



# All-In-One 310 Desktop Hardware Maintenance Manual

Machine Types:F0CK [AIO 310-20ASR / Energy Star] / F0CL [AIO 310-20IAP / Energy Star]





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310-20IAP / Energy Star]

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## Chapter 1. About this manual

This manual contains service and reference information for All-In-One 310 desktop computer 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.

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### Important Safety Information

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

Veillez 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。



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## Chapter 2. Safety information

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

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### 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 lbs.) 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 nonconductive 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 generatorsand 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.

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## 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.

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## 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.

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## 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.

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## 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
<ol style="list-style-type: none"> <li>1. Turn everything OFF.</li> <li>2. First, attach all cables to devices.</li> <li>3. Attach signal cables to connectors.</li> <li>4. Attach power cords to outlet.</li> <li>5. Turn device ON.</li> </ol>	<ol style="list-style-type: none"> <li>1. Turn everything OFF.</li> <li>2. First, remove power cords from outlets.</li> <li>3. Remove signal cables from connectors.</li> <li>4. Remove all cables from devices.</li> </ol>



**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.

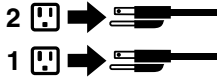


		
≥18 kg (37 lbs)	≥32 kg (70.5 lbs)	≥55 kg (121.2 lbs)

**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.



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## Chapter 3. General information

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

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### Specifications

This section lists the physical specifications for your computer.

**This section lists the physical specifications for your computer.**

#### Type All-In-One 310 Desktop Computer

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



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## 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.



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## 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. Retype the password to confirm, then press the **Enter** key. If you typed the password correctly, the password will be installed. A Setup Notice will be displayed confirming that your changes has been saved.
5. Return to the Lenovo BIOS Setup Utility program menu and select the **Exit** option.
6. Select **Save Changes and Exit** from the menu.

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. Retype the new password to confirm it. If you typed the new password correctly, the new password will be installed. A Setup Notice will be displayed confirming that your changes have been saved.
5. Return to the Lenovo BIOS Setup Utility program menu and select the **Exit** option.
6. Select **Save Changes and Exit** from the menu.

To delete a previously set 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 and press the **Enter** key.
4. Leave each new password line item blank, then press the **Enter** key. A Setup Notice will be displayed confirming that your changes have been saved.
5. Return to the Lenovo BIOS Setup Utility program menu and select the **Exit** option.
6. 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. Retype the password to confirm. If you typed the password correctly, the password will be installed.
5. Return to the Lenovo BIOS Setup Utility program menu and select the **Exit** option.
6. Select **Save Changes and Exit** from the menu.

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. Retype the new password to confirm it. If you typed the new password correctly, the new password will be installed. A Setup Notice will be displayed confirming that your changes have been saved.
5. Return to the Lenovo BIOS Setup Utility program menu and select the **Exit** option.
6. Select **Save Changes and Exit** from the menu.

To delete a previously set 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 and press the **Enter** key.
4. Leave each new password line item blank, then press Enter. A Setup Notice will be displayed confirming that your changes have been saved.
5. Return to the Lenovo BIOS Setup Utility program menu and select the **Exit** option.
6. Select **Save Changes and Exit** from the menu.

---

## Enabling or disabling a device

The <b>Devices</b> options is used to enable or disable user access to the following:	
<b>USB Functions</b>	Select whether to enable or disable <b>USB</b> (Universal Serial Bus) functions. If the functions are disabled, no <b>USB</b> devices can be used.

<b>SATA Mode</b>	Select <b>Disabled/IDE/AHCI</b> mode. Device driver support is required for <b>AHCI</b> or <b>RAID</b> . Depending on how the hard disk drive image was installed, changing this setting may prevent the system from booting.
<b>Onboard Audio Controller</b>	Select whether to enable or disable the <b>Onboard Audio Controller</b> . When this feature is set to <b>Disabled</b> all devices connected to the audio connectors (e.g. headphones or a microphone) are disabled and cannot be used.
<b>Onboard Ethernet Controller or LAN Boot Agent</b>	Select whether to enable or disable the <b>Onboard Ethernet Controller</b> , or select whether to enable or disable load onboard <b>PXE (Preboot Execution Environment)</b> .

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 Drivers 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.

---

## 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  $\bar{\text{~}}$  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.

---

## Changing booting mode

There are two boot modes UEFI and Legacy for your computer. The default boot mode for your computer is the UEFI mode. If you need to install a legacy Windows operating system (any operating system before Windows 8) on your computer, you must change the boot mode to Legacy support. The legacy Windows operating system cannot be installed if you don't change the boot mode.

To change the booting mode, 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. Select the **Boot Priority**, then press **Enter** key. From the pop up “**Boot Priority**” window choose **Legacy** mode.
4. Return to the Lenovo BIOS Setup Utility program menu and select the **Exit** option.
5. Select **Save Changes and Exit** 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 have the following causes.

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: <ol style="list-style-type: none"><li>1. Attempt to back up the data on the failing hard disk drive.</li><li>2. Use the operating system to format the hard disk drive.</li></ol>
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: <ul style="list-style-type: none"><li>• Power Cord</li><li>• On/Off Switch connector</li><li>• System Board Power Supply connectors</li><li>• Microprocessor connections</li></ul>	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 <b>Keyboardless operation</b> in <b>Startup</b> and set the option to <b>Enabled</b> . 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 components and connectors

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

The following illustrations will help you to locate the various components and connectors on your computer.

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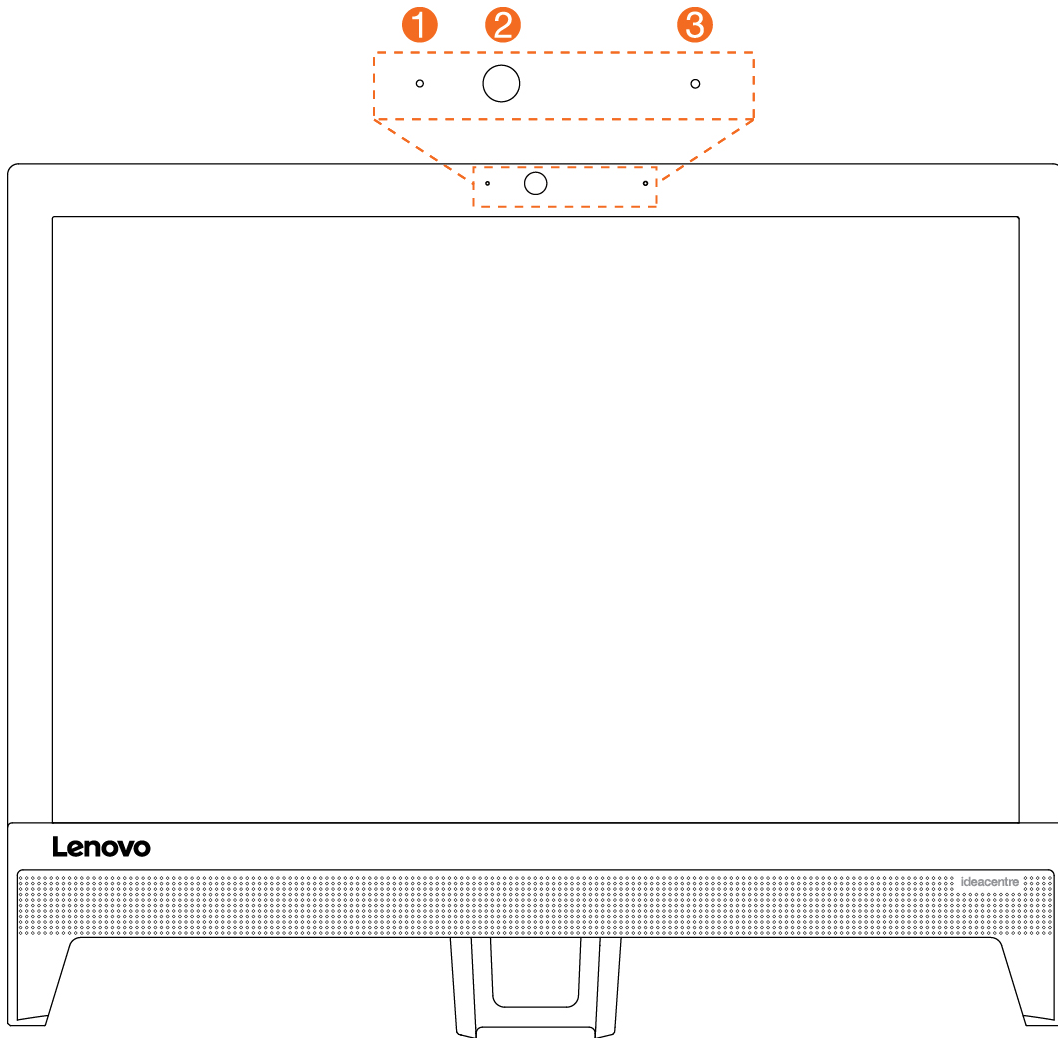
### Locating connectors, controls and components

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

#### Front 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.

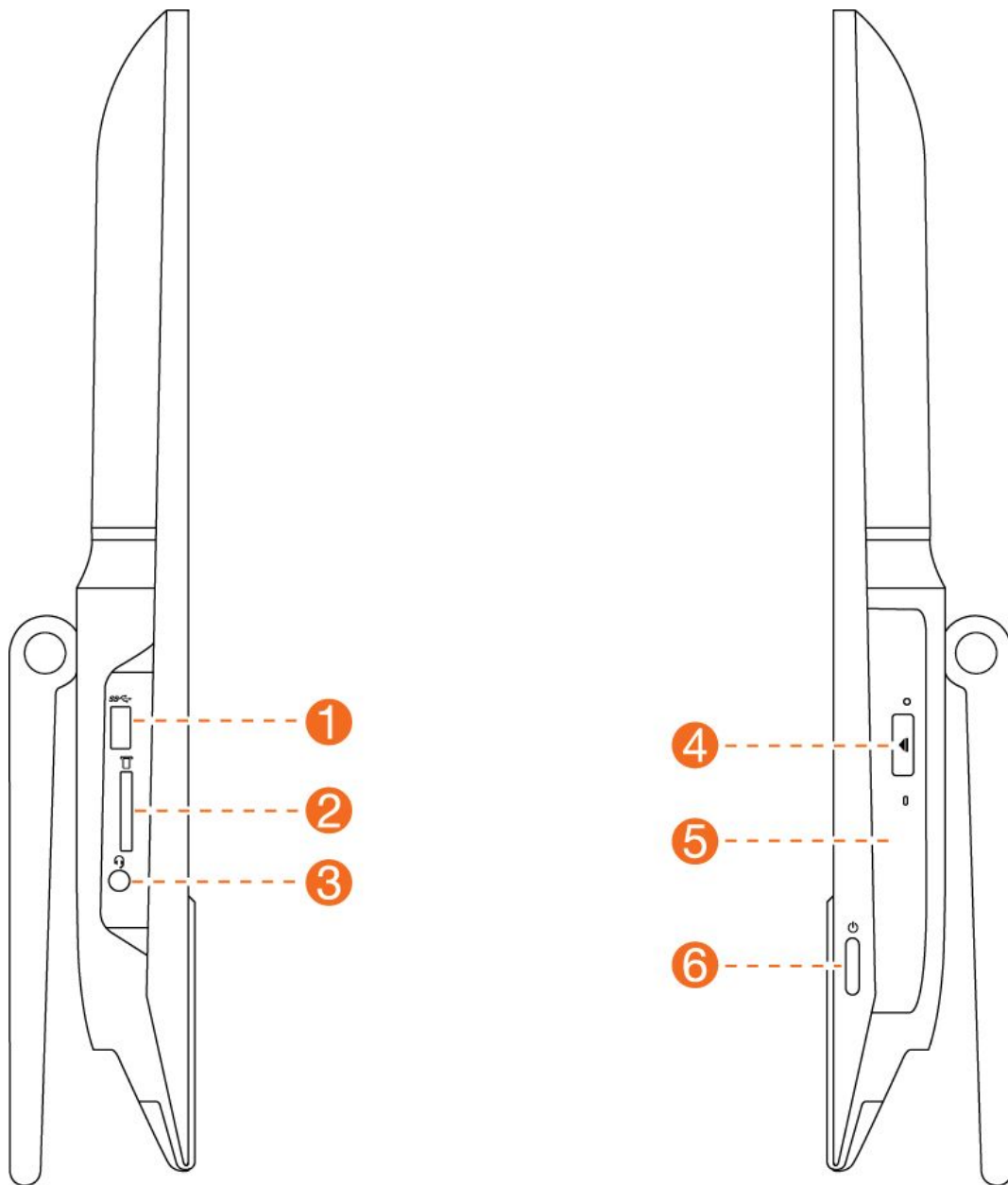


1. Built-in microphone	3. Camera indicator
2. Built-in camera	



## Left and right view

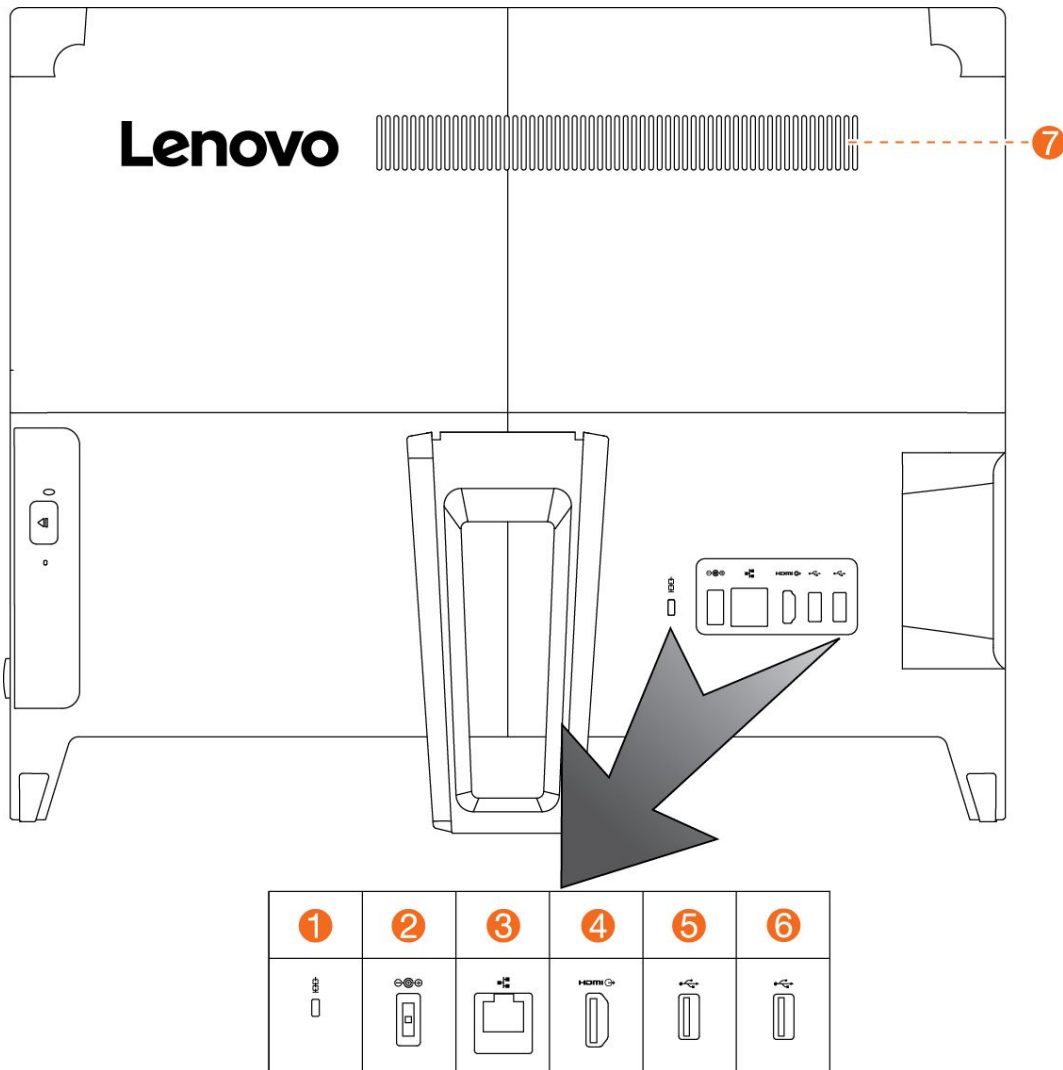
The following illustration shows the location of connectors, controls and components on the left and right side of the computer.



1. USB 3.0 connector	4. Optical drive eject button
2. Memory card reader	5. Optical drive
3. USB 3.0 connectors (selected models only)	6. Power button

## Rear view

The following illustration shows the location of connectors and components on the rear of the computer.



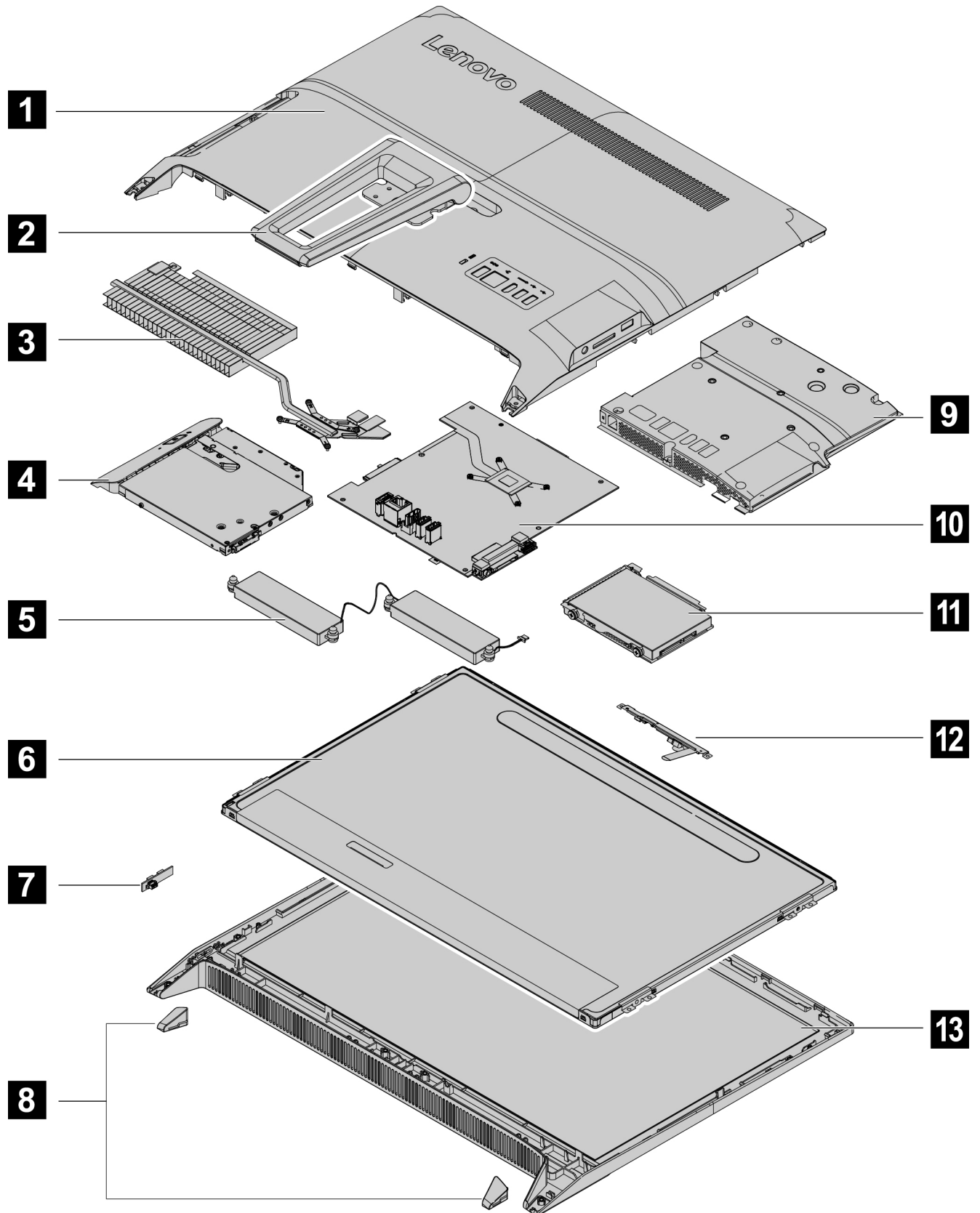
1. Security cable slot	5. USB 2.0 connector
2. Power connector	6. USB 2.0 connector
3. Ethernet connector	7. Air vents
4. HDMI-out connector	

## Hardware components

The following illustration shows the components that make up your computer.

### 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. Rear cover	8. Rubber feet
2. Computer stand	9. EMI cover
3. Heat-sink	10. Motherboard
4. Optical drive	11. Hard disk drive
5. Speaker system	12. Camera, microphone module
6. LED panel	13. Front bezel

---

## 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://support.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

### To replace the keyboard and mouse:

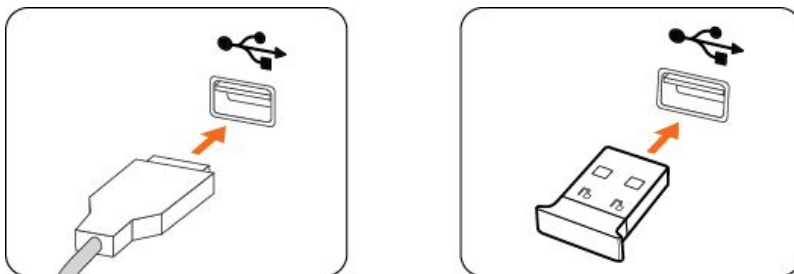
- Step 1. Remove any media (disks, CDs, DVDs or memory cards) from the drives, shut down the operating system, and turn off the computer and all attached devices.
- Step 2. Unplug all power cords from electrical outlets.
- Step 3. Disconnect all cables attached to the computer. This includes power cords, 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.

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

- Step 4. Disconnect the defective keyboard cable from the computer and connect the new keyboard cable to the same connector.

**Note:** The mouse can be replaced using the same method.

- Step 5. Connect the new mouse or keyboard to the USB port as shown.

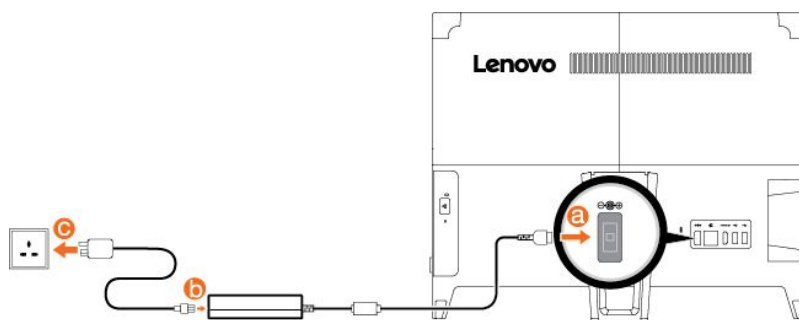


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## Replacing the power adapter

### To replace the power adapter:

- 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. Locate the connector for the power cord. Refer to “Rear view”.
- Step 3. Disconnect the failing power adapter from the computer.
- Step 4. To install the new power adapter:
  - a. Connect the new power adapter to the same connector.



---

## Removing the rear cover

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

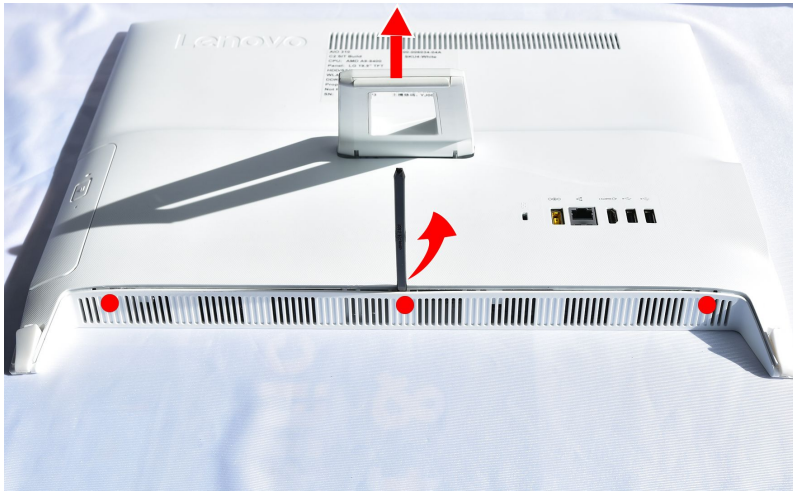
**Note:** It may be helpful to place the computer face-down on a soft flat surface for this procedure. Lenovo recommends that you use a blanket, towel, or other soft cloth to protect the touch screen from scratches or other damage.

### To remove the rear cover:

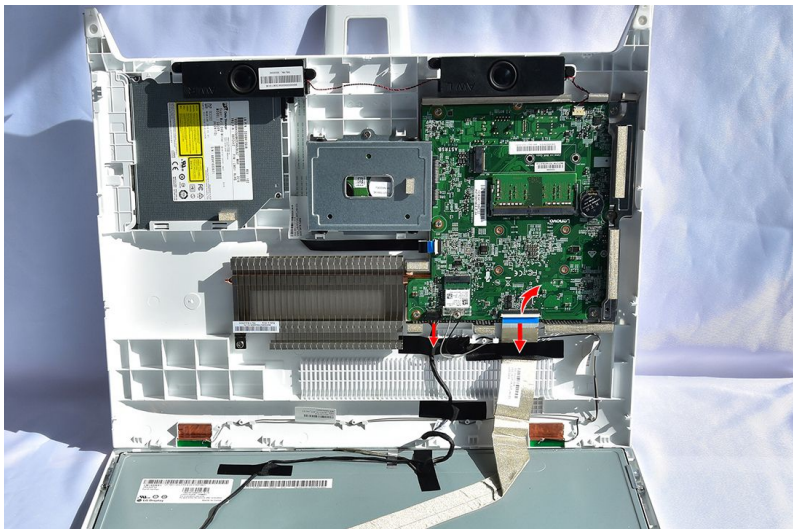
- Step 1. Remove any media (disks, CDs, DVDs, or memory cards) from the drives, shut down the operating system, and turn off the computer and all attached devices.
- Step 2. Unplug all power cords from electrical outlets.
- Step 3. Disconnect all cables attached to the computer. This includes power cords, 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. Lift up the rubbers that protect the 2 screws, remove the 2 screws that secure the rear cover to the front bezel.



- Step 5. Use a plastic spudger or a flat head screw driver to pry up the rear cover to release the cover from the 3 locking pins. Gently lift up the rear cover.



- Step 6. Disconnect the LVDS and the multi-function cables from the connectors on the motherboard.



- Step 7. To reattach the rear cover:
- Line up the rear cover with the front bezel and reconnect the LVDS, multi-function cables.
  - Line up the holes on the rear cover with mounting holes on the front bezel, and place the rear cover into position.
  - Secure the rear cover to the front bezel with the two screws.
  - Reattach the rubber cover.

---

## Replacing a memory module

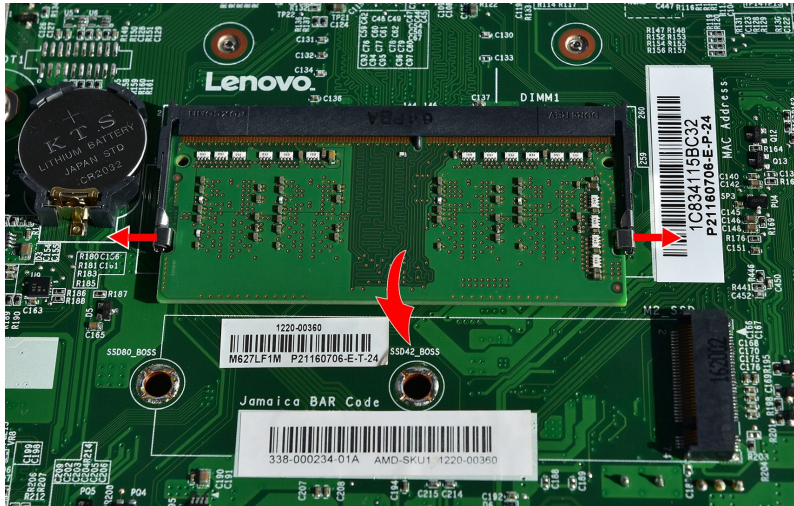
**Attention:** Turn off the computer and wait 3 to 5 minutes to let it cool down before removing the rear cover.

### To replace a memory 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 rear cover. Refer to “Removing the rear cover”.
- Step 5. Push out the latches on both sides of the memory socket to release the memory module. Gently pull the memory module upward to remove it from its socket.



- Step 6. To install the new memory module:
  - a. Align the new memory module with the memory socket, then insert it and push down on the top edge.
  - b. Make sure the latches lock the memory module in place.
- Step 7. Reattach the rear cover.

---

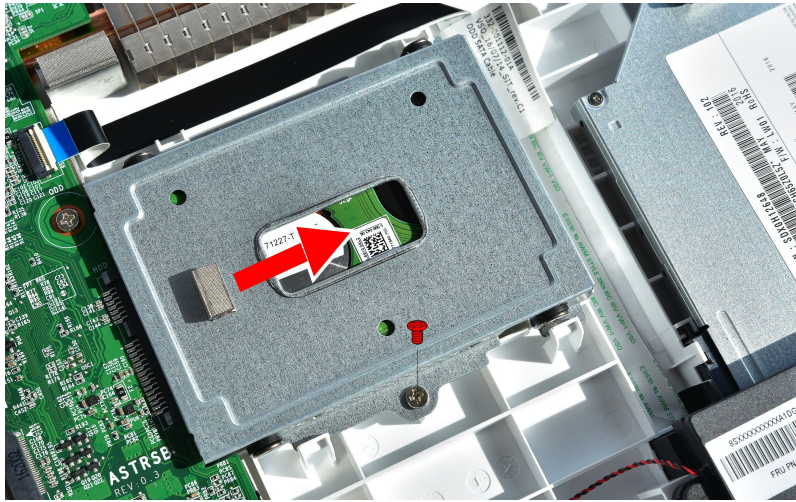
## Replacing the hard disk drive

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

### To replace the hard disk drive:

- 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 rear cover. Refer to "Removing the rear cover".

- Step 5. Remove the screw that secures the hard disk drive to the rear cover.
- Step 6. Slide the hard disk drive and bay out to remove.
- Step 7. Slide out the hard disk drive to remove it from the bay.



- Step 8. To install the new hard disk drive:
  - a. Slide the new hard disk drive into the hard disk drive bay.
  - b. Secure the new hard disk drive to the rear cover with the screw.
  - c. Reattach the new hard disk drive to the motherboard.
- Step 9. Reattach the rear cover.

---

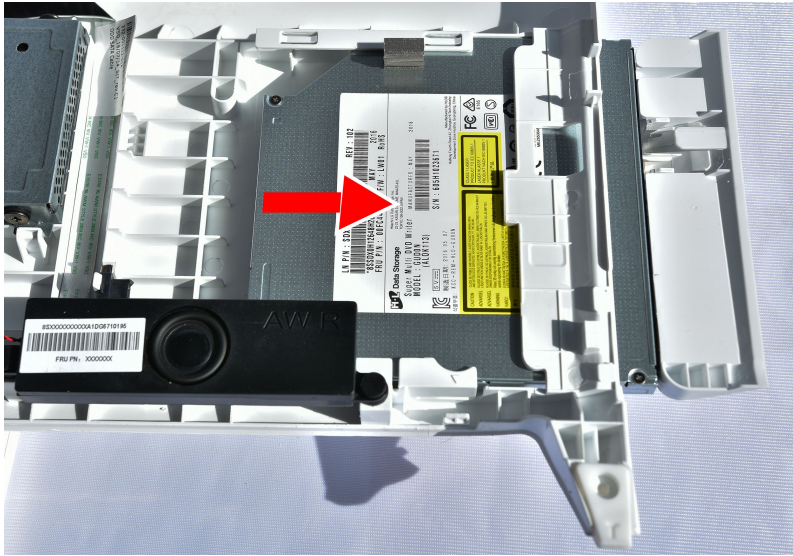
## Replacing the optical drive

**Attention:** Turn off the computer and wait 3 to 5 minutes to let it cool down before replacing the optical drive.

### To replace the optical drive:

- 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 rear cover, refer to “Removing the rear cover”.

Step 5. Use a screw driver to push out the optical drive as shown..



Step 6. Install the new optical drive as follows:

- a. Slide the new optical drive into the drive bay, then push it into position.
- b. Reattach the rear cover.

---

## Replacing the Wi-Fi card

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

### To replace the Wi-Fi 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 rear cover. Refer to "Removing the rear cover".

- Step 5. Disconnect the antenna and data cables from the Wi-Fi card.
- Step 6. Remove the screw that secures the Wi-Fi card to the motherboard.
- Step 7. Pull the Wi-Fi card upward to remove it from the socket.



- Step 8. To install the new Wi-Fi card:
  - a. Insert the new Wi-Fi card into the card port and secure it with the screw.
  - b. Connect the antenna cables to the new Wi-Fi card.
- Step 9. Reattach the rear cover.

---

## Replacing the speaker system

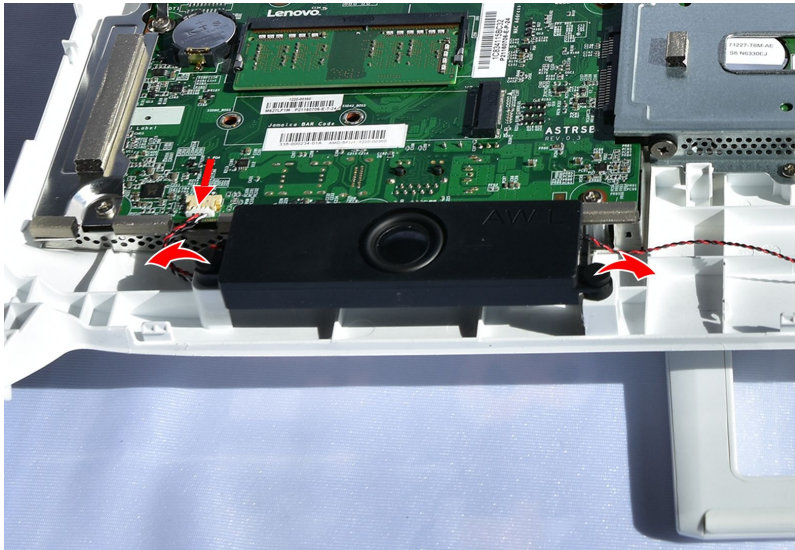
**Note:** Turn off the computer and wait 3 to 5 minutes to let it cool down before removing the rear cover.

### 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 rear cover. Refer to “Removing the rear cover”.



- Step 5. Disconnect the speaker cable from the connector on motherboard.  
Step 6. Detach the speaker system from the rubber screws.



- Step 7. To install the new speaker system:
- Attach the new speaker system to the rear cover with the rubber screws..
  - Connect the new speaker cable to the connector on the motherboard.
- Step 8. Reattach the rear cover.

---

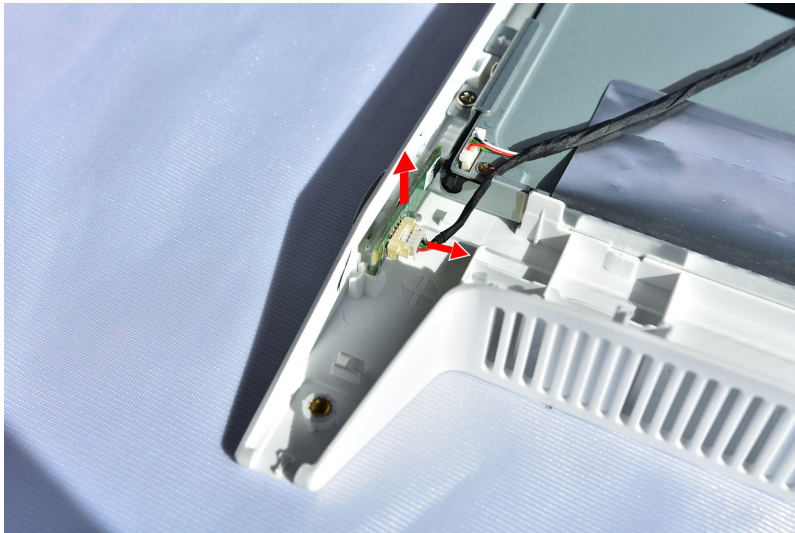
## Replacing the power switch board

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

### 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 rear cover. Refer to "Removing the rear cover".

- Step 5. Remove the tape covers up the switch board.
- Step 6. Lift up the switch board to remove it from the switch slot, disconnect the power cable from the switch board.



- Step 7. To install the power switch board:
- Connect the data cable to the connector on the new motherboard.
  - Line up the switch board with the slot, place the switch board into position and seal the switch board to the rear cover properly with the tape.
- Step 8. Reattach the rear cover.

---

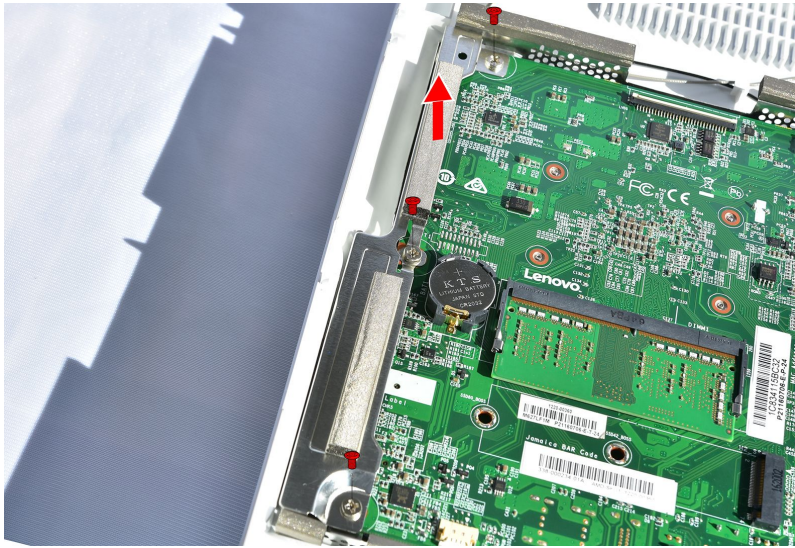
## Replacing the I/O Shielding

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

### To replace the I/O shielding:

- 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 rear cover. Refer to “Removing the rear cover”.

- Step 5. Remove the three screws that secure the I/O shielding module to the motherboard.
- Step 6. Lift up the I/O shielding to remove it.



- Step 7. To install the new I/O shielding:
- Line up the new I/O shielding module with the mounting holes on the motherboard.
  - Secure the new I/O shielding to the motherboard with the screws.
- Step 8. Reattach the rear cover.

---

## Replacing the motherboard or the heat-sink module

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

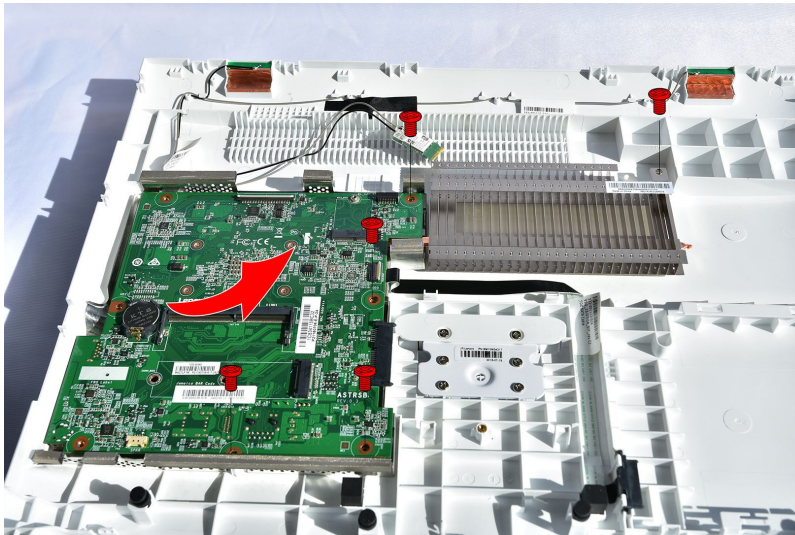
### To replace the motherboard:

- 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 rear cover. Refer to “Removing the rear cover”.
- Step 5. Remove all memory modules. Refer to “Replacing a memory module”.
- Step 6. Remove the heat-sink. Refer to “Replacing the heat-sink”.
- Step 7. Remove the Wi-Fi card. Refer to “Replacing the Wi-Fi card”.
- Step 8. Remove the I/O shielding. Refer to “Removing I/O shielding”.

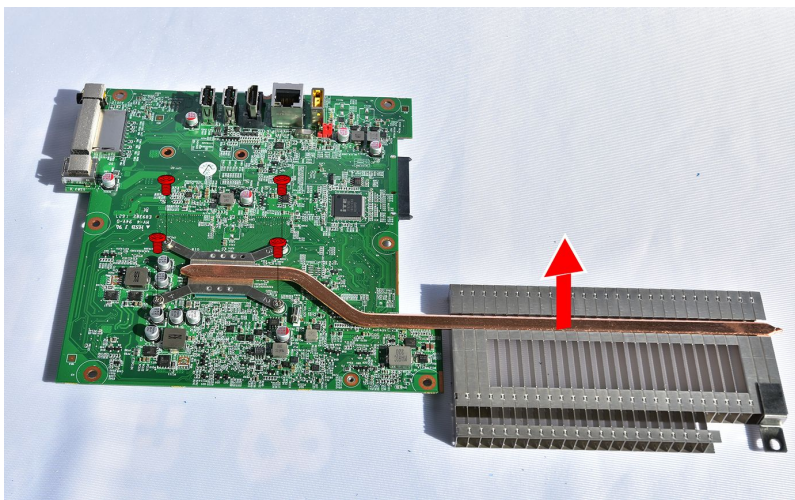


Step 9. Remove all the cables connected to the motherboard.

Step 10. Remove the five screws that secure the motherboard and heat-sink to the rear cover. Slide out the motherboard and heat-sink as shown.



Step 11. Remove the screws that secure the heat-sink module to the motherboard, and then lift up the heat-sink to remove it.



Step 12. To install the new motherboard or the new heat-sink:

- a. Attach the heat-sink, Wi-Fi card, memory modules to the motherboard.
- b. Slide in the motherboard and heat-sink into position then secure them with 5 screws.
- c. Connect the antenna cable(s) to the Wi-Fi card.
- d. Connect all the cables to the new motherboard.
- e. Reattach the I/O shielding to the motherboard.

Step 13. Reattach the rear cover.

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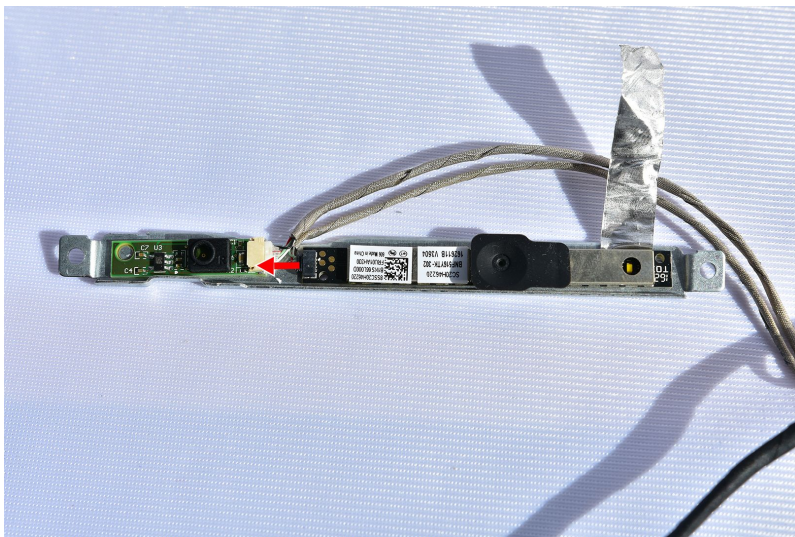
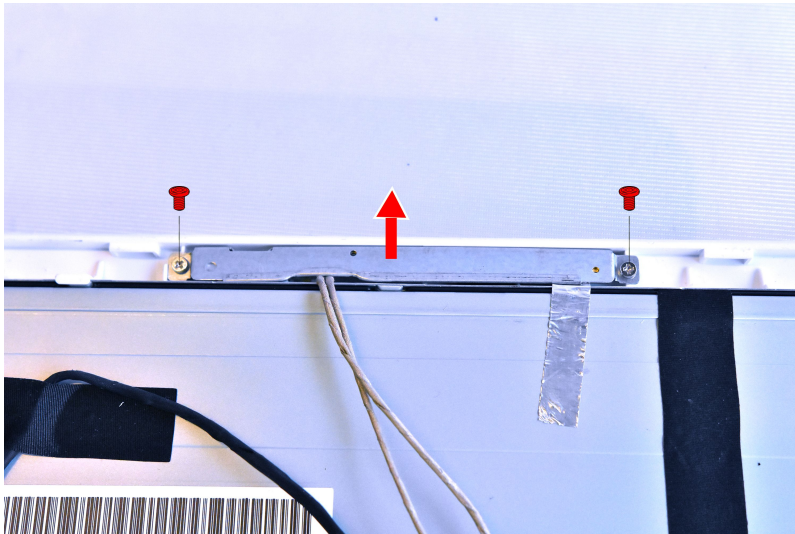
## Replacing the camera and microphone module

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

**To replace the camera and microphone 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 rear cover. Refer to “Removing the rear cover”.
- Step 5. Remove the 2 screws that secure the camera and microphone module to the front bezel. Disconnect the data cable from either camera or microphone module. Remove the camera or microphone module from the bracket.



- Step 6. To install the new camera or microphone module:
  - a. Connect the data cable to the new camera or microphone.
  - b. Attach the new module to the bracket, then secure the camera and microphone module to the front bezel with the 2 screws.
- Step 7. Reattach the rear cover.

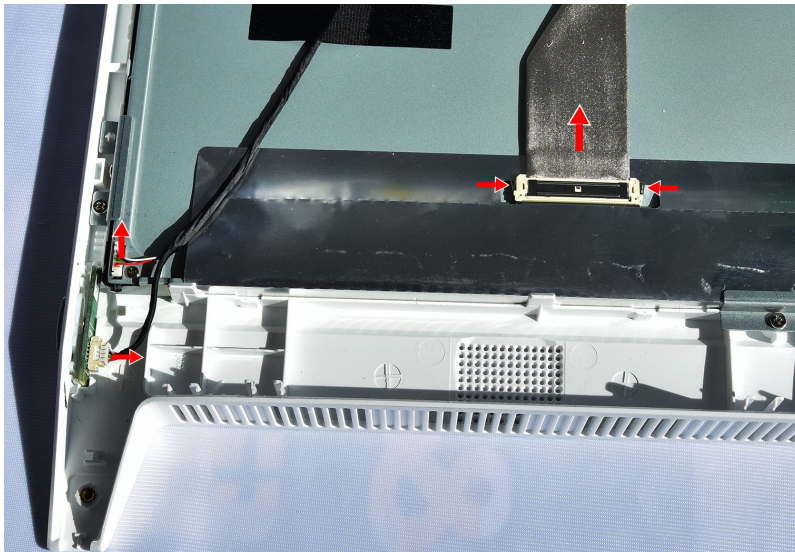
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## Replacing the LED panel

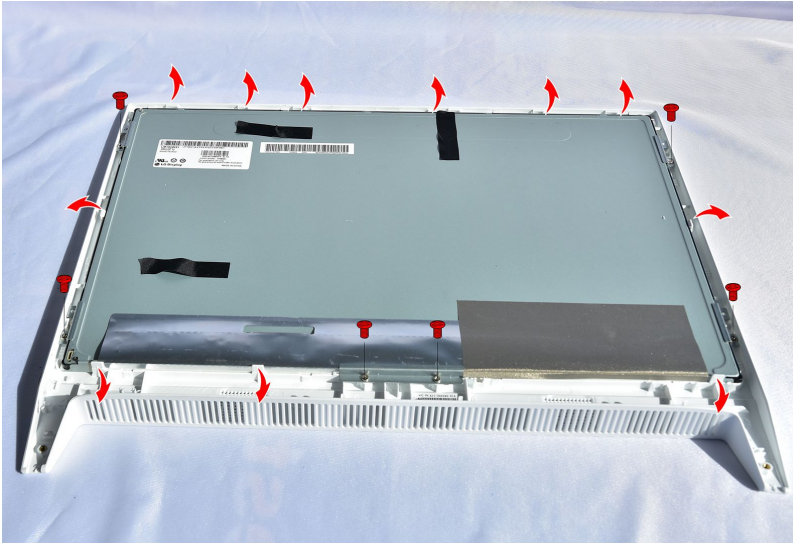
**Note:** Turn off the computer and wait 3 to 5 minutes to let it cool down before removing the rear cover.

### To replace the LED panel:

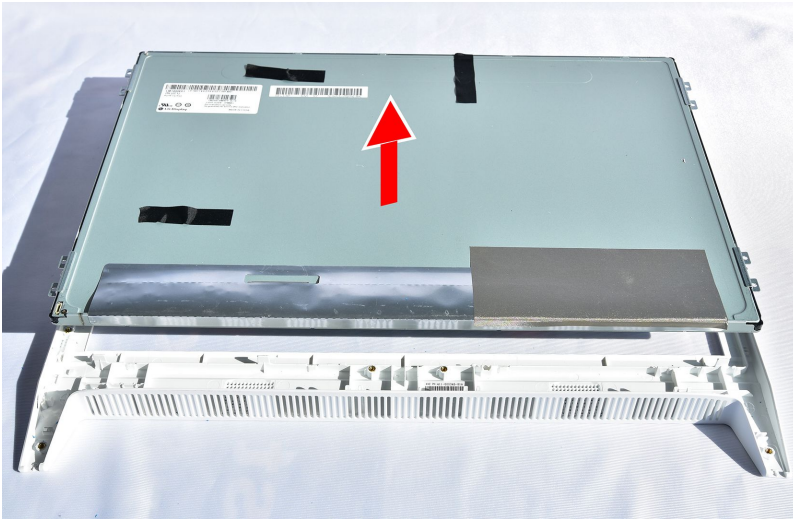
- Step 1. Remove any media (disks, CDs, DVDs, or memory cards) from the drives, shut down the operating system, and turn off the computer and all attached devices.
- Step 2. Unplug all power cords from electrical outlets.
- Step 3. Disconnect all cables attached to the computer. This includes power cords, 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 rear cover. Refer to “Removing the rear cover”.
- Step 5. Disconnect the LVDS, LED panel power and the power switch board cables from the connectors as shown.



Step 6. Remove the 6 screws that secures the LED panel to the front bezel. The LED panel is pinned to the front bezel, push all the pins outward to release the panel from the front bezel.



Step 7. Lift up the LED panel to separate from the front bezel, and then remove the two panel bracket by removing the two screws.



Step 8. Remove the 4 panel bracket via removing the 4 screws.



Step 9. To install the new LED panel module:

- a. Attach the panel brackets with the new panel, and secure the brackets with the 4 screws.
- b. Line up the panel assembly with the front bezel, then place the panel into position.
- c. Secure the new panel to the front bezel with the 6 screws and pins.
- d. Attach all the cables to the connectors on the new LED panel.
- e. Attach the power cable to the power switching board.

Step 10. Reattach the rear cover.



## Chapter 9. FRU lists-AIO-310ASR

This chapter lists the information on the field replaceable units (FRUs) for Lenovo C20-00 All-In-One desktop computers.

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

Lenovo AIO 310-20ASR service parts listing	
MT: F0CK	
FRU P/N	Description
AC_ADAPTER	
54Y8998	AC_ADAPTER,45W,100-240Vac,3P
ANTENNA	
00XJ092	AIO 310 615/300mm antenna
BDPLANAR	
01GJ023	A6-9200 UMA HDMI OUT WIN DPK
01GJ022	MB A9-9400,UMA, WIN DPK
01GJ032	MB A9-9400,UMA, NO DPK
01GJ033	A6-9200 UMA HDMI OUT NO DPK
01GJ034	E2-9000 UMA HDMI OUT WIN DPK
01GJ035	E2-9000 UMA HDMI OUT NO DPK
CABLE	
00XL236	Cable_LVDS
00XL237	Cable_ODD SATA
CARDPOP	
01AJ797	A AIO310 Power button board
CAMERA	
01AH330	C2S2 720P Cam
DT_KYB	
00XH674	USB,Calliope,KB,WH,TUR
00XH635	USB Calliope KB BK CAN ENG/FRA
00XH633	USB Calliope KB BK NORDIC
00XH655	USB,Calliope,KB,WH,HUN
00XH672	USB,Calliope,KB,WH,THAI
00XH654	USB,Calliope,KB,WH,HBW
00XH666	USB,Calliope,KB,WH,RUS
00XH652	USB,Calliope,KB,WH,GRE
00XH604	USB Calliope KB BK HBW

00XH605	USB Calliope KB BK HUN
00XH677	USB,Calliope,KB,WH,SLV
00XH607	USB Calliope KB BK ITA
00XH668	USB,Calliope,KB,WH,SLK
00XH598	USB Calliope KB BK FRA
00XH685	USB,Calliope,KB,WH,CAN,ENG/FRA
00XH602	USB Calliope KB BK GRE
00XH601	USB Calliope KB BK GER
00XH644	USB,Calliope,KB,WH,TC/ENG
00XH627	USB Calliope KB BK SLV
00XH643	USB,Calliope,KB,WH,BUL
00XH626	USB Calliope KB BK EURO ENG
00XH657	USB,Calliope,KB,WH,ITA
00XH610	USB Calliope KB BK KOR
00XH608	USB Calliope KB BK JPN
00XH645	USB,Calliope,KB,WH,CZE
00XH658	USB,Calliope,KB,WH,JPN
00XH671	USB,Calliope,KB,WH,SWS
00XH680	USB,Calliope,KB,WH,IND,ENG
00XH648	USB,Calliope,KB,WH,FRA
00XH676	USB,Calliope,KB,WH,EURO,ENG
00XH651	USB,Calliope,KB,WH,GER
00XH675	USB,Calliope,KB,WH,UKE
00XH621	USB Calliope KB BK SWS
00XH683	USB,Calliope,KB,WH,NORDIC
00XH622	USB Calliope KB BK THAI
00XH669	USB,Calliope,KB,WH,SPA
00XH630	USB Calliope KB BK IND ENG
00XH618	USB Calliope KB BK SLK
00XH625	USB Calliope KB BK UKE
00XH619	USB Calliope KB BK SPA
00XH624	USB Calliope KB BK TUR
00XH611	USB,Calliope,KB,BK,LA SPA
00XH660	USB,Calliope,KB,WH,KOR
00XH661	USB Calliope KB WH LA SPA
00XH664	USB,Calliope,KB,WH,POR
00XH594	USB Calliope KB BK TC/ENG
00XH614	USB Calliope KB BK POR
00XH638	USB,Calliope,KB,WH,ARA
00XH595	USB Calliope KB BK CZE

00XH637	USB,Calliope,KB,WH,ENG
00XH593	USB Calliope KB BK BUL
00XH641	USB,Calliope,KB,WH,BEL ENG
00XH591	USB,Calliope,KB,BK,BEL ENG
00XH616	USB Calliope KB BK RUS
00XH587	USB Calliope KB BK ENG
00XH588	USB Calliope KB BK ARA
HDD_ASM	
00FC428	HDD,500G,5400,7mm,DT2,SATA3,STD
00FC430	HDD,1TB,5400,7mm,DT2,SATA3,STD
00FC429	HDD,1TB,5400,9mm,DT2,SATA3,STD
HEATSINK	
01EF575	A SR UMA TM w/o BP for 310ASR
LINECORD	
00XL073	Fru, LINECORD,IT,1M,3P,NON-LH
00XL096	Fru, LINECORD,IN,1M,3P,NON-LH
00XL082	Fru, LINECORD,ZA,1M,3P,NON-LH
00XL090	Fru, LINECORD,CN,1M,3P,NON-LH
00XL093	Fru, LINECORD,TW,1M,3P,NON-LH
00XL057	Fru, LINECORD,AR,1M,3P,NON-LH
00XL003	Fru, JP,Anti-TR,1M,2P,NON-LH
00XL071	Fru, LINECORD,CH,1M,3P,NON-LH
00XL060	Fru, LINECORD,BR,1M,3P,NON-LH
00XL086	Fru, LINECORD,IL,1M,3P,NON-LH
00XL058	Fru, LINECORD,AR,1M,3P,NON-LH
00XL062	Fru, LINECORD,BR,1M,3P,NON-LH
00XL089	Fru, LINECORD,CN,1M,3P,NON-LH
00XL080	Fru, LINECORD,AU,1M,3P,NON-LH
00XL074	Fru, LINECORD,IT,1M,3P,NON-LH
00XL075	Fru, LINECORD,GB,1M,3P,NON-LH
00XL072	Fru, LINECORD,IT,1M,3P,NON-LH
00XL092	Fru, LINECORD,TW,1M,3P,NON-LH
00XL078	Fru, LINECORD,AU,1M,3P,NON-LH
00XL097	Fru, LINECORD,TH,1M,3P,NON-LH
00XL059	Fru, LINECORD,AR,1M,3P,NON-LH
00XL052	Fru, US/CA,1M,3P,NON-LH
00XL061	Fru, LINECORD,BR,1M,3P,NON-LH
00XL085	Fru, LINECORD,IL,1M,3P,NON-LH

00XL064	Fru, EU/KR,1M,3P,NON-LH
00XL076	Fru, LINECORD,GB,1M,3P,NON-LH
00XL002	Fru, JP,Anti-TR,1M,2P,NON-LH
00XL051	Fru,US/CA,1M,3P,NON-LH
00XL081	Fru, LINECORD,ZA,1M,3P,NON-LH
00XL077	Fru, LINECORD,GB,1M,3P,NON-LH
00XL069	Fru, LINECORD,CH,1M,3P,NON-LH
00XL079	Fru, LINECORD,AU,1M,3P,NON-LH
00XL083	Fru, LINECORD,ZA,1M,3P,NON-LH
00XL065	Fru, EU/KR,1M,3P,NON-LH
00XL063	Fru, EU/KR,1M,3P,NON-LH
00XL070	Fru, LINECORD,CH,1M,3P,NON-LH
00XL091	Fru, LINECORD,TW,1M,3P,NON-LH
00XL066	Fru, LINECORD,DK,1M,3P,NON-LH
00XL053	Fru, US/CA,1M,3P,NON-LH
00XL067	Fru, LINECORD,DK,1M,3P,NON-LH
00XL094	Fru, LINECORD,IN,1M,3P,NON-LH
00XL084	Fru, LINECORD,IL,1M,3P,NON-LH
00XL068	Fru, LINECORD,DK,1M,3P,NON-LH
MECH_ASM	
01EF749	C2_FRONT-COVER-ASSY-BK-W/O-Cam
01EF748	C2_FRONT-COVER-ASSY-WT-W/O-Cam
01EF625	Frame Stand AIO 310 White
01EF627	ASSY_ODD_Bezel_AIO310, White
01EF626	Frame Stand AIO 310 Black
01EF636	ASSY-C2-HDD-BKT
01EF635	C2_BACK-COVER-ASSY(BLACK)
01EF634	C2_FRONT-COVER-ASSY(BLACK)
01EF628	ASSY_ODD_Bezel_AIO310, Black
01EF632	C2_FRONT-COVER-ASSY(WHITE)
01EF663	panel Assy,LG,N-Cam,AIO 310
01EF633	C2_BACK-COVER-ASSY(WHITE)
01EF661	panel Assy,LG,AIO 310
MECHANICAL	
01EF747	C2_camera_bkt
01EF672	Non-ODD cover White
01EF630	C2_panel_bkt
01EF631	C2_panel_bkt2
01EF673	Non-ODD cover Black
MEMORY	



01HW756	FRU SoDIMM 4GB DDR4 2400 Samsung
01AG701	4GB DDR4 2400 SoDIMM
01AG708	4GB DDR4 2400 SoDIMM
01AG709	4GB DDR4 2400 SoDIMM
SCREW	
00XD903	Screw with bracket WIFI card
01EF641	Screw list C2
MICROPHONE	
01AH402	AIO 510 Microphone
MOUSE	
00PH132	USB,Calliope,Mouse,White
00PH131	USB Calliope Mouse Black(Orange wh
OPT_DRIVE	
00FC442	SMD,DT,SATA,9.5mm,x8,w/o bezel
SPEAKERINT	
01AH931	AVC AIO300 AW Speaker
WIRELESS	
00JT482	Wireless,CMB,CBT,8821AE
01AX709	Wireless,CMB,LTN,NFA435A



## Chapter 10. FRU lists-AIO-310-20IAP

This chapter lists the information on the field replaceable units (FRUs) for Lenovo C20-30 None Touch All-In-One desktop computer.

**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.

Lenovo AIO 310-20IAP service parts listing	
MT: FOCL	
FRU P/N	Description
AC_ADAPTER	
54Y8998	AC_ADAPTER,45W,100-240Vac,3P
ANTENNA	
00XJ092	AIO 310 615/300mm antenna
BDPLANAR	
01GJ019	MB,Pentium J4205,UMA,NO DPK
01GJ213	MB,Celeron J3455,UMA,WIN DPK
01GJ018	MB,Pentium J4205,UMA,WIN DPK
01GJ216	MB,Celeron J3355,UMA,NO DPK
01GJ215	MB,Celeron J3355,UMA,WIN DPK
01GJ214	MB,Celeron J3455,UMA,NO DPK
CABLE	
00XL236	Cable_LVDS
00XL237	Cable_ODD SATA
CARDPOP	
01AJ797	A AIO310 Power button board
CAMERA	
01AH330	C2S2 720P Cam
DT_KYB	
00XH674	USB,Calliope,KB,WH,TUR
00XH635	USB Calliope KB BK CAN ENG/FRA
00XH633	USB Calliope KB BK NORDIC
00XH655	USB,Calliope,KB,WH,HUN
00XH672	USB,Calliope,KB,WH,THAI
00XH654	USB,Calliope,KB,WH,HBW

00XH666	USB,Calliope,KB,WH,RUS
00XH652	USB,Calliope,KB,WH,GRE
00XH604	USB Calliope KB BK HBW
00XH605	USB Calliope KB BK HUN
00XH677	USB,Calliope,KB,WH,SLV
00XH607	USB Calliope KB BK ITA
00XH668	USB,Calliope,KB,WH,SLK
00XH598	USB Calliope KB BK FRA
00XH685	USB,Calliope,KB,WH,CAN,ENG/FRA
00XH602	USB Calliope KB BK GRE
00XH601	USB Calliope KB BK GER
00XH644	USB,Calliope,KB,WH,TC/ENG
00XH627	USB Calliope KB BK SLV
00XH643	USB,Calliope,KB,WH,BUL
00XH626	USB Calliope KB BK EURO ENG
00XH657	USB,Calliope,KB,WH,ITA
00XH610	USB Calliope KB BK KOR
00XH608	USB Calliope KB BK JPN
00XH645	USB,Calliope,KB,WH,CZE
00XH658	USB,Calliope,KB,WH,JPN
00XH671	USB,Calliope,KB,WH,SWS
00XH680	USB,Calliope,KB,WH,IND,ENG
00XH648	USB,Calliope,KB,WH,FRA
00XH676	USB,Calliope,KB,WH,EURO,ENG
00XH651	USB,Calliope,KB,WH,GER
00XH675	USB,Calliope,KB,WH,UKE
00XH621	USB Calliope KB BK SWS
00XH683	USB,Calliope,KB,WH,NORDIC
00XH622	USB Calliope KB BK THAI
00XH669	USB,Calliope,KB,WH,SPA
00XH630	USB Calliope KB BK IND ENG
00XH618	USB Calliope KB BK SLK
00XH625	USB Calliope KB BK UKE
00XH619	USB Calliope KB BK SPA
00XH624	USB Calliope KB BK TUR
00XH611	USB,Calliope,KB,BK,LA SPA
00XH660	USB,Calliope,KB,WH,KOR
00XH661	USB Calliope KB WH LA SPA
00XH664	USB,Calliope,KB,WH,POR
00XH594	USB Calliope KB BK TC/ENG

00XH614	USB Calliope KB BK POR
00XH638	USB,Calliope,KB,WH,ARA
00XH595	USB Calliope KB BK CZE
00XH637	USB,Calliope,KB,WH,ENG
00XH593	USB Calliope KB BK BUL
00XH641	USB,Calliope,KB,WH,BEL ENG
00XH591	USB,Calliope,KB,BK,BEL ENG
00XH616	USB Calliope KB BK RUS
00XH587	USB Calliope KB BK ENG
00XH588	USB Calliope KB BK ARA
HDD_ASM	
00FC428	HDD,500G,5400,7mm,DT2,SATA3,STD
00FC430	HDD,1TB,5400,7mm,DT2,SATA3,STD
00FC429	HDD,1TB,5400,9mm,DT2,SATA3,STD
HEATSINK	
01EF576	I APL UMA TM w/o BP for 310AP
LINECORD	
00XL073	Fru, LINECORD,IT,1M,3P,NON-LH
00XL096	Fru, LINECORD,IN,1M,3P,NON-LH
00XL082	Fru, LINECORD,ZA,1M,3P,NON-LH
00XL090	Fru, LINECORD,CN,1M,3P,NON-LH
00XL093	Fru, LINECORD,TW,1M,3P,NON-LH
00XL057	Fru, LINECORD,AR,1M,3P,NON-LH
00XL003	Fru, JP,Anti-TR,1M,2P,NON-LH
00XL071	Fru, LINECORD,CH,1M,3P,NON-LH
00XL060	Fru, LINECORD,BR,1M,3P,NON-LH
00XL086	Fru, LINECORD,IL,1M,3P,NON-LH
00XL058	Fru, LINECORD,AR,1M,3P,NON-LH
00XL062	Fru, LINECORD,BR,1M,3P,NON-LH
00XL089	Fru, LINECORD,CN,1M,3P,NON-LH
00XL080	Fru, LINECORD,AU,1M,3P,NON-LH
00XL074	Fru, LINECORD,IT,1M,3P,NON-LH
00XL075	Fru, LINECORD,GB,1M,3P,NON-LH
00XL072	Fru, LINECORD,IT,1M,3P,NON-LH
00XL092	Fru, LINECORD,TW,1M,3P,NON-LH
00XL078	Fru, LINECORD,AU,1M,3P,NON-LH
00XL097	Fru, LINECORD,TH,1M,3P,NON-LH
00XL059	Fru, LINECORD,AR,1M,3P,NON-LH
00XL052	Fru, US/CA,1M,3P,NON-LH

00XL061	Fru, LINECORD,BR,1M,3P,NON-LH
00XL085	Fru, LINECORD,IL,1M,3P,NON-LH
00XL064	Fru, EU/KR,1M,3P,NON-LH
00XL076	Fru, LINECORD,GB,1M,3P,NON-LH
00XL002	Fru, JP,Anti-TR,1M,2P,NON-LH
00XL051	Fru,US/CA,1M,3P,NON-LH
00XL081	Fru, LINECORD,ZA,1M,3P,NON-LH
00XL077	Fru, LINECORD,GB,1M,3P,NON-LH
00XL069	Fru, LINECORD,CH,1M,3P,NON-LH
00XL079	Fru, LINECORD,AU,1M,3P,NON-LH
00XL083	Fru, LINECORD,ZA,1M,3P,NON-LH
00XL065	Fru, EU/KR,1M,3P,NON-LH
00XL063	Fru, EU/KR,1M,3P,NON-LH
00XL070	Fru, LINECORD,CH,1M,3P,NON-LH
00XL091	Fru, LINECORD,TW,1M,3P,NON-LH
00XL066	Fru, LINECORD,DK,1M,3P,NON-LH
00XL053	Fru, US/CA,1M,3P,NON-LH
00XL067	Fru, LINECORD,DK,1M,3P,NON-LH
00XL094	Fru, LINECORD,IN,1M,3P,NON-LH
00XL084	Fru, LINECORD,IL,1M,3P,NON-LH
00XL068	Fru, LINECORD,DK,1M,3P,NON-LH
MECH_ASM	
01EF749	C2_FRONT-COVER-ASSY-BK-W/O-Cam
01EF748	C2_FRONT-COVER-ASSY-WT-W/O-Cam
01EF625	Frame Stand AIO 310 White
01EF627	ASSY_ODD_Bezel_AIO310, White
01EF626	Frame Stand AIO 310 Black
01EF636	ASSY-C2-HDD-BKT
01EF635	C2_BACK-COVER-ASSY(BLACK)
01EF634	C2_FRONT-COVER-ASSY(BLACK)
01EF628	ASSY_ODD_Bezel_AIO310, Black
01EF632	C2_FRONT-COVER-ASSY(WHITE)
01EF663	panel Assy,LG,N-Cam,AIO 310
01EF633	C2_BACK-COVER-ASSY(WHITE)
01EF661	panel Assy,LG,AIO 310
MECHANICAL	
01EF747	C2_camera_bkt
01EF672	Non-ODD cover White
01EF630	C2_panel_bkt
01EF631	C2_panel_bkt2

01EF673	Non-ODD cover Black
MEMORY	
03T7117	SODIMM,4G,DDR3L,1600
SCREW	
00XD903	Screw with bracket WIFI card
01EF641	Screw list C2
MICROPHONE	
01AH402	AIO 510 Microphone
MOUSE	
00PH132	USB,Calliope,Mouse,White
00PH131	USB Calliope Mouse Black(Orange wh
OPT_DRIVE	
00FC442	SMD,DT,SATA,9.5mm,x8,w/o bezel
SPEAKERINT	
01AH931	AVC AIO300 AW Speaker
WIRELESS	
01AX709	Wireless,CMB,LTN,NFA435A
00JT497	Wireless,CMB,IN,3165 ac





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## Chapter 11. 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.