Service Manual

(LE50)

LG Electronics

Contents

Chapter 1. Service information

1-1. Important service information

■ Strategy for replacing parts (FRU-Field Replaceable Units)

> **Before replacing parts**
>
> Make sure that latest BIOS and drivers are installed before replacing any parts (FRUs) listed in this

Use the following strategy to prevent unnecessary expense for replacing and servicing parts

1. If you are instructed to replacing a part but the replacement does not correct the problem, reinstall the original part before you continue.

2. Some computers have both a processor board and system board. If you are instructed to replace either the processor board or the system board, and replacing one of them does not correct the problem, reinstall that board, and then replace the other one.

3. If an adapter or device consists of more than one part, any of the parts (FRUs) may be the cause of the error. Before replacing the adapter or device, remove the parts (FRUs), one by one, to see if the symptoms change. Replace only the part that changed the symptoms.

> **Caution**
>
> The BIOS configuration on the computer you are servicing may have been customized. Running Automatic Configuration my alter the settings. Note the current configuration settings; then, when service has been completed, verify that those settings remain in effect.

■ Strategy for replacing a hard-disk drive

You have to get a User's approval before formatting or replacing a hard-disk drive. You must let the User know that the user is responsible for the loss data

> **Caution**
>
> The drive startup sequence in the computer you are servicing may have been changed. Be extremely careful during write operations such as copying, saving, or formatting. If you select an incorrect drive, data or programs can be overwritten.

1-2. Safety notices

> **Warning**
>
> Before the computer is powered-on after part (FRU) replacement, make sure all screws, springs, and other small parts are in place and are not left loose inside the computer. Verify this by shaking the computer and listening for rattling sounds. Metallic parts or metal flakes can cause electrical shorts.

> **Warning**
>
> some standby batteries contain a small amount of nickel and cadmium. Do not disassemble a standby battery, recharge it, throw it into fire or water, or short-circuit it. Dispose of the battery as required by local ordinances or regulations. Use only the battery in the appropriate parts listing. Use of an incorrect battery can result in ignition or explosion of the battery

> **Warning**
>
> The battery pack contains small amounts of nickel. Do not disassemble it, throw it into fire or water, or short-circuit it. Dispose of the battery pack as required by local ordinances or regulations. Use only the battery in the appropriate parts listing when replacing the battery pack. Use of an incorrect battery can result in ignition or explosion of the battery.

> **Warning**
>
> If the LCD breaks and the fluid from inside the LCD gets into your eyes or on your hands, immediately was the affected areas with water for at least 15 minutes. Seek medical care if any symptoms from the fluid are present after washing.

> **Warning**
>
> To avoid shock, do not remove the plastic cover that protects the lower part of the inverter card.

> **Warning**
>
> Though the main batteries have low voltage, a shorted or grounded battery can produce enough current to burn personnel or combustible materials.

> **Warning**
>
> Before removing any part (FRU), turn off the computer, unplug all power cords from electrical outlets, remove the battery pack, and then disconnect any interconnecting cables.

1-3. Safety information

■ General safety

Follow these rules to ensure general safety

· Observe good housekeeping in the area of the machines during and after maintenance.

· When lifting any heavy object

1. Ensure you can stand safely without slipping.

2. Distribute the weight of the object equally between your feet.

3. Use a slow lifting force. Never move suddenly or twist when you attempt to lift.

4. Lift by standing or by pushing up with your leg muscles

   (This action removes the strain from the muscles in your back.)

· Do not attempt to lift any object weights more then 16kg(35lb) or object that you think are too heavy for you.

· Do not perform any action that causes hazards to the customer, or that makes the equipment unsafe.

· Before you start the machine, ensure that other service representatives and the customer's personnel are not in a hazardous position.

· Place removed covers and other parts in a safe place, away from all personnel, while you are servicing the machine.

· Keep your tool box away from walk areas so that other people will not trip over it.

· Do not wear loose clothing that can be trapped in the moving parts of a machine. Make sure that your sleeves are fastened or rolled up above your elbows. If your hair is long, fasten it.

· Insert the ends of your necktie or scarf inside clothing or fasten it with a nonconductive clip, approximately 8 centimeters(3 inches) from the end.

· Do not wear jewelry, chains, metal-frame eyeglasses, or metal fasteners for you clothing.

· Wear safety glasses when you are hammering, drilling, soldering, cutting wire, attaching springs, using solvents, or working in any other conditions that might be hazardous to your eyes.

· After service, reinstall all safety shields, guards, labels, and ground wires. Replace any safety device that is worn or defective.

· Reinstall all covers correctly before returning the machine to the customer.

⚠ **Caution**

Metal objects are good electrical conductors.

■ Electrical safety

Observe the following rules when working on electrical equipment.

> **Important**
>
> Use only approved tools and test equipment. Some hand tools have handles covered with a soft material that does not insulate you when working with live electrical currents.
>
> Many customers have, near their equipment, rubber floor mats that contain small conductive fibers to decrease electrostatic discharges. Do not use this type of mat to protect yourself from electrical shock.

· Find the room emergency power-off switch, disconnecting switch, or electrical outlet. If an electrical outlet. If an electrical accident occurs, you can then operate the switch or unplug the power cord quickly.

· Do not work alone under hazardous conditions or near equipment that has hazardous voltages.

· Disconnect all power before

  1. Performing a mechanical inspection

  2. Working near power supplies

  3. Removing or installing main units

· Before you start to work on the machine, unplug the power cord. If you cannot unplug it, ask the customer to power-off the wall box that supplies power to the machine and to lock the wall box in the off position.

· If you need to work on a machine that has exposed electrical circuits, observe the following precautions : Ensure that another person, familiar with the power-off controls, is near you.

> **Caution**
>
> Another person must be there to switch off the power, if necessary.

· Use only one hand when working with powered-on electrical equipment. Keep the other hand in your pocket or behind your back

> **Caution**
>
> An electrical shock can occur only when there is a complete circuit. By observing the above rule, you may prevent a current from through your body.

· When using testers, set the controls correctly and use the approved probe leads and accessories for that tester

· Stand on suitable rubber mats (obtained locally, if necessary) to insulate you from grounds such as metal floor strips and machine frames.

· Observe the special safety precautions when you work with very high voltages. These instructions are in the safety sections of maintenance information. Use extreme care when measuring high voltages.

· Regularly inspect and maintain your electrical hand tools for safe operational condition.

· Do not use worn or broken tools and testers.

· Never assume that power has been disconnected from a circuit. First check that it has been powered off.

· Always look carefully for possible hazards in your work area. Examples of these hazards are moist floors, non-grounded power extension cables, power surges, and missing safety grounds.

· Do not touch live electrical circuits with the reflective surface of a plastic dental mirror. The surface is conductive such touching can cause personal injury and machine damage.

· Do not service the following parts with the power on when they are removed from their normal operating places in a machine.

  1. Power supply units

  2. Pumps

  3. Blowers and fans

  4. Motorgenerators

    and similar units. (This practice ensure correct grounding of the units.)

· If an electrical accident occurs

  1. Use caution ; do not become a victim of yourself.

  2. Switch off power.

  3. Send another person to get medical aid.

■ Safety inspection guide

The purpose of this inspection guide is to assist you in identifying potentially unsafe conditions.

As each machine was designed and built, required safety items were installed to protect users and service personnel from injury. This guide addresses only those items. You should use good judgment to identify potential safety hazards due to attachment of non-LG features or options not covered by this inspection guide.

If any unsafe conditions are present, you must determine how serious the apparent hazard could be and whether you can continue without first correcting the problem.

· Consider these conditions and the safety hazards they present

1. Electrical hazards, especially primary power (primary voltage on the frame can cause serious or fatal electrical shock)
2. Mechanical hazards, such as loose or missing hardware

Refer to the following checklist and begin the checks with the power off, and the power cord disconnected.

· Checklist

1. Check exterior covers for damage (loose, broken, or sharp edges)
2. Power off the computer. Disconnect the power cord.
3. Check the power cord for :
   a. A third-wire ground connector in good condition. Use a meter to measure third-wire ground continuity for 0.1 Ω or less between the external ground pin and frame ground.
   b. The power cord should be the type specified in the parts list.
   c. Insulation must not be frayed or worn.
4. Remove the cover.
5. Check for any obvious non-LG alterations. Use good judgment as to the safety of any non-LG alterations.
6. Check inside the unit for any obvious unsafe conditions, such as metal filings, contamination, water or other liquids, or signs of fire or smoke damage.
7. Check for worn, frayed, or pinched cables.
8. Check that the power-supply cover fasteners (screw or rivets) have not been removed or tampered with.

■ Handling devices that are sensitive to electrostatic discharge

Any computer part containing transistors or integrated circuits (ICs) should be considered sensitive to electrostatic discharge (ESD). ESD damage can occur when there is a difference in charge between objects. Protect against ESD damage by equalizing the charge so that the machine, the part, the work mat, and the person handling the part are all at the same charge.

> **Note**
>
> Use product-specific ESD procedures when they exceed the requirements noted here.
>
> Make sure that the ESD protective devices you use have been certified (ISO9000) as fully effective.

· When handling ESD-sensitive parts :

1. Keep the parts in protective packages until they are inserted into the product.
2. Wear a grounded wrist strap against your skin to eliminate static on your body.
3. Prevent the part from touching your clothing. Most clothing retains a charge even when you are wearing a wrist strap.
4. Use the black side of a grounded work mat to provide a static-free work surface. The mat is especially useful when handling ESD-sensitive devices.
5. Select a grounding system, such as those listed below, to provide protection that meets the specific service requirement.

> **Note**
>
> The use of a grounding system is desirable but not required to protect against ESD damage.

　　a. Attach the ESD ground clip too any frame ground, ground braid, or green-wire ground.
　　b. Use an ESD ground or reference point when working on a double-insulated or battery-operated system. You can use coax or connector-outside shells on these systems.
　　c. Use the round ground-prong of the AC plug on AC-operated computers.

■ Grounding requirements

Electrical grounding of the computers is required for operator safety and correct system function.

Proper grounding of the electrical outlet can be verified by a certified electrician.

1-4. Laser compliance statement

When a CD-ROM drive, DVD drive or the other laser product is installed, note the following :

> ⚠️ **Caution**
> Use of controls or adjustments or performance of procedures other than those specified here in might result in hazardous radiation exposure.

Opening the CD-ROM drive, DVD-ROM drive or the other optical storage device could result in exposure to hazardous laser radiation.

There are no serviceable parts inside those drives. Do not open

> ⚠️ **Danger**
> Emits visible and invisible laser radiation when open. Do not stare into the beam , do not view directly with optical instruments, and avoid direct exposure to the bean.

1-5. Backup (Standby) RTC battery safety information

When replacing or disposing of the backup (standby) RTC battery, note the following :

> ⚠️ **Caution**
> There is the risk of explosion if the backup (standby) RTC battery is replaced by an incorrect type.
> Dispose of used backup (standby) RTC battery according to your local ordinances or regulation.
>
> Для замены, используйте соответствующий тип батареек.
> Существует опасность воспламенения.
>
> Удаляйте отработанные батарейки согласно местным правилам или нормам.
> Неправильное удаление батареек может привести к их взрыву или пожару.
>
> باطری ذخیره (یدکی)را با نوع درست آن عوض کنید.
> خطر انفجار وجود دارد.
> باطری های ذخیره های (یدکی) استفاده شده را بر اساس دستورالعمل داخلی مصرف کنید.
> مصرف باطریهای نادرست منجر به انفجار یا آتش سوزی میشود.
>
> غير البطارية البديلة على الطراز المناسب.
> وهناك احتمال الانفجار.
> تخلص من البطاريات البديلة المستعملة حسب القوانين والانظمة المحلية.
> البطاريات المتخلص منها بصورة غير مناسبة قد تؤدي الى انفجار او احتراق.

1-6. Read this first

Before you go to the checkout guide, be sure to read this section.

Important Notes

· Only trained personnel certified by LG should service the computer.

· Read the entire FRU removal and replacement page before replacing any FRU.

· Use new nylon-coated screws when you replace FRUs.

· Be extremely careful during such write operations as copying, saving, formatting.

 Drives in the computer that you are servicing sequence might have been altered. If you selected an

 incorrect drive, data or programs might be overwritten.

· Replace FRUs only for the correct mode.

· When you replace a FRU, make sure the model of the machine and the FRU part number are correct by

 referring to the FRU parts list.

· A FRU should not be replaced because of a single, irreproducible failure. Single failures can occur for a

 variety of reasons that have nothing to do with a hard ware defect, such as cosmic radiation,

 electrostatic discharge, or software errors.

· Consider replacing a FRU only when a problem recurs. If you suspect that a FRU is defective, clear the

 error log and run the test again. If the error does not recur, do not replace the FRU.

· Be careful not to replace a non-defective FRU.

■ What to do first

You must fill out the record form first.

During the warranty period, the customer may be responsible for repair costs if the computer damage was

caused by misuse, accident, modification, unsuitable physical or operating environment, or improper

maintenance by the customer. The following list provides some common items that are not covered under

warranty and some symptoms that might indicate that the system was subjected to stress beyond normal

use. Before checking problems with computer, determine whether the damage is covered under the

warranty by referring to the following :

Ch1. Service information
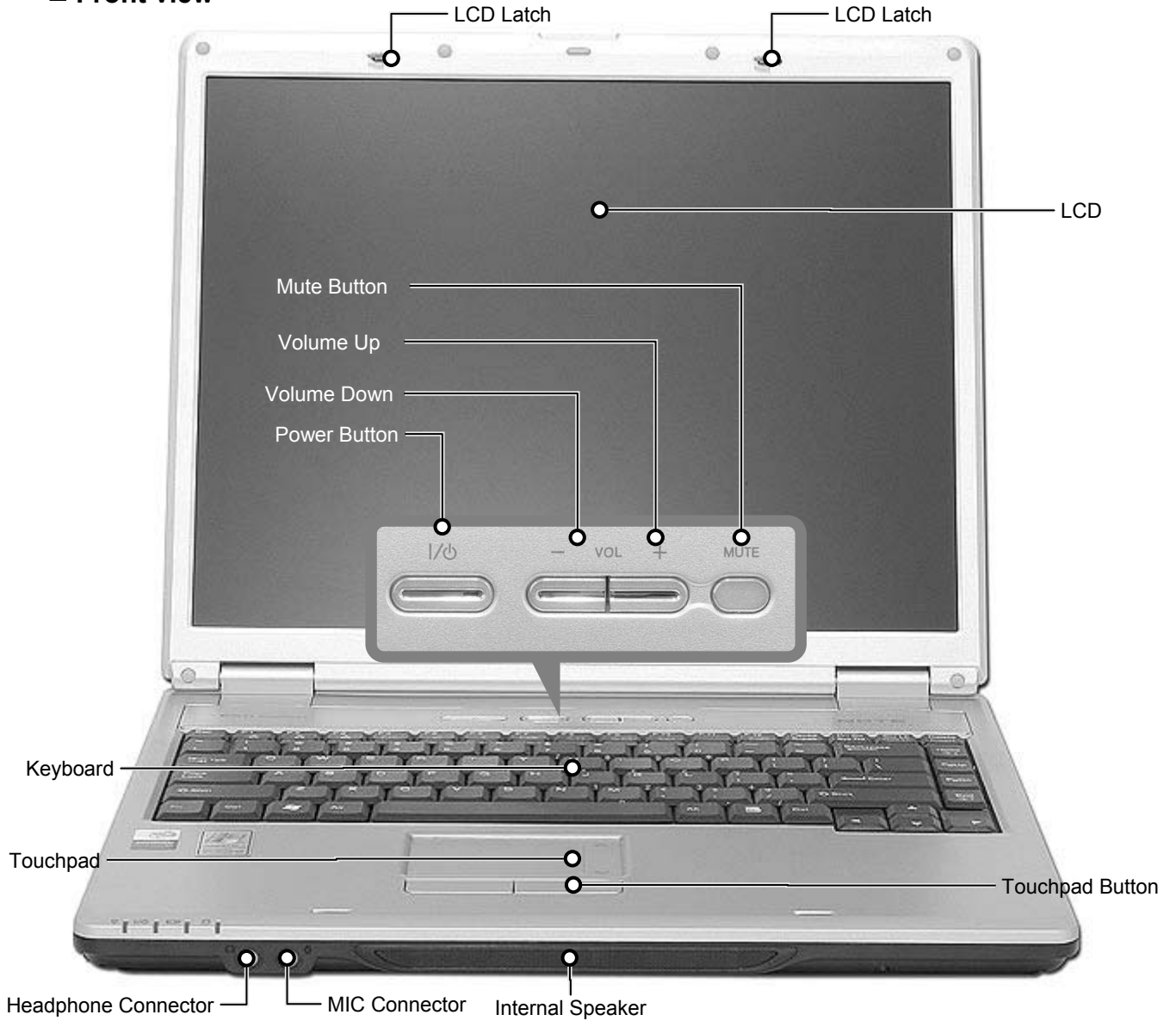
The followings are not covered under warranty :

· CD panel cracked from the application of excessive force or from being dropped

· Scratched (cosmetic) parts

· Distortion, deformation, or discoloration of the cosmetic parts

· Cracked or broken plastic parts, broken latches, broken pins, or broken connectors caused by excessive
  force

· Damage caused by liquid spilled into system

· Damage caused by improper insertion of a PC Card or the installation of an incompatible card

· Damage caused foreign material in the diskette drive

· Diskette drive damage caused by pressure on the diskette drive cover or by the insertion of a diskette
  with multiple labels

· Damaged or bent diskette eject button

· Fusses blown by attachment of a non-supported device

· Forgotten computer password (making the computer unusable)

· Sticky keys caused by spilling a liquid onto the keyboard

The following symptoms might indicate damage caused by non-warranted activities :

· Missing parts might be a symptom of unauthorized service or modification.

· If the spindle of a hard-disk drive becomes noisy, it may have been subjected to excessive force, or
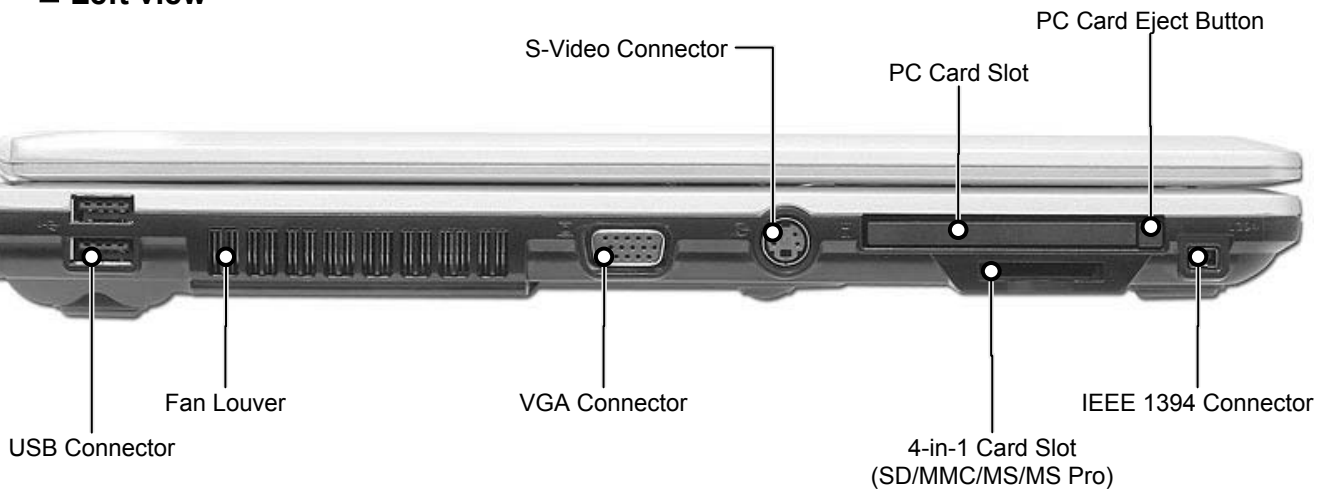 dropped.

Chapter 2. Locations

■ Front view

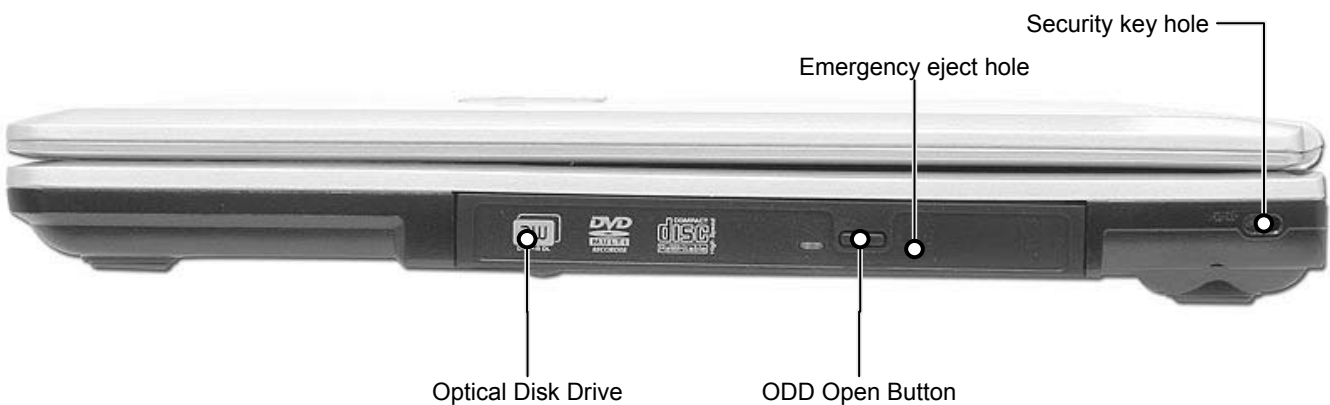LCD Latch

LCD Latch

LCD

Mute Button

Volume Up

Volume Down

Power Button

I/Ø   VOL   MUTE

Keyboard

Touchpad

Touchpad Button

Headphone Connector

MIC Connector

Internal Speaker

■ Rear view

AC Connector

USB Connector

Power Management Battery

LAN Connector

12

■ **Left view**

PC Card Eject Button

S-Video Connector

PC Card Slot

Fan Louver   VGA Connector

IEEE 1394 Connector

USB Connector

4-in-1 Card Slot
(SD/MMC/MS/MS Pro)

■ **Right view**

Security key hole

Emergency eject hole

Optical Disk Drive   ODD Open Button

Emergency eject hole

Insert a thin and hard pin into this hole, and you can open the disc tray manually.

Security key hole (Kensington Lock)

User can attach a separately purchased chain lock into the security keyhole and connect it to a fixed object
to prevent a notebook theft

Chapter 3. System information

■ **Specification**

- CPU

    · Dothan 1.6 ~ 2.0 GHz
    · Celeron 1.3 ~ 1.6 GHz
    · μFCBGA

- Main Chipset & Graphic
    · Radeon® Xpress 200M

- Memory
    · 2SODIMM - Up to 2GB
    · DDR2 PC2-3200S/4200S Capable (400/533MHz)

- HDD
    · 2.5" 9.5mm 40/60/80 GB SATA Type
    · 2.5" 9.5mm 40/60/80/100 GB PATA Type

- Communication
    · Marvell Yukon 88E8036 PCI-E 10/100 Ethernet Controller

- Wireless LAN Solution
    · 802.11bg Mini PCI Type, Hexa-band Antenna

- Card Slot

    · 4-in-I Card Slot (Memory Stick, Memory Stick Pro, Multi Media Card, SD Card)

- ODD
    · Removable Optical Storage
    · DVD, DVD-COMBO, DVD Super Multi

- Port
    · VGA, 4X USB(2.0), RJ45, Headphone/SPDIF, Mic-in, AC-in, IEEE1394, S-Video

- Input Devices
    · Keyboard : 86Key Keyboard
    · Touchpad

- Buttons
    · Power, Volume Down, Volume Up, Mute

- Indicator (LED)
    · Power On, Charge, HDD, Caps Lock, Num Lock, Wireless

- Power
    · 65 Watt 18.5V 3.5A Adapter

- Audio
    · Sigmatel High Definition Audio Codec(STAC9200), Stereo speakers

- Battery
    · 6 Cell 4.8AHr, CYLINDRICAL (Li-Ion)
    · 9 Cell 7.2AHr, CYLINDRICAL (Li-Ion)

■ System Block Diagram
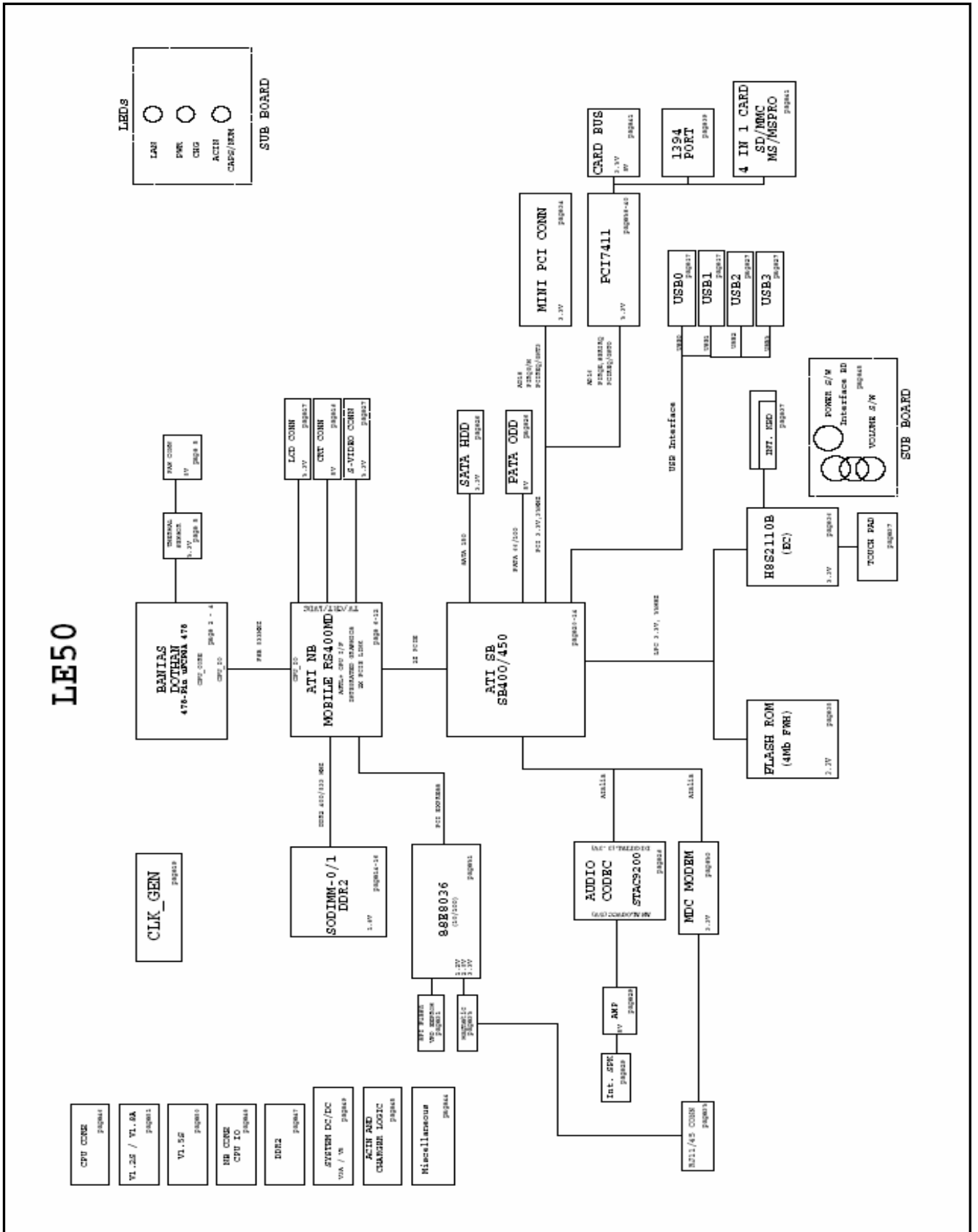
■ Fn key combinations

The following table shows the function of each combination of Fn with a function key.

Function of Fn keys has nothing to do with Operating System.

[Fn] + [F1]	User defined Hot key. (Setting is available at OSD)
[Fn] + [F2]	User defined Hot key. (Setting is available at OSD)
[Fn] + [F3]	User defined Hot key. (Setting is available at OSD)
[Fn] + [F4]	Force the computer to enter power-saving mode. (ex: system standby and hibernation)
[Fn] + [F5]	Press the combination once to disable the touch pad, and press again to enable the touch pad. (The touch pad initialization takes 1~2 seconds, so wait for the initialization to end before using the touch pad)
[Fn] + [F6]	Wireless LAN Enable/Disable Toggle.
[Fn] + [F7]	Monitor toggle. When the computer is attached to an external monitor, you can change the display output location with **[Fn] + [F7] combination.** You can switch to and from the three types of display modes, LCD display only, the external monitor only, or both at the same time.
[Fn] + [Delete]	The computer display becomes brighter.
[Fn] + [Insert]	The computer display becomes darker.
[Fn] + [F8]	Audio Enabe/disable •Refer to Battery Miser Help.
[Fn] + [F9]	LCD Auto Brightness control Enable/Disable. Enable/disable Auto Brightness control. (ON/OFF) •Refer to Battery Miser Help.
[Fn] + [F10]	System information.
[Fn] + [F11]	CPU Cooling Fan control mode (Normal / Slow / Fast)
[Fn] + [F12]	Maximum power-saving mode. (When OSD is installed.)
[Fn] + Home	Brighten the LCD (9 Steps).
[Fn] + End	Darken the LCD (9 Steps).
[Fn] + ScrLk(NumLk)	Num Lock
[Fn] + Delete	Insert

■ Status indicators

The system status indicators show the status of the computer
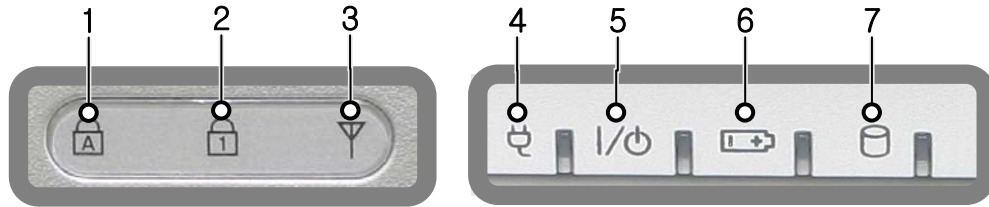
1. Caps lock

Caps lock indicator lights up when the Caps lock key is pressed.

When this indicator lights up, you can type capital letters without pressing the Shift key.

2. Num lock

Num lock indicator lights up when the combination of the Fn and Num lock key is pressed.

When this indicator lights up, you can use the embedded numeric keys.

The Num Lock indicator is off while an external keyboard is connected if OSD keyboard setup is configured not to use embedded keypad with an external keyboard connection.

3. Wireless activity indicator

Wireless activity indicator indicates the following.

- Off: Wireless LAN is off.

- Blinking(3-4 Seconds): Searching for Access point for Wireless LAN Connection.

- On: Data is transferring with Wireless LAN is on.

4. AC Power

Power indicator lights up when the power cord is connected to the computer.

5. Power

Power status indicator indicates the following status of the computer.

- On: The computer is turned on.

- Off: The computer is turned off or is in hibernation mode.

- Blinking: The computer is in standby mode.

6. Battery

Battery status indicator indicates the following status of the battery. Power status indicator indicates the following status of the computer.

- On: Battery is being charged.

- Off : Battery is being discharged or fully charged.

- Blinking : Battery is remaining less than 10%, or being discharged, or A battery error occurs.

The Battery indicator blinks as you have set the alarm action from the Battery miser 2005.

7. Drive in use

Drive in use indicator lights up when data is being written to or read from the hard disk or optical disk drive.

■ BIOS Flash

You can update BIOS using a floppy disk drive.

Because this system is not equipped with any floppy disk drive, you have to use an external USB drive for a BIOS update. In order to boot up with an USB drive, please set Removable Device as the first boot up drive in the boot menu of BIOS setup.

· How to update flash ROM in DOS

1. Create 'boot up' flash update diskette.
2. Copy a ROM image file (*.wph) into the root of the flash update diskette.
3. Copy phlash16.exe to the flash update diskette.
4. Insert the diskette into the FDD of your computer.
5. Boot your computer with the diskette, and type 'phlash16*.wph /mode=n'.
6. Cold boot and follow the instruction displayed on the screen.

· Flash options /mode=n

0 – Default mode. Keep the current DMI information and update BIOS image only.

1 – Update DMI information only.
   If new DMI information is not specified, the current DMI information is left unchanged.

2 – Update BIOS and DMI information.
   If new DMI information is not specified, the current DMI information is left unchanged.

3 – Update BIOS and DMI information.
   DMI information is updated to the DMI string and options specified in the new BIOS image.

Note

DMI is Desktop Management Interface

■ BIOS Setup

BIOS (Basic Input and Output System) Setup saves the system configuration in **CMOS RAM**, and check the configurations during startup. Use the **BIOS Setup Utility** to change and save the system environment, hardware configurations, power saving mode, etc.

· Open the BIOS Setup Utility in the following situations :

  1. to change the BIOS setup

  2. to replace the backup battery

  3. system configuration error occurs

  4. to change the boot order

  5. to set/change a password

Press the power button.

When the **LG** logo appears on the screen, press F2 and enter the **BIOS Setup Utility**.

■ BIOS Setup

■ **Using the keys**

The keys used in the BIOS Setup Utility and their functions are described at the bottom.

· F1 , Alt + H : General Help

Display the descriptions of the keys used in the setup utility.

· ↓ , ↑ : Select Item

Navigate and select items in the setup utility. The selected item becomes highlighted.

· ← , → : Select Menu

Move to another menu.

· − / + , Space Bar : Change Values

Change the value of a selected item.

· F9 : Load Default Configuration

Display Setup Confirmation window. Press Enter to load default configuration.

· Enter ↵ : Select Sub-Menu

Some items have sub-menus. Display the sub-menu for a selected item.

· F10 : Save and Exit

Display Setup Confirmation window. Press **Enter** to save and exit.

· Esc : Exit

In a sub-menu, press **Esc** to move to the previous window. In Main menu, click **Esc** to move to Exit menu.

■ Main menu

System Time
Current time. Use <**Tab**>, <**Shift-Tab**>, or <**Enter**> keys to move around these fields. To change the value, press <+> or <–> key.

System Date
Today date. Use <**Tab**>, <**Shift-Tab**>, or <**Enter**> keys to move around these fields. To change the value, press <+> or <–> key. Set any date from year 1981 to 2079. It will automatically keep track of leap years. The system date can also be set from the operating system.

Product Name
This shows the name of PC.

Processor Type
This shows the type of CPU.

Processor Spd
This shows the speed CPU.

BIOS Version
This shows the Version of BIOS.

KBC Version
This shows the Version of KBD firm ware.

UUID
This is for display only. This shows the UUID.

Pri Master
Enter its submenu by pressing <**Enter**>. In this submenu, it would show the device of Primary IDE Master is HDD and its parameters.

Sec Slave
Enter its submenu by pressing <**Enter**>. In this submenu, it would show the device of Secondary IDE Slave is optical drive and its parameters.

Total Memory
This is for display only. This shows size of system memory.

■ Advanced menu

Legacy USB Support
There are two options to this field: **Enabled**, and **Disabled**. This field allows you to **enable** or **disable** the legacy USB support.

Boot-time Diagnostic Screen
Enables the Boot-time Diagnostic Screen.

SATA Controller Mode
Set SATA (Serial ATA) Controller Mode.

AHCI Configuration
Enables the AHCI (Advanced Host Controller Interface).

Battery Charge Stop Percentage
Set Battery Charge Stop Percentage.

Fan Mode Control
Set Fan Mode Control.

Fn Key Setup
Set Sticky fn key function.

Wake On Lan
Enables Wake On Lan.

PXE/Remote Boot
Enables PXE/Remote Boot.

Execute-Disable Bit Capability
Enables Execute-Disable Bit Capability.

■ Security menu

Supervisor Password Is
This shows the system's supervisor password has been set, or not.

Set Supervisor Password
Set Supervisor Password.

User Password Is
This shows the system's User Password has been set, or not.

Set User Password
Set User Password.

Password on boot
Enables Password on boot.

HDD Password Is
This shows the system's HDD Password has been set, or not.

Set HDD Password
Set HDD Password.

■ Boot menu

Boot menu enables you to set the boot order for the CD-ROM drive, Removable devices Hard drive, and Network boot as shown below.

CD-ROM Drive

Removable Devices

Hard Drive

B2 D0 Yukon PXE

■ Exit menu

Exit Saving Changes
Select Exit Saving Changes to save new setup information in CMOS RAM. CMOS RAM stores the information using the backup battery; therefore, the information will not be lost when the computer is turned off.

Exit Discarding Changes
Select Exit Discarding Changes to discard new setup information. If you made changes to items other than date, time, and passwords, the Setup Warning asks you to save the new configurations. Select Yes and press Enter to save the new configuration.

Load Setup Defaults
Select Load Setup Defaults to change the setup information to the factory default settings. If you select Load Setup Defaults or press F9, Setup Confirmation asks you to confirm your selection. Press Yes to load setup defaults.

Discard Changes
Discard change value.

Save Changes
Save change value.

Chapter 4. Symptom-to-part index

The symptom-to-part index in this section lists symptoms and errors and their possible causes.

The most likely cause is listed first.

Note

If replacing a part (FRU) does not solve the problem, put the original part back in the computer.

Do not replace a non-defective FRU.

■ Power system checkout

· To verify a symptom, do the following :

1. Power off the computer.

2. Remove the battery pack.

3. Connect the AC adapter.

4. Check that power is supplied when you power on the computer.

5. Power off the computer.

6. Disconnect the AC adapter and install the charged battery pack.

7. Check that the battery pack supplies power when you power on the computer.

· If you suspect a power problem, see the appropriate one of the following power supply checkouts :

1. Checking the AC adapter

2. Checking the operational charging

3. Checking the battery pack

4. Checking the backup battery

25

· Checking the AC adapter

If the power-on indicator does not turn on, check the power cord of the AC adapter for correct continuity and installation.

If the computer does not charge during operation, go to "Checking operational charging."

To check the AC adapter, do the following :

1. Unplug the AC adapter cable from the computer.
2. Measure the output voltage at the plug of the
   AC adapter cable. See the following figure:
3. If the measured output voltage is incorrect, remove
   the power cord from the AC adapter and then re-
   connect it in about ten seconds.
4. Measure the output voltage at the plug of the AC adapter cable.
5. If the measured output voltage is incorrect, replace the AC adapter.
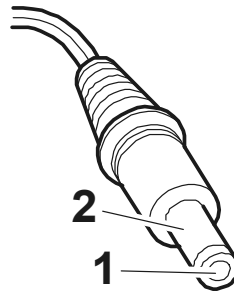
Pin	Voltage (V dc)
1	+18.0 ~ +19.2
2	Ground

· If the voltage is not correct, replace the AC adapter.

· If the voltage is acceptable, do the following :

  1. Replace the system board.

  2. If the problem persists, check the AC adapter whether it is correct product or not.

Note

Noise from the AC adapter does not always indicate a defect.

· Checking operational charging

  1. To check whether the battery charges properly during operation, use a discharged battery pack or a
     battery pack that has less than 50% of the total power remaining when installed in the computer.
     Perform operational charging. If the battery status indicator or icon does not turn on, remove the battery
     does not turn on, replace the battery pack.

  2. If the charge indicator still does not turn on, replace the system board.
     Then reinstall the battery pack.

Note

Do not charge battery pack, when its temperature is below 0℃ or above 75℃.

· Checking the battery pack

  1. Open the Power Meter window by clicking **Start → Control Panel → Power Options** and then;
     check the total power remains. Battery charging does not start until the power Meter shows that less
     than 95% of the total power remains; under this condition the battery pack can charge to 100% of its
     capacity. This protects the battery pack from being overcharged or from having a shortened life.

  2. To check the status of your batter, move your cursor to the Power Meter icon in the icon tray of the
     Windows taskbar and wait for a moment (but do not click), and the percentage of battery power
     remaining is displayed. To get detailed information about the battery, double-click the Power Meter icon.

Note

If the battery pack becomes hot, it may not be able to charge. Remove it from the computer and
Leave it at room temperature for a while. After it cools down, reinstall and recharge it.

· The Characteristics of the battery pack

1. Self-discharge

   The battery gradually loses its power over time without ever being used.

2. Periodic full discharge / charge

   Frequent recharge of the battery pack can reduce the capacity of the battery pack. When this happens, you can perform the full discharge / charge to improve the capacity. You should perform periodic full discharge /charge once every 30~60 days.

   You should always use the battery until its power is low; then fully charge the battery.

3. Trickle charge

   If the temperature of the battery pack drops below 10℃ , the trickle charging begins.

   The trickle charging may take 32 hours for the battery pack to be fully charged.

· To check the battery pack, do the following :

1. Power off the computer.

2. Remove the battery pack and measure the voltage between battery terminals 1(-) and 5(+).

    See the following figure :
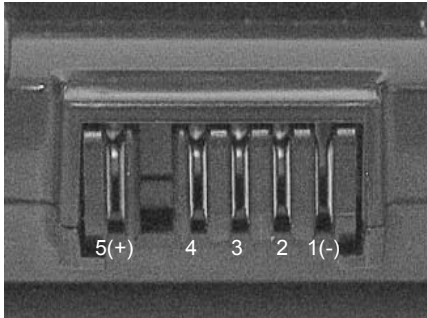
Terminal	Voltage (V dc)
1	Ground(-)
5	+0V ~ +12.6V (6 cell)

3. If the voltage is still less than +11.1 V DC after recharging, replace the battery.

4. If the voltage is more than +11.1 V DC, measure the resistance between battery terminals 1 and 2. The resistance must be 2 to 4 kΩ (typically 3 kΩ).

5. If the resistance is not correct, replace the battery pack. If the resistance is correct, replace the system board.

Note

Charging will take at least 3 hours.

Note

Battery is an expendable supplier, so its capacity and used time can be reduced by using the computer.

■ **Numeric error codes**

Symptom / Error	FRU or action, in sequence
0200 Fixed disk failure (The hard disk is not working)	1.Reset the hard-disk drive. 2.Load Setup Defaults in BIOS Setup Utility. 3.Hard-disk drive. 4.System board.
0210 Stuck Key error	1.Check the keyboard if it is pressed. 2.Replace the keyboard.
0211 Keyboard error	Run interactive tests of the keyboard and the auxiliary input device.
0212 Keyboard Controller Failed	System board.
0220 Monitor type error - Monitor type does not match the one specified in CMOS.	Load Setup Defaults in BIOS Setup Utility.
0230 System RAM error - System RAM Failed at offset.	1.DIMM 2.System board
0231 Shadow RAM error - Shadow RAM failed at offset	System board
0232 Extended RAM error - Extended RAM Failed at address line	1. DIMM 2. System board
0250 System battery error – System battery is dead	Replace the backup battery and run BIOS Setup Utility to reset the time and date.

Symptom / Error	FRU or action, in sequence
0251 System CMOS checksum bad – System CMOS checksum is not correct. – Default configuration used.	Replace the backup battery and run BIOS Setup Utility to reset the time and date.
0252 Password checksum bad – The password is cleared.	Reset the password by running BIOS Setup Utility.
0260 System timer error	1. Replace the backup battery and run BIOS Setup Utility to reset the time and date. 2. System board.
0271 Check date and time settings – Date and time error.	Run BIOS Setup Utility to reset the time and date.
0280 Previous boot incomplete - Default configuration used	1. Load "Setup Default" in BIOS Setup Utility. 2. DIMM. 3. System board.
0281: Memory Size found by POST differed from EISA CMOS	Load Setup Defaults in BIOS Setup Utility.
02D0 System cache error – Cache disabled (RAM cache failed and BIOS disabled)	1. Load "Setup Default" in BIOS Setup Utility. 2. System board.
02F4 EISA CMOS not writable	1. Load "Setup Default" in BIOS Setup Utility. 2. Replace the backup battery. 3. System board.
02F5 DMA test failed	1. DIMM 2. System board
02F6 Software NMI failed	1. DIMM 2. System board

Symptom / Error	FRU or action, in sequence
02F7 Fail – Safe timer NMI failed	1. DIMM 2. System board
0611 IDE configuration changed	1. Load Setup Defaults in BIOS Setup Utility. 2. System board.
0612 IDE configuration error	1. Load Setup Defaults in BIOS Setup Utility. 2. System board.
0613 Com A configuration changed	1. Load Setup Defaults in BIOS Setup Utility. 2. System board.
0614 Com A configuration error	1. Load Setup Defaults in BIOS Setup Utility. 2. System board.
0615 Com B configuration changed	1. Load Setup Defaults in BIOS Setup Utility. 2. System board.
0616 Com B configuration error	1. Load Setup Defaults in BIOS Setup Utility. 2. System board.
0617 Floppy configuration changed	1. Load Setup Defaults in BIOS Setup Utility. 2. System board.
0618 Floppy configuration error	1. Load Setup Defaults in BIOS Setup Utility. 2. System board.
0619 Parallel port configuration changed	1. Load Setup Defaults in BIOS Setup Utility. 2. System board.
061A Parallel port configuration error	1. Load Setup Defaults in BIOS Setup Utility. 2. System board.

■ Error message

Symptom / Error	FRU or action, in sequence
Device address conflict.	1. Load Setup Defaults in BIOS Setup Utility. 2. Backup battery. 3. System board.
Allocation error for device.	1. Load Setup Defaults in BIOS Setup Utility. 2. Backup battery. 3. System board.
Failing bits: nnnn.	1. DIMM. 2. System board.
Invalid System Configuration Data.	1. DIMM. 2. System board.
I/O Device IRQ Conflict.	1. Load Setup Defaults in BIOS Setup Utility. 2. Backup battery. 3. System board.
Operating System not found.	1. Check that the operating system has no failure and is installed correctly. 2. Enter BIOS Setup Utility and see whether the hard-disk drive and the diskette drive are properly identified. 3. Reset the hard-disk drive. 4. Reinstall the operating system. 5. Diskette drive. 6. Hard-disk drive. 7. System board.
Hibernation error.	1. Restore the system configuration to what it was before the computer entered hibernation mode. 2. If memory size has been changed, re-create the hibernation file.
FAN error.	Fan.
Thermal sensing error.	System board.

■ LCD-related symptoms

> **Note**
>
> Before removing or disassembling LCD, power off the computer, unplug all power cords from electrical outlets, remove the battery pack also.

Symptom / Error	FRU or action, in sequence
LCD screen becomes dark suddenly.	Check out Battery Miser.
Nothing displayed on LCD screen.	1. Check out Battery Miser. 2. Choose Never in the Turn off Monitor item on Power Options Properties. 3. Check the power save mode switch if it is pressed by something. 4. Check the System is in standby or hibernation mode.
LCD backlight not working. LCD too dark. LCD brightness cannot be adjusted.	1. Reconnect inverter to the board connector. 2. Replace inverter. 3. LCD assembly. 4. System board.
LCD color cannot be adjusted. LCD screen abnormal. Characters missing pixels. LCD screen unreadable. Wrong color displayed.	1. Reset all LCD connectors. 2. Replace LCD cable. 3. LCD assembly. 4. System board.
Horizontal or vertical lines displayed on LCD	LCD assembly.
Power-on indicator on, and a blank\LCD during POST.	LCD assembly. System board.

■ Indeterminate problems

· You are here because the diagnostic tests did not identify which adapter or device failed, wrong devices

   are installed, a short circuit is suspected, or the system is inoperative.

   Follow these procedures to isolate the failing FRU (do not isolate FRUs that have no defects).

· Verify that all attached devices are supported by the computer.

· Verify that the power supply being used at the time of the failure is operating correctly.

   1. Power off the computer

   2. Visually check each FRU for damage. Replace any damaged FRU.

   3. Remove or disconnected all of the following devices :

      a. Non-LG devices.

      b. Printer, mouse, and other external devices.

      c. Battery pack.

      d. PC cards.

      e. ODD (CD-ROM, Combo) drive or FDD drive in the Bay.

      f. Hard-disk drive.

Note

Use the other memory card because it needs when operating computer.

---

   4. Power on the computer.

   5. Determine whether the problem has changed.

   6. If the problem does not recur, reconnect the removed devices one at a time until you find the failing FRU.

   7. If the problem remains, replace the following FRUs one at a time.

      (do not replace a non-defective FRU)

      a. LCD assembly (Check external monitor whether the same problem recurs or not).

      b. Keyboard.

      c. Keydeck (TouchPad and Scroll Button assembly).

      d. System board.

Chapter 5. Removing and replacing a part (FRU)

> **Danger**
>
> Before removing any FRU, power off the computer, unplug all power cords from electrical outlets, remove the battery pack, and then disconnect any interconnecting cables.

> **Caution**
>
> Before the computer is powered on after FRU replacement, make sure that all screws, springs, and other small parts are in place and are not loose inside the computer. Verify metal flakes can cause electrical short circuits.

> **Note**
>
> As for the screw, every Torque 3±0.2Kgfcm(0.196Nm)

■ 1010 Battery Pack

1. Push the battery latch in the direction shown below; then slide the battery pack out of the slot.

■ 1020 Hard Disk Drive

Remove the following parts in order before replacing this part.

1. Battery Pack(1010)

1. Remove 2 HDD Cover Screws, then remove HDD cover.

2. Remove HDD.

■ 1030 Wireless LAN Card

Remove the following parts in order before replacing this part.

1. Battery Pack(1010) 2. Hard Disk Drive(1020)

1. Remove a Mini PCI Cover Screw.

2. Remove Mini PCI Cover.

3. Disconnect Antenna Connector, then remove Wireless LAN Card.

■ 1040 Keyboard

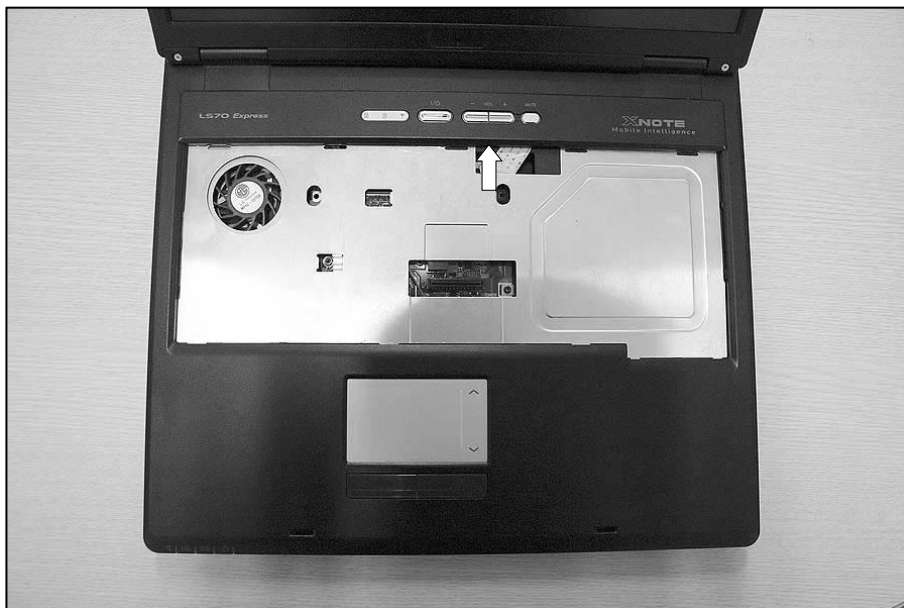**Remove the following parts in order before replacing this part.**

1. Battery Pack(1010) 2. Hard Disk Drive(1020) 3. Wireless LAN Card(1030)

1. Remove 20 Screws.
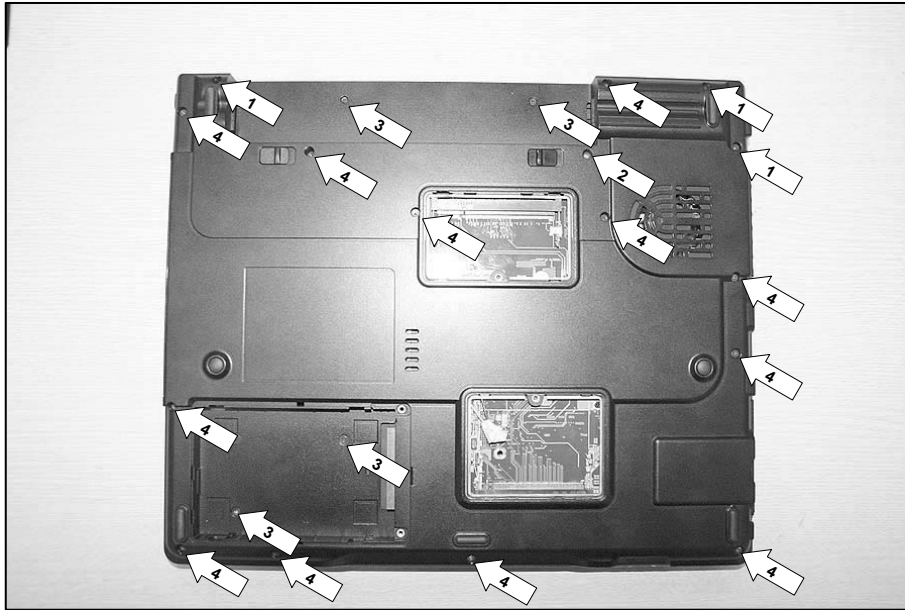
No.	FRU No.	Specification	Qty
1	1SZZBA4039D	D4.5 X L8.0	3
2	1SZZBZ4026B	D4.5 X L10.0	1
3	1SZZBA4017E	D2.0 X L3.0	4
4	1SZZBZ4097A	D4.5 X L6.5	12

2. To remove 6 hooks, insert a (-) type screwdriver into a hook located at the lower end of keyboard, and
   pull it.

3. Disconnect Keyboard Connector.

4. Remove Keyboard.

■ 1050 Retainer

Remove the following parts in order before replacing this part.

1. Battery Pack(1010) 2. Hard Disk Drive(1020) 3. Wireless LAN Card(1030) 4. Keyboard(1040)
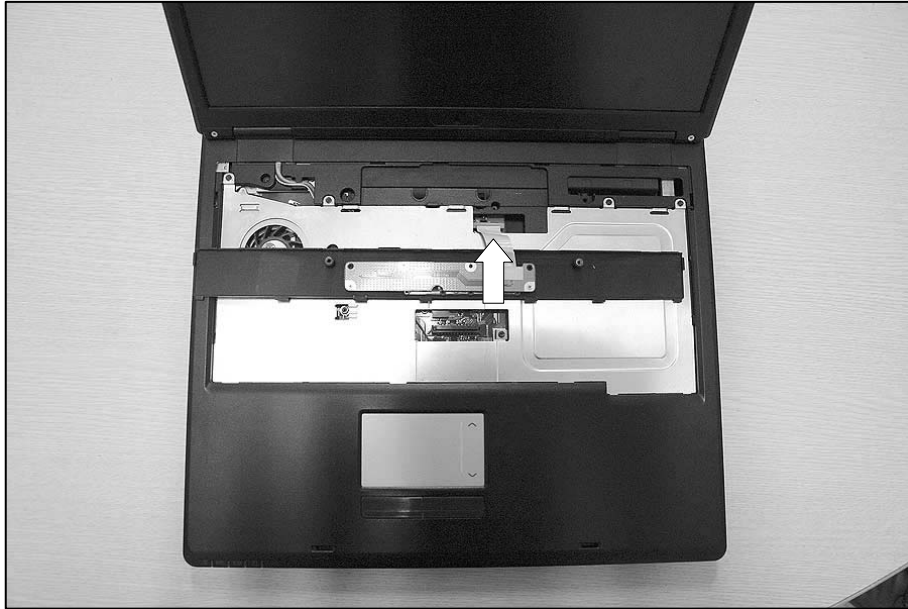
1. Remove 2 Screws.
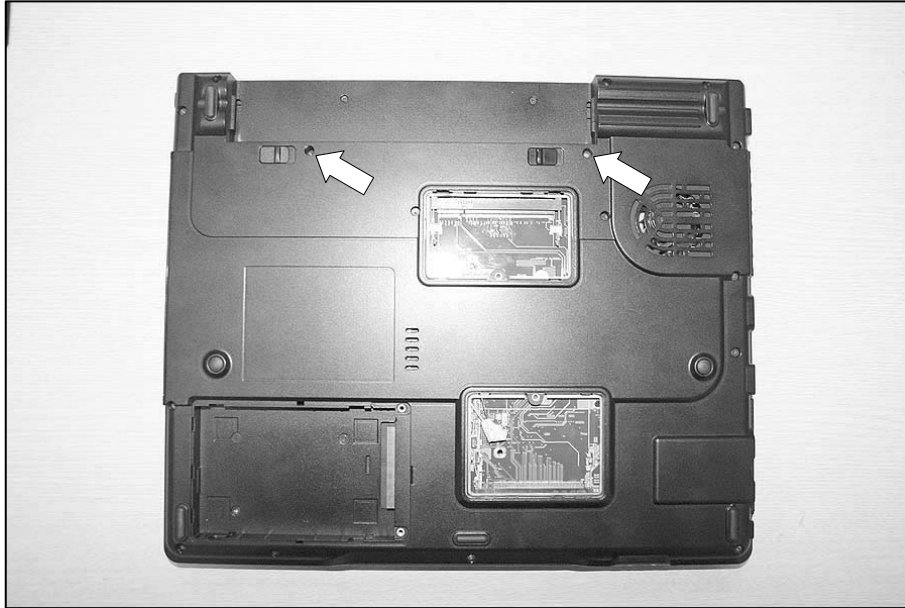
No.	FRU No.	Specification	Qty
1	1SZZBA4097A	D2.5 X L1.0	2

2. Pull up the Retainer Hook using a (-) type screwdriver.
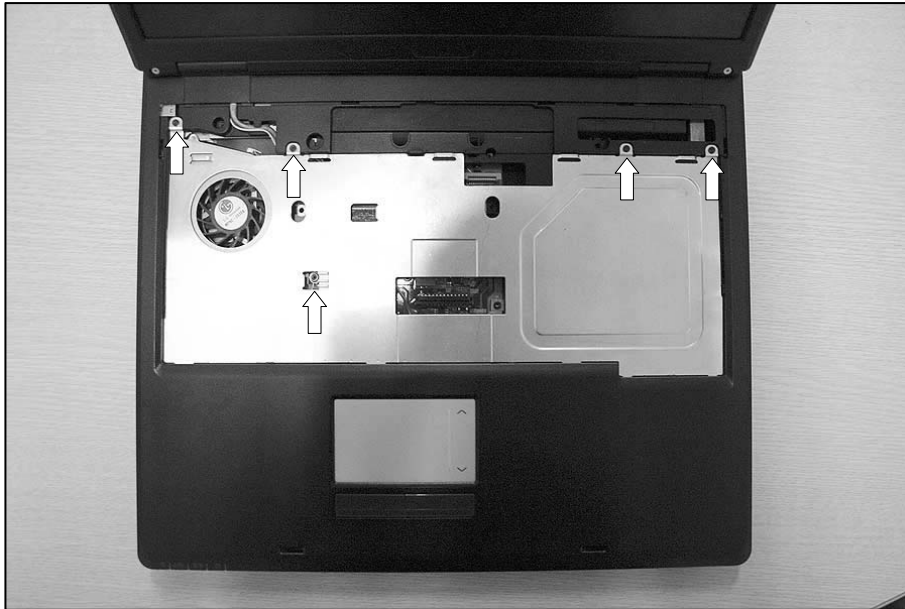
3. Disconnect Retainer Connector.

4. Remove Retainer.
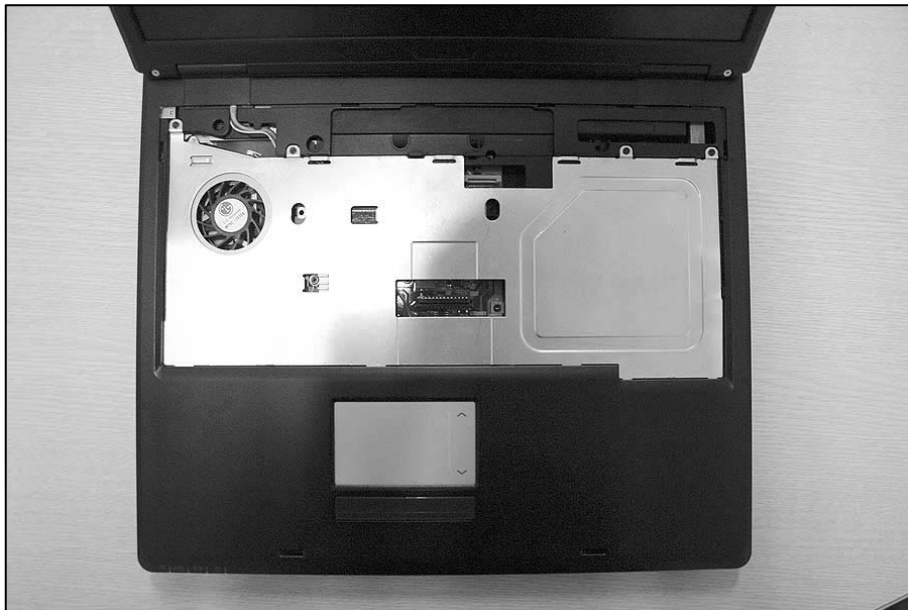
■ 1060 Keyboard Plate

Remove the following parts in order before replacing this part.

1. Battery Pack(1010) 2. Hard Disk Drive(1020) 3. Wireless LAN Card(1030) 4. Keyboard(1040)

5. Retainer(1050)

1. Remove 5 Screws.

No.	FRU No.	Specification	Qty
1	1SZZBA4023A	D2.0 X L3.5	5

2. Remove Keyboard Plate.

■ 1070 Display Module

Remove the following parts in order before replacing this part.

1. Battery Pack(1010) 2. Hard Disk Drive(1020) 3. Wireless LAN Card(1030) 4. Keyboard(1040)

5. Retainer(1050) 6. Keyboard Plate(1060)

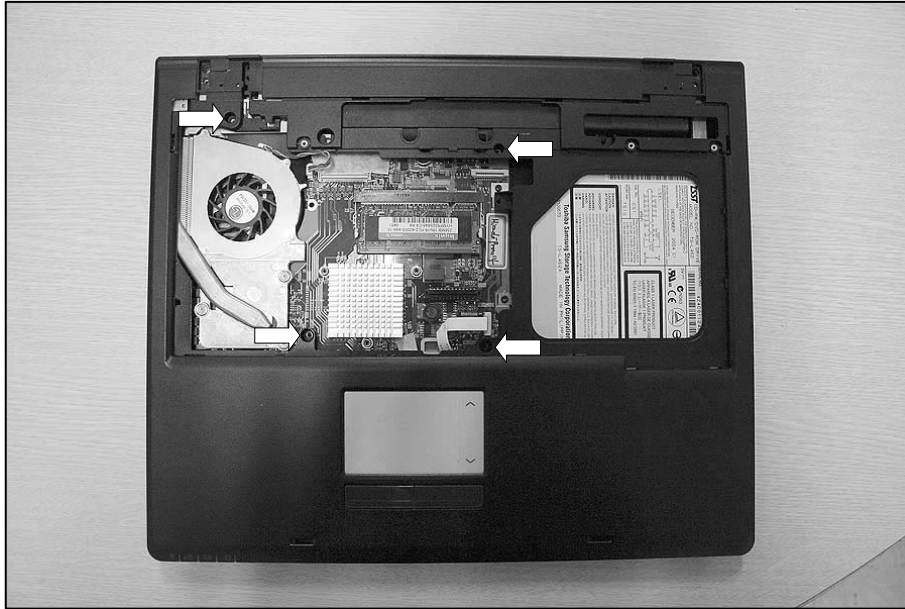1. Remove Hinge Cap using a (-) type screwdriver or tool.

2. Remove 2 Screws.

No.	FRU No.	Specification	Qty
1	1SZZBA4097A	D2.5 X L1.0	2

3. Remove Display Module.

4. Remove 4 Screws.

No.	FRU No.	Specification	Qty
1	1SZZBA4014C	D4.3 X L5.0	4

■ 1080 Key Deck

Remove the following parts in order before replacing this part.

1. Battery Pack(1010) 2. Hard Disk Drive(1020) 3. Wireless LAN Card(1030) 4. Keyboard(1040)

5. Retainer(1050) 6. Keyboard Plate(1060) 7. Display Module(1070)

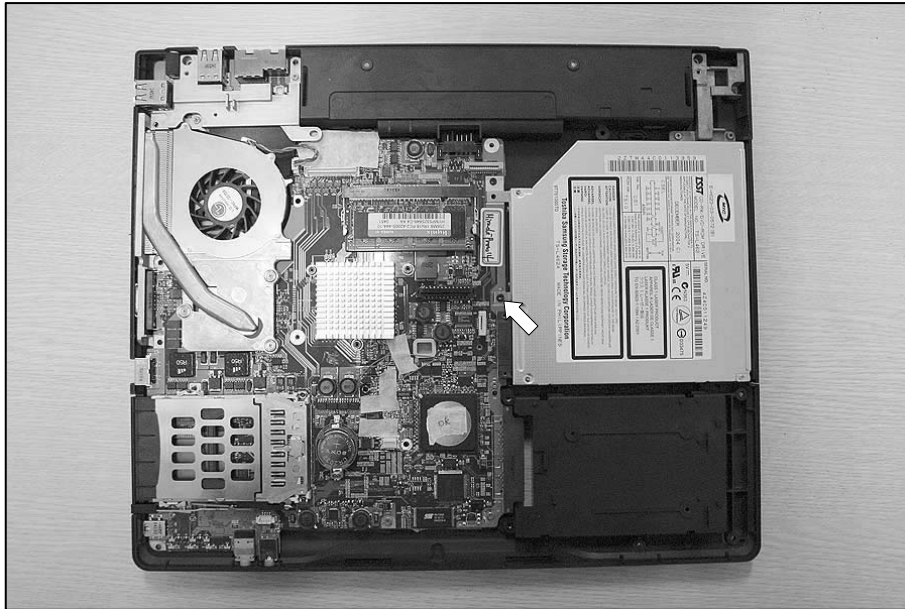1. Disconnect Speaker Connector, then remove Key Deck.

■ 1090 Optical Disk Drive

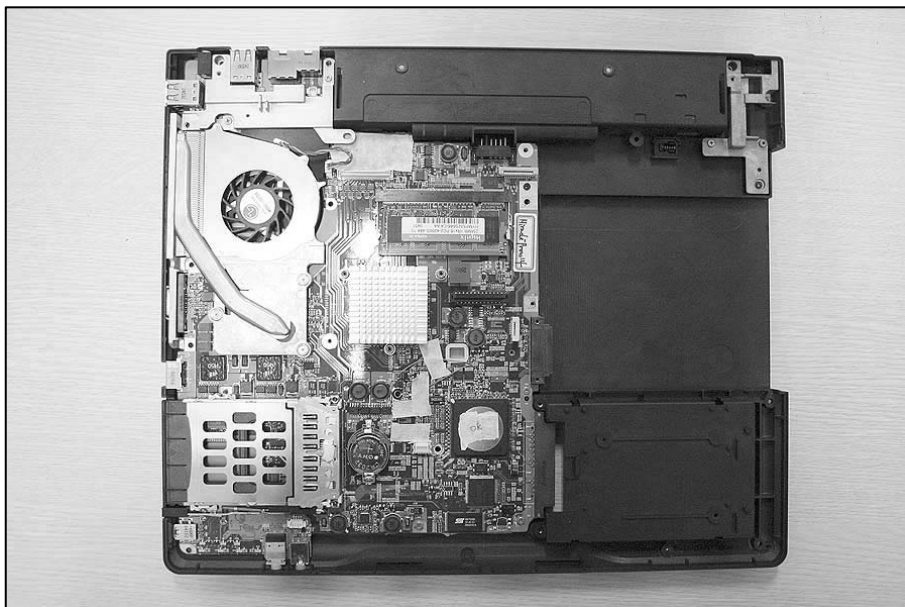**Remove the following parts in order before replacing this part.**

1. Battery Pack(1010) 2. Hard Disk Drive(1020) 3. Wireless LAN Card(1030) 4. Keyboard(1040)

5. Retainer(1050) 6. Keyboard Plate(1060) 7. Display Module(1070) 8. Key Deck(1080)

1. Remove a Screw.

No.	FRU No.	Specification	Qty
1	1SZZBZ4014C	D2.0 X L5.0	1

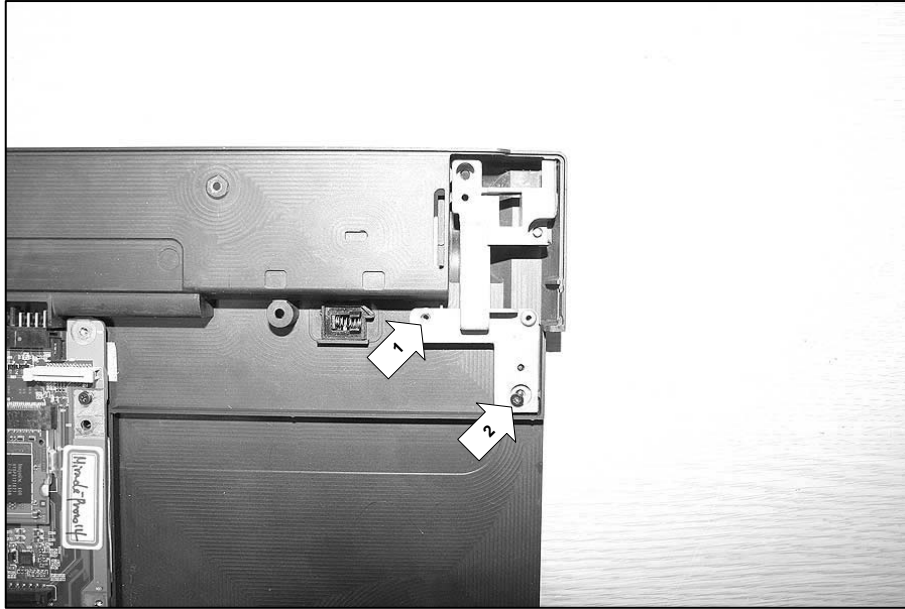2. Remove ODD.

■ 1100 Main Board

Remove the following parts in order before replacing this part.

1. Battery Pack(1010) 2. Hard Disk Drive(1020) 3. Wireless LAN Card(1030) 4. Keyboard(1040)

5. Retainer(1050) 6. Keyboard Plate(1060) 7. Display Module(1070) 8. Key Deck(1080)
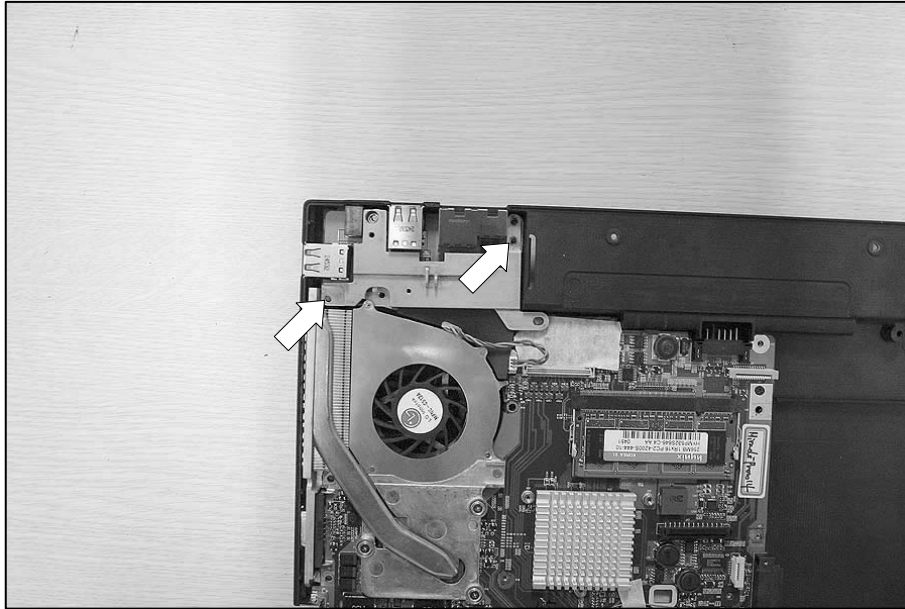
9. Optical Disk Drive(1090)

1. Remove 2 Right Hinge Screws.

No.	FRU No.	Specification	Qty
1	1SZZBA4023A	D2.0 X L3.5	1
2	1SZZBZ4014C	D2.0 X L5.0	3

2. Remove 2 Left Hinge Screws.

No.	FRU No.	Specification	Qty
1	1SZZBZ4014C	D2.0 X L5.0	2

2. Remove 4 Screws.
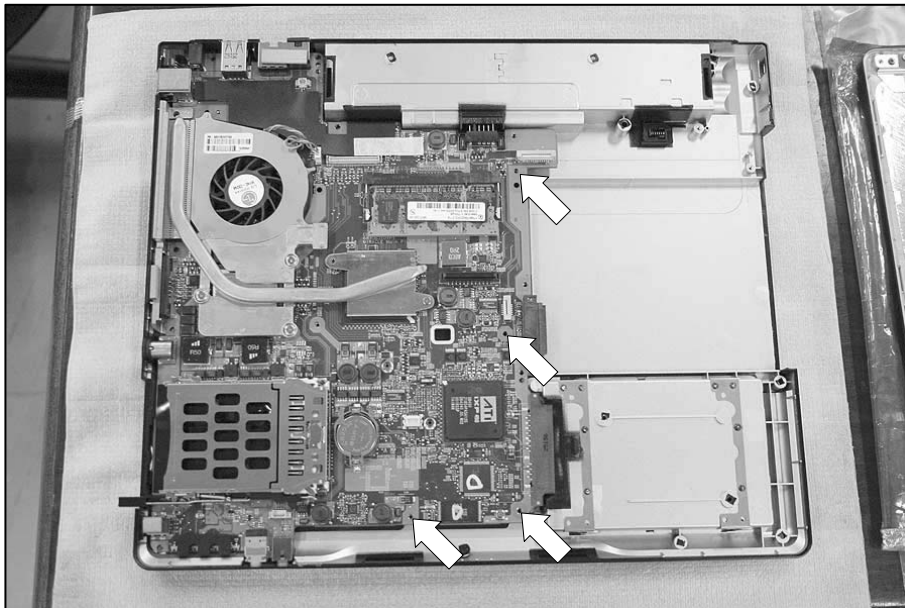
No.	FRU No.	Specification	Qty
1	1SZZBZ4023A	D2.0 X L3.5	4

52

3. Remove dummy using a (-) type screwdriver.
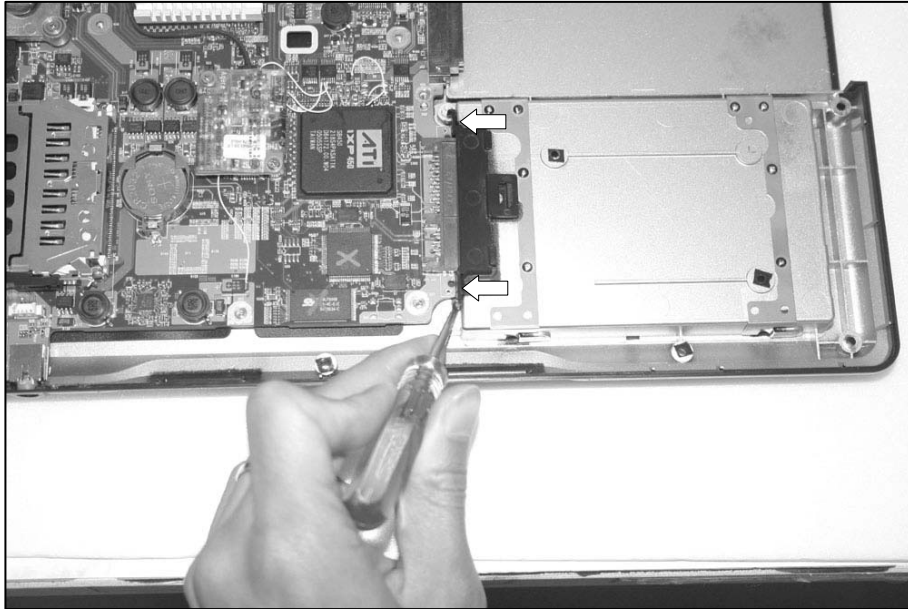
■ 1110 Speakers

Remove the following parts in order before replacing this part.

1. Battery Pack(1010) 2. Hard Disk Drive(1020) 3. Wireless LAN Card(1030) 4. Keyboard(1040)

5. Retainer(1050) 6. Keyboard Plate(1060) 7. Display Module(1070) 8. Key Deck(1080)

1. Remove 2 Screws, then remove Speaker left and Speaker right.
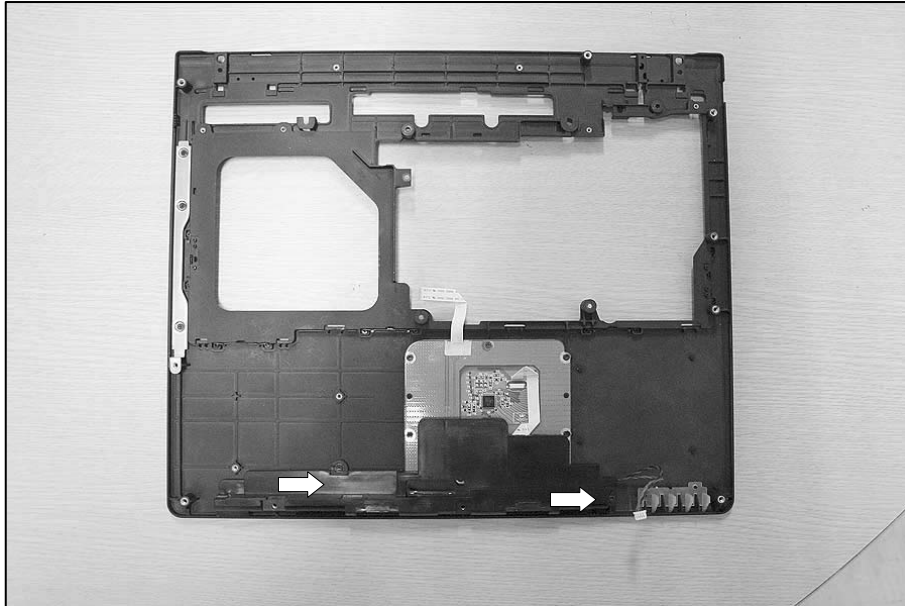
No.	FRU No.	Specification	Qty
1	1SZZBZ4041A	D3.5 X L3.0	2

■ 1120 Display Exploded View

Remove the following parts in order before replacing this part.

1. Battery Pack(1010) 2. Hard Disk Drive(1020) 3. Wireless LAN Card(1030) 4. Keyboard(1040)

5. Retainer(1050) 6. Keyboard Plate(1060) 7. Display Module(1070)

1. Remove 6 Rubber Caps, then remove 6 Screws.

No.	FRU No.	Specification	Qty
1	1SZZBZ4080F	D2.5 X L1.0	6

2. Remove LCD Front.

3. Remove 4 Screws.

No.	FRU No.	Specification	Qty
1	1SZZBZ4080F	D2.5 X L1.0	4

4. Remove a Screw, then remove LCD Panel.

No.	FRU No.	Specification	Qty
1	1SZZBZ3002K	D4.5 X L3.5	1

5. Remove 8 Screws.
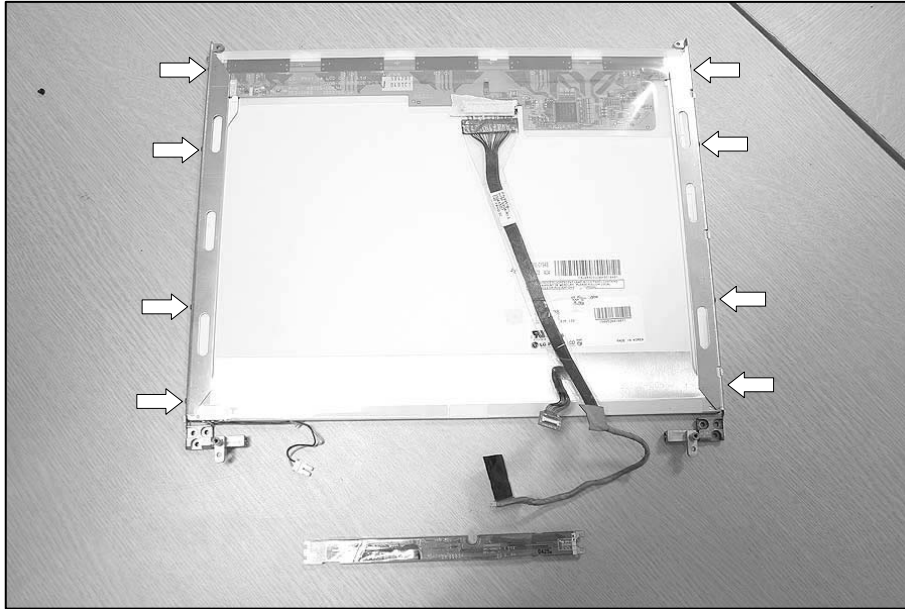
6. Remove LCD Brackets.
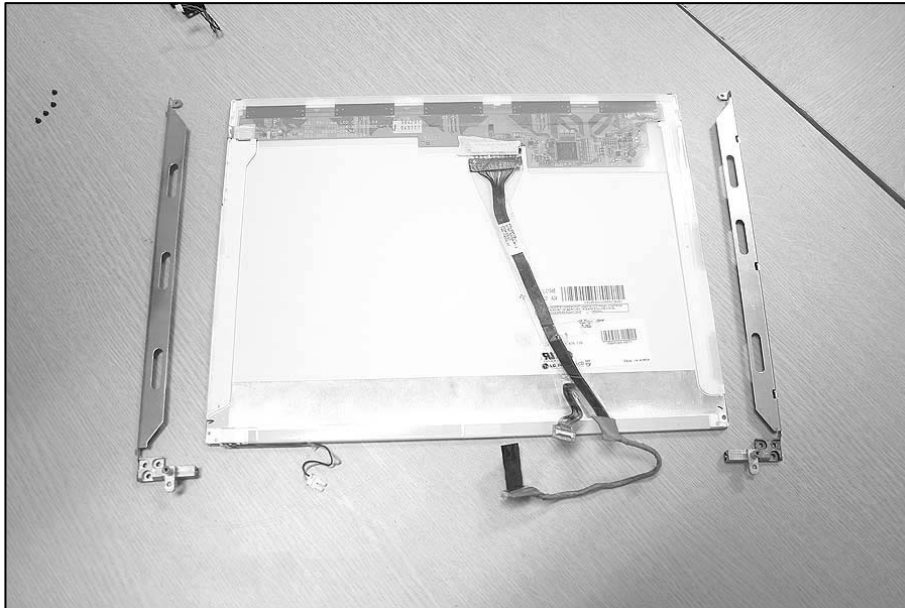
No.	FRU No.	Specification	Qty
1	1SZZBA4080F	D3.8 X L2.5	8
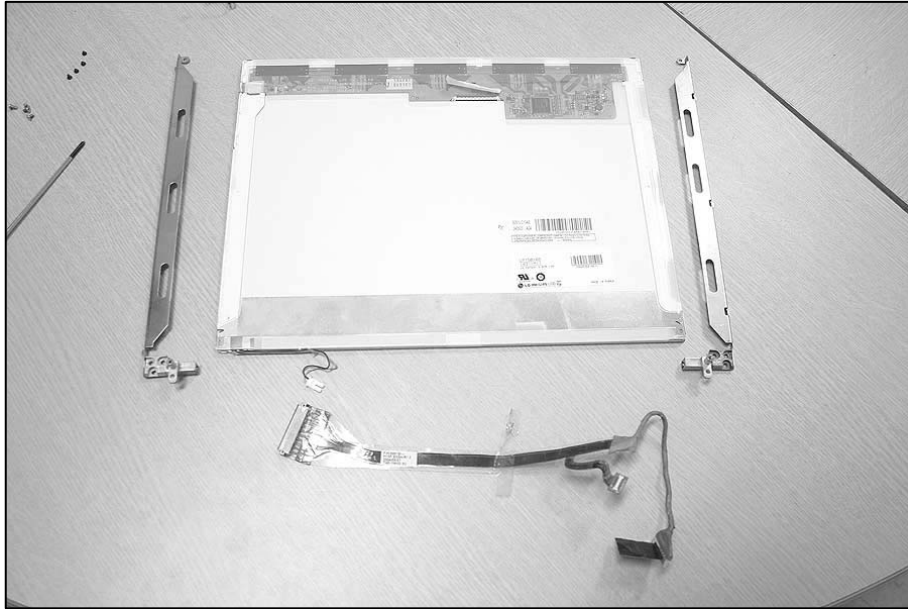
Chapter 6. Part lists

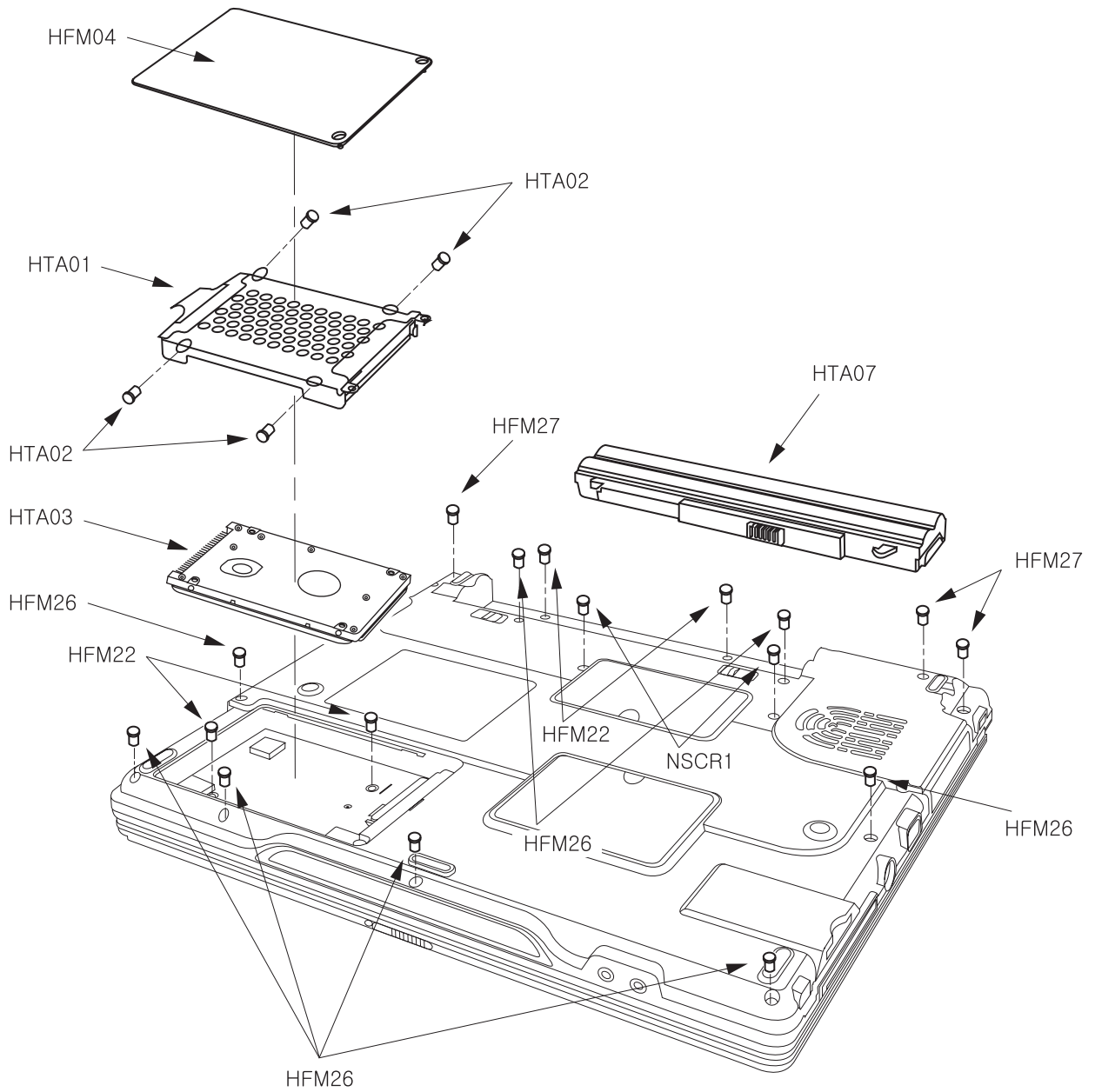| Location	Part Number	Specification	Remarks
HFC08	0IMCR00005A	RH80536GE0412M LG INTEL 478P UFCPGA TRAY NT CPU PENTIUM-M 760 2.00GHZ/800MHZ C0-STEPPING(SL7SM)	
HFC08	0IMCR02097A	RH80536NC0211M LG INTEL 478P UFCPGA TRAY NT CPU CELERON-M 370 1.5GHZ C0-STEPPING(SL86J)	
HFC08	0IMCR00016B	RH80536NC0171M LG INTEL 478P UFCPGA TRAY NT CPU CELERON-M 360 1400MHZ/400MHZ C0-STEPPING(SL86K)	
HFC08	0IMCR00001B	RH80536NC0131M LG INTEL 478P UFCPGA TRAY NT CPU CELERON-M 350 1300MHZ/400MHZ C0-STEPPING(SL86L)	
NMEM1	0IMMR00007A	HYS64T32000HDL-3.7-A INFINEON 200P SODIMM BK 256MB 32MX64 533MHZ DDR2 SDRAM WITH 32MX16	
NMEM1	0IMMR00006C	M470T6554BZ3-CD5 SAMSUNG ELECTRONICS 200P SODIMM BK 512MB 64MX64 533MHZ DDR2 SDRAM WITH 32MX16	
NMEM1	0IMMR00008A	HYS64T64020HDL-3.7-A INFINEON 200P SODIMM BK 512MB 64MX64 533MHZ DDR2 SDRAM WITH 32MX16	
NMEM1	0IMMR00005C	M470T3354BZ3-CD5 SAMSUNG ELECTRONICS 200P SODIMM BK 256MB 32MX64 533MHZ DDR2 SDRAM WITH 32MX16	
NMEM1	0IMMR00054B	HYMP564S64P6-C4 HYNIX 200P SODIMM BK 512MB 64MX64 533MHZ DDR2 SDRAM WITH 32MX16	
NMEM1	0IMMR00053B	HYMP532S64P6-C4 HYNIX 200P SODIMM BK 256MB 32MX64 533MHZ DDR2 SDRAM WITH 32MX16	
HTC05	3041B0A000Q	DEBORAH NT B/D - MODEM ASSY QCOM ROHS	
HFC09	3823B01061A	ENGLISH HUNTER F 86KEY	
HFC09	3823B01060A	KOREA HUNTER F OKI 86KEY	
HFM01	3111B0TS65A	DEBORAH COVER BOTTOM CASE ASSY	
HFD01	3111B0TS66A	DEBORAH COVER KBD DECK TOTAL ASSY	
HFD01	3111B0TS66B	DEBORAH COVER KBD DECK TOTAL ASSY FOR EXPORT	
HFD03	3551B09734B	HUNTER-FULL 15 INCH SPEAKER ASSY FOR ENVIROMENT	
HFM05	3210BD2021A	HUNTER-FULL 15 INCH ZN HINGE , FRAME RIGHT	
HFM06	3210BD3027A	DEBORAH ZN HINGE FRAME LEFT	
HFM14	3301B00559B	KBD PLATE HUNTER-FULL WITH GASKET AND TAPE(COMMERCIAL-DEBORAH)	
HFM13	3550BM3202A	HUNTER-WIDE 15.4 INCH PCABS HDD BLOCK	
HFM11	3550BM3204C	DEBORAH PCABS COVER , HINGE CAP LEFT SILVER	

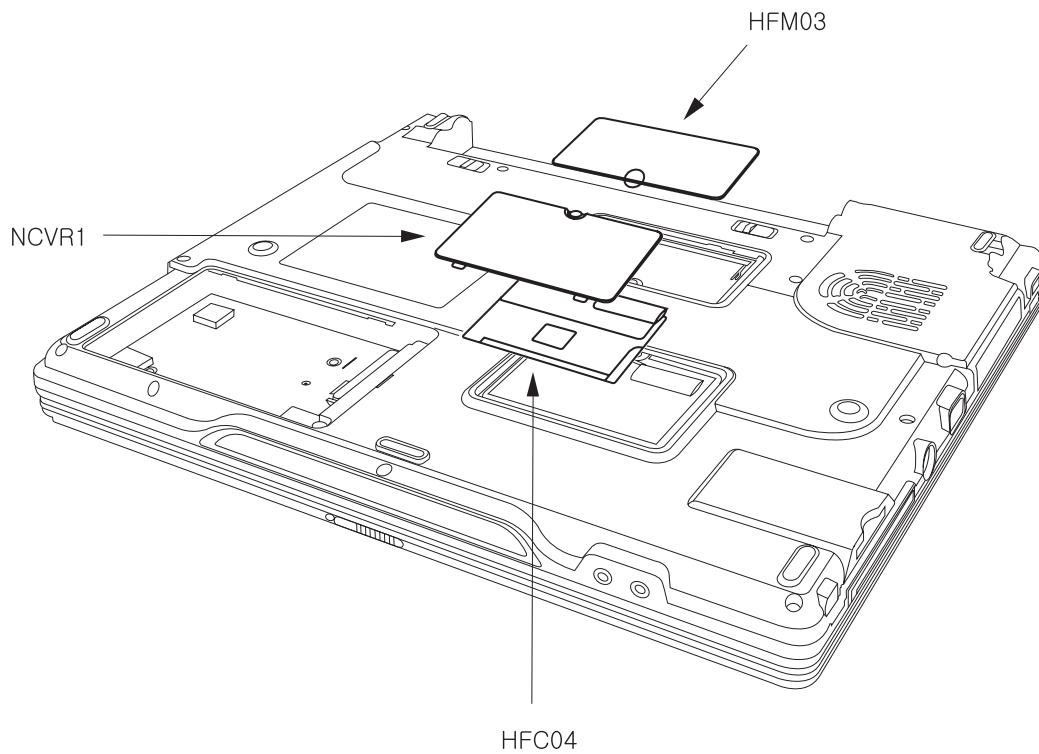| Location	Part Number	Specification	Remarks
HFM11	3550BM3204D	DEBORAH PCABS COVER , HINGE CAP LEFT FOR EXPORT	
HFM12	3550BM3205C	DEBORAH PCABS COVER , HINGE CAP RIGHT SILVER	
HFM12	3550BM3205D	DEBORAH PCABS COVER , HINGE CAP RIGHT FOR EXPORT	
HFM09	3550BM3171B	ME 14 PCABS DUMMY CARDBUS	
HFM04	3551B09740A	HUNTER-FULL 15 INCH COVER ,HDD H150F	
HFM03	3551B09757B	DEBORAH MEMORY . E1677	
NCVR1	3551B09758B	DEBORAH . MINI PCI E1677	
HFM02	3551B09763A	DEBORAH COVER RETAINER ASSY 150F FOR DOMESTIC	
HFM02	3551B09763B	DEBORAH COVER RETAINER ASSY 150F FOR COMMERCIAL	
HFM02	3551B09763C	DEBORAH COVER RETAINER ASSY 150F FOR EXPORT SILVER	
HFL18	3858BP4497A	DEBORAH LOGO BADGE XNOTE	
HFL18	3858BP4498A	DEBORAH LOGO BADGE LG	
HFL18	3858BP4498B	. DEBORAH LOGO BADGE LG SILVER	
HFM22	1SZZBA4017E	+ D2.0 L3.0MM SWRH4 / [BK] DISPLAY BK [S-PJT] #0 TIP	
HFM23	1SZZBA4023A	+ D2.0 L 3.5 SWRH4 SYDNEY SYSTEM SILVER S3-PJT PLATED NICKEL	
HFM27	1SZZBA4039D	+ D4.5 L8.0MM SWRH4 LCD FIX BK MCKINLEY M2.5 TIP#0 ROHS	
HFM26	1SZZBA4097B	+ D4.5 L6.5MM SWRH4 M2.5 H1.0 BK HUNTER TIP NO.0 ROHS	
HFM24	1SZZBZ4014C	+ D4.3 L5.0MM SWRH4 M2X5.0L BK MCKINLEY LYLOCK ROHS	
HFM25	1SZZBZ4020A	+ D4.0 L8.8MM SWRH4 FAN ASSEMBLY SILVER MCKINLEY L(10.0) WITH HEAD LENGTH TIP#0	
NSCR1	1SZZBZ4026B	+ D4.5 L10.0MM SWRH4 / [BK] . BK DEBORAH FOR ENVIROMENT M2.5	
NSCR7	1SZZBA4041A	+ D3.5 L3.0MM SWRH4 DUMMY COVER FIX SILVER MAGELLAN DISPLAY	
HFC07	5901B09279B	FAN ASSY DEBORAH LG INNOTEK	
HFC13	6410BM21002	PT8XXK9KB0A-033 LONGWELL KS 1000MM 3P CONN W/VELCRO TIE BLACK	
HFC11	6708BA0044P	HP-OK065B133-LF, HIPRO 65W 18.5V/3.5A 3PIN WITHOUT PFC WINDRIVER ,FOR DEBORAH, ROHS	
HFC11	6708BA0036P	PA-1650-02GR LITEON 65W 18.5V/3.5A 3PIN WITHOUT PFC WINDRIVER , FOR DEBORAH, ROHS	
NSCR5	1SZZBA4080F	+ D4.5 L4.5MM SWRH4 M2.5 H1.0 SILVER HUNTER TIP #0	
NSCR3	1SZZBZ3002K	+ D4.5 L3.5MM SWRH4 . BK HUNTER ROHS	
NSCR4	1SZZBZ3009J	+ D3.8 L2.5MM SWRH4 H=1.0 BK MCKINLEY NYLOK ROHS	

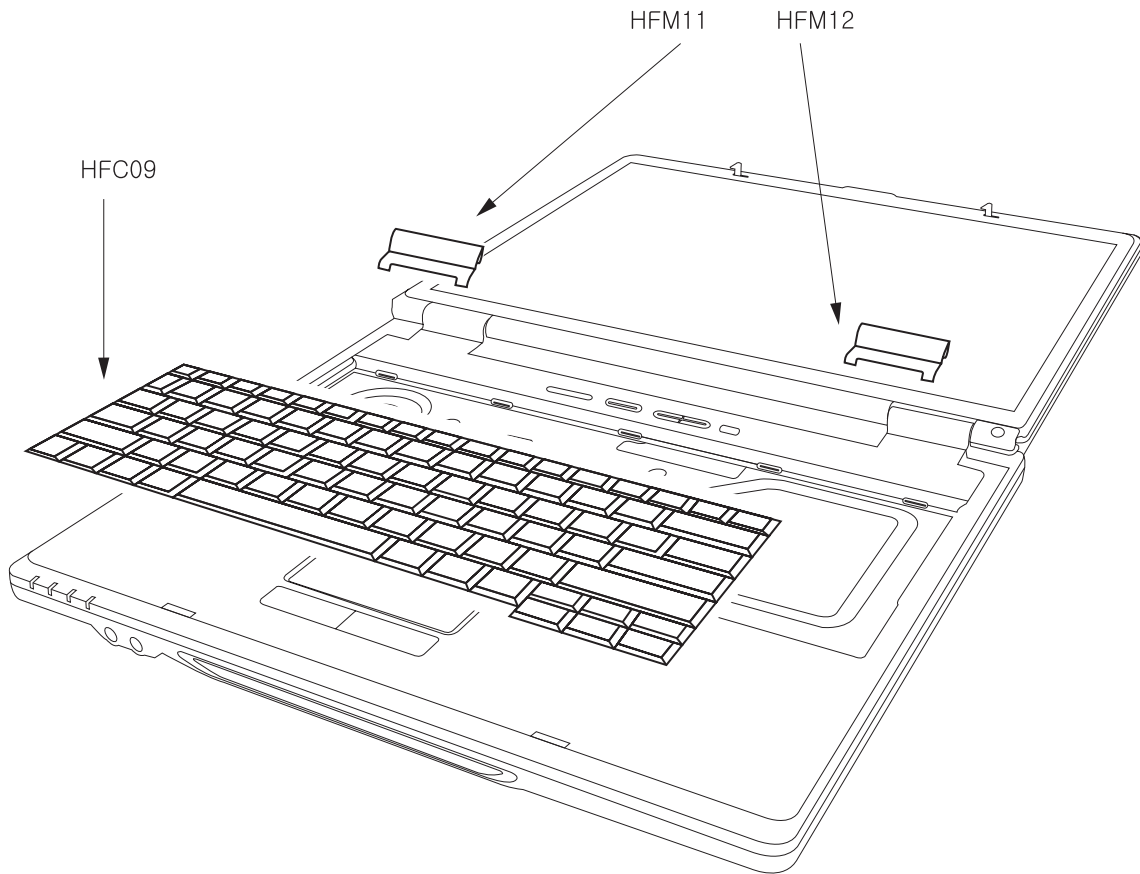| Location	Part Number	Specification	Remarks
HFL02	3111B0TS68A	DEBORAH COVER REAR CASE TOTAL ASSY	
HFL02	3111B0TS68B	DEBORAH COVER REAR CASE TOTAL ASSY(EXPORT)	
HFL06	3111B0TS70A	DEBORAH COVER FRONT CASE ASSY	
HFL06	3111B0TS70B	DEBORAH COVER FRONT CASE ASSY FOR EXPORT	
HFL09	3300BP4455A	INVERTER PLATE HUNTER 14T FOR INVERTER PLATE	
HFL10	3301B00540A	ANTENNA PLATE HUNTER 14T WIRELESS LEFT	
NSET1	3858BP0001A	. HUNTER-FULL 15 INCH SHEET FOR REAR CASE	
HFL07	4774BD2005A	HUNTER-FULL 15 INCH SUS 7.0KGF-CM HINGE LEFT	
HFL08	4774BD2006A	HUNTER-FULL 15 INCH SUS 7.0KGF-CM HINGE , RIGHT	
HFL14	4826BZ4003B	DISPLAY RUBBER FRONT HUNTER 14T SILVER	
HFL14	4826BZ4003C	DISPLAY RUBBER FRONT HUNTER FULL SILVER FOR COMMERCIAL	
HFL13	4850BM4029A	HUNTER-FULL 15 INCH SILICON DISPLAY FRONT UPPER CUSHION	
HFL13	4850BM4029B	HUNTER-FULL 15 INCH SILICON DISPLAY FRONT UPPER CUSHION FOR COMMERCIAL	
NCSN1	4850BM4030B	DEBORAH SILICON DISPLAY FRONT LOWER CUSHION FOR DEBORAH	
NCSN1	4850BM4030A	HUNTER-FULL 15 INCH SILICON DISPLAY FRONT LOWER CUSHION	
HTL25	3850BB3042A	BRAND NAME LABEL HUNTER T DOMESTIC	
HTL25	3850BB3042B	BRAND NAME LABEL HUNTER 15 FULL SMILE LG FOR COMMERCIAL	
HFL01	6304FHS011A	HSD150PX17-A02 HANNSTAR TFT COLOR 15.0 INCH XGA(1024X768) ISP STYLE B 200NITS PB FREE	
HFL01	6304FLP242C	LP150X08-TLA2 F TFT COLOR 15 INCHES 1024X768 170NITS ANTI- GLARE	
HFL12	6708BI0088B	KUBNKM095A ALPS GENERAL GENERAL GENERAL HUNTER-FULL 15 INCH HUNTER-FULL ALL, HUNTER-TL ALL, MP1017 (	
HFL12	6708BI0089B	DAC-08B073 DELTA GENERAL GENERAL GENERAL HUNTER-TL 15 INCH HUNTER-FULL ALL, HUNTER-TL ALL, OZ1060S,	
HFL16	6851B34041A	15 LCD CABLE, TAEYANG3C 206X196 31 WIRES DEBORAH	
HFL16	6851B34042A	15 LCD CABLE, WANSHIH 196X206 31 WIRES DEBORAH	
HFC04	6718M000012	Q802MKG QCOM INTERFACE STANDARD IEEE802.11G 54M LF(LEAD FREE)	
HTA02	1SZZBA4011K	+ D5.0 L3.0MM SWRH4 HDD ASSY FIX WH HUNTER WIDE TIP #0 ROHS	
HTA01	4811B00605A	HUNTER-WIDE 15.4 INCH HDD SUS 17.1W, 15F	
HTA03	6744C00137A	MHV2040AT FUJITSU 40GB EIDE INNER HUNTER	
HTA03	6744C00138A	MHV2060AT FUJITSU 60GB EIDE INNER HUNTER	
HTA03	6744C00139A	MHV2080AT FUJITSU 80GB EIDE INNER HUNTER	

62

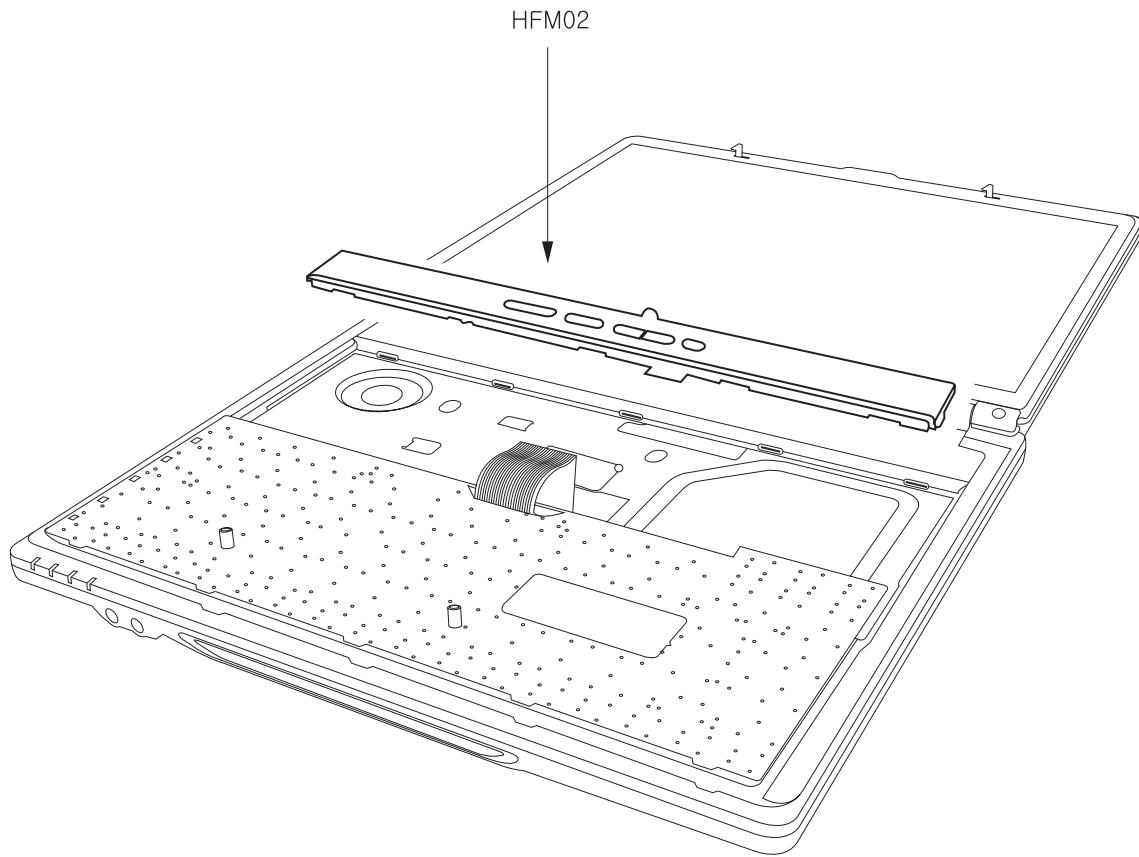| Location	Part Number	Specification	Remarks
HTA04	6777B0A01TE	DV-28E-N88 TEAC 24X NOTE BOOK DEBORAH DVD ASSY ROHS	
HTA04	2026B2A01TS	TS-L632B TSST 8X 8X 4X 8X(6X) 4X 5X 24X 10X 4X 2X 4X(2.4X) 2X 3X 24X NOTE BOOK DEBORAH SUPERMULTI A	
HTA04	2029B1B01TE	GCC-4244N HLDS 8X 24X 24X 24X 12.7 MM NOTEBOOK COMBO ASSY ROHS DEBORAH	
NSCR6	6871BJ501A1	DEBORAH LGE 8 LAYERS REV 0.4 DEBORAH ROHS MAIN B/D ASSY(PATA)	MP PCB ASSY
NSCR6	6871BJ502A1	DEBORAH LGE 8 LAYERS REV 0.4 DEBORAH R0.4 ROHS MAIN B/D ASSY(SATA)	MP PCB ASSY
HWC12	6910BLC3201	CR2032 SONY 3V 220MA/H COIN	
HTA07	6911B00121P	4800MAH 3S-2P SIMPLO LI-ION CYLINDERICAL HUNTER-ALL LGC CELL, ROHS	
HTA07	6911B00092P	4800MAH 3S-2P LGC LI-ION CYLINDERICAL HUNTER-ALL LGC CELL,ROHS	
HTA07	6911B00119P	4800MAH 3S-2P SIMPLO LI-ION CYLINDERICAL HUNTER-ALL SDI CELL, ROHS	

HFM04

HTA02

HTA01

HTA02

HTA03

HFM26

HFM22

HFM27

HTA07

HFM27

HFM22

NSCR1

HFM26

HFM26

HFM26

HFM26

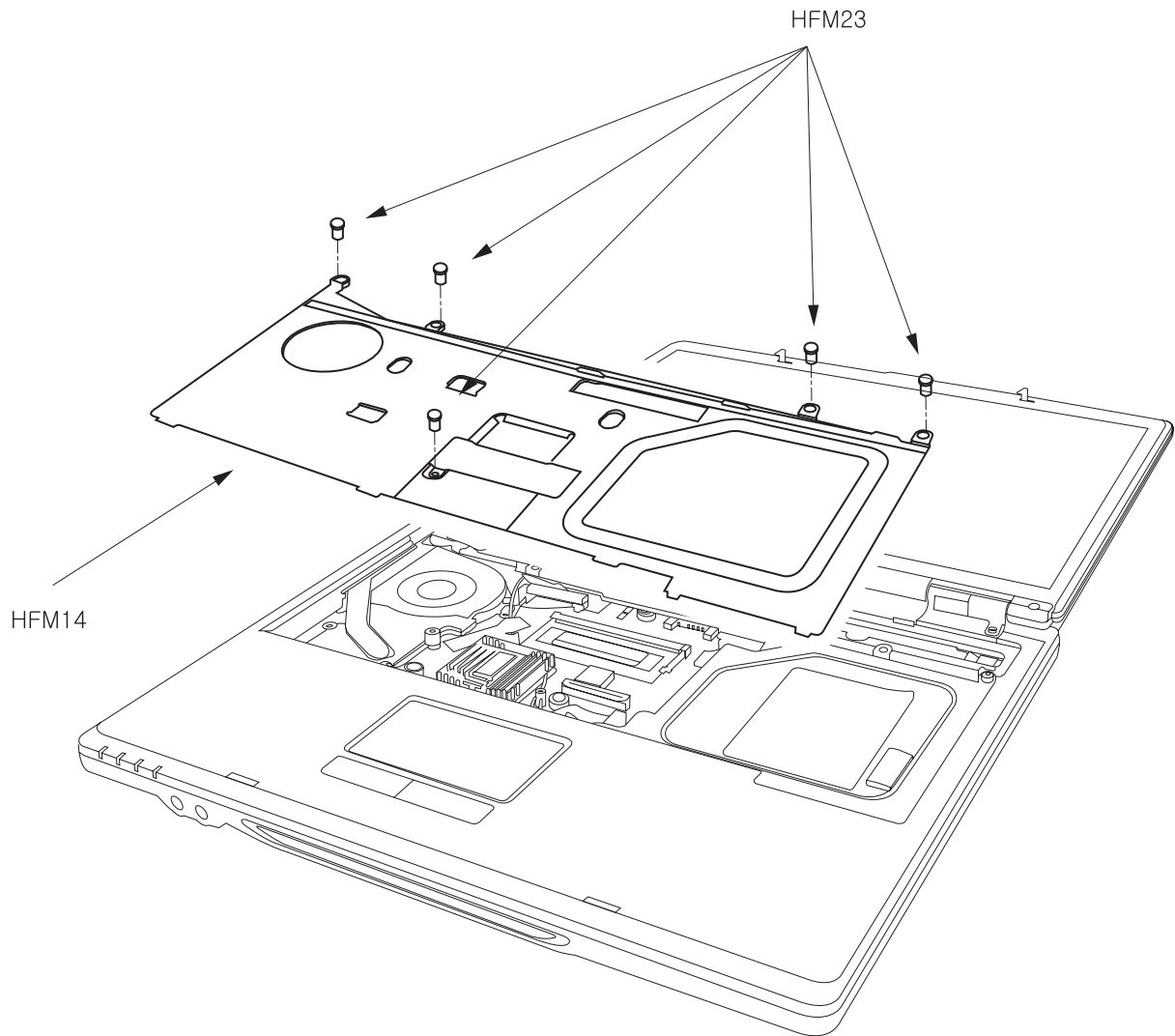| Location	LG P/N	SPECIFICATION	REMARKS
HFM04	3551B09740A	HUNTER-FULL 15 INCH COVER, HDD H150F	COVER ASSEMBLY
HFM22	1SZZBA4017E	+ D2.0 L3.0MM SWRH4 / [BK] DISPLAY BK [S-PJT] #0 TIP	SCREW, DRAWING
HFM26	1SZZBA4097B	+ D4.5 L6.5MM SWRH4 M2.5 H1.0 BK HUNTER TIP NO.0 ROHS	SCREW, DRAWING
HFM27	1SZZBA4039D	+ D4.5 L8.0MM SWRH4 LCD FIX BK MCKINLEY M2.5 TIP#0 ROHS	SCREW, DRAWING
HTA01	4811B00605A	HUNTER-WIDE 15.4 INCH HDD SUS 17.1W, 15F	BRACKET ASSEMBLY
HTA02	1SZZBA4011K	+ D5.0 L3.0MM SWRH4 HDD ASSY FIX WH HUNTER WIDE TIP #0 ROHS	SCREW, DRAWING
HTA03	6744C00137A	MHV2040AT FUJITSU 40GB EIDE INNER HUNTER	HDD,2.6"
HTA03	6744C00138A	MHV2060AT FUJITSU 60GB EIDE INNER HUNTER	HDD,2.7"
HTA03	6744C00139A	MHV2080AT FUJITSU 80GB EIDE INNER HUNTER	HDD,2.8"
HTA07	6911B00121P	4800MAH 3S-2P SIMPLO LI-ION CYLINDERICAL HUNTER-ALL LGC CELL, ROHS	BATTERY ASSEMBLY, GOODS (SANG-POOM)
HTA07	6911B00092P	4800MAH 3S-2P LGC LI-ION CYLINDERICAL HUNTER-ALL LGC CELL, ROHS	BATTERY ASSEMBLY, GOODS (SANG-POOM)
HTA07	6911B00119P	4800MAH 3S-2P SIMPLO LI-ION CYLINDERICAL HUNTER-ALL SDI CELL, ROHS	BATTERY ASSEMBLY, GOODS (SANG-POOM)

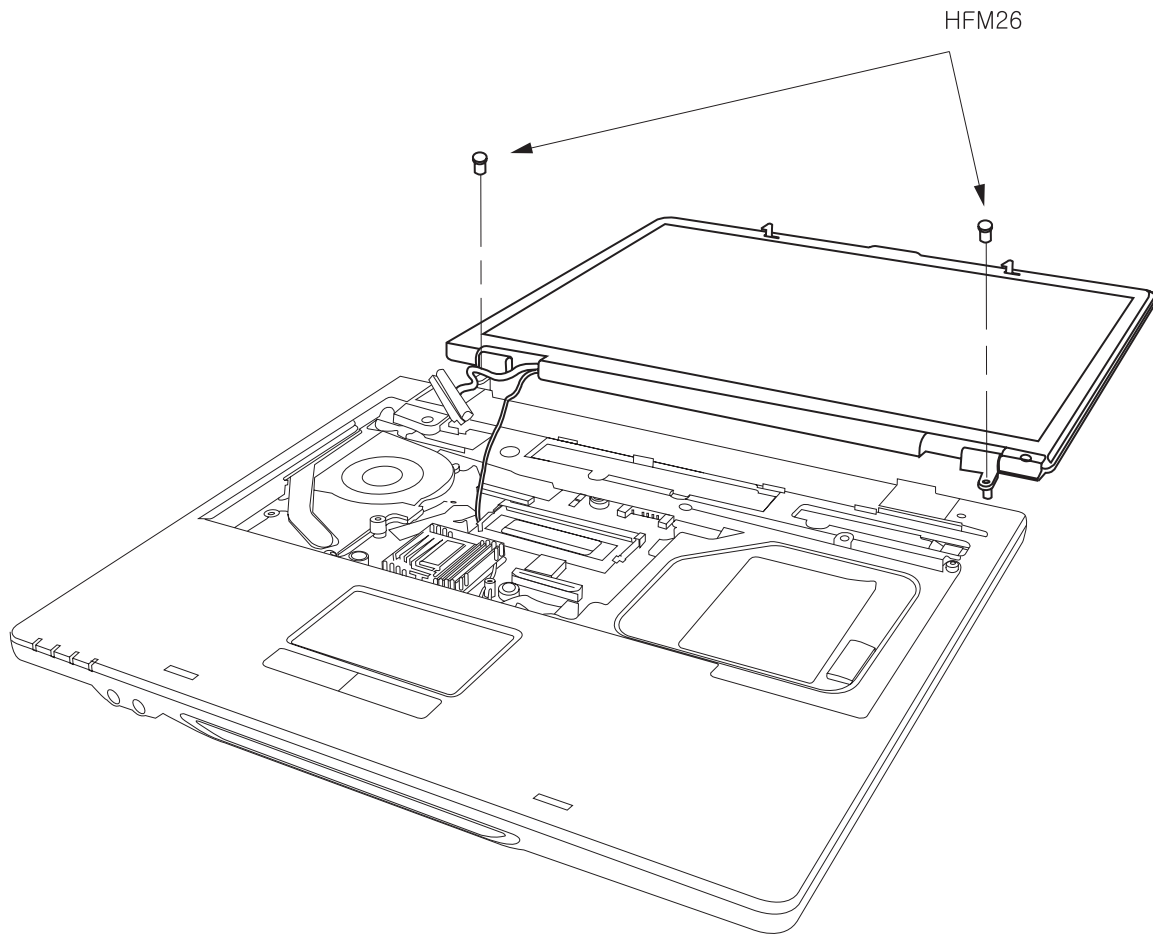| Location	LG P/N	SPECIFICATION	REMARKS
NCVR1	3551B09758B	DEBORAH. MINI PCI E1677	COVER ASSEMBLY
HFM03	3551B09757B	DEBORAH MEMORY. E1677	COVER ASSEMBLY
HFC04	6718M000012	Q802MKG QCOM INTERFACE STANDARD IEEE802.11G 54M LF(LEAD FREE)	LANCARD, MINI PCI

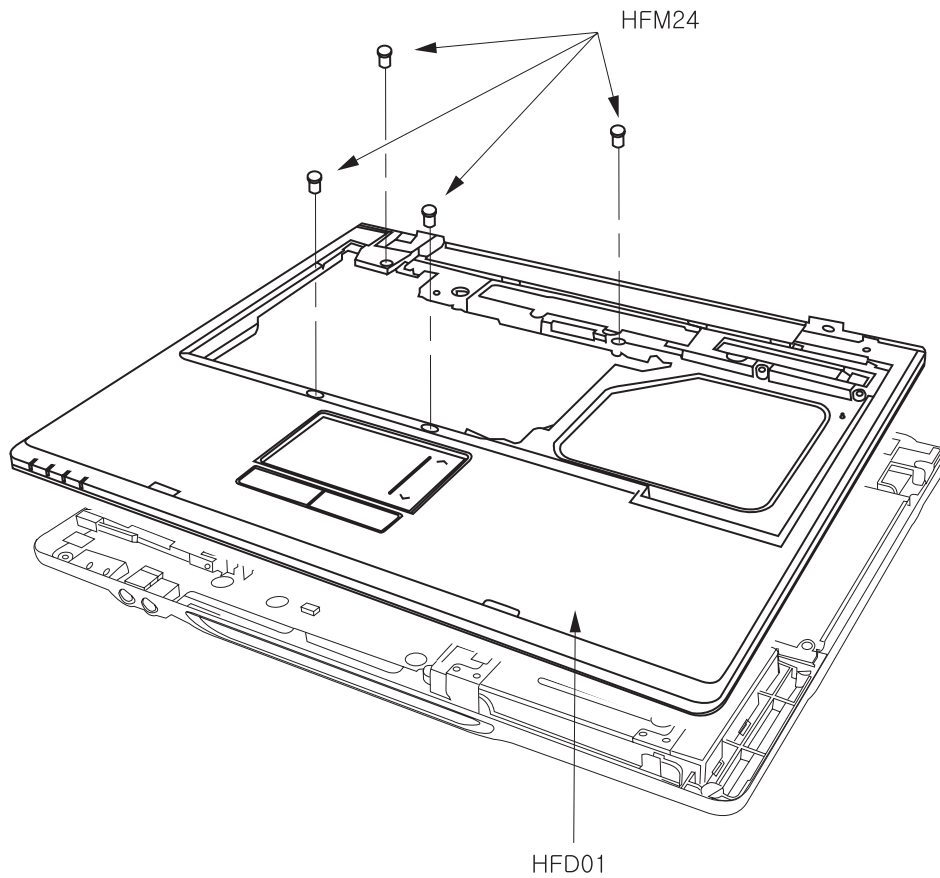| Location	LG P/N	SPECIFICATION	REMARKS
HFM11	3550BM3204C	DEBORAH PCABS COVER, HINGE CAP LEFT SILVER	COVER
HFM11	3550BM3204D	DEBORAH PCABS COVER, HINGE CAP LEFT FOR EXPORT	COVER
HFM12	3550BM3205C	DEBORAH PCABS COVER, HINGE CAP RIGHT SILVER	COVER
HFM12	3550BM3205D	DEBORAH PCABS COVER, HINGE CAP RIGHT FOR EXPORT	COVER
HFC09	3823B01061A	ENGLISH HUNTER F 86KEY	KEYBOARD ASSEMBLY
HFC09	3823B01060A	KOREA HUNTER F OKI 86KEY	KEYBOARD ASSEMBLY

HFM02

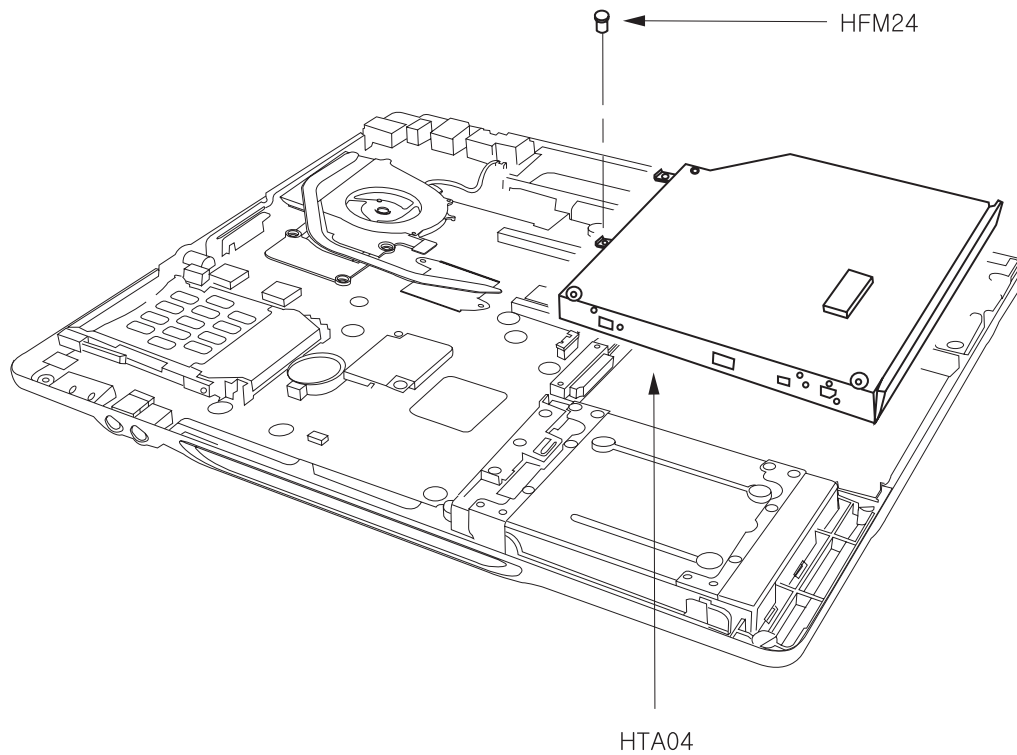| Location	LG P/N	SPECIFICATION	REMARKS
HFM02	3551B09763A	DEBORAH COVER RETAINER ASSY 150F FOR DOMESTIC	COVER ASSEMBLY
HFM02	3551B09763B	DEBORAH COVER RETAINER ASSY 150F FOR COMMERCIAL	COVER ASSEMBLY
HFM02	3551B09763C	DEBORAH COVER RETAINER ASSY 150F FOR EXPORT SILVER	COVER ASSEMBLY

HFM23

HFM14

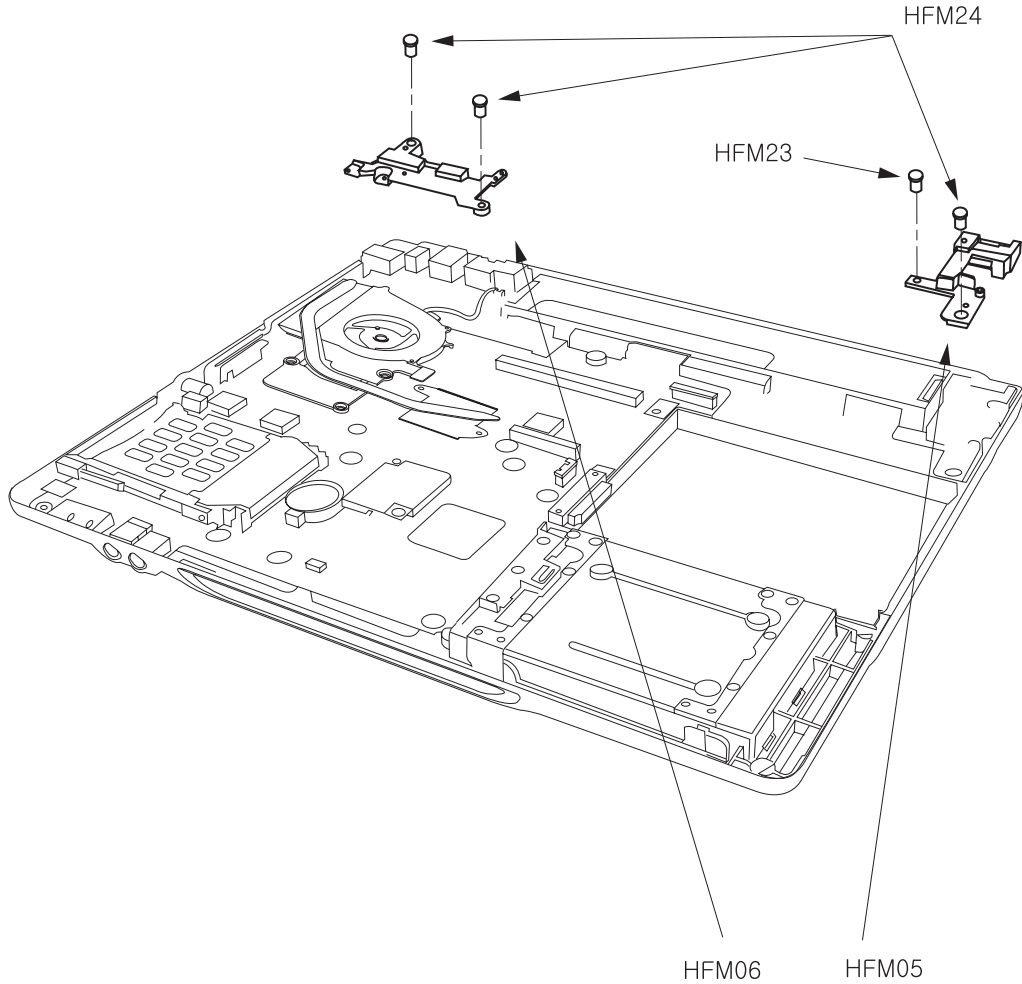| Location	LG P/N	SPECIFICATION	REMARKS
HFM23	1SZZBA4023A	+ D2.0 L 3.5 SWRH4 SYDNEY SYSTEM SILVER S3-PJT PLATED NICKEL	SCREW, DRAWING
HFM14	3301B00559B	KBD PLATE HUNTER-FULL WITH GASKET AND TAPE(COMMERCIAL-DEBORAH)	PLATE ASSEMBLY

HFM26

Location	LG P/N	SPECIFICATION	REMARKS
HFM26	1SZZBA4097B	+ D4.5 L6.5MM SWRH4 M2.5 H1.0 BK HUNTER TIP NO.0 ROHS	SCREW, DRAWING

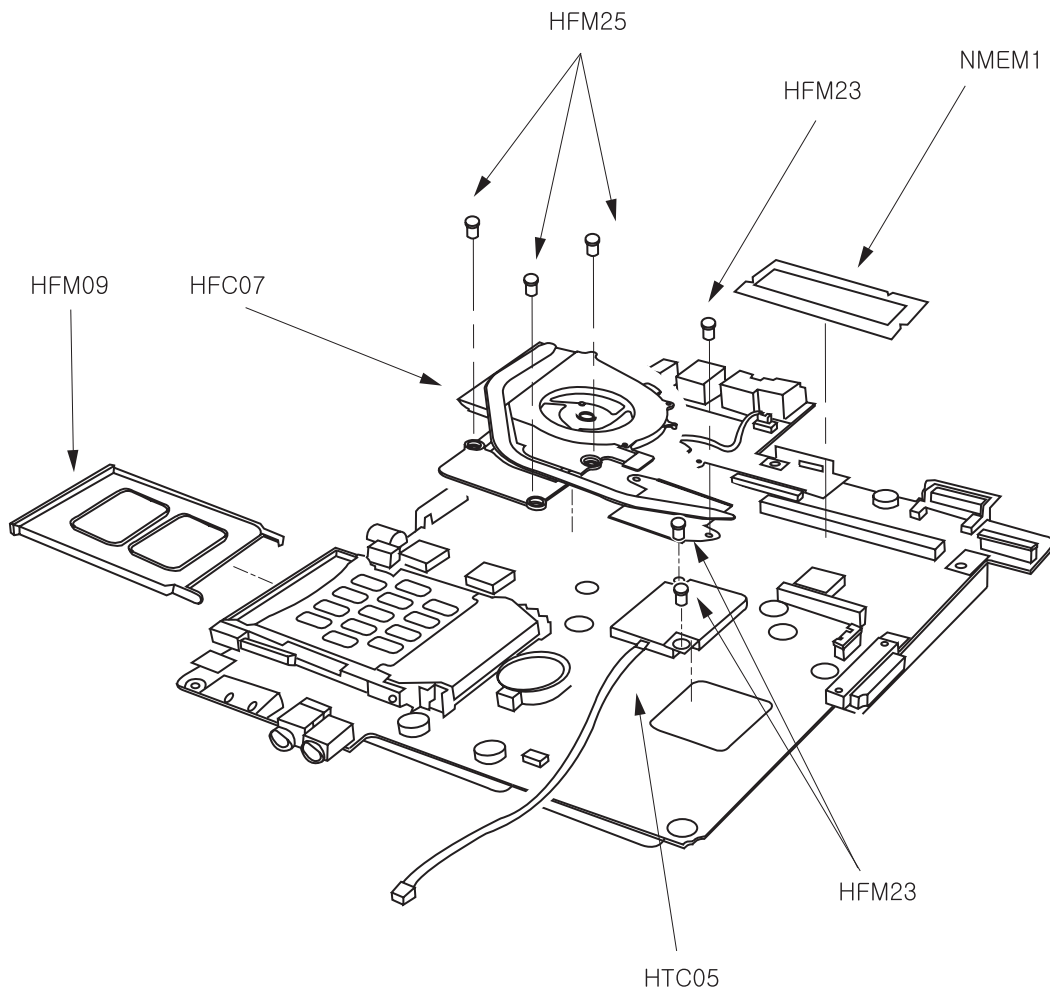| Location	LG P/N	SPECIFICATION	REMARKS
HFM24	1SZZBZ4014C	+ D4.3 L5.0MM SWRH4 M2X5.0L BK MCKINLEY LYLOCK ROHS	SCREW, DRAWING
HFD01	3111B0TS66A	DEBORAH COVER KBD DECK TOTAL ASSY	CASE ASSEMBLY
HFD01	3111B0TS66B	DEBORAH COVER KBD DECK TOTAL ASSY FOR EXPORT	CASE ASSEMBLY

HFM24

HTA04

Location	LG P/N	SPECIFICATION	REMARKS
HFM24	1SZZBZ4014C	+ D4.3 L5.0MM SWRH4 M2X5.0L BK MCKINLEY LYLOCK ROHS	SCREW, DRAWING
HTA04	6777B0A01TE	DV-28E-N88 TEAC 24X NOTE BOOK DEBORAH DVD ASSY ROHS	DVD-ROM DRIVE ASSEMBLY
HTA04	2026B2A01TS	TS-L632B TSST 8X 8X 4X 8X(6X) 4X 5X 24X 10X 4X 2X 4X(2.4X) 2X 3X 24X NOTE BOOK DEBORAH SUPERMULTI A	DVD REWRITABLE
HTA04	2029B1B01TE	GCC-4244N HLDS 8X 24X 24X 24X 12.7 MM NOTEBOOK COMBO ASSY ROHS DEBORAH	COMBO, ASSEMBLY

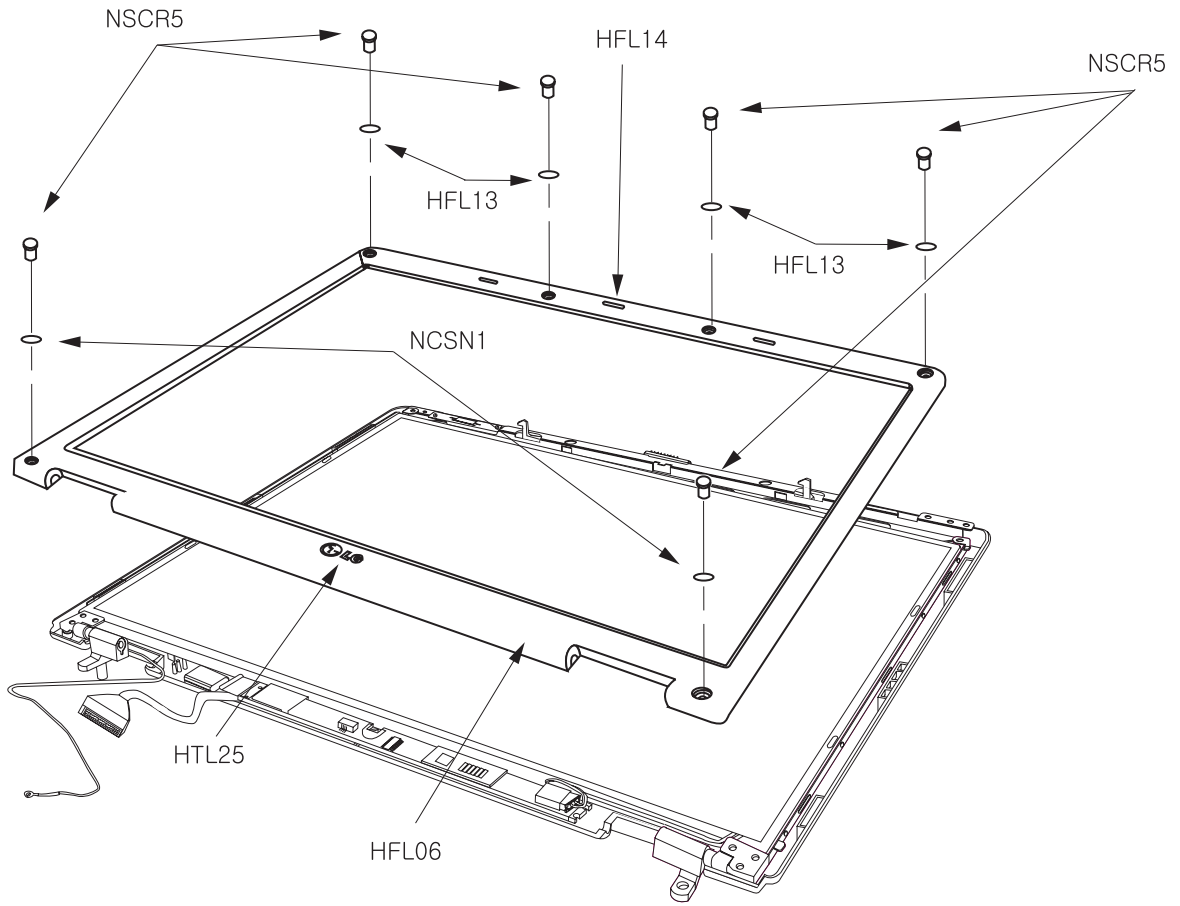| Location	LG P/N	SPECIFICATION	REMARKS
HFM23	1SZZBA4023A	+ D2.0 L 3.5 SWRH4 SYDNEY SYSTEM SILVER S3-PJT PLATED NICKEL	SCREW, DRAWING
HFM24	1SZZBZ4014C	+ D4.3 L5.0MM SWRH4 M2X5.0L BK MCKINLEY LYLOCK ROHS	SCREW, DRAWING
HFM05	3210BD2021A	HUNTER-FULL 15 INCH ZN HINGE , FRAME RIGHT	FRAME
HFM06	3210BD3027A	DEBORAH ZN HINGE FRAME LEFT	FRAME
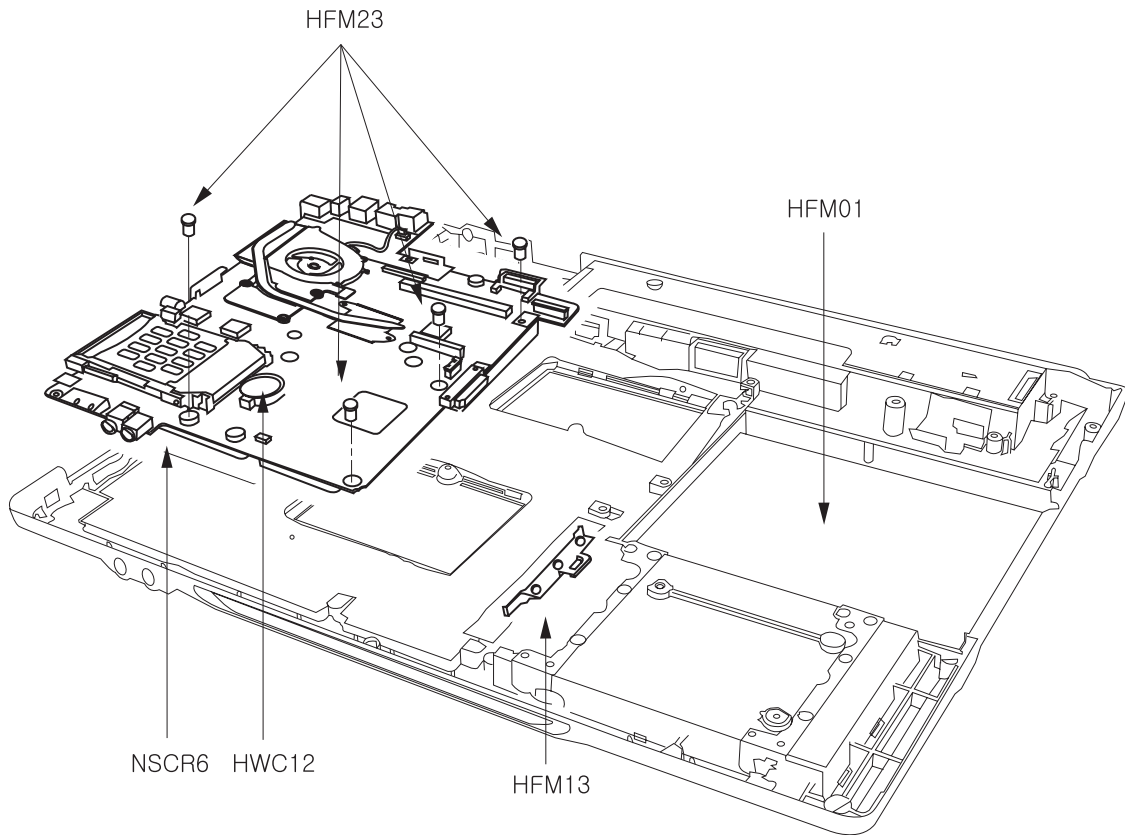
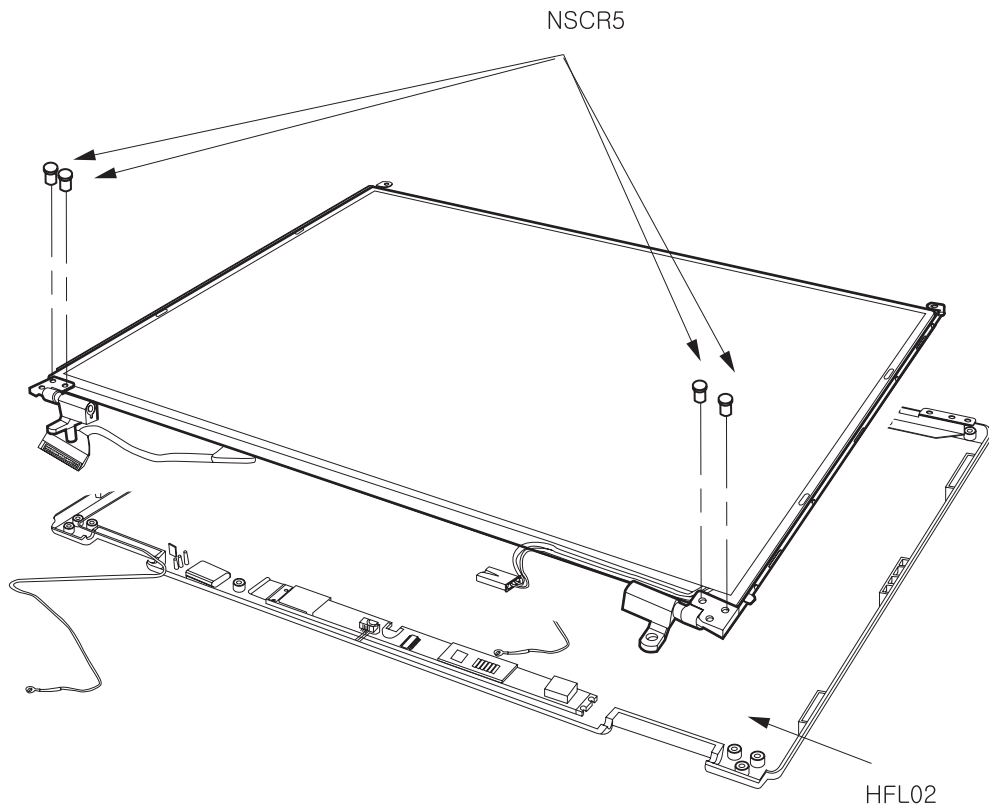| Location	LG P/N	SPECIFICATION	REMARKS
HFM01	3111B0TS65A	DEBORAH COVER BOTTOM CASE ASSY	CASE ASSEMBLY
HFM13	3550BM3202A	HUNTER-WIDE 15.4 INCH PCABS HDD BLOCK	COVER
HFM23	1SZZBA4023A	+ D2.0 L 3.5 SWRH4 SYDNEY SYSTEM SILVER S3-PJT PLATED NICKEL	SCREW, DRAWING
HWC12	6910BLC3201	CR2032 SONY 3V 220MA/H COIN	BATTERY, LITHIUM
NSCR6	6871BJ501A1	DEBORAH LGE 8 LAYERS REV 0.4 DEBORAH ROHS MAIN B/D ASSY(PATA)	PWB(PCB) ASSEMBLY, MAIN
NSCR6	6871BJ502A1	DEBORAH LGE 8 LAYERS REV 0.4 DEBORAH R0. 4 ROHS MAIN B/D ASSY(SATA)	PWB(PCB), ASSEMBLY, MAIN

HFM25

NMEM1

HFM23

HFM09   HFC07

HFM23

HTC05

Location	LG P/N	SPECIFICATION	REMARKS
NMEM1	0IMMR00007A	HYS64T32000HDL-3.7-A INFINEON 200P SODIMM BK 256MB 32MX64 533MHZ DDR2 SDRAM WITH 32MX16	IC, MEMORIES
NMEM1	0IMMR00006C	M470T6554BZ3-CD5 SAMSUNG ELECTRONICS 200P SODIMM BK 512MB 64MX64 533MHZ DDR2 SDRAM WITH 32MX16	IC, MEMORIES
NMEM1	0IMMR00008A	HYS64T64020HDL-3.7-A INFINEON 200P SODIMM BK 512MB 64MX64 533MHZ DDR2 SDRAM WITH 32MX16	IC, MEMORIES
NMEM1	0IMMR00005C	M470T3354BZ3-CD5 SAMSUNG ELECTRONICS 200P SODIMM BK 256MB 32MX64 533MHZ DDR2 SDRAM WITH 32MX16	IC, MEMORIES
NMEM1	0IMMR00054B	HYMP564S64P6-C4 HYNIX 200P SODIMM BK 512MB 64MX64 533MHZ DDR2 SDRAM WITH 32MX16	IC, MEMORIES
NMEM1	0IMMR00053B	HYMP532S64P6-C4 HYNIX 200P SODIMM BK 256MB 32MX64 533MHZ DDR2 SDRAM WITH 32MX16	IC, MEMORIES
HFM09	3550BM3171B	ME 14 PCABS DUMMY CARDBUS	COVER
HFM23	1SZZBA4023A	+ D2.0 L 3.5 SWRH4 SYDNEY SYSTEM SILVER S3-PJT PLATED NICKEL	SCREW, DRAWING
HFM25	1SZZBZ4020A	+ D4.0 L8.8MM SWRH4 FAN ASSEMBLY SILVER MCKINLEY L(10.0) WITH HEAD LENGTH TIP#0	SCREW, DRAWING
HTC05	3041B0A000Q	DEBORAH NT B/D - MODEM ASSY QCOM ROHS	BASE ASSEMBLY
HFC07	5901B09279B	FAN ASSY DEBORAH LG INNOTEK	FAN ASSEMBLY
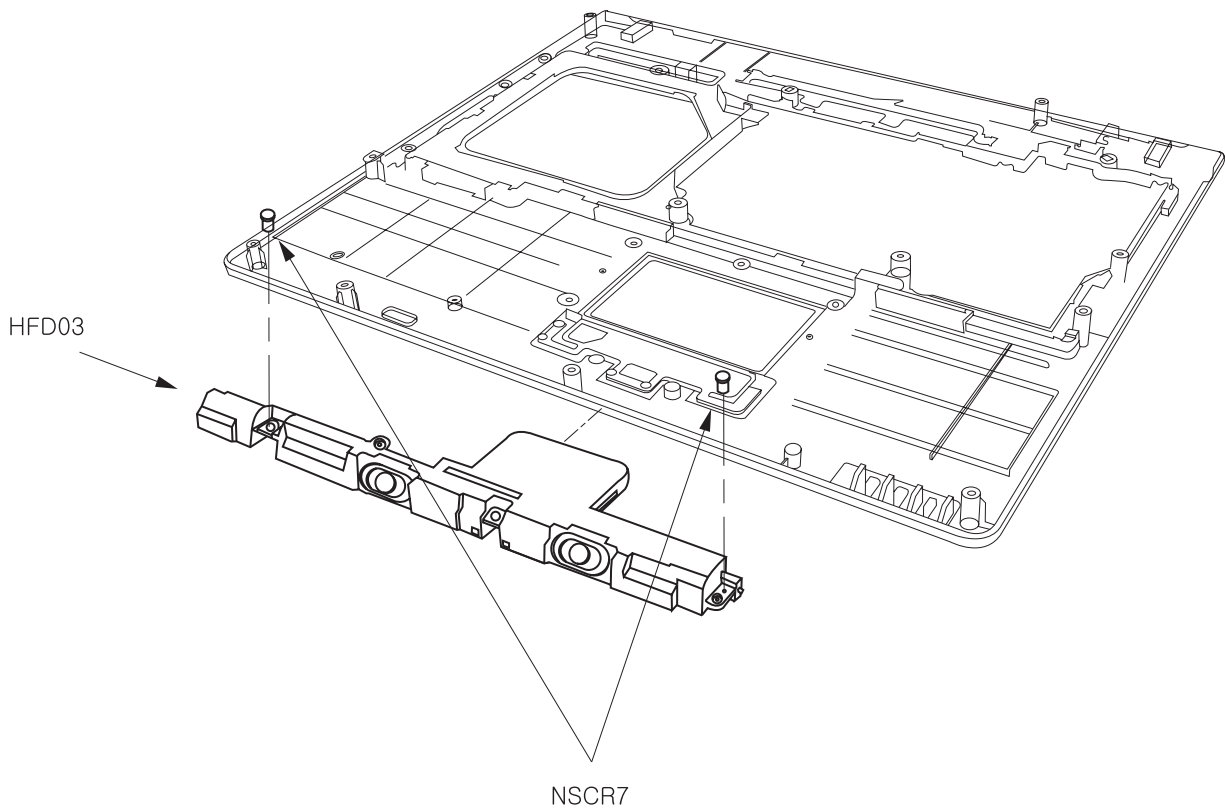
HFD03

NSCR7

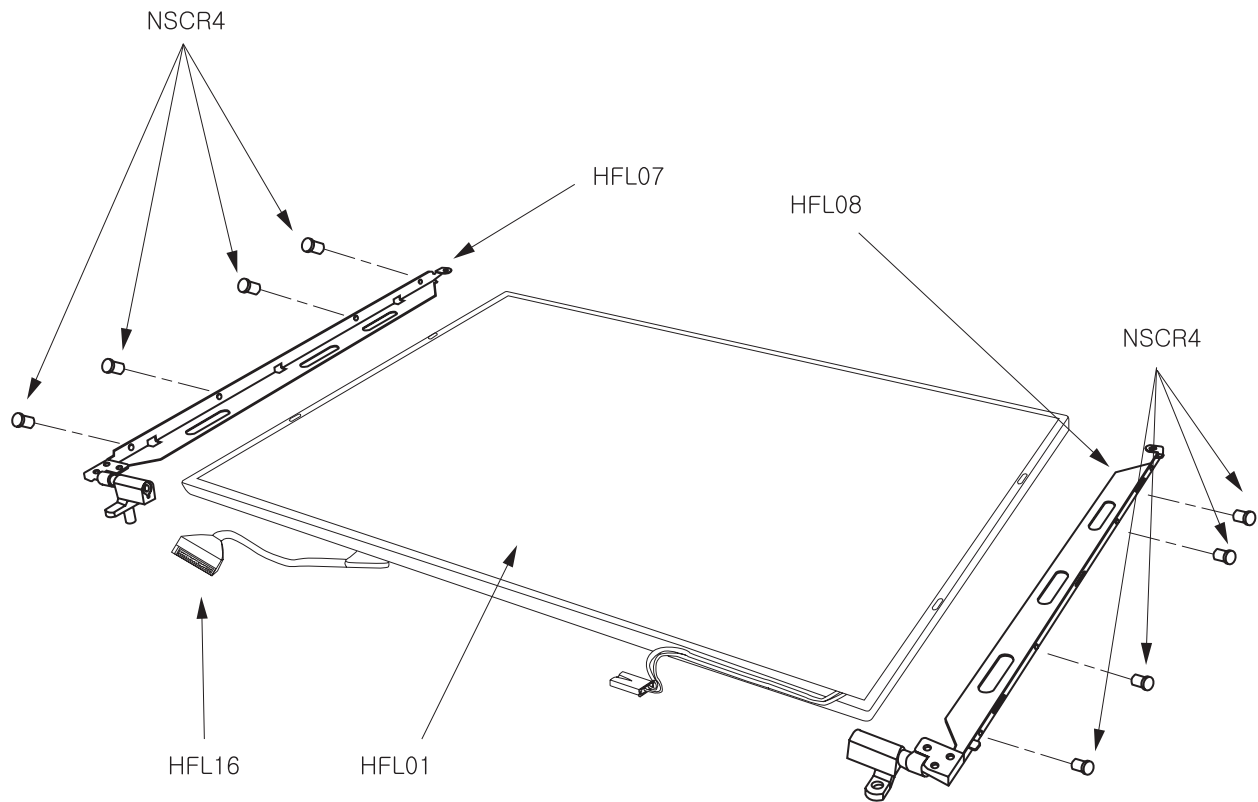| Location	LG P/N	SPECIFICATION	REMARKS
HFD03	3551B09734B	HUNTER-FULL 15 INCH SPEAKER ASSY FOR ENVIROMENT	COVER ASSEMBLY
NSCR7	1SZZBA4041A	+ D3.5 L3.0MM SWRH4 DUMMY COVER FIX SILVER MAGELLAN DISPLAY	SCREW, DRAWING

NSCR5

HFL14

NSCR5

HFL13

HFL13

NCSN1

HTL25

HFL06

Location	LG P/N	SPECIFICATION	REMARKS
NSCR5	1SZZBA4080F	+ D4.5 L4.5MM SWRH4 M2.5 H1.0 SILVER HUNTER TIP #0	SCREW, DRAWING
NCSN1	4850BM4030B	DEBORAH SILICON DISPLAY FRONT LOWER CUSHION FOR DEBORAH	CUSHION
NCSN1	4850BM4030A	HUNTER-FULL 15 INCH SILICON DISPLAY FRONT LOWER CUSHION	CUSHION
HFL06	3111B0TS70A	DEBORAH COVER FRONT CASE ASSY	CASE ASSEMBLY
HFL06	3111B0TS70B	DEBORAH COVER FRONT CASE ASSY FOR EXPORT	CASE ASSEMBLY
HFL13	4850BM4029A	HUNTER-FULL 15 INCH SILICON DISPLAY FRONT UPPER CUSHION	CUSHION
HFL13	4850BM4029B	HUNTER-FULL 15 INCH SILICON DISPLAY FRONT UPPER CUSHION FOR COMMERCIAL	CUSHION
HFL14	4826BZ4003B	DISPLAY RUBBER FRONT HUNTER 14T SILVER	SPACER
HFL14	4826BZ4003C	DISPLAY RUBBER FRONT HUNTER FULL SILVER FOR COMMERCIAL	SPACER
HTL25	3850BB3042A	BRAND NAME LABEL HUNTER T DOMESTIC	LABEL
HTL25	3850BB3042B	BRAND NAME LABEL HUNTER 15 FULL SMILE LG FOR COMMERCIAL	LABEL

NSCR5

HFL02

Location	LG P/N	SPECIFICATION	REMARKS
NSCR5	1SZZBA4080F	+ D4.5 L4.5MM SWRH4 M2.5 H1.0 SILVER HUNTER TIP #0	SCREW, DRAWING
HFL02	3111B0TS68A	DEBORAH COVER REAR CASE TOTAL ASSY	CASE ASSEMBLY
HFL02	3111B0TS68B	DEBORAH COVER REAR CASE TOTAL ASSY (EXPORT)	CASE ASSEMBLY
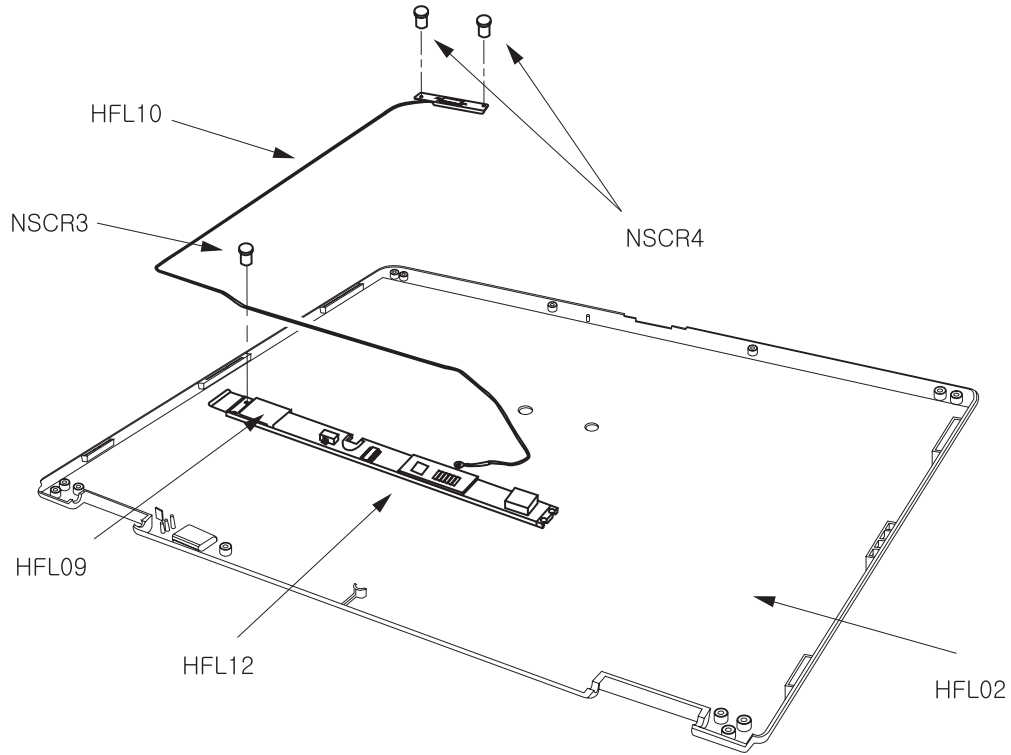
Location	LG P/N	SPECIFICATION	REMARKS
HFL02	3111B0TS68A	DEBORAH COVER REAR CASE TOTAL ASSY	CASE ASSEMBLY
HFL02	3111B0TS68B	DEBORAH COVER REAR CASE TOTAL ASSY (EXPORT)	CASE ASSEMBLY
HFL09	3300BP4455A	INVERTER PLATE HUNTER 14T FOR INVERTER PLATE	PLATE
HFL10	3301B00540A	ANTENNA PLATE HUNTER 14T WIRELESS LEFT	PLATE ASSEMBLY
NSCR3	1SZZBZ3002K	+ D4.5 L3.5MM SWRH4 . BK HUNTER ROHS	SCREW, DRAWING
NSCR4	1SZZBZ3009J	+ D3.8 L2.5MM SWRH4 H=1.0 BK MCKINLEY NYLOK ROHS	SCREW, DRAWING
HFL12	6708BI0088B	KUBNKM095A ALPS GENERAL GENERAL GENERAL HUNTER-FULL 15 INCH HUNTER-FULL ALL, HUNTER-TL ALL, MP1017	POWER SUPPLY, INVERTER
HFL12	6708BI0089B	DAC-08B073 DELTA GENERAL GENERAL GENERAL HUNTER-TL 15 INCH HUNTER-FULL ALL, HUNTER-TL ALL, OZ1060S,	POWER SUPPLY, INVERTER

Location	LG P/N	SPECIFICATION	REMARKS
NSCR4	1SZZBZ3009J	+ D3.8 L2.5MM SWRH4 H=1.0 BK MCKINLEY NYLOK ROHS	SCREW, DRAWING
HFL01	6304FHS011A	HSD150PX17-A02 HANNSTAR TFT COLOR 15.0 INCH XGA(1024X768) ISP STYLE B 200NITS PB FREE	LCD (LIQUID CRYSTAL DISPLAY)
HFL01	6304FLP242C	LP150X08-TLA2 F TFT COLOR 15 INCHES 1024X768 170NITS ANTI- GLARE	LCD (LIQUID CRYSTAL DISPLAY)
HFL07	4774BD2005A	HUNTER-FULL 15 INCH SUS 7.0KGF-CM HINGE LEFT	HINGE
HFL08	4774BD2006A	HUNTER-FULL 15 INCH SUS 7.0KGF-CM HINGE , RIGHT	HINGE
HFL16	6851B34041A	15 LCD CABLE, TAEYANG3C 206X196 31 WIRES DEBORAH	CABLE ASSEMBLY
HFL16	6851B34042A	15 LCD CABLE, WANSHIH 196X206 31 WIRES DEBORAH	CABLE ASSEMBLY