U13
R13	VDD_6	VSS_35	U17
R17	VDD_7	VSS_36	V3
U12	VDD_8	VSS_37	V8
U15	VDD_9	VSS_38	V12
U18	VDD_10	VSS_39	V15
V13	VDD_11	VSS_40	V18
V17	VDD_12	VSS_41	V21
		VSS_42	W1
A2	S5_3.3V_1	VSS_43	W9
A7	S5_3.3V_2	VSS_44	Y29
E1	S5_3.3V_3	VSS_45	AA11
J5	S5_3.3V_4	VSS_46	AA14
J7	S5_3.3V_5	VSS_47	AA18
K1	S5_3.3V_6	VSS_48	AC6
		VSS_49	AC24
G4	S5_1.2V_1	VSS_50	AD9
H1	S5_1.2V_2	VSS_51	AD23
H2	S5_1.2V_3	VSS_52	AE3
H3	S5_1.2V_4	VSS_53	AE27
		VSS_54	AG6
A18	USB_PHY_1.2V_1	VSS_55	AJ1
A19	USB_PHY_1.2V_2	VSS_56	AJ25
B19	USB_PHY_1.2V_3	VSS_57	AJ29
B20	USB_PHY_1.2V_4		
B21	USB_PHY_1.2V_5		
		PCIE_VSS_1	D27
AA27	CPU_PWR	PCIE_VSS_2	D28
AE11	V5_VREF	PCIE_VSS_3	D29
		PCIE_VSS_4	F26
A24	AVDDCK_3.3V	PCIE_VSS_5	G23
A22	AVDDCK_1.2V	PCIE_VSS_6	G24
		PCIE_VSS_7	G25
B22	AVSSCK	PCIE_VSS_8	H27
		PCIE_VSS_9	J23
P27	PCIE_VSS_28	PCIE_VSS_10	J26
T21	PCIE_VSS_29	PCIE_VSS_11	J28
T24	PCIE_VSS_30	PCIE_VSS_12	K27
T27	PCIE_VSS_31	PCIE_VSS_13	L22
T28	PCIE_VSS_32	PCIE_VSS_14	L23
T29	PCIE_VSS_33	PCIE_VSS_15	L24
U27	PCIE_VSS_34	PCIE_VSS_16	L27
V22	PCIE_VSS_35	PCIE_VSS_17	L28
V23	PCIE_VSS_36	PCIE_VSS_18	M21
V24	PCIE_VSS_37	PCIE_VSS_19	M24
V25	PCIE_VSS_38	PCIE_VSS_20	M27
V26	PCIE_VSS_39	PCIE_VSS_21	N27
V27	PCIE_VSS_40	PCIE_VSS_22	N28
V28	PCIE_VSS_41	PCIE_VSS_23	P22
V29	PCIE_VSS_42	PCIE_VSS_24	P23
		PCIE_VSS_25	P24
		PCIE_VSS_26	P25
		PCIE_VSS_27	P26

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DRAW: TERMI KWON	DATE: 1/11/2007	TITLE: FIRENZE2-R MAIN SB600(4/4)	SAMSUNG ELECTRONICS
CHECK: HJ KIM	DEV. STEP: MP		PART NO.: BA41-00714A
APPROVAL: SJ PARK	REV: 1.0		
MODULE CODE:	LAST EDIT: January 11, 2007 8:27:44 PM	PAGE 23 OF 52	

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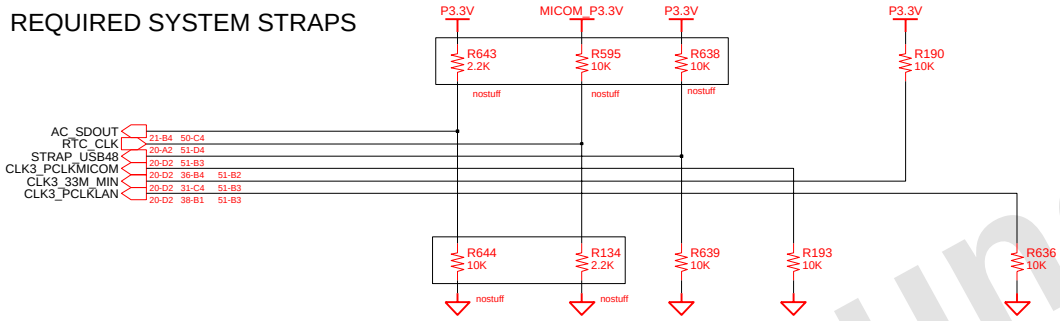
SB600 HAS AN INTERNAL PD FOR AC_SDOUT
SB600 HAS AN INTERNAL PU FOR RTC_CLK

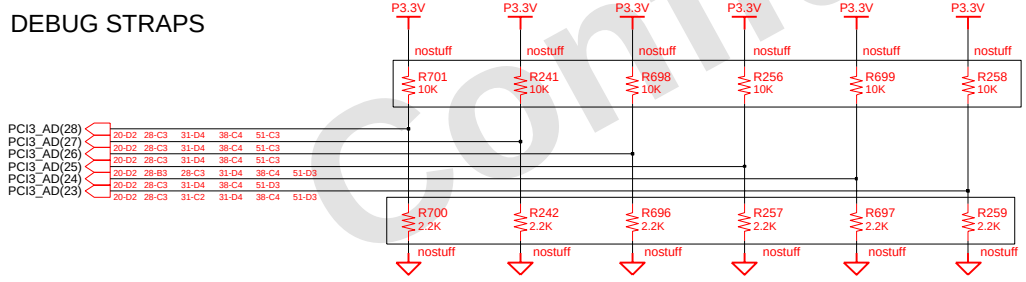
REQUIRED SYSTEM STRAPS



	AC_SDOUT	RTC_CLK	PCI3_CLK4	PCI3_CLK6	PCI3_CLK0 PCI3_CLK1
STRAP HIGH	USE DEBUG STRAPS	INTERNAL RTC	USE INTERNAL PLL48	CPU I/F = K8	ROM TYPE H, H = PCI ROM H, L = SPI ROM L, H = LPC ROM L, L = FWH ROM
STRAP LOW	IGNORE DEBUG STRAPS	EXRERNAL RTC (PD on X1, Apply 32KHz to RTC_CLK)	USE EXTERNAL 48MHz	CPU I/F = P4	

SB600 HAS 15K INTERNAL PU FOR PCI_AD[28:23]

DEBUG STRAPS



	PCI3_AD(28)	PCI3_AD(27)	PCI3_AD(26)	PCI3_AD(25)	PCI3_AD(24)	PCI3_AD(23)
STRAP HIGH	USE LONG RESET	USE PCI PLL	USE ACPI BCLK	USE IDE PLL	USE DEFAULT PCIE STRAPS	BOOTFAILTIMER DISABLED
STRAP LOW	USE SHORT RESET	BYPASS PCI PLL	BYPASS ACPI BCLK	BYPASS IDE PLL	USE EEPROM PCIE STRAPS	BOOTFAILTIMER ENABLED

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DRAW: TERMI KWON	DATE: 1/11/2007	TITLE: FIRENZE2-R STRAPS	SAMSUNG ELECTRONICS
CHECK: HJ KIM	DEV. STEP: MP		
APPROVAL: SJ PARK	REV: 1.0		PART NO.: BA41-00714A
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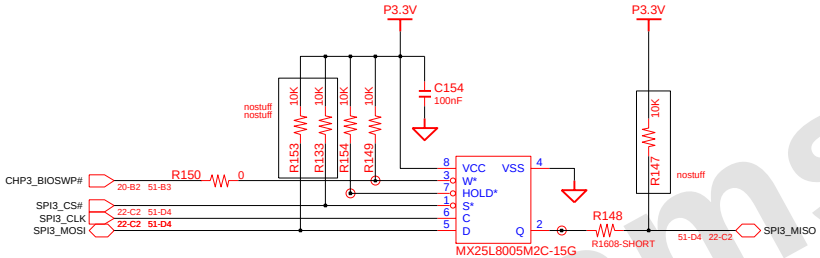

SPI3_CS#
SB600 prior to A21 : Pulled up to P3.3V_ALW with 1Kohm resistor.
SB600 A21 and newer : No external pull-up resistor required.

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
OE INIT. I/O VALUE	7E TEST COPROCESSER IF PRESENT
0F ENABLE THE L-BUS IDE	80 DISABLE ON-BOARD I/O PORT
10 INIT. POWER MANAGER	82 DETECT AND INSTALL EXT.RS232C
11 LOAD ALTERNATE REG.	84 DETECT AND INSTALL EXT.PARALLEL
13 PCI BUS MASTER RESET WITH INITIAL POST VALUE	86 RE-INIT. ON-BOARD I/O PORT
	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 INTERRUP 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 TESET 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 GETWEEN 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	

DRAW: TERMI KWON	DATE: 1/11/2007	TITLE: FIRENZE2-R MAIN FIRMWARE HUB	SAMSUNG ELECTRONICS
CHECK: HJ KIM	DEV. STEP: MP		
APPROVAL: SJ PARK	REV: 1.0		PART NO.: BA41-00714A
MODULE CODE:	LAST EDIT: January 11, 2007 8:27:44 PM	PAGE 25 OF 52	

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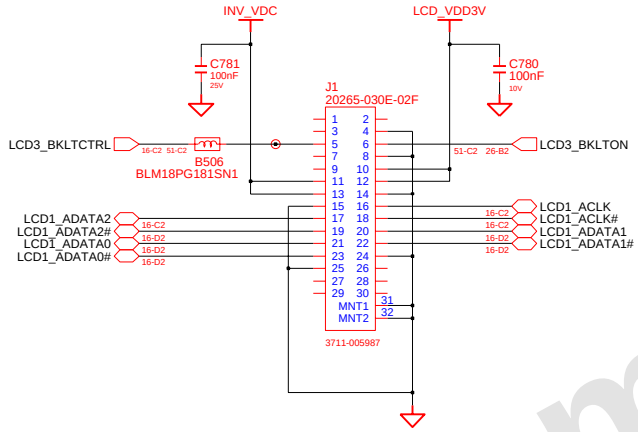
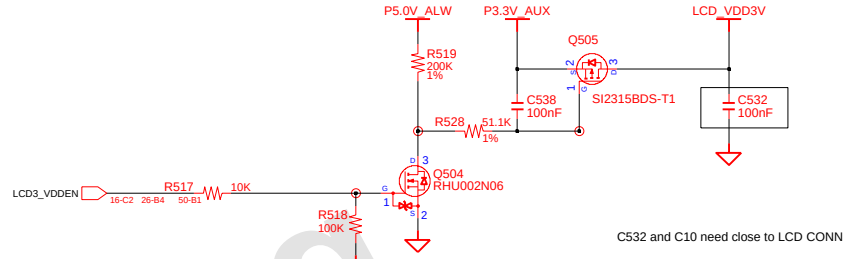
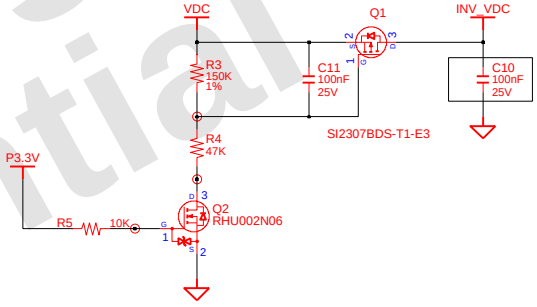
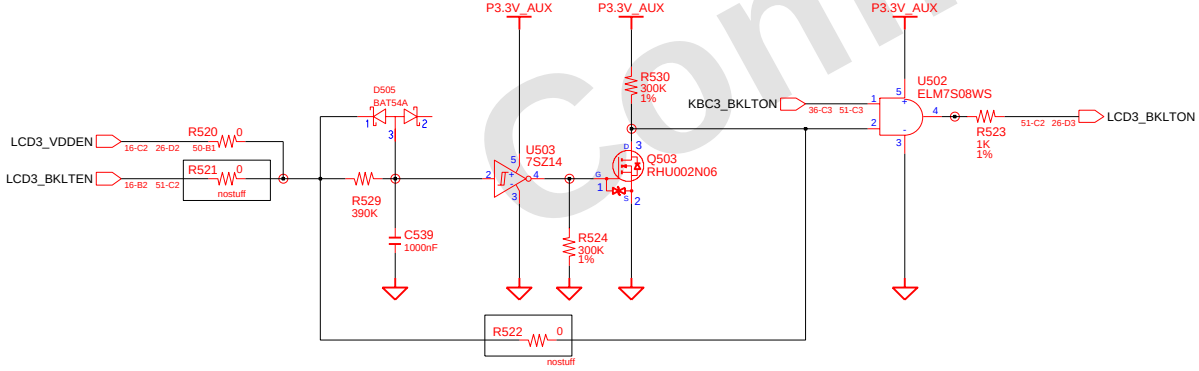


LCD Connector(LVDS)



C532 and C10 need close to LCD CONN





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DRAW: TERMI KWON	DATE: 1/11/2007	TITLE: FIRENZE2-R LCD Connector & SPREAD SPECTRUM	SAMSUNG ELECTRONICS
CHECK: HJ KIM	DEV. STEP: MP		PART NO.: BA41-00714A
APPROVAL: SJ PARK	REV: 1.0		
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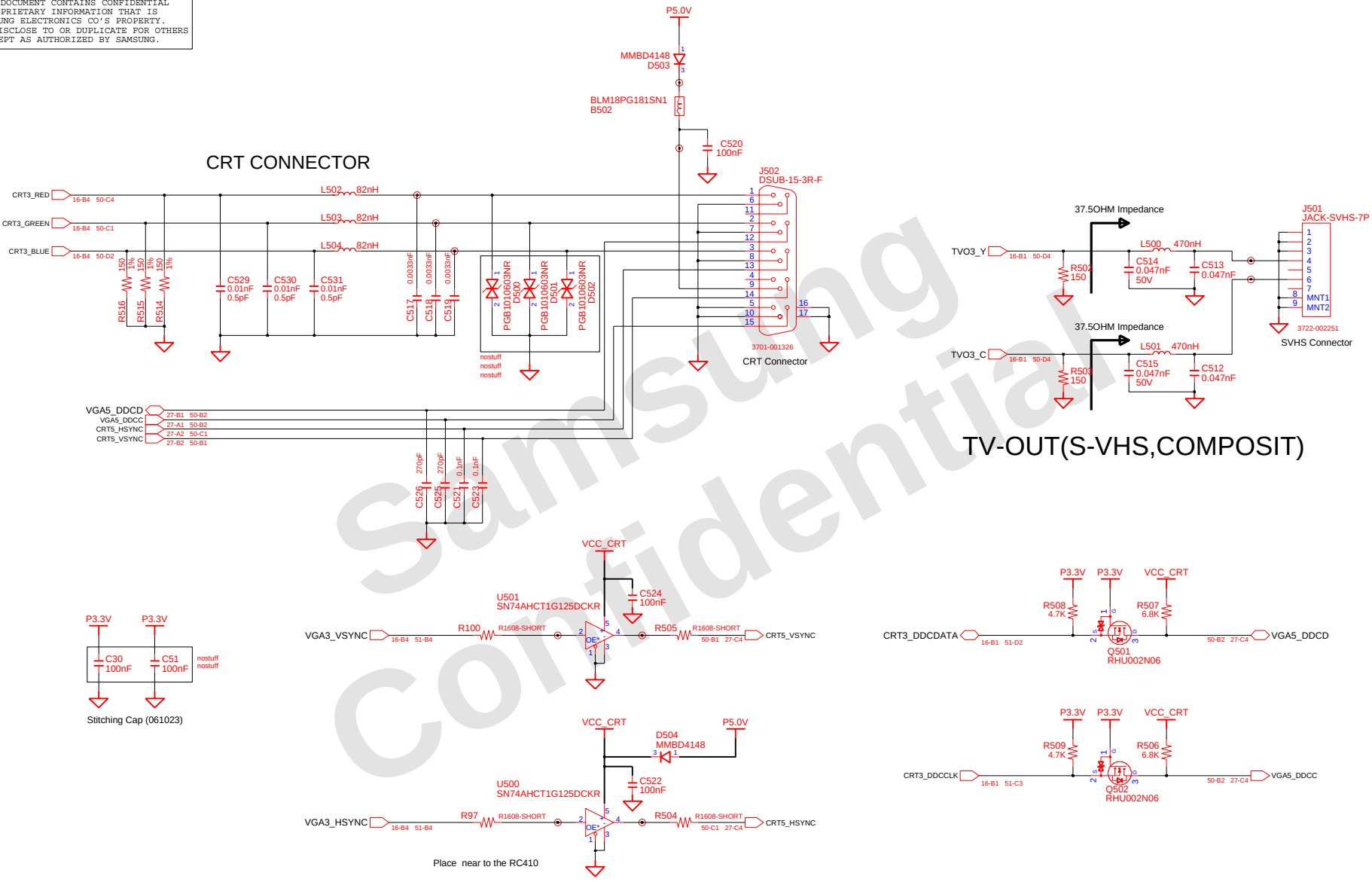

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CHECK: HJ KIM	DEV. STEP: MP	CRT AND TV-OUT	
APPROVAL: SJ PARK	REV: 1.0		PART NO. BA41-00714A
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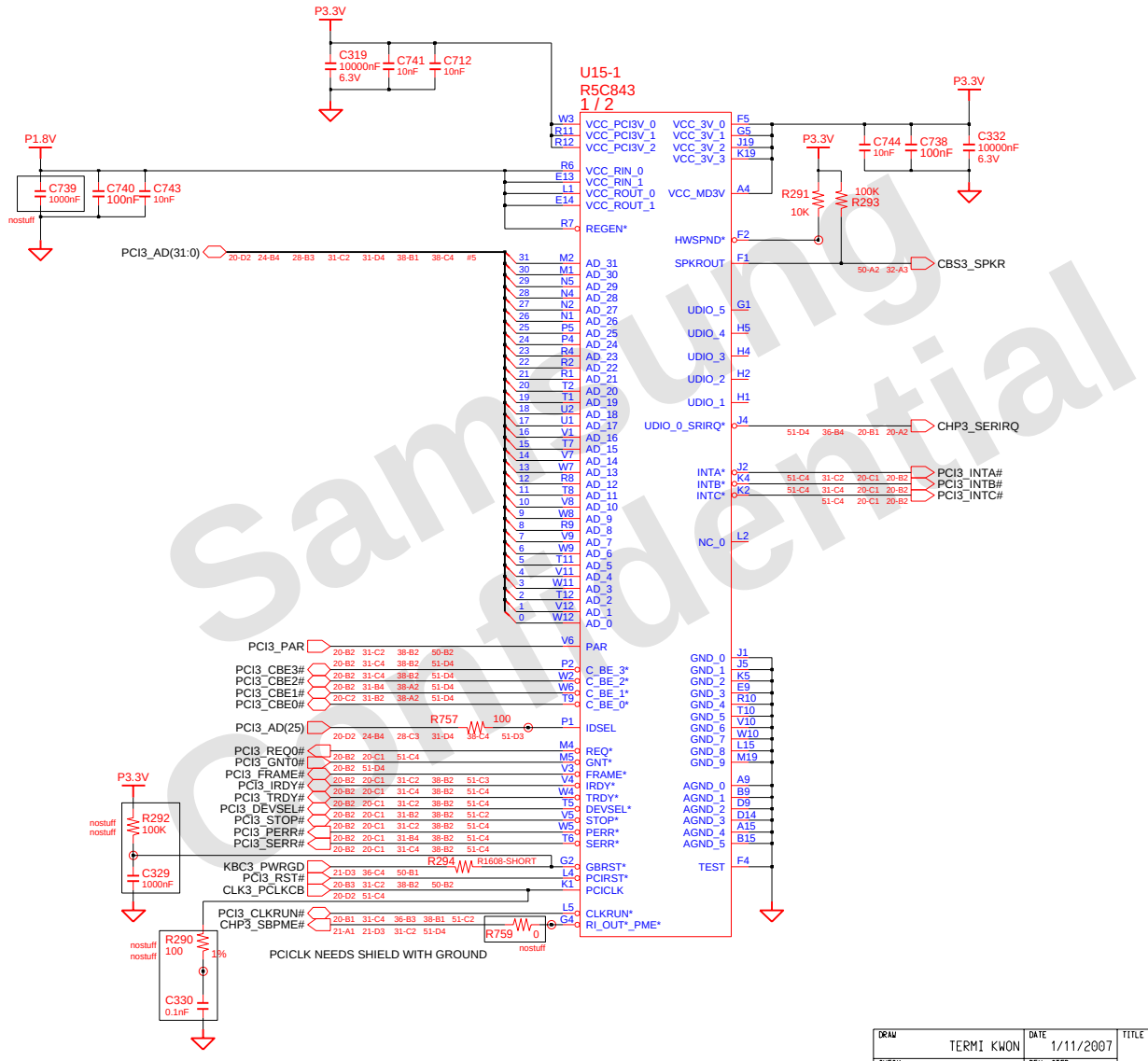

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DRAW: TERMI KWON	DATE: 1/11/2007	TITLE: FIRENZE2-R	SAMSUNG ELECTRONICS
CHECK: HJ KIM	DEV. STEP: MP	CARDBUS(1/2)	PART NO.: BA41-00714A
APPROVAL: SJ PARK	REV: 1.0		
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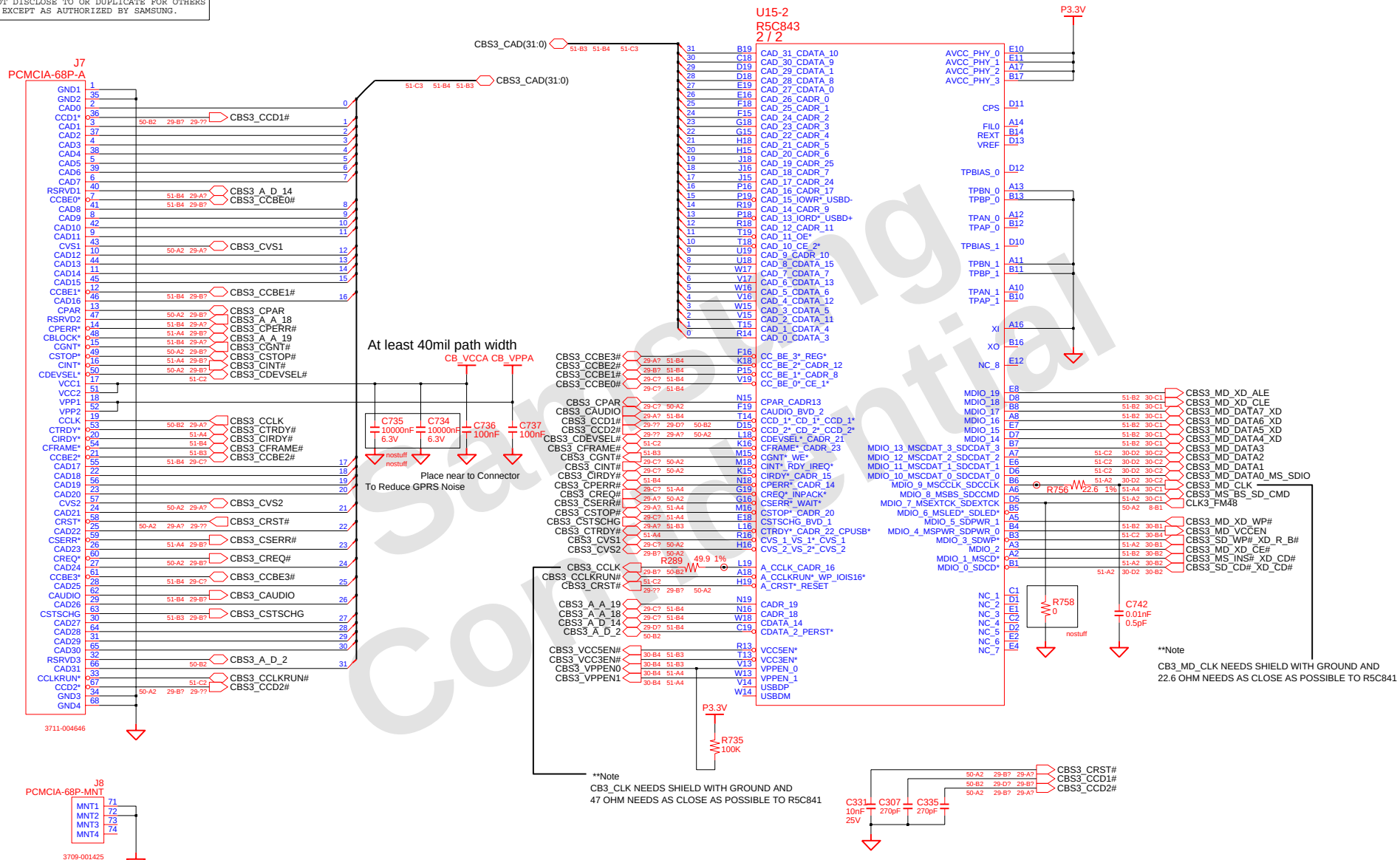

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DRAW: TERMI KWON	DATE: 1/11/2007	TITLE: FIRENZE2-R CARDBUS(2/2)	SAMSUNG ELECTRONICS
CHECK: HJ KIM	DEV. STEP: MP		PART NO.: BA41-00714A
APPROVAL: SJ PARK	REV: 1.0		
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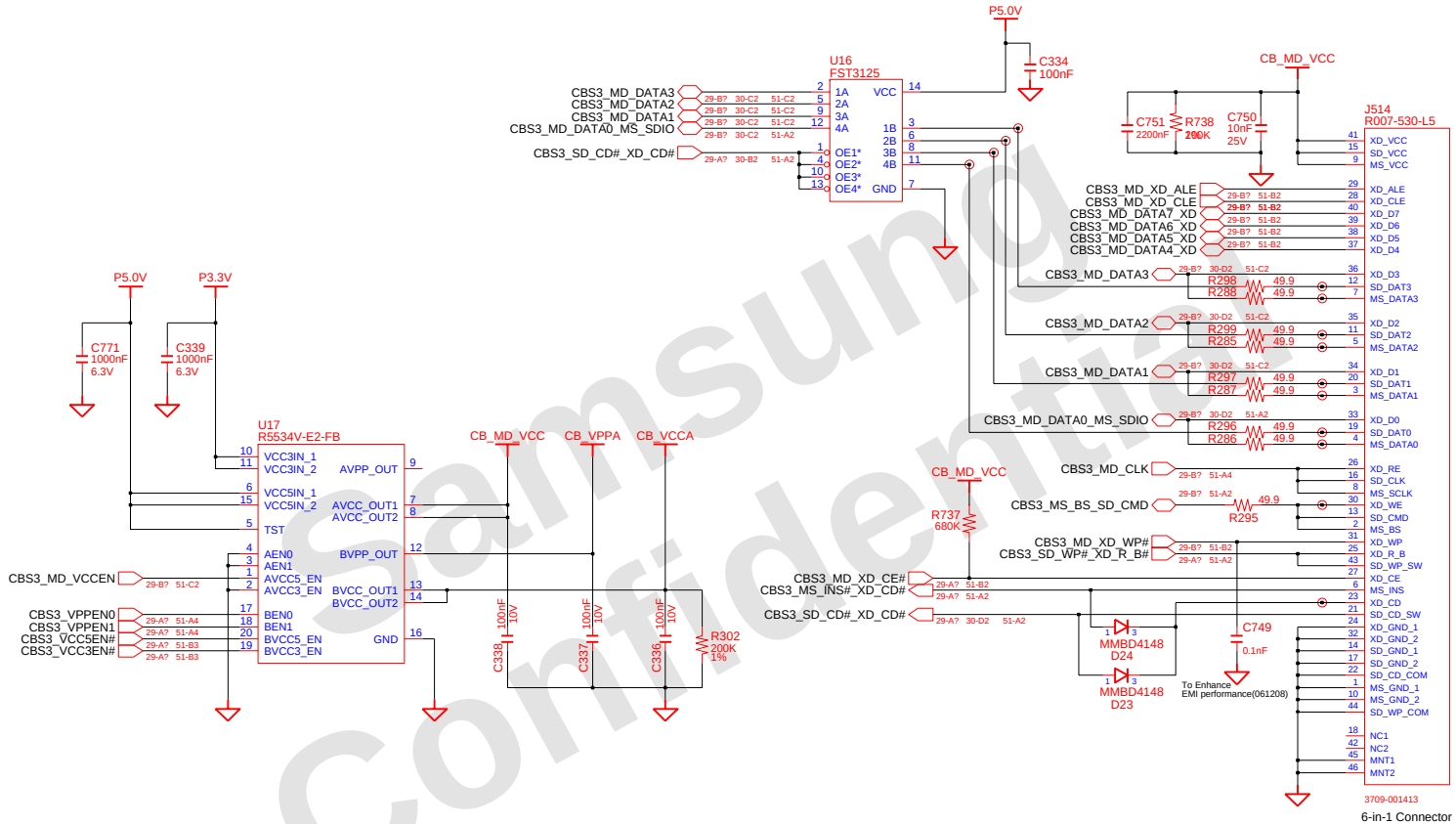

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CHECK: HJ KIM	DEV. STEP: MP	5 in 1 Socket	
APPROVAL: SJ PARK	REV: 1.0		PART NO.: BA41-00714A
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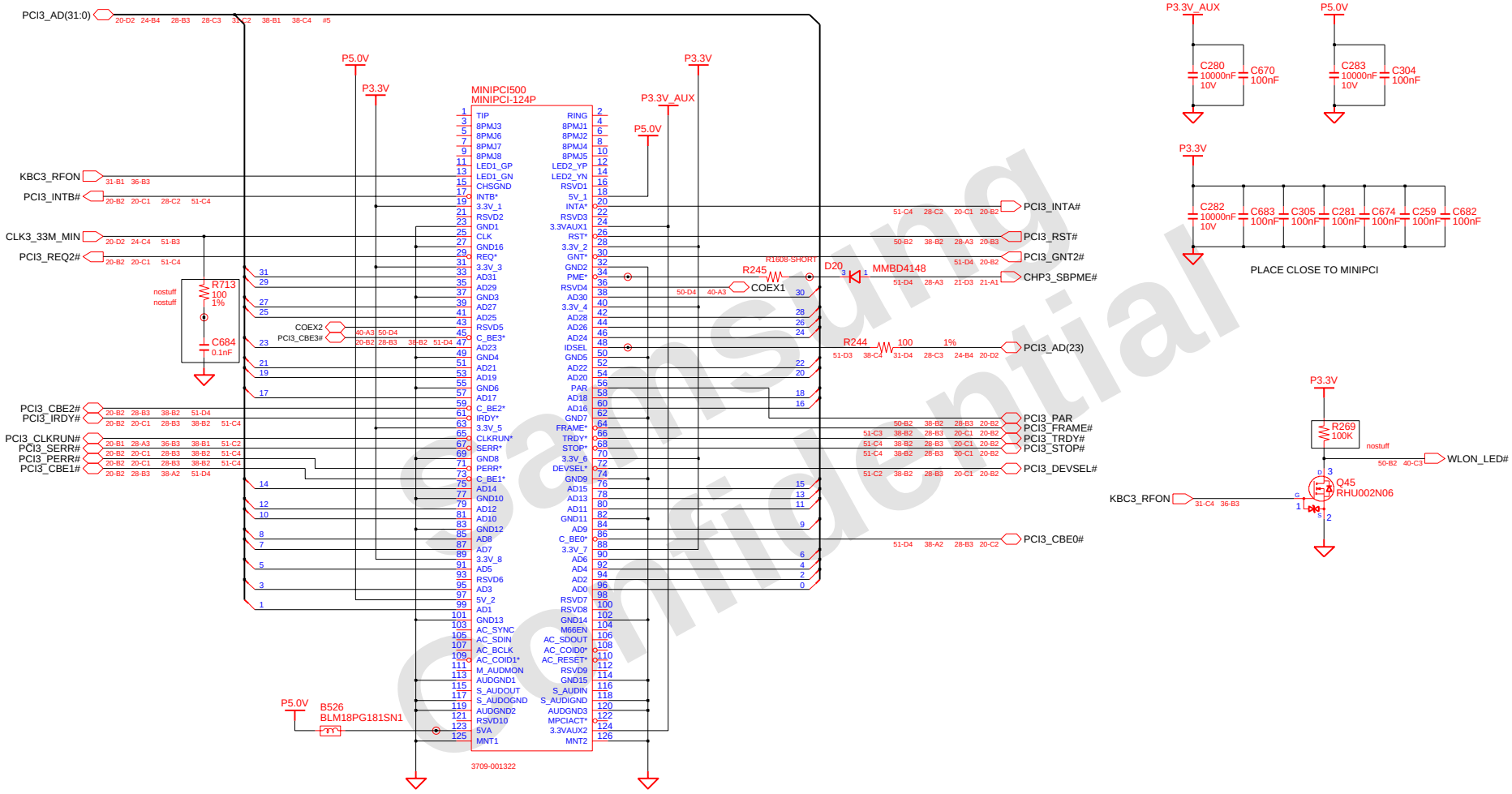

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DRAW: TERMI KWON	DATE: 1/11/2007	TITLE: FIRENZE2-R MAIN MINI PCI	SAMSUNG ELECTRONICS
CHECK: HJ KIM	DEV. STEP: MP		
APPROVAL: SJ PARK	REV: 1.0		PART NO.: BA41-00714A
MODULE CODE: undefined	LAST EDIT: January 11, 2007 8:27:44 PM	PAGE 31 OF 52	

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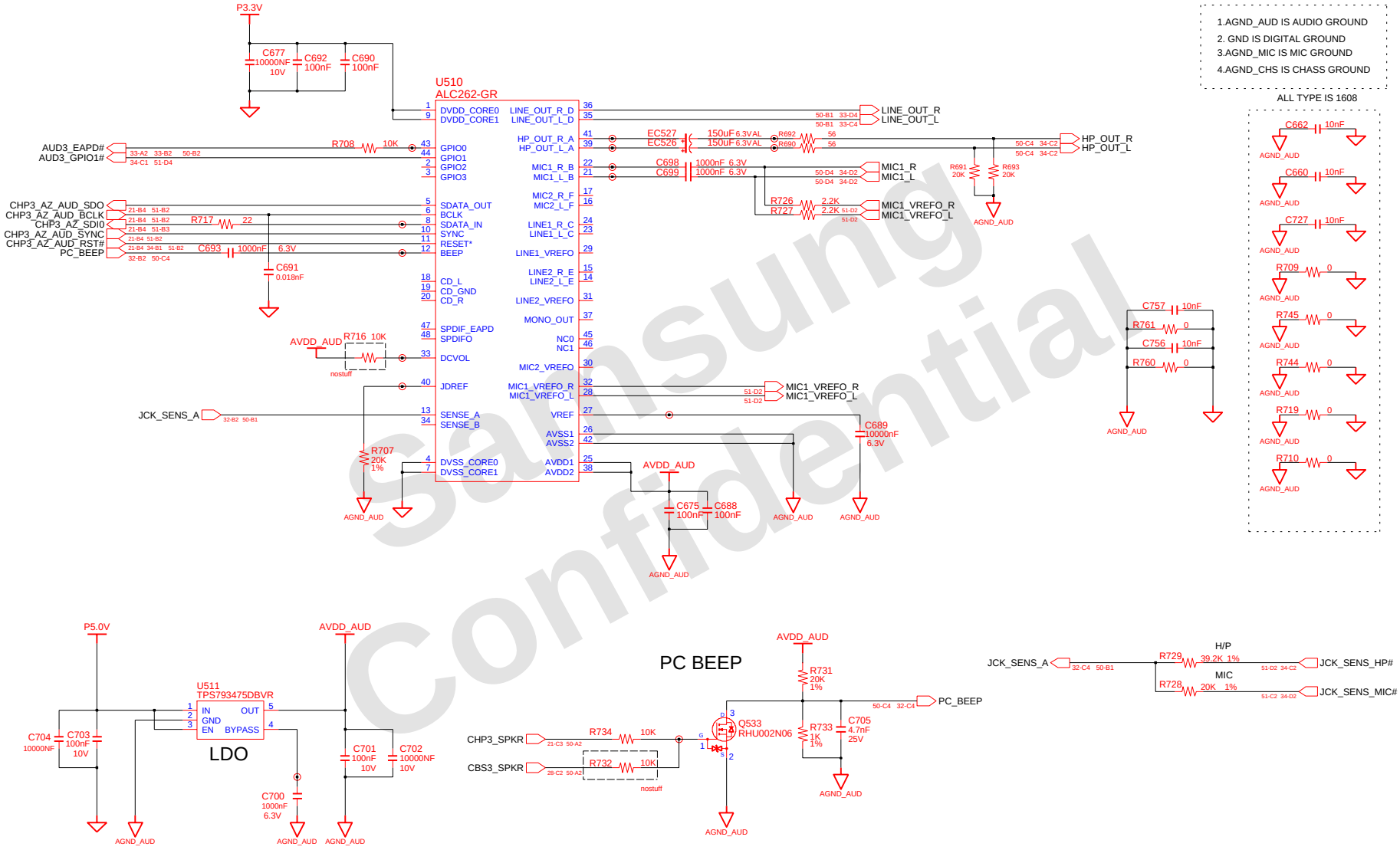

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DRAW: TERMI KWON	DATE: 1/11/2007	TITLE: FIRENZE2-R MAIN AUDIO CODEC	SAMSUNG ELECTRONICS
CHECK: HJ KIM	DEV. STEP: MP		
APPROVAL: SJ PARK	REV: 1.0		PART NO.: BA41-00714A
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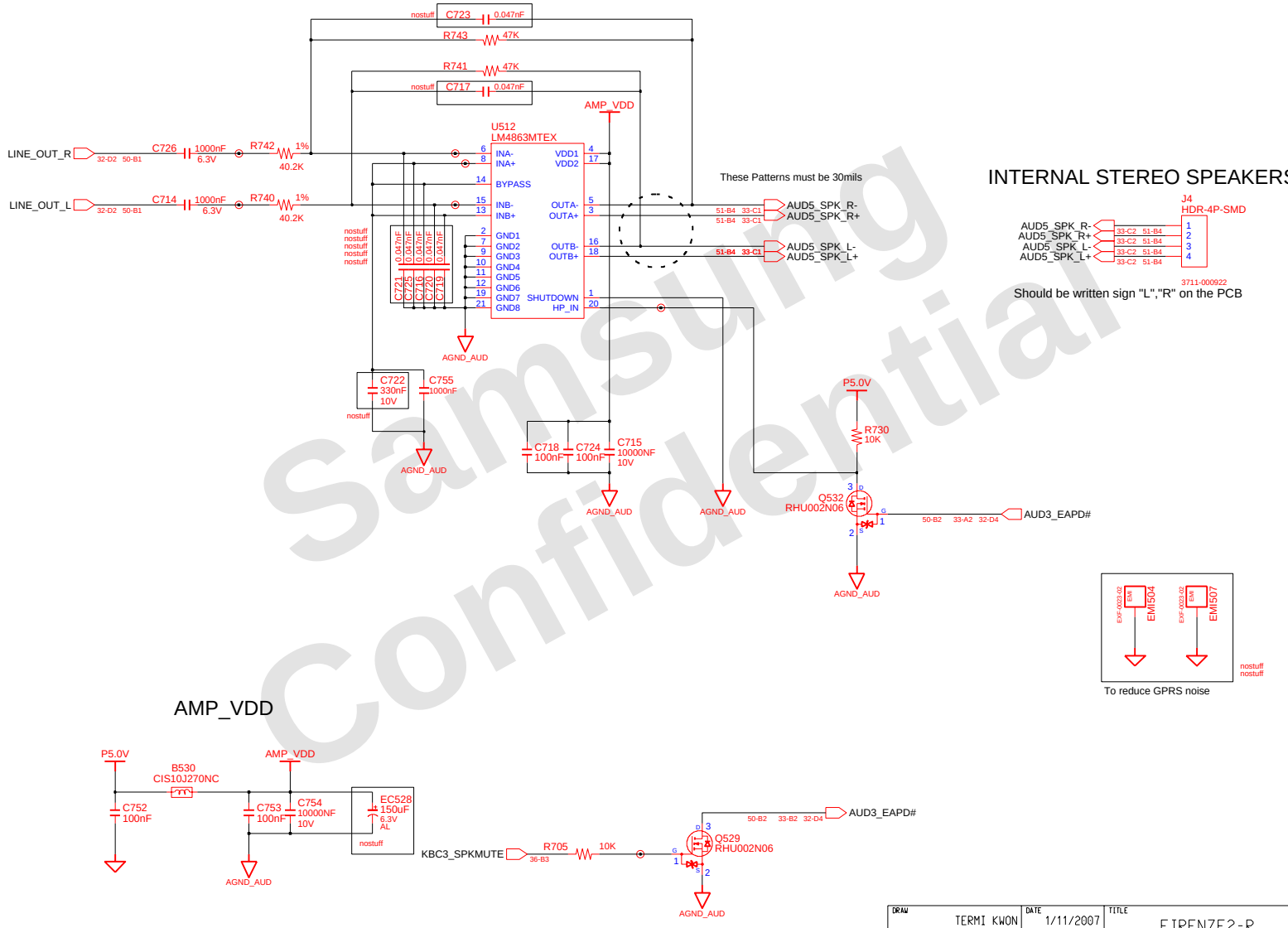

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DRAW: TERMI KWON	DATE: 1/11/2007	TITLE: FIRENZE2-R MAIN LIMITER & AMP	SAMSUNG ELECTRONICS
CHECK: HJ KIM	DEV. STEP: MP		
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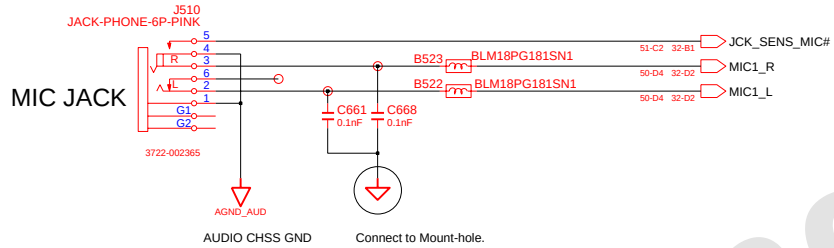
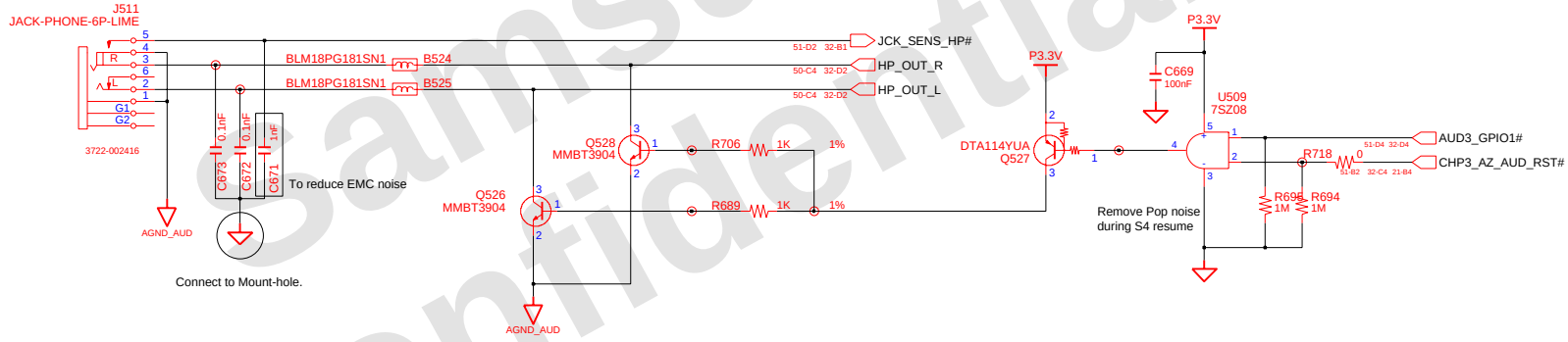


HEADPHONE



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

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DRAW: TERMI KWON	DATE: 1/11/2007	TITLE: FIRENZE2-R MAIN UPPER & AUDIO CONN	SAMSUNG ELECTRONICS
CHECK: HJ KIM	DEV. STEP: MP		
APPROVAL: SJ PARK	REV: 1.0		PART NO.: BA41-00714A
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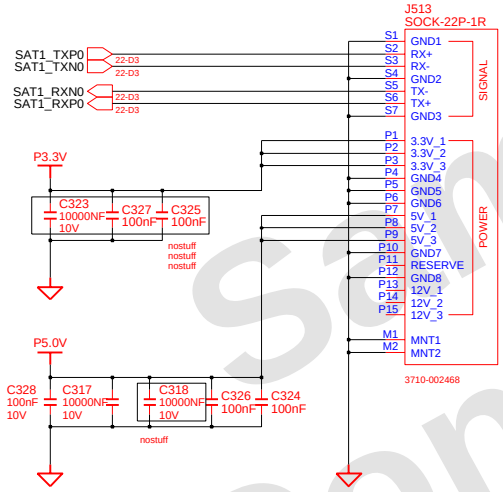
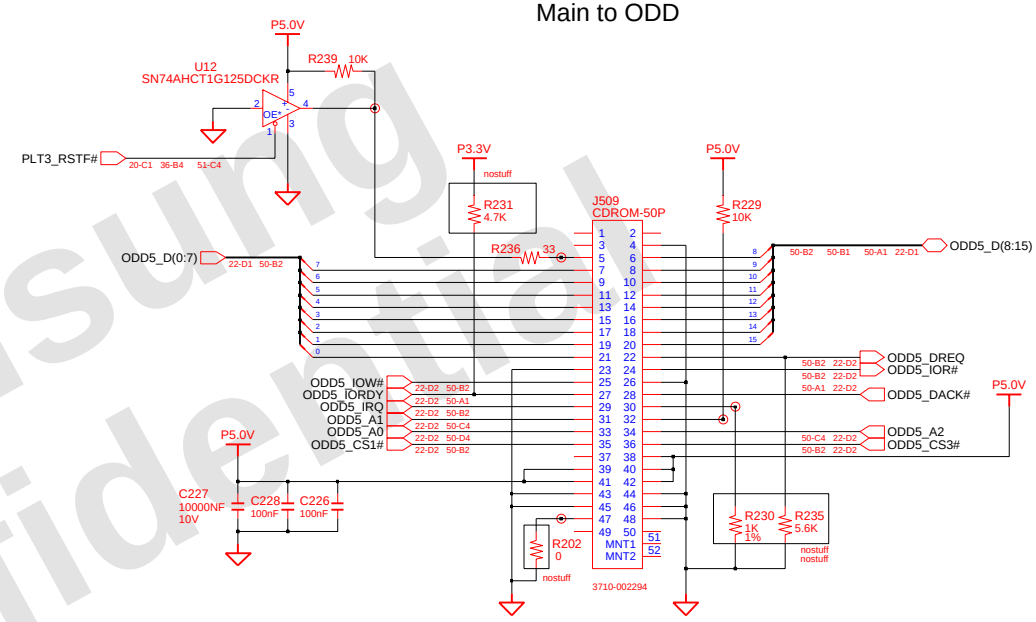
Main to HDD



Main to ODD



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DRAW: TERMI KWON	DATE: 1/11/2007	TITLE: FIRENZE2-R POWER HDD & ODD	SAMSUNG ELECTRONICS
CHECK: HJ KIM	DEV. STEP: MP		
APPROVAL: SJ PARK	REV: 1.0		PART NO.: BA41-00714A
MODULE CODE: undefined	LAST EDIT: January 11, 2007 8:27:44 PM	PAGE 35 OF 52	

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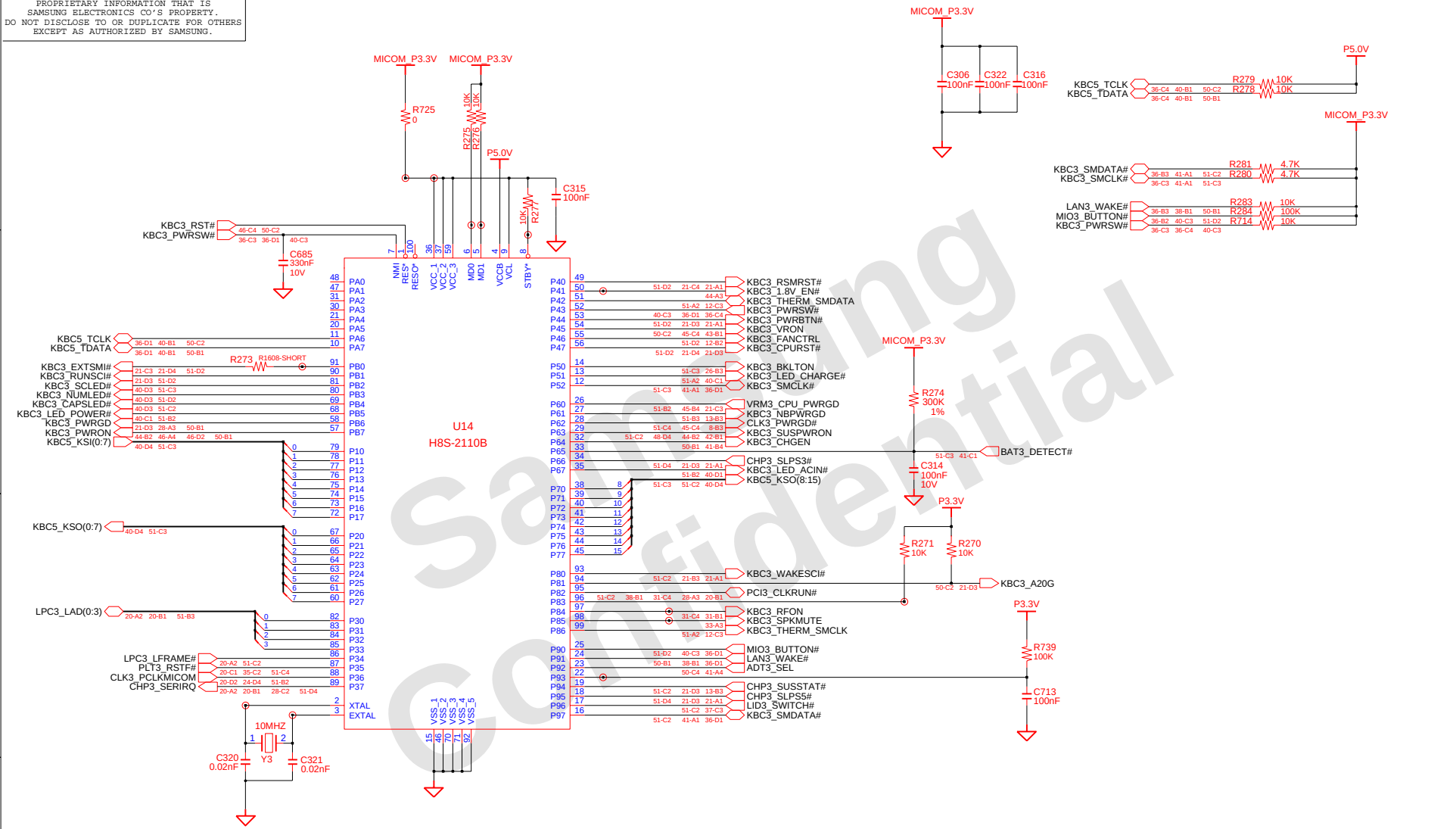

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MICOM Crisis Update

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

The removed signal compaired from 144pin

- KBC5_CAL_THRM*
- THRM_ALERT*
- LCD3_BKLTEN
- FAN3_FDBACK*
- THERM_STP*

DRAW: TERMI KWON	DATE: 1/11/2007	TITLE: FIRENZE2-R POWER MICOM	SAMSUNG ELECTRONICS
CHECK: HJ KIM	DEV. STEP: MP		
APPROVAL: SJ PARK	REV: 1.0		PART NO.: BA41-00714A
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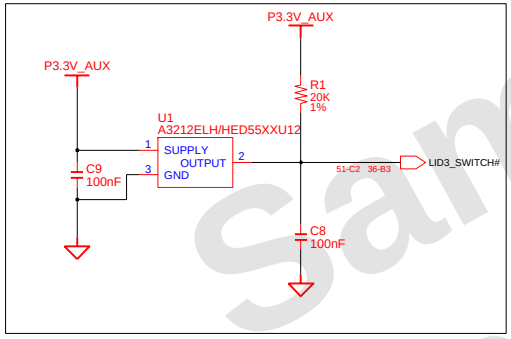
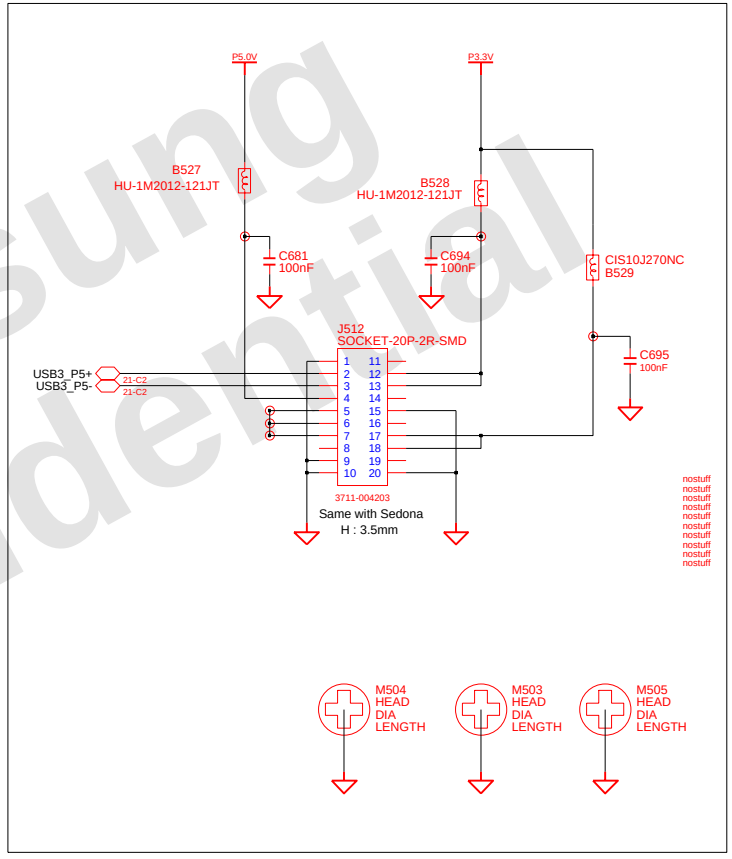
LID SWITCH



DMB (nostuff)

Factory Option



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DRAW: TERMI KWON	DATE: 1/11/2007	TITLE: FIRENZE2-R MAIN LPC	SAMSUNG ELECTRONICS
CHECK: HJ KIM	DEV. STEP: MP		
APPROVAL: SJ PARK	REV: 1.0		PART NO.: BA41-00714A
MODULE CODE: undefined	LAST EDIT: January 11, 2007 8:27:44 PM	PAGE 37 OF 52	

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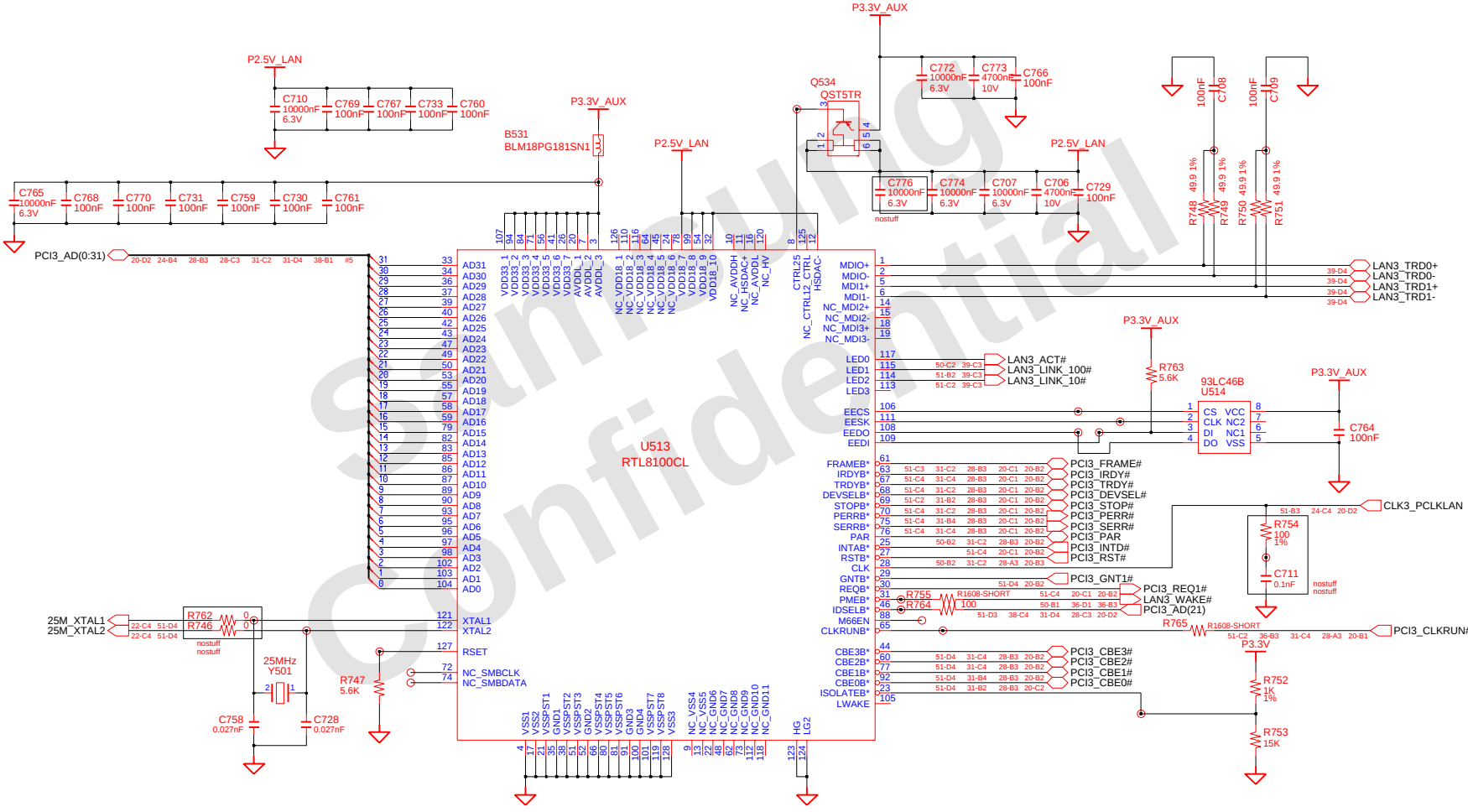
LAN Controller (Only 10/100M)



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DRAW: TERMI KWON	DATE: 1/11/2007	TITLE: FIRENZE2-R MAIN LAN	SAMSUNG ELECTRONICS
CHECK: HJ KIM	DEV. STEP: MP		
APPROVAL: SJ PARK	REV: 1.0		PART NO.: BA41-00714A
MODULE CODE: undefined	LAST EDIT: January 11, 2007 8:27:44 PM	PAGE 38 OF 52	

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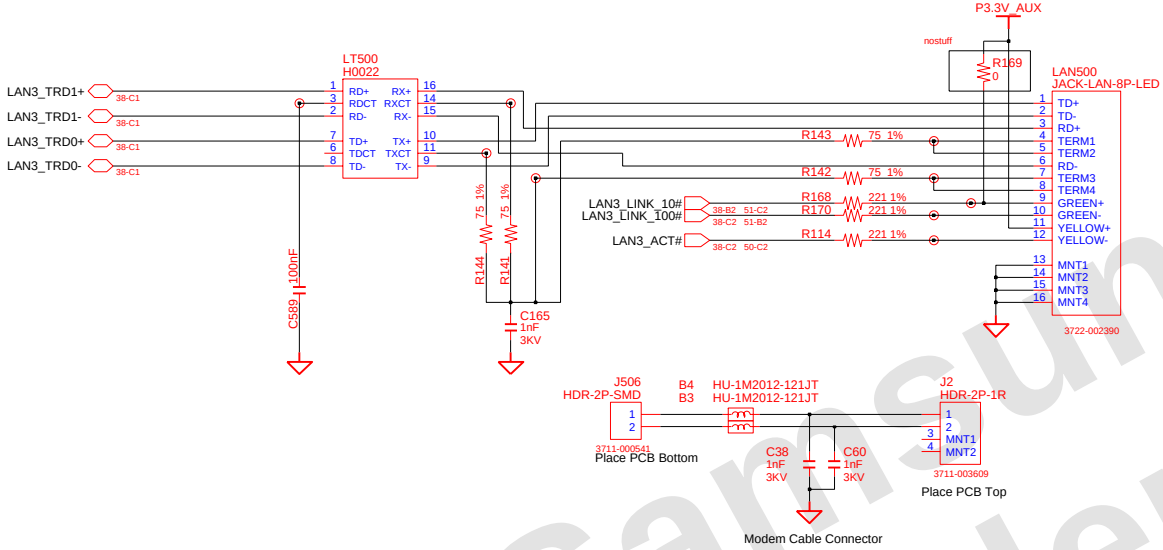
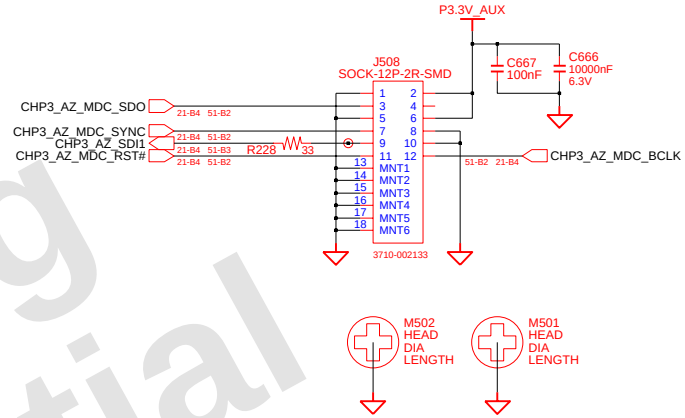
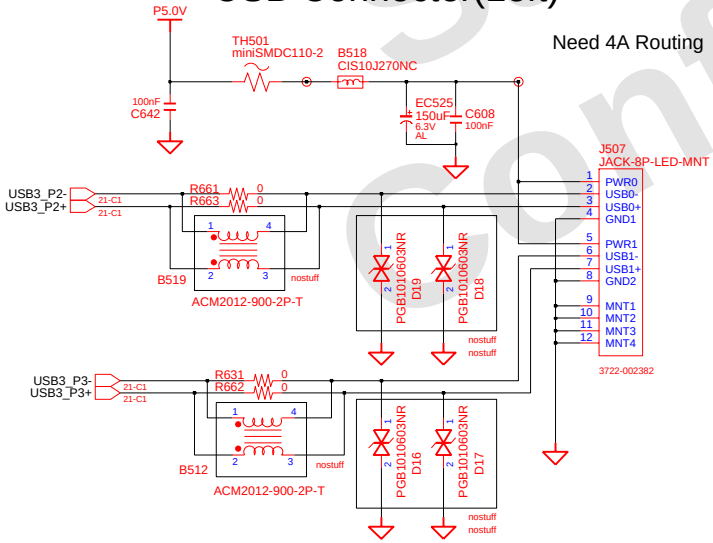
LAN Connector



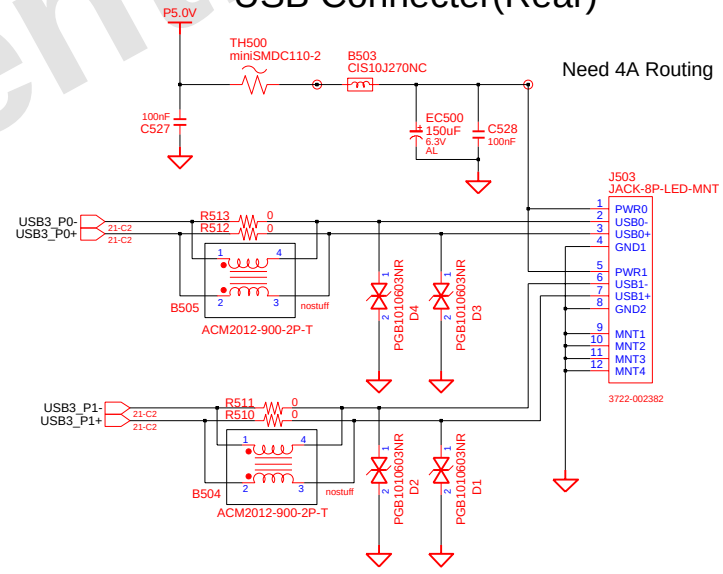
MDC Connecter



USB Connecter(Left)



USB Connecter(Rear)



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DRAW: TERMI KWON	DATE: 1/11/2007	TITLE: FIRENZE2-R MAIN LAN & USB0 & MODEM Conn.	SAMSUNG ELECTRONICS
CHECK: HJ KIM	DEV. STEP: MP		
APPROVAL: SJ PARK	REV: 1.0		PART NO.: BA41-00714A
MODULE CODE: undefined	LAST EDIT: January 11, 2007 8:27:44 PM	PAGE 39 OF 52	

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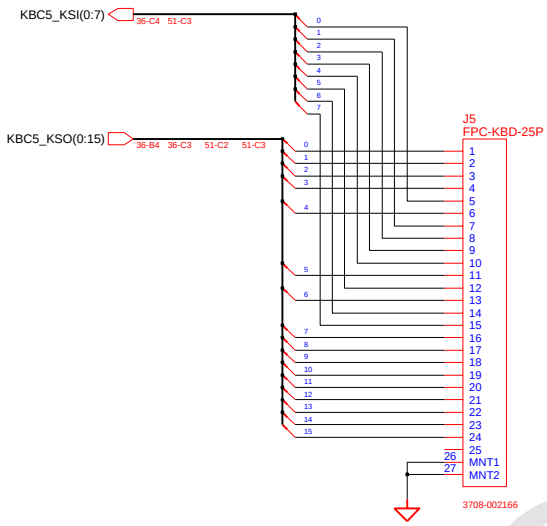
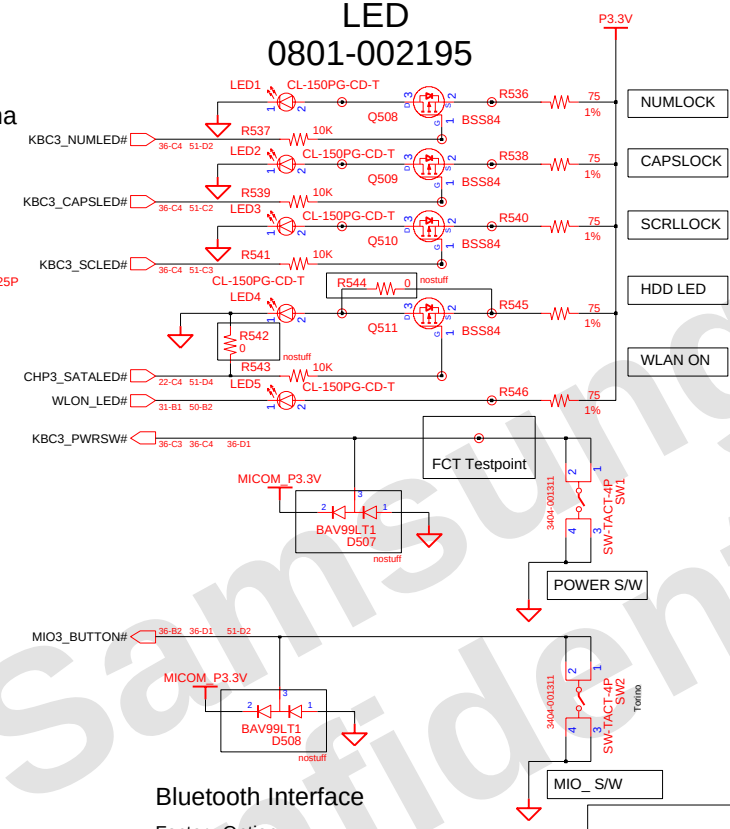
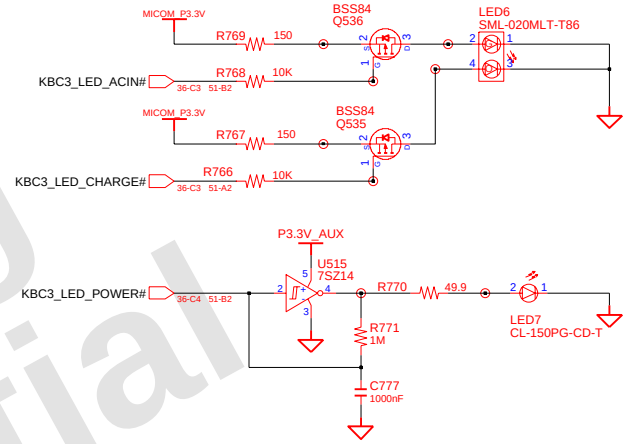
LED
0801-002195

KEYBOARD
Same connector with Sedona

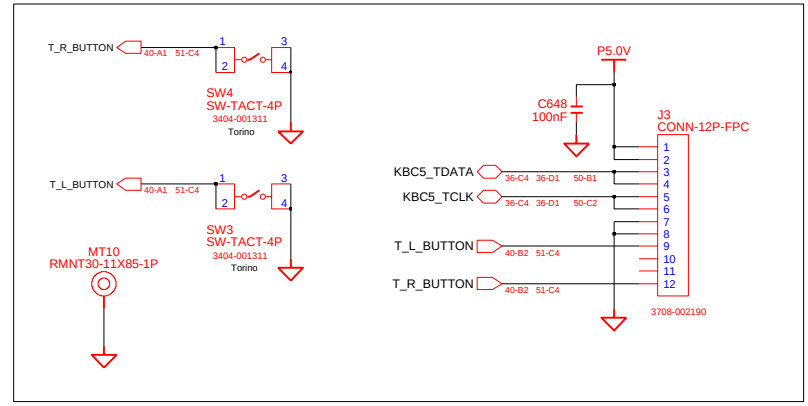




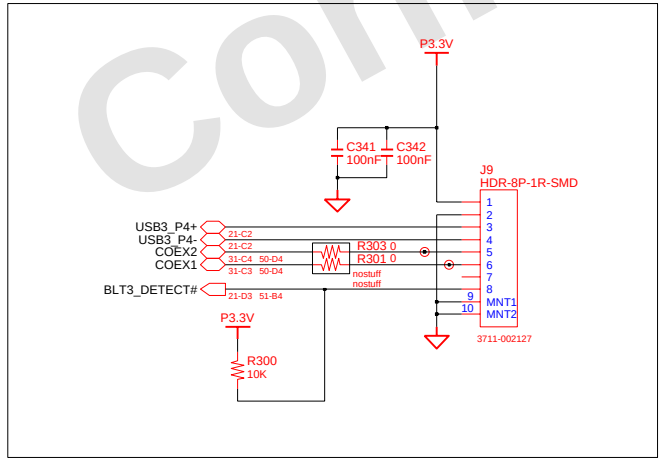
ADAPTERIN/CHARGING LED

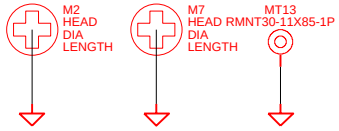


TOUCHPAD



Bluetooth Interface
Factory Option





DRAW: TERMI KWON	DATE: 1/11/2007	TITLE: FIRENZE2-R MAIN B'D TO B'D CONNECTOR	SAMSUNG ELECTRONICS
CHECK: HJ KIM	DEV. STEP: MP		PART NO.: BA41-00714A
APPROVAL: SJ PARK	REV: 1.0		
MODULE CODE: undefined	LAST EDIT: January 11, 2007 8:27:44 PM	PAGE 40 OF 52	

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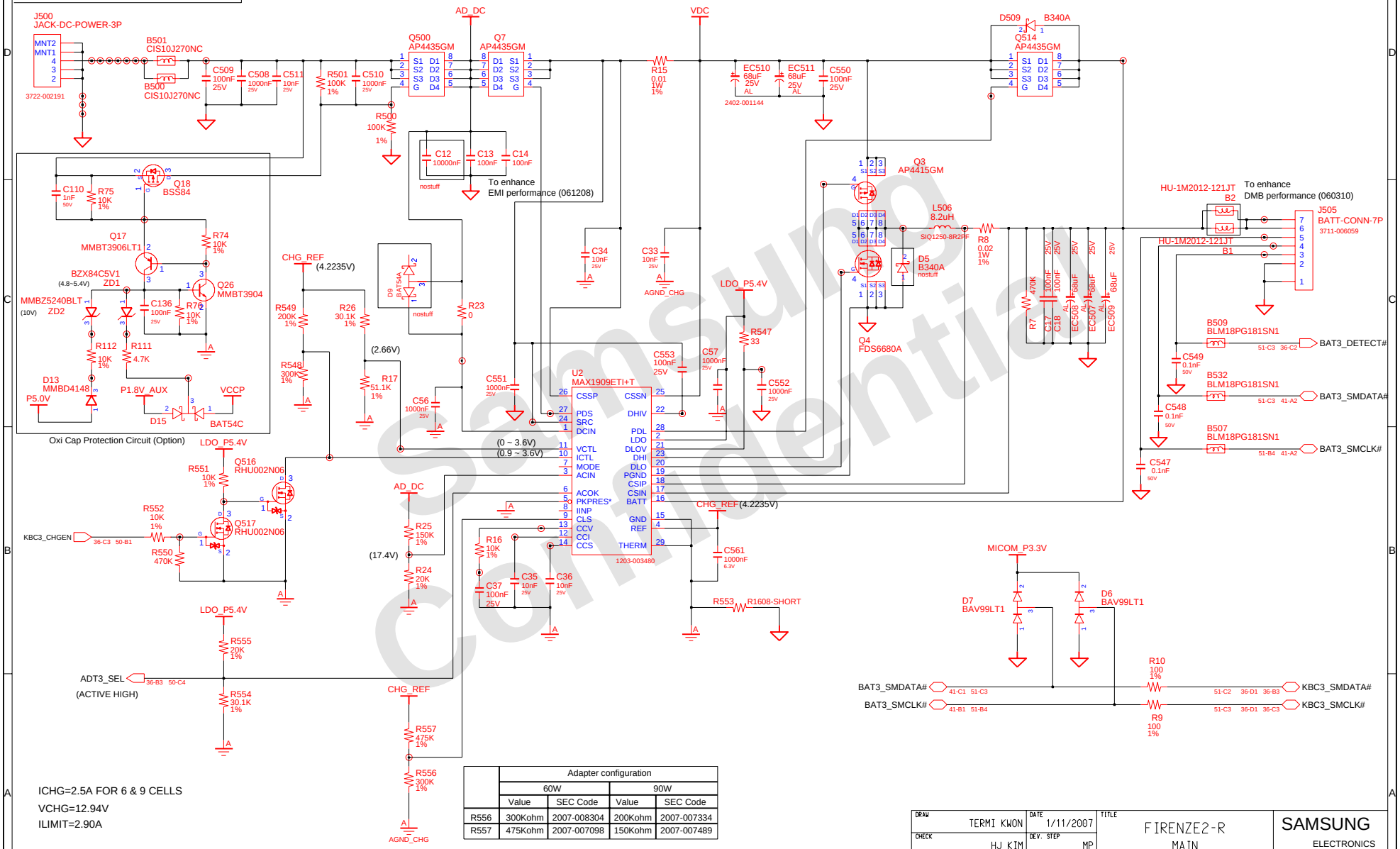
CHARGER & POWER MANAGEMENT



ICHG=2.5A FOR 6 & 9 CELLS
VCHG=12.94V
ILIMIT=2.90A

	Adapter configuration			
	60W		90W	
	Value	SEC Code	Value	SEC Code
R556	300Kohm	2007-008304	200Kohm	2007-007334
R557	475Kohm	2007-007098	150Kohm	2007-007489

DRAW	TERMI KWON	DATE	1/11/2007
CHECK	HJ KIM	DEV. STEP	MP
APPROVAL	SJ PARK	REV	1.0
MODULE CODE	undefined	LAST EDIT	January 11, 2007 8:27:44 PM

TITLE: FIRENZE2-R MAIN CHARGER

SAMSUNG ELECTRONICS

PART NO. BA41-00714A

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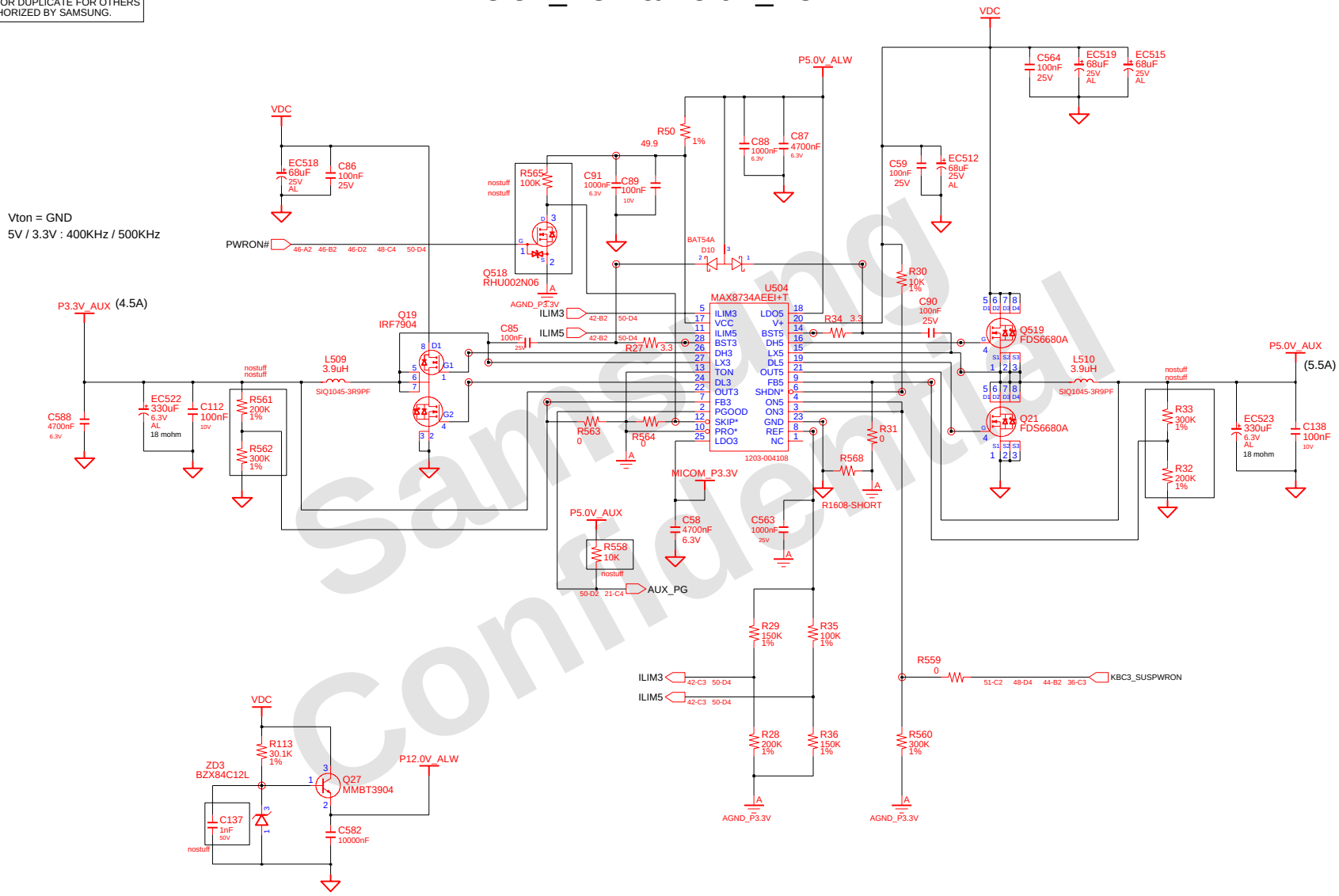
P3.3V_AUX & P5.0V_AUX



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DRAW: TERMI KWON	DATE: 1/11/2007	TITLE: FIRENZE2-R POWER P3.3V ALWAYS & P5V_AUX	SAMSUNG ELECTRONICS
CHECK: HJ KIM	DEV. STEP: MP		
APPROVAL: SJ PARK	REV: 1.0		PART NO.: BA41-00714A
MODULE CODE: undefined	LAST EDIT: January 11, 2007 8:27:44 PM	PAGE 42 OF 52	

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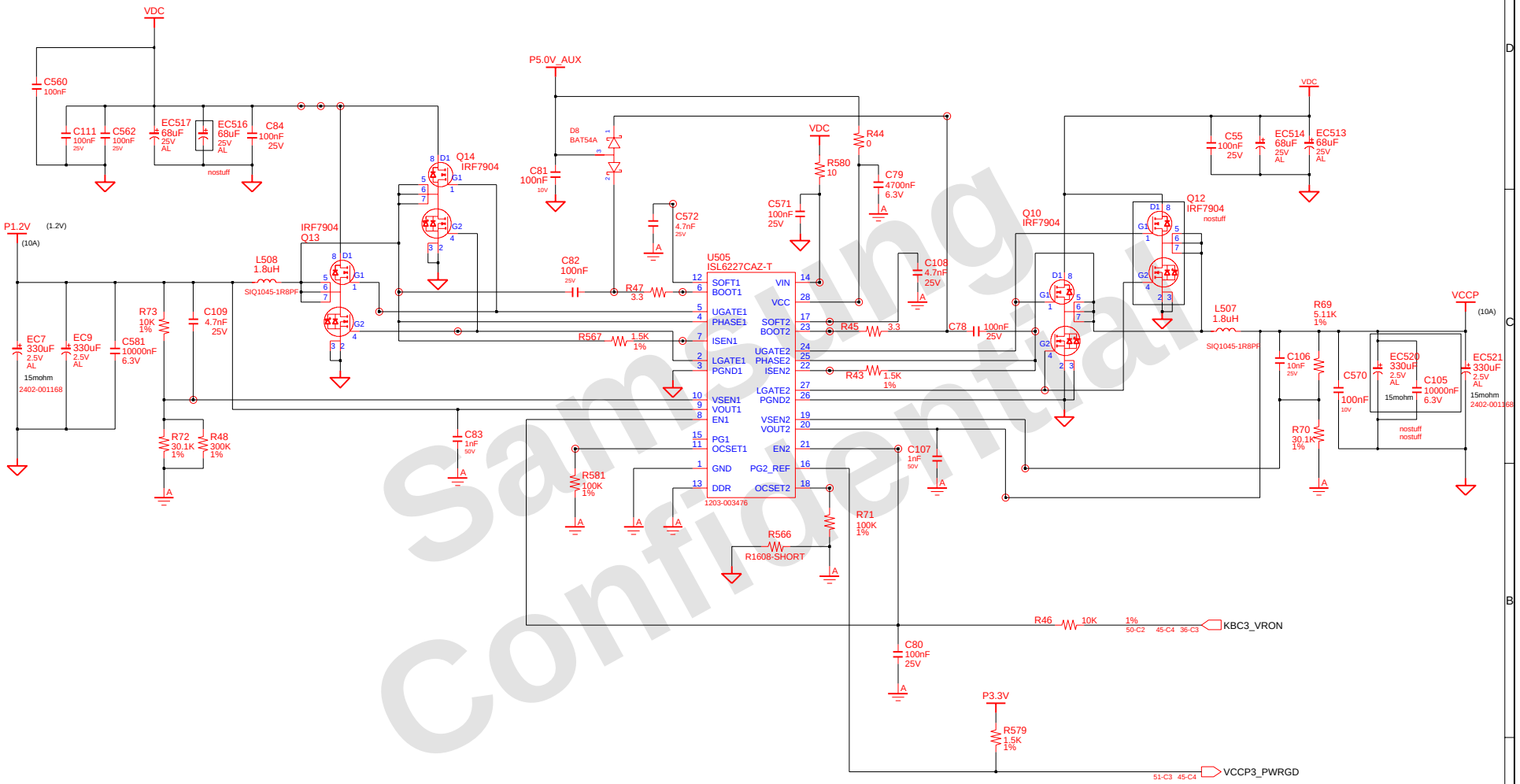
P1.2V(VCC_NB) & VCCP (1.05V)



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DRAW: TERMI KWON	DATE: 1/11/2007	TITLE: FIRENZE2-R POWER P1.2V & VCCP	SAMSUNG ELECTRONICS
CHECK: HJ KIM	DEV. STEP: MP		
APPROVAL: SJ PARK	REV: 1.0		PART NO.: BA41-00714A
MODULE CODE: undefined	LAST EDIT: January 11, 2007 8:27:44 PM	PAGE 43 OF 52	

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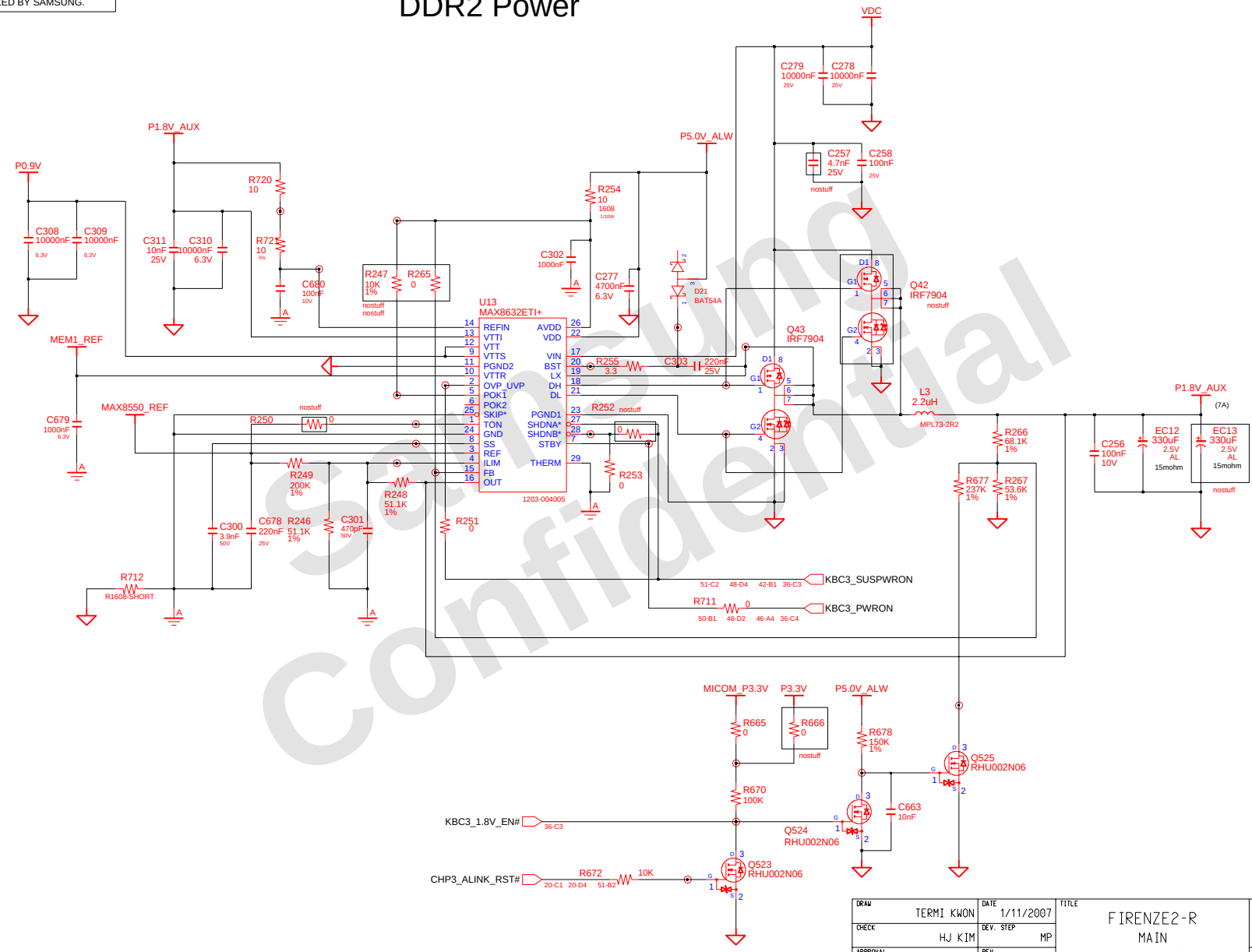
DDR2 Power



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DRAW: TERMI KWON	DATE: 1/11/2007	TITLE: FIRENZE2-R MAIN DDR POWER	SAMSUNG ELECTRONICS
CHECK: HJ KIM	DEV. STEP: MP		PART NO.: BA41-00714A
APPROVAL: SJ PARK	REV: 1.0		
MODULE CODE: undefined	LAST EDIT: January 11, 2007 8:27:44 PM	PAGE 44 OF 52	

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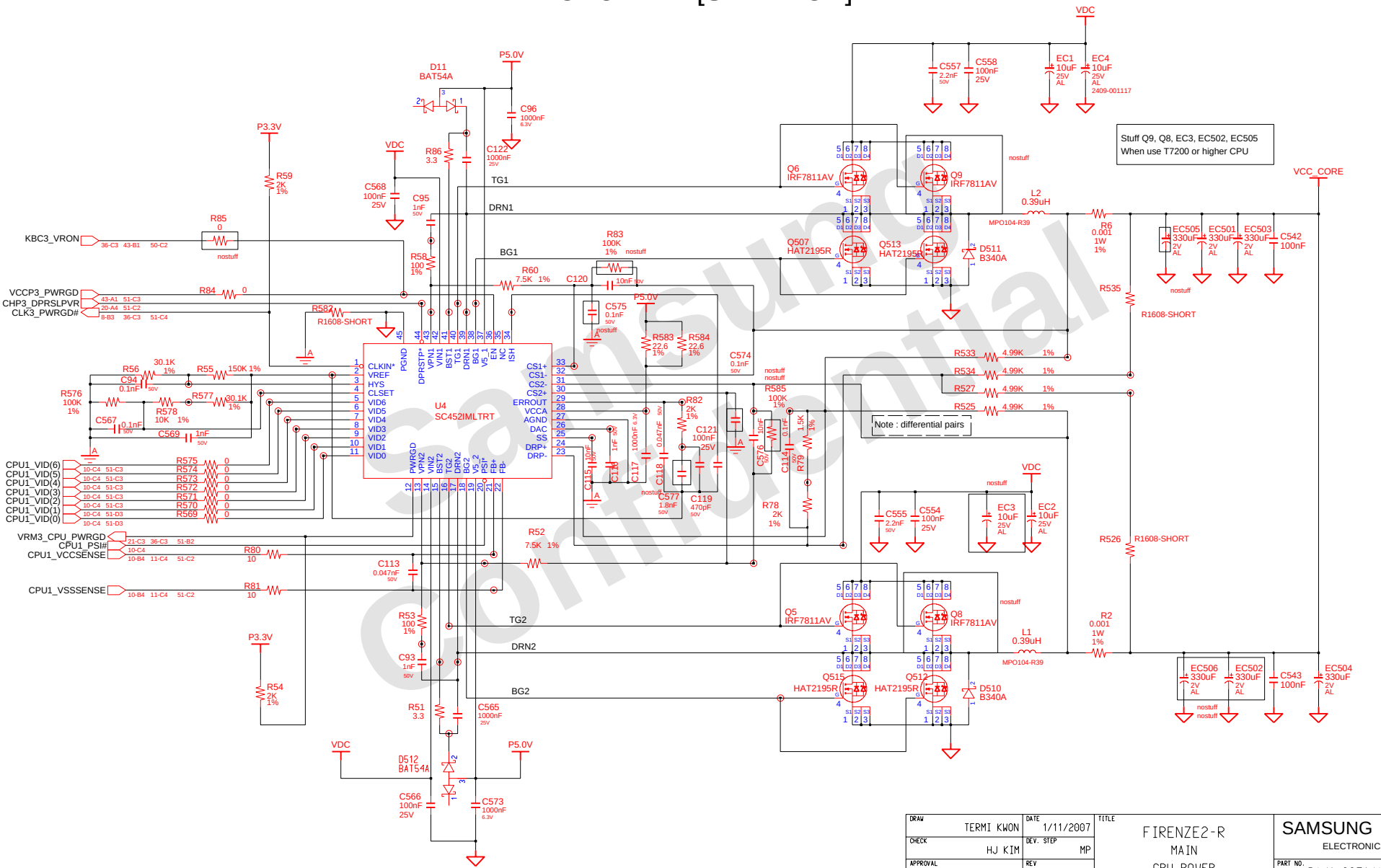
CPU VRM [SEMTECH]



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DRAW: TERMI KWON	DATE: 1/11/2007	TITLE: FIRENZE2-R MAIN CPU POWER	SAMSUNG ELECTRONICS
CHECK: HJ KIM	DEV. STEP: MP		
APPROVAL: SJ PARK	REV: 1.0		PART NO.: BA41-00714A
MODULE CODE: undefined	LAST EDIT: January 11, 2007 8:27:44 PM	PAGE 45 OF 52	

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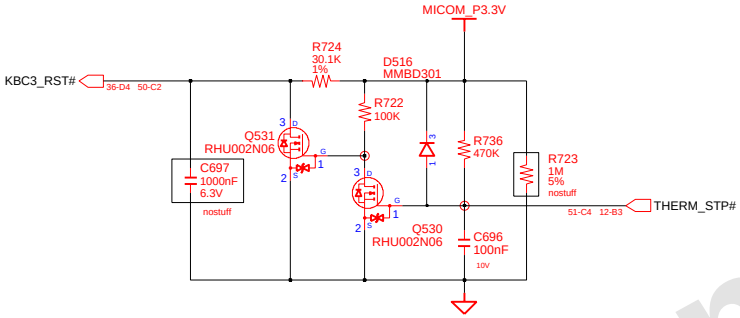
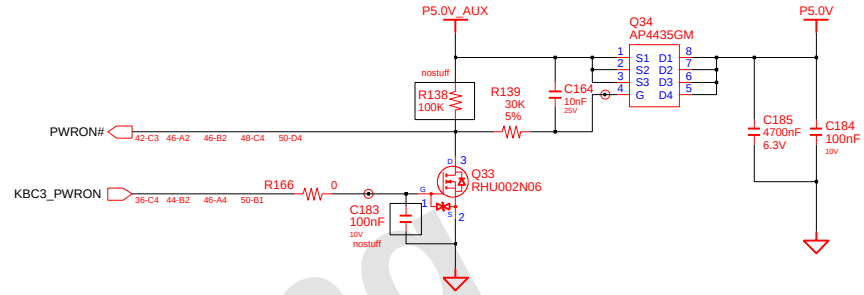
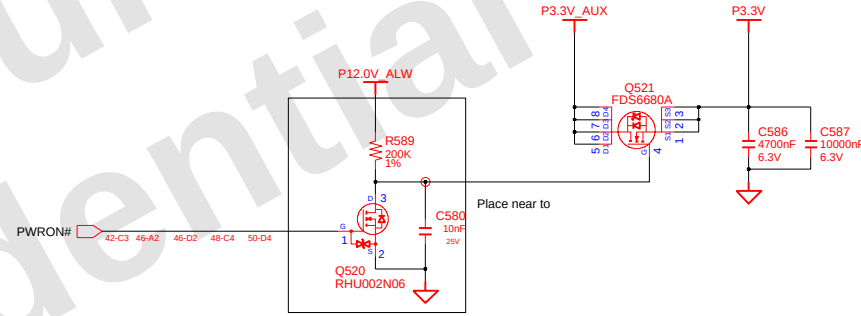
MICOM RESET



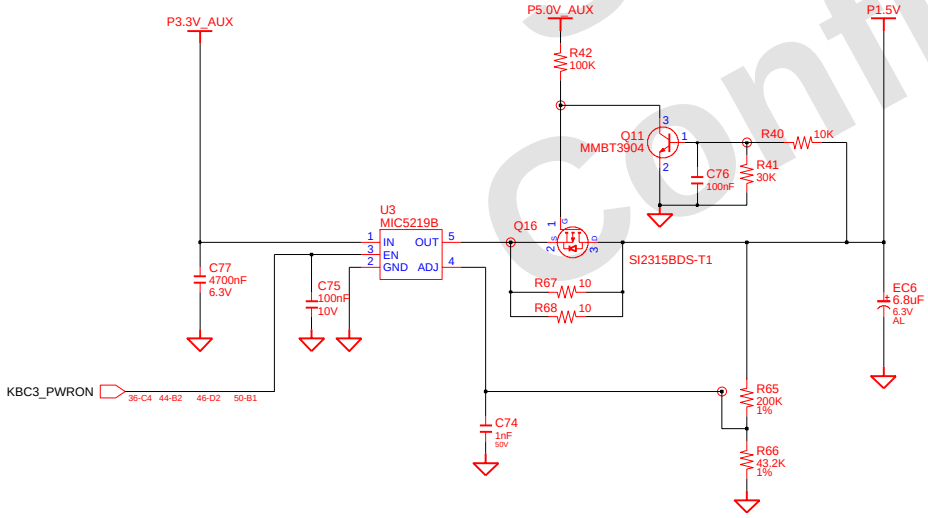
Switched Power On (P5V)

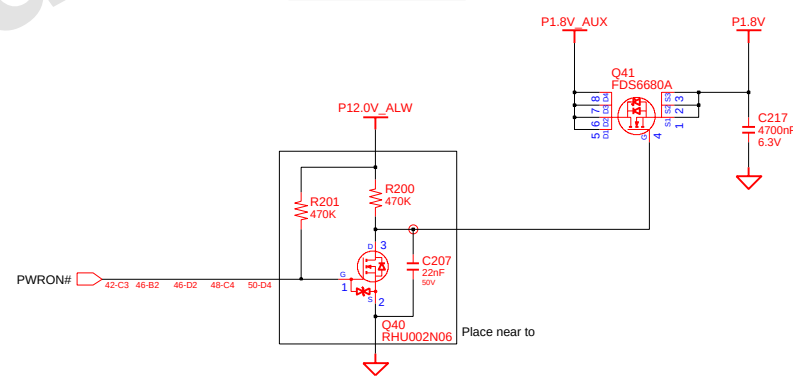


Switched Power On (P3.3V & 1.8V)



P1.5V POWER





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DRAW: TERMI KWON	DATE: 1/11/2007	TITLE: FIRENZE2-R MAIN MICOM & SWITCHED POWER	SAMSUNG ELECTRONICS
CHECK: HJ KIM	DEV. STEP: MP		
APPROVAL: SJ PARK	REV: 1.0		PART NO.: BA41-00714A
MODULE CODE: undefined	LAST EDIT: January 11, 2007 8:27:44 PM	PAGE 46 OF 52	

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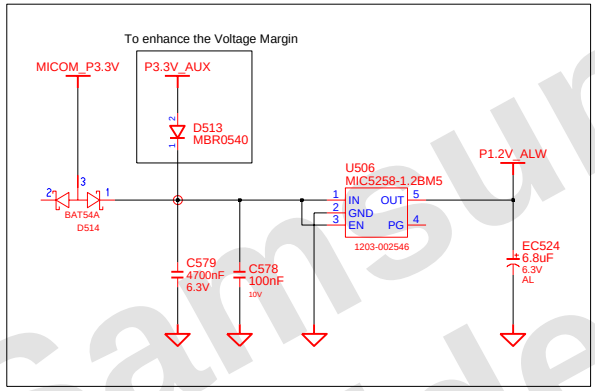

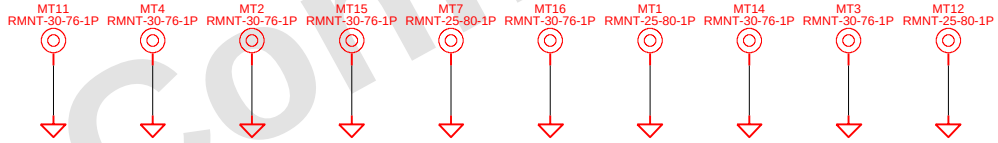

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DRAW: TERMI KWON	DATE: 1/11/2007	TITLE: FIRENZE2-R	SAMSUNG ELECTRONICS
CHECK: HJ KIM	DEV. STEP: MP	P1.2V & P2.5V AUX POWER	
APPROVAL: SJ PARK	REV: 1.0		PART NO.: BA41-00714A
MODULE CODE: undefined	LAST EDIT: January 11, 2007 8:27:44 PM	PAGE 47 OF 52	

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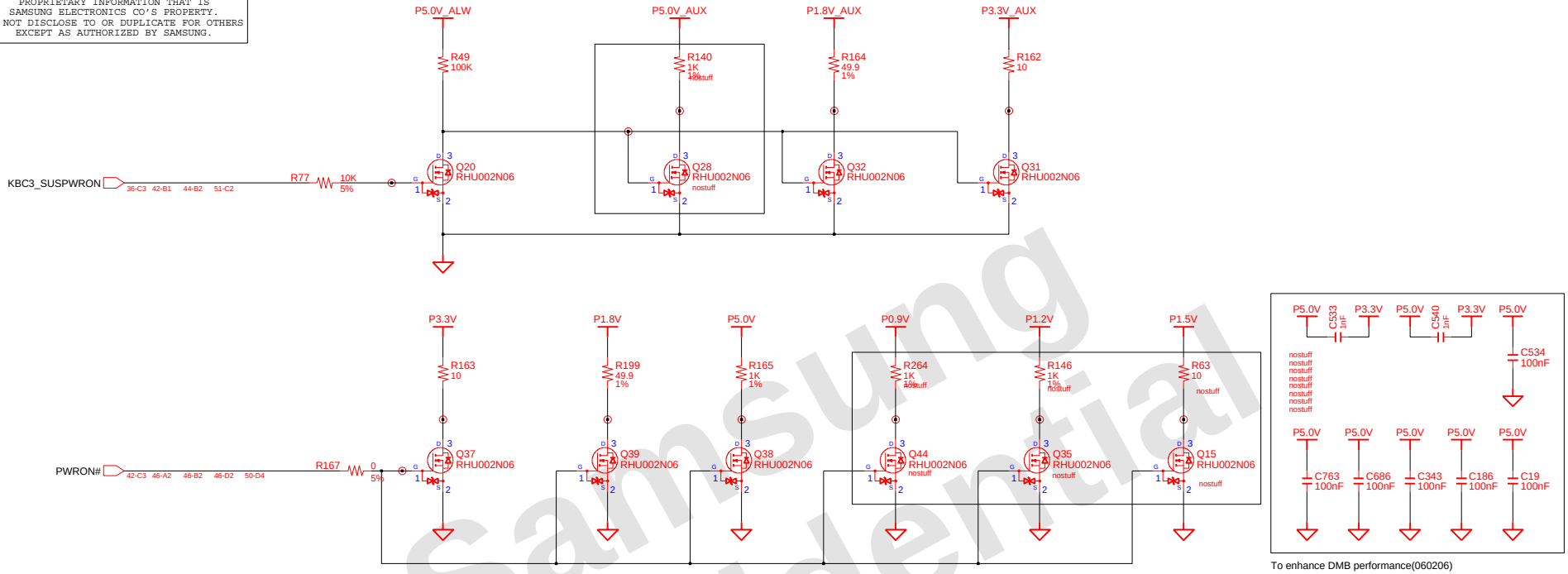
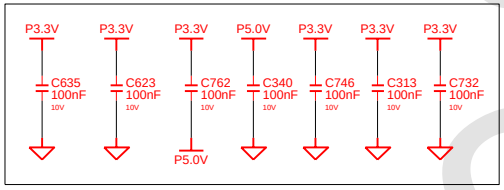
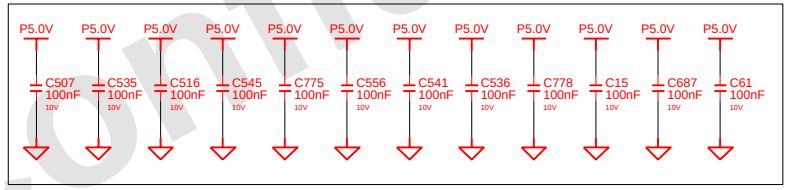


To enhance DMB performance(060206)

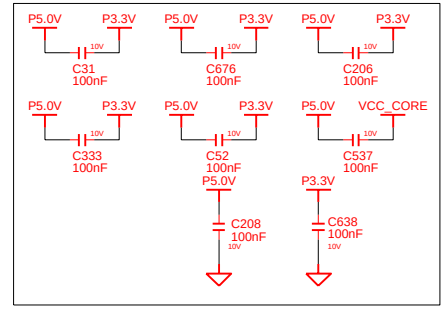


STICHING CAP



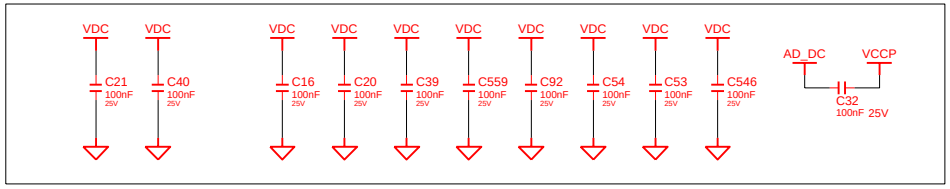
Decap for P5.0V Plane

To reduce BB noise(120 ~ 230MHz) from Power Line (2006/01/24 relate on EMI)



Stiching Cap for Power partition

To reduce BB noise(120 ~ 230MHz) from Power Partition points (2006/01/24 relate on EMI)



Decap for VDC

To reduce BB noise(120 ~ 230MHz) from Power Line (2006/01/24 relate on EMI)

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DRAW: TERMI KWON	DATE: 1/11/2007	TITLE: FIRENZE2-R MAINBD POWER ADAPT	SAMSUNG ELECTRONICS
CHECK: HJ KIM	DEV. STEP: MP		
APPROVAL: SJ PARK	REV: 1.0		PART NO.: BA41-00714A
MODULE CODE: undefined	LAST EDIT: January 11, 2007 8:27:44 PM	PAGE 48 OF 52	

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REV1

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

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CHECK: HJ KIM	DEV. STEP: MP		
APPROVAL: SJ PARK	REV: 1.0	TP	PART NO.: BA41-00714A
MODULE CODE:	LAST EDIT: January 11, 2007 8:27:44 PM	PAGE 49 OF 52	

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COEX1
COEX2
ILIM3
ILIM5
MIC1_L
MIC1_R
PWRON#
TVO3_C
TVO3_Y

ODD5_A0
ODD5_A1
ODD5_A2
PC_BEEP

AC_SDOUT
ADT3_SEL

CPU1_TCK
CPU1_TDI
CPU1_TMS
CRT3_RED

HP_OUT_L
HP_OUT_R

CLK3_ICH14
CLK3_NB14M
CLK3_USB48

CRT3_BLUE
AUX_PG

KBC3_A20G
KBC3_RST#
KBC3_VRON
KBC5_TCLK
LAN3_ACT#

CRT3_GREEN
CRT5_HSYNC
CRT5_VSYNC

ODD5_CS1#
ODD5_CS3#
ODD5_D(0)
ODD5_D(1)
ODD5_D(2)
ODD5_D(3)
ODD5_D(4)
ODD5_D(5)
ODD5_D(6)
ODD5_D(7)
ODD5_D(8)
ODD5_D(9)
ODD5_DREQ
ODD5_IOR#
ODD5_IOW#

ODD5_IRQ
PCI3_PAR
SMB3_CLK

JCK_SENS_A
KBC3_CHGEN
KBC3_PWRGD
KBC3_PWRON
KBC5_TDATA

PCI3_RST#
SMB3_DATA
VGA5_DDCC
VGA5_DDCD
WLON_LED#
AUD3_EAPD#
CBS3_A_D_2
CBS3_CCD1#
CBS3_CCD2#
CBS3_CGNT#
CBS3_CINT#
CBS3_CREQ#
CBS3_CRST#

LAN3_WAKE#

LCD3_VDDEN
LINE_OUT_L
LINE_OUT_R

CBS3_CCLK
CBS3_CPAR
CBS3_CVS1
CBS3_CVS2
CBS3_SPKR
CHP3_SPKR
CLK3_FM48

ODD5_D(10)
ODD5_D(11)
ODD5_D(12)
ODD5_D(13)
ODD5_D(14)
ODD5_D(15)
ODD5_DACK#
ODD5_IORDY
PCI3_AD(0)
PCI3_AD(1)
PCI3_AD(2)
PCI3_AD(3)

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DRAW: TERMI KWON	DATE: 1/11/2007	TITLE: FIRENZE2-R TP	SAMSUNG ELECTRONICS
CHECK: HJ KIM	DEV. STEP: MP		
APPROVAL: SJ PARK	REV: 1.0		PART NO.: BA41-00714A
MODULE CODE:	LAST EDIT: January 11, 2007 8:27:44 PM	PAGE 50 OF 52	

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PCI3_AD(4)
PCI3_AD(5)
PCI3_AD(6)
PCI3_AD(7)
PCI3_AD(8)
PCI3_AD(9)
PCI3_CBE0#
PCI3_CBE1#
PCI3_CBE2#
PCI3_CBE3#
PCI3_GNT0#
PCI3_GNT1#
PCI3_GNT2#

PCI3_INTA#
PCI3_INTB#
PCI3_INTC#
PCI3_INTD#
PCI3_IRDY#
PCI3_PERR#
PCI3_REQ0#
PCI3_REQ1#
PCI3_REQ2#
PCI3_RSTF#

PCI3_SERR#
PCI3_STOP#
PCI3_TRDY#

PLT3_RSTF#
THERM_STP#
T_L_BUTTON
T_R_BUTTON
VGA3_HSYNC
VGA3_VSYNC

AUD5_SPK_L+
AUD5_SPK_L-
AUD5_SPK_R+
AUD5_SPK_R-
BAT3_SMCLK#
BLT3_DETECT#
CBS3_A_A_18
CBS3_A_A_19
CBS3_A_D_14
CBS3_CAD(0)
CBS3_CAD(1)
CBS3_CAD(2)
CBS3_CAD(3)
CBS3_CAD(4)
CBS3_CAD(5)
CBS3_CAD(6)
CBS3_CAD(7)
CBS3_CAD(8)
CBS3_CAD(9)
CBS3_CAUDIO
CBS3_CCBE0#
CBS3_CCBE1#
CBS3_CCBE2#
CBS3_CCBE3#
CBS3_CIRDY#
CBS3_CPERR#
CBS3_CSERR#
CBS3_CSTOP#
CBS3_CTRDY#
CBS3_MD_CLK
CBS3_VPPEN0
CBS3_VPPEN1

CHP3_NBRST#

CHP3_OVERT#
CHP3_SBPME#
CHP3_SERIRQ
CHP3_SLPS3#
CHP3_SLPS5#
25M_XTAL1
25M_XTAL2
AUD3_GPIO1#
CHP3_SATALED#
RTC_CLK
SPI3_CLK
SPI3_CS#
SPI3_MISO
SPI3_MOSI

CLK3_PCLKCB
CLK3_PWRGD#

CPU1_VID(0)
CPU1_VID(1)
CPU1_VID(2)
CPU1_VID(3)
CPU1_VID(4)
CPU1_VID(5)
CPU1_VID(6)
CRT3_DDCCLK

KBC3_BKLTON
KBC3_SCLED#
KBC3_SMCLK#
KBC5_KSI(0)
KBC5_KSI(1)
KBC5_KSI(2)
KBC5_KSI(3)
KBC5_KSI(4)
KBC5_KSI(5)
KBC5_KSI(6)
KBC5_KSI(7)
KBC5_KSO(0)
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KBC5_KSO(2)
KBC5_KSO(3)
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KBC5_KSO(6)
KBC5_KSO(7)
KBC5_KSO(8)
KBC5_KSO(9)

LPC3_LAD(0)
LPC3_LAD(1)
LPC3_LAD(2)
LPC3_LAD(3)

OTP3_OVERT#
PCI3_AD(10)

PCI3_AD(11)
PCI3_AD(12)
PCI3_AD(13)
PCI3_AD(14)
PCI3_AD(15)
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PCI3_AD(30)
PCI3_AD(31)
PCI3_FRAME#
PCI3_PLOCK#
THRM_ALERT#
VCCP3_PWRGD
BAT3_DETECT#
BAT3_SMDATA#
CBS3_CAD(10)
CBS3_CAD(11)
CBS3_CAD(12)
CBS3_CAD(13)
CBS3_CAD(14)
CBS3_CAD(15)
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CBS3_CAD(31)
CBS3_CFRAME#
CBS3_CSTSCHG
CBS3_VCC3EN#
CBS3_VCCSEN#
CHP3_AZ_SDI0
CHP3_AZ_SDI1
CHP3_BIOSWP#
CHP3_CPUSTP#
KBC3_NBPWRGD

CLK3_33M_MIN

CLK3_PCLKLAN
STRAP_USB48

CPU1_CPURST#
CPU1_BREQ#
CPU1_BSEL0
CPU1_BSEL1
CPU1_BSEL2
CPU1_DPRSTP#
CPU1_DPSLP#
CPU1_FERR#
CPU1_SLP#
CPU1_TRST#

CPU1_STPCLK#
CPU2_THERMDA
CPU2_THERMDC
CRT3_DDCDATA
ITP3_SYSRST#
ITP3_DBRESET#
JCK_SENS_HP#

KBC3_CPURST#
KBC3_EXTSMI#
KBC3_FANCTRL
KBC3_NUMLED#
KBC3_PWRBTN#
KBC3_RSMRST#
KBC3_RUNSCI#
KBC3_SMDATA#
KBC5_KSO(10)
KBC5_KSO(11)
KBC5_KSO(12)
KBC5_KSO(13)
KBC5_KSO(14)
KBC5_KSO(15)

LID3_SWITCH#
LPC3_LFRAME#

MIC1_VREFO_L
MIC1_VREFO_R
MIO3_BUTTON#
PCI3_CLKRUN#
PCI3_DEVSEL#
CBS3_CCLKRUN#
CBS3_CDEVSEL#
CBS3_MD_DATA1
CBS3_MD_DATA2
CBS3_MD_DATA3
CBS3_MD_VCCEN

CHP3_DPRSLPVR
CHP3_SUSSTAT#

CPU1_PWRGDCPU
CPU1_VCCSENSE
CPU1_VSSSENSE
JCK_SENS_MIC#
KBC3_CAPSLED#
KBC3_SUSPWRON
KBC3_WAKESCI#
LAN3_LINK_10#
LCD3_BKLTCTRL
LCD3_BKLTEN
LCD3_BKLTON

CBS3_MD_XD_ALE
CBS3_MD_XD_CE#
CBS3_MD_XD_CLE
CBS3_MD_XD_WP#

CLK3_PCLKMICOM
CPU1_THRMTRIP#
KBC3_LED_ACIN#
LAN3_LINK_100#
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CHP3_ALINK_RST#
CHP3_AZ_AUD_SDO
CHP3_AZ_MDC_SDO

KBC3_LED_POWER#
CBS3_MD_DATA4_XD
CBS3_MD_DATA5_XD
CBS3_MD_DATA6_XD
CBS3_MD_DATA7_XD
CHP3_AZ_AUD_BCLK
CHP3_AZ_AUD_RST#
CHP3_AZ_AUD_SYNC
CHP3_AZ_MDC_BCLK
CHP3_AZ_MDC_RST#
CHP3_AZ_MDC_SYNC
CHP3_SBTHRMTRIP#
KBC3_LED_CHARGE#
KBC3_THERM_SMCLK
CBS3_MS_BS_SD_CMD
KBC3_THERM_SMDATA
CBS3_SD_CD#_XD_CD#
CBS3_MS_INS#_XD_CD#
CBS3_SD_WP#_XD_R_B#
CBS3_MD_DATA0_MS_SDIO

AVDD_AUD
AVDD_AUD

AD_DC
AD_DC
AD_DC
AD_DC
AD_DC
AVDDQ

AMP_VDD
AMP_VDD

AVDD

AGND_AUD
AGND_AUD
AGND_AUD
AGND_AUD
AGND_AUD
AGND_CHG

AGND_P3.3V

CGND

C_AGND

CB_VCCA

CB_VPPA

CHG_REF

CB_MD_VCC

D_AGND

GROUND
GROUND
GROUND
GROUND
GROUND
GROUND
GROUND
GROUND
GROUND
GROUND
GROUND

INV_VDC
INV_VDC

LCD_VDD3V
LCD_VDD3V

LDO_P5.4V

MEM1_REF

MAX8550_REF

MICOM_P3.3V
MICOM_P3.3V

P0.9V
P0.9V
P0.9V
P0.9V
P0.9V
P1.2V
P1.2V
P1.2V
P1.2V
P1.2V
P1.5V
P1.5V

P1.8V
P1.8V
P1.8V
P1.8V
P1.8V
P3.3V

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DRAW: TERMI KWON	DATE: 1/11/2007	TITLE: FIRENZE2-R TP	SAMSUNG ELECTRONICS
CHECK: HJ KIM	DEV. STEP: MP		
APPROVAL: SJ PARK	REV: 1.0		PART NO.: BA41-00714A
MODULE CODE:	LAST EDIT: January 11, 2007 8:27:44 PM	PAGE 51 OF 52	

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P3.3V
P3.3V
P3.3V
P3.3V
P5.0V
P5.0V
P5.0V
P5.0V
P5.0V
PLLVDD18

VCC_CRT

VCC_CORE
VCC_CORE
VCC_CORE
VCC_CORE
VCC_CORE

C1 0.1nF
C2 0.01nF 0.5pF
C3 0.018nF
C4 0.022nF
C5 0.027nF
C6 0.047nF
C7 0.0033nF

PRTC_BAT
P1.2V_ALW

C500 0.1nF
C501 0.01nF 0.5pF
C502 0.018nF
C503 0.022nF
C504 0.027nF
C505 0.047nF
C506 0.0033nF

P1.8V_AUX
P1.8V_AUX
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P1.8V_AUX
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PCIE_VDDR

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P12.0V_ALW
P12.0V_ALW
P12.0V_ALW
VDC
VDC
VDC
VDC
VDC
VCCP
VCCP
VCCP
VCCP
VCCP

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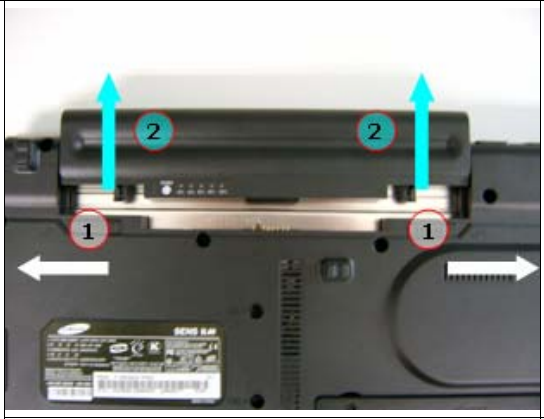
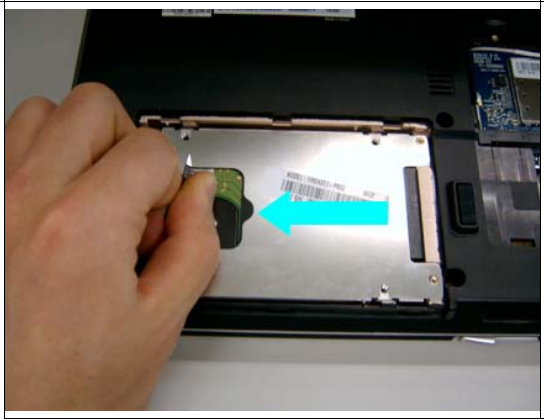
DRAW: TERMI KWON	DATE: 1/11/2007	TITLE: FIRENZE2-R	SAMSUNG ELECTRONICS
CHECK: HJ KIM	DEV. STEP: MP		
APPROVAL: SJ PARK	REV: 1.0		PART NO.: BA41-00714A
MODULE CODE:	LAST EDIT: January 11, 2007 8:27:44 PM	PAGE 52 OF 52	

4. Assembly and Disassembly

Item	Picture	Description
Main System		1. AC Adapter & Battery must be disassembled before disassembling System. 2. Move Knob like Point 1 and separate Battery like Point 2.
		3. Battery will be disassembled when push Battery to the upper side.
		4. Remove Bottom Screw - M2.6 L8 : 14pcs - M2 L7 : 2pcs - M2 L4 : 2pcs *Caution Just loose Memory Door Screw, because they can not be removed.
		5. Remove HDD DOOR 6. Remove MEMORY DOOR

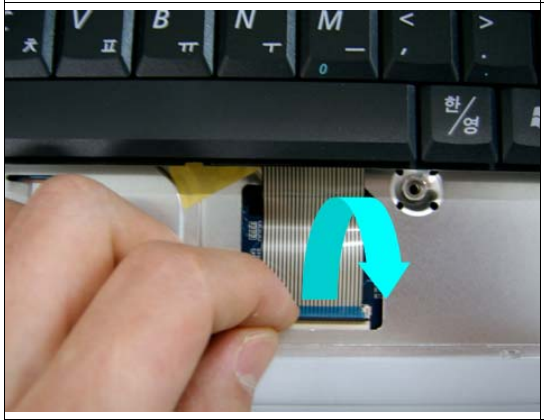
4. Assembly and Disassembly

Item	Picture	Description
Main System		7. Push HDD to Arrow mark side gripping handle to remove HDD. *Caution Be careful when push the HDD to the rear side. HDD must be removed before turning upside down the system.
		8. Remove Wireless LAN Card after disassembling Wireless LAN Antenna *Caution Firenze2-R have just one Wireless LAN Antenna
		9. Lift up Memory by doing like Point 1, and pull out the Memory from Socket.

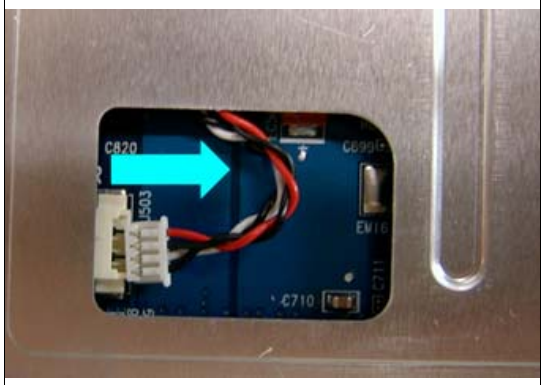
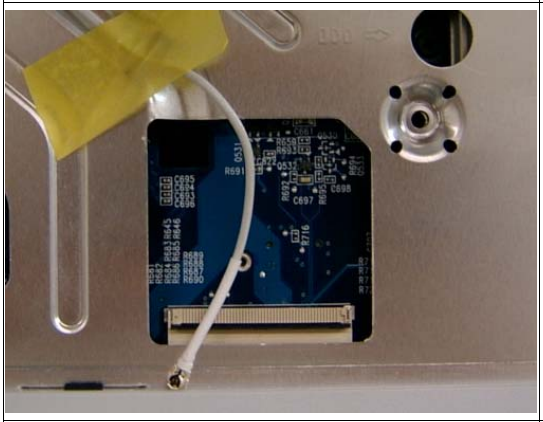
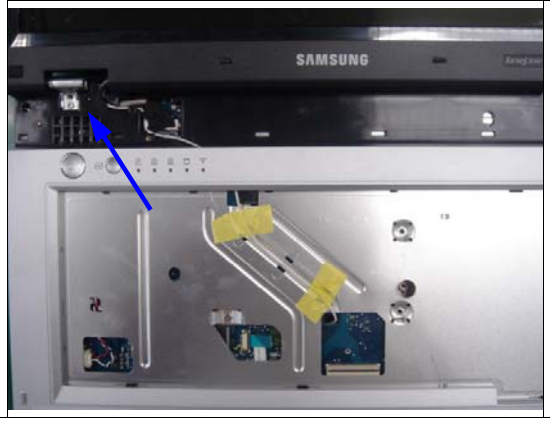
4. Assembly and Disassembly

Item	Picture	Description
Main System		10. Bottom view after remove HDD, Wireless LAN, Memory,
		11. Lift up Top cover from right side. *Caution Lift up Top cover after fully openning the lid.
		12. Disassemble 3 Hooks by sequence of 1, 2, 3 in the picture to remove KEYBOARD

4. Assembly and Disassembly

Item	Picture	Description
Main System		13. Use tweezers, wooden cutter, '-' driver to disassemble Keyboard. *Caution 1. Be careful of injury and scratch of Top surface when use instruments. 2. Don't lift up Keyboard highly.
		14. Lift up FPC Connector cover like a picture and disassemble Keyboard FPC. *Caution Don't lift up FPC Connector cover highly. That may cause Connector crash.
		15. Remove 3 screws to disassemble Top. - M2 L4 : 1pcs - M2 L6 : 2pcs
		16. Disassemble Touchpad FFC after lifting up FPC Connector cover. *Caution Don't lift up FPC Connector cover highly. That may cause Connector crash.

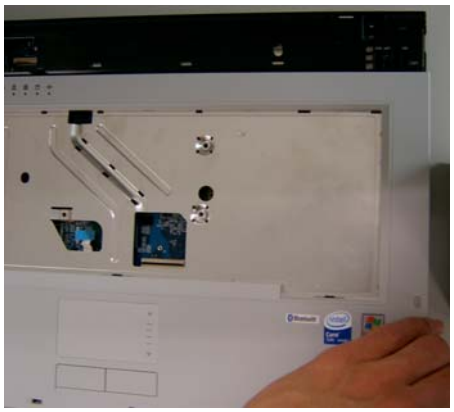
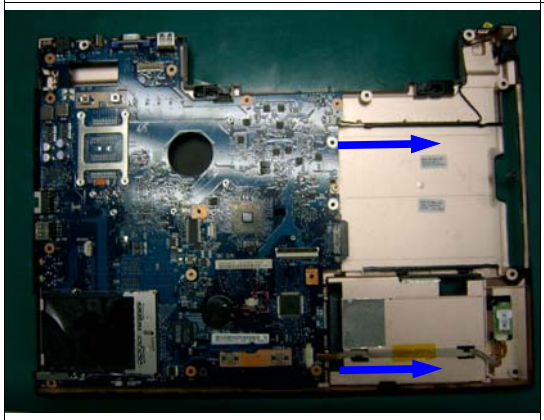
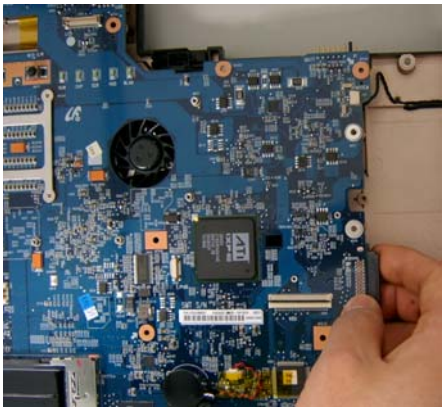
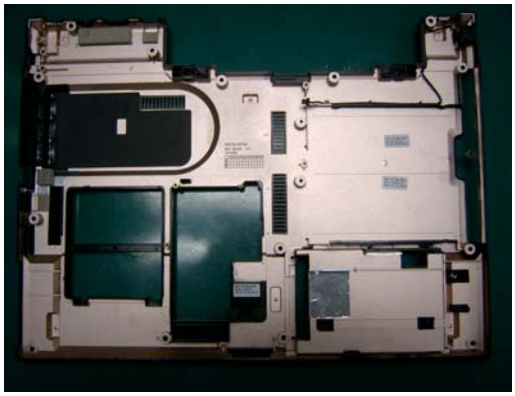
4. Assembly and Disassembly

Item	Picture	Description
Main System		17. Disassemble Speaker Cable by pulling out the connector like a picture.
		18. Disassemble LCD cable tapping by lifting up transparent handle. *Caution If lift up Top without disconnection of LCD Cable, that may cause LCD connector crash.
		19. Pull out the Wireless LAN Antenna from bottom side carefully.
		20. Pull out the Wireless LAN Antenna like a picture carefully.

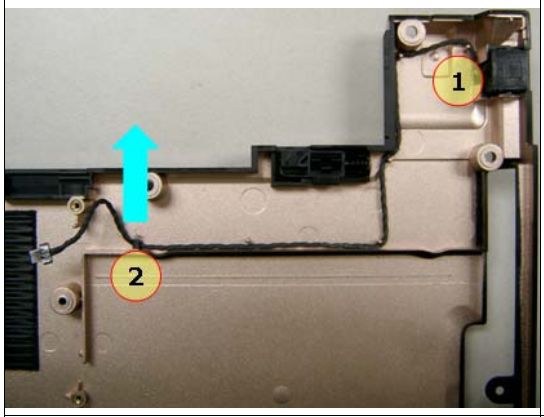
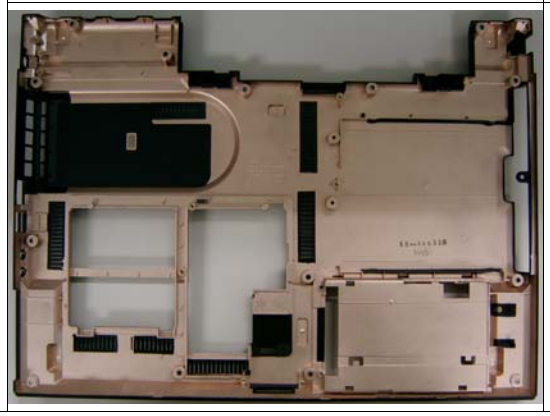
4. Assembly and Disassembly

Item	Picture	Description
Main System		21. Disassembly LCD Ass'y from System after remove 2 screws. - M2 L6 : 2pcs
		22. After disassembly LCD Ass'y.
		23. Turn upside down the System and pull out the ODD like a picture.
		24. Remove 1 screw after pulling out the ODD for disassemble Top. - M2 L3 : 1pcs

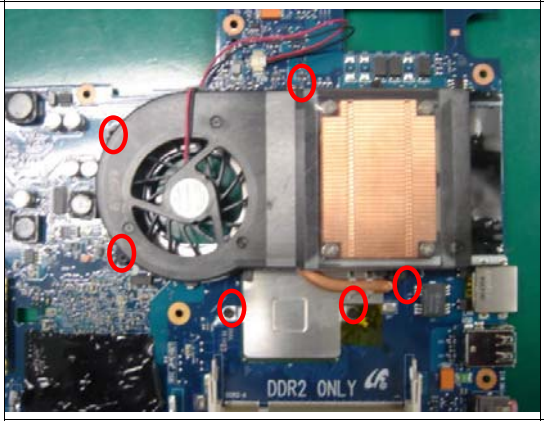
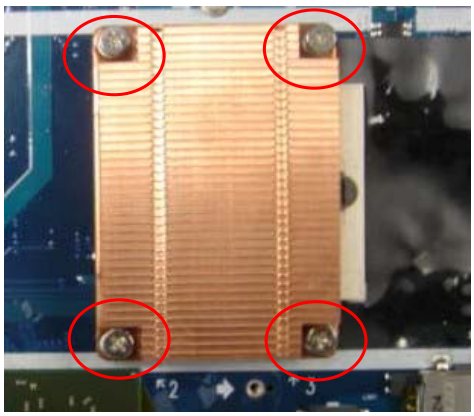
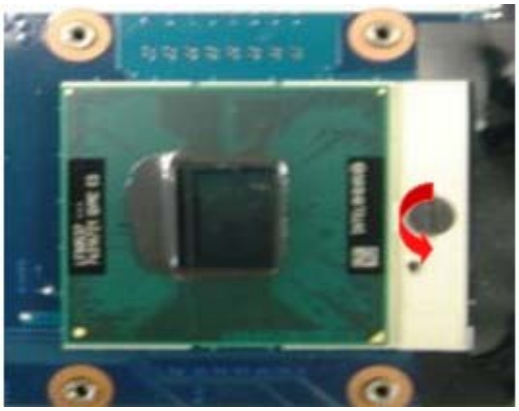
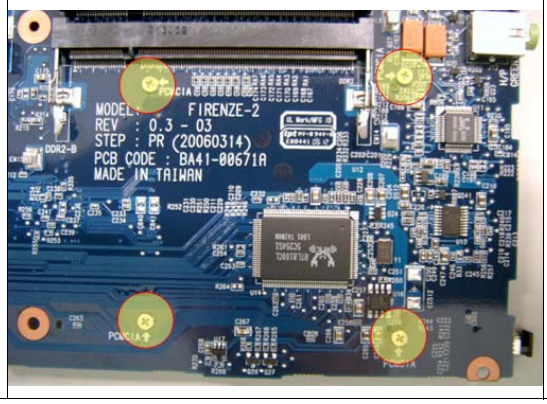
4. Assembly and Disassembly

Item	Picture	Description
Main System		25. Lift up Top from right side.
		26. Remove 2 screws to disassemble Main Board from Bottom. Disconnect RJ11 Cable and Bluetooth Cable. - M2 L4 : 2pcs
		27. Lift up the Main board from right side. *Caution If lift up from left side, that may cause crash of some ports.
		28. Bottom after removing the Main Board.

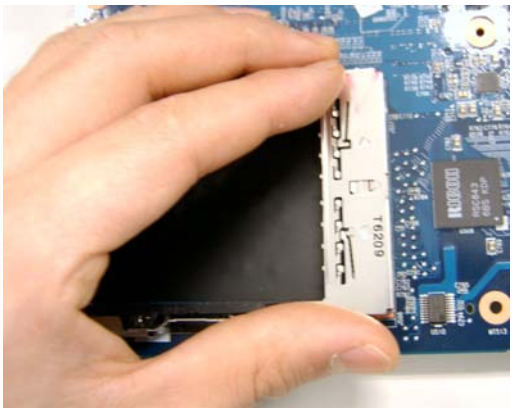
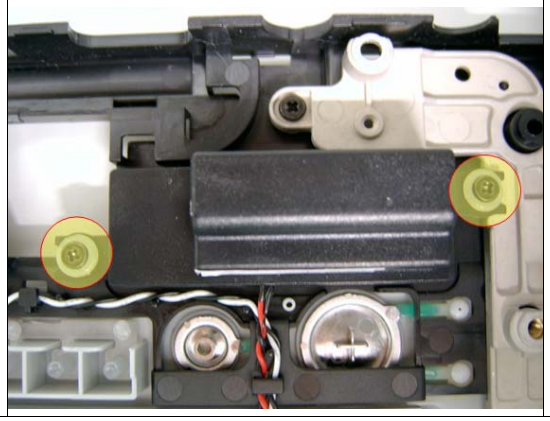
4. Assembly and Disassembly

Item	Picture	Description
Main System		29. Disassemble Bluetooth with Cable after removing 1 screw. - M2 L4 : 1pcs *Caution Be careful not to crash the Bluetooth Module, when disassemble from hook.
		30. Lift up RJ11 Connector like a Point 1 and pull out the Cable like a Point 2.
		31. Bottom after removing Main Board, Bluetooth, RJ11 Cable.

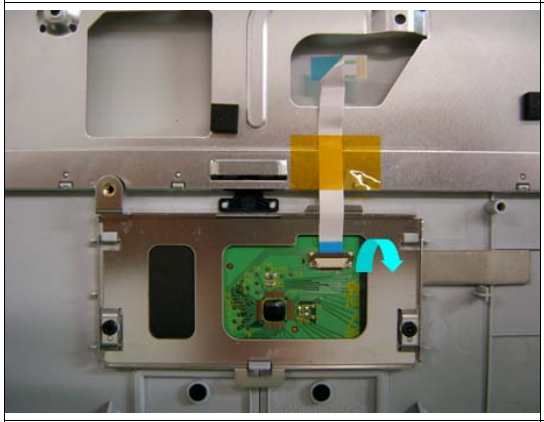
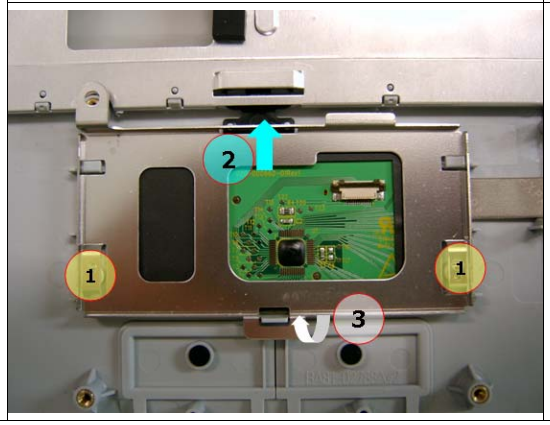
4. Assembly and Disassembly

Item	Picture	Description
Main System		32. Remove 6 screws and pull out the FAN Cable to the arrow mark side. Lift up the Thermal Duct. - M2 L4 : 6pcs *Caution Be care of not to crash some other part on Main Board when lift up the Thermal Duct.
		33. Remove Heatsink after loosing 4 Screws. *Caution - Screws can not be seperated from Heatsink. - Be care of not to distort Main Board when loose 4 screws.
		34. Turn screw like a picture and lift up the CPU. *Caution Be care of not to bend CPU Pin.
		35. Remove 4 screws to disassemble PCMCIA Frame after detaching the insulator. - M2 L6 : 4pcs

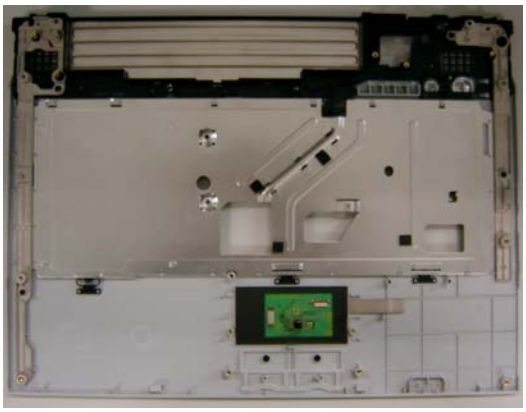
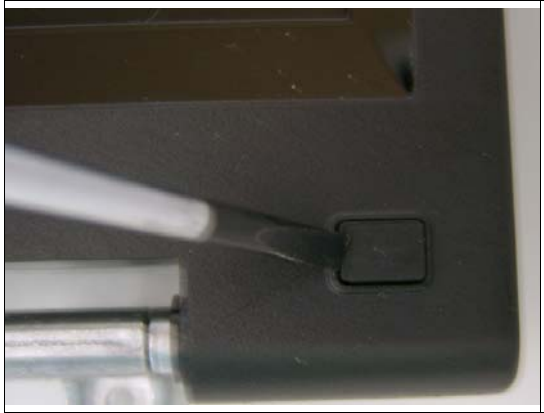
4. Assembly and Disassembly

Item	Picture	Description
Main System		36. Lift up the PCMCIA Frame like a picture. *Caution Be care of not to bend PCMCIA Pin.
		37. Disconnect the MDC with Cable like a picture after removing 2 screws. - M2 L4 : 2pcs
		38. The Main Board after removing the Thermal Duct, Heatsink, CPU, PCMCIA Frame, and MDC.
Top Ass'y		1. Remove 2 screws to disassemble Speaker. - M2 L4 : 2pcs

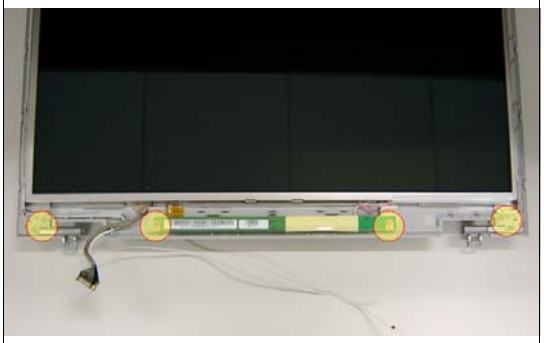
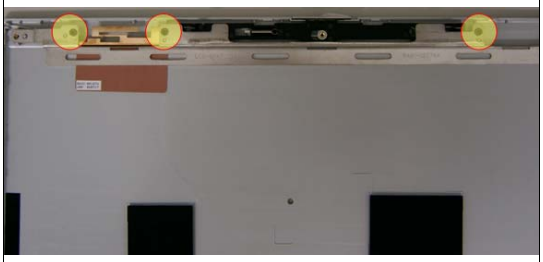
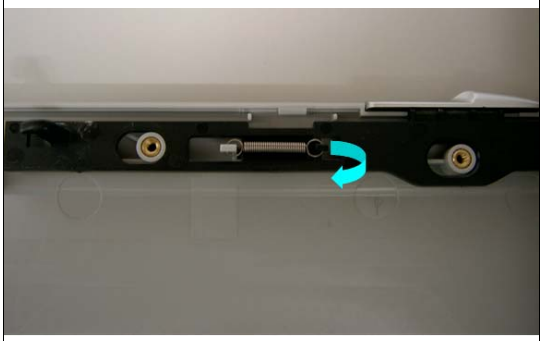
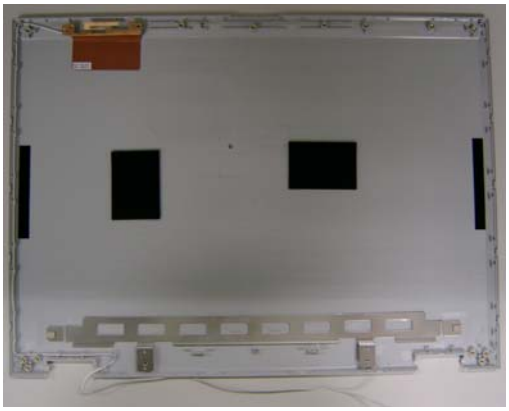
4. Assembly and Disassembly

Item	Picture	Description
Top Ass'y		2. Remove 2 screws to disassemble Speaker. - M2 L4 : 2pcs
		3. Remove Speaker after detach 2 adhesives. *Caution - Be care of not to crash Speaker Cable. - Be care of not to damage Speaker diaphragm.
		4. Remove Touchpad FFC after detaching 2 adhesives and lifting up the FFC Connector cover.
		5. 1) Remove 2 screws. 2) Push the Touchpad Bracket like a Point 2. 3) Lift up the Touchpad Bracket like a Point 3. - M2 L3 : 2pcs *Caution Lift up the Bracket carefully to protect from damage of Touchpad Module.

4. Assembly and Disassembly

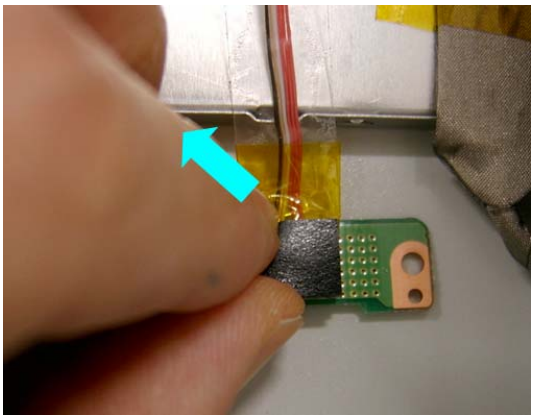
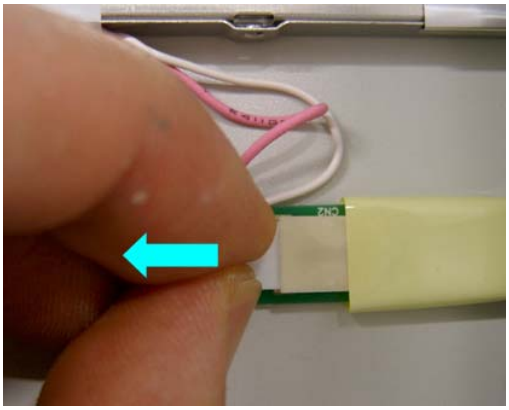
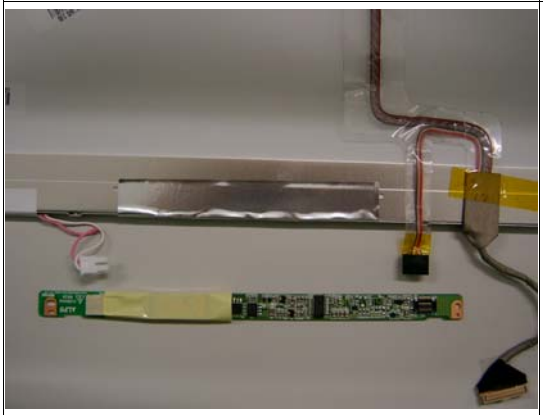
Item	Picture	Description
TOP Ass'y		6. Top Ass'y after removing Speaker and Touchpad Bracket *Caution Do not detach Touchpad Module, because that is attached with Top by double adhesive.
LCD Ass'y		1. Remove 5 screws after detaching the 5 Rubber. - M2 L6 : 5pcs
		2. Use tweezers, wooden cutter or '-' driver when remove rubbers. *Caution Be careful of injury and scratch of LCD Front surface when use instruments.
		3. Disassemble the LCD Front like a picture. *Caution Be care of not distort the LCD Front.

4. Assembly and Disassembly

Item	Picture	Description
LCD Ass'y		4. Disassemble the LCD Module and Inverter from LCD Back after removing 6 screws. - M2 L6 6pcs
		5. Disassemble the Bracket Upper after removing 3 screws. - M2 L4 : 3pcs *Caution Do not detach the Wireless LAN Antenna because that is attached with LCD Back by double adhesive.
		6. Lift up the Knob latch after removing the Spring like a picture.
		7. LCD Back after removing the LCD Module, Bracket Upper and Knob Latch.

4. Assembly and Disassembly

4-2. P50 의 Assembly and Disassembly

Item	Picture	Description
LCD Ass'y		8. Disconnect the LCD Cable from Inverter like a picture.
		9. Disconnect the LCD Module from Inverter like a picture.
		10. The picture after detaching inverter from LCD Module.
		11. Disconnect the LCD Cable from LCD Module like a picture after detaching the silver adhesive. *Caution Do not lift up the LCD Cable because LCD panel board is very fragile.

4. Assembly and Disassembly

Item	Picture	Description
LCD Ass'y		**12. Disassemble the LCD L, R Bracket after removing 8 screws.** **- M2 L3 : 8pcs** ***Caution** **Be care of not scratch the LCD surface when remove screws.**
		13. LCD Module after removing LCD Cable, L, R Bracket and Inverter

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5. Troubleshooting

1) General

(1) Tools used for repairing the product

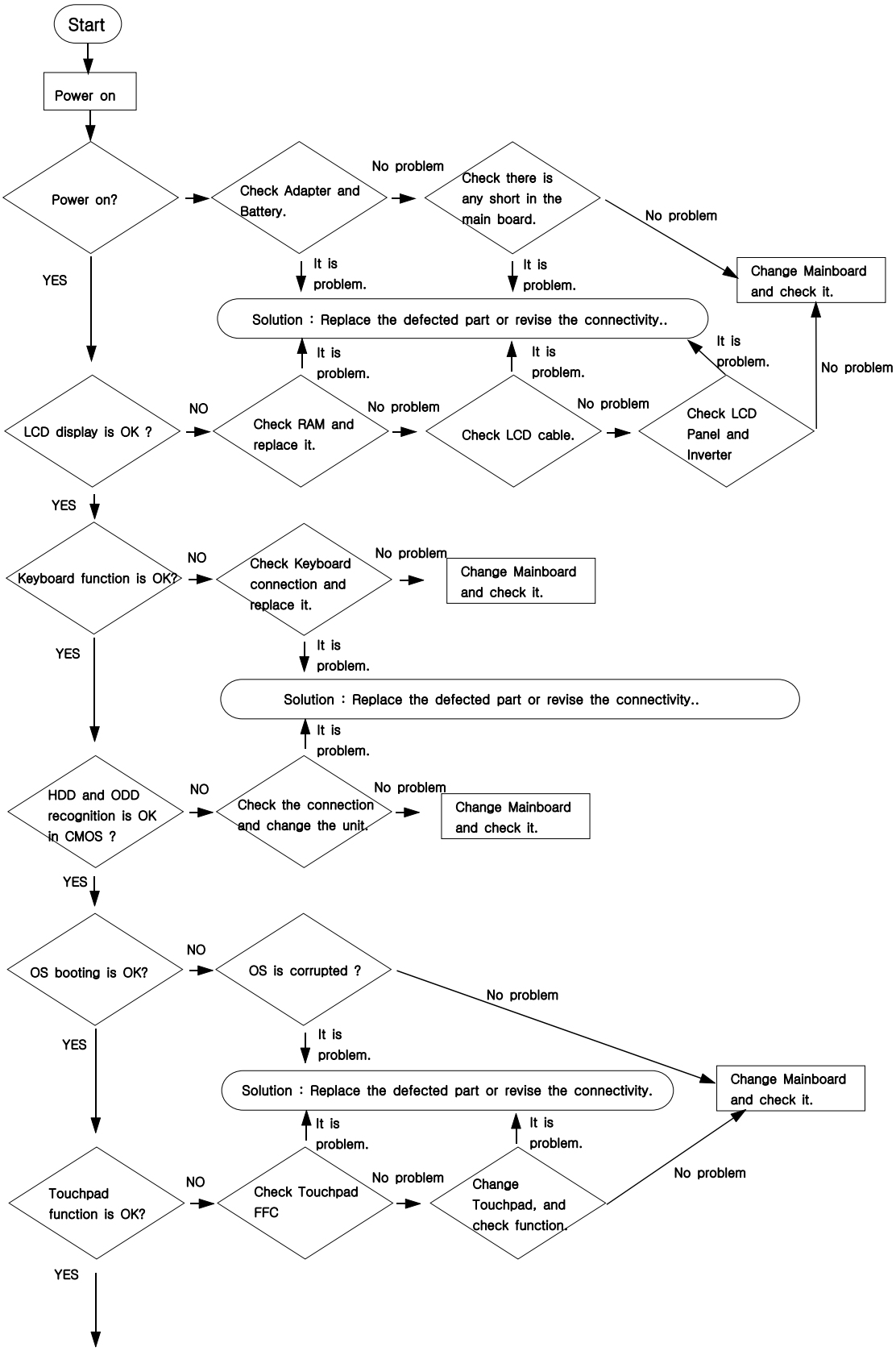
System Diagnostics Disk
MS-DOS Booting Disk
System Diagnostics Card
Screwdrivers (+,—)
Tweezers
Multi-meter
Oscilloscope
Logic Analyzer

(2) Replaceable Units (FRU: Field Replaceable Unit)

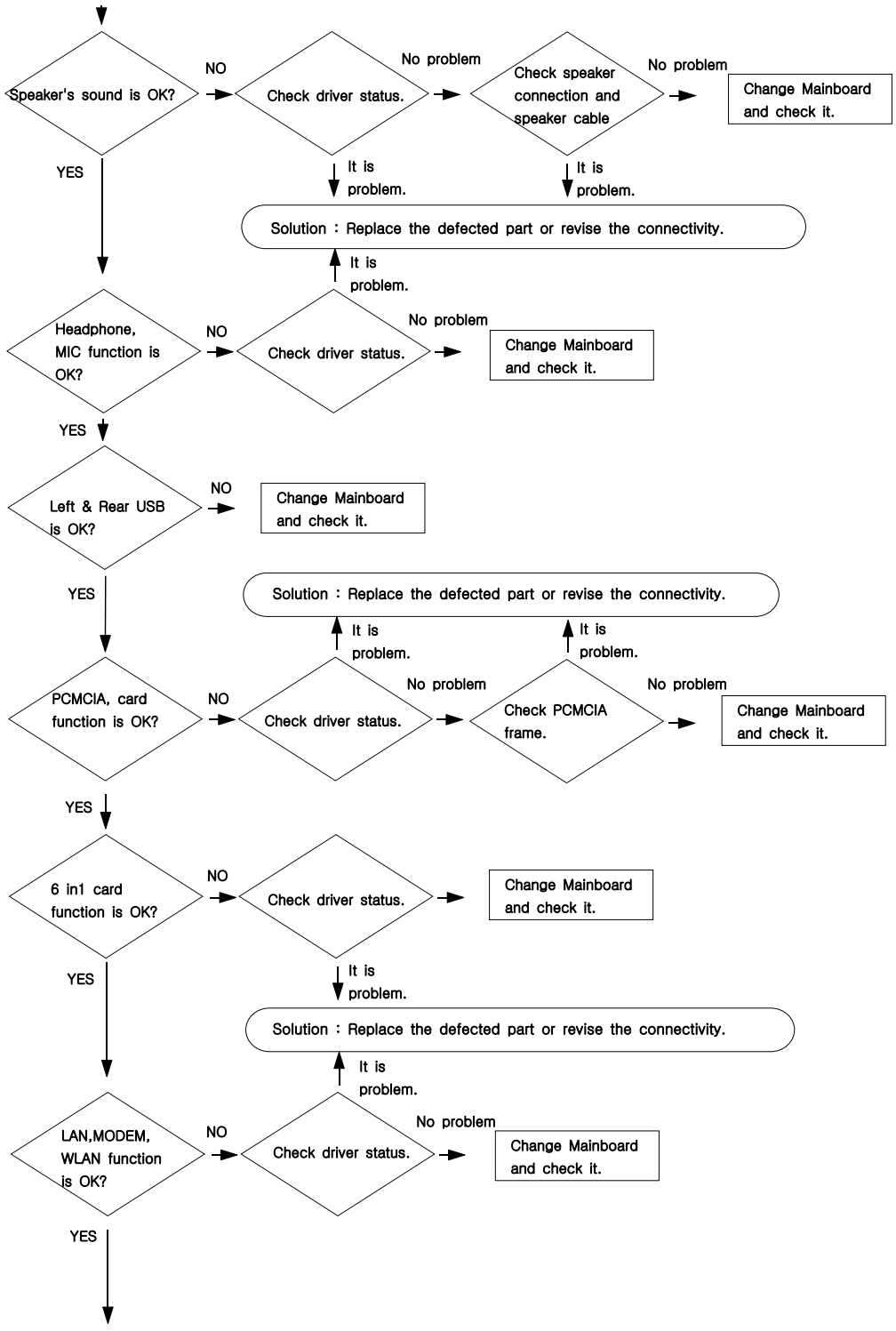
DDR2 RAM Module
2.5” SATA HDD
ODD – Super multi Dual layer drive or DVD Combo Drive or Etc.
Wireless LAN Module
Bluetooth Module
MDC Module
Keyboard
System Fan
Touch Pad
LCD Panel
LCD Inverter
Main Board
PCMCIA Frame
Harness Cable – MDC Cable, Bluetooth Cable, LCD Cable,
Wireless LAN Antenna
FFC - Touch Pad FFC

5. Troubleshooting

2) Debugging Flow Chart



5. Troubleshooting



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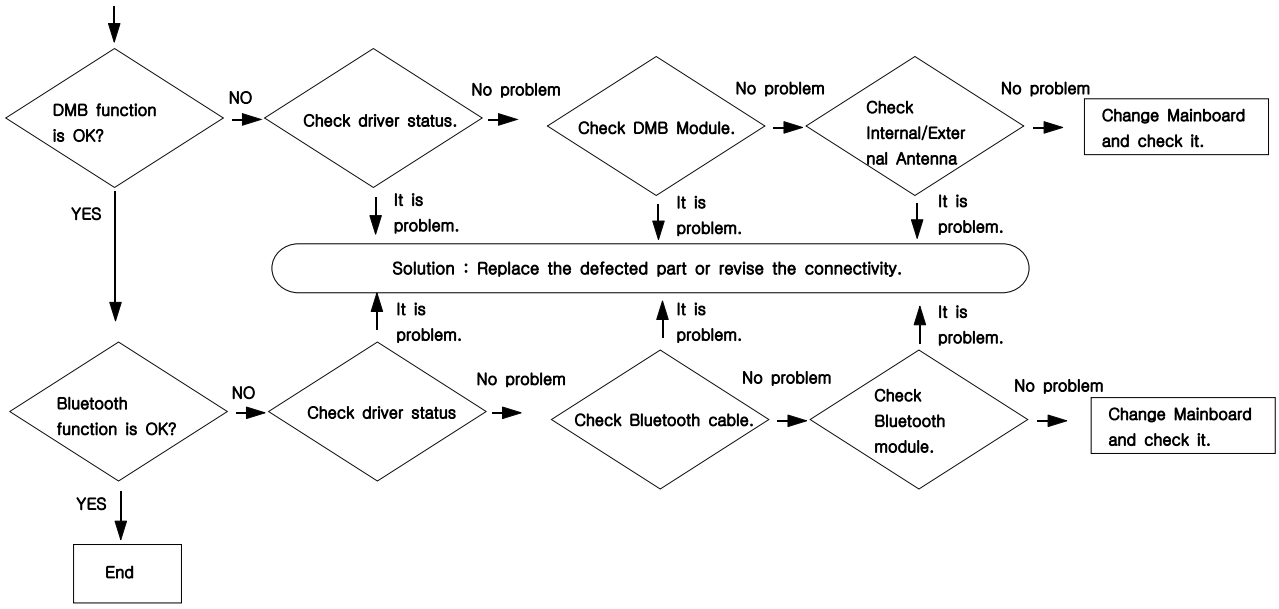
5. Troubleshooting



5. Troubleshooting

3) System Diagnosis

(1) System Diagnosis Card

The working status of the system is displayed by hexadecimal codes on the seven segment during the post. If the system is working improperly, it is used to test the system is working in the proper way after replacing the FRU caused system down or diagnosing the causes of the improper working without taking apart the system.

(2) Debugging Code

If there is something wrong with the system, which can be circuit or parts, the systems working at a specific code, The following is the debugging code list about the error of the system board.

Code	Beeps	POST Routine Description
02h		Verify Real Mode
03h		Disable Non-Maskable Interrupt
04h		Get CPU type
06h		Initialize system hardware
08h		Initialize chipset with initial POST values
09h		Set IN POST flag
0Ah		Initialize CPU registers
0Bh		Enable CPU cache
0Ch		Initialize caches to initial POST values
0Eh		Initialize I/O component
0Fh		Initialize the local bus IDE
10h		Initialize Power Management
11h		Load alternate registers with initial POST values
12h		Restore CPU control word during warm boot
13h		Initialize PCI Bus Mastering devices
14h		Initialize keyboard controller
16h	1-2-2-3	BIOS ROM checksum
17h		Initialize cache before memory auto size
18h		8254 timer initialization
1Ah		8237 DMA controller initialization
1Ch		Reset Programmable Interrupt Controller
20h	1-3-1-1	Test DRAM refresh
22h	1-3-1-3	Test 8742 Keyboard Controlle
24h		Set ES segment register to 4 GB
26h		Enable A20 line
28h		Auto size DRAM
29h		Initialize POST Memory Manager
2Ah		Clear 512 KB base RAM
2Ch	1-3-4-1	RAM failure on address line xxxx*
2Eh	1-3-4-3	RAM failure on data bits xxxx* of low byte of memory bus
2Fh		Enable cache before system BIOS shadow
30h	1-4-1-1	RAM failure on data bits xxxx* of high byte of memory bus

5. Troubleshooting

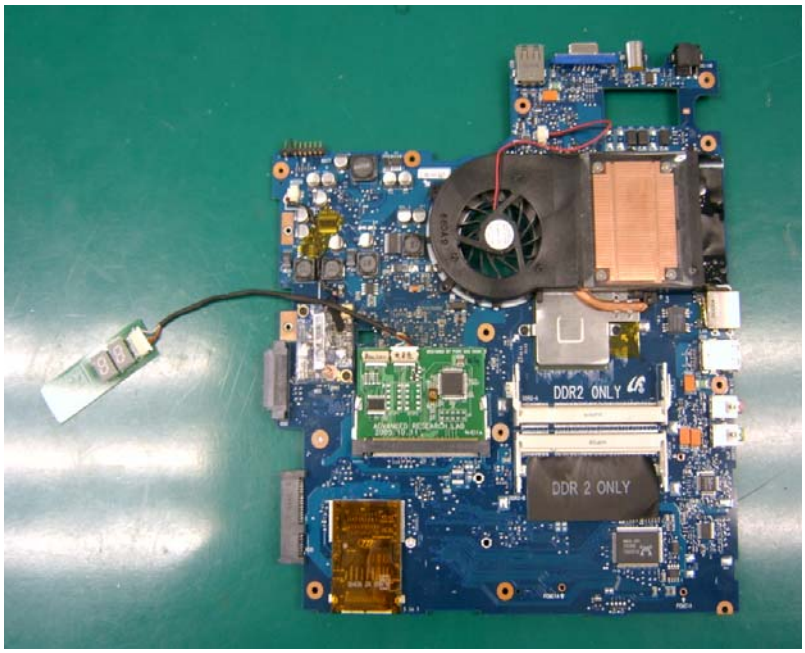
32h		Test the CPU bus-clock frequency
33h		Initialize Phoenix Dispatch Manager
36h		Warm start shutdown
38h		Shadow system BIOS ROM
3Ah		Auto size cache
3Ch		Advanced configuration of chipset registers
3Dh		Load alternate registers with CMOS values
42h		Initialize interrupt vectors
45h		POST device initialization
46h	2-1-2-3	Check the ROM copyright notice
48h		Check the video configuration against CMOS
49h		Initialize PCI bus and devices
4Ah		Initialize all video adapters on the system
4Bh		Quiet Boot start (optional)
4Ch		Shadow video BIOS ROM
4Eh		Display the BIOS copyright notice
50h		Display the CPU type and speed
51h		Initialize EISA board
52h		Test the keyboard
54h		Set key click if enabled
58h	2-2-3-1	Test for unexpected interrupts
59h		Initialize POST display service
5Ah		Display the prompt "Press F2 to enter SETUP"
5Bh		Disable CPU cache
5Ch		Test RAM between 512 and 640 KB
60h		Test extended memory
62h		Test extended memory address lines
64h		Jump to UserPatch1
66h		Configure advanced cache registers
67h		Initialize Multi Processor APIC
68h		Enable external and CPU caches
69h		Setup System Management Mode (SMM) area
6Ah		Display external L2 cache size
6Bh		Load custom defaults (optional)
6Ch		Display shadow-area message
6Eh		Display possible high address for UMB recovery
70h		Display error messages
72h		Check for configuration errors
76h		Check for keyboard errors
7Ch		Set up hardware interrupt vectors
7Eh		Initialize coprocessor if present
80h		Disable onboard Super I/O ports and IRQs
81h		Late POST device initialization
82h		Detect and install external RS232 ports
83h		Configure non-MCD IDE controllers
84h		Detect and install external parallel ports
85h		Initialize PC-compatible PnP ISA devices

5. Troubleshooting

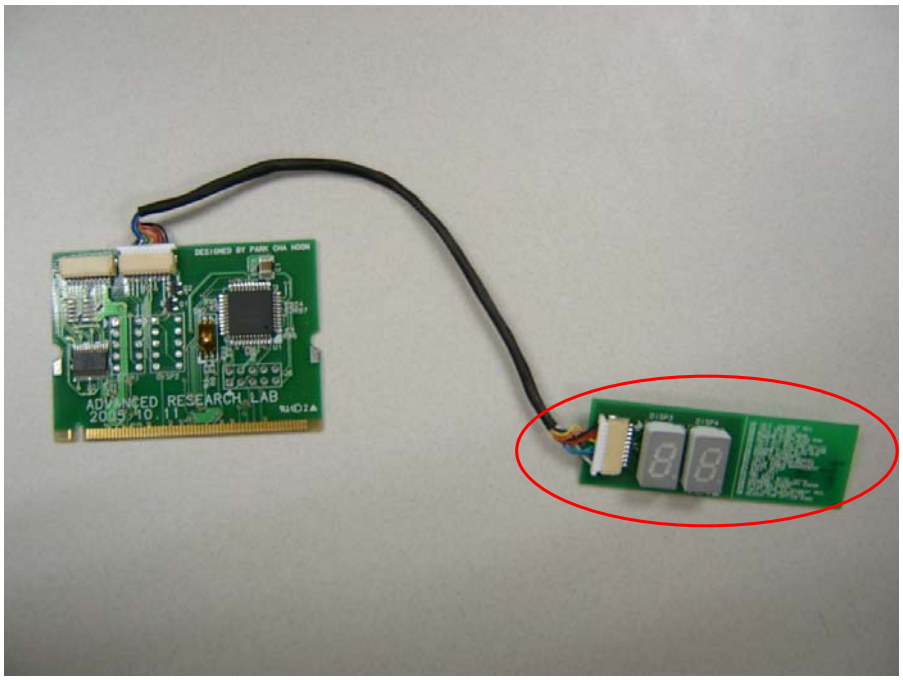
86h		Re-initialize onboard I/O ports.
87h		Configure Mothe board Configurable Devices
88h		Initialize BIOS Data Area
89h		Enable Non-Maskable Interrupts (NMIs)
8Ah		Initialize Extended BIOS Data Area
8Bh		Test and initialize PS/2 mouse
8Ch		Initialize floppy controller
8Fh		Determine number of ATA drives (optional)
90h		Initialize hard-disk controllers
91h		Initialize local-bus hard-disk controllers
92h		Jump to UserPatch2
93h		Build MPTABLE for multi-processor boards
95h		Install CD ROM for boot
96h		Clear huge ES segment register
97h		Fixup Multi Processor table
98h	1-2	Search for option ROMs. One long, two short beeps on
che		checksum failure
99h		Check for SMART Drive (optional)
9Ah		Shadow option ROMs
9Ch		Set up Power Management
9Dh		Initialize security engine (optional)
9Eh		Enable hardware interrupts
9Fh		Determine number of ATA and SCSI drives
A0h		Set time of day
A2h		Check key lock
A4h		Initialize Typematic rate
A8h		Erase F2 prompt
AAh		Scan for F2 key stroke
ACh		Enter SETUP
AEh		Clear Boot flag
B0h		Check for errors
B2h		POST done - prepare to boot operating system
B4h	1	One short beep before boot
B5h		Terminate QuietBoot (optional)
B6h		Check password (optional)
B9h		Prepare Boot
BAh		Initialize DMI parameters
BBh		Initialize PnP Option ROMs
BCh		Clear parity checkers
BDh		Display Multi Boot menu
BEh		Clear screen (optional)
BFh		Check virus and backup reminders
C0h		Try to boot with INT 19
C1h		Initialize POST Error Manager (PEM)
C2h		Initialize error logging
C3h		Initialize error display function
C4h		Initialize system error handler
C5h		PnPnd dual CMOS (optional)

5. Troubleshooting

(3) Use of Debug card



-. Like upper picture, debug card is connected to MiniPCI Socket on Main board.



-. Debug code is shown at the viewer in red line.

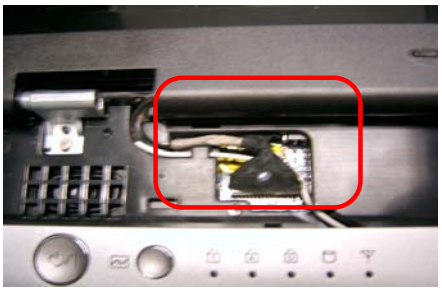
5. Troubleshooting

4) Hardware Troubleshooting

For the procedures to disassemble each part, refer to the descriptions of Chapter 4, “Disassembly and Reassembly”.

◆ **LCD Related Troubles**

1. The screen is dark or the colors of the screen are distorted.
   → Check the connection status between the LCD module and the LCD cable, between the LCD cable and the main board LCD connector and between the LCD cable and the LCD inverter.
   → Replace the LCD cable or LCD inverter.
   → Check if there is a part of the LCD that is bent or broken due to impact.



2. No picture appears on the screen.
   → Check the connection status between the LCD module and the LCD cable, between the LCD cable and the main board LCD connector and between the LCD cable and the LCD inverter.
   → Replace the LCD cable or LCD inverter.
   → Check if the System LED of the main board is blinking. (Check if it is operating or not)
   → Check if the memory module is out of order.
   → Check if the Power button can be normally pressed.

3. The LCD brightness is not adjusted.
   → Check if the LCD inverter is out of order.
   → Check the BIOS version and check if the standard adapter is used.
   → Replace the LCD cable or LCD inverter and check if it is out of order.

4. The LCD blinks while the system is in operation.
   → Check if there is a magnetic body near the touch pad button or the system or check if there is an cosmetic defection to the LCD or system.
   → Replace the LCD cable or LCD inverter and check if it is out of order.
   → Check if a standard adapter is being used (R40:19V/3.16A/60W).

5. Troubleshooting

◆ **Main System Troubles**

5. The system is not turned off.
   → Check if the AC adapter LED is lit and if the adapter is properly connected to the system. (Check the adapter LED)
   → If the AC adapter is not connected, check the charge status of the battery. Even if the battery is charged, if the remaining battery charge is too low, the system may not be turned on.
   (As the following figure shows, press the PUSH button on the battery and check the remaining battery charge via the LEDs)

   → Check if there are any alien substances in the Power switch.
   → Replace the main board.

6. Although system power is supplied, the system does not boot or immediately turns off after being turned on.
   → Since this may be a short circuit in the system, disconnect the power immediately, disassemble the system and check if there are any conducting alien objects such as a screw inside.
   → Check the connection status between the CPU and the Heatsink.
   → Replace the memory module and check if it is out of order.
   → Reset the RTC Reset terminal next to the memory socket.
   → Replace the main board.

7. The PCMCIA card is not inserted or the Eject button does not work.
   → This may occur when the insulator within the PCMCIA slot is enwrapped.
   → Replace the PCMCIA slot frame and check if it is out of order.

8. There is no sound from the speaker.
   → Check if the earphones or headphones are connected to the MIC jack of if there are any alien substances in the jack.

   → Check if the sound is muted after booting up Windows.

5. Troubleshooting

→ Check the connection status of the speaker cable and check if the speaker is out of order.

→ Check if there is a magnetic object near the speaker.

→ Replace the main board.

9. I cannot hear sound through the headphones.

→ Check if the sound is muted in Windows.

→ Turn the volume up.

→ Replace the main board

10. The HDD is not recognized.

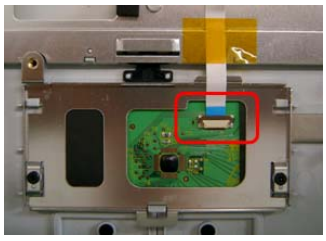
→ Check the connection between HDD and Main Board, re-assemble them.

→ If the 'Operating system not found' message appears during the booting process even though the HDD is recognized by CMOS, the operating system of the HDD may be corrupted or the HDD is out of order. In this case, format the HDD and reinstall the operating system or replace the HDD with a new one.

11. The Touch Pad does not work or is malfunctioning.

→ Check the connection status of the Touch Pad FFC.

→ Check the connection status of the Touch Pad module.



→ If there is no problem with the connections, replace any suspicious parts and check if they are out of order.

5. Troubleshooting

12. The battery is not charged or the battery charge LED malfunctions.

→ Check the standard voltage of the adapter.

→ Check if the battery is defective.

→ Replace the main board.

13. The LAN function does not work.

→ Check if the LAN cable is properly connected.

→ Check if the LAN driver is properly installed.

→ If the driver is properly installed, check if the LAN cable jack is out of order.

→ Replace the main board

14. The wireless LAN does not work normally.

→ Check if the WLAN driver is properly installed.

→ Check if the wireless LAN antenna cable is properly connected.

→ Replace the main board

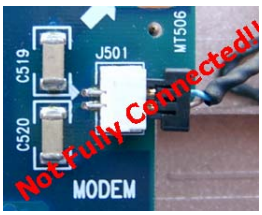
5. Troubleshooting

17. Modem does not work normally.

→ Check if the Modem driver is properly installed.

→ Check if the MDC is connected to Main board properly.

→ Check if the RJ11 Cable is connected to Main board properly.

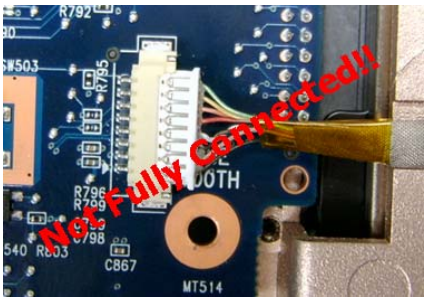


→ Replace the Main board.

18. Bluetooth does not work normally.

→ Check if the Bluetooth driver and application are properly installed.

→ Check the Bluetooth cable is connected to Main board properly.



→ Replace the Main board

5. Troubleshooting

◆ **When booting up the computer**

19. The "Invalid System Disk. Replace the Disk and then press any key" message appears.
   → This message may appear when the connected USB memory or CD media does not include bootable data.
   → The "Reboot and Select the proper Boot device or Insert a bootable media in the selected Boot device and press a key" message appears.
   → Check if the signal and power cables are properly connected to the hard disk drive.
   → Check if the hard disk drive is recognized in the BIOS SETUP.
   → The operating system on the hard disk drive is corrupted. Reinstall Windows.

20. The "To enter BIOS SETUP, press <F2>. To continue, press <F1>." message appears.
   → This may happen when the BIOS settings are different from the system environment. In this case, setup the BIOS according to your system environment.
   → Press <F2> to enter the BIOS SETUP.
   → Check if the date and time are correct in the BIOS SETUP.
   → Save the settings and restart the system.

21. The 'CMOS Checksum error' message appears.
   → This message may appear when the CMOS battery of the main board is completely discharged. In this case, replace the battery with a new one of the same type and set up the BIOS SETUP according to your system environment.

22. Windows boots up in safe mode.
   → This may happen when Windows was not shut down normally. Therefore, shut down the system by selecting Start > Turn Off Computer.
   → This may happen when the system settings have been incompletely recognized.
   → Run Check Disk.

23. I cannot boot up the computer with a USB floppy drive or from USB memory.
   → Check if the diskette is bootable.
   → This may happen when the booting priority of the device is low. In this case, change the booting priority in the BIOS SETUP.

◆ **When shutting down the computer**

24. The computer is not shut down
   → If Windows does not end normally, you can forcibly shut down the system by pressing the Power button. If the power-saving feature is activated on the Power button, press the Power button for more than 4 seconds to turn the computer off. If the computer is then turned on again, Check Disk is automatically run.

5. Troubleshooting

◆ **Windows / Screen Related Problems**

25. The computer hangs while running a program.

→ If the running program causes an error:

In Windows XP, press the <Ctrl>, <Alt> and <Del> key combination, select the application program and click on End Task in the Applications tab of the [Windows Task Manager] window.

In Windows 2000, press the <Ctrl>, <Alt> and <Del> key combination, select the application program or an application that does not respond and click on End Task in the [End Program] window.

→ If Windows does not respond, restart the computer. Restart the computer by pressing the Power button.

* No picture is displayed on the external monitor.

→ Press the Switch LCD/CRT Monitor function key and check if the screen output is output to another display device.

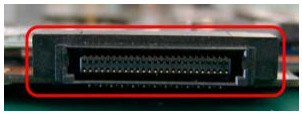
→ Check if the hardware is out of order referring to the descriptions in the LCD related section of the Hardware Troubleshooting.

◆ **CD/DVD-ROM Related Troubles**

26. A disc is not recognized or read.

→ Check if the ODD module and the main board are properly connected with the 50 pin connector.

→ Replace the ODD or Main board, if they have some defection.



◆ **Power-Saving Mode Related Troubles**

27. Connecting a USB device to the computer in standby mode.

→ If a USB device is connected to the computer in standby mode, the screen may be abnormally displayed.

You have to connect a USB device when the computer is operating normally.

28. A USB device is not working normally when the computer returns from standby mode.

→ In this case, separate and reconnect the USB device.

29. The picture is displayed abnormally when the computer running the Command Prompt (MS-DOS) enters standby mode and then returns from standby mode.

→ Press the <Alt> and <Tab> key combination to display the picture on the screen.

5. Troubleshooting

(1) HDD and ODD Related Problems

For an HDD, check if the HDD operates in Ultra DMA Mode 5 by selecting the Primary IDE Channel in the Control Panel as follows. If it does not, check the BIOS SETUP, reinstall the operating system or replace the HDD, if necessary.

For an ODD, check if it operates in Ultra DMA Mode 2. If it does not, check if the disc inserted into the ODD is clean. If the disc is contaminated, the access speed may slows down. If the disc is clean, check the BIOS SETUP, reinstall the operating system or replace the ODD, if necessary.

Check if the HDD and ODD models are properly displayed. If not, check the BIOS SETUP or replace the Drive, if necessary.

(2) Other Problems

Press each corresponding button and check its operation.

The following figure illustrates the operation of the volume control button.

5. Troubleshooting

The drivers and application software are listed in the following table.

DRIVER

ITEM/Revision	ROLS
Cyberlink DVD Solution(33 - Vista)	DNC;V32PR/V32HB/V32BZ/V32UL;DNC;ALL
Display Manager 2.0(for VISTA)(2.1.0.7)	DNC;XPHOM/XPPRO/XPMCE/XPTBL/V32PR/V32HB/V32BZ/V32UL;DNC;ALL
Easy Network Manager(3.0.1.6)	DNC;XPHOM/XPPRO/XPH64/XPP64/XPMCE/XPTBL/WIN2K/V32PR/V32HB/V32BZ/V32UL;DNC;ALL
McAfee VirusScan (CHS)(13.3.0.132)	DNC;XPHOM/XPPRO/XPMCE/XPTBL/V32PR/V32HB/V32BZ/V32UL;CHS;ALL
McAfee VirusScan (ENG)(13.3.0.132)	DNC;XPHOM/XPPRO/XPMCE/XPTBL/V32PR/V32HB/V32BZ/V32UL;ENG/RUS;ALL
McAfee VirusScan (FRN)()	DNC;XPHOM/XPPRO/XPMCE/XPTBL/V32PR /V32HB/V32BZ/V32UL;FRN;ALL
McAfee VirusScan (GER)(13.3.0.132)	DNC;XPHOM/XPPRO/XPMCE/XPTBL/V32PR/V32HB/V32BZ/V32UL;GER;ALL
McAfee VirusScan (KOR)(13.3.0.132)	DNC;XPHOM/XPPRO/XPMCE/XPTBL/V32PR/V32HB/V32BZ/V32UL;KOR;ALL
McAfee VirusScan (SPN)(13.3.0.132)	DNC;XPHOM/XPPRO/XPMCE/XPTBL/V32PR/V32HB/V32BZ/V32UL;SPN;ALL
MS Office 2007 ready (ENG)(1.0)	DNC;XPHOM/XPPRO/XPH64/XPP64/XPMCE/XPTBL/V32PR/V32HB/V32BZ/V32UL/V64PR/V64HB/V64BZ/V64UL;ENG;ALL
MS Office 2007 Ready (KOR)(1.0)	DNC;XPHOM/XPPRO/XPTBL/V32PR/V32HB/V32BZ/V32UL/V64PR/V64HB/V64BZ/V64UL;KOR;ALL
Adobe Reader (CHS)(7.0.8.218)	DNC;XPHOM/XPPRO/XPH64/XPP64/XPMCE/XPTBL/WIN2K/V32PR/V32HB/V32BZ/V32UL;CHS;ALL
Adobe Reader (CHT)(7.0.8.218)	DNC;XPHOM/XPPRO/XPH64/XPP64/XPMCE/XPTBL/WIN2K/V32PR/V32HB/V32BZ/V32UL;CHT;ALL
Adobe Reader (ENG)(7.0.8.218)	DNC;XPHOM/XPPRO/XPH64/XPP64/XPMCE/XPTBL/WIN2K/V32PR/V32HB/V32BZ/V32UL/V64PR/V64HB/V64BZ/V64UL;ENG/THA;ALL
Adobe Reader (FRN)(7.0.8.218)	FRA;XPHOM/XPPRO/XPH64/XPP64/XPMCE/XPTBL/WIN2K/V32PR/V32HB/V32BZ/V32UL;FRN;ALL
Adobe Reader (GER)(7.0.8.218)	DEU;XPHOM/XPPRO/XPH64/XPP64/XPMCE/XPTBL/WIN2K/V32PR/V32HB/V32BZ/V32UL;GER;ALL
Adobe Reader (KOR)(7.0.8.218)	KOR;XPHOM/XPPRO/XPH64/XPP64/XPMCE/XPTBL/WIN2K/V32PR/V32HB/V32BZ/V32UL/V64PR/V64HB/V64BZ/V64UL;KOR;ALL
Adobe Reader (POR)(7.0.8.218)	PRT;XPHOM/XPPRO/XPH64/XPP64/XPMCE/XPTBL/WIN2K/V32PR/V32HB/V32BZ/V32UL;POR;ALL
Adobe Reader (RUS)(7.0.5.172)	RUS;XPHOM/XPPRO/XPH64/XPP64/XPMCE/XPTBL/WIN2K/V32PR/V32HB/V32BZ/V32UL;RUS;ALL
Adobe Reader (SPN)(7.0.8.218)	ESP;XPHOM/XPPRO/XPH64/XPP64/XPMCE/XPTBL/WIN2K/V32PR/V32HB/V32BZ/V32UL;SPN;ALL
Atheros WLAN Driver (Vista)(7.1.0.90 (Fixed Setup))	DNC;V32PR/V32HB/V32BZ/V32UL/V64PR/V64HB/V64BZ/V64UL;DNC;ALL
Media Center KOR IME(3.1.5)	KOR;XPMCE/V32PR/V32UL;KOR;ALL
Recovery EmptyWim(1.0.0.0)	DNC;XPHOM/XPPRO/XPMCE/XPTBL/V32PR/V32HB/V32BZ/V32UL;DNC;ALL
Recovery Environment(1.0.0.8)	DNC;XPHOM/XPPRO/XPMCE/XPTBL/V32PR/V32HB/V32BZ/V32UL;DNC;ALL
Recovery Settings(1.0.0.0)	DNC;XPHOM/XPPRO/XPMCE/XPTBL/V32PR/V32HB/V32BZ/V32UL;DNC;ALL
Recovery Solution II(1.0.0.8)	DNC;XPHOM/XPPRO/XPMCE/XPTBL/V32PR/V32HB/V32BZ/V32UL;DNC;ALL
Samsung Magic Doctor 5(kstartmem1.004)(5.005)	DNC;V32PR/V32HB/V32BZ/V32UL;DNC;ALL

5. Troubleshooting

Touchpad Driver(WHQL)(9.1.7.0(VistaWHQL))	DNC;V32PR/V32HB/V32BZ/V32UL;DNC;ALL
Vista manual_Firenze2-R (R40Plus)(1.0)	DNC;V32PR/V32HB/V32BZ/V32UL/V64PR/V64HB/V64BZ/V64UL;KOR/ENG/FRN/GER/SPN/RUS/CHS/CHT/UKR;ALL
Agere Delphi Modem Driver(2.1.75_Vista_LogoedR)	DNC;V32PR/V32HB/V32BZ/V32UL;DNC;ALL
ALC26X Sound Driver(6.0.1.5322logoP2)	DNC;V32PR/V32HB/V32BZ/V32UL/V64PR/V64HB/V64BZ/V64UL;DNC;ALL
Broadcom Bluetooth Driver (BCM92045NMD)(6.0.1.3400_Vista_LogoedR)	DNC;V32PR/V32HB/V32BZ/V32UL/V64PR/V64HB/V64BZ/V64UL;KOR/ENG/FRN/GER/SPN/POR/RUS/ITA/CHS/CHT/THA/JPN;ALL
Vista(32 & 64)-Realtek LAN Driver [10/100](6.101.1124.2006)	DNC;V32PR/V32HB/V32BZ/V32UL/V64PR/V64HB/V64BZ/V64UL;DNC;ALL
Vista-Ricoh MMCR 32bit Driver V102 [R5C843/832](6.0.1.4)	DNC;XPHOM/XPPRO/XPMCE/XPTBL/V32PR/V32HB/V32BZ/V32UL;DNC;ALL
Broadcom 2045 Bluetooth 2.0 USB Device()	DNC;DONCR;DNC;ALL
Broadcom Bluetooth V2.0 USB Module (SEMCO)()	DNC;DONCR;DNC;ALL
Delphi Azalia MDC()	DNC;DONCR;DNC;ALL
Vista-Hotfix-Bluetooth(1.0.0.1)	DNC;V32PR/V32HB/V32BZ/V32UL;DNC;ALL
Vista-Hotfix-Common(1.0.0.1)	DNC;V32PR/V32HB/V32BZ/V32UL;DNC;ALL
Vista 32bit Business()	DNC;V32BZ;DNC;ALL
Vista 32bit CHS Language Pack()	DNC;V32PR/V32HB/V32BZ/V32UL;CHS;ALL
Vista 32bit Home Basic()	DNC;V32HB;DNC;ALL
Vista 32bit Home Premium()	DNC;V32PR;DNC;ALL
Vista 32bit KOR Language Pack()	DNC;V32PR/V32HB/V32BZ/V32UL;KOR;ALL
Vista 32bit Ultimate()	DNC;V32UL;DNC;ALL
ChkWiz Anchor((ChkWiz4Vista)2.0.0.1)	DNC;V32PR/V32HB/V32BZ/V32UL;DNC;ALL
CSUP (MDA)(1.0.0.1)	DNC;V32PR/V32HB/V32BZ/V32UL/V64PR/V64HB/V64BZ/V64UL;DNC;ALL
Media Center Update (Vista)(2.0.1)	DNC;V32PR/V32UL;DNC;ALL
OOBE_CaseLangCopy(1.0)	DNC;V32PR/V32HB/V32BZ/V32UL;DNC;ALL
SetDisplayResolution(1.0.0.11)	DNC;V32PR/V32HB/V32BZ/V32UL;DNC;ALL
SW Media Installer - 1 of 1(Vista 4.0.1.7)	DNC;V32PR/V32HB/V32BZ/V32UL/V64PR/V64HB/V64BZ/V64UL;DNC;ALL
AVStation Movie Contents_COPY_NP_KOR(4.1.6_NP_KOR)	DNC;V32PR/V32HB/V32UL;KOR;ALL
AVStation Movie Contents_COPY_NP_NOKOR(4.1.6_NP_NOKOR)	DNC;V32PR/V32HB/V32UL;KOR/ENG/FRN/GER/SPN/POR/RUS/ITA/CHS/CHT/THA/JPN/UKR;ALL
Easy Battery Manager 3(3.2.0.6)	DNC;V32PR/V32HB/V32BZ/V32UL;KOR/ENG/FRN/GER/SPN/RUS/ITA/CHS/CHT/UKR;ALL
Easy Partition Manager(2.2.0.4)	DNC;XPHOM/XPPRO/XPMCE/XPTBL/V32PR/V32HB/V32BZ/V32UL;KOR;ALL
Hotstart Shell(4.0.10.4)	DNC;DONCR;DNC;ALL
Play AVStation_35_KMem1004(4.1.20.35)	DNC;V32PR/V32HB/V32UL;DNC;ALL
Samsung Update Plus(1.3.0.9)	DNC;V32PR/V32HB/V32BZ/V32UL;DNC;ALL
ABBYY Lingvo 9(9.0.2.299)	DNC;DONCR;RUS;ALL
Adobe Reader (ITA)(7.0.8.218)	DNC;DONCR;RUS;ALL
CertRename(1.0)	DNC;DONCR;DNC;ALL

5. Troubleshooting

Dungeon&Fighter Setup Icon(1.0.0.1_2)	KOR;XPHOM/XPPRO/XPMCE/XPTBL/V32PR/V32HB/V32BZ/V32UL/V64PR/V64HB/V64BZ/V64UL;KOR;ALL
Firenze2-R Vista Graphics Driver(8.332.0.0 (RC2))	DNC;V32PR/V32HB/V32BZ/V32UL/V64PR/V64HB/V64BZ/V64UL;DNC;ALL
McAfee VirusScan (CHT)(13.3.0.132)	DNC;XPHOM/XPPRO/XPMCE/XPTBL/V32PR/V32BZ/V32UL;CHT;ALL
Samsung Screen Saver(1.0.1.0)	DNC;XPHOM/XPPRO/XPMCE/XPTBL/V32PR/V32HB/V32BZ/V32UL;KOR;ALL
Wallpaper Vista(2.0.0.0)	DNC;V32PR/V32HB/V32BZ/V32UL;DNC;ALL

5. Troubleshooting

6) CPU Fan Control

(1) CPU: MEROM, YONAH, Celeron/-D [T j 100]

Basic Mode

CPU Speed	Mode	Address [Hexa]		(for CPU temperature)	Toshiba	Sepa	Speed step & throttling
		FFA0	FFA1	CPU Sensor(on/off)	FAN Voltage	Fan Voltage	
I 단계	OFF	0	69		0	0	
	Low	42	69	45 / 40	2.4V	2.45	
	Middle 1	54	69	55 / 50	2.8V	2.8	
	Middle 2	6F	69	63 / 57	3.4V	3.3	
	Middle 3	90	69	70 / 64	3.8V	3.8	
	High	A9	69	77 / 71	4.1V	4.1	
II 단계		A9	69	85 / 80	4.1	4.1	Speed Step (Middle)
III 단계		A9	69	90 / 85	4.1	4.1	Speed Step (Lowest)
	OS Throttle			95			
	OS Shut-down			100			
	DOS Throttle			95/90			
	DOS Shut-down			100			

Low noise Mode (Etiquette Mode)

CPU Speed	Mode	Address [Hexa]		(for CPU temperature)	Toshiba	Sepa	Speed step & throttling
		FFA0	FFA1	CPU Sensor(on/off)	FAN Voltage	Fan Voltage	
I 단계	OFF	0	69		0		
		42	69	50 / 45	2.4		
II 단계		54	69	60 / 55	2.4		Speed Step (Middle)
III 단계	Low	6F	69	65 / 61	2.4		Speed Step (Lowest)
	Middle 1	90	69	70 / 66	2.8		
	Middle 2	A9	69	75 / 71	3.4		
	Middle 3	A9	69	80 / 76	3.8		
	High	A9	69	85 / 81	4.1		
	OS Throttle			95			
	OS Shut-down			100			
	DOS Throttle			95/90			
	DOS Shut-down			100			

Battery Mode (Etiquette Mode)

CPU Speed	Mode	Address [Hexa]		(for CPU temperature)	Toshiba	Sepa	Speed step & throttling
		FFA0	FFA1	CPU Sensor(on/off)	FAN Voltage	Fan Voltage	
I 단계	OFF	0	69		0		
	Low	42	69	55 / 50	2.4		
	Middle 1	54	69	60 / 55	2.8		
	Middle 2	6F	69	65 / 61	3.4		
	Middle 3	90	69	70 / 66	3.8		
	High	A9	69	75 / 71	4.1		
II 단계		A9	69	80 / 76	4.1		Speed Step (Middle)
III 단계		A9	69	85 / 81	4.1		Speed Step (Lowest)
	OS Throttle			95			
	OS Shut-down			100			
	DOS Throttle			95/90			
	DOS Shut-down			100			

5. Troubleshooting

(2) CPU: MEROM, YONAH, Celeron/-D [T j 85]

Basic Mode

CPU Speed	Mode	Address [Hexa]		(for CPU temperature)	Toshiba	Sepa	Speed step & throttling
		FFA0	FFA1	CPU Sensor(on/off)	FAN Voltage	Fan Voltage	
I 단계	OFF	0	69		0	0	
	Low	42	69	45 / 40	2.4V	2.45	
	Middle 1	54	69	55 / 50	2.8V	2.8	
	Middle 2	6F	69	63 / 57	3.4V	3.3	
	Middle 3	90	69	70 / 64	3.8V	3.8	
	High	A9	69	77 / 71	4.1V	4.1	
II 단계		A9	69	80 / 75	4.1	4.1	Speed Step (Middle)
III 단계		A9	69	85 / 80	4.1	4.1	Speed Step (Lowest)
	OS Throttle			88			
	OS Shut-down			90			
	DOS Throttle			85/80			
	DOS Shut-down			90			

Low noise Mode (Etiquette Mode)

CPU Speed	Mode	Address [Hexa]		(for CPU temperature)	Toshiba	Sepa	Speed step & throttling
		FFA0	FFA1	CPU Sensor(on/off)	FAN Voltage	Fan Voltage	
I 단계	OFF	0	69		0		
		42	69	50 / 45	2.4		
II 단계		54	69	60 / 55	2.4		Speed Step (Middle)
III 단계	Low	6F	69	65 / 61	2.4		Speed Step (Lowest)
	Middle 1	90	69	70 / 66	2.8		
	Middle 2	A9	69	75 / 71	3.4		
	Middle 3	A9	69	80 / 76	3.8		
	High	A9	69	85 / 81	4.1		
	OS Throttle			88			
	OS Shut-down			90			
	DOS Throttle			85/80			
	DOS Shut-down			90			

Battery Mode (Etiquette Mode)

CPU Speed	Mode	Address [Hexa]		(for CPU temperature)	Toshiba	Sepa	Speed step & throttling
		FFA0	FFA1	CPU Sensor(on/off)	FAN Voltage	Fan Voltage	
I 단계	OFF	0	69		0		
	Low	42	69	55 / 50	2.4		
	Middle 1	54	69	60 / 55	2.8		
	Middle 2	6F	69	65 / 61	3.4		
	Middle 3	90	69	70 / 66	3.8		
	High	A9	69	75 / 71	4.1		
II 단계		A9	69	80 / 76	4.1		Speed Step (Middle)
III 단계		A9	69	85 / 81	4.1		Speed Step (Lowest)
	OS Throttle			88			
	OS Shut-down			90			
	DOS Throttle			85/80			
	DOS Shut-down			90			

5. Troubleshooting

7) Battery Use Time

Check the following check lists for systems where the battery use time is too short to diagnose problems.

(1) Check the battery

Check if the battery is out of order referring to the Battery check program distributed to Service Centers and the 'Battery Check Manual' included in the 'Note-PC A/S Guide'.

1. Battery Check List

Please mark "✓" in the box (☐) of each applicable items, after checking the battery status with the "battery checking program"

1. Does the battery communicate normally with system?
- ☐ PASS
- ☐ FAIL

2. Is the battery charged normally?
- ☐ PASS
- ☐ FAIL

3. Is the battery discharged normally?
- ☐ PASS
- ☐ FAIL

4. Is the battery still in warranty?
- ☐ Excess than 6 months : Out of warranty
- ☐ Excess than 300 Cycles : Out of warranty
- ☐ Less than 6 months : PASS
- ☐ Less than 6 months : FAIL

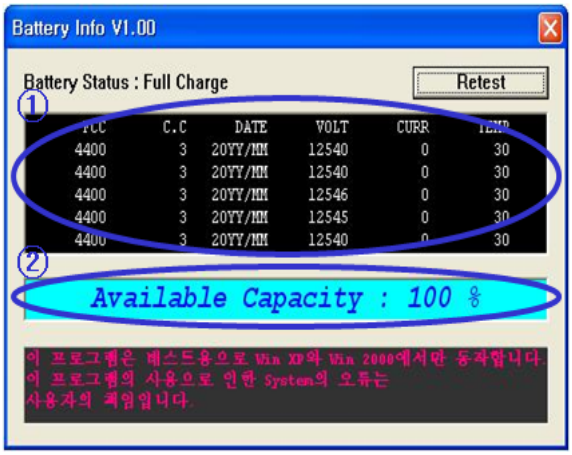
2. Criteria for each of the check lists.

1. Does the battery communicate normally with system?

☐ PASS

①: Data displayed in the data window.

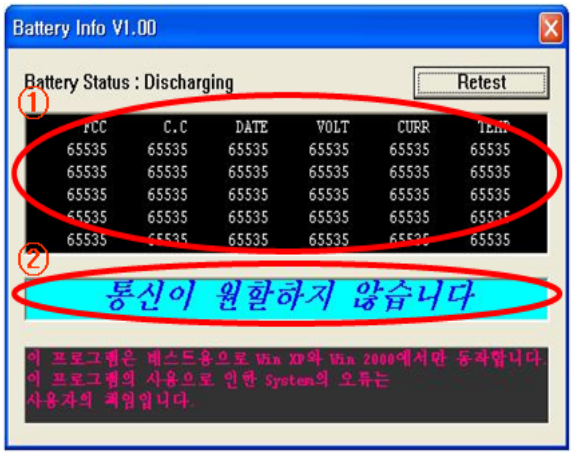
②: Available capacity displayed : 0 ~ 100%



☐ FAIL

①: The code 65535 displayed

②: Displayed the error message in Korean "통신이 원할 하지 않습니다"



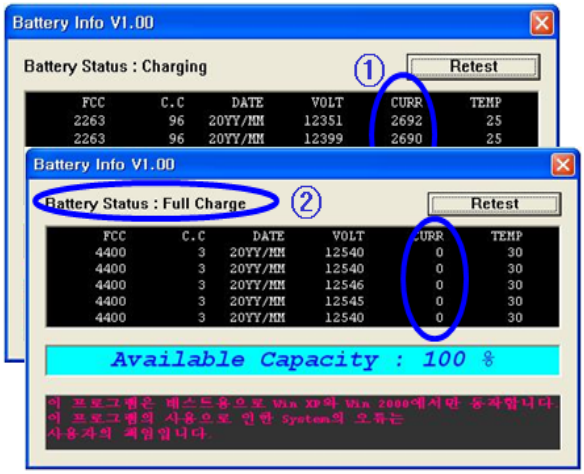
☞ recommended : When the communication failed, please set a normal battery to the system and check first which -battery or system- has the problem.

5. Troubleshooting

2. Is the battery charged normally?

☐ PASS

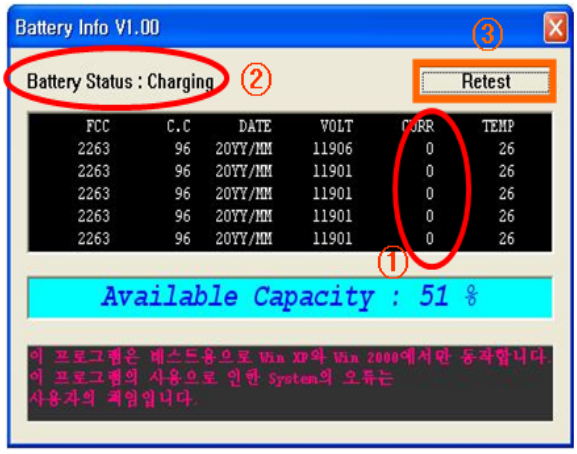
①: Pass, if the CURR values are within **35 ~ 3500**



②: Pass, even if the **CURR** value is **0** but the battery is in status of **Full Charge**

☐ FAIL

①,②: Fail, if the CURR values are **0** and the battery status is in **Charging**.

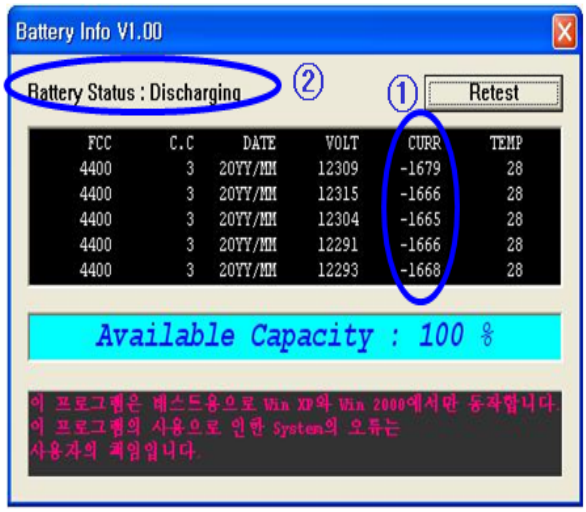


③: if the **CURR** value is **0** and in status of **Charging**, please reconfirm the "fail" after 2~3 times of **Retest**.

3. Is the battery discharged normally?

☐ PASS

①,②: Pass, if the **CURR** values are within **-50 ~ -5000** and the battery status is in **Discharging**.



☐ FAIL

Fail, if the **System is off status when the adaptor is removed** from the System

5. Troubleshooting

4. Is the battery still in warranty?

☐ Excess than 6 months : Out of warranty

☐ Excess than 300 cycles : Out of warranty

☞ **Warranty period** : Within **6 months after sales date**, more than **60% of initial electric capacity after 300 cycles.**

*** Reference** : If a battery is out of warranty, the battery can not be considered as "defected". So if a customer requests to exchange his battery in this case, the battery should be provided **onerously with sales price**. So please persuade customer to use continuously his battery, with the explanation of effective capacity of his battery, if the battery have no defect but only small decrease of capacity.

☐ Less than 6 months : PASS

☐ Less than 6 months : FAIL

☞ **①Please refer to "Capacity Standard Table" (or ②Capacity Standard Graph). Please judge Pass or Fail after checking the sales date of a battery. Pass, if the capacity of the battery is over than the value of corresponded date of "Available Capacity" column in the Table. Fail, if the capacity is lower than the value.**

* Reference : The battery capacity can have individual error according to the user's circumstance of the battery. So it is recommended that the battery should be checked (with Battery Check Program) after calibration (Smart Battery Calibration: Full charge/discharge or Full discharge/charge)

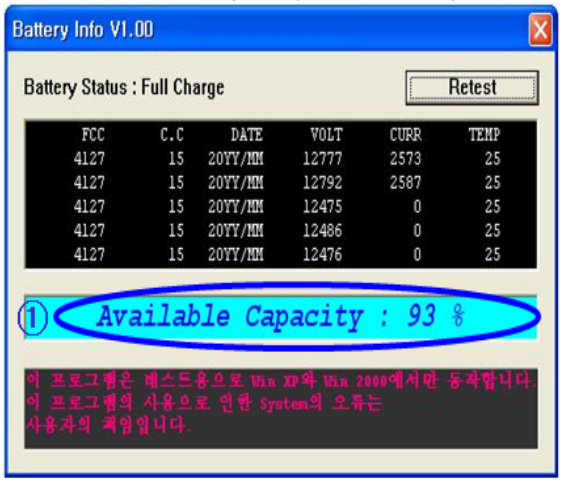
[Example]

☐ Less than 6 months: PASS

①: Available Capacity: 93%

Duration of Use : 1month(30days)

Available Capacity of warranty: 87.8%

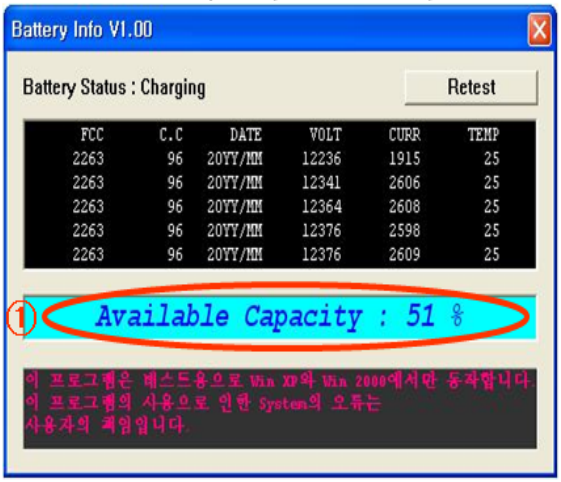


☐ Less than 6 months: FAIL

①: Available Capacity: 51%

Duration of Use : 1month(30days)

Available Capacity of warranty: 87.8%



* Reference : If the sale date is 2004.5.10 and service receipt date is 2004.6.10, the Duration of Use is regarded as 1 month(30days)

5. Troubleshooting

3. Battery Capacity Table

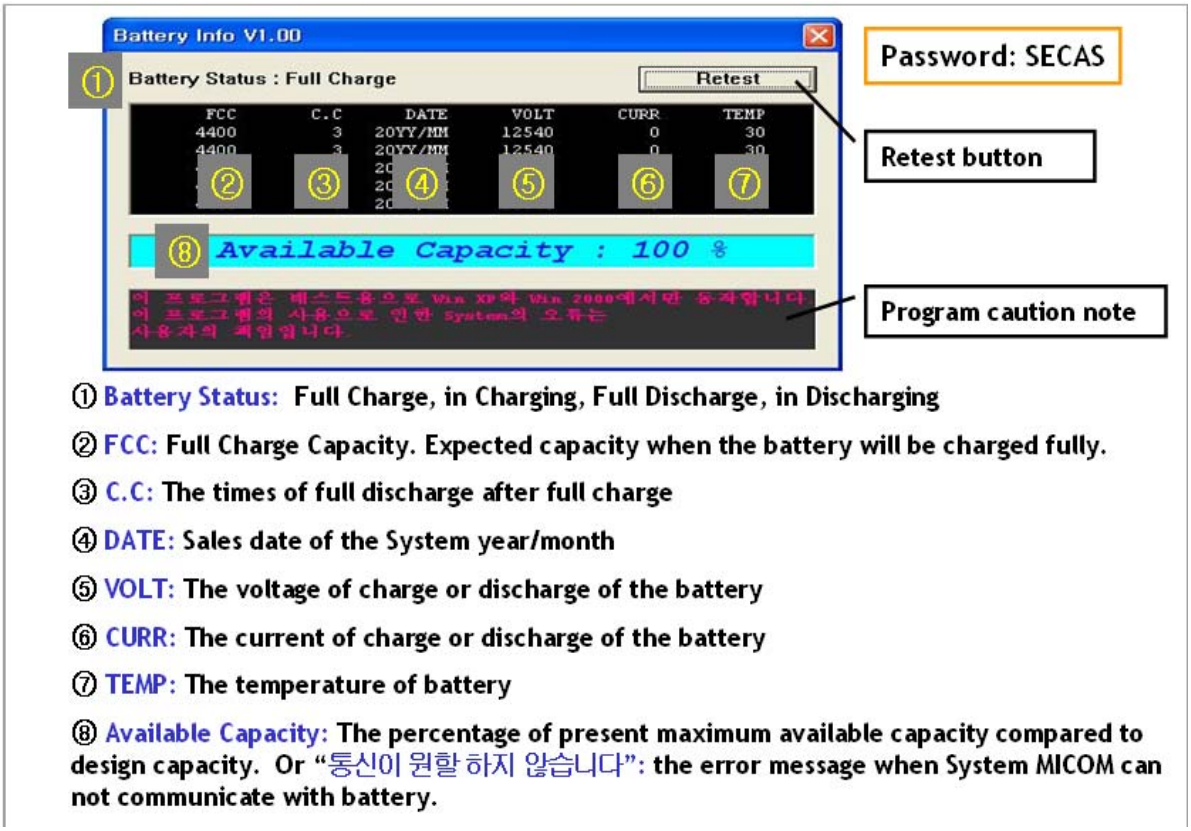
Duration of Use	Available Capacity(%)
Within 0.5month (15days)	More than 93.6 %
Within 1.0month (30days)	More than 87.8 %
Within 1.5month (45days)	More than 82.5 %
Within 2.0month (60days)	More than 77.8 %
Within 2.5month (75days)	More than 73.6 %
Within 3.0month (90days)	More than 70.0 %
Within 3.5month (105days)	More than 66.9 %
Within 4.0month (120days)	More than 64.4 %
Within 4.5month (135days)	More than 62.5 %
Within 5.0month (150days)	More than 61.1 %
Within 5.5month (165days)	More than 60.3 %
Within 6.0month (180days)	More than 60.0 %

* Reference

Duration of Use : The using period from the sales date of the system (with battery)

Available Capacity(%) : The real capacity of the battery, decreased from the design capacity by the user's circumstance, keeping status or etc.

4. Battery Check Program



① **Battery Status:** Full Charge, in Charging, Full Discharge, in Discharging

② **FCC:** Full Charge Capacity. Expected capacity when the battery will be charged fully.

③ **C.C:** The times of full discharge after full charge

④ **DATE:** Sales date of the System year/month

⑤ **VOLT:** The voltage of charge or discharge of the battery

⑥ **CURR:** The current of charge or discharge of the battery

⑦ **TEMP:** The temperature of battery

⑧ **Available Capacity:** The percentage of present maximum available capacity compared to design capacity. Or "통신이 원할 하지 않습니다": the error message when System MICOM can not communicate with battery.

5. Troubleshooting

(2) Check the battery use environment

1. Generally, the battery usage time in advertisements by notebook manufacturers refers to the maximum battery use time. Since the system specifications and the usage environment may differ, the user's battery usage time may differ from the advertisement even if there is no problem with the system.

2. Conditions for the company's maximum battery use time
   a. Minimum LCD brightness, base system, the wireless LAN R/F is turned off, BatteryManager-Maximum Battery Mode
   b. Measuring Tool: BatteryMark v.4.0.1

3. If a customer complains about the battery usage time, let them know that the battery usage time may differ depending on the model specifications and the usage environment and recommend the following usage environment for longer battery time.
   a. Use the company's power-saving program, BatteryManager, and set BatteryManager to Maximum Battery Mode.
   b. LCD brightness: Set to the minimum level as long as the user does not experience inconvenience.
   c. Disable unnecessary devices
      : Turn the wireless LAN R/F switch off and disable USB devices (DMB, fingerprint recognition and Bluetooth)

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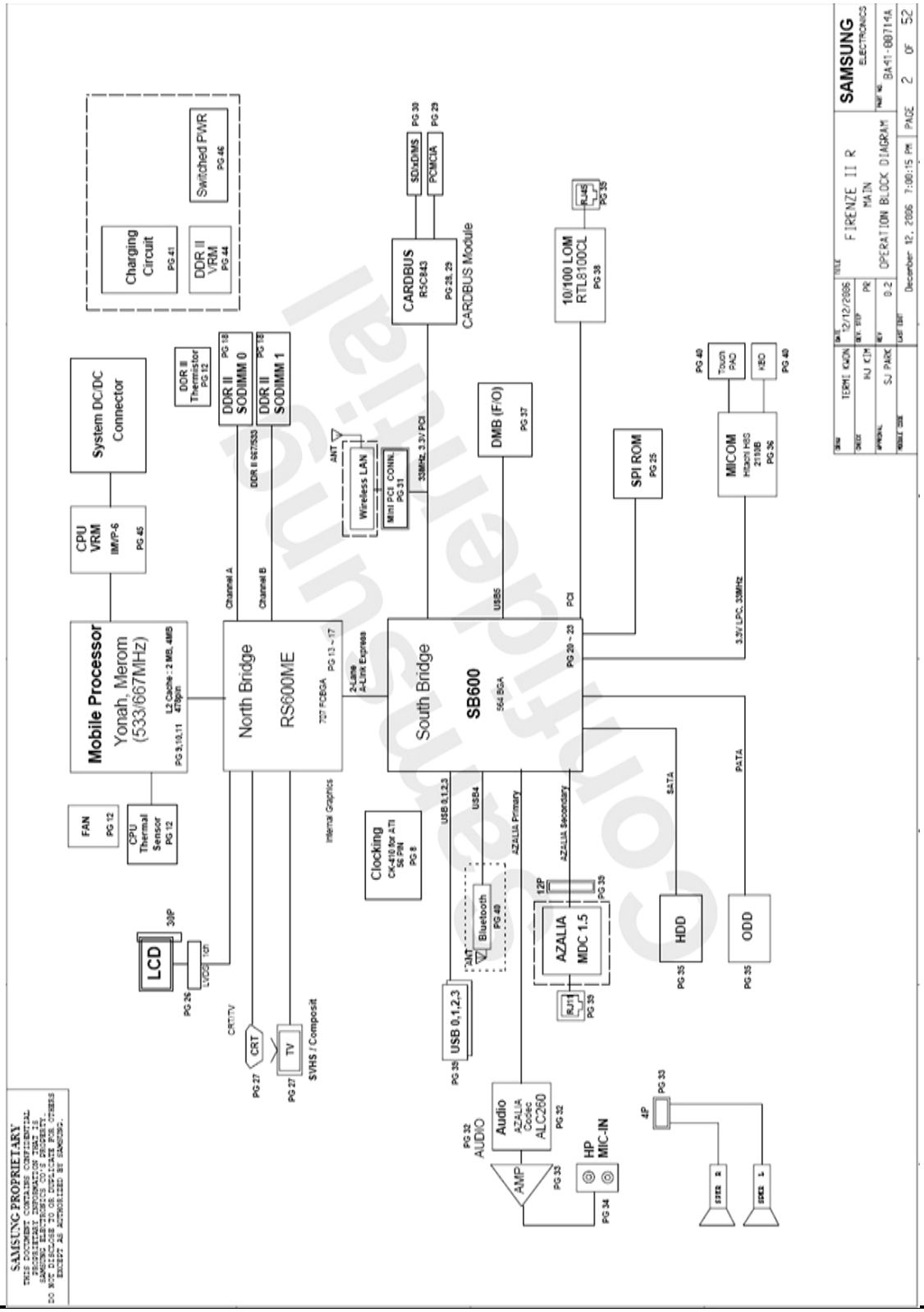
8. Block Diagram

*. 시스템 블록도는 회로도에 나와 있으니, 가급적 회로도를 참고하시기 바랍니다.



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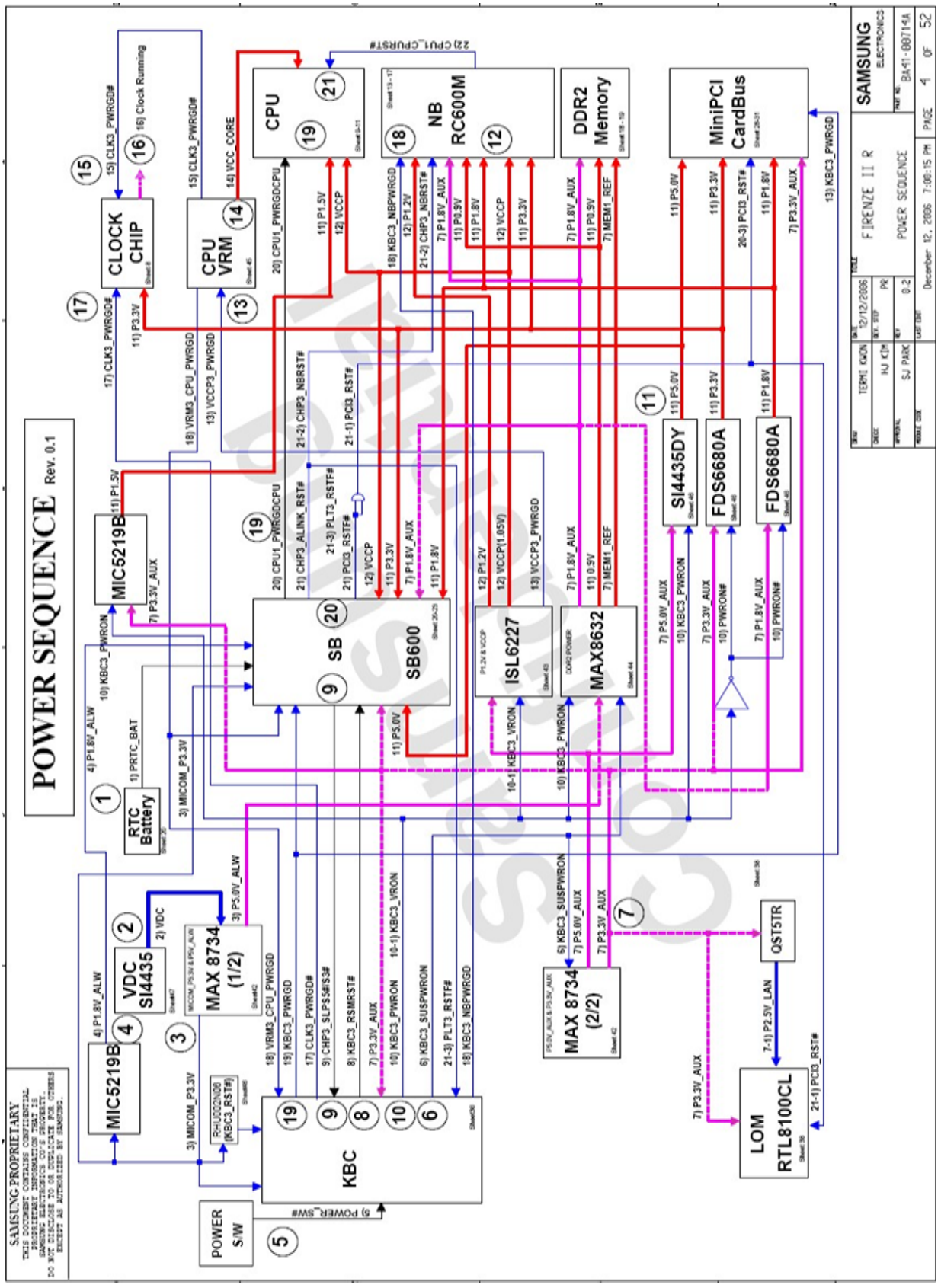
8. Block Diagram



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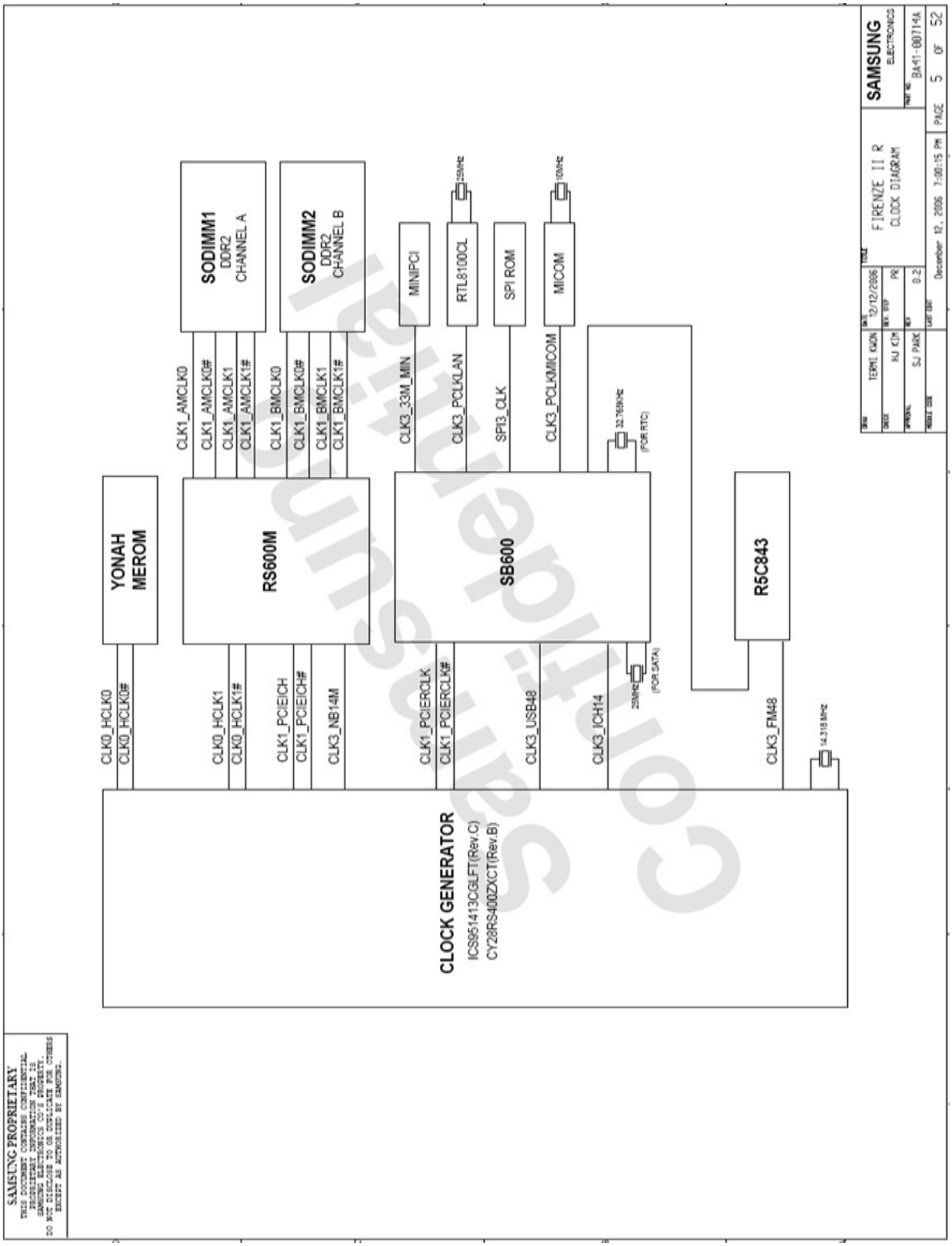
8. Block Diagram



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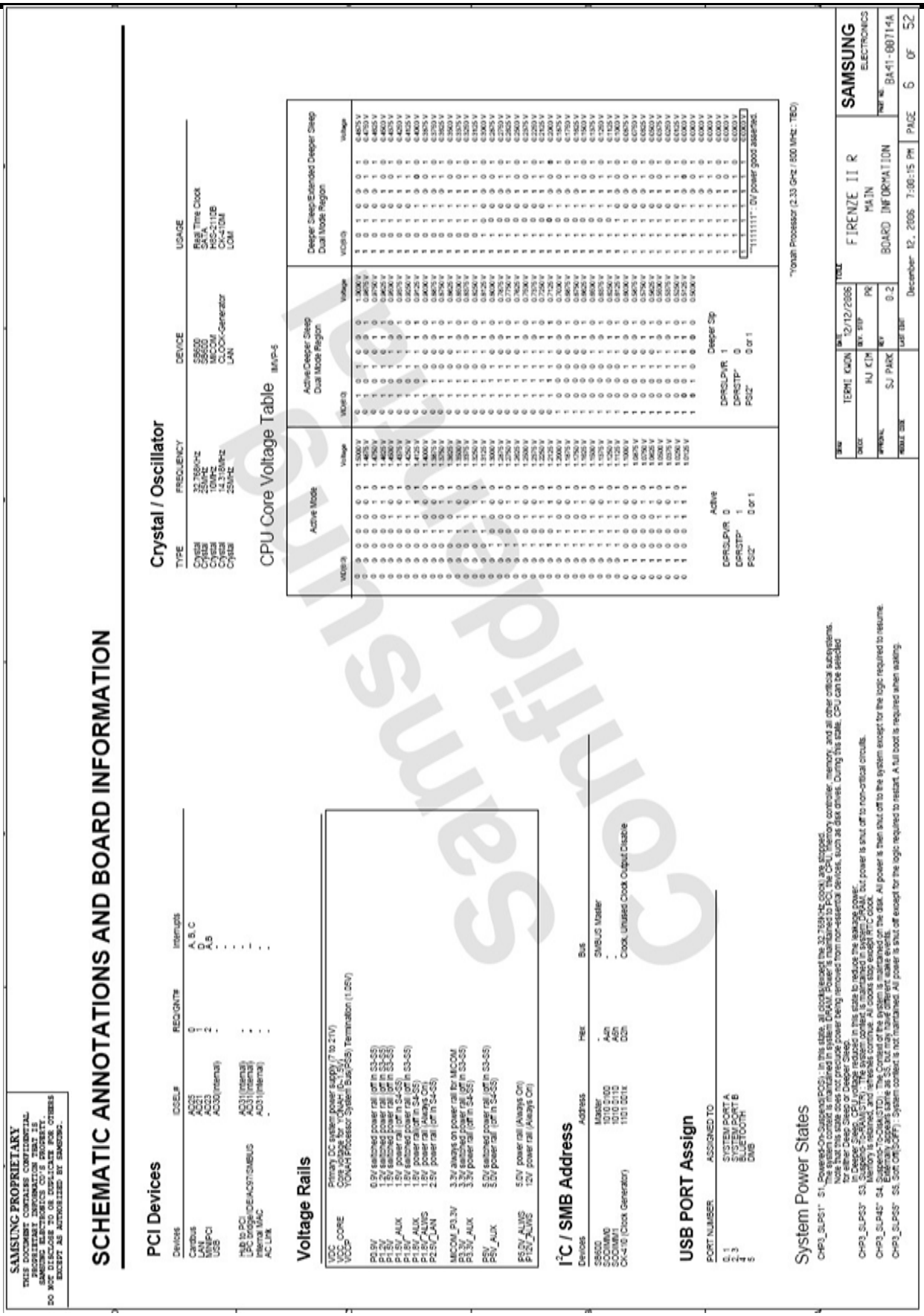
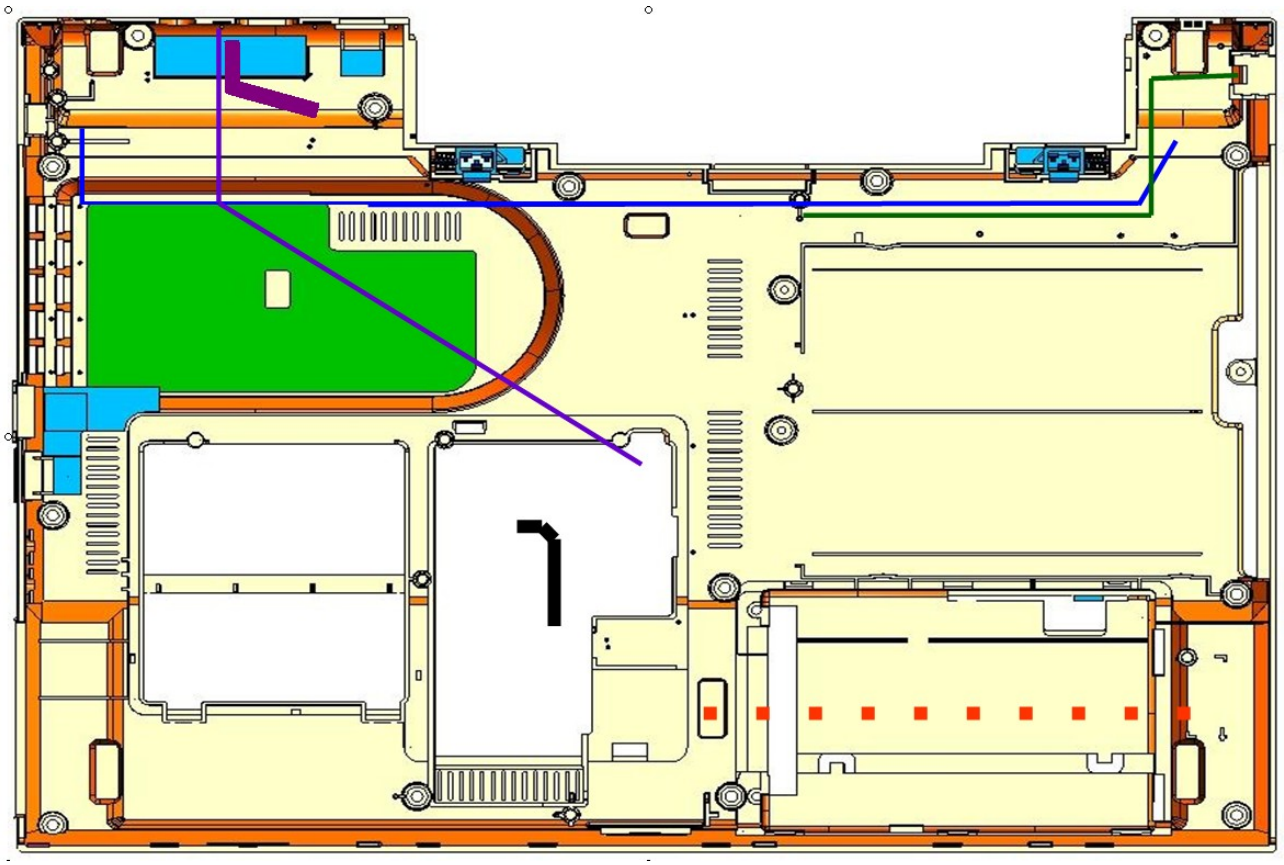
8. Block Diagram



9. System Wire Diagram

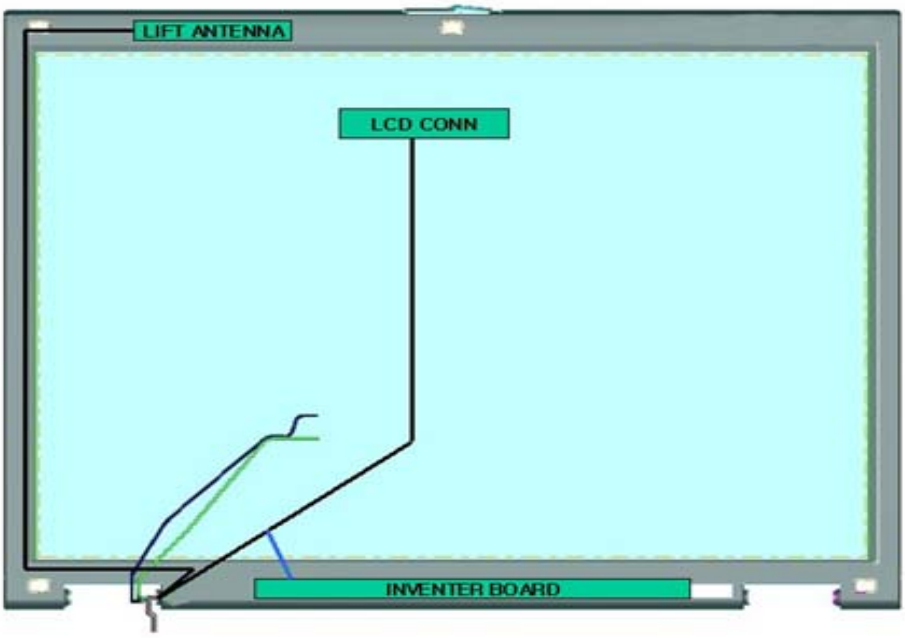
1) R40 plus System



	Speaker cable		Touchpad FFC
	WLAN Antenna		RJ11 Cable
	LCD Cable		Bluetooth Cable

9. System Wire Diagram

2). R40 plus LCD



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Electrical Part List

SEC Code	DESCRIPTION	COUNT	REFERENCE
0401-000132	diode2_s, DIODE-SWITCHING;BAV99,70V,50MA,SOT-23,TP, nostuff	5	D6 D7 D12 D507
			D508
0401-000191	diode, DIODE-SWITCHING;MMBD4148,75V,200mA,SOT-23,TP	8	D13 D14 D20 D23
			D24 D503 D504 D515
0402-001024	diode, DIODE-RECTIFIER;MBR0540,40V,0.5A,SOD-123,TP	2	D506 D513
0402-001405	sdiode, DIODE-RECTIFIER;B340A,40,3A,SMA,TP, nostuff	4	D5 D509 D510 D511
0403-000285	zdiode, DIODE-ZENER;MMBZ5240B,5%,225mW,SOT-23,TP	1	ZD2
0403-000579	zdiode, DIODE-ZENER;BZX84C5V1,4.8-5.4V,200mW,SOT-23,TP	1	ZD1
0403-001047	zdiode, DIODE-ZENER;BZX84C12L,5%,225mW,SOT-23,TP	1	ZD3
0404-000114	diode, DIODE-SCHOTTKY;MMBD301,30V,200MA,SOT-23,TP	1	D516
0404-001020	sdiode2_2a, DIODE-SCHOTTKY;BAT54C,30V,200mA,SOT-23,TP	2	D15 D22
0404-001084	sdiode2_2k, DIODE-SCHOTTKY;BAT54A,30V,200MA,SOT-23,TP, nostuff	8	D8 D9 D10 D11 D21
			D505 D512 D514
0406-001205	esd, DIODE-TVS;PGB0010603NR,-/-/1000V,-,EIA-RS481, nostuff	11	D1 D2 D3 D4 D16
			D17 D18 D19 D500
			D501 D502
0501-000465	npn_tr, TR-SMALL SIGNAL;MMBT3904,NPN,350mW,SOT-23,TP,30-30, nostuff	10	Q11 Q22 Q23 Q26
			Q27 Q30 Q46 Q522
			Q526 Q528
0501-000467	pnp_tr, TR-SMALL SIGNAL;MMBT3906,PNP,350mW,SOT-23,TP,30-30	1	Q17
0502-001278	qst5, TR-POWER;QST5TR,PNP,500mW,TSMT6,TR,270/-/680	1	Q534
0504-001157	pnp_tr_res, TR-DIGITAL;DTA114YUA,PNP,200mW,10K/47K,UMT3,TP	1	Q527
0505-001049	pmos_fet, FET-GAAS;BSS84,-50V,20V,-130mA,360mW,SOT-23,TP	7	Q18 Q508 Q509 Q510
			Q511 Q535 Q536
0505-001386	nmos_fet_3s_4d, FET-SILICON;FDS6680A,N,30V,12.5A,0.0095ohm,2.5W,SO	5	Q4 Q21 Q41 Q519
			Q521
0505-001585	si3456dv, FET-SILICON;FDC653N,N,30V,5A,55mohm,1.6W,SSOT-6	1	Q506
0505-001648	nmos_fet_3s_4d, FET-SILICON;IRF7811AV,N,30V,10.8A,11mohm,2.5W,SO-8, nostuff	4	Q5 Q6 Q8 Q9
0505-001861	pmos_fet, FET-SILICON;SI2315BDS,P,-12V,-3A,0.100ohm,0.75W,SO	3	Q16 Q25 Q505
0505-001883	nmos_fet_zener2, FET-SILICON;RHU002N06,N,60V,200MA,3.3ohm,0.15W,SOT, nostuff	33	Q2 Q15 Q20 Q24 Q28
			Q29 Q31 Q32 Q33
			Q35 Q36 Q37 Q38
			Q39 Q40 Q44 Q45
			Q501 Q502 Q503
			Q504 Q516 Q517
			Q518 Q520 Q523
			Q524 Q525 Q529
			Q530 Q531 Q532
			Q533
0505-001920	nmos_fet_3s_4d, FET-SILICON;HAT2195R,N,30V,18A,0.0084ohm,2.5W,SOP-	4	Q507 Q512 Q513
			Q515
0505-001972	irf7904, FET-SILICON;IRF7904,N,30V,7.6A/11A,0.016/0.01ohm,1, nostuff	7	Q10 Q12 Q13 Q14
			Q19 Q42 Q43
0505-002166	pmos_fet, FET-SILICON;SI2307BDS,P,30V,12A,0.063ohm,0.8W,SOT-	1	Q1
0505-002182	pmos_fet_3s_4d, FET-SILICON;AP4415GM,P,-30V,-7A,0.032ohm,2.5W,SO-8	1	Q3
0505-002183	si4435dy, FET-SILICON;AP4435GM,P,-30V,-8A,0.015ohm,2.5W,SO-8	4	Q7 Q34 Q500 Q514

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Electrical Part List

0601-000189	led, LED;SMD,P-GRN,3.2X1.6X1.1MM,557NM,3.2X1.6X1.1MM	6	LED1 LED2 LED3
			LED4 LED5 LED7
0601-001130	led4_6, LED;SMD,RED/GRN,3.0X2.5MM,660/570NM,3.0X2.5MM	1	LED6
0801-002195	7s08, IC-CMOS LOGIC;7S08,AND GATE,SOT-25,5P,63MIL,SINGLE, nostuff	3	U5 U11 U502
0801-002478	7sz14, IC-CMOS LOGIC;7SZ14,SCHMITT TRIGGER,SOT23,5P,63MIL	2	U503 U515
0801-002628	7sz08, IC-CMOS LOGIC;7SZ08,2-INPUT AND GATE,SC70,5P,49MIL	1	U509
0801-002998	74ahct1g125, IC-CMOS LOGIC;74AHCT1G125,Single buffer,SC-70,5P,2	3	U12 U500 U501
0903-001439	h8s-2110b, IC-MICROCOMPUTER;H8S/2110B,16Bit,TQFP,100P,16x16mm	1	U14
0904-002063	r5c841, IC-BUS CONTROLLER;R5C843,32Bit,CSP,208P,16x16mm,33	1	U15
0904-002207	rs600mf, IC-MEMORY CONT.;216MEP6CLA14FG,FCBGA,1201P,35x35mm	1	U507
0904-002230	sb600, IC-I/O CONTROLLER;SB600,FcBGA,549P,23x23mm,100MHz,	1	U9
1001-001097	fst3125, IC-ANALOG SWITCH;FST3125,BUS SWITCH,TSSOP,14P,173M	1	U16
1009-001010	a3212elh-samsung, IC-HALL EFFECT S/W;A3212ELH/HED55XXU12,SC-59A,3P,8	1	U1
1103-001244	93lc46b, IC-EEPROM;93LC46B,1Kbit,64x16Bit,SOP,8P,5x4mm,-,2.	1	U514
1107-001646	m25p80, IC-FLASH MEMORY;MX25L8005,8Mbit,8Mx1,SOP,8P,5.28x5	1	U8
1201-001559	lm4863mte, IC-AUDIO AMP;4863,TSSOP,20P,173MIL,DUAL,98dB,PLAST	1	U512
1203-002062	mic5219b, IC-POSI.ADJUST REG.;5219,SOT-23,5P,63MIL,PLASTIC,-	1	U3
1203-002546	mic5258, IC-POSI.FIXED REG.;MIC5258,SOT-23-5,5P,65MIL,PLAST	1	U506
1203-002972	tps793475, IC-POSI.FIXED REG.;TPS793475DBVR,SOT-23,5P,2.9x1.6	1	U511
1203-003476	isl6227, IC-PWM CONTROLLER;ISL6227,SSOP,28P,9.9x3.9mm,PLAST	1	U505
1203-003480	max1909, IC-BATTERY;MAX1909,TQFN,28P,5x5mm,PLASTIC,9.12/17.	1	U2
1203-003898	sc452, IC-POWER SUPERVISOR;SC452IMLTRT,MLP,44P,7x7mm,PLAS	1	U4
1203-004005	max8550, IC-PWM CONTROLLER;MAX8632ETI+T,QFN,28P,5x5mm,PLAST	1	U13
1203-004108	max8734, IC-PWM CONTROLLER;MAX8734AEEI+T,QSOP,28P,9.9x3.9mm	1	U504
1205-002806	r5534v, IC-SWITCH;R5534V-E2-FB,SSOP,20P,6.7x4.4mm,PLASTIC,	1	U17
1205-002853	alc262, IC-CODEC;ALC262-GR,LQFP,48P,7x7mm,PLASTIC,5.5V,-,0	1	U510
1205-002941	rtl8100cl, IC-ETHERNET CONTROLLER;RTL8100CL-LF,LQFP,128P,20x1	1	U513
1205-003157	ics951461, IC-CLOCK GENERATOR;ICS951461,TSSOP,64P,17x6.1mm,PL	1	U10
1209-001507	lm26c-t, IC-ETC, LINEAR;LM26CIM5X-TPA,SOT-23,5P,2.92x1.6mm,	1	U6
1209-001653	w83l771w, IC-TEMP. TRANSDUCER;W83L771W/G,TSSOP,8P,3x3mm,PLAS	1	U7
1404-001089	therm_fuse, THERMISTOR-PTC;0.21ohm,-,-,6Vac,40A,2.2A,TP	2	TH500 TH501
2007-000043	res_t, R-CHIP;1Kohm,1%,1/10W,TP,1608	1	R674
2007-000052	res_t, R-CHIP;10Kohm,1%,1/10W,TP,1608	4	R74 R75 R76 R112
2007-000057	res_t, R-CHIP;40.2Kohm,1%,1/10W,TP,1608	2	R740 R742
2007-000066	res_t, R-CHIP;20Kohm,1%,1/10W,TP,1608	1	R707
2007-000070	res, R-CHIP;0ohm,5%,1/10W,TP,1608, nostuff	23	R44 R109 R110 R202
			R203 R510 R511
			R512 R513 R616
			R627 R631 R661
			R662 R663 R709
			R710 R719 R725
			R744 R745 R760
			R761
2007-000077	res, R-CHIP;470ohm,5%,1/10W,TP,1608	1	R88
2007-000092	res, R-CHIP;15Kohm,5%,1/10W,TP,1608	1	R753
2007-000102	res, R-CHIP;100Kohm,5%,1/10W,TP,1608, nostuff	5	R670 R685 R686
			R687 R688

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			LED4 LED5 LED7
0601-001130	led4_6, LED;SMD,RED/GRN,3.0X2.5MM,660/570NM,3.0X2.5MM	1	LED6
0801-002195	7s08, IC-CMOS LOGIC;7S08,AND GATE,SOT-25,5P,63MIL,SINGLE, nostuff	3	U5 U11 U502
0801-002478	7sz14, IC-CMOS LOGIC;7SZ14,SCHMITT TRIGGER,SOT23,5P,63MIL	2	U503 U515
0801-002628	7sz08, IC-CMOS LOGIC;7SZ08,2-INPUT AND GATE,SC70,5P,49MIL	1	U509
0801-002998	74ahct1g125, IC-CMOS LOGIC;74AHCT1G125,Single buffer,SC-70,5P,2	3	U12 U500 U501
0903-001439	h8s-2110b, IC-MICROCOMPUTER;H8S/2110B,16Bit,TQFP,100P,16x16mm	1	U14
0904-002063	r5c841, IC-BUS CONTROLLER;R5C843,32Bit,CSP,208P,16x16mm,33	1	U15
0904-002207	rs600mf, IC-MEMORY CONT.;216MEP6CLA14FG,FCBGA,1201P,35x35mm	1	U507
0904-002230	sb600, IC-I/O CONTROLLER;SB600,FcBGA,549P,23x23mm,100MHz,	1	U9
1001-001097	fst3125, IC-ANALOG SWITCH;FST3125,BUS SWITCH,TSSOP,14P,173M	1	U16
1009-001010	a3212elh-samsung, IC-HALL EFFECT S/W;A3212ELH/HED55XXU12,SC-59A,3P,8	1	U1
1103-001244	93lc46b, IC-EEPROM;93LC46B,1Kbit,64x16Bit,SOP,8P,5x4mm,-,2.	1	U514
1107-001646	m25p80, IC-FLASH MEMORY;MX25L8005,8Mbit,8Mx1,SOP,8P,5.28x5	1	U8
1201-001559	lm4863mte, IC-AUDIO AMP;4863,TSSOP,20P,173MIL,DUAL,98dB,PLAST	1	U512
1203-002062	mic5219b, IC-POSI.ADJUST REG.;5219,SOT-23,5P,63MIL,PLASTIC,-	1	U3
1203-002546	mic5258, IC-POSI.FIXED REG.;MIC5258,SOT-23-5,5P,65MIL,PLAST	1	U506
1203-002972	tps793475, IC-POSI.FIXED REG.;TPS793475DBVR,SOT-23,5P,2.9x1.6	1	U511
1203-003476	isl6227, IC-PWM CONTROLLER;ISL6227,SSOP,28P,9.9x3.9mm,PLAST	1	U505
1203-003480	max1909, IC-BATTERY;MAX1909,TQFN,28P,5x5mm,PLASTIC,9.12/17.	1	U2
1203-003898	sc452, IC-POWER SUPERVISOR;SC452IMLTRT,MLP,44P,7x7mm,PLAS	1	U4
1203-004005	max8550, IC-PWM CONTROLLER;MAX8632ETI+T,QFN,28P,5x5mm,PLAST	1	U13
1203-004108	max8734, IC-PWM CONTROLLER;MAX8734AEEI+T,QSOP,28P,9.9x3.9mm	1	U504
1205-002806	r5534v, IC-SWITCH;R5534V-E2-FB,SSOP,20P,6.7x4.4mm,PLASTIC,	1	U17
1205-002853	alc262, IC-CODEC;ALC262-GR,LQFP,48P,7x7mm,PLASTIC,5.5V,-,0	1	U510
1205-002941	rtl8100cl, IC-ETHERNET CONTROLLER;RTL8100CL-LF,LQFP,128P,20x1	1	U513
1205-003157	ics951461, IC-CLOCK GENERATOR;ICS951461,TSSOP,64P,17x6.1mm,PL	1	U10
1209-001507	lm26c-t, IC-ETC, LINEAR;LM26CIM5X-TPA,SOT-23,5P,2.92x1.6mm,	1	U6
1209-001653	w83l771w, IC-TEMP. TRANSDUCER;W83L771W/G,TSSOP,8P,3x3mm,PLAS	1	U7
1404-001089	therm_fuse, THERMISTOR-PTC;0.21ohm,-,-,6Vac,40A,2.2A,TP	2	TH500 TH501
2007-000043	res_t, R-CHIP;1Kohm,1%,1/10W,TP,1608	1	R674
2007-000052	res_t, R-CHIP;10Kohm,1%,1/10W,TP,1608	4	R74 R75 R76 R112
2007-000057	res_t, R-CHIP;40.2Kohm,1%,1/10W,TP,1608	2	R740 R742
2007-000066	res_t, R-CHIP;20Kohm,1%,1/10W,TP,1608	1	R707
2007-000070	res, R-CHIP;0ohm,5%,1/10W,TP,1608, nostuff	23	R44 R109 R110 R202
			R203 R510 R511
			R512 R513 R616
			R627 R631 R661
			R662 R663 R709
			R710 R719 R725
			R744 R745 R760
			R761
2007-000077	res, R-CHIP;470ohm,5%,1/10W,TP,1608	1	R88
2007-000092	res, R-CHIP;15Kohm,5%,1/10W,TP,1608	1	R753
2007-000102	res, R-CHIP;100Kohm,5%,1/10W,TP,1608, nostuff	5	R670 R685 R686
			R687 R688

Electrical Part List

2203-002720	ccap, C-CER,CHIP;10nF,10%,25V,X7R,1005, nostuff	26	C33 C34 C35 C36
			C97 C106 C164 C222
			C223 C224 C225
			C311 C331 C511
			C580 C644 C651
			C653 C655 C656
			C663 C712 C741
			C743 C744 C750
2203-005052	ccap, C-CER,CHIP;0.0033nF,0.25pF,50V,NP0,1005	5	C7 C506 C517 C518
			C519
2203-005261	ccap_v, C-CER,CHIP;1000nF,10%,25V,X7R,3216	1	C590
2203-005384	ccap_v, C-CER,CHIP;4700nF,+80-20%,10V,Y5V,2012	6	C233 C236 C239
			C260 C706 C773
2203-005437	ccap_v, C-CER,CHIP;10000nF,+80-20%,10V,Y5V,3216	3	C280 C282 C283
2203-005509	ccap_v, C-CER,CHIP;330nF,+80-20%,10V,Y5V,1005, nostuff	2	C685 C722
2203-005918	ccap, C-CER,CHIP;1000nF,10%,6.3V,X7R,1608, nostuff	19	C88 C91 C96 C117
			C155 C302 C312
			C329 C539 C561
			C573 C596 C597
			C649 C679 C700
			C739 C755 C777
2203-006000	ccap_v, C-CER,CHIP;1NF,10%,3KV,X7R,TP,4520	3	C38 C60 C165
2007-000134	res, R-CHIP;33Kohm,5%,1/10W,TP,1608	1	R131
2007-000141	res, R-CHIP;2.2Kohm,5%,1/16W,TP,1005, nostuff	19	R106 R117 R118
			R134 R210 R216
			R220 R242 R257
			R259 R612 R623
			R624 R643 R696
			R697 R700 R726
			R727
2007-000143	res, R-CHIP;4.7Kohm,5%,1/16W,TP,1005, nostuff	15	R96 R98 R99 R102
			R103 R104 R107
			R111 R173 R231
			R280 R281 R304
			R508 R509
2007-000146	res, R-CHIP;6.8Kohm,5%,1/16W,TP,1005	2	R506 R507
2007-000147	res, R-CHIP;8.2Kohm,5%,1/16W,TP,1005, nostuff	17	R223 R225 R243
			R260 R261 R262
			R263 R657 R667
			R668 R669 R671
			R673 R679 R702
			R703 R704

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2007-000148	res, R-CHIP;10Kohm,5%,1/16W,TP,1005, nostuff	100	R5 R40 R77 R116
			R120 R132 R133
			R135 R147 R149
			R152 R153 R154
			R159 R160 R161
			R190 R191 R192
			R193 R197 R221
			R222 R224 R226
			R227 R229 R237
			R239 R241 R256
			R258 R270 R271
			R272 R275 R276
			R277 R278 R279
			R283 R291 R300
			R517 R537 R539
			R541 R543 R558
			R588 R595 R598
			R600 R604 R605
			R606 R607 R608
			R609 R610 R611
			R617 R618 R619
			R620 R621 R636
			R637 R638 R639
			R642 R644 R645
			R646 R647 R648
			R649 R650 R651
			R652 R653 R654
			R655 R656 R658
			R659 R672 R676
			R698 R699 R701
			R705 R708 R714
			R716 R730 R732
			R734 R766 R768
2007-000156	res, R-CHIP;30Kohm,5%,1/16W,TP,1005	2	R41 R139
2007-000157	res, R-CHIP;47Kohm,5%,1/16W,TP,1005, nostuff	9	R4 R305 R592 R593
			R594 R596 R715
			R741 R743
2007-000162	res, R-CHIP;100Kohm,5%,1/16W,TP,1005, nostuff	14	R42 R49 R138 R269
			R284 R292 R293
			R518 R531 R565
			R597 R599 R735
			R739
2007-000167	res_t, R-CHIP;390Kohm,5%,1/16W,TP,1005	1	R529
2007-000168	res, R-CHIP;470Kohm,5%,1/16W,TP,1005	5	R7 R200 R201 R550
			R736
2007-000170	res, R-CHIP;1Mohm,5%,1/16W,TP,1005, nostuff	5	R232 R694 R695
			R723 R771

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2007-000171	res, R-CHIP;0ohm,5%,1/16W,TP,1005, nostuff	57	R23 R31 R84 R85
			R115 R119 R128
			R130 R145 R150
			R155 R166 R167
			R169 R198 R233
			R250 R251 R252
			R253 R265 R301
			R303 R520 R521
			R522 R542 R544
			R559 R563 R564
			R569 R570 R571
			R572 R573 R574
			R575 R601 R613
			R614 R615 R622
			R628 R629 R630
			R660 R665 R666
			R683 R684 R711
			R718 R746 R758
			R759 R762
2007-000173	res, R-CHIP;22ohm,5%,1/16W,TP,1005	6	R194 R195 R196
			R640 R641 R717
2007-000309	res, R-CHIP;10ohm,5%,1/10W,TP,1608, nostuff	11	R63 R67 R68 R80
			R81 R162 R163 R254
			R580 R720 R721
2007-000539	res, R-CHIP;200ohm,5%,1/10W,TP,1608	2	R61 R90
2007-000669	res_t, R-CHIP;2Kohm,1%,1/10W,TP,1608	1	R625
2007-000695	res, R-CHIP;3.3ohm,5%,1/10W,TP,1608	7	R27 R34 R45 R47
			R51 R86 R255
2007-000729	res, R-CHIP;300ohm,5%,1/10W,TP,1608, nostuff	1	R89
2007-000982	res, R-CHIP;5.6Kohm,5%,1/16W,TP,1005, nostuff	3	R235 R747 R763
2007-001139	res_t, R-CHIP;7.5Kohm,1%,1/10W,TP,1608	2	R52 R60
2007-001292	res, R-CHIP;33ohm,5%,1/16W,TP,1005	30	R91 R108 R151 R179
			R180 R181 R182
			R183 R184 R187
			R188 R189 R211
			R212 R213 R214
			R215 R217 R218
			R219 R228 R234
			R236 R547 R602
			R603 R634 R635
			R680 R681
2007-001341	res, R-CHIP;680Kohm,5%,1/16W,TP,1005	1	R737
2007-002907	res_t, R-CHIP;237Kohm,1%,1/10W,TP,1608	1	R677
2007-002910	res_t, R-CHIP;30.1Kohm,1%,1/10W,TP,1608	8	R26 R56 R70 R72
			R113 R554 R577
			R724
2007-002918	res_t, R-CHIP;51.1Kohm,1%,1/10W,TP,1608	4	R17 R246 R248 R528
[illegible]	[illegible]	[illegible]	[illegible]

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2007-002970	res, R-CHIP;56ohm,5%,1/16W,TP,1005	12	R18 R19 R20 R21
			R87 R92 R93 R238
			R240 R587 R690
			R692
2007-007046	res_pt, R-CHIP;0.02ohm,1%,1W,TP,6432	1	R8
2007-007098	res_t, R-CHIP;475Kohm,1%,1/16W,TP,1005	1	R557
2007-007100	res, R-CHIP;10Mohm,5%,1/16W,TP,1005	1	R682
2007-007107	res_t, R-CHIP;100Kohm,1%,1/16W,TP,1005, nostuff	9	R35 R71 R83 R500
			R501 R576 R581
			R585 R722
2007-007108	res_t, R-CHIP;43.2Kohm,1%,1/16W,TP,1005	1	R66
2007-007142	res_t, R-CHIP;10Kohm,1%,1/16W,TP,1005, nostuff	8	R16 R30 R46 R73
			R247 R551 R552
			R578
2007-007226	res_t, R-CHIP;49.9ohm,1%,1/10W,TP,1608, nostuff	10	R50 R62 R64 R164
			R199 R289 R748
			R749 R750 R751
2007-007228	res_t, R-CHIP;681ohm,1%,1/10W,TP,1608	1	R101
2007-007302	res_t, R-CHIP;24.9ohm,1%,1/10W,TP,1608	1	R122
2007-007306	res_t, R-CHIP;100ohm,1%,1/16W,TP,1005, nostuff	13	R9 R10 R11 R12 R53
			R58 R244 R290 R532
			R713 R754 R757
			R764
2007-007307	res_t, R-CHIP;150ohm,1%,1/16W,TP,1005	12	R123 R124 R125
			R126 R127 R502
			R503 R514 R515
			R516 R767 R769
2007-007312	res_t, R-CHIP;20Kohm,1%,1/16W,TP,1005	8	R1 R24 R105 R555
			R691 R693 R728
			R731
2007-007318	res_t, R-CHIP;1Kohm,1%,1/16W,TP,1005, nostuff	16	R14 R129 R140 R146
			R165 R204 R205
			R230 R264 R268
			R523 R675 R689
			R706 R733 R752
2007-007334	res_t, R-CHIP;200Kohm,1%,1/16W,TP,1005, nostuff	10	R28 R32 R65 R249
			R302 R519 R549
			R561 R589 R738
2007-007382	res, R-CHIP;20Mohm,5%,1/10W,TP,1608, nostuff	2	R590 R591
2007-007441	res_t, R-CHIP;562ohm,1%,1/10W,TP,1608	2	R626 R632
2007-007489	res_t, R-CHIP;150Kohm,1%,1/16W,TP,1005	6	R3 R25 R29 R36 R55
			R678
2007-007528	res_t, R-CHIP;1.5Kohm,1%,1/16W,TP,1005	4	R43 R79 R567 R579
2007-007549	res_t, R-CHIP;4.99Kohm,1%,1/10W,TP,1608	4	R525 R527 R533
			R534
2007-007615	res_t, R-CHIP;11.8Kohm,1%,1/10W,TP,1608	1	R136
2007-007668	res_t, R-CHIP;68.1Kohm,1%,1/10W,TP,1608	1	R266

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2007-007766	res_t, R-CHIP;2Kohm,1%,1/16W,TP,1005	7	R13 R54 R59 R78
			R82 R174 R586
2007-007792	res_t, R-CHIP;221ohm,1%,1/16W,TP,1005	3	R114 R168 R170
2007-007839	res_t, R-CHIP;53.6Kohm,1%,1/10W,TP,1608	1	R267
2007-008015	res_t, R-CHIP;75ohm,1%,1/16W,TP,1005	9	R141 R142 R143
			R144 R536 R538
			R540 R545 R546
2007-008223	res_t, R-CHIP;39.2Kohm,1%,1/10W,TP,1608	1	R729
2007-008293	res_t, R-CHIP;475ohm,1%,1/16W,TP,1005	2	R633 R773
2007-008298	res_t, R-CHIP;49.9ohm,1%,1/16W,TP,1005	21	R121 R175 R176
			R177 R178 R185
			R186 R206 R207
			R208 R209 R285
			R286 R287 R288
			R295 R296 R297
			R298 R299 R770
2007-008299	res_t, R-CHIP;61.9ohm,1%,1/16W,TP,1005	1	R94
2007-008300	res_t, R-CHIP;5.11Kohm,1%,1/16W,TP,1005	1	R69
2007-008303	res_t, R-CHIP;27.4ohm,1%,1/16W,TP,1005	2	R37 R39
2007-008304	res_t, R-CHIP;300Kohm,1%,1/16W,TP,1005, nostuff	9	R33 R48 R274 R524
			R530 R548 R556
			R560 R562
2007-008314	res_t, R-CHIP;54.9ohm,1%,1/16W,TP,1005	2	R22 R38
2007-008330	res_t, R-CHIP;22.6ohm,1%,1/16W,TP,1005	3	R583 R584 R756
2007-008373	res_t, R-CHIP;1.47kohm,1%,1/10W,TP,1608	1	R664
2007-008535	res_t, R-CHIP;127ohm,1%,1/16W,TP,1005	1	R95
2007-008708	res_t, R-CHIP;40.2ohm,1%,1/16W,TP,1005	2	R171 R172
2007-008714	res_pt, R-CHIP;0.01ohm,1%,1W,TP,6432	1	R15
2007-008789	res_pt, R-CHIP;0.001ohm,1%,1W,TP,6432	2	R2 R6
2011-000685	rneta, R-NET;56ohm,5%,63mW,L,CHIP,4P,TP,1.0x1.0mm	26	RA1 RA2 RA3 RA4
			RA5 RA6 RA7 RA8
			RA9 RA10 RA11 RA12
			RA13 RA14 RA15
			RA16 RA17 RA18
			RA19 RA20 RA21
			RA22 RA23 RA24
			RA25 RA26
2203-000189	ccap_v, C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	C591
2203-000233	ccap, C-CER,CHIP;0.1nF,5%,50V,C0G,1005, nostuff	20	C1 C94 C114 C330
			C500 C521 C523
			C547 C548 C549
			C567 C574 C575
			C661 C668 C672
			C673 C684 C711
			C749
2203-000257	ccap, C-CER,CHIP;10nF,10%,50V,X7R,1608	8	C115 C120 C576
			C660 C662 C727
			C756 C757

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2203-000278	ccap_t, C-CER,CHIP;0.01nF,0.5pF,50V,C0G,1005	9	C2 C501 C529 C530
			C531 C664 C665
			C742 C779
2203-000425	ccap, C-CER,CHIP;0.018nF,5%,50V,C0G,1005	5	C3 C502 C583 C584
			C691
2203-000438	ccap, C-CER,CHIP;1nF,10%,50V,X7R,1005, nostuff	12	C74 C83 C93 C95
			C107 C110 C116
			C137 C533 C540
			C569 C671
2203-000489	ccap, C-CER,CHIP;2.2nF,10%,50V,X7R,1005	3	C141 C555 C557
2203-000575	ccap_v, C-CER,CHIP;220nF,10%,25V,X7R,2012	2	C303 C678
2203-000585	ccap, C-CER,CHIP;0.22nF,10%,50V,X7R,1005	2	C123 C133
2203-000627	ccap, C-CER,CHIP;0.022nF,5%,50V,C0G,1005	8	C4 C231 C232 C320
			C321 C503 C747
			C748
2203-000654	ccap, C-CER,CHIP;0.27nF,10%,50V,X7R,1005	4	C307 C335 C525
			C526
2203-000679	ccap, C-CER,CHIP;0.027nF,5%,50V,C0G,1005	4	C5 C504 C728 C758
2203-000727	ccap, C-CER,CHIP;3.9nF,10%,50V,X7R,2012	1	C300
2203-000940	ccap, C-CER,CHIP;0.47nF,10%,50V,X7R,1005	2	C119 C301
2203-000995	ccap, C-CER,CHIP;0.047nF,5%,50V,C0G,1005, nostuff	15	C6 C113 C118 C505
			C512 C513 C514
			C515 C716 C717
			C719 C720 C721
			C723 C725
2203-001554	ccap, C-CER,CHIP;1.8nF,10%,50V,X7R,1608, nostuff	1	C577
2203-001652	ccap_v, C-CER,CHIP;470nF,+80-20%,16V,Y5V,1608, nostuff	1	C153
2203-002398	ccap, C-CER,CHIP;22nF,10%,50V,X7R,1608	1	C207
2203-002487	ccap_v, C-CER,CHIP;4.7nF,10%,25V,X7R,1005, nostuff	5	C108 C109 C257
			C572 C705
2203-002709	ccap, C-CER,CHIP;100nF,+80-20%,16V,Y5V,1005, nostuff	20	C139 C154 C201
			C218 C219 C220
			C221 C234 C235
			C527 C528 C608
			C618 C642 C643
			C646 C654 C658
			C669 C695
2203-002711	ccap_v, C-CER,CHIP;100nF,10%,25V,X7R,1608	26	C10 C11 C17 C18
			C32 C37 C55 C59
			C78 C80 C82 C84
			C85 C86 C90 C121
			C258 C509 C550
			C553 C554 C558
			C564 C566 C568
			C571

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2203-006048	cap, C-CER,CHIP;100nF,10%,10V,X7R,1005, nostuff	205	C8 C9 C15 C19 C30
			C31 C41 C49 C51
			C52 C61 C62 C64
			C71 C72 C75 C81
			C89 C100 C112 C138
			C145 C148 C152
			C157 C158 C160
			C163 C183 C184
			C186 C187 C188
			C189 C192 C195
			C196 C206 C208
			C209 C210 C216
			C226 C228 C229
			C237 C240 C241
			C242 C243 C244
			C245 C246 C247
			C248 C249 C250
			C251 C252 C255
			C256 C259 C261
			C262 C263 C264
			C265 C266 C267
			C268 C269 C270
			C271 C272 C273
			C274 C275 C276
			C281 C285 C286
			C287 C288 C289
			C290 C291 C292
			C293 C294 C295
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			C304 C305 C306
			C313 C314 C315
			C316 C322 C324
			C325 C326 C327
			C328 C333 C334
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			C340 C341 C342
			C343 C507 C516
			C520 C522 C524
			C532 C534 C535
			C536 C537 C538
			C541 C542 C543
			C545 C556 C570
			C578 C589 C594
			C595 C598 C599
			C605 C606 C609
			C610 C611 C612
			C613 C614 C615
			C616 C619 C620

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			C616 C619 C620
			C623 C635 C636
			C638 C648 C667
			C670 C674 C675
			C676 C680 C681
			C682 C683 C686
			C687 C688 C690
			C692 C694 C696
			C701 C703 C708
			C709 C713 C718
			C724 C729 C730
			C731 C732 C733
			C736 C737 C738
			C740 C745 C746
			C752 C753 C759
			C760 C761 C762
			C763 C764 C766
			C767 C768 C769
			C770 C775 C778
			C780
2203-006069	ccap_y, C-CER,CHIP;4700nF,10%,6.3V,X7R,2012, nostuff	17	C58 C77 C79 C87
			C99 C103 C146 C151
			C174 C177 C185
			C200 C217 C277
			C579 C586 C588
2203-006090	ccap_y, C-CER,CHIP;10000nF,10%,6.3V,X5R,2012, nostuff	67	C22 C23 C24 C25
			C26 C27 C28 C29
			C42 C43 C44 C45
			C46 C47 C48 C50
			C63 C65 C66 C67
			C68 C69 C70 C73
			C98 C105 C124 C125
			C126 C127 C128
			C129 C130 C131
			C142 C143 C156
			C168 C170 C191
			C193 C197 C211
			C212 C230 C253
			C308 C309 C310
			C319 C332 C544
			C581 C585 C587
			C641 C645 C666
			C689 C707 C710
			C734 C735 C765
			C772 C774 C776

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2203-006166	ccap, C-CER,CHIP;100nF,10%,25V,X5R,1005	27	C13 C14 C16 C20
			C21 C39 C40 C53
			C54 C76 C92 C111
			C136 C140 C178
			C179 C180 C181
			C182 C203 C204
			C205 C546 C559
			C560 C562 C781
2203-006324	ccap, C-CER,CHIP;2200nF,10%,10V,X5R,1608, nostuff	28	C101 C102 C104
			C134 C135 C144
			C147 C150 C159
			C161 C162 C166
			C167 C175 C176
			C190 C194 C198
			C202 C213 C215
			C238 C254 C284
			C298 C617 C631
			C751
2203-006336	ccap, C-CER,CHIP;10000nF,10%,25V,X5R,3216, nostuff	4	C12 C278 C279 C582
2203-006348	ccap, C-CER,CHIP;1000nF,10%,25V,X5R,1608, nostuff	10	C56 C57 C122 C508
			C510 C551 C552
			C563 C565 C647
2203-006361	ccap_v, C-CER,CHIP;10000nF,10%,10V,X5R,2012, nostuff	9	C227 C317 C318
			C323 C677 C702
			C704 C715 C754
2203-006399	ccap_v, C-CER,CHIP;1000nF,10%,6.3V,X5R,1005, nostuff	38	C132 C149 C169
			C171 C172 C199
			C339 C593 C600
			C601 C602 C603
			C604 C607 C621
			C622 C624 C625
			C626 C627 C628
			C629 C630 C632
			C633 C634 C639
			C640 C650 C652
			C657 C693 C697
			C698 C699 C714
			C726 C771
2203-006474	cap_t, C-CER,CHIP;22000nF,20%,6.3V,X5R,2012	5	C173 C214 C592
			C637 C659
2402-001120	ecap, C-POLYMER AL CHIP;330uF,0.2,6.3V,-,TP,7.3x4.3x2.8,	2	EC522 EC523
2402-001122	ecap, C-POLYMER AL CHIP;100uF,0.2,6.3V,-,TP,7.3x4.3x1.9,	2	EC10 EC11
2402-001127	ecap, C-ORGANIC;220UF,20%,6.3V,-,TP,7343	1	EC14
2402-001144	ecap, C-AL,SMD;68uF,20%,25V,LZ,TP,6.3*5.8mm, nostuff	13	EC507 EC508 EC509
			EC510 EC511 EC512
			EC513 EC514 EC515
			EC516 EC517 EC518
			EC519

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2402-001168	ecap, C-POLYMER AL CHIP;330uF,20%,2.5V,WT,TP,7.3*4.3*1.8, nostuff	6	EC7 EC9 EC12 EC13
			EC520 EC521
2402-001258	ecap, C-AL,SMD;330uF,+-20%,2V,-,TP,7.3*4.3*2.8mm, nostuff	6	EC501 EC502 EC503
			EC504 EC505 EC506
2409-001117	ecap, C-ORGANIC,SMD;10uF,20%,25V,CAN,TP,6.8*6.8*6.0mm,-, nostuff	4	EC1 EC2 EC3 EC4
2409-001139	oxi_cap, C-NIOBUIM,CHIP;150uF,20%,6.3V,-,TP,7343(2.0),-, nostuff	5	EC500 EC525 EC526
			EC527 EC528
2409-001140	oxi_cap, C-NIOBUIM,CHIP;330uF,+-20%,2.5V,-,TP,7.3*4.3*2.0mm, nostuff	2	EC5 EC8
2409-001147	oxi_cap, C-NIOBIUM,CHIP;6.8?F,+-20%,6.3V,-,TR,3.2x1.6x1.6mm	2	EC6 EC524
2603-000048	h0022, TRANS-MATCHING;-,1:1,0mA,6P:6P,11.81x8.63x2.159mm,	1	LT500
2703-000214	inductor, INDUCTOR-SMD;470nH,10%,2012	2	L500 L501
2703-001839	inductor, INDUCTOR-SMD;82nH,5%,1608	3	L502 L503 L504
2703-002748	inductor, INDUCTOR-SMD;10uH,10%,4532	1	L505
2703-002771	inductor, INDUCTOR-SMD;8.2uH,20%,12.5x12.5mm	1	L506
2703-002987	inductor, INDUCTOR-SMD;2.2uH,20%,6965	1	L3
2703-002988	inductor, INDUCTOR-SMD;1.8uH,20%,10x10mm	2	L507 L508
2703-002992	inductor, INDUCTOR-SMD;0.39uH,20%,10x10mm	2	L1 L2
2703-002996	inductor, INDUCTOR-SMD;3.9uH,20%,10x10mm	2	L509 L510
2801-000111	xtal4, CRYSTAL-SMD;0.032768MHz,20ppm,28-AAW,12.5pF,50000o	1	Y500
2801-004517	xtal, CRYSTAL-SMD;25.0MHz,30ppm,-,10pF,50ohm,TP	2	Y2 Y501
2801-004518	xtal, CRYSTAL-SMD;14.31818MHz,30ppm,-,16pF,70ohm,TP	1	Y1
2801-004519	xtal, CRYSTAL-SMD;10.0MHz,30ppm,-,16pF,100ohm,TP	1	Y3
3301-001272	bead_core, BEAD-SMD;120ohm,2x1.25x1mm,-,TR,-,-,-, nostuff	6	B1 B2 B3 B4 B527
			B528
3301-001594	bead_core, BEAD-SMD;90ohm,2.0*1.2*1.3mm,-,TP,-,-,-, nostuff	6	B504 B505 B510
			B511 B512 B519
3301-001649	bead_core, BEAD-SMD;180ohm,1608,-,TP,-,226ohm/389MHz,-	37	B5 B6 B7 B8 B9 B10
			B11 B12 B13 B14
			B15 B16 B17 B18
			B20 B21 B22 B23
			B502 B506 B507
			B508 B509 B513
			B514 B515 B516
			B517 B520 B521
			B522 B523 B524
			B525 B526 B531
			B532
3301-001772	bead_core, BEAD-SMD;27ohm,1608,-,TP,30ohm/120MHz,48ohm/550Mhz, nostuff	7	B19 B500 B501 B503
			B518 B529 B530
3404-001311	sw-tact-4p, SWITCH-TACT;12VDC,50mA,100gf,6.0x6.0x5.0mm,SPST	4	SW1 SW2 SW3 SW4
3701-001326	dsub-15s-3r-f, CONNECTOR-DSUB;15P,2R,FEMALE,ANGLE,NI	1	J502
3704-001153	yonah2m, SOCKET-IC;479P,PGA,AU,1.27mm	1	CPU500
3708-002166	fpc-25s-smd-mnt, CONNECTOR-FPC/FFC/PIC;25P,0.5mm,SMD-A,AU,Y,FLIP,BO	1	J5
3708-002190	fpc-12s-smd, CONNECTOR-FPC/FFC/PIC;12,0.5,SMD-A,AUF,Y,FLIP,BOTT	1	J3
3709-001322	edge-minipci-124p, CONNECTOR-CARD EDGE;124P,0.8,SMD-A,TIN,Mini PCI	1	MINIPCI500
3709-001341	edge-sodimm-200p-smd, CONNECTOR-CARD EDGE;200P,0.6mm,SMD-A,AUF,-	1	DDR501
3709-001413	edge-4in1-44p, CONNECTOR-CARD EDGE;44P,0.8mm,SMD-A,AU,4IN1	1	J514
3709-001425	edge-pcmcia-68p-mnt, CONNECTOR-CARD EDGE;-,-,-,Ni,PCMCIA Frame	1	J8
3709-001459	edge-sodimm-200p-smd, CONNECTOR-CARD EDGE;200P,0.6mm,SMD-A,Au,DDR2 SODIM	1	DDR500

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3709-001459	edge-sodimm-200p-smd, CONNECTOR-CARD EDGE;200P,0.6mm,SMD-A,Au,DDR2 SODIM	1	DDR500
3710-002133	sock-12z-2r-smd-mnt6, SOCKET-BOARD TO BOARD;12P,2R,0.8mm,SMD-A,SN,NTR	1	J508
3710-002294	sock-50z-2r-mnt, CONNECTOR-SOCKET;50P,2R,0.8mm,ANGLE,AU,BLK	1	J509
3710-002468	sock-22s-1r-mnt2, SOCKET-INTERFACE;7+15P,1R,1.27mm,ANGLE,Au,BLK	1	J513
3711-000541	head-2s-1r-smd, HEADER-BOARD TO CABLE;BOX,2P,1R,1.25MM,SMD-A,SN,NT	3	J6 J504 J506
3711-000922	head-4s-1r-smd, HEADER-BOARD TO CABLE;BOX,4P,1R,1.25mm,SMD-A,SN,WH	1	J4
3711-002127	head-8s-1r-smd-mnt, HEADER-BOARD TO CABLE;BOX,8P,1R,1.25mm,SMD-A,SN,WH	1	J9
3711-003609	head-2s-1r-smd-mnt, HEADER-BOARD TO CABLE;BOX,2P,1R,1.25MM,SMD-A,SN,BE	1	J2
3711-004203	sock-20s-2r-smd, HEADER-BOARD TO BOARD;BOX,20P,2R,0.5MM,SMD-S,AUF, nostuff	1	J512
3711-004646	socket-pcmcia-68p-a, HEADER-BOARD TO BOARD;NOWALL,68P,2R,1.27mm,SMD-A,A	1	J7
3711-005987	head-30z-2r-smd-mnt, CONNECTOR-HEADER;BOX,30P,2R,1mm,SMD-S,AU,NTR	1	J1
3711-006059	head-7s-1r-2, HEADER-BATTERY;NOWALL,7P,1R,2.5,BATTERY,AU,BLK	1	J505
3722-002191	jack-dc-power-3p, JACK-DC POWER;3P,5.6pi,Sn-P,Black	1	J500
3722-002251	jack-din-7p-mnt, JACK-VHS;7P,-,SN,YEL,-	1	J501
3722-002365	jack-phone-6p-4, JACK-PHONE;6P,AUF,PINK	1	J510
3722-002382	jack-usb-8p-mnt4, JACK-USB;4P/2C,AUF,BLK,ANGLE-OFFSET,A TYPE	2	J503 J507
3722-002390	jack-lan-8p-led2-mnt, JACK-MODULAR;8P/8C,REVERSE,YES,ANGLE-OFF,GRN/YEL/A	1	LAN500
3722-002416	jack-phone-6p-4, JACK-PHONE;6P,AUF,LIME,ANGLE	1	J511
6302-001053	emi-clip, GASKET;EXF-0023-02,L3.7,GOLD,BECU, nostuff	2	EMI504 EMI507
BA61-00784A	screw, SUPPORT-VIDEO_BD;ARGO,CU ALLOY,T3.5,W3.5,L3.9,-,-	3	M500 M501 M502
BA61-00784A	screw, SUPPORT-VIDEO_BD;ARGO,CU ALLOY,T3.5,W3.5,L3.9,-,-	5	M1 M3 M4 M5 M6
BA61-01047A	screw, SUPPORT-DMB;SEDONA,BRONZE(C3604RD-F),T3.5,W3.5,L3., nostuff	3	M503 M504 M505
BA61-01082A	screw, SUPPORT-KEYBOARD;FIRENZE2,CU ALLOY,T1.6,W7.0,L0.6m	2	M2 M7
BA70-00601A	emi-clip, GASKET-EMI;EMISTOP,Be-Cu,T0.10,Au/gold color,W5.5,, nostuff	7	EMI1 EMI500 EMI501
			EMI502 EMI503
			EMI505 EMI506
R1608-SHORT	res_short, RESISTOR;r1608-short	21	R97 R100 R137 R148
			R156 R157 R158
			R245 R273 R294
			R504 R505 R526
			R535 R553 R566
			R568 R582 R712
			R755 R765