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Lenovo C340/440 SeriesHardware Maintenance Manual

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Machine Types: 10102/4773 [C340], 10104/6595 [C440]

Lenovo

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Hardware Maintenance Manual

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Contents

Chapter 1. About this manual

This manual contains service and reference information for Lenovo C340 and C440 All-In-One computers listed on the cover. It is intended only for trained servicers who are familiar with Lenovo computer products.

Before servicing a Lenovo product, be sure to read the Safety Information.

The description of the TV-tuner card in this manual applies only to computers with a TV-tuner card installed. It does not apply to computers without a TV-tuner card.

Important Safety Information

Be sure to read all CAUTION and DANGER sections in this manual before following any of the instructions.

Veuillez lire toutes les consignes de type DANGER et ATTENTION du présent document avant d'exécuter les instructions.

Lesen Sie unbedingt alle Hinweise vom Typ "ACHTUNG" oder "VORSICHT" in dieser Dokumentation, bevor Sie irgendwelche Vorgänge durchführen

Leggere le istruzioni introdotte da ATTENZIONE e PERICOLO presenti nel manuale prima di eseguire una qualsiasi delle istruzioni

Certifique-se de ler todas as instruções de cuidado e perigo neste manual antes de executar qualquer uma das instruções

Es importante que lea todas las declaraciones de precaución y de peligro de este manual antes de seguir las instrucciones.

执行任何说明之前，请确保已阅读本书中的所有警告和危险声明。

執行任何指示前，請確實閱讀本書中的所有警告及危險聲明。

Chapter 2. Safety information

This chapter contains the safety information that you need to be familiar with before servicing a computer.

General safety

Follow these rules to ensure general safety:

- Keep the areas around the computer clear and clean 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 across both feet.
    3. Lift slowly. 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 objects that weigh more than 16 kg (35 lb) or objects that you think are too heavy for you.
- Do not perform any action that would create a hazard for the customer, or would make the computer unsafe.
- Before you start the computer, ensure that other service representatives and customer personnel are not in a position that would create a hazard for them.
- Place removed covers and other parts in a safe place, away from all personnel, while you are servicing the computer.
- Keep your tool case away from areas that people may walk through to ensure no-one trips over it.
- Do not wear loose clothing that can be trapped in the moving parts of a machine. Ensure that your sleeves are fastened or rolled up above your elbows. If your hair is long, tie or fasten it back.
- Insert the ends of your necktie or scarf inside clothing or fasten it with a non-conductive clip, approximately 8 centimeters (3 inches) from the end.
- Do not wear jewelry, chains, metal-frame eyeglasses, or metal fasteners for your clothing.
Remember: Metal objects are good electrical conductors.
- 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.
- Reattach all covers correctly before returning the computer to the customer.

Electrical safety

CAUTION:
Electrical current from power, telephone, and communication cables can be hazardous. To avoid personal injury or equipment damage, disconnect any attached power cords, telecommunication cables, network cables, and modem cables before you open the computer covers, unless instructed otherwise in the installation and configuration procedures.

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 rubber floor mats near their equipment that contain small conductive fibers to decrease electrostatic discharge.

- Find the room emergency power-off (EPO) switch, disconnecting switch, or 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:

  - Performing a mechanical inspection

  - Working near power supplies

  - Removing or installing Field Replaceable Units (FRUs)

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

- If you need to work on a computer that has exposed electrical circuits, observe the following precautions:

  - Ensure that another person, familiar with the power-off controls, is near you.
    Remember: 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.
    Remember: There must be a complete circuit to cause electrical shock. By observing the above rule, you may prevent a current from passing through your body.

  - When using a tester, 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 the maintenance information. Use extreme care when measuring high voltages.

- Regularly inspect and maintain your electrical hand tools to ensure they are safe to use.

- 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 wet floors, non-grounded power extension cables, conditions that may cause or allow power surges, and missing safety grounds.

- Do not touch live electrical circuits with the reflective surface of a plastic dental mirror. This surface is conductive, and touching a live circuit can cause personal injury and damage to the computer.

- Do not service the following parts with the power on when they are removed from their normal operating positions in a computer:

  - Power supply units

  - Pumps

  - Blowers and fans

  - Motor generators

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

- If an electrical accident occurs:

  - Use caution; do not become a victim yourself.

– Switch off power.

– Send another person to get medical aid.

Safety inspection guide

The intent of this inspection guide is to assist you in identifying potential hazards posed by these products. Each computer, as it was designed and built, had required safety items installed to protect users and service personnel from injury. This guide addresses only those items. However, good judgment should be used to identify potential safety hazards due to attachment of features or options not covered by this inspection guide.

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

Consider the following items and the safety hazards they present:

- Electrical hazards, especially primary power (primary voltage on the frame can cause serious or fatal electrical shock).
- Explosive hazards, such as a damaged CRT face or bulging capacitor
- Mechanical hazards, such as loose or missing hardware

The guide consists of a series of steps presented as a checklist. 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 ohm or less between the external ground pin and frame ground.
    b. The power cord should be the appropriate type as specified in the parts listings.
    c. Insulation must not be frayed or worn.
4. Remove the cover.
5. Check for any obvious alterations. Use good judgment as to the safety of any alterations.
6. Check inside the unit for any obvious hazards, 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 (screws or rivets) have not been removed or tampered with.

Handling electrostatic discharge-sensitive devices

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 computer, the part, the work mat, and the person handling the part are all at the same charge.

Notes:

1. Use product-specific ESD procedures when they exceed the requirements noted here.
2. Make sure that the ESD protective devices you use have been certified (ISO 9000) as fully effective.

When handling ESD-sensitive parts:

- Keep the parts in protective packages until they are inserted into the product.
- Avoid contact with other people while handling the part.
- Wear a grounded wrist strap against your skin to eliminate static on your body.
- Prevent the part from touching your clothing. Most clothing is insulative and retains a charge even when you are wearing a wrist strap.
- 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.
- 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 to any frame ground, ground braid, or green-wire ground.
   – Use an ESD common 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 computer is required for operator safety and correct system function. Proper grounding of the electrical outlet can be verified by a certified electrician.

Safety notices

The CAUTION and DANGER safety notices in this section are provided in the language of English.

DANGER

Electrical current from power, telephone and communication cables is hazardous.

To avoid a shock hazard:

- **Do not connect or disconnect any cables or perform installation, maintenance, or reconfiguration of this product during an electrical storm.**
- **Connect all power cords to a properly wired and grounded electrical outlet.**
- **Connect any equipment that will be attached to this product to a properly wired outlet.**
- **When possible, use one hand only to connect or disconnect signal cables.**
- **Never turn on any equipment when there is evidence of fire, water, or structural damage.**
- **Disconnect the attached power cords, telecommunications cables, network cables, and modem cables before you open the device covers, unless instructed otherwise in the installation and configuration procedures.**
- **Connect and disconnect cables as described in the following table when installing, moving, or opening covers on this product or attached devices.**

To Connect	To Disconnect
1. Turn everything OFF.	1. Turn everything OFF.
2. First, attach all cables to devices.	2. First, remove power cords from outlets.
3. Attach signal cables to connectors.	3. Remove signal cables from connectors.
4. Attach power cords to outlet.	4. Remove all cables from devices.
5. Turn device ON.	

CAUTION:
When replacing the lithium battery, use only Part Number 45C1566 or an equivalent type battery recommended by the manufacturer. If your system has a module containing a lithium battery, replace it only with the same module type made by the same manufacturer. The battery contains lithium and can explode if not properly used, handled, or disposed of.
Do not:

- **Throw into or immerse in water**

- **Heat to more than 100°C (212°F)**

- **Repair or disassemble**

Dispose of the battery as required by local ordinances or regulations.

CAUTION:
When laser products (such as CD-ROMs, DVD-ROM drives, fiber optic devices, or transmitters) are installed, note the following:

- **Do not remove the covers. Removing the covers of the laser product could result in exposure to hazardous laser radiation. There are no serviceable parts inside the device.**

- **Use of controls or adjustments or performance of procedures other than those specified herein might result in hazardous radiation exposure.**

DANGER

Some laser products contain an embedded Class 3A or Class 3B laser diode. Note the following:

These diodes emit radiation when open. Do not stare into the beam, do not view directly with optical instruments, and avoid direct exposure to the beam.

≥18 kg (37 lbs)	≥32 kg (70.5 lbs)	≥55 kg (121.2 lbs)

CAUTION:
Use safe practices when lifting.

CAUTION:
The power control button on the device and the power switch on the power supply do not turn off the electrical current supplied to the device. The device also might have more than one power cord. To remove all electrical current from the device, ensure that all power cords are disconnected from the power source.
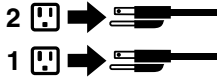
CAUTION:
Do not place any object weighing more than 82 kg (180 lbs.) on top of rack-mounted devices.

Chapter 3. General information

This chapter provides general information that applies to all computer models covered by this manual.

Specifications

This section lists the physical specifications for your computer.

This section lists the physical specifications for your computer.

Type Lenovo C340/C440

This section lists the physical specifications.

Environment

Air temperature:

    Operating: 10° to 35°C

    Transit: -20° to 55°C

Humidity:

    Operating: 35% to 80%

    Transit: 20% to 90% (40°C)

    Altitude: 86KPa to 106KPa

Electrical input:

    Input voltage: 90V-264V(AC)

    Input frequency: 47Hz-63Hz

Chapter 4. General Checkout

Attention: The drives in the computer you are servicing might have been rearranged or the drive startup sequence may have been changed. Be extremely careful during write operations such as copying, saving, or formatting. Data or programs can be overwritten if you select an incorrect drive.

General error messages appear if a problem or conflict is found by an application, the operating system, or both. For an explanation of these messages, refer to the information supplied with that software package.

Use the following procedure to help determine the cause of the problem:

1. Power-off the computer and all external devices.
2. Check all cables and power cords.
3. Set all display controls to the middle position.
4. Power-on all external devices.
5. Power-on the computer.
   - Look for displayed error codes.
   - Look for readable instructions or a main menu on the display.

     If you did not receive the correct response, proceed to step 6.

     If you did receive the correct response, proceed to step 7.
6. If one of the following happens, follow the instruction given:
   - If the computer displays a POST error, go to "POST error codes".
   - If the computer hangs and no error is displayed, continue at step 7.
7. If the test stops and you cannot continue, replace the last device tested.

Chapter 5. Using the Setup Utility

The Setup Utility program is used to view and change the configuration settings of your computer, regardless of which operating system you are using. However, the operating system settings might override any similar settings in the Setup Utility program.

Starting the Lenovo BIOS Setup Utility program

To start the Lenovo BIOS Setup Utility program, do the following:

1. If your computer is already on when you start this procedure, shut down the operating system and turn off the computer.
2. Press and hold the **F1** key then turn on the computer. When the Lenovo BIOS Setup Utility program is displayed, release the **F1** key.

Note: If a Power-On Password or an Administrator Password has been set, the Setup Utility program menu will not be displayed until you type your password. For more information, see "Using passwords."

Viewing and changing settings

System configuration options are listed in the Lenovo BIOS Setup Utility program menu. To view or change settings, see "Starting the Setup Utility program."

You must use the keyboard when using the Lenovo BIOS Setup Utility menu. The keys used to perform various tasks are displayed on the bottom of each screen.

Using passwords

You can use the Lenovo BIOS Setup Utility program to set passwords to prevent unauthorized persons from gaining access to your computer and data. See "Starting the Setup Utility program." The following types of passwords are available:

- Administrator Password
- Power-On Password

You do not have to set any passwords to use your computer. However, if you decide to set passwords, read the following sections.

Password considerations

A password can be any combination of letters and numbers up to 16 characters (a-z and 0-9). For security reasons, it is a good idea to use a strong password that cannot be easily compromised. We suggest that passwords should follow these rules:

- For a strong password, use 7-16 characters and a mix of letters and numbers.
- Do not use your name or your user name.
- Do not use a common word or a common name.
- Use something significantly different from your previous password.

Attention: Administrator and Power-On passwords are not case sensitive.

Administrator Password

Setting an Administrator Password deters unauthorized persons from changing configuration settings. You might want to set an Administrator Password if you are responsible for maintaining the settings of several computers.

After you set an Administrator Password, a password prompt is displayed every time you access the Lenovo BIOS Setup Utility program.

If both the Administrator and Power-On Password are set, you can type either password. However, you must use your Administrator Password to change any configuration settings.

Setting, changing, or deleting an Administrator password

To set an Administrator Password, do the following:

Note: A password can be any combination of letters and numbers up to 16 characters (a-z and 0-9). For more information, see "Password considerations" on page 13.

1. Start the Lenovo BIOS Setup Utility program (see "Starting the Lenovo BIOS Setup Utility program" on page 13).
2. From the **Security** menu, select **Set Administrator Password** and press the **Enter** key.
3. The password dialog box will be displayed. Type the password then press the **Enter** key.
4. Re-type the password to confirm, then press the **Enter** key. If you typed the password correctly, the password will be installed.

To change an Administrator Password, do the following:
1. Start the Lenovo BIOS Setup Utility program (see "Starting the Lenovo BIOS Setup Utility program" on page 13).
2. From the **Security** menu, select **Set Administrator Password** and press the **Enter** key.
3. The password dialog box will be displayed. Type the current password then press the **Enter** key.
4. Type the new password, then press the **Enter** key. Re-type the password to confirm the new password. If you typed the new password correctly, the new password will be installed. A Setup Noticed confirming that changes have been saved will be displayed.

To delete a previously set Administrator Password, do the following :
1. From the **Security** menu, select **Set Administrator Password** and press the **Enter** key.
2. The password dialog box will be displayed. Type the current password and press the **Enter** key.
3. To delete an **Administrator Password**, leave each new password line item blank, then press the **Enter** key. A Setup Notice confirming that changes have been saved will be displayed.
4. Return to the Lenovo BIOS Setup Utility program menu and select the **Exit** option.
5. Select **Save changes and Exit** from the menu.

Power-On Password

When a Power-On Password is set, you cannot start the Lenovo BIOS Setup Utility program until a valid password is typed from the keyboard.

Setting, changing, or deleting a Power-On Password

Note: A password can be any combination of letters and numbers up to 16 characters (a-z and 0-9).

To set a Power-On Password, do the following:

1. Start the Lenovo BIOS Setup Utility program (See "Starting the Lenovo BIOS Setup Utility program" on page 13.)
2. From the **Security** menu, select **Set Power-On Password** and press the **Enter** key.
3. The password dialog box will be displayed. Type the password, then press the **Enter** key.
4. Re-type the password to confirm. If you typed the password correctly, the password will be installed.

To change a Power-On Password, do the following:

1. Start the Lenovo BIOS Setup Utility program (See "Starting the Lenovo BIOS Setup Utility program" on page 13.)
2. From the **Security** menu, select **Set Power-On Password** and press the **Enter** key.
3. The password dialog box will be displayed. Type the current password then press the **Enter** key.
4. Type the new password, then press the **Enter** key. Re-type the password to confirm the new password. If you typed the new password correctly, the new password will be installed. A Setup Noticed confirming that changes have been saved will be displayed.

To delete a previously set Power-On Password, do the following :

1. From the **Security** menu, select **Set Power-On Password** and press the **Enter** key.
2. The password dialog box will be displayed. Type the current password and press the **Enter** key.
3. To delete the **Power-On Password**, leave each new password line item blank, then press Enter. A Setup Notice confirming that changes have been saved will be displayed.
4. Return to the Lenovo BIOS Setup Utility program menu and select the **Exit** option.
5. Select **Save changes and Exit** from the menu.

Enabling or disabling a device

The **Devices** options is used to enable or disable user access to the following devices:	
USB Functions	Select whether to enable or disable **USB** (Universal Serial Bus) functions. If the functions are disabled, no **USB** devices can be used.
SATA Mode	When this feature is set to **Disabled**, all devices connected to the SATA connectors (e.g. hard disk drives or the optical disk drive) are disabled and cannot be accessed.
Onboard Audio Controller	Select whether to enable or disable the **Onboard Audio Controller**. When this feature is set to **Disabled** all devices connected to the audio connectors (e.g. headphones or a microphone) are disabled and cannot be used.
Onboard Ethernet Controller or LAN Boot Agent	Select whether to enable or disable the **Onboard Ethernet Controller**, or select whether to enable or disable load onboard **PXE** (**Preboot Execution Environment**).

To enable or disable a device, do the following:

1. Start the Setup Utility program (see "Starting the Setup Utility program" on page 13).
2. From the Setup Utility program menu, select **Devices**.
3. Select an option as follows:

   Select **USB Setup**, press the **Enter** key, then select **USB Functions**.

Select **ATA Device Setup**, press the **Enter** key, then select **SATA Mode**.

Select **Audio Setup**, press the **Enter** key, then select **Onboard Audio Controller**.

Select **Network Setup**, press the **Enter** key, then select **Onboard Ethernet Support** or **LAN Boot Agent**.

4. Select **Disabled** or **Enabled** and press the **Enter** key.

5. Return to the Lenovo BIOS Setup Utility program menu and select the **Exit** option.

6. Select **Save changes and Exit** from the menu.

   Notes:

   a. If you do not want to save the settings, select **Discard changes and Exit** from the menu.

   b. Select IDE/AHCI Mode: Device driver support is required for ACHI. Depending on how the hard disk image was installed, changing this setting may prevent the system from booting.

Selecting a startup device

If your computer does not boot from a device such as the CD/DVD-ROM drive disk or hard disk as expected, follow one of the procedures below.

Selecting a temporary startup device

Use this procedure to start up from any boot device.

Note: Not all CDs, DVDs or hard disk drives are bootable.

1. Turn off your computer.

2. Press and hold the **F12** key then turn on the computer. When the **Startup Device Menu** appears, release the **F12** key.

   Note: If the **Startup Device Menu** does not display using these steps, repeatedly press and release the **F12** key rather than keeping it pressed when turning on the computer.

3. Use ↑ and ↓ arrows to select the desired startup device from the **Startup Device Menu** and press the **Enter** key to begin.

   Note: Selecting a startup device from the **Startup Device Menu** does not permanently change the startup sequence.

Selecting or changing the startup device sequence

To view or permanently change the configured startup device sequence, do the following:

1. Start the Lenovo BIOS Setup Utility program (see "Starting the Lenovo BIOS Setup Utility program" on page 13).

2. From the Lenovo BIOS Setup Utility program main menu, select the **Startup** option.

3. Press the **Enter** key, and select the devices for the **Primary Boot Sequence**. Read the information displayed on the right side of the screen.

4. Use - and ¯ arrows to select a device. Use the **<+>** or **<->** keys to move a device up or down. Use the **<x>** key to exclude the device from or include the device in the boot sequence.

5. Return to the Lenovo BIOS Setup Utility program menu and select the **Exit** option.

6. Select **Save changes and Exit** from the menu.

   Notes:

a. If you do not want to save the settings, select **Discard changes and Exit** from the menu.

b. If you have changed these settings and want to return to the default settings, select **Load Optimal Defaults** from the menu.

Exiting the Lenovo BIOS Setup Utility program

After you finish viewing or changing settings, press the **Esc** key to return to the Lenovo BIOS Setup Utility program main menu. You might have to press the **Esc** key several times. Do one of the following:

- If you want to save the new settings, select **Save changes and Exit** from the menu. When the **Save & reset** window shows, select the **Yes** button, and then press the **Enter** key to exit the Lenovo BIOS Setup Utility program.

- If you do not want to save the settings, select **Discard changes and Exit** from the menu. When the **Reset Without Saving** window shows, select the **Yes** button, and then press the **Enter** key to exit the Lenovo BIOS Setup Utility program.

Chapter 6. Symptom-to-FRU Index

The Symptom-to-FRU index lists error symptoms and possible causes. The most likely cause is listed first. Always begin with Chapter 4, "General Checkout," on page 11. This index can also be used to help you decide which FRUs to have available when servicing a computer. If you are unable to correct the problem using this index, go to "Undetermined problems" on page 20.

Notes:

- If you have both an error message and an incorrect audio response, diagnose the error message first.
- If you cannot run the diagnostic tests or you get a diagnostic error code when running a test but did receive a POST error message, diagnose the POST error message first.
- If you did not receive any error message look for a description of your error symptoms in the first part of this index.

Hard disk drive boot error

A hard disk drive boot error can be caused by the following.

Error	FRU/Action
The startup drive is not included in the boot sequence configuration.	Check the configuration and ensure the startup drive is in the boot sequence.
No operating system is installed on the boot drive.	Install an operating system on the boot drive.
The boot sector on the startup drive is corrupted.	The drive must be formatted. Do the following: 1. Attempt to back up the data on the failing hard disk drive. 2. Use the operating system to format the hard disk drive.
The drive is defective.	Replace the hard disk drive.

Power Supply Problems

Follow these procedures if you suspect there is a power supply problem.

Check/Verify	FRU/Action
Check that the following are properly installed: • Power Cord • On/Off Switch connector • System Board Power Supply connectors • Microprocessor connections	Reseat connectors
Check the power cord.	Power Cord
Check the power-on switch.	Power-on Switch

POST error codes

Each time you turn the computer on, it performs a series of tests to check that the system is operating correctly and that certain options are set. This series of tests is called the *Power-On Self-Test*, or *POST*. POST does the following:

- Checks some basic motherboard operations
- Checks that the memory is working correctly
- Starts video operations
- Verifies that the boot drive is working

POST Error Message	Description/Action
Keyboard error	Cannot initialize the keyboard. Make sure the keyboard is properly connected to the computer and that no keys are held pressed during POST. To purposely configure the computer without a keyboard, select **Keyboardless operation** in **Startup** and set the option to **Enabled**. The BIOS then ignores the missing keyboard during POST.
Reboot and Select proper Boot device or Insert Boot Media in selected Boot device	The BIOS was unable to find a suitable boot device. Make sure the boot drive is properly connected to the computer. Make sure you have bootable media in the boot device.

Undetermined problems

1. Power-off the computer.
2. Remove or disconnect the following components (if connected or installed) one at a time.
   a. External devices (modem, printer, or mouse)
   b. Extended video memory
   c. External Cache
   d. External Cache RAM
   e. Hard disk drive
   f. Disk drive
3. Power-on the computer to re-test the system.
4. Repeat steps 1 through 3 until you find the failing device or component.

If all devices and components have been removed and the problem continues, replace the system board.

Chapter 7. Locating connectors, controls and components

This section provides illustrations to help locate the various connectors, controls and components of the computer.

Font view

The following illustration shows the location of controls and components on the front of the computer.

Attention: Be careful not to block any air vents on the computer. Blocked air vents can cause overheating.
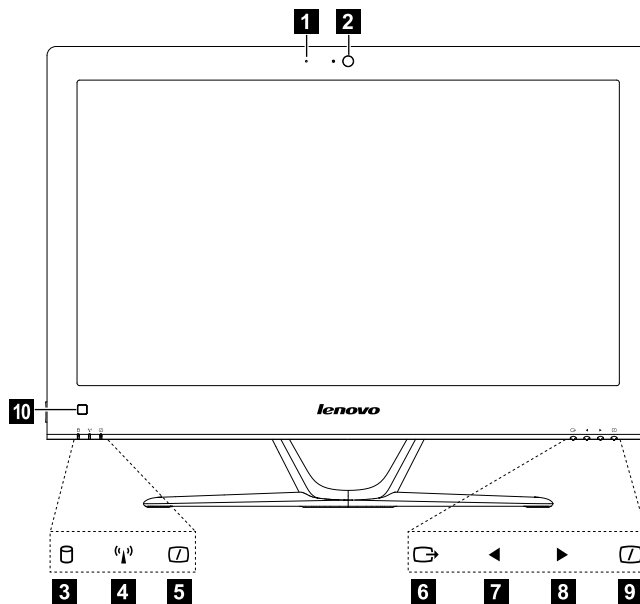
1. Built-in microphone	6. Menu button
2. Built-in camera	7. Left direction button
3. Hard disk drive indicator	8. Right direction button
4. Wi-Fi status indicator	9. Monitor On/Off button
5. Monitor On/Off indicator	10. Built-in IR receiver (Only functional on models equipped with a IR receiver module)

Left and right view

The following illustration shows the location of connectors, controls and components on the left and right side of the computer.
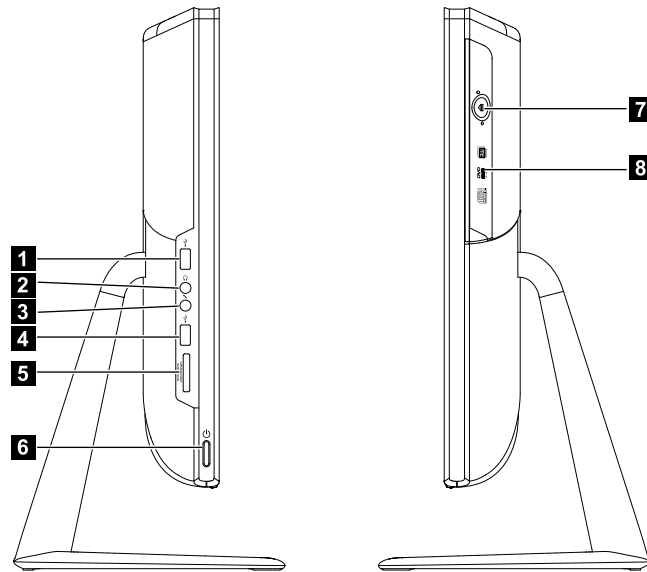
1. USB connector	5. Memory card reader
2. Headphone connector	6. Power button
3. Microphone connector	7. Optical drive eject button
4. USB connector	8. Optical drive

Attention: Do not insert 3-inch discs into the optical drive.

Rear view

The following illustration shows the location of connectors and components on the rear of the computer.
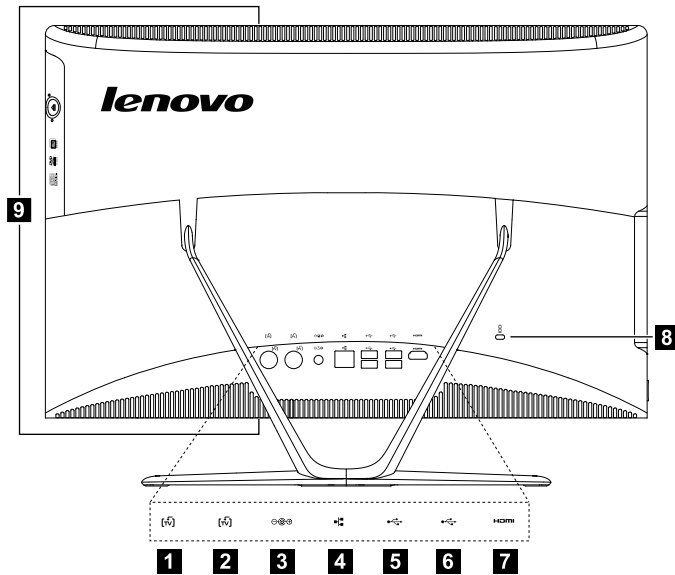
1. TV tuner connector (selected models only, 2 connectors for Japan)	6. USB connector
2. TV tuner connector (selected models only, 2 connectors for Japan)	7. HDMI-out connector (selected models only)
3. Power connector	8. Security cable slot
4. Ethernet connector	9. Air vents
5. USB connector	

Hardware components

The following illustration shows the components that make up your computer.
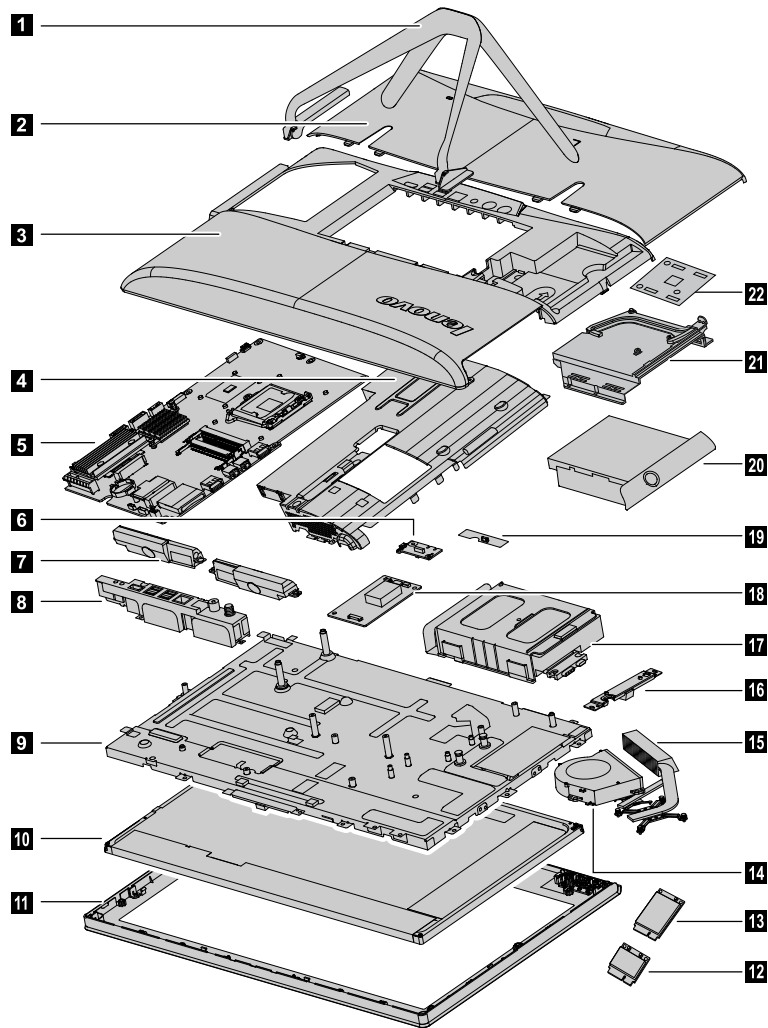
1. Computer stand	12. Wi-Fi card
2. Foot cover	13. TV-Tuner card
3. Middle cover	14. System fan
4. EMI cover	15. Heat-sink
5. Motherboard	16. Camera
6. Power switch board	17. Hard disk drive and bay
7. Speakers	18. Converter board
8. Rear I/O module	19. Front function board
9. Chassis	20. Optical drive
10. LED panel	21. Optical drive bracket
11. Front bezel	22. Touch control board

Identifying parts on the motherboard

The motherboard (sometimes called the planar or system board) is the main circuit board in your computer. It provides basic computing functions and supports a variety of devices that are factory-installed or that you can install later. The following illustration shows the location of connectors and components on the front of the motherboard.
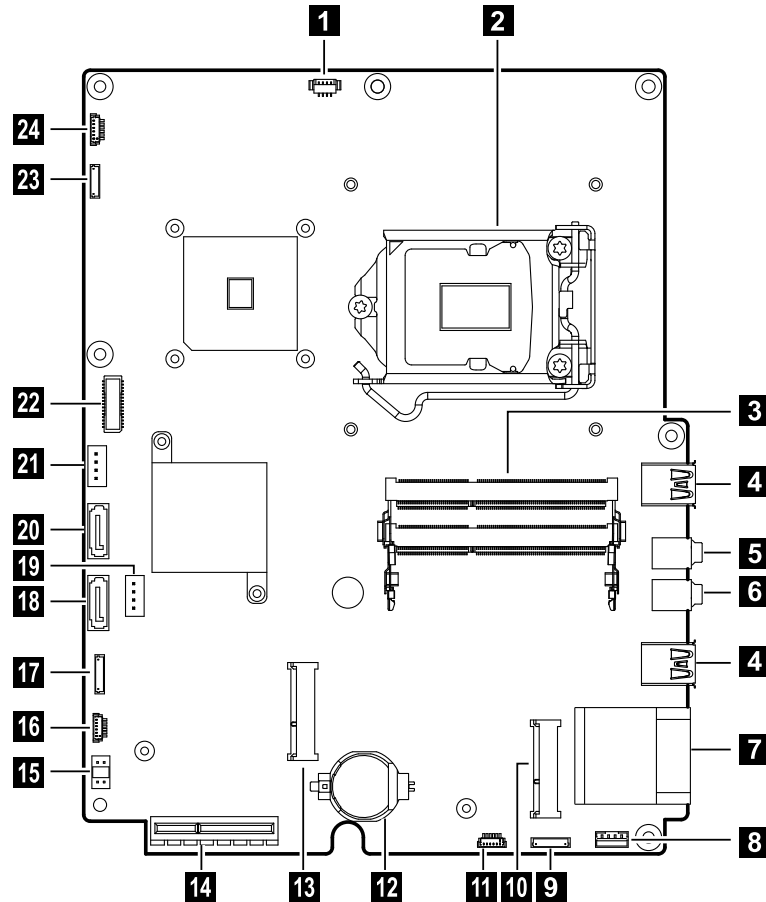
1. Thermal sensor header	13. TV-Tuner card connector
2. CPU and socket	14. Rear I/O module connector
3. Memory connector	15. DC-in connector
4. USB connectors	16. B-Case card connector
5. Headphone connector	17. Converter board connector
6. Microphone connector	18. Hard disk drive SATA connector
7. Memory card connector	19. Hard disk drive power connector
8. Speaker connector	20. Optical drive SATA connector
9. Power switch board connector	21. Optical driver power connector
10. Wi-Fi card connector	22. LVDS connector
11. Front control board connector	23. Camera connector
12. Battery	24. System fan connector

Chapter 8. Replacing hardware

Attention: Do not remove the computer cover or attempt any repair before reading the "Important safety information" in the Safety and Warranty Guide that was included with your computer. To obtain copies of the Safety and Warranty Guide, go to the Support Web site at: http://consumersupport.lenovo.com.

Note: Use only parts provided by Lenovo.

General information

Pre-disassembly instructions

Before starting the disassembly procedure, make sure that you do the following:

1. Turn off the power to the system and all peripherals.
2. Unplug all power and signal cables from the computer.
3. Place the system on a flat, stable surface.

Replacing the keyboard and mouse

Note: Your keyboard will be connected to a USB connector at either side or at the rear of the computer.

To replace the keyboard:

Step 1.   Remove any media (disks, CDs, or memory cards) from the drives, shut down the computer, and turn off all attached devices.

Step 2.   Unplug all power cords from electrical outlets.

Step 3.   Locate the connector for the keyboard. Refer to "Side view of the computer" and "Rear view of the computer".
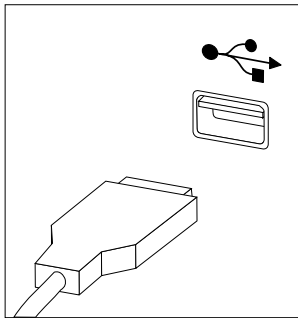
Step 4.   Disconnect the defective keyboard cable from the computer and connect the new keyboard cable to the same connector.

Step 5.   The mouse can be replaced using the same method.

Replacing the adapter

Attention: Turn off the computer and wait 3 to 5 minutes to let it cool down before removing the cover.

Step 1.   Remove any media (disks, CDs, or memory cards) from the drives, shut down the operating system, and turn off the computer and all attached devices.

Step 2. Disconnect the adapter cable from the computer **1**, then unplug the power cord from electrical outlet. **2**
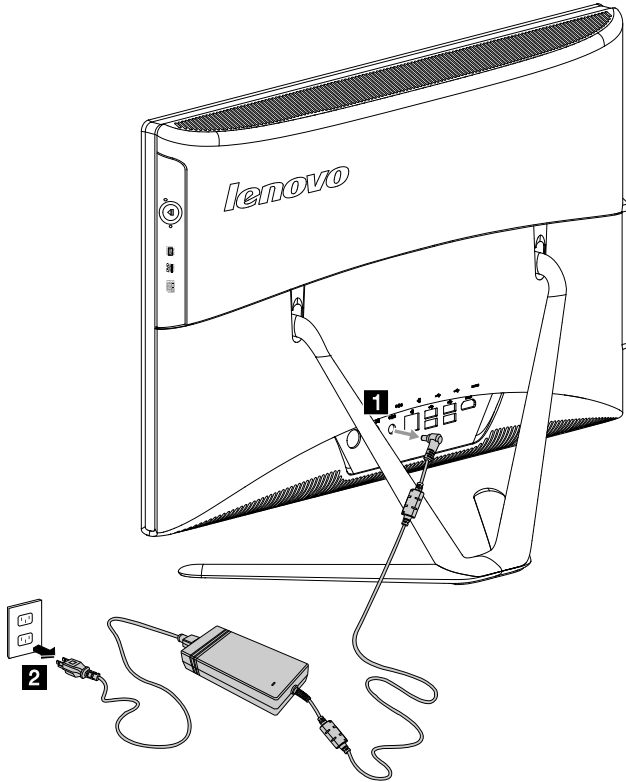
Step 3. Connect the new adapter as shown. **1 2**
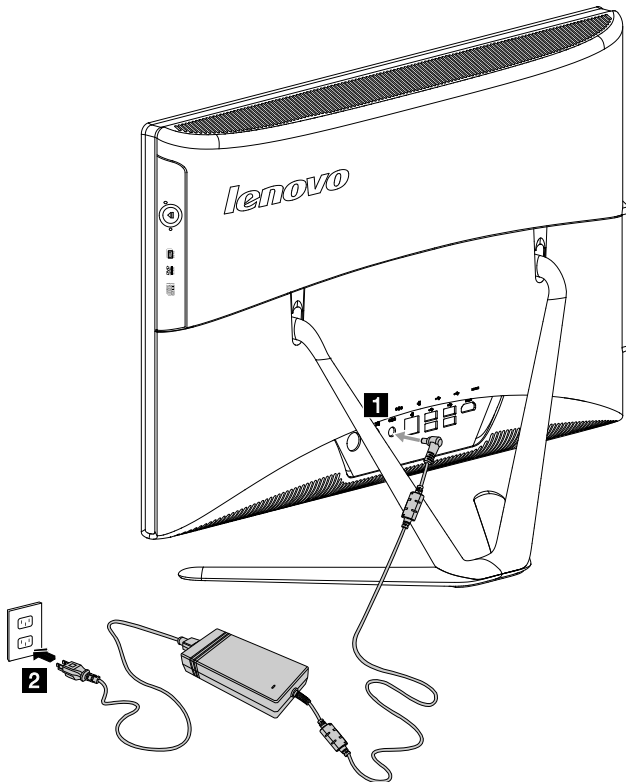
Removing the stand base

Attention: Turn off the computer and wait 3 to 5 minutes to let it cool down before removing the cover.

Note: It may be helpful to place the computer face-down on a soft flat surface for this procedure. Lenovo recommends that you use a blanket, towel, or other soft cloth to protect the touch screen from scratches or other damage.

Step 1.   Remove any media (disks, CDs, or memory cards) from the drives, shut down the operating system, and turn off the computer and all attached devices.

Step 2.   Unplug all power cords from electrical outlets.

Step 3.   Disconnect all cables attached to the computer. This includes power cords, input/output (I/O) cables, and any other cables that are connected to the computer. Refer to "Left and right views" and "Rear view" for help with locating the various connectors.

Step 4.   Twist the hand screw ring counter-clockwise until the base comes loose to release the stand base from the stand holder. **1**

Step 5.   Slide the stand base out from the holder then put it aside. **2**

Step 6.   Refer to "Installing the computer stand" to reinstall the stand base.

Removing the foot cover

Attention: Turn off the computer and wait 3 to 5 minutes to let it cool down before removing the cover.

Note: It may be helpful to place the computer face-down on a soft flat surface for this procedure. Lenovo recommends that you use a blanket, towel, or other soft cloth to protect the touch screen from scratches or other damage.

Step 1. Remove any media (disks, CDs, or memory cards) from the drives, shut down the operating system, and turn off the computer and all attached devices.

Step 2. Unplug all power cords from electrical outlets.

Step 3. Disconnect all cables attached to the computer. This includes power cords, input/output (I/O) cables, and any other cables that are connected to the computer. Refer to "Left and right views" and "Rear view" for help with locating the various connectors.

Step 4. Remove the foot base. Refer to "Removing the foot base".

Step 5. Lift up the stand holder then slide out the foot cover as shown.

Step 6. To reattach the foot cover:

    a. Lift up the stand holder.

   b. Line up the foot cover with mounting holes on the back of the computer, then slide it back into position.

Replacing a memory module

Attention: Turn off the computer and wait 3 to 5 minutes to let it cool down before removing the cover.

Note: It may be helpful to place the computer face-down on a soft flat surface for this procedure. Lenovo recommends that you use a blanket, towel, or other soft cloth to protect the touch screen from scratches or other damage.

Step 1.   Remove any media (disks, CDs, or memory cards) from the drives, shut down the operating system, and turn off the computer and all attached devices.

Step 2.   Unplug all power cords from electrical outlets.

Step 3.   Disconnect all cables attached to the computer. This includes power cords, input/output (I/O) cables, and any other cables that are connected to the computer. Refer to "Left and right views" and "Rear view" for help with locating the various connectors.

Step 4.   Remove the stand base. Refer to "Removing the stand base".

Step 5.   Remove the foot cover. Refer to "Removing the foot cover".

Step 6.   Push out the latches on both sides of the memory socket to release the memory module **1** and gently pull the memory module upward to remove it from its socket. **2** All of the memory modules can be removed using the same procedure.

Step 7.   To install a memory module:

   a.   Align the new memory module with the memory socket, then insert it and push down on the top edge. Make sure the latches lock the memory module in place.
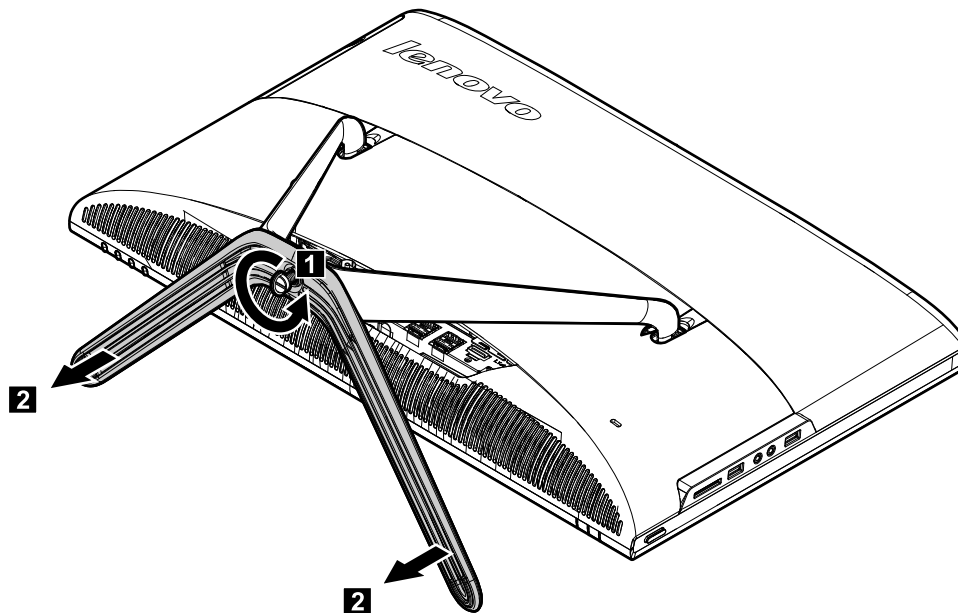
Step 8.   Reattach the foot cover and stand base.

Replacing the hard disk drive
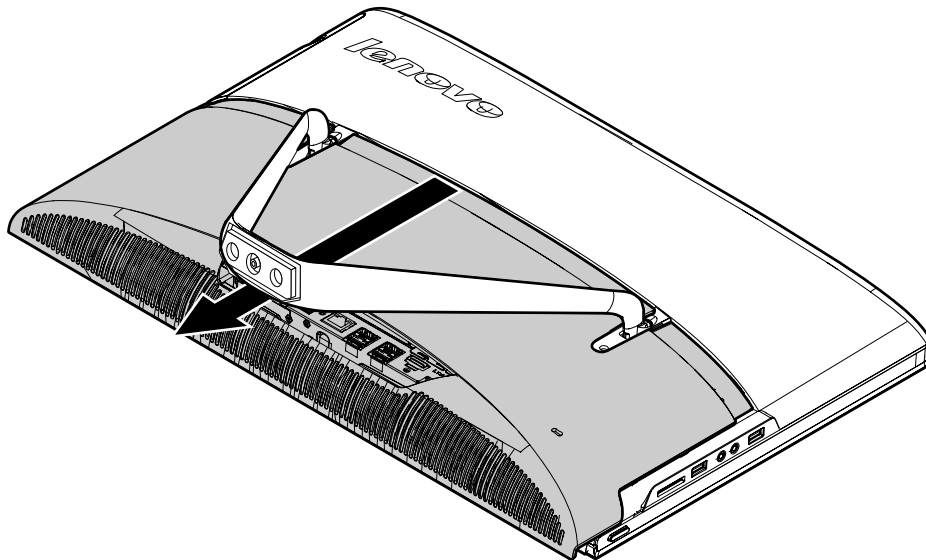
Attention: Turn off the computer and wait 3 to 5 minutes to let it cool down before removing the cover.

Note: It may be helpful to place the computer face-down on a soft flat surface for this procedure. Lenovo recommends that you use a blanket, towel, or other soft cloth to protect the touch screen from scratches or other damage.

Step 1. Remove any media (disks, CDs, or memory cards) from the drives, shut down the operating system, and turn off the computer and all attached devices.

Step 2. Unplug all power cords from electrical outlets.

Step 3. Disconnect all cables attached to the computer. This includes power cords, input/output (I/O) cables, and any other cables that are connected to the computer. Refer to "Left and right views" and "Rear view" for help with locating the various connectors.

Step 4. Remove the stand base. Refer to "Removing the stand base".

Step 5. Remove the foot cover. Refer to "Removing the foot cover".

Step 6. Push the hard disk drive bracket **1**, then slide the hard disk drive and bracket out of the chassis as shown. **2**

Step 7. Push the lock pins outward to release the hard disk drive from the bracket.

Step 8. To install the new hard disk drive:

    a. Line up the new hard disk drive with the bracket and secure it with the pins.

    b. Slide the hard disk drive and bracket back into position.
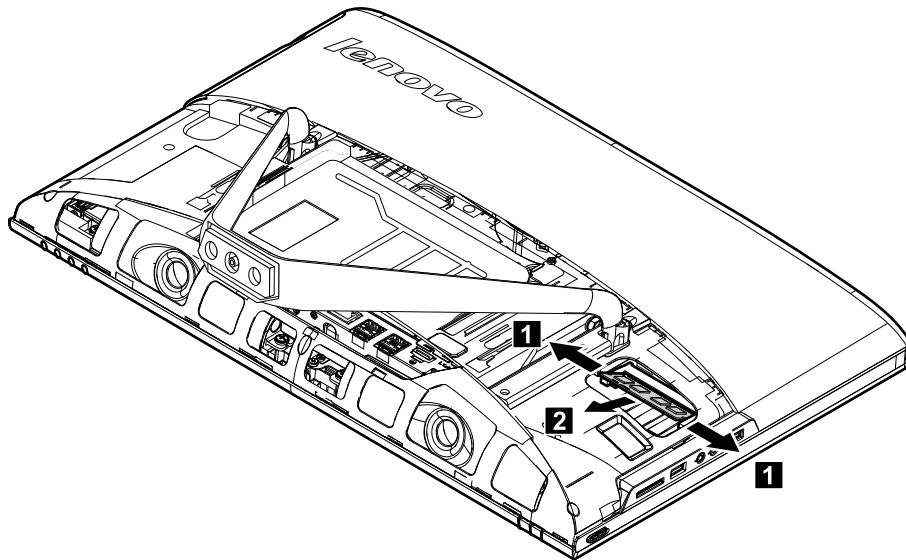
Step 9. Reattach the foot cover and stand base.

Replacing the optical drive

Attention: Turn off the computer and wait 3 to 5 minutes to let it cool down before removing the cover.

Note: It may be helpful to place the computer face-down on a soft flat surface for this procedure. Lenovo recommends that you use a blanket, towel, or other soft cloth to protect the touch screen from scratches or other damage.

Step 1. Remove any media (disks, CDs, or memory cards) from the drives, shut down the operating system, and turn off the computer and all attached devices.

Step 2. Unplug all power cords from electrical outlets.

Step 3. Disconnect all cables attached to the computer. This includes power cords, input/output (I/O) cables, and any other cables that are connected to the computer. Refer to "Left and right views" and "Rear view" for help with locating the various connectors.

Step 4. Remove the stand base. Refer to "Removing the stand base".

Step 5. Remove the foot cover. Refer to "Removing the foot cover".

Step 6. Push the optical drive pin downward to push out the optical drive as shown. **1 2**
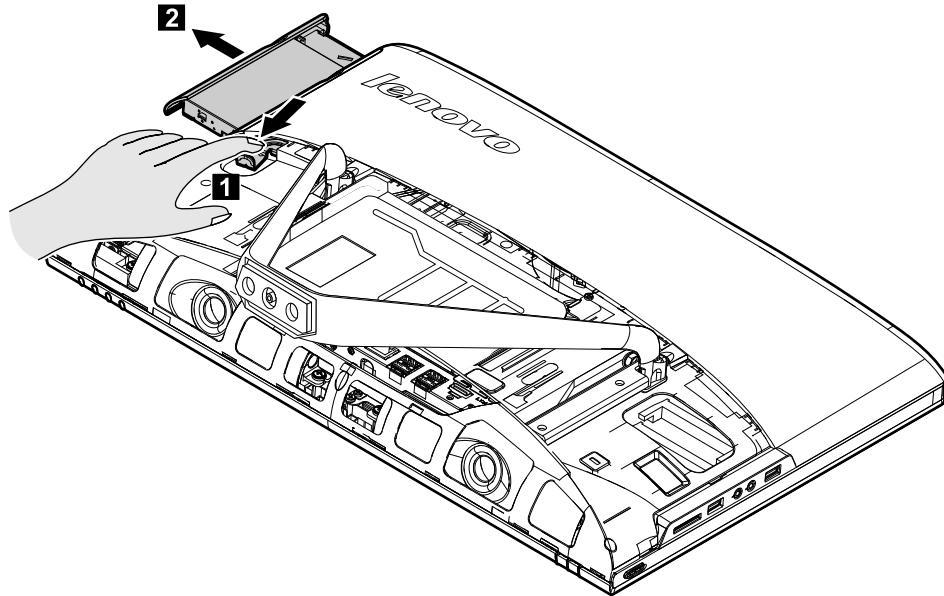
Step 7. Push a small iron stick (paper clip) into the small hole on the optical drive cover so that the disk springs out as shown.
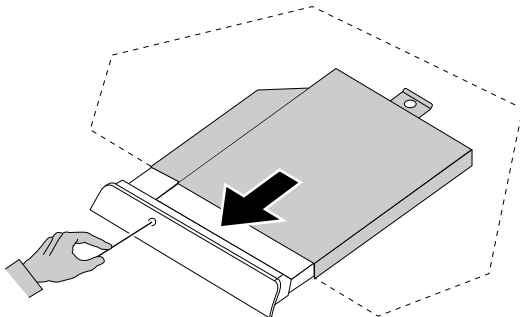
Step 8. Remove the 2 screws that secure the optical drive to the metal bracket. **1**

Step 9. Use a small flat head screwdriver to press and push out the pins that secure the cover to the disk. **2 3**

Step 10. Separate the cover from the defective optical drive.
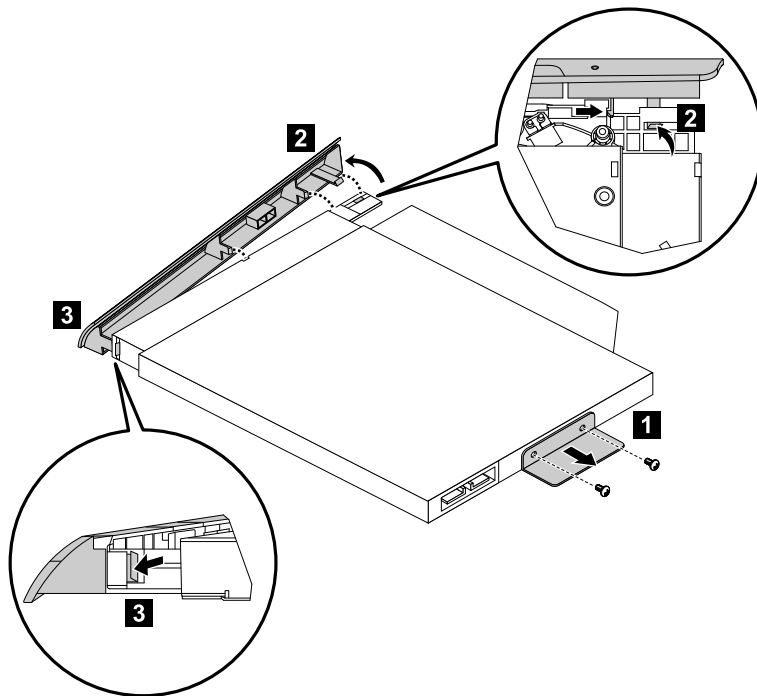
Step 11. To install the new optical drive:

    a.   Align the new optical drive with the cover, and then push the cover back into position.

    b.   Screw the metal bracket back onto the new optical drive.

    c.   Slide the new optical drive into the drive bay.

Step 12. Reattach the foot cover and stand base.
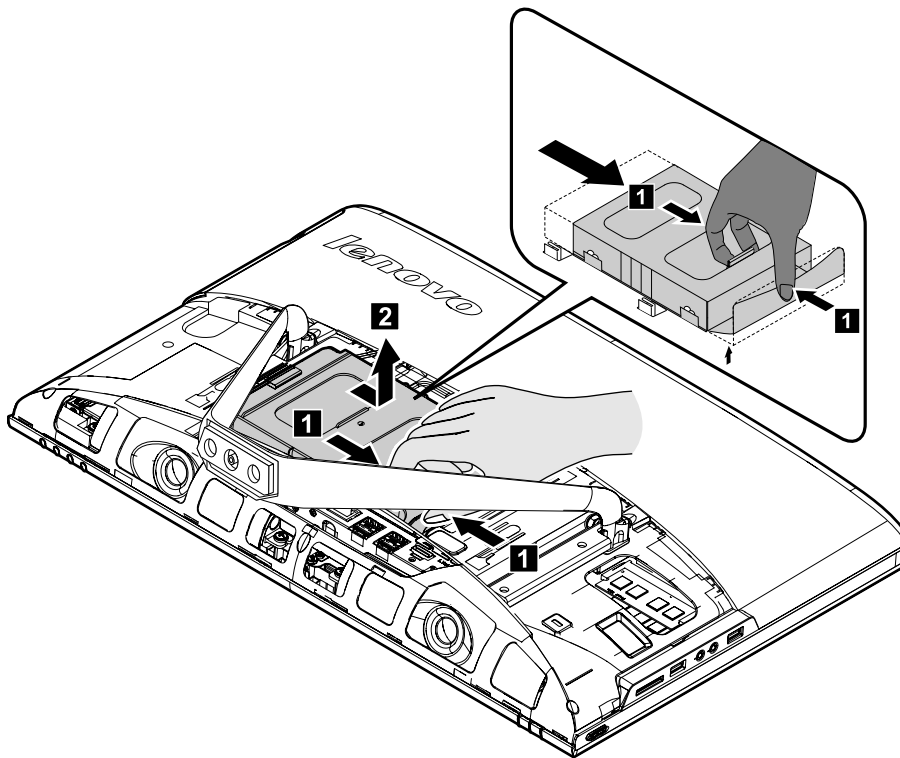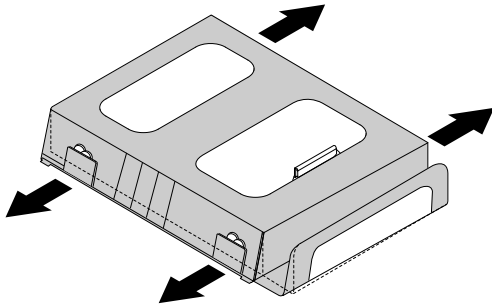
Removing the stand holder

Note: Turn off the computer and wait 3 to 5 minutes to let it cool down before removing the cover.

Note: It may be helpful to place the computer face-down on a soft flat surface for this procedure. Lenovo recommends that you use a blanket, towel, or other soft cloth to protect the computer screen from scratches or other damage.

To remove the stand holder:

Step 1.   Remove any media (disks, CDs, DVDs, or memory cards) from the drives, shut down the operating system, and turn off the computer and all attached devices.

Step 2.   Unplug all power cords from electrical outlets.

Step 3.   Disconnect all cables attached to the computer. This includes power cords, input/output (I/O) cables, and any other cables that are connected to the computer. Refer to "Left and right view" and "Rear view" for help with locating the various connectors.

Step 4.   Remove the stand base. Refer to "Removing the stand base".

Step 5.   Remove the foot cover. Refer to "Removing the foot cover".

Step 6.   Remove the four screws that secure the stand holder to the chassis, then lift up the stand holder to remove it.

Step 7. To reattach the stand holder:

    a.   Align the holes on the stand holder with mounting holes on the chassis, place the stand holder back into position.

    b.   Secure the stand holder to the chassis with the four screws.

Step 8. Line up the foot cover with mounting holes on the back of the computer, then slide it back into position.

Step 9. Reattach the stand base.

Removing the middle cover

Note: Turn off the computer and wait 3 to 5 minutes to let it cool down before removing the cover.

Note: It may be helpful to place the computer face-down on a soft flat surface for this procedure. Lenovo recommends that you use a blanket, towel, or other soft cloth to protect the computer screen from scratches or other damage.

To remove the middle cover:

Step 1. Remove any media (disks, CDs, DVDs, or memory cards) from the drives, shut down the operating system, and turn off the computer and all attached devices.

Step 2. Unplug all power cords from electrical outlets.

Step 3. Disconnect all cables attached to the computer. This includes power cords, input/output (I/O) cables, and any other cables that are connected to the computer. Refer to "Left and right view" and "Rear view" for help with locating the various connectors.

Step 4. Remove the stand base. Refer to "Removing the stand base".

Step 5. Remove the foot cover. Refer to "Removing the foot cover".

Step 6. Remove the optical drive. Refer to "Replacing the optical drive".

Step 7. Remove the stand holder. Refer to "Removing the stand holder".

Step 8. Remove the six screws that secure the middle cover to the chassis, then lift up the middle cover from the left side (optical drive side) to remove the middle cover.

Step 9.   To reattach the middle cover:

    a.   Line up the middle cover with chassis, then place the middle cover back.

    b.   Secure the middle cover to the chassis with the six screws.

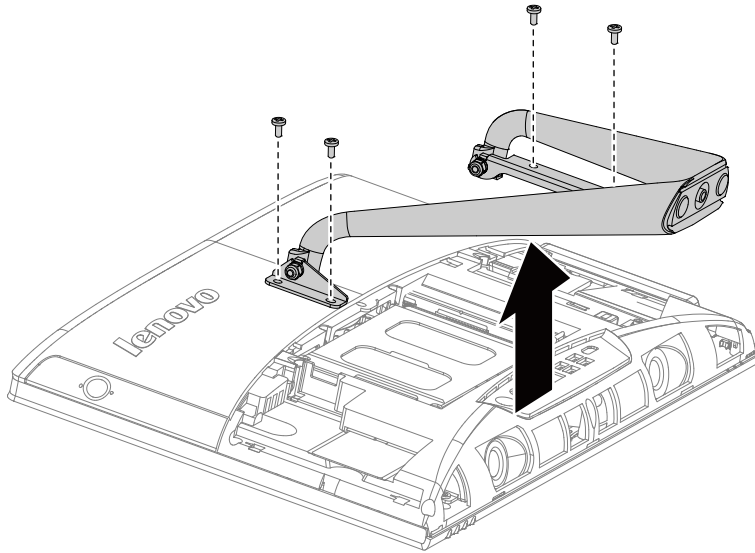Step 10. Reattach the stand holder, optical drive, foot cover and stand base.

Replacing the converter board

Note: Turn off the computer and wait 3 to 5 minutes to let it cool down before removing the cover.

Note: It may be helpful to place the computer face-down on a soft flat surface for this procedure. Lenovo recommends that you use a blanket, towel, or other soft cloth to protect the computer screen from scratches or other damage.

To replace the converter board:

Step 1.   Remove any media (disks, CDs, DVDs, or memory cards) from the drives, shut down the operating system, and turn off the computer and all attached devices.

Step 2.   Unplug all power cords from electrical outlets.

Step 3.   Disconnect all cables attached to the computer. This includes power cords, input/output (I/O) cables, and any other cables that are connected to the computer. Refer to "Left and right view" and "Rear view" for help with locating the various connectors.

Step 4.   Remove the stand base. Refer to "Removing the stand base".

Step 5.   Remove the foot cover. Refer to "Removing the foot cover".

Step 6.   Remove the optical drive. Refer to "Replacing the optical drive".

Step 7.   Remove the stand holder. Refer to "Removing the stand holder".

Step 8.   Remove the middle cover. Refer to "Removing the middle cover".

Step 9. Disconnect the two cables from the converter, and then remove the two screws that secure the converter board to the chassis.

Step 10. Lift up the converter board to remove it.

Step 11. To install the new converter board:

    a. Line up the holes on the new converter board with the mounting holes on the chassis and secure it with the two screws.

    b. Connect the two cables to the new converter board.

Step 12. Reattach the middle cover, optical drive, stand holder, foot cover and stand base.

Replacing the touch control board
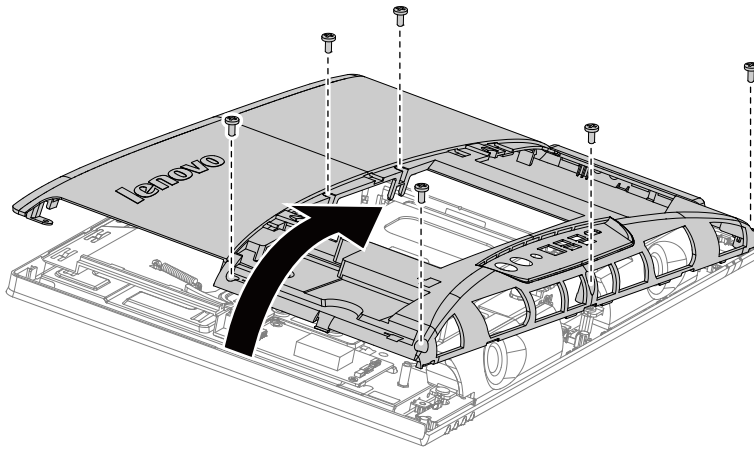
Note: Turn off the computer and wait 3 to 5 minutes to let it cool down before removing the cover.

Note: It may be helpful to place the computer face-down on a soft flat surface for this procedure. Lenovo recommends that you use a blanket, towel, or other soft cloth to protect the computer screen from scratches or other damage.

To replace the touch control board:

Note: The following instructions are for C440 touch models only.

Step 1. Remove any media (disks, CDs, DVDs, or memory cards) from the drives, shut down the operating system, and turn off the computer and all attached devices.

Step 2. Unplug all power cords from electrical outlets.

Step 3. Disconnect all cables attached to the computer. This includes power cords, input/output (I/O) cables, and any other cables that are connected to the computer. Refer to "Left and right view" and "Rear view" for help with locating the various connectors.

Step 4. Remove the stand base. Refer to "Removing the stand base".

Step 5. Remove the foot cover. Refer to "Removing the foot cover".

Step 6. Remove the optical drive. Refer to "Replacing the optical drive".

Step 7. Remove the stand holder. Refer to "Removing the stand holder".

Step 8. Remove the middle cover. Refer to "Removing the middle cover".

Step 9. Disconnect the four cables from the converter **1** **2** **3** **4**, and then remove the three screws that secure the touch control board to the chassis.

Step 10. Lift up the touch control board to remove it.

Step 11. To install the new touch control board:

    a.   Line up the holes on the new touch control board with the mounting holes on the chassis and secure it with the three screws.

    b.   Connect the four cables to the new touch control board.

Step 12. Reattach the middle cover, optical drive, stand holder, foot cover and stand base.

Removing the EMI cover

Note: Turn off the computer and wait 3 to 5 minutes to let it cool down before removing the cover.
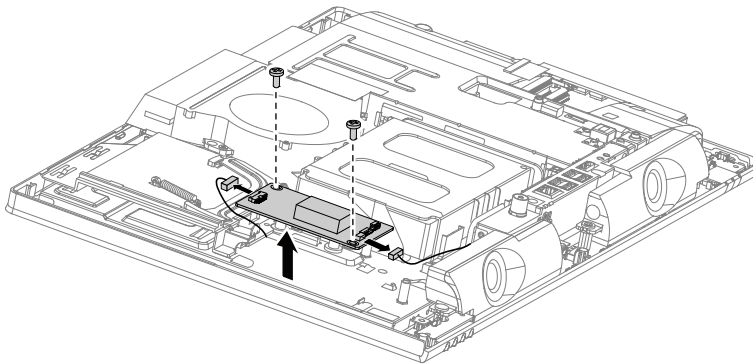
Note: It may be helpful to place the computer face-down on a soft flat surface for this procedure. Lenovo recommends that you use a blanket, towel, or other soft cloth to protect the computer screen from scratches or other damage.

To replace the EMI cover

Step 1. Remove any media (disks, CDs, DVDs, or memory cards) from the drives, shut down the operating system, and turn off the computer and all attached devices.

Step 2. Unplug all power cords from electrical outlets.

Step 3. Disconnect all cables attached to the computer. This includes power cords, input/output (I/O) cables, and any other cables that are connected to the computer. Refer to "Left and right view" and "Rear view" for help with locating the various connectors.

Step 4. Remove the stand base. Refer to "Removing the stand base".

Step 5. Remove the foot cover. Refer to "Removing the foot cover".

Step 6. Remove the optical drive. Refer to "Replacing the optical drive".

Step 7. Remove the stand holder. Refer to "Removing the stand holder".

Step 8. Remove the middle cover. Refer to "Removing the middle cover".

Step 9. Remove the three screws that secure the EMI cover to the chassis, and then lift it up.

Step 10. To reattach the EMI cover:

    a. Line up the holes on the EMI cover with mounting holes on the chassis, then place EMI cover back into position.

    b. Secure the EMI cover to the chassis with three screws.

Step 11. Reattach the middle cover, optical drive, stand holder, foot cover and stand base.

Replacing the rear I/O module

Note: Turn off the computer and wait 3 to 5 minutes to let it cool down before removing the cover.
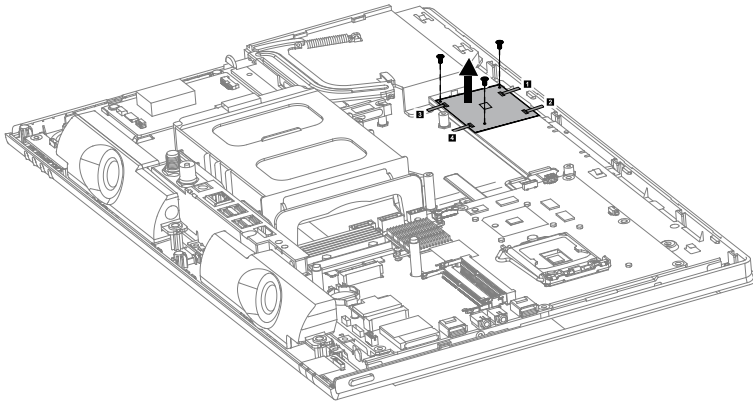
Note: It may be helpful to place the computer face-down on a soft flat surface for this procedure. Lenovo recommends that you use a blanket, towel, or other soft cloth to protect the computer screen from scratches or other damage.

To replace the rear I/O module

Step 1. Remove any media (disks, CDs, DVDs, or memory cards) from the drives, shut down the operating system, and turn off the computer and all attached devices.

Step 2. Unplug all power cords from electrical outlets.

Step 3. Disconnect all cables attached to the computer. This includes power cords, input/output (I/O) cables, and any other cables that are connected to the computer. Refer to "Left and right view" and "Rear view" for help with locating the various connectors.

Step 4. Remove the stand base. Refer to "Removing the stand base".

Step 5. Remove the foot cover. Refer to "Removing the foot cover".

Step 6. Remove the optical drive. Refer to "Replacing the optical drive".

Step 7. Remove the stand holder. Refer to "Removing the stand holder".

Step 8. Remove the middle cover. Refer to "Removing the middle cover".

Step 9. Remove the EMI cover. Refer to "Removing the EMI cover".

Step 10. Remove the three screws that secure the rear I/O module to the motherboard and lift it up gently.

Step 11. Disconnect the power cable from the motherboard and the TV antenna cable(s) from the TV tuner card.
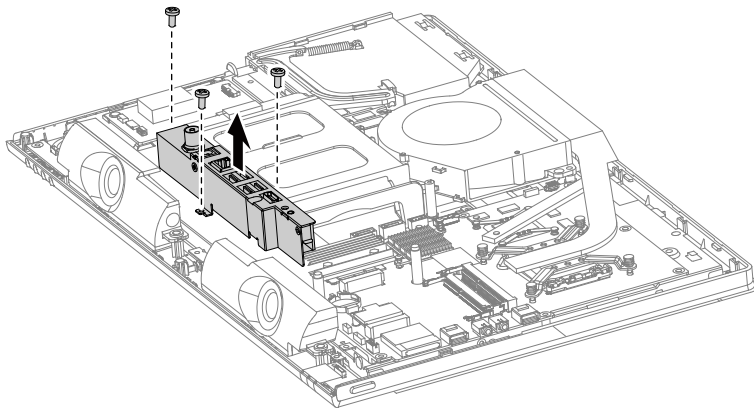
Step 12. Remove the hexagonal nut that secure the TV-Tuner antenna connector to the rear I/O bracket. Then slide the TV-Tuner antenna connector out.

Step 13. Remove the one screw that secures the power jack to the bracket. Slide out the power jack from the rear I/O bracket.

Step 14. To install the new rear I/O module:

    a.   Attach the TV-Tuner antenna connector and power jack to the new rear I/O bracket, then secure them with the screw and nut.

    b.   Line up the rear I/O module with the connectors on the motherboard, then insert the rear I/O module into place.

    c.   Connect the power cable to the motherboard and the TV antenna cable(s) to the TV tuner card.

    d.   Secure the rear I/O module with the three screws.

Step 15. Reattach the EMI cover, middle cover, optical drive, stand holder, foot cover and stand base.
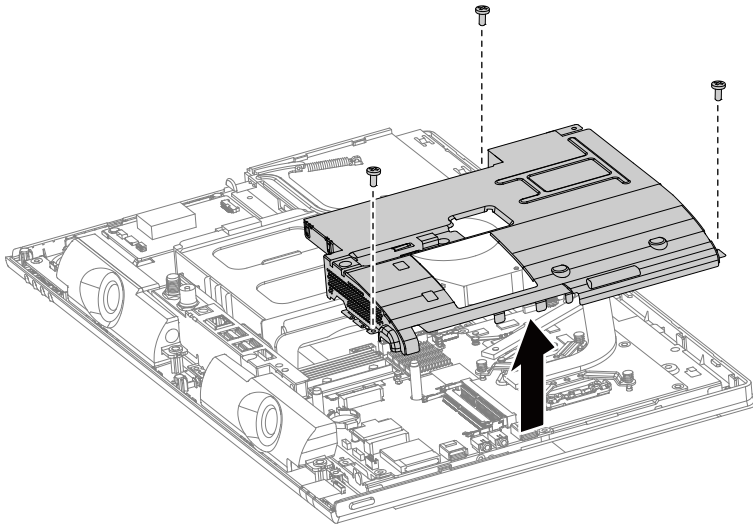
Replacing the TV tuner card

Note: Turn off the computer and wait 3 to 5 minutes to let it cool down before removing the cover.

Note: It may be helpful to place the computer face-down on a soft flat surface for this procedure. Lenovo recommends that you use a blanket, towel, or other soft cloth to protect the computer screen from scratches or other damage.

To replace the TV tuner card

Step 1. Remove any media (disks, CDs, DVDs, or memory cards) from the drives, shut down the operating system, and turn off the computer and all attached devices.

Step 2. Unplug all power cords from electrical outlets.

Step 3. Disconnect all cables attached to the computer. This includes power cords, input/output (I/O) cables, and any other cables that are connected to the computer. Refer to "Left and right view" and "Rear view" for help with locating the various connectors.

Step 4. Remove the stand base. Refer to "Removing the stand base".

Step 5. Remove the foot cover. Refer to "Removing the foot cover".

Step 6. Remove the optical drive. Refer to "Replacing the optical drive".

Step 7. Remove the stand holder. Refer to "Removing the stand holder".

Step 8.   Remove the middle cover. Refer to "Removing the middle cover".

Step 9.   Remove the EMI cover. Refer to "Removing the EMI cover".

Step 10. Disconnect the antenna cable from the TV-Tuner card.

Step 11. Remove the screw that secures the TV-Tuner card to the motherboard.

Step 12. Pull the TV-Tuner card upward to remove it from the card port on the motherboard.

Step 13. To install the new TV-Tuner card:

      a.   Insert the notched end of the TV-Tuner card into the card port on the motherboard.

      b.   Secure new the TV-Tuner card to the motherboard with the screw.

      c.   Connect the antenna cable to the new TV-Tuner card.

Step 14. Reattach the EMI cover, middle cover, optical drive, stand holder, foot cover and stand base.

Replacing the WLAN card

Note: Turn off the computer and wait 3 to 5 minutes to let it cool down before removing the cover.

Note: It may be helpful to place the computer face-down on a soft flat surface for this procedure. Lenovo recommends that you use a blanket, towel, or other soft cloth to protect the computer screen from scratches or other damage.

To replace the WLAN card:

Step 1.   Remove any media (disks, CDs, DVDs, or memory cards) from the drives, shut down the operating system, and turn off the computer and all attached devices.

Step 2.   Unplug all power cords from electrical outlets.

Step 3.   Disconnect all cables attached to the computer. This includes power cords, input/output (I/O) cables, and any other cables that are connected to the computer. Refer to "Left and right view" and "Rear view" for help with locating the various connectors.

Step 4.   Remove the stand base. Refer to "Removing the stand base".

Step 5.   Remove the foot cover. Refer to "Removing the foot cover".

Step 6.   Remove the optical drive. Refer to "Replacing the optical drive".

Step 7.   Remove the stand holder. Refer to "Removing the stand holder".

Step 8.   Remove the middle cover. Refer to "Removing the middle cover".

Step 9.   Remove the EMI cover. Refer to "Removing the EMI cover".

Step 10. Disconnect the antenna cables from the WLAN card.

Step 11. Remove the screw that secures the WLAN card to the motherboard.

Step 12. Lift up the WLAN card to remove it from the socket.

Step 13. To install the new WLAN card:

    a.   Insert the notched end of the WLAN card into the card port on the motherboard.

    b.   Secure new the WLAN card to the motherboard with the screw.

    c.   Connect the antenna cables to the new WLAN card.

Step 14. Reattach the EMI cover, middle cover, optical drive, stand holder, foot cover and stand base.

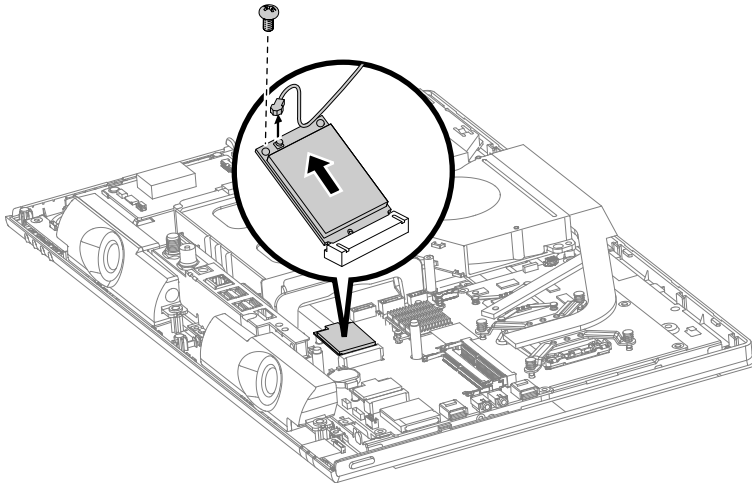## Replacing the speaker system

Note: Turn off the computer and wait 3 to 5 minutes to let it cool down before removing the cover.

Note: It may be helpful to place the computer face-down on a soft flat surface for this procedure. Lenovo recommends that you use a blanket, towel, or other soft cloth to protect the computer screen from scratches or other damage.

To replace the speaker system:

Step 1. Remove any media (disks, CDs, DVDs, or memory cards) from the drives, shut down the operating system, and turn off the computer and all attached devices.

Step 2. Unplug all power cords from electrical outlets.

Step 3. Disconnect all cables attached to the computer. This includes power cords, input/output (I/O) cables, and any other cables that are connected to the computer. Refer to "Left and right view" and "Rear view" for help with locating the various connectors.

Step 4. Remove the stand base. Refer to "Removing the stand base".

Step 5. Remove the foot cover. Refer to "Removing the foot cover".

Step 6. Remove the optical drive. Refer to "Replacing the optical drive".

Step 7. Remove the stand holder. Refer to "Removing the stand holder".

Step 8. Remove the middle cover. Refer to "Removing the middle cover".

Step 9. Remove the EMI cover. Refer to "Removing the EMI cover".

Step 10. Disconnect the speaker cables from the connector on the motherboard.

Step 11. Remove the four screws that secure the speaker system to the chassis, then lift up the speaker system to remove it.

Step 12. To install the new speaker system:

a. Place the new speaker system into position, then secure it with four screws.

b. Connect the new speaker cables to the connector on the motherboard.

Step 13. Reattach the EMI cover, middle cover, optical drive, stand holder, foot cover and stand base.
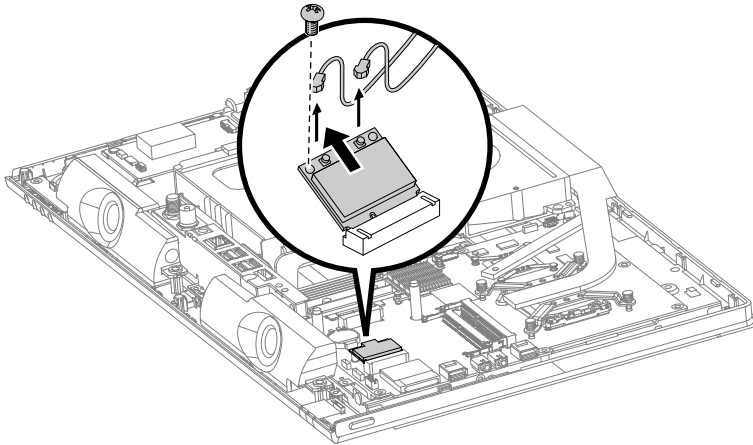
Replacing the system fan

Note: Turn off the computer and wait 3 to 5 minutes to let it cool down before removing the cover.

Note: It may be helpful to place the computer face-down on a soft flat surface for this procedure. Lenovo recommends that you use a blanket, towel, or other soft cloth to protect the computer screen from scratches or other damage.

To replace the system fan

Step 1. Remove any media (disks, CDs, DVDs, or memory cards) from the drives, shut down the operating system, and turn off the computer and all attached devices.

Step 2. Unplug all power cords from electrical outlets.

Step 3. Disconnect all cables attached to the computer. This includes power cords, input/output (I/O) cables, and any other cables that are connected to the computer. Refer to "Left and right view" and "Rear view" for help with locating the various connectors.

Step 4. Remove the stand base. Refer to "Removing the stand base".

Step 5. Remove the foot cover. Refer to "Removing the foot cover".

Step 6. Remove the optical drive. Refer to "Replacing the optical drive".

Step 7. Remove the stand holder. Refer to "Removing the stand holder".

Step 8. Remove the middle cover. Refer to "Removing the middle cover".

Step 9. Remove the EMI cover. Refer to "Removing the EMI cover".

Step 10. Remove the sealing tape between the system fan and heat-sink.

Step 11. Remove the three screws that secure the system fan to the chassis.

Step 12. Disconnect the power cable from the motherboard.

Step 13. Lift up the system fan to remove it.

Step 14. To install the new system fan:

    a.   Place the new system fan into position, and then secure it to the chassis with the three screws.

    b.   Connect the system fan power cable to the connector on the motherboard.

    c.   Use the sealing tape to seal the gap in-between the system fan and heat-sink.

Step 15. Reattach the EMI cover, middle cover, optical drive, stand holder, foot cover and stand base.

Replacing the heat-sink

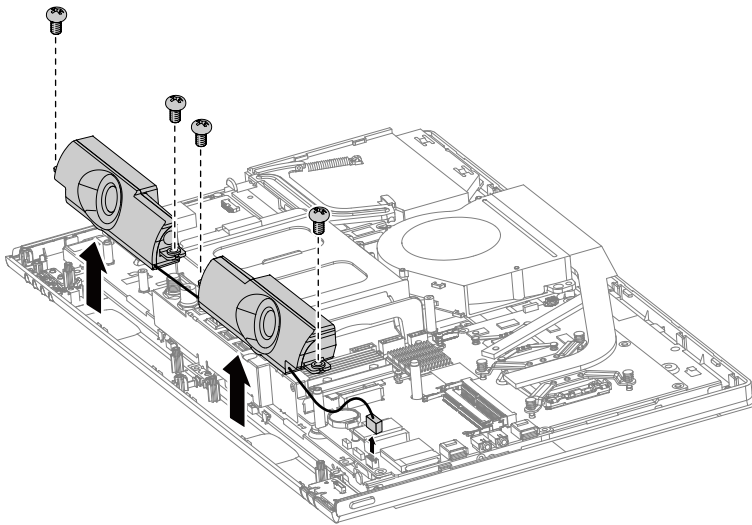**Note:** Turn off the computer and wait 3 to 5 minutes to let it cool down before removing the cover.

Note: It may be helpful to place the computer face-down on a soft flat surface for this procedure. Lenovo recommends that you use a blanket, towel, or other soft cloth to protect the computer screen from scratches or other damage.

To replace the heat-sink:

Step 1.   Remove any media (disks, CDs, DVDs, or memory cards) from the drives, shut down the operating system, and turn off the computer and all attached devices.

Step 2.   Unplug all power cords from electrical outlets.

Step 3.   Disconnect all cables attached to the computer. This includes power cords, input/output (I/O) cables, and any other cables that are connected to the computer. Refer to "Left and right view" and "Rear view" for help with locating the various connectors.

Step 4.   Remove the stand base. Refer to "Removing the stand base".

Step 5.   Remove the foot cover. Refer to "Removing the foot cover".

Step 6.   Remove the optical drive. Refer to "Replacing the optical drive".

Step 7.   Remove the stand holder. Refer to "Removing the stand holder".

Step 8.   Remove the middle cover. Refer to "Removing the middle cover".

Step 9.   Remove the EMI cover. Refer to "Removing the EMI cover".

Step 10. Remove the sealing tape between the system fan and heat-sink.

Step 11. Remove the eight screws that secure the heat-sink to the motherboard and chassis.

Step 12. Remove the heat-sink by lifting it up.
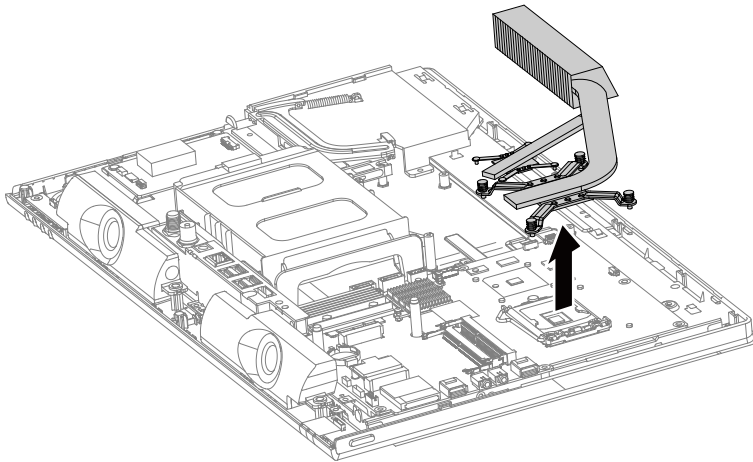
> **Attention:** Place the heat-sink upside down on a flat surface to prevent thermal grease from contaminating other components.

> **Attention:** Use an alcohol pad to wipe the thermal grease off the CPU.

Step 13. To install the new heat-sink:

    a.   Line up the new heat-sink with mounting holes on the motherboard, then place it into position.

    b.   Follow the numbers printed on the new heat-sink to secure it in order using the eight screws.

    c.   Use the sealing tape to seal the gap in-between the system fan and heat-sink.

Step 14. Reattach the EMI cover, middle cover, optical drive, stand holder, foot cover and stand base.
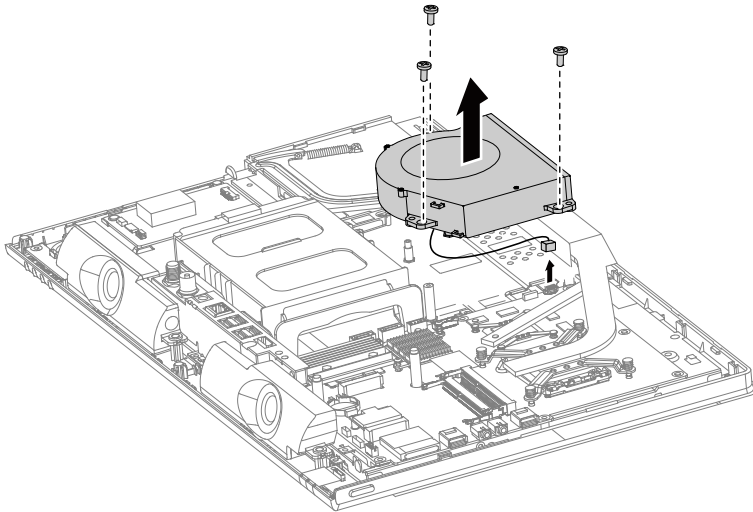
Replacing the camera

Note: Turn off the computer and wait 3 to 5 minutes to let it cool down before removing the cover.

Note: It may be helpful to place the computer face-down on a soft flat surface for this procedure. Lenovo recommends that you use a blanket, towel, or other soft cloth to protect the computer screen from scratches or other damage.

To replace the camera:

Step 1. Remove any media (disks, CDs, DVDs, or memory cards) from the drives, shut down the operating system, and turn off the computer and all attached devices.

Step 2. Unplug all power cords from electrical outlets.

Step 3. Disconnect all cables attached to the computer. This includes power cords, input/output (I/O) cables, and any other cables that are connected to the computer. Refer to "Left and right view" and "Rear view" for help with locating the various connectors.

Step 4. Remove the stand base. Refer to "Removing the stand base".

Step 5. Remove the foot cover. Refer to "Removing the foot cover".

Step 6. Remove the optical drive. Refer to "Replacing the optical drive".

Step 7. Remove the stand holder. Refer to "Removing the stand holder".

Step 8. Remove the middle cover. Refer to "Removing the middle cover".

Step 9.   Remove the EMI cover. Refer to "Removing the EMI cover".

Step 10. Remove the two screws that secure camera to the front bezel.

Step 11. Lift up the camera and disconnect the data cable from the camera.

Step 12. Remove the two screws that secure the camera to the bracket, then put aside the bracket.

Step 13. To install the new camera:

    a. Line up the new camera with the bracket, then secure the camera to the bracket with the two screws.

    b. Connect the data cable to the new camera.

    c. Line up the holes in the new camera with the mounting holes on the front bezel and secure it with the two screws.

Step 14. Reattach the EMI cover, middle cover, optical drive, stand holder, foot cover and stand base.

Replacing the CPU

Note: Turn off the computer and wait 3 to 5 minutes to let it cool down before removing the cover.

Note: It may be helpful to place the computer face-down on a soft flat surface for this procedure. Lenovo recommends that you use a blanket, towel, or other soft cloth to protect the computer screen from scratches or other damage.

To replace the CPU

Step 1.   Remove any media (disks, CDs, DVDs, or memory cards) from the drives, shut down the operating system, and turn off the computer and all attached devices.

Step 2.   Unplug all power cords from electrical outlets.

Step 3.   Disconnect all cables attached to the computer. This includes power cords, input/output (I/O) cables, and any other cables that are connected to the computer. Refer to "Left and right view" and "Rear view" for help with locating the various connectors.

Step 4.   Remove the stand base. Refer to "Removing the stand base".

Step 5.   Remove the foot cover. Refer to "Removing the foot cover".

Step 6. Remove the optical drive. Refer to "Replacing the optical drive".

Step 7. Remove the stand holder. Refer to "Removing the stand holder".

Step 8. Remove the middle cover. Refer to "Removing the middle cover".

Step 9. Remove the EMI cover. Refer to "Removing the EMI cover".

Step 10. Remove the heat-sink. Refer to "Replacing the heat sink".

Step 11. Lift the small handle and open the retainer.

Step 12. Lift the microprocessor straight up and out of the socket. **3**
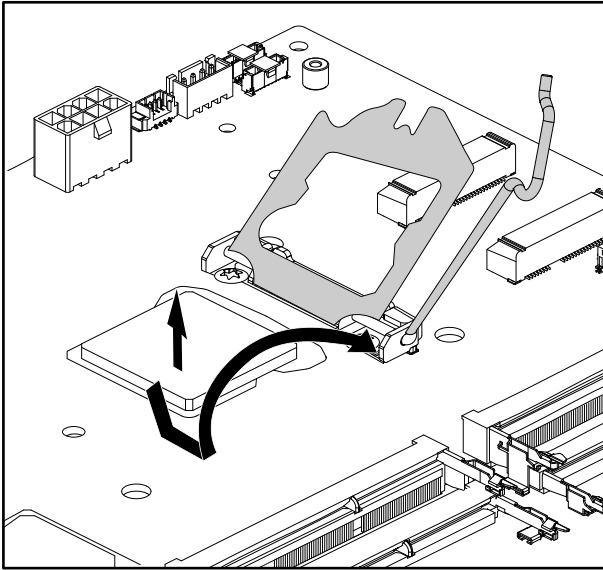
Attention: Do not touch the gold contacts on the bottom of the microprocessor. When handling the microprocessor, touch only the sides.

Note: Do not drop anything onto the microprocessor socket while it is exposed. The socket pins must be kept as clean as possible.

Step 13. Holding the sides of the microprocessor with your fingers, remove the protective cover **1** that protects the gold contacts on the new microprocessor. **2**
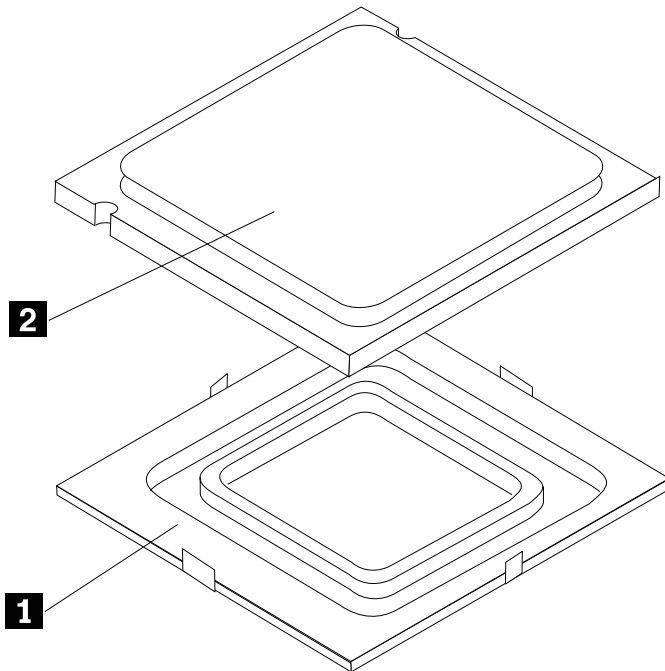
Step 14. Holding the sides of the microprocessor with your fingers, position the microprocessor so that the notches on the microprocessor are aligned with the tabs in the microprocessor socket.

> **Important:** To avoid damaging the microprocessor contacts, keep the microprocessor completely level while installing it into the socket.

Step 15. Lower the microprocessor straight down into its socket on the motherboard.
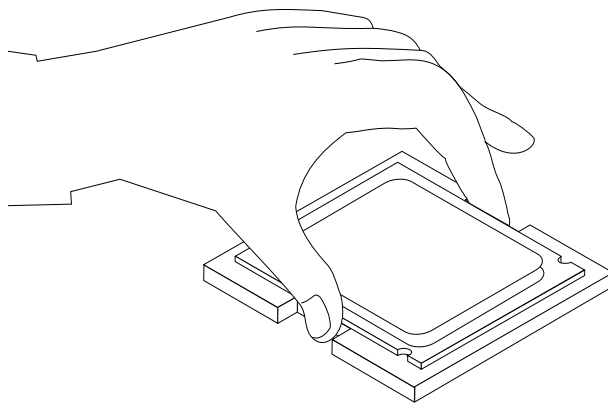
Step 16. To secure the microprocessor in the socket, close the microprocessor retainer and lock it into position with the small handle.

Step 17. Use a thermal grease syringe to place 5 drops of grease on the top of the microprocessor. Each drop of grease should be 0.03ml (3 tick marks on the grease syringe).

Step 18. Reattach the heat-sink, EMI cover, middle cover, optical drive, stand holder, foot cover and stand base.
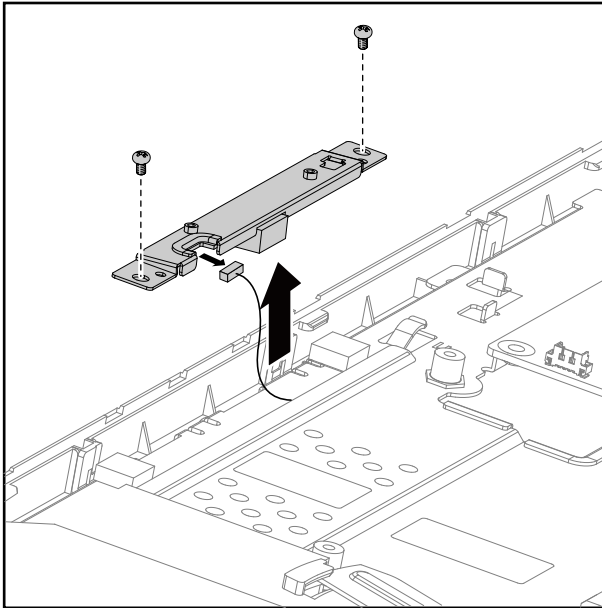
Replacing the front control board

Note: Turn off the computer and wait 3 to 5 minutes to let it cool down before removing the cover.

Note: It may be helpful to place the computer face-down on a soft flat surface for this procedure. Lenovo recommends that you use a blanket, towel, or other soft cloth to protect the computer screen from scratches or other damage.

To replace the front control board:

Step 1.   Remove any media (disks, CDs, DVDs, or memory cards) from the drives, shut down the operating system, and turn off the computer and all attached devices.

Step 2.   Unplug all power cords from electrical outlets.

Step 3.   Disconnect all cables attached to the computer. This includes power cords, input/output (I/O) cables, and any other cables that are connected to the computer. Refer to "Left and right view" and "Rear view" for help with locating the various connectors.

Step 4.   Remove the stand base. Refer to "Removing the stand base".

Step 5.   Remove the foot cover. Refer to "Removing the foot cover".

Step 6.   Remove the optical drive. Refer to "Replacing the optical drive".

Step 7.   Remove the stand holder. Refer to "Removing the stand holder".

Step 8.   Remove the middle cover. Refer to "Removing the middle cover".

Step 9.   Remove the EMI cover. Refer to "Removing the EMI cover".

Step 10. Remove the speaker system. Refer to "Replacing the speaker system".

Step 11. Remove the two screws that secure the front control board to the front bezel,

Step 12. Disconnect the data cable from the front control board, then lift up the front control board.
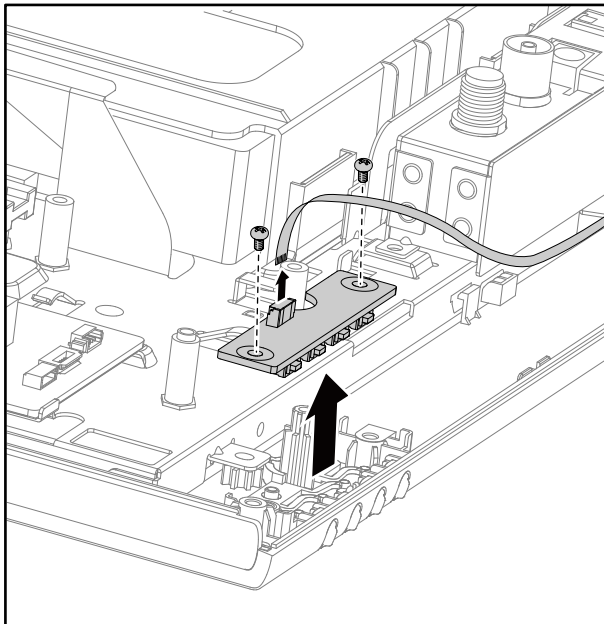
Step 13. To install the new front control board:

      a.   Connect the data cable to the new front control board.

      b.   Line up the new front control board with the front bezel, then place it into position.

      c.   Secure the front control board with the two screws.

Step 14. Reattach the speaker system, EMI cover, middle cover, optical drive, stand holder, foot cover and stand base.

Replacing the power switch board

Note: Turn off the computer and wait 3 to 5 minutes to let it cool down before removing the cover.

Note: It may be helpful to place the computer face-down on a soft flat surface for this procedure. Lenovo recommends that you use a blanket, towel, or other soft cloth to protect the computer screen from scratches or other damage.

To replace the power switch board

Step 1.   Remove any media (disks, CDs, DVDs, or memory cards) from the drives, shut down the operating system, and turn off the computer and all attached devices.

Step 2.   Unplug all power cords from electrical outlets.

Step 3.   Disconnect all cables attached to the computer. This includes power cords, input/output (I/O) cables, and any other cables that are connected to the computer. Refer to "Left and right view" and "Rear view" for help with locating the various connectors.

Step 4.   Remove the stand base. Refer to "Removing the stand base".

Step 5.   Remove the foot cover. Refer to "Removing the foot cover".

Step 6.   Remove the optical drive. Refer to "Replacing the optical drive".

Step 7.   Remove the stand holder. Refer to "Removing the stand holder".

Step 8.   Remove the middle cover. Refer to "Removing the middle cover".

Step 9.   Remove the EMI cover. Refer to "Removing the EMI cover".

Step 10. Remove the screw that secure the power switch board to the front bezel.

Step 11. Disconnect the data cable from the power switch board, then lift up the power switch board.

Step 12. To install the power switch board:

    a.   Line up the hole on the new power switch board with the mounting hole on the front bezel, then place it into position.

    b.   Secure the power switch board with the screw.

c.   Connect the power cable to the new power switch board.

Step 13. Reattach the EMI cover, middle cover, optical drive, stand holder, foot cover and stand base.

Replacing the motherboard

Note: Turn off the computer and wait 3 to 5 minutes to let it cool down before removing the cover.

Note: It may be helpful to place the computer face-down on a soft flat surface for this procedure. Lenovo recommends that you use a blanket, towel, or other soft cloth to protect the computer screen from scratches or other damage.

To replace the motherboard:

Step 1.   Remove any media (disks, CDs, DVDs, or memory cards) from the drives, shut down the operating system, and turn off the computer and all attached devices.

Step 2.   Unplug all power cords from electrical outlets.

Step 3.   Disconnect all cables attached to the computer. This includes power cords, input/output (I/O) cables, and any other cables that are connected to the computer. Refer to "Left and right view" and "Rear view" for help with locating the various connectors.

Step 4.   Remove the stand base. Refer to "Removing the stand base".

Step 5.   Remove the foot cover. Refer to "Removing the foot cover".

Step 6.   Remove the memory modules. Refer to "Replacing a memory module".

Step 7.   Remove the optical drive. Refer to "Replacing the optical drive".

Step 8.   Remove the stand holder. Refer to "Removing the stand holder".

Step 9.   Remove the middle cover. Refer to "Removing the middle cover".

Step 10. Remove the EMI cover. Refer to "Removing the EMI cover".

Step 11. Remove the rear I/O module. Refer to "Replacing the rear I/O module".

Step 12. Remove the heat-sink. Refer to "Replacing the heat-sink".

Step 13. Remove the CPU. Refer to "Replacing the CPU".

Step 14. Remove the TV-Tuner card. Refer to "Replacing the TV tuner card".

Step 15. Remove the WLAN card. Refer to "Replacing the WLAN card".

Step 16. Unplug the following cables from connectors on the motherboard:

- Power switch board cable
- Speaker system cable
- Front control board cable
- Converter cable
- Camera cable
- System fan power cable
- Hard disk drive power cable
- Hard disk drive SATA cable (Black)
- Optical drive SATA cable (Red)
- Optical disk drive power cable
- LVDS cable

Step 17. Remove the seven screws that secure the motherboard to the chassis and lift the motherboard up to remove it.
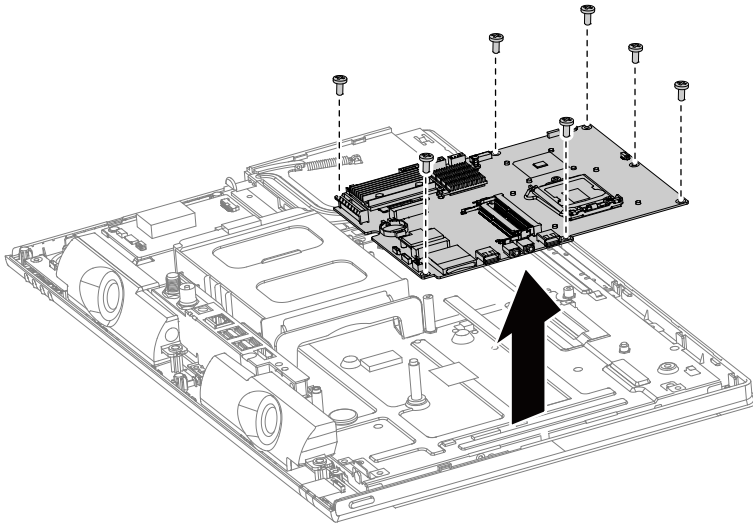
Step 18. To install the new motherboard:

    a.   Line up the holes on the new motherboard with the mounting holes chassis and place the new motherboard into position.

    b.   Use the screws to secure the new motherboard to the chassis.

Step 19. Install the following parts to the new motherboard:

- WLAN card
- TV-Tuner card
- CPU
- Heat-sink
- Rear I/O module
- Memory module

Step 20. Connect all the cables to the new motherboard.

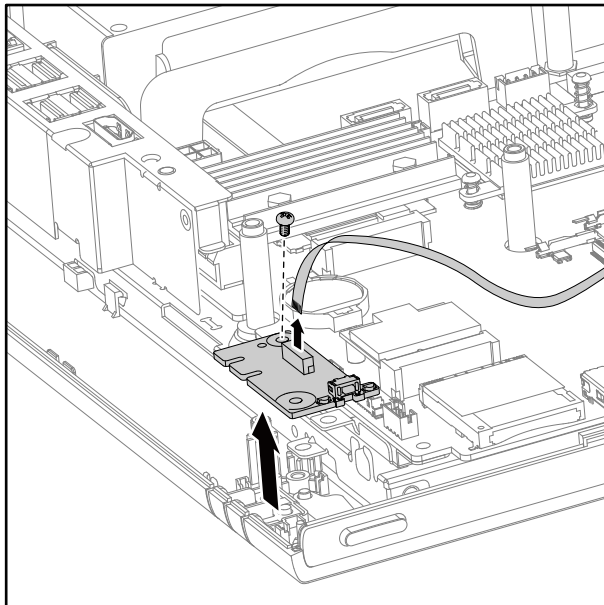Step 21. Reattach the EMI cover, middle cover, optical drive, stand holder, foot cover and stand base.

Replacing the LED panel

Note: Turn off the computer and wait 3 to 5 minutes to let it cool down before removing the cover.

Note: It may be helpful to place the computer face-down on a soft flat surface for this procedure. Lenovo recommends that you use a blanket, towel, or other soft cloth to protect the computer screen from scratches or other damage.

To replace the LED panel:

Step 1. Remove any media (disks, CDs, DVDs, or memory cards) from the drives, shut down the operating system, and turn off the computer and all attached devices.

Step 2. Unplug all power cords from electrical outlets.

Step 3. Disconnect all cables attached to the computer. This includes power cords, input/output (I/O) cables, and any other cables that are connected to the computer. Refer to "Left and right view" and "Rear view" for help with locating the various connectors.

Step 4. Remove the stand base. Refer to "Removing the stand base".

Step 5. Remove the foot cover. Refer to "Removing the foot cover".

Step 6. Remove the optical drive. Refer to "Replacing the optical drive".

Step 7. Remove the stand holder. Refer to "Removing the stand holder".

Step 8. Remove the middle cover. Refer to "Removing the middle cover".

Step 9. Remove the EMI cover. Refer to "Removing the EMI cover".

Step 10. Remove the speaker system. Refer to "Replacing the speaker system".

Step 11. Remove the system fan. Refer to "Replacing the system fan".

Step 12. Disconnect the power switch board cable and camera cable from connectors on the motherboard:

Step 13. Disconnect the cable from the connector on the front control board.

Step 14. Remove the nine screws that secure the chassis to the front bezel. **1**

Step 15. Remove the four screws that secure the LED panel to the chassis. **2 3**

Step 16. Disconnect the converter cable and LVDS cable from the connectors on the LED panel.

Step 17. Lift up the chassis to separate the LED panel from the chassis.
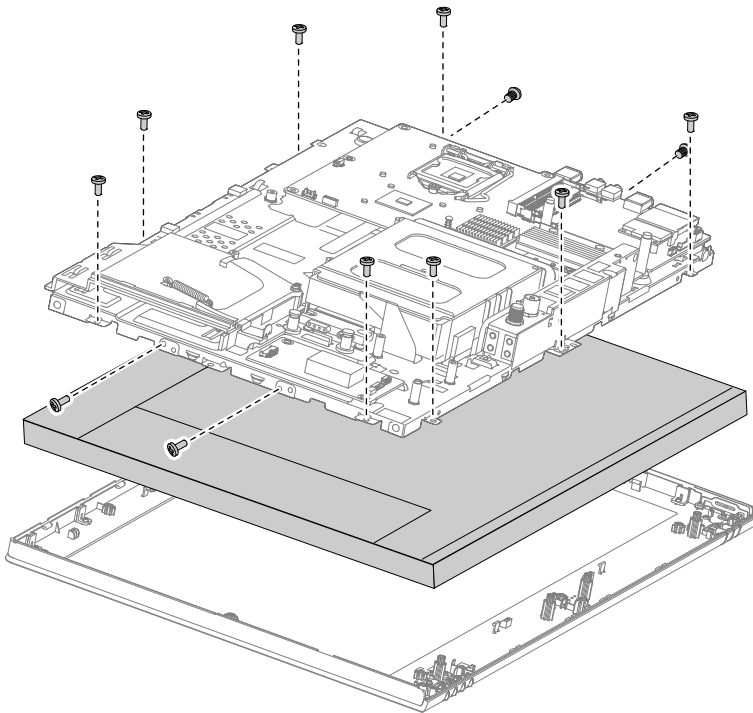
Step 18. To install the new the LED panel:

    a. Line up the chassis with new LED panel, and then secure the new LED panel to the chassis with the four screws.

    b. Connect the converter cable and LVDS cable to the new LED panel.

    c. Line up the chassis with the front bezel, and then place the chassis into position.

    d. Secure the chassis to the front bezel with the nine screws.

    e. Reconnect all the camera and power switch board cables to the connectors on the motherboard.

    f. Reconnect the front control board cable back to the connector on front control board.

g. A converter jumper setting is required after replacing the old panel with a new panel. Follow the below diagram to insert the jumper heads to the pins properly depending on the panel brands.Follow the below drawing to locate the LCD jumper header on the motherboard:

LCD jumper header

Jumper head

ID 5

ID 4

ID 3

ID 2

ID 1
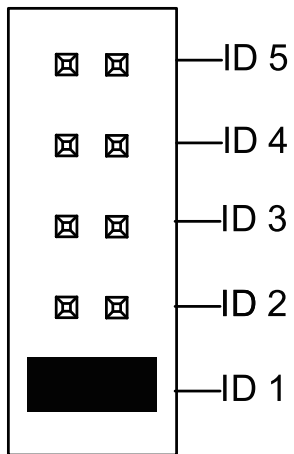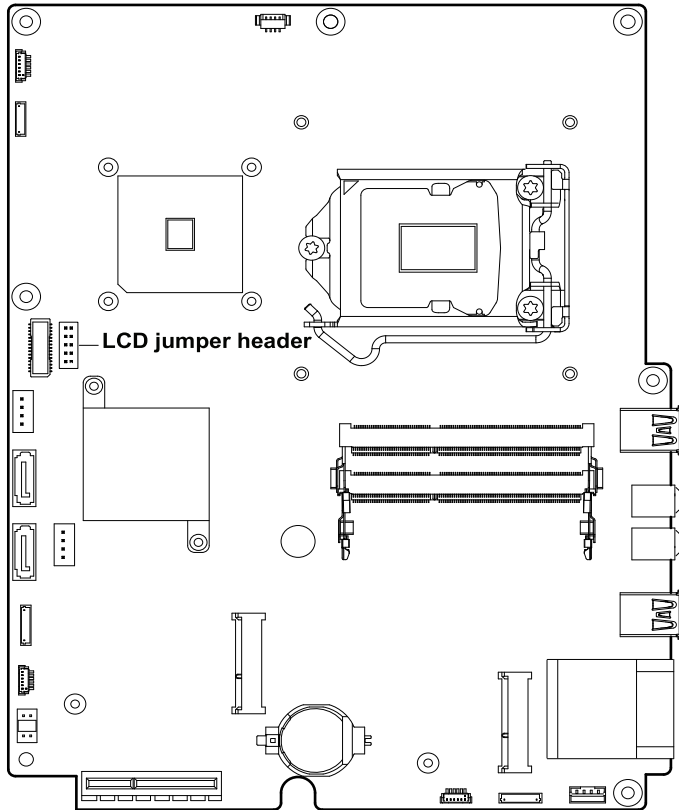
C340 20in LCD Jumper Setting						
Panel	AUO	LG	SEC			CMI
11S	18200419	18200171	18200079	18201527		18200172
Description	M200RW01 V6	LM200WD3 -TLF1	LTM200KT10- M01,M02	LTM200KT12 -M01	LTM200KT12 -M02	M200FGE -L20
Heads Position	ID5–ID2 open, ID1 set	ID5–ID3 open, ID2,ID1 set	ID5,ID4 open, ID3,ID2 set, ID1 open	ID5 open, ID4 set, ID3,ID2 set, ID1	ID5,ID4 open, ID3,ID2,ID1 set	ID5 open, ID4 set, ID3,ID2 open, ID1 set

C440 21.5in LCD Jumper Setting				
Panel	AUO		LG	CMI
11s	18200169	18200835	18200166	18200168
Description	M215HW03 V1	M215HTN01.1	LM215WF4-TLG1	M215HGE-L21
Heads Position	ID5–ID1	ID5,ID4 open, ID3,ID2 set, ID1	ID5–ID3 open, ID2 set, ID1	ID5 open, ID4 set, ID3–ID1

Step 19. Reattach the system fan, speaker system, EMI cover, middle cover, stand holder, optical drive, foot cover and stand base.

Chapter 9. FRU lists

This chapter lists the information on the field replaceable units (FRUs).

Attention: Be sure to read and understand all the safety information before replacing any FRUs.

Notes: FRUs that have a 1 or 2 in the CRU column are Customer Replaceable Units (CRUs).

- **1**– identifies parts that are fairly simple to replace, requiring few or no tools.
- **2**– identifies parts that are slightly more difficult to replace.
- **N**-identifies parts that are not to be replaced by the customer.
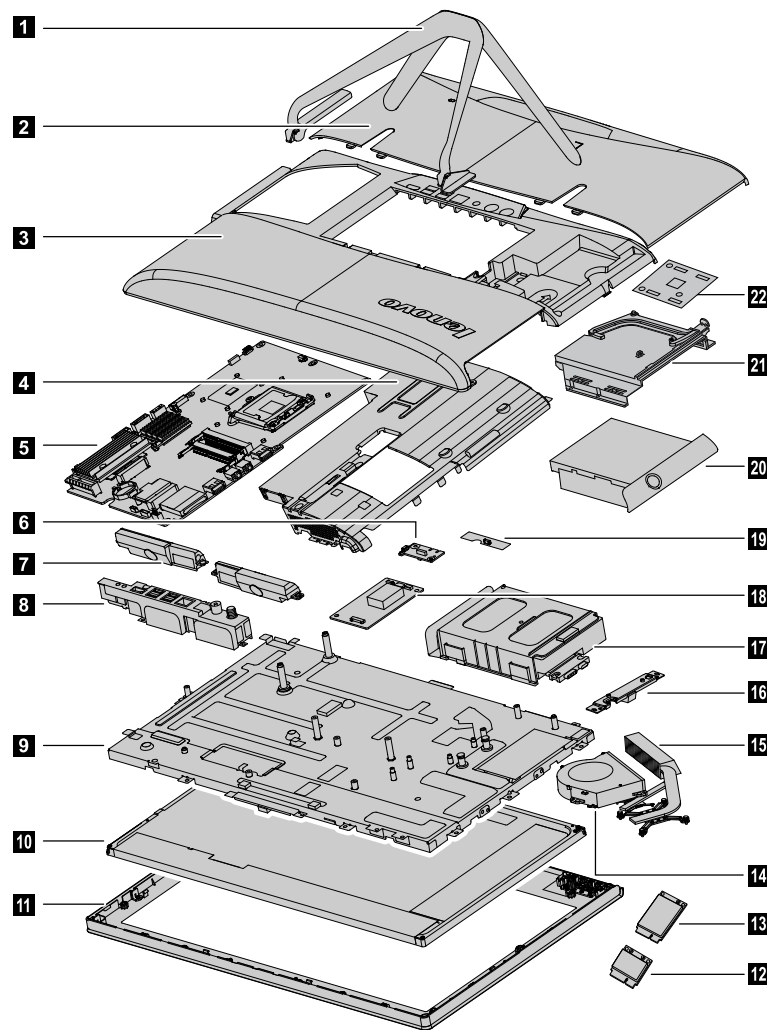
Item #	Description	Service Part Number	CRU ID
1	**Computer stand**		
	? ?	? ?	

2	**Foot cover**		
	? ?	? ?	
3	**Middle cover**		
	? ?	? ?	
4	**EMI cover**		
	? ?	? ?	
5	**Motherboard**		
	C340/C440 512M_GPU W/O USB3.0 MB	90000624	N
	C340/C440 2G_GPU W/O USB3.0 MB	90000626	N
	C340/C440 WIN8 UMA W/USB3.0 MB	90000841	N
	C340/C440 WIN8_PRO UMA W/USB3.0 MB	90000842	N
	C340/C440 WIN8 1G_GPU W/USB3.0 MB	90000844	N
	C340/C440 WIN8_PRO 1G_GPU W/USB3.0 MB	90000845	N
	C340/C440 WIN8 512M_GPU W/USB3.0 MB	90000847	N
	C340/C440 WIN8_PRO 512M_GPU W/USB3.0 MB	90000848	N
	C340/C440 WIN8 2G_GPU W/USB3.0 MB	90000850	N
	C340/C440 WIN8_PRO 2G_GPU W/USB3.0 MB	90000851	N
	C340/C440 WIN8 UMA W/O USB3.0 MB	90000853	N
	C340/C440 WIN8_PRO UMA W/O USB3.0 MB	90000854	N
	C340/C440 WIN8 1G_GPU W/O USB3.0 MB	90000856	N
	C340/C440 WIN8_PRO 1G_GPU W/O USB3.0 MB	90000857	N
	C340/C440 WIN8 512M_GPU W/O USB3.0 MB	90000859	N
	C340/C440 WIN8_PRO 512M_GPU W/O USB3.0 MB	90000860	N
	C340/C440 WIN8 2G_GPU W/O USB3.0 MB	90000862	N
	C340/C440 WIN8 PRO 2G_GPU W/O USB3.0 MB	90000863	N
6	**Power switch board**		
		? ?	N
7	**Speakers**		
	C340/C440 Speaker SUMSANG W/HOUSING(*2)	90201451	N
	C340/C440 Speaker Kuaida W/HOUSING(*2)	90201452	N
8	**Rear I/O module**		
	C440 Rear IO Board W/GPU W/HDMI W/O TV	90001422	N
	C440 Rear IO Board W/GPU W/O HDMI W/TV	90001423	N
	C440 Rear IO Board W/GPU W/O HDMI W/O TV	90001424	N
	C440 Rear IO Board W/O GPU W/HDMI W/O TV	90001425	N
	C340 Rear IO Board W/GPU W/HDMI W/O TV	90001413	N
	C340 Rear IO Board W/GPU W/O HDMI W/TV	90001414	N
	C340 Rear IO Board W/GPU W/O HDMI W/O TV	90001415	N
	C340 Rear IO Board W/O GPU W/HDMI W/O TV	90001416	N

9	Chassis		
		? ?	N
10	LED panel		
	LM200WD3-TLF1	18200171	N
	M200RW01 V6	18200419	N
	LTM200KT10-M01,M02	18200079	N
	LM215WF4-TLG1	18200166	N
	AUO M215HTN01.1	18200835	N
	M215HW03 V1	18200169	N
11	Front bezel		
	C340 Front Bezel（Black）	90201405	N
	C340 Front Bezel（White）	90201406	N
	C440 Front Bezel（Black）	90201458	N
	C440 Front Bezel（White）	90201459	N
12	Wi-Fi card		
	CBT AR9485 11n SB HMC WiFi card(wowl)	11200354	N
	LTN RTL8188CE 11n SB HMC WiFi card(wowl)	11200352	N
	CBT BCM94313 11n HMC WiFi card	20002505	N
13	TV-Tuner card		
	Avermedia H339BB DVB-T Mini TV Card	11200290	N
	Avermedia H339BA ATSC Mini TV Card	11200291	N
14	System fan		
	C340/C440 AVC Fan	90201347	N
	C340/C440 Delta Fan	90201349	N
15	Heat-sink		
	C340 AVC DIS HeatSink	90201656	N
	C440 Coolermaster DIS HeatSink	90201657	N
	C340 AVC UMA HeatSink	90201658	N
	C440 Coolermaster UMA HeatSink	90201659	N
	C340 AVC UMA HeatSink	90201348	N
	C340 Coolermaster UMA HeatSink	90201350	N
	C340 AVC DIS HeatSink	90201351	N
	C340 Coolermaster DIS HeatSink	90201352	N
16	Camera		
	Bison M720P VC OV9712 CAM	20200085	N
	CCY M720P VC OV9712 CAM	20200086	N

| 17	**Hard disk drive and bay**		
	WDXL500A WD3200AAKX-08ERMA0 320G HDD-LH	16200246	1
	SGT Pharaoh 4K ST320DM000 320G HDD-LH	16200177	1
	WDXL500SM6G WD5000AAKX-083CA1 500GHDD-LH	16200031	1
	WDXL500A WD5000AAKX-08ERMA0 500G HDD-LH	16200247	1
	SGT Pharaoh 4K ST500DM002 500G HDD-LH	16200178	1
	SGT Grenada ST1000DM003 1TB HDD-LH	16200182	1
	WD XL1000S WD10EZEX-08RKKA0 1TB HDD-LH	16200292	1
	SGT Grenada BP ST1000DM003 1TB HDD-LH	16200293	1
18	**Converter board**		
	C340/C440 AUO Converter	90000633	N
	C340/C440 LG Converter	90000634	N
	C340 SAMSUNG Converter	90000632	N
19	**Front function board**		
	C340/C440 Function Board	90000631	N
20	**Optical drive**		
	PLDS DS-8A8SH	25201487	1
	SN-208AB	25201108	1
	HLDS GT50N	25201635	1
	HLDS GT80N Slim Rambo w/o bezel-LH	25209015	1
	PLDS DS-8A9SH Slim Rambo w/o bezel-LH	25209016	1
	TSST SN-208DB Slim Rambo w/o bezel-LH	25209014	1
21	**Optical drive bracket**		
	? ?	??	N

Chapter 10. FRU lists-C440 Touch

This chapter lists the information on the field replaceable units (FRUs).

Attention: Be sure to read and understand all the safety information before replacing any FRUs.

Notes: FRUs that have a 1 or 2 in the CRU column are Customer Replaceable Units (CRUs).

- **1**– identifies parts that are fairly simple to replace, requiring few or no tools.
- **2**– identifies parts that are slightly more difficult to replace.
- **N**-identifies parts that are not to be replaced by the customer.
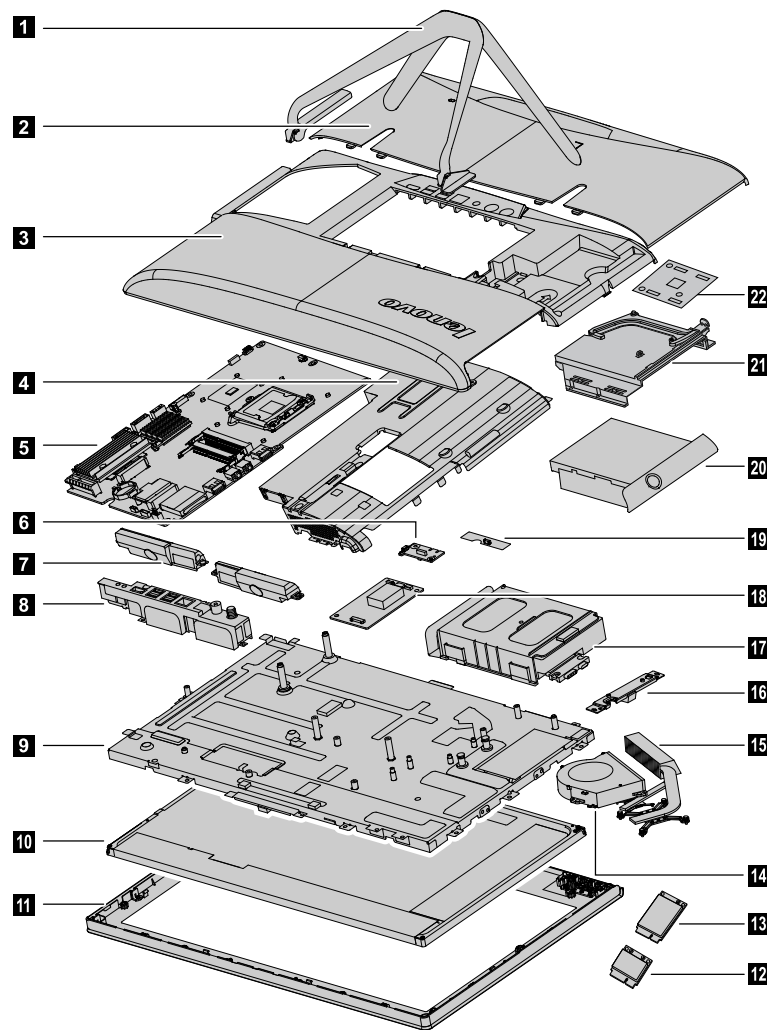
Part item	Name	Part Description (English)	FRU PN	CRU ID

Mainboard	Mainboard	C440 TOUCH NOK UMA W/USB3.0 MB	90002580	N
		C440 TOUCH NOK 2G_GPU W/USB3.0 MB	90002581	N
		C440 TOUCH W8S UMA W/USB3.0 MB	90002582	N
		C440 TOUCH W8S 2G_GPU W/USB3.0 MB	90002583	N
		C440 TOUCH W8P UMA W/USB3.0 MB	90002584	N
		C440 TOUCH W8P 2G_GPU W/USB3.0 MB	90002585	N
		C440 TOUCH NOK 1G_GPU W/USB3.0 MB	90002645	N
		C440 TOUCH NOK 512M_GPU W/USB3.0 MB	90002646	N
		C440 TOUCH NOK 2G_GPU W/USB2.0 MB	90002647	N
		C440 TOUCH NOK UMA W/USB2.0 MB	90002648	N
		C440 TOUCH NOK 512M_GPU W/USB2.0 MB	90002649	N
		C440 TOUCH NOK 1G_GPU W/USB2.0 MB	90002650	N
		C440 TOUCH W8S 1G_GPU W/USB3.0 MB	90002651	N
		C440 TOUCH W8S 512M_GPU W/USB3.0 MB	90002652	N
		C440 TOUCH W8S 2G_GPU W/USB2.0 MB	90002653	N
		C440 TOUCH W8S UMA W/USB2.0 MB	90002654	N
		C440 TOUCH W8S 512M_GPU W/USB2.0 MB	90002655	N
		C440 TOUCH W8S 1G_GPU W/USB2.0 MB	90002656	N
		C440 TOUCH W8P 1G_GPU W/USB3.0 MB	90002657	N
		C440 TOUCH W8P 512M_GPU W/USB3.0 MB	90002658	N
		C440 TOUCH W8P 2G_GPU W/USB2.0 MB	90002659	N
		C440 TOUCH W8P UMA W/USB2.0 MB	90002660	N
		C440 TOUCH W8P 512M_GPU W/USB2.0 MB	90002661	N
		C440 TOUCH W8P 1G_GPU W/USB2.0 MB	90002662	N
System Fan	System Fan	C340 AVC Fan	90201347	N
		C340 Delta Fan	90201349	N
Heatsink	Heatsink	C340 AVC DIS HeatSink	90201656	N
		C440 Coolermaster DIS HeatSink	90201657	N
		C340 AVC UMA HeatSink	90201658	N
		C440 Coolermaster UMA HeatSink	90201659	N
Speaker	Speaker	C340 Speaker SUMSANG W/HOUSING(*2)	90201451	N
		C340 Speaker Kuaida W/HOUSING(*2)	90201452	N
WLAN Antena	WLAN Antena	C440 TOUCH Wlan Antena	90202552	N
LCD Module	LCD Module	C440 TOUCH LCD MODULE FOR 2D AUO (GY)	90400117	N
		C440 TOUCH LCD MODULE FOR 2D LG (GY)	90400118	N
		C440 TOUCH LCD MODULE FOR 2D AUO (BL)	90400165	N
		C440 TOUCH LCD MODULE FOR 2D LG (BL)	90400166	N

Rear IO Board	Rear IO Board	C440 Rear IO Board W/GPU W/HDMI W/O TV	90001422	N
		C440 Rear IO Board W/GPU W/O HDMI W/TV	90001423	N
		C440 Rear IO Board W/GPU W/O HDMI W/O TV	90001424	N
		C440 Rear IO Board W/O GPU W/HDMI W/O TV	90001425	N
		C440 Rear IO Board W/GPU W/HDMI W/TV	90000641	N
		C440 Rear IO Board W/O GPU W/HDMI W/TV	90000642	N
Converter Board	Converter Board	C440 Converter For AUO Panel 2	90002680	N
		C340 LG Converter	90000634	N
Other Boards	Other Boards	C440 TOUCH Power LED Board W/IR	90002586	N
		C440 TOUCH Function key Board	90002587	N
Converter Board Cable	Converter Board Cable	C340 AUO Converter to Panel Cable	90201433	N
		C340 LG Converter to Panel Cable	90201435	N
		C340 Converter cable	90201432	N
LVDS cable	LVDS cable	C340 LVDS cable	90201426	N
Touch Control Board Cable	Touch Control Board Cable	C440 TOUCH Control Board to MB Cable	90202557	N
FFC	FFC	C440 TOUCH Board FFC Top Right	90202558	N
		C440 TOUCH Board FFC Top Left	90202559	N
		C440 TOUCH Board FFC Bottom	90202560	N
Other Cable	Other Cable	C340 ODD SATA cable	90201428	N
		C340 HDD SATA cable	90201429	N
		C340 Function board cable	90201430	N
		C340 Power board cable	90201431	N
		C340 TV tuner Cable For F type	90201453	N
		C340 TV tuner Cable For IEC type	90201454	N
		C340 DC in cable (120W)	90201448	N
		C440 TOUCH Sigle Mic Wecam Cable	90202553	N
Mechanical	Mechanical	C340 STAND(BOTTOM)	90201424	1
		C440 TOUCH Stand(Top)	90202551	2
		B540 HDD Bracket	90200894	N
		C340 DC IN BRACKET D6.5MM	90201444	N
		C340 SET SHIELDING FOR MB	90201450	N
		C340 ODD LATCH	90201449	N
		C440 ODD COVER	90201482	N
		C440 TOUCH Front Bezel(Black)	90202533	N
		C440 TOUCH Front Bezel(White)	90202534	N
		C440 TOUCH Rear Cover W/TV W/HDMI(B)	90202535	2
		C440 TOUCH Rear Cover W/TV W/O HDMI(B)	90202536	2
		C440 TOUCH Rear Cover W/O TV W/HDMI(B)	90202537	2
		C440 TOUCH Rear Cover W/O TV W/O HDMI(B)	90202538	2

		C440 TOUCH Rear Cover W/TV W/HDMI(W)	90202539	2
		C440 TOUCH Rear Cover W/TV W/O HDMI(W)	90202540	2
		C440 TOUCH Rear Cover W/O TV W/HDMI(W)	90202541	2
		C440TOUCH Rear Cover W/O TV W/O HDMI(W)	90202542	2
		C440 TOUCH Slide Cover W/TV W/HDMI(B)	90202543	2
		C440 TOUCH Slide Cover W/TV W/O HDMI(B)	90202544	2
		C440 TOUCH Slide Cover W/O TV W/HDMI(B)	90202545	2
		C440TOUCH Slide Cover W/O TV W/O HDMI(B)	90202546	2
		C440 TOUCH Slide Cover W/TV W/HDMI(W)	90202547	2
		C440 TOUCH Slide Cover W/TV W/O HDMI(W)	90202548	2
		C440 TOUCH Slide Cover W/O TV W/HDMI(W)	90202549	2
		C440TOUCH Slide Cover W/O TV W/O HDMI(W)	90202550	2
		C440 TOUCH ODD Bezel(Black)	90202554	N
		C440 TOUCH ODD Bezel(White)	90202555	N
		C440 TOUCH Middle Frame	90202556	N
CPU	CPU	IPC G530 2.4GHZ 65W HD GRAPHICS	1100089	N
		IPC G540 2.5GHZ 65W HD GRAPHICS	1100088	N
		I ICP G550 2.6/1066/2/1155/65 Q0 CPU®	1100539	N
		I G550T 2.2/1066/2/1155 35 Q0 CPU®	1100594	N
		I ICP G540T 2.1/1066/2/1155/35 Q0 CPU®	1100538	N
		I G1610 2.6/1333/2/1155 55 CPU	1100689	N
		I G1610T 2.3/1333/2/1155 35 CPU	1100691	N
		I G630 2.7/1333/3/1155/65 Q0 CPU(R)	1100104	N
		I G640 2.8/3/1066/1155 65 Q0 CPU	1100474	N
		I G645 2.9/1066/3/1155 65 Q0 CPU	1100578	N
		I G645T 2.5/1066/2.5/1155 35 Q0 CPU®	1100595	N
		I G2020 2.9/1333/3/1155 55 CPU	1100688	N
		I G2020T 2.5/1333/3/1155 35 CPU	1100690	N
		I G2030 3.0/1333/3/1155 55 CPU	1100857	N
		I G2030T 2.6/1333/3/1155 35 CPU	1100858	N
		I I3-3240 3.4/1600/3/1155 55 L1 CPU®	1100454	N
		I I3-3220 3.3/1600/3/1155 55 L1 CPU®	1100456	N
		I I3-2130 3.4/1333/3/1155 65 Q0 CPU®	1100102	N
		I I3-3240T 2.9/1600/3/1155 35 L1 CPU®	1100485	N
		I I3-3220T 2.8/1600/3/1155 35 L1 CPU(R)	1100484	N
		I I5-3330S 2.7/1600/6/1155 65 E1 CPU	1100394	N

RAM	2GB	M471B5773DH0-CK0	1100226	N
		HMT325S6CFR8C-PB	1100227	N
		M471B5773CHS-CK0 2GB D3-1600S MEMORY	1100614	N
		Mic_S D9PFJ 2GB D3-1600S MEMORY	1100646	N
		MT8KTF25664HZ-1G6M1	1100228	N
		Elp_R J2108EDBG-GN-F 2G D3L-1600SMEMORY	1100750	N
		HMT425S6AFR6A-PB 2GB D3L-1600SMemory-HF	1100643	N
		Elp_R J2108BDBG-GN-F 2GB D3-1600S MEMORY (RMT3150ED58E8W-1600)	1100425	N
	4G	M471B5273DH0-CK0	1100230	N
		HMT351S6CFR8C-PB	1100231	N
		MT16KTF51264HZ-1G6M1	1100232	N
		Mic_S D9PFJ 4GB D3-1600S MEMORY	1100641	N
		M471B5273CH0-CK0 4GB D3-1600S MEMORY	1100613	N
		HMT451S6AFR8A-PB 4GB D3L-1600SMemory-HF	1100638	N
		M471B5173BH0-YK0 4G D3L-1600S MEMORY	1100856	N
		Elp_R J4208EBBG-GN-F 4G D3L-1600S MEMORY (RMT3170EB68F9W-1600)	1100640	N
		Elp_R J2108BDBG-GN-F 4GB D3-1600S MEMORY (RMT3160ED58E9W-1600)	1100426	N
	4GB(2*2G)	M471B5773DH0-CK0	1100226	N
		HMT325S6CFR8C-PB	1100227	N
		MT8KTF25664HZ-1G6M1	1100228	N
		M471B5773CHS-CK0 2GB D3-1600S MEMORY	1100614	N
		Elp_R J2108EDBG-GN-F 2G D3L-1600SMEMORY	1100750	N
		HMT425S6AFR6A-PB 2GB D3L-1600S Memory-HF	1100643	N
		Mic_S D9PFJ 2GB D3-1600S MEMORY	1100646	N
		Elp_R J2108BDBG-GN-F 2GB D3-1600S MEMORY (RMT3150ED58E8W-1600)	1100425	N
	6GB(2G+4G)	M471B5773DH0-CK0	1100226	N
		M471B5273DH0-CK0	1100230	N
		HMT325S6CFR8C-PB	1100227	N
		HMT351S6CFR8C-PB	1100231	N
		MT8KTF25664HZ-1G6M1	1100228	N
		MT16KTF51264HZ-1G6M1	1100232	N
		M471B5773CHS-CK0 2GB D3-1600S MEMORY	1100614	N
		M471B5273CH0-CK0 4GB D3-1600S MEMORY	1100613	N
		Mic_S D9PFJ 2GB D3-1600S MEMORY	1100646	N

		Mic_S D9PFJ 4GB D3-1600S MEMORY	1100641	N
		HMT451S6AFR8A-PB 4GB D3L-1600SMemory-HF	1100638	N
		HMT425S6AFR6A-PB 2GB D3L-1600SMemory-HF	1100643	N
		Elp_R J2108BDBG-GN-F 2GB D3-1600S MEMORY (RMT3150ED58E8W-1600)	1100425	N
		Elp_R J2108BDBG-GN-F 4GB D3-1600S MEMORY (RMT3160ED58E9W-1600)	1100426	N
	8GB(2*4G)	M471B5273DH0-CK0	1100230	N
		HMT351S6CFR8C-PB	1100231	N
		Mic_S D9PFJ 4GB D3-1600S MEMORY	1100641	N
		M471B5273CH0-CK0 4GB D3-1600S MEMORY	1100613	N
		MT16KTF51264HZ-1G6M1	1100232	N
		HMT451S6AFR8A-PB 4GB D3L-1600SMemory-HF	1100638	N
		M471B5173BH0-YK0 4G D3L-1600S MEMORY	1100856	N
		Elp_R J2108BDBG-GN-F 4GB D3-1600S MEMORY (RMT3160ED58E9W-1600)	1100426	N
		Elp_R J4208EBBG-GN-F 4G D3L-1600S MEMORY (RMT3170EB68F9W-1600)	1100640	N
HDD	320G	WDXL500A WD3200AAKX-08ERMA0 320G HDD-LH	16200246	2
		SGT Pharaoh 4K ST320DM000 320G HDD-LH	16200177	2
	500G	WDXL500SM6G WD5000AAKX-083CA1 500GHDD-LH	16200031	2
		WDXL500A WD5000AAKX-08ERMA0 500G HDD-LH	16200247	2
		SGT Pharaoh 4K ST500DM002 500G HDD-LH	16200178	2
	1T	SGT Grenada ST1000DM003 1TB HDD-LH	16200182	2
		WD XL1000S WD10EZEX-08RKKA0 1TB HDD-LH	16200292	2
		SGT Grenada BP ST1000DM003 1TB HDD-LH	16200293	2
	2T	SGT Grenada BP ST2000DM001 2TB HDD-LH	16200294	2
ODD	ODD	PLDS DS-8A8SH	25201487	2
		SN-208AB	25201108	2
		HLDS GT50N	25201635	2
		HLDS GT80N Slim Rambo w/o bezel-LH	25209015	2
		PLDS DS-8A9SH Slim Rambo w/o bezel-LH	25209016	2
		TSST SN-208DB Slim Rambo w/o bezel-LH	25209014	2

Power Adapter	120W	Delta ADP-120ZB BBGP 120W ADAPTER(R)	36001857	1
		LITEON PA-1121-04LA 120W ADAPT®	36200226	1
	150W	LITEON PA-1151-11VA 150W ADAPTER	36001875	1
		FSP150-RAB 150W ADAPTER ADAPT®	36001876	1
WLAN	WLAN	CBT AR9485 11n SB HMC WiFi card(wowl)	11200354	1
		LTN RTL8188CE 11n SB HMC WiFi card(wowl)	11200352	1
		CBT BCM94313 11n HMC WiFi card	20002505	1
TV Tuner	DVB-T card	Avermedia H339BB DVB-T Mini TV Card	11200290	1
	ATSC card	Avermedia H339BA ATSC Mini TV Card	11200291	1
	DVB-T card	Avermedia H334 DVB-T Mini TV Card	11201071	1
	ATSC card	Avermedia H334 ATSC Mini TV Card	11201072	1
Rempote controller	IR contorller	Philips Win8 IR remote controller--Black	888900006	1
	IR contorller	Philips Win8 IR remote controller--White	888900007	1
Camera	Camera	Bison M720P VC OV9712 CAM	20200085	1
		CCY M720P VC OV9712 CAM	20200086	1
Keyboard	USB Keyboard	Sunrex EKB-10YA(US) B-Silk USB KB-LVT8	25209111	1
		Primax KB4721(US) B-Silk USB KB-LVT8	25209112	1
		Chicony KU-1153(US) B-Silk USB KB-LVT8	25209113	1
		Sunrex EKB-10YA(TW) B-Silk USB KB-LVT8	25209114	1
		Sunrex EKB-10YA(TH) B-Silk USB KB-LVT8	25209115	1
		Sunrex EKB-10YA(CZ-SL) B-S USB KB-LVT8	25209116	1
		Sunrex EKB-10YA(IN) B-Silk USB KB-LVT8	25209117	1
		Sunrex EKB-10YA(RU) B-Silk USB KB-LVT8	25209118	1
		Sunrex EKB-10YA(UK) B-Silk USB KB-LVT8	25209119	1
		Sunrex EKB-10YA(Nordic) B-S USB KB-LVT8	25209120	1
		Sunrex EKB-10YA(LA) B-Silk USB KB-LVT8	25209121	1
		Sunrex EKB-10YA(AR) B-Silk USB KB-LVT8	25209122	1
		Sunrex EKB-10YA(SW) B-Silk USB KB-LVT8	25209123	1
		Sunrex EKB-10YA(GE) B-Silk USB KB-LVT8	25209124	1
		Sunrex EKB-10YA(TR) B-Silk USB KB-LVT8	25209125	1
		Sunrex EKB-10YA(SP) B-Silk USB KB-LVT8	25209126	1
		Sunrex EKB-10YA(SL) B-Silk USB KB-LVT8	25209127	1
		Sunrex EKB-10YA(IT) B-Silk USB KB-LVT8	25209128	1
		Sunrex EKB-10YA(HB) B-Silk USB KB-LVT8	25209129	1
		Sunrex EKB-10YA(FR) B-Silk USB KB-LVT8	25209130	1
		Sunrex EKB-10YA(GK) B-Silk USB KB-LVT8	25209131	1
		Sunrex EKB-10YA(HG) B-Silk USB KB-LVT8	25209132	1
		Sunrex EKB-10YA(BG) B-Silk USB KB-LVT8	25209133	1
		Sunrex EKB-10YA(HR) B-Silk USB KB-LVT8	25209134	1
		Sunrex EKB-10YA(JP) B-Silk USB KB-LVT8	25209135	1

		Sunrex EKB-10YA(EN-FR) B-S USB KB-LVT8	25209136	1
		Sunrex EKB-10YA(PT) B-Silk USB KB-LVT8	25209137	1
		Sunrex EKB-10YA(BE-EN) B-S USB KB-LVT8	25209138	1
		Sunrex EKB-10YA(DU) B-S USB KB-LVT8	25209139	1
		Sunrex EKB-10YA(US) W-Silk USB KB-LVT8	25209145	1
		Primax KB4721(US) W-Silk USB KB-LVT8	25209146	1
		Sunrex EKB-10YA(TW) W-Silk USB KB-LVT8	25209147	1
		Sunrex EKB-10YA(TH) W-Silk USB KB-LVT8	25209148	1
		Sunrex EKB-10YA(CZ-SL) W-S USB KB-LVT8	25209149	1
		Sunrex EKB-10YA(IN) W-Silk USB KB-LVT8	25209150	1
		Sunrex EKB-10YA(RU) W-Silk USB KB-LVT8	25209151	1
		Sunrex EKB-10YA(UK) W-Silk USB KB-LVT8	25209152	1
		Sunrex EKB-10YA(Nordic) W-S USB KB-LVT8	25209153	1
		Sunrex EKB-10YA(LA) W-Silk USB KB-LVT8	25209154	1
		Sunrex EKB-10YA(AR) W-Silk USB KB-LVT8	25209155	1
		Sunrex EKB-10YA(SW) W-Silk USB KB-LVT8	25209156	1
		Sunrex EKB-10YA(GE) W-Silk USB KB-LVT8	25209157	1
		Sunrex EKB-10YA(TR) W-Silk USB KB-LVT8	25209158	1
		Sunrex EKB-10YA(SP) W-Silk USB KB-LVT8	25209159	1
		Sunrex EKB-10YA(SL) W-Silk USB KB-LVT8	25209160	1
		Sunrex EKB-10YA(IT) W-Silk USB KB-LVT8	25209161	1
		Sunrex EKB-10YA(HB) W-Silk USB KB-LVT8	25209162	1
		Sunrex EKB-10YA(FR) W-Silk USB KB-LVT8	25209163	1
		Sunrex EKB-10YA(GK) W-Silk USB KB-LVT8	25209164	1
		Sunrex EKB-10YA(HG) W-Silk USB KB-LVT8	25209165	1
		Sunrex EKB-10YA(BG) W-Silk USB KB-LVT8	25209166	1
		Sunrex EKB-10YA(HR) W-Silk USB KB-LVT8	25209167	1
		Sunrex EKB-10YA(JP) W-Silk USB KB-LVT8	25209168	1
		Sunrex EKB-10YA(EN-FR) W-S USB KB-LVT8	25209169	1
		Sunrex EKB-10YA(PT) W-Silk USB KB-LVT8	25209170	1
		Sunrex EKB-10YA(BE-EN) W-S USB KB-LVT8	25209171	1
		Sunrex EKB-10YA(DU) W-S USB KB-LVT8	25209172	1
	Wireless Keyboard	Liteon SK-8861(US) 2.4G KB-Black8	25209175	2
		Liteon SK-8861(US-MY) 2.4G KB-Black8	25209176	2
		Liteon SK-8861(TW) 2.4G KB-Black8	25209177	2
		Liteon SK-8861(TH) 2.4G KB-Black8	25209178	2
		Liteon SK-8861(CS-SK) 2.4G KB-Black8	25209179	2
		Liteon SK-8861(US-IN) 2.4G KB-Black8	25209180	2
		Liteon SK-8861(RU) 2.4G KB-Black8	25209181	2
		Liteon SK-8861(GB) 2.4G KB-Black8	25209182	2

		Liteon SK-8861(Nordic) 2.4G KB-Black8	25209183	2
		Liteon SK-8861(LA) 2.4G KB-Black8	25209184	2
		Liteon SK-8861(LA-AR) 2.4G KB-Black8	25209185	2
		Liteon SK-8861(SA) 2.4G KB-Black8	25209186	2
		Liteon SK-8861(CH) 2.4G KB-Black8	25209187	2
		Liteon SK-8861(DE) 2.4G KB-Black8	25209188	2
		Liteon SK-8861(TR) 2.4G KB-Black8	25209189	2
		Liteon SK-8861(ES) 2.4G KB-Black8	25209190	2
		Liteon SK-8861(SL) 2.4G KB-Black8	25209191	2
		Liteon SK-8861(IT) 2.4G KB-Black8	25209192	2
		Liteon SK-8861(IL) 2.4G KB-Black8	25209193	2
		Liteon SK-8861(FR) 2.4G KB-Black8	25209194	2
		Liteon SK-8861(GR) 2.4G KB-Black8	25209195	2
		Liteon SK-8861(HU) 2.4G KB-Black8	25209196	2
		Liteon SK-8861(BG) 2.4G KB-Black8	25209197	2
		Liteon SK-8861(KR) 2.4G KB-Black8	25209198	2
		Liteon SK-8861(JP) 2.4G KB-Black8	25209199	2
		Liteon SK-8861(EN-FR) 2.4G KB-Black8	25209200	2
		Liteon SK-8861(PT) 2.4G KB-Black8	25209201	2
		Liteon SK-8861(BE-EN) 2.4G KB-Black8	25209202	2
		Liteon SK-8861(DU) 2.4G KB-Black8	25209203	2
		Liteon SK-8861(US) 2.4G KB-White8	25210987	2
		Liteon SK-8861(US-MY) 2.4G KB-White8	25210988	2
		Liteon SK-8861(TW) 2.4G KB-White8	25210989	2
		Liteon SK-8861(TH) 2.4G KB-White8	25210990	2
		Liteon SK-8861(CS-SK) 2.4G KB-White8	25210991	2
		Liteon SK-8861(US-IN) 2.4G KB-White8	25210992	2
		Liteon SK-8861(RU) 2.4G KB-White8	25210993	2
		Liteon SK-8861(GB) 2.4G KB-White8	25210994	2
		Liteon SK-8861(Nordic) 2.4G KB-White8	25210995	2
		Liteon SK-8861(LA) 2.4G KB-White8	25210996	2
		Liteon SK-8861(LA-AR) 2.4G KB-White8	25210997	2
		Liteon SK-8861(SA) 2.4G KB-White8	25210998	2
		Liteon SK-8861(CH) 2.4G KB-White8	25210999	2
		Liteon SK-8861(DE) 2.4G KB-White8	25211000	2
		Liteon SK-8861(TR) 2.4G KB-White8	25211001	2
		Liteon SK-8861(ES) 2.4G KB-White8	25211002	2
		Liteon SK-8861(SL) 2.4G KB-White8	25211003	2
		Liteon SK-8861(IT) 2.4G KB-White8	25211004	2
		Liteon SK-8861(IL) 2.4G KB-White8	25211005	2

		Liteon SK-8861(FR) 2.4G KB-White8	25211006	2
		Liteon SK-8861(GR) 2.4G KB-White8	25211007	2
		Liteon SK-8861(HU) 2.4G KB-White8	25211008	2
		Liteon SK-8861(BG) 2.4G KB-White8	25211009	2
		Liteon SK-8861(KR) 2.4G KB-White8	25211010	2
		Liteon SK-8861(JP) 2.4G KB-White8	25211011	2
		Liteon SK-8861(EN-FR) 2.4G KB-White8	25211012	2
		Liteon SK-8861(PT) 2.4G KB-White8	25211013	2
		Liteon SK-8861(BE-EN) 2.4G KB-White8	25211014	2
		Liteon SK-8861(US-EU) 2.4G KB-White8	25211015	2
Mouse	USB Mouse	Liteon LXH-SM-8825 Black Silk Mouse-LVT	25200528	1
		Chicony LXH-MSU-1111 Black Silk Mouse-LVT	25200529	1
		Sunrex LXH-EMS-10ZA Black Silk Mouse-LVT	25200530	1
		Liteon LXH-SM-8825 W-Silk Mouse	25201068	1
		Sunrex LXH-EMS-10ZA W-Silk Mouse	25201322	1
	Wireless Mouse	Liteon SM-8861(WW) Mouse Black	25203464	2
		Liteon SM-8861 Mouse(No Battery) Black	25203465	2
		Liteon SM-8861 Mouse(MY) Black	25203466	2
		Liteon SM-8861(JP) Mouse-Black	25205773	2
		Liteon SM-8861(WW) 2.4G Mouse White	25211016	2
		Liteon SM-8861 2.4G Mouse(No Battery)WTE	25211017	2
		Liteon SM-8861 2.4G Mouse(MY) White	25211018	2
		Liteon SM-8861 2.4G Mouse(JP) White	25211019	2
Power Cord	Power Cord	longwell Black Single-end 1.0m3wire ULCSA Power Cable	31033857	1
		Volex 1m C5 US Power Cable	31033858	1
		Luxshare1.0m C5 US Power Cable	31049517	1
		longwell Black Single-end 1.0m SAA Power Cable	31035397	1
		Volex 1m C5 Australia Power Cable	31049500	1
		Luxshare1.0m C5 Australia Power Cable	31049520	1
		longwell Black Single-end 1.0m Japan C5 Power Cable	31038887	1
		Volex 1m C5 Japan Power Cable	31049506	1
		Luxshare1.0m C5 Japan Power Cable	31049519	1
		Longwell JPN 3_2pin convert AC plug®	31039655	1
		Luxshare 1.0M C5 2pin Japan power cord	31503425	1
		Longwell 1.0M C5 2pin Japan power cord	31503423	1
		Volex1.0M C5 2pin Japan power cord	31503424	1
		Grandsun Black Single-end 1.0m3wire CCC Power Cable (R)	31032953	1
		Luxshare1.0M C5 CCC Power Cable	31045147	1

		Volex 1m C5 UK Power Cable	31049496	1
		Luxshare1.0m C5 UK Power Cable	31503352	1
		longwell Black Single-end 1.0m ASTA Power Cable	31035396	1
		longwell Black Single-end 1.0m VDE Power Cable	31035332	1
		Volex 1m C5 Europe Power Cable	31049497	1
		Luxshare1.0m C5 Europe Power Cable	31049518	1
		longwell Black Single-end 1.0m India Power Cable	31035395	1
		Luxshare1.0m C5 India Power Cable	31503353	1
		Longwell Black Single-end 1.0m Italy C5 Power Cable ®	31039104	1
		Luxshare1.0m C5 Italy Power Cable	31503359	1
		Volex 1m C5 Italy Power Cable	31049504	1
		Longwell Black Single-end 1.0m Brazil Power Cable ®	31035828	1
		Luxshare1.0m C5 Brazil Power Cable	31503357	1
		Volex 1m C5 Brazil Power Cable	31049505	1
		Longwell Black Single-end 1.0m Argentina C5 Power Cable ®	31039100	1
		Luxshare1.0m C5 LA US Power Cable	31503356	1
		Volex 1m C5 LA US Power Cable	31049507	1
		Longwell Black Single-end 1.0m Denmark C5 Power Cable ®	31039101	1
		Luxshare1.0m C5 Denmarl Power Cable	31503360	1
		Volex 1m C5Denmarl Power Cable	31049503	1
		Longwell Black Single-end 1.0m Switzerland C5 Power Cable ®	31039103	1
		Luxshare1.0m C5 Switzerland Power Cable	31503361	1
		Volex 1m C5Switzerland Power Cable	31049508	1
		Longwell Black Single-end 1.0m Israel C5 Power Cable ®	31039107	1
		Luxshare1.0m C5 Isereal Power Cable	31503362	1
		Volex 1m C5 Israel Power Cable	31049502	1
		Longwell Black Single-end 1.0m Taiwan C5 Power Cable ®	31038885	1
		Luxshare1.0m C5 Taiwan Power Cable	31503354	1
		Volex 1m C5 Taiwan Power Cable	31049499	1
		Longwell Black Single-end 1.0m Korea C5 Power Cable ®	31039106	1
		Luxshare1.0m C5 Korea Power Cable	31503358	1
		Volex 1m C5 Korea Power Cable	31049498	1

		Longwell Black Single-end 1.0m SA C5 Power Cable ®	31039105	1
		Luxshare1.0m C5 SA Power Cable	31503355	1
		Volex 1m C5 SA Power Cable	31049501	1

Chapter 11. General information

This chapter provides general information that applies to all computer models covered by this manual.

Additional Service Information

This chapter provides additional information that the service representative might find helpful.

Power management

Power management reduces the power consumption of certain components of the computer such as the system power supply, processor, hard disk drives, and some monitors.

Advanced configuration and power interface (ACPI) BIOS

As this computer has an ACPI BIOS system, the operating system is allowed to control the power management features of the computer and the settings for Advanced Power Management (APM) BIOS mode is ignored. Not all operating systems support ACPI BIOS mode.

Automatic Power-On features

The Automatic Power-On features within the Power Management menu allow you to enable and disable features that turn on the computer automatically.

- Wake Up on Alarm: You can specify a date and time at which the computer will be turned on automatically. This can be either a single event , a daily event or a weekly event.
- Wake Up on LAN: This feature allows LAN adapter card to wake the System.