Service Manual
(TX)

LG Electronics
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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 may 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 wash 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 your 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.

- Attach the ESD ground clip too any frame ground, ground braid, or green-wire ground.
- 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.
- 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 beam.

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.

إطلاق قنبلة بالطيارية البديلة على اطراف المناصب.
وهناك احتمال الانفجار.

تحل من البطاريات البديلة المستعملة حسب القوانين والانظمة المحلية.

البطاريات المستخرجة منها بصورة غير مناسبة قد تؤدي إلى انفجار أو 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 hardware 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:
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 (15”)

1. LCD Monitor
2. Keyboard
3. Touch pad
4. Using 5-in-1 (XD / SD / MMC / Memory Stick / Memory Stick Pro) Card
5. Touch pad button
6. Wireless LAN/Bluetooth antenna

※ The Mini-PCI Wireless Lan Card is optional.
※ Bluetooth is optional.
Ch2. Locations

Left view

1. VGA Connector
2. Fan louvers
3. Security keyhole
4. USB Connector
5. Power button

Right view

1. Volume up/down/mute button
2. SRS button
3. Headphone Connector / S/PDIF
4. Microphone connector
5. Line-In connector
6. USB Connector
7. Modem connector
8. LAN Connector
9. Power connector
Chapter 3. System information

### Specification

- **CPU**
  - Intel P-M ULV Processor 733/753 (1.1/1.2GHz) Dothan 90nm, 400MHz FSB, 2MB L2
  - Intel Cel-M ULV Processor 383 (1.0GHz) Dothan 90nm, 400MHz, 1MB L2

- **Main Chipset & Graphic**
  - Intel 915GM/PM + ICH6-M
  - Intel GMA (Graphics Media Accelerators 900)
  - nVIDIA G72M (VRAM: 64MB)

- **Memory**
  - 256/512MB (DDR2 400/533MHz, Dual Ch., Up to 2GB)

- **LCD**
  - 12.1” WXGA (1280 X 800, 16:10, FBL)

- **HDD**
  - 40GB~80GB (1.8”, PATA, 4200rpm)

- **Communication**
  - Qcom MA560-3 (Azalia)
  - 10/100MB Ethernet
  - Intel PRO/Wireless 2200BG or 2915ABG
  - BMDC (Option)

- **ODD**
  - External ODD (DVD Super-Multi)

- **I/O**
  - 3 USB 2.0, IEEE 1394(4p), VGA, MIC-In, RJ45, RJ11(Domestic: TBD)

- **Input Device**
  - KBD: 84keys(TBD), Touchpad w/2 buttons & scrolling Function

- **Indicator**
  - Power/Suspend, HDD Activity, Caps Lock, Num Lock, WLAN, Battery Charge

- **Button**
  - Power On/Off(w/LED), Volume(Jog-dial Type), SRSWOW(TBD)

- **Power**
  - Primary: 3 Cell(3S1P, 2600mAh Cylindrical, GM: 3.38hr, PM: 2.97)
  - Extended: 6 Cell(3S2P, 3800mAh Cylindrical)
  - Primary + Extended: 8.26hr (GM, PM: 7.26hr)
  - AC Adapter: 65W

- **Weight**
  - 1.08kg (GM), 1.12kg (PM)

- **Dimension (W X L X H)**
  - GM: 292 X 199 X 23.1mm
  - PM: 295 X 203.5 X 23.1mm

- **Others**
  - T-DMB Module(Built-in, Option) / WiBro Module(Built-in, Option)
# 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.

<table>
<thead>
<tr>
<th>Fn key combination</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>[Fn]+[F1]</td>
<td>User defined Hot key. (Setting is available at OSD)</td>
</tr>
<tr>
<td>[Fn]+[F2]</td>
<td>User setting available in OSD. (By default, this combination is for Zoom In/Out. ※ Zoom In/Out entails automatic adjustment of resolution.)</td>
</tr>
<tr>
<td>[Fn]+[F3]</td>
<td>User setting available in OSD. (By default, this combination is for XTS Pro On/Off. ※ XTS Pro On/Off is a new technology that realizes the optimal sound quality in playing the original sound as it is by adjusting frequency attributes in the signal processing part that governs speaker operation without physical alteration of speakers.)</td>
</tr>
<tr>
<td>[Fn]+[F4]</td>
<td>Force the computer to enter power-saving mode. (ex: system standby or hibernation)</td>
</tr>
<tr>
<td>[Fn]+[F5]</td>
<td>Press the combination [Fn]+[F5] keys to select or deselect Touchpad Disabled. In Touchpad Auto-disable mode, Touchpad becomes disabled automatically if USB or PS2 mouse is connected. Press again to change touchpad modes.</td>
</tr>
<tr>
<td>[Fn]+[F6]</td>
<td>Hotkeys to turn on/off wireless devices including wireless LAN and Bluetooth. (Bluetooth is a sales option.) User setting available in OSD. By default, this combination is for turning Wireless LAN and Bluetooth on and off.</td>
</tr>
<tr>
<td>[Fn]+[F7]</td>
<td>Monitor change. When the computer is attached to an external monitor, you can change the display output location with [Fn]+[F7] combination.</td>
</tr>
<tr>
<td>[Fn]+[F8]</td>
<td>Power scheme change (Refer to the Battery Miser help menu).</td>
</tr>
<tr>
<td>[Fn]+[F9]</td>
<td>Shows System information.</td>
</tr>
<tr>
<td>[Fn]+[F10]</td>
<td>Fan control function. CPU Cooling Fan control mode (Normal / Silent (for quiet operation) / Cool (for fast spinning)).</td>
</tr>
<tr>
<td>[Fn]+[F11]</td>
<td>Maximum power-saving mode (When OSD is installed).</td>
</tr>
<tr>
<td>[Fn]+[Esc]</td>
<td>Scroll Lock</td>
</tr>
<tr>
<td>[Fn]+[PgUp]</td>
<td>Prt Sc(Sys Rq)</td>
</tr>
<tr>
<td>[Fn]+[PgUp]</td>
<td>Pause(Break)</td>
</tr>
<tr>
<td>[Fn]+[Delete]</td>
<td>Insert</td>
</tr>
<tr>
<td>[Fn]+[▲]</td>
<td>Brighten the LCD 8-level brightness adjustment available.</td>
</tr>
<tr>
<td>[Fn]+[▼]</td>
<td>Darken the LCD 8-level brightness adjustment available.</td>
</tr>
<tr>
<td>[Fn]+[◀]</td>
<td>Home</td>
</tr>
<tr>
<td>[Fn]+[▶]</td>
<td>End</td>
</tr>
</tbody>
</table>
Ch3. System information

### Status indicators

The system status indicators show the status of the computer.

1. **Num Lock Indicator**
   - By pressing [Fn]+[Num Lk] keys, you can enable the embedded numeric keypad. By pressing [Fn]+[Num Lk] keys again, you can disable the embedded numeric keypad.

2. **Caps Lock Indicator**
   - Caps Lock indicator lights up when Caps Lock key is pressed. When this indicator lights up, you can type capital letters without pressing the Shift key.

3. **Hard disk drive indicator**
   - Indicator lights up when the Notebook PC access to the hard disk drive.
   - Do not turn off the computer when the drive indicator lights up. It may cause data loss to the computer.

4. **Wireless LAN/Bluetooth indicator**
   - Wireless LAN/Bluetooth indicator operation may differ depending on the model.
   - Mini-PCI Wireless LAN Card/Bluetooth is optional.
   - Indicator Off Wireless LAN/Bluetooth function not in use.
   - Blinking: Wireless LAN/Bluetooth in connection with data transfer.
   - Blinking(2 to 3 seconds): Wireless LAN/Bluetooth not in connection with Wireless Radio on.
   - Blinking(3 to 4 seconds): Searching for access points to establish Wireless LAN/Bluetooth connection.
   - ON : Searching for access points to establish Wireless LAN/Bluetooth connection, or already in connection.

5. **Power indicator**
   - Power indicator lights up when the power cord is connected to the computer.
   - OFF : Power is off, or it is entered system hibernation mode
   - Green Notebook PC is turned on
   - Blinking: Stand by mode
6. Battery status indicator: Recharging the battery (The indicator is on when recharging the battery.
   - Recharging the battery : Orange
   - Battery is charged over 90% : Orange, Green Indicator blinking
   - Discharge : OFF
   - AC Adaptor is connected with full battery or no battery : Green
   - Discharging the battery or the battery is charged under 10% : Green indicator blinking
   - Battery Malfunction : Red blinking
※ The Battery indicator blinks as you have set the alarm action from the Battery miser 2005.
**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
1. Quit all running programs.
2. Start WINPHLASH.EXE.

3. Select the procedure you want:
   a. Backup BIOS and Flash BIOS with new settings
   b. Backup BIOS Only
4. Specify the locations for backup and new BIOS files in BIOS Setting Locations.
   a. Enter the name of the backup file for existing BIOS or click Browse to locate the file.
   b. Enter the name of the new BIOS file or click Browse to locate the file.
5. Click Advanced Settings button to access the advanced settings
6. Click Flash BIOS button to start flash BIOS.
7. Wait for the operation to complete. WinPhlash may take one or two minutes to complete flash BIOS operation.
8. After the completion, 'System BIOS was successfully updated' appears on the screen, then the computer restarts.

9. After the restart, make sure the system BIOS is updated.

10. If your computer does not restart automatically, turn off your computer and then turn it back on by pressing power button.
### BIOS Release Process and Making Bootable CD

1. LGE(Korea) will send BIOS Image (*.iso) to each Service Centers when we have a new revision. (Please refer to the BIOS Table (Document No. SBE-HA-01) for latest BIOS)

2. Service center will make Bootable Image CD with Image file (*.iso) as below

   a. Insert empty disc to CD-RW Drive and start Nero Burning ROM.

   ![Nero Burning ROM](image1)

   b. Select Disc Image or Saved Project.

   ![Nero Express](image2)
c. Select File Format as "Image Files(*.iso)".

d. Open Image File(*.iso) which is sent from LGE
e. Tab Next then burning will be started

![Image of Nero Express interface with file path set to C:\Documents and Settings\[username]\Desktop\81D9859247.iso, drive set to E:, writing speed set to 24x (3,600 KB/s), and number of copies set to 1. The Next button is highlighted.]

f. Burn process completed as below, and tab “OK”

![Image of Nero Express interface showing the successful burn process completed at 24x (3,600 KB/s) with a message box indicating the burn process completed successfully.]

BIOS/EC Flash Process

1. Insert Bootable CD in PC, and Turn it on, then PC will boot by DOS mode as below
   (If the EC is not correct or old version, then automatically update EC first and reboot again)

2. Type in Mode Name at the “WIP ID :” then press Enter key (You must use Capital Letter)
   (You can see the Model Name in ID Label at the bottom Case of PC: “M/N: LMXX-XXXX”)

3. Type in Serial No at the “WIP ID :” then press Enter key (You must use Capital Letter)
   (You can see the Serial No in ID Label at the bottom Case of PC: “S/N: 412KIXXXXXXXX”(13digits))
4. You can see the BIOS flash process as below

![Phoenix Phlash16 Utility Version 1.4. Build 57](image1)

- Performing the following function
- \( \text{Load Image file} \) (HUNTSF06.IMC)
- \( \text{Verify interface information} \)
- \( \text{Backup system BIOS ROM} \)
- \( \text{Check flash memory type(s)} \)
  - Flash memory block: 0123
  - Save block
  - Restore block
  - Zero out block
  - Erase block
  - Program block
  - Verify block
  - Flash programming complete

5. After flashing is completed, you can see the “PASS” on your screen, and reboot your PC

![PASS](image2)
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.
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 firmware.

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

Hard Disk
Enter its submenu by pressing <Enter>. In this submenu, it would show the device of Primary IDE Master is HDD 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.

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 OPROM
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.
Ch3. System information

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.

Boot Priority order / Excluded from boot order

Up and Down arrows select a device. <+> and <-> moves the device up or down. <f> and <r> specifies the device fixed or removable.

<x> exclude or include the device to boot.

<Shift + 1> enables or disables a device.

<1 – 4> Loads default boot sequence.

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

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 voltage is not correct, remove the power code form AC adapter.
4. 10 seconds later, connect the power code, then measure the output voltage.
5. If the voltage is not correct, change the AC adapter.

<table>
<thead>
<tr>
<th>Pin</th>
<th>Voltage (V dc)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>+18.0 ~ +19.2</td>
</tr>
<tr>
<td>2</td>
<td>Ground</td>
</tr>
</tbody>
</table>
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°C or above 75°C.

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.
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°C, 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 1: Ground(-)
   - Terminal 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

<table>
<thead>
<tr>
<th>Symptom / Error</th>
<th>FRU or action, in sequence</th>
</tr>
</thead>
<tbody>
<tr>
<td>0200 Fixed disk failure (The hard disk is not working)</td>
<td>1. Reset the hard-disk drive. 2. Load Setup Defaults in BIOS Setup Utility. 3. Hard-disk drive. 4. System board.</td>
</tr>
<tr>
<td>0210 Stuck Key error</td>
<td>1. Check the keyboard if it is pressed. 2. Replace the keyboard.</td>
</tr>
<tr>
<td>0220 Monitor type error - Monitor type does not match the one specified in CMOS.</td>
<td>Load Setup Defaults in BIOS Setup Utility.</td>
</tr>
<tr>
<td>0230 System RAM error - System RAM Failed at offset.</td>
<td>1. DIMM 2. System board</td>
</tr>
<tr>
<td>0231 Shadow RAM error - Shadow RAM failed at offset</td>
<td>System board</td>
</tr>
<tr>
<td>0232 Extended RAM error - Extended RAM Failed at address line</td>
<td>1. DIMM 2. System board</td>
</tr>
<tr>
<td>0250 System battery error – System battery is dead</td>
<td>Replace the backup battery and run BIOS Setup Utility to reset the time and date.</td>
</tr>
<tr>
<td>Symptom / Error</td>
<td>FRU or action, in sequence</td>
</tr>
<tr>
<td>----------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>0251 System CMOS checksum bad</td>
<td>Replace the backup battery and run BIOS Setup Utility to reset the time and date.</td>
</tr>
<tr>
<td>– System CMOS checksum is not correct. – Default configuration used.</td>
<td></td>
</tr>
<tr>
<td>0252 Password checksum bad – The password is cleared.</td>
<td>Reset the password by running BIOS Setup Utility.</td>
</tr>
<tr>
<td>0260 System timer error</td>
<td>1. Replace the backup battery and run BIOS Setup Utility to reset the time and date. 2. System board.</td>
</tr>
<tr>
<td>0271 Check date and time settings – Date and time error.</td>
<td>Run BIOS Setup Utility to reset the time and date.</td>
</tr>
<tr>
<td>0280 Previous boot incomplete - Default configuration used</td>
<td>1. Load “Setup Default” in BIOS Setup Utility. 2. DIMM. 3. System board.</td>
</tr>
<tr>
<td>0281: Memory Size found by POST differed from EISA CMOS</td>
<td>Load Setup Defaults in BIOS Setup Utility.</td>
</tr>
<tr>
<td>02B0 Diskette drive A error</td>
<td>Set up the diskette type in BIOS Setup Utility.</td>
</tr>
<tr>
<td>02B1 Diskette drive B error</td>
<td>Set up the diskette type in BIOS Setup Utility.</td>
</tr>
<tr>
<td>02B2 Incorrect drive A type – Floppy diskette drive error</td>
<td>1. Floppy diskette drive. 2. External FDD cable. 3. I/O card.</td>
</tr>
<tr>
<td>02B3 Incorrect Drive B type</td>
<td>1. Floppy diskette drive. 2. External FDD cable. 3. I/O card.</td>
</tr>
<tr>
<td>02D0 System cache error – Cache disabled (RAM cache failed and BIOS disabled)</td>
<td>1. Load “Setup Default” in BIOS Setup Utility. 2. System board.</td>
</tr>
<tr>
<td>02F4 EISA CMOS not writable</td>
<td>1. Load “Setup Default” in BIOS Setup Utility. 2. Replace the backup battery. 3. System board.</td>
</tr>
<tr>
<td>02F5 DMA test failed</td>
<td>1. DIMM 2. System board</td>
</tr>
<tr>
<td>02F6 Software NMI failed</td>
<td>1. DIMM 2. System board</td>
</tr>
</tbody>
</table>

Ch4. Symptom-to-part index
<table>
<thead>
<tr>
<th>Symptom / Error</th>
<th>FRU or action, in sequence</th>
</tr>
</thead>
</table>
| 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

<table>
<thead>
<tr>
<th>Symptom / Error</th>
<th>FRU or action, in sequence</th>
</tr>
</thead>
</table>
| Device address conflict.               | 1. Load Setup Defaults in BIOS Setup Utility.  
                                          2. Backup battery.  
| Allocation error for device.           | 1. Load Setup Defaults in BIOS Setup Utility.  
                                          2. Backup battery.  
| 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.  
| 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.  
                                          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.

<table>
<thead>
<tr>
<th>Symptom / Error</th>
<th>FRU or action, in sequence</th>
</tr>
</thead>
<tbody>
<tr>
<td>LCD screen becomes dark suddenly.</td>
<td>Check out Battery Miser.</td>
</tr>
</tbody>
</table>
| 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:
   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 Keyboard

※ Remove the following parts in order before replacing this part

a. Battery Pack(1010)

1. Remove 2 screws.

<table>
<thead>
<tr>
<th>No.</th>
<th>FRU No.</th>
<th>Specification</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1SZZBA4122A</td>
<td>M2.0 x L5.0</td>
<td>2</td>
</tr>
</tbody>
</table>

2. To remove 4 hooks, insert a (-) type screwdriver into a hook located at the upper end of keyboard, and pull it up.
3. Disconnect the Keyboard Connector.

4. Remove the Keyboard.
Ch5. Removing and replacing a part

1030 WLAN Card

※ Remove the following parts in order before replacing this part
  a. Battery Pack(1010)  b. Keyboard(1020)

1. Remove the Gasket.

2. Disconnect the Antenna Cable.
3. Remove the WLAN Card.
1. Remove 2 screws.

2. Remove the MDC Card.

<table>
<thead>
<tr>
<th>No.</th>
<th>FRU No.</th>
<th>Specification</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1SZZBA4017E</td>
<td>M2.0 x L3.0</td>
<td>2</td>
</tr>
</tbody>
</table>
Ch5. Removing and replacing a part

1050 Micro DIMM

※ Remove the following parts in order before replacing this part
a. Battery Pack(1010)  b. Keyboard(1020)  c. WLAN Card(1030)  d. MDC Card(1040)

1. Remove 2 screws.

2. Remove the Micro DIMM.

<table>
<thead>
<tr>
<th>No.</th>
<th>FRU No.</th>
<th>Specification</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1SZZBA4017E</td>
<td>M2.0 x L3.0</td>
<td>2</td>
</tr>
</tbody>
</table>
Ch5. Removing and replacing a part

1060 Keydeck

* Remove the following parts in order before replacing this part
  a. Battery Pack(1010)  b. Keyboard(1020)  c. WLAN Card(1030)  d. MDC Card(1040)  
  e. Micro DIMM(1050)

1. Remove 12 screws.

2. Remove the Keydeck.

<table>
<thead>
<tr>
<th>No.</th>
<th>FRU No.</th>
<th>Specification</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1SZZBA4121B</td>
<td>M2.5 x L4.0</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>1SZZBA4122A</td>
<td>M2.0 x L5.0</td>
<td>10</td>
</tr>
</tbody>
</table>
### 1070 DMB Module

※ Remove the following parts in order before replacing this part
a. Battery Pack(1010)  b. Keyboard(1020)  c. WLAN Card(1030)  d. MDC Card(1040)
e. Micro DIMM(1050)  f. Keydeck(1060)

1. Remove 4 screws, then remove 2 plates.

<table>
<thead>
<tr>
<th>No.</th>
<th>FRU No.</th>
<th>Specification</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1SZZBA4017E</td>
<td>M2.0 x L3.0</td>
<td>4</td>
</tr>
</tbody>
</table>

![Image of 1070 DMB Module with arrows pointing to relevant components]
2. Remove 4 screws.

<table>
<thead>
<tr>
<th>No.</th>
<th>FRU No.</th>
<th>Specification</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1SZZBA4041A</td>
<td>M2.0 x L3.0</td>
<td>4</td>
</tr>
</tbody>
</table>

3. Disconnect the Antenna Cable.
1080 Display Module

※ Remove the following parts in order before replacing this part
a. Battery Pack(1010)  b. Keyboard(1020)  c. WLAN Card(1030)  d. MDC Card(1040)  
 e. Micro DIMM(1050)  f. Keydeck(1060)  g. DMB Module(1070)

1. Disconnect the LCD Cable.

2. Remove the LCD Module.
1090 HDD

※ Remove the following parts in order before replacing this part
a. Battery Pack(1010) b. Keyboard(1020) c. WLAN Card(1030) d. MDC Card(1040)
e. Micro DIMM(1050) f. Keydeck(1060) g. DMB Module(1070) h. Display Module(1080)

1. Disconnect the HDD Cable from the Main Board.

2. Remove the HDD.
**1100 Fan Assembly**

※ Remove the following parts in order before replacing this part
a. Battery Pack(1010)  b. Keyboard(1020)  c. WLAN Card(1030)  d. MDC Card(1040)
e. Micro DIMM(1050)  f. Keydeck(1060)  g. DMB Module(1070)  h. Display Module(1080)
i. HDD(1090)

1. Remove 4 or 6 screws, then disconnect the Fan Assembly Connector.
   (GM: 4 screws, PM: 6 screws)

2. Remove the Fan Assembly.

<table>
<thead>
<tr>
<th>No.</th>
<th>FRU No.</th>
<th>Specification</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1SZZBA4017E</td>
<td>M2.0 x L3.0</td>
<td>6</td>
</tr>
</tbody>
</table>
1110 5-in-1 Card Reader

※ Remove the following parts in order before replacing this part
a. Battery Pack(1010)  b. Keyboard(1020)  c. WLAN Card(1030)  d. MDC Card(1040)
e. Micro DIMM(1050)  f. Keydeck(1060)  g. DMB Module(1070)  h. Display Module(1080)
i. HDD(1090)  j. Fan Assembly(1100)

1. Remove 5 screws.

<table>
<thead>
<tr>
<th>No.</th>
<th>FRU No.</th>
<th>Specification</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1SZZBA4017E</td>
<td>M2.0 x L3.0</td>
<td>5</td>
</tr>
</tbody>
</table>

2. Remove the 5-in-1 Card Reader.
Ch5. Removing and replacing a part

■ 1120 Button Sub Board

Remove the following parts in order before replacing this part

- Battery Pack (1010)
- Keyboard (1020)
- WLAN Card (1030)
- MDC Card (1040)
- Micro DIMM (1050)
- Keydeck (1060)
- DMB Module (1070)
- Display Module (1080)
- HDD (1090)
- Fan Assembly (1100)
- 5-in-1 Card Reader (1110)

1. Remove 2 screws, then disconnect the Button Sub Board Connector.

<table>
<thead>
<tr>
<th>No.</th>
<th>FRU No.</th>
<th>Specification</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1SZZBA4017E</td>
<td>M2.0 x L3.0</td>
<td>2</td>
</tr>
</tbody>
</table>

2. Remove the Button Sub Board.
1130 Bluetooth Module

※ Remove the following parts in order before replacing this part
a. Battery Pack(1010)  b. Keyboard(1020)  c. WLAN Card(1030)  d. MDC Card(1040)
e. Micro DIMM(1050)  f. Keydeck(1060)  g. DMB Module(1070)  h. Display Module(1080)
i. HDD(1090)  j. Fan Assembly(1100)  k. 5-in-1 Card Reader(1110)  l. Button Sub Board(1120)

1. Remove a screw, then disconnect the Bluetooth Connector.

<table>
<thead>
<tr>
<th>No.</th>
<th>FRU No.</th>
<th>Specification</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1SZZBA4017E</td>
<td>M2.0 × L3.0</td>
<td>1</td>
</tr>
</tbody>
</table>
2. Remove the Bluetooth Module.
Ch5. Removing and replacing a part

1140 RTC Battery

※ Remove the following parts in order before replacing this part
a. Battery Pack(1010)  b. Keyboard(1020)  c. WLAN Card(1030)  d. MDC Card(1040)
e. Micro DIMM(1050)  f. Keydeck(1060)  g. DMB Module(1070)  h. Display Module(1080)
i. HDD(1090)  j. Fan Assembly(1100)  k. 5-in-1 Card Reader(1110)  l. Button Sub Board(1120)
m. Bluetooth Module(1130)

1. Disconnect the RTC Connector.

2. Remove the RTC Battery.
Ch5. Removing and replacing a part

### 1150 Speaker

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

- a. Battery Pack(1010)
- b. Keyboard(1020)
- c. WLAN Card(1030)
- d. MDC Card(1040)
- e. Micro DIMM(1050)
- f. Keydeck(1060)
- g. DMB Module(1070)
- h. Display Module(1080)
- i. HDD(1090)
- j. Fan Assembly(1100)
- k. 5-in-1 Card Reader(1110)
- l. Button Sub Board(1120)
- m. Bluetooth Module(1130)
- n. RTC Battery(1140)

1. Remove 4 screws, then disconnect the Speaker Connectors.

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<td>M2.0 x L3.0</td>
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2. Remove the Speakers.
1160 Main Board

※ Remove the following parts in order before replacing this part
a. Battery Pack(1010)  b. Keyboard(1020)  c. WLAN Card(1030)  d. MDC Card(1040)
e. Micro DIMM(1050)  f. Keydeck(1060)  g. DMB Module(1070)  h. Display Module(1080)
i. HDD(1090)  j. Fan Assembly(1100)  k. 5-in-1 Card Reader(1110)  l. Button Sub Board(1120)
m. Bluetooth Module(1130)  n. RTC Battery(1140)  o. Speaker(1150)

1. Remove 2 screws.

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2. Remove the Main Board.
Ch5. Removing and replacing a part
Ch5. Removing and replacing a part

1170 Display Exploded View

※ Remove the following parts in order before replacing this part
a. Battery Pack(1010)  b. Keyboard(1020)  c. WLAN Card(1030)  d. MDC Card(1040)
  e. Micro DIMM(1050)  f. Keydeck(1060)  g. DMB Module(1070)  h. Display Module(1080)

1. Using a knife, remove the rubbers that are covering screws, then remove 5 screws.

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2. Disassemble the LCD Front.
3. Remove 2 screws.

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4. Remove 3 screws.

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No. | FRU No.     | Specification | Qty |
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5. Remove a screw.

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6. Remove 8 screws, then remove the LCD Brackets.

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6. Remove the LCD Cable.
7. Remove 4 screws, then remove the WLAN Antenna and Bluetooth Antenna.

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## Chapter 6. Part lists

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### Ch6. Part lists

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