ideacentre All-In-One 510S/520S Computer Hardware Maintenance Manual

Machine Types: F0C3 [AIO 510S-23ISU / Energy Star] / F0CU [AIO 520S-23IKU / Energy Star]

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Contents

Chapter 1. About this manual

This manual contains service and reference information for Lenovo All-In-One 510S/520S 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.
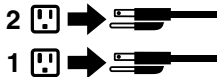
CAUTION:
Do not place any object weighing more than 82 kg (180 lbs.) on top of rack-mounted devices.

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 All-In-One 510S/520S

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.
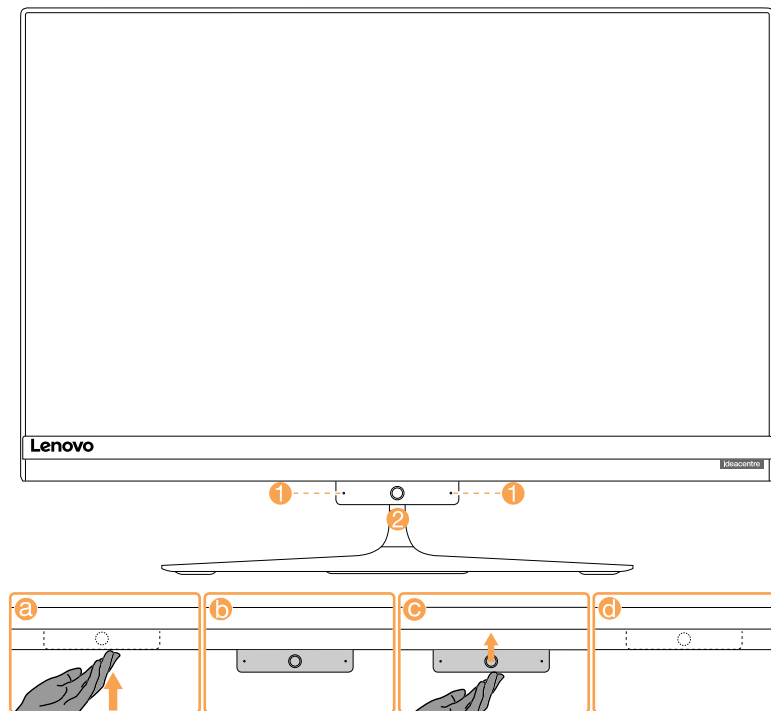
Chapter 7. Locating connectors, controls and components

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.
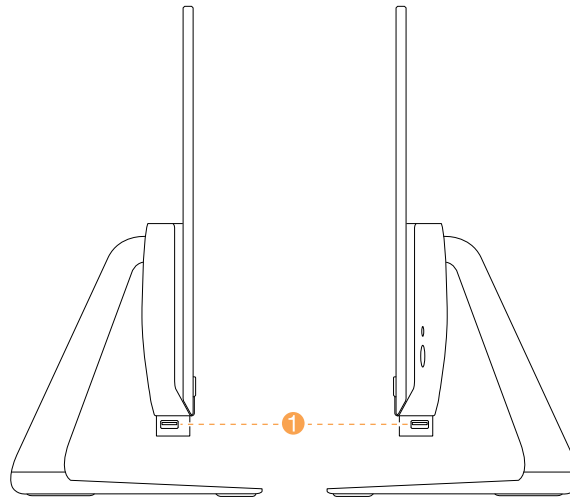
Attention: Be careful not to block any air vents on the computer. Blocked air vents can cause overheating.

1. Built-in microphones (2)	2. 2D 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 connectors	

Rear view

The following illustration shows the location of connectors and components on the rear of the computer.
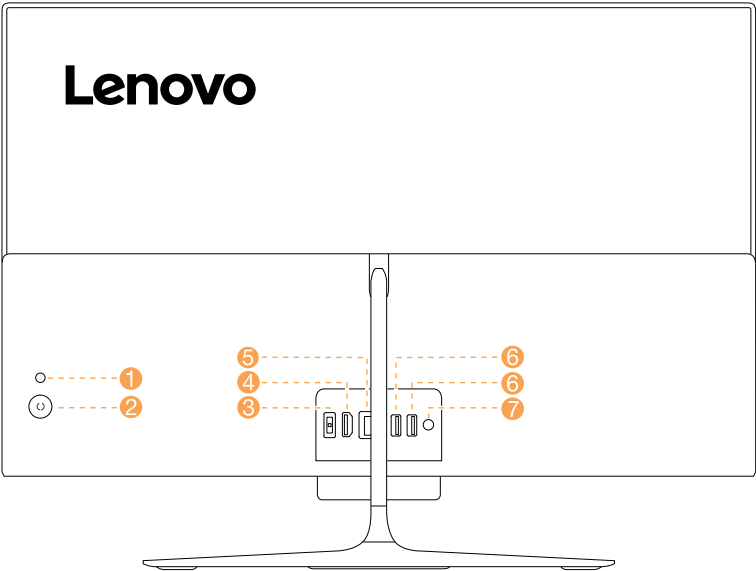
1. HDMI button	5. Ethernet connector
2. Power button	6. USB 3.0 connectors (2)
3. Power connector	7. Combo audio jack
4. HDMI connector	

Hardware components

The following illustration shows the components that make up your computer.
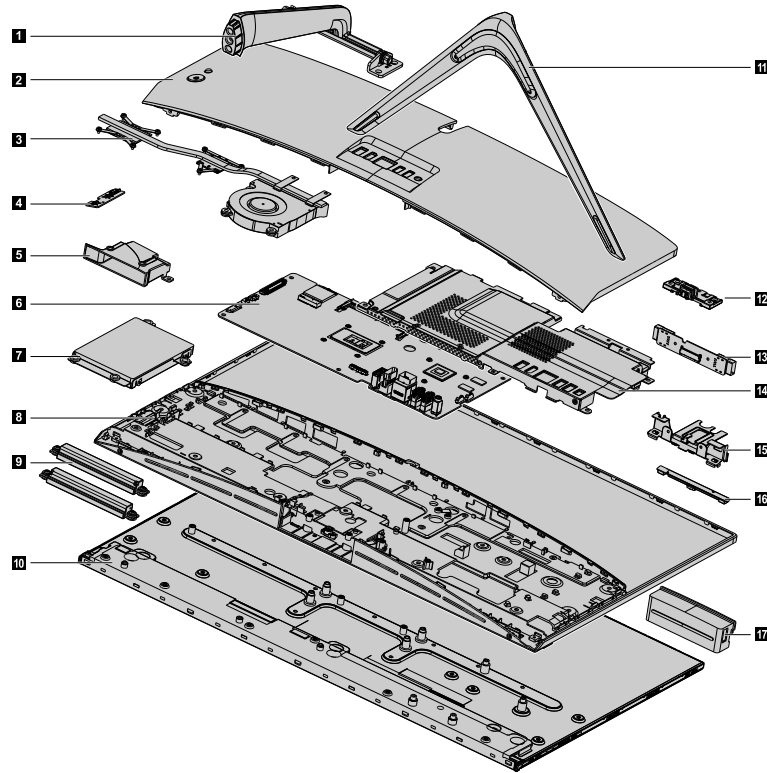
1. Stand holder	10. LCD panel
2. Rear cover	11. Stand base
3. Heat-sink and fan assembly	12. Pull-down assembly holder
4. Power switch board	13. USB board in pull-down assembly
5. Wind shielding	14. EMI cover
6. Motherboard	15. Pull-down assembly bracket
7. Solid state drive (SSD)	16. Camera
8. Middle frame	17. Pull-down assembly cover
9. Speaker system	

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.
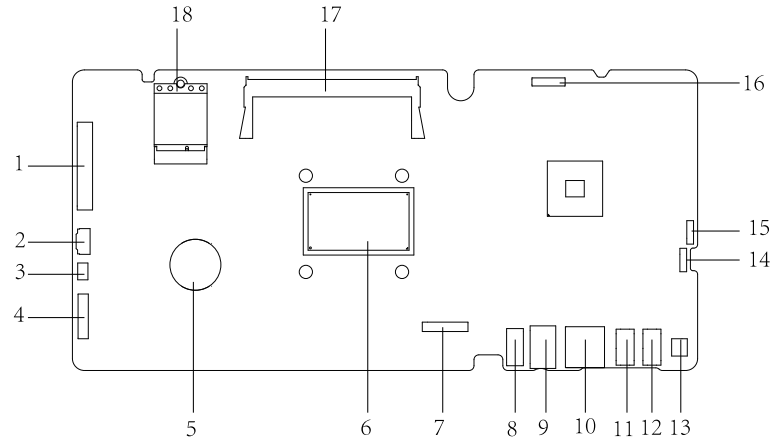
1. LVDS connector	10. Ethernet connector
2. Power switch board connector	11. USB 3.0 connector
3. Touch panel connector	12. USB 3.0 connector
4. Converter connector	13. Combo audio jack
5. Battery	14. Speaker connector
6. CPU	15. System fan connector
7. Pull-down assembly connector	16. SATA SSD connector
8. Power connector	17. Memory socket
9. HDMI connector	18. Wi-Fi card slot

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 and mouse:

Step 1.   Remove any media from the drives, shut down the computer, and turn off 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. .

Step 4.   Locate the connector for the keyboard. Refer to Locating connectors, controls and components to locate the various connectors.

Step 5.   Disconnect the defective keyboard cable from the computer and connect the new keyboard cable to the same connector.
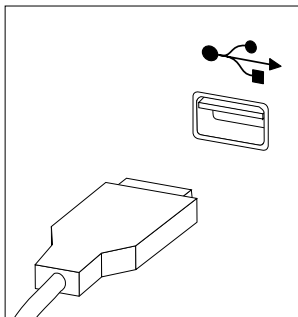
Step 6.   The mouse can be replaced using the same method.
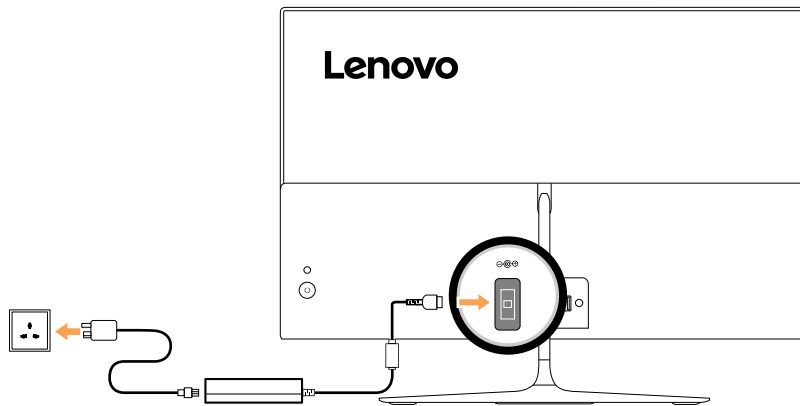

Replacing the adapter

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 from the drives, shut down the operating system, and turn off the computer and all attached devices.

Step 2.   Disconnect the adapter from the connector on the computer, then unplug the adapter from electrical outlet.
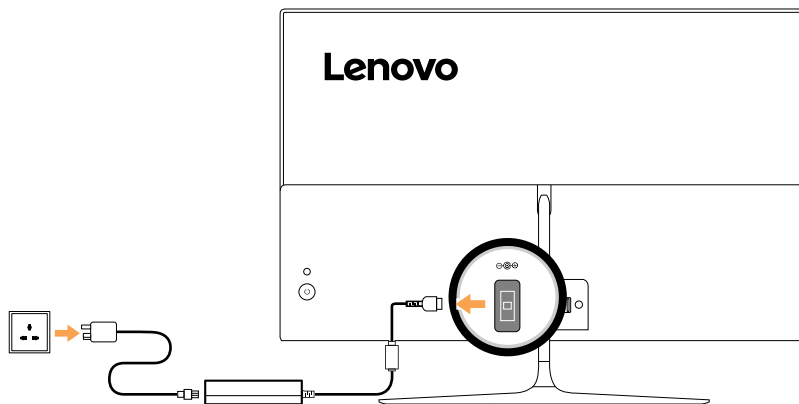
Step 3. Connect the new adapter as shown.

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 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 Locating connectors, controls and components to locate the various connectors.

Step 4. Remove the rubber, and then twist the hand screw ring counter-clockwise until the stand base is loosed. **1 2**

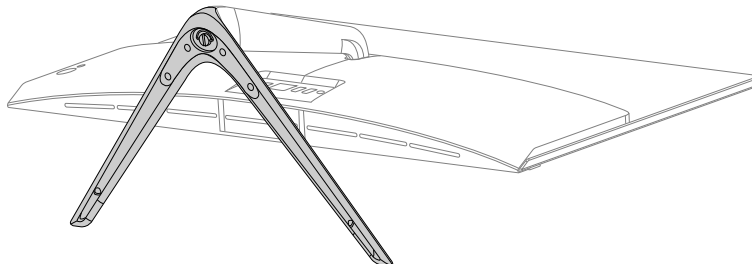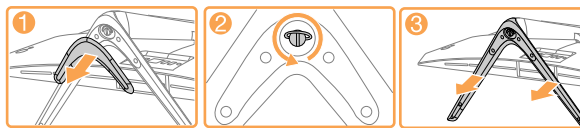Step 5. Remove the stand base from the stand holder and put it aside. **3**

Removing the rear 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 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 Locating connectors, controls and components to locate the various connectors.

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

Step 5.   Remove the two screws that secure the rear cover to the chassis.

Step 6.   Insert a screw driver into the hole at the bottom of the device as shown, and then bend the screw driver gently until the rear cover and the chassis are separated.

Step 7.   To reattach the rear cover:

   a.   Align the screw holes in the rear cover with the corresponding holes in the bottom of the computer.

   b.   Press the rear cover until it snaps into position.

   c.   Secure the rear cover to the chassis with two screws.

Removing the stand holder

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 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 Locating connectors, controls and components to locate the various connectors.

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

Step 5.   Remove the rear cover. Refer to Removing the rear cover.

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

Step 7.   To reattach the stand holder:

    a.   Align the holes in the stand holder with the corresponding holes in the chassis.

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

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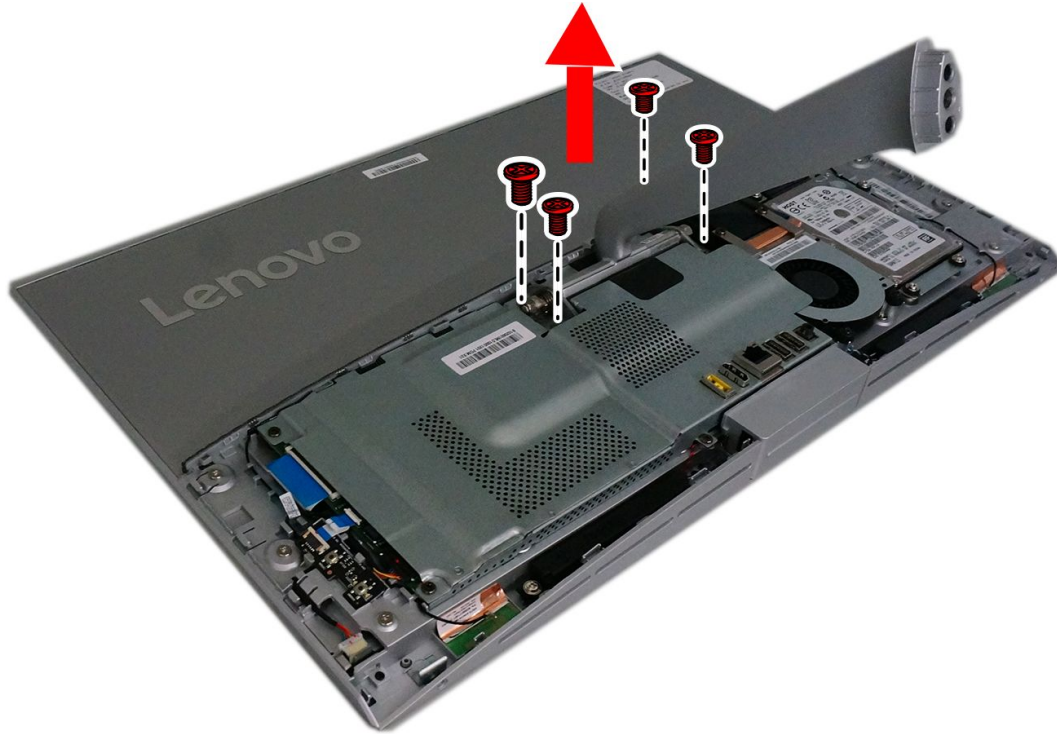
Attention: Turn off the computer and wait 3 to 5 minutes to let it cool down before removing the cover.

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 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 Locating connectors, controls and components to locate the various connectors.

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

Step 5.   Remove the rear cover. Refer to Removing the rear cover.

Step 6.   Remove the stand holder. Refer to Removing the stand holder.

Step 7.   Disconnect the signal cable from the solid state drive.

Step 8. Remove the four screws that secure the storage converter to the chassis, and then remove the storage converter.

Step 9. Remove the four screws that secure the solid state drive to the storage converter, and then remove the solid state drive from the converter.

Step 10. To install the new solid state drive:

   a.   Align the holes in the new solid state drive with the corresponding holes in the storage converter.

   b.   Secure the new solid state drive to the converter with four screws.

   c.   Reinstall the storage converter.

   d.   Connect the signal cable to the solid state drive.

Step 11. Reattach the stand holder, rear cover, and stand base.

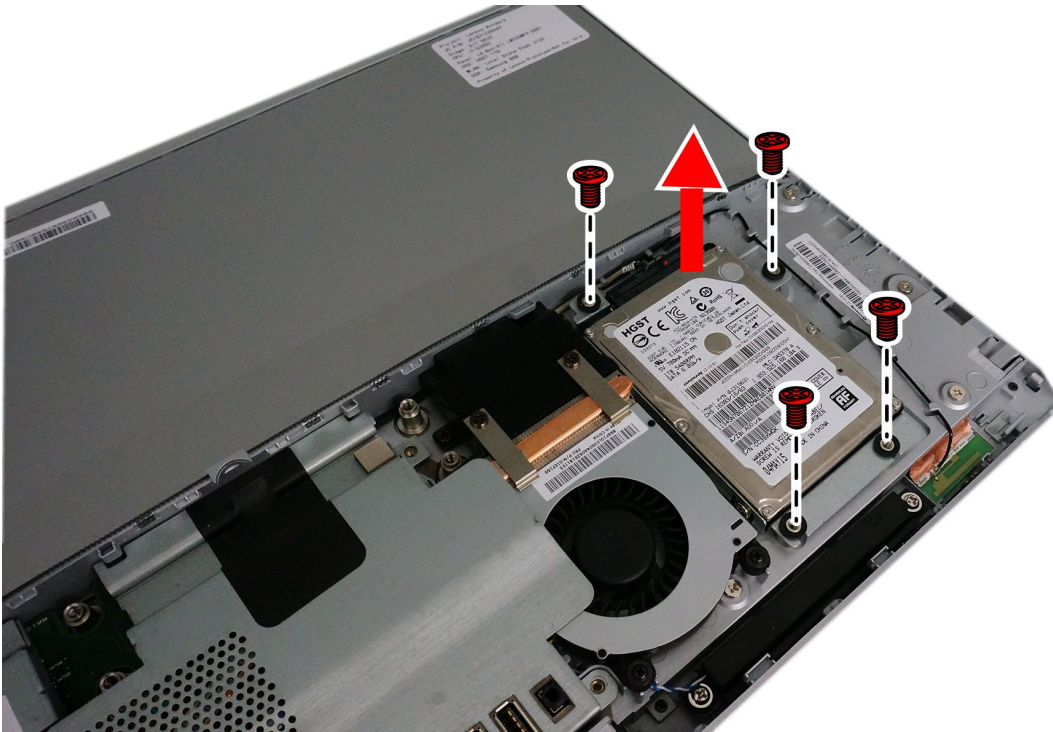# Removing the EMI cover

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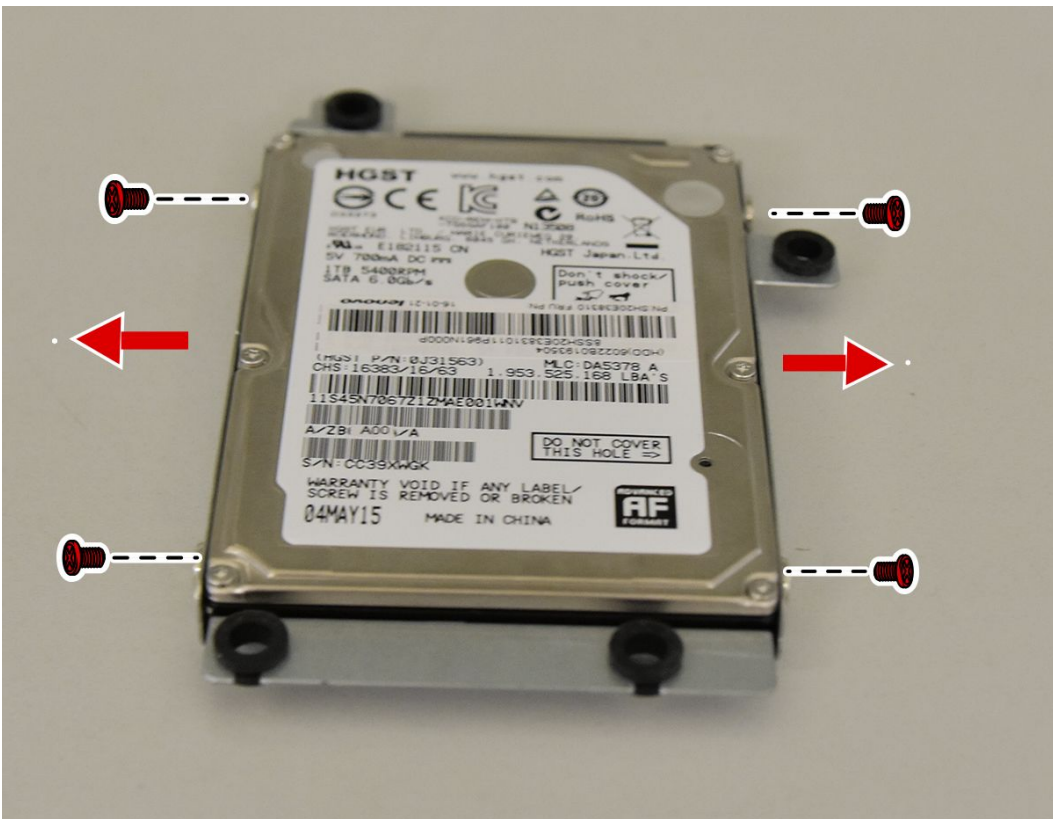
Note: It may be helpful to place the computer face-down on a soft flat surface for this procedure. Lenovo recommends that you use a blanket, towel, or other soft cloth to protect the computer screen from scratches or other damage.

To replace the EMI cover

Step 1.   Remove any media 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 Locating connectors, controls and components to locate the various connectors.

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

Step 5.   Remove the rear cover. Refer to Removing the rear cover.

Step 6.   Remove the stand holder. Refer to Removing the stand holder.

Step 7.   Remove the five screws that secure the EMI cover to the chassis, and then lift it up.

Step 8.   To install the EMI cover:

      a.   Align the holes in the EMI cover with the mounting holes in the chassis.

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

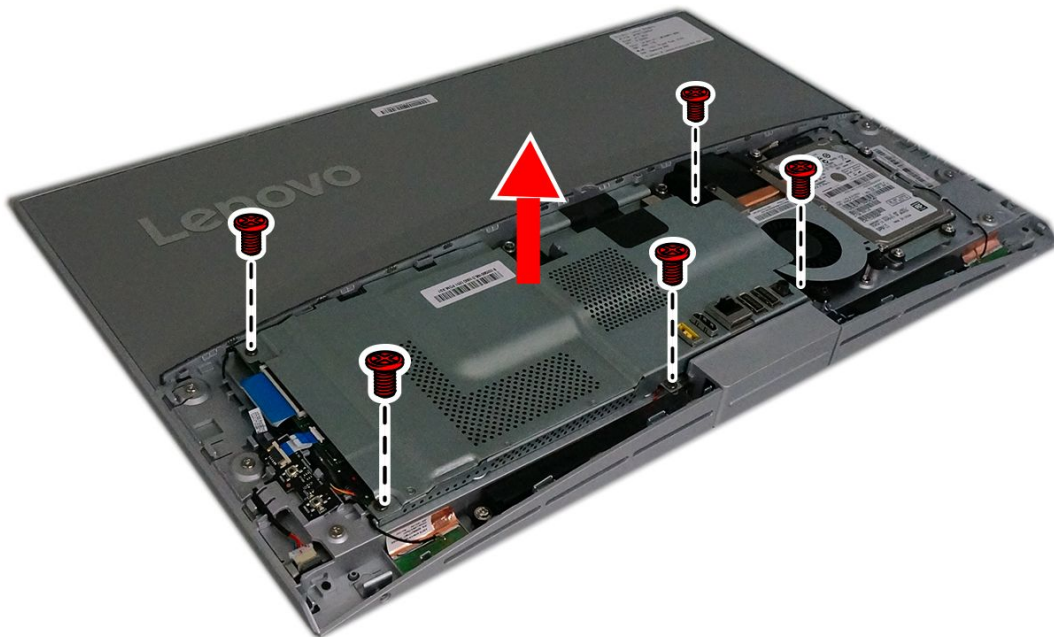Step 9.   Reattach the stand holder, rear cover, and stand base.

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 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 Locating connectors, controls and components to locate the various connectors.

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

Step 5.   Remove the rear cover. Refer to Removing the rear cover.

Step 6.   Remove the stand holder. Refer to Removing the stand holder.

Step 7.   Remove the EMI cover. Refer to Removing the EMI cover.

Step 8.   Disconnect the power switch board cable from the power switch board. **1**

Step 9.   Slide the power switch board out in the direction as shown. **2**

Step 10. To install the power switch board:

      a.   Slide in the power switch board until it locks into position.

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

Step 11. Reattach the EMI cover, stand holder, rear cover, and stand base.

Replacing the Wi-Fi 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 Wi-Fi card:

Step 1. Remove any media 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 Locating connectors, controls and components to locate the various connectors.

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

Step 5. Remove the rear cover. Refer to Removing the rear cover.

Step 6. Remove the stand holder. Refer to Removing the stand holder.

Step 7. Remove the EMI cover. Refer to Removing the EMI cover.

Step 8. Disconnect the antenna cables from the Wi-Fi card. **1**

Step 9. Remove the screw that secures the Wi-Fi card to the motherboard. **2**

Step 10. Pull the Wi-Fi card out of the slot.

Step 11. To install the new Wi-Fi card:
a. Insert the new Wi-Fi card into the Wi-Fi card slot.

      b.   Secure new the Wi-Fi card to the motherboard with the screw.

      c.   Connect the antenna cables to the new Wi-Fi card.

Step 12. Reattach the EMI cover, stand holder, rear cover, and stand base.
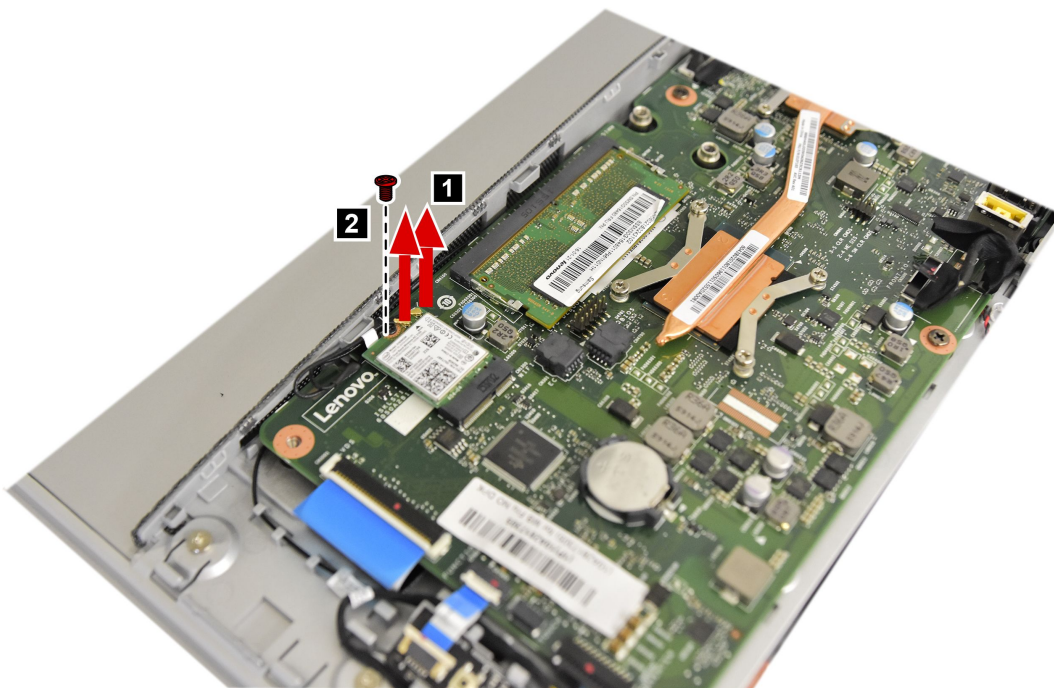
Replacing the memory module

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 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 Locating connectors, controls and components to locate the various connectors.

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

Step 5.   Remove the rear cover. Refer to Removing the rear cover.

Step 6.   Remove the stand holder. Refer to Removing the stand holder.

Step 7.   Remove the EMI cover. Refer to Removing the EMI cover.

Step 8.   Open the retaining clips **1** and gently pull the memory module out of the memory socket **2**.

Step 9.   To install the new memory module:

      a.   Position the new memory module over the memory slot. Ensure that the notch **2** on the memory module aligns correctly with the slot key **1** in the memory socket. Push the memory module straight down into the socket until the retaining clips close.
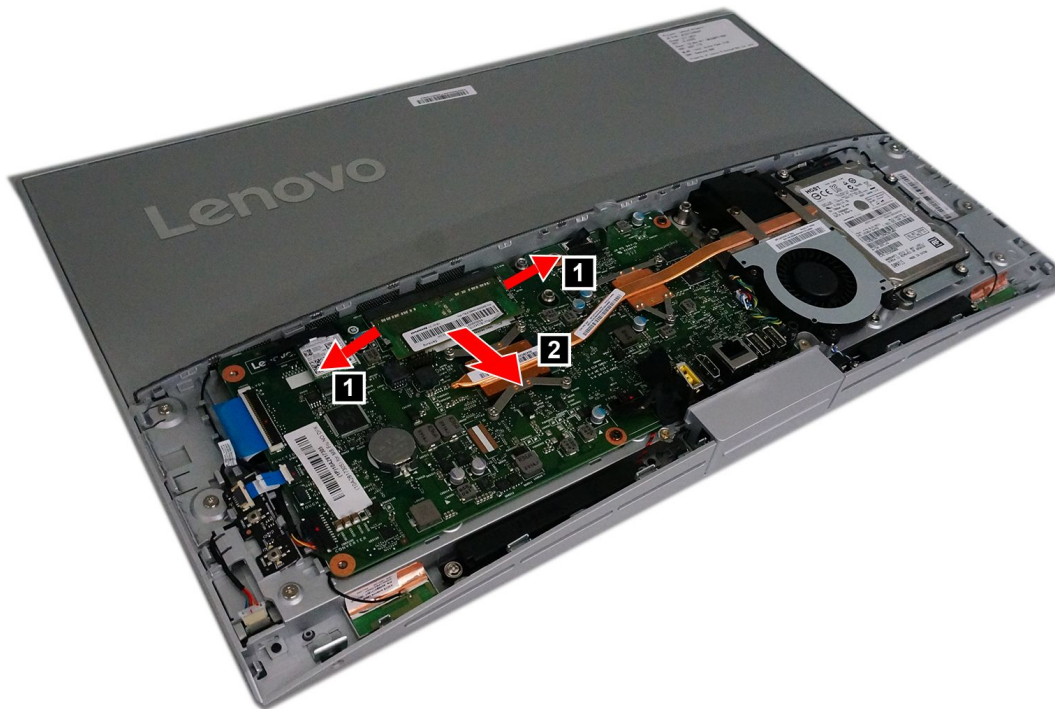
Step 10. Reattach the EMI cover, stand holder, rear cover, and stand base.
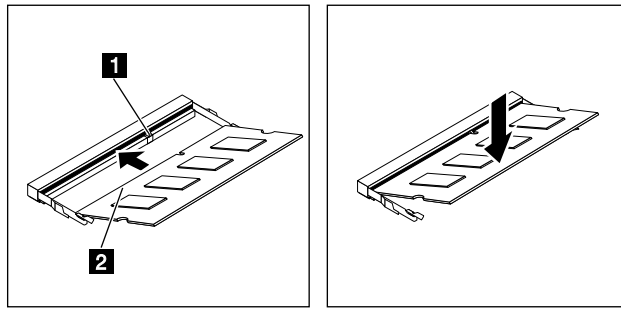
Replacing the system fan

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 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 Locating connectors, controls and components to locate the various connectors.

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

Step 5. Remove the rear cover. Refer to Removing the rear cover.

Step 6. Remove the stand holder. Refer to Removing the stand holder.

Step 7. Remove the EMI cover. Refer to Removing the EMI cover.

Step 8.	Remove the three screws that secure the system fan to the chassis.

Step 9.	Disconnect the system fan power cable from the motherboard.

Step 10.	Lift the system fan to remove it.

Step 11.	To install the new system fan:

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

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

Step 12.	Reattach the EMI cover, stand holder, rear 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 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 Locating connectors, controls and components to locate the various connectors.

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

Step 5.	Remove the rear cover. Refer to Removing the rear cover.

Step 6.	Remove the stand holder. Refer to Removing the stand holder.

Step 7.	Remove the EMI cover. Refer to Removing the EMI cover.

Step 8. Remove the system fan. Refer to Replacing the system fan.

Step 9. Loosen the nine screws that secure the heat-sink to the motherboard and wind shielding. Then, lift the heat-sink off the system board.

> **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 10. To install the new heat-sink:

    a. Position the new heat-sink on the motherboard so that the nine screws are aligned with the holes in the motherboard and wind shielding.

    b. Tighten the screws in numeric order to secure the new heat-sink to the motherboard.

Step 11. Reattach the EMI cover, stand holder, rear cover, and stand base.
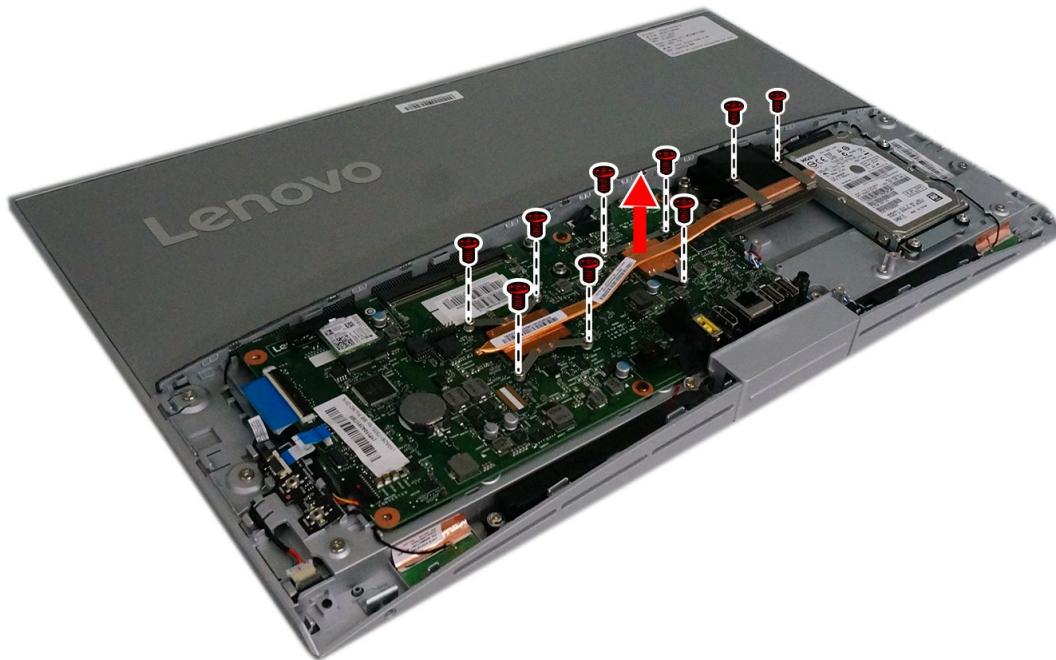
Removing the wind shielding

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 wind shielding:

Step 1. Remove any media 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 Locating connectors, controls and components to locate the various connectors.

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

Step 5.   Remove the rear cover. Refer to Removing the rear cover.

Step 6.   Remove the stand holder. Refer to Removing the stand holder.

Step 7.   Remove the EMI cover. Refer to Removing the EMI cover.

Step 8.   Remove the system fan. Refer to Replacing the system fan.

Step 9.   Remove the heat sink. Refer to Replacing the heat-sink.

Step 10. Remove the two screws secure the wind shielding to the chassis.

Step 11. To install the new wind shielding:

   a.   Align the two holes in the new wind shielding with the mounting holes in the chassis.

   b.   Secure the new wind shielding to the chassis with two screws.

Step 12. Reattach the heat-sink, system fan, EMI cover, stand holder, rear 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 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 Locating connectors, controls and components to locate the various connectors.

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

Step 5. Remove the rear cover. Refer to Removing the rear cover.

Step 6. Remove the stand holder. Refer to Removing the stand holder.

Step 7. Remove the EMI cover. Refer to Removing the EMI cover.

Step 8. Remove the memory modules. Refer to Replacing the memory module.

Step 9. Remove the system fan. Refer to Replacing the system fan.

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

Step 11. Remove the Wi-Fi card. Refer to Replacing the Wi-Fi card.

Step 12. Remove all the cables from the motherboard.

Step 13. Remove the four screws that secure the motherboard to the chassis, and then lift the motherboard up to remove it.

Step 14. To install the new motherboard:

    a. Align the four screw holes in the new motherboard with the screw holes in the chassis.

    b. Secure the new motherboard to the chassis with four screws.

    c. Connect all the cables to the new motherboard.

Step 15. Install the following parts to the new motherboard:

- Wi-Fi card
- Heat-sink
- System fan
- Memory module

Step 16. Reattach the EMI cover, stand holder, rear cover, and stand base.
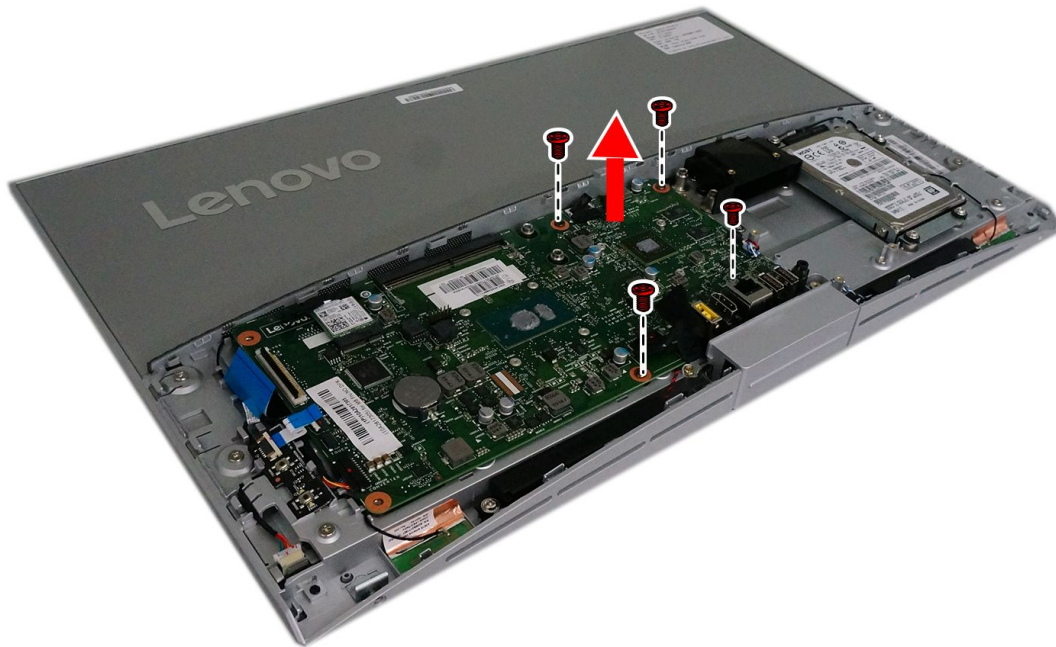
Replacing the speaker system

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 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 Locating connectors, controls and components to locate the various connectors.

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

Step 5. Remove the rear cover. Refer to Removing the rear cover.

Step 6. Remove the stand holder. Refer to Removing the stand holder.

Step 7. Remove the EMI cover. Refer to Removing the EMI cover.

Step 8. Remove the motherboard. Refer to Replacing the motherboard.

Step 9. Remove the four screws that secure the speaker system to the chassis. Then, lift up the speaker system to remove it.

Step 10. To install the new speaker system:

  a. Align the four screw holes in the new speaker system with the mounting holes in the chassis.

  b. Secure the new speaker system to the chassis with four screws.

Step 11. Reattach the motherboard, EMI cover, stand holder, rear cover, and stand base.

Removing the pull down assembly

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 pull down assembly:

Step 1.   Remove any media 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 Locating connectors, controls and components to locate the various connectors.

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

Step 5.   Remove the rear cover. Refer to Removing the rear cover.

Step 6.   Remove the stand holder. Refer to Removing the stand holder.

Step 7.   Remove the EMI cover. Refer to Removing the EMI cover.

Step 8.   Remove the motherboard. Refer to Replacing the motherboard.

Step 9.   Remove the two screws that secure the pull down assembly to the chassis, and then remove the pull down assembly.

Step 10. To install the pull down assembly:

     a.   Align the two screw holes in the new pull down assembly with the mounting holes in the chassis.

     b.   Secure the new pull down assembly to the chassis with two screws.

Step 11. Reattach the motherboard, EMI cover, stand holder, rear cover, and stand base.
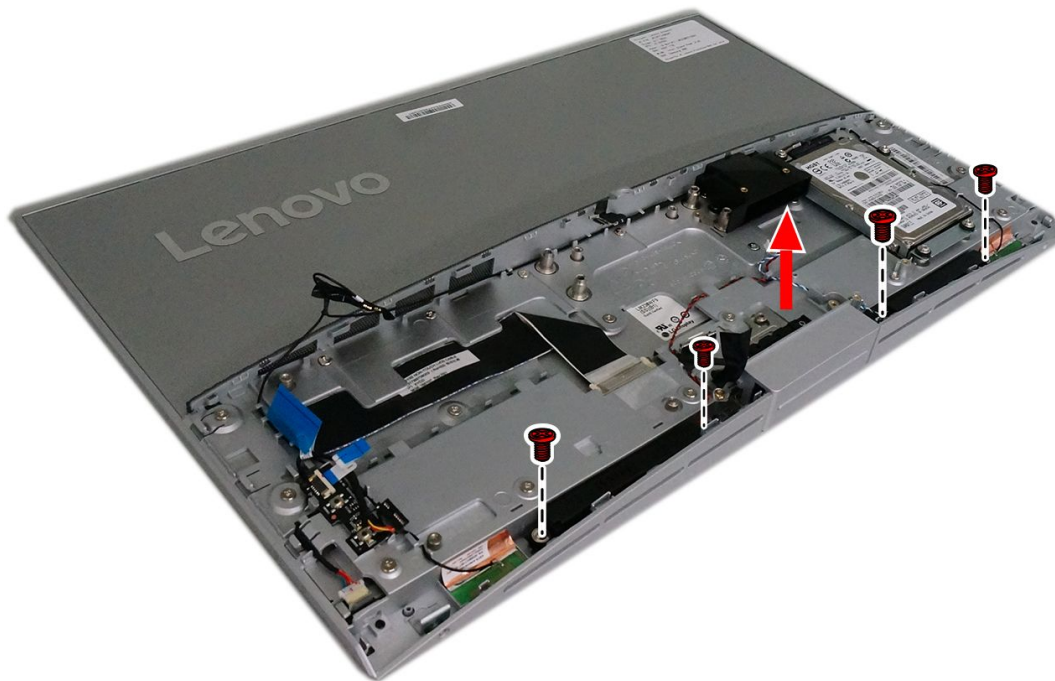
Replacing the camera

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 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 Locating connectors, controls and components to locate the various connectors.

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

Step 5.   Remove the rear cover. Refer to Removing the rear cover.

Step 6.   Remove the stand holder. Refer to Removing the stand holder.

Step 7.   Remove the EMI cover. Refer to Removing the EMI cover.

Step 8.   Remove the motherboard. Refer to Replacing the motherboard.

Step 9.   Remove the pull down assembly. Refer to Removing the pull down assembly.

Step 10. Remove the two screws that secure camera and USB board to the pull down assembly cover.

Step 11. Remove the pull down assembly bracket.

Step 12. Pull the USB board and camera assembly out of the pull down assembly cover.

Step 13. Disconnect the camera data cable from the connector in the camera.

Step 14. The camera is stick to the USB board by adhesive bandage. Separate the camera from the USB board.

Step 15. To install the new camera:

    a. Connect the data cable to the new camera.

    b. Place the new camera into position, and then stick it to the USB board using adhesive bandage.

    c. Secure the camera and USB board assembly to the pull down assembly cover with two screws.

    d. Place the pull down assembly bracket into position.

Step 16. Reattach the pull down assembly, motherboard, EMI cover, stand holder, rear cover, and stand base.
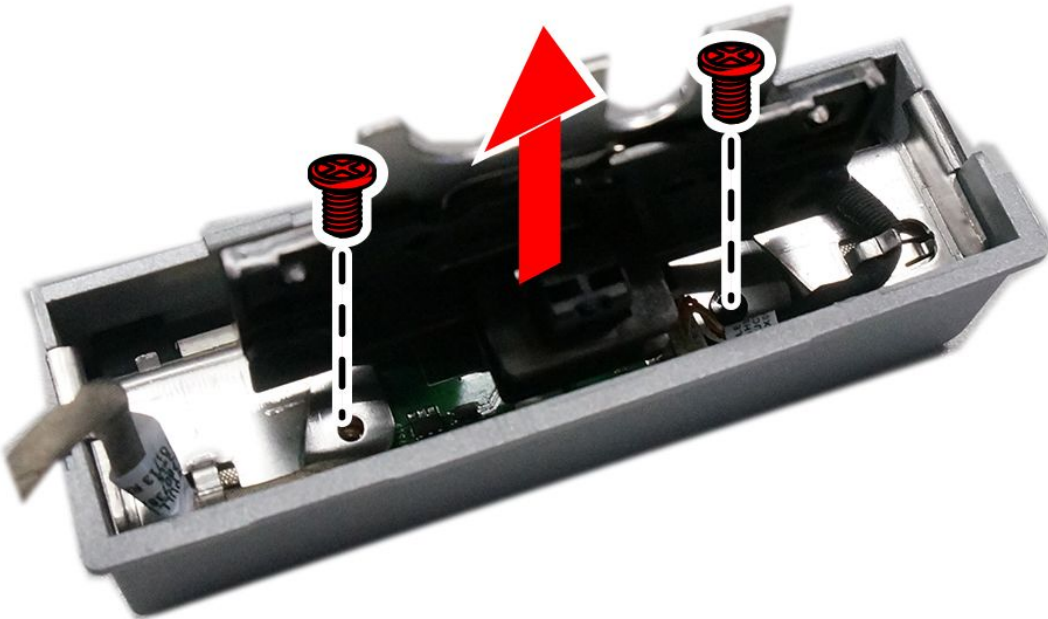
Replacing the USB board in the pull down assembly

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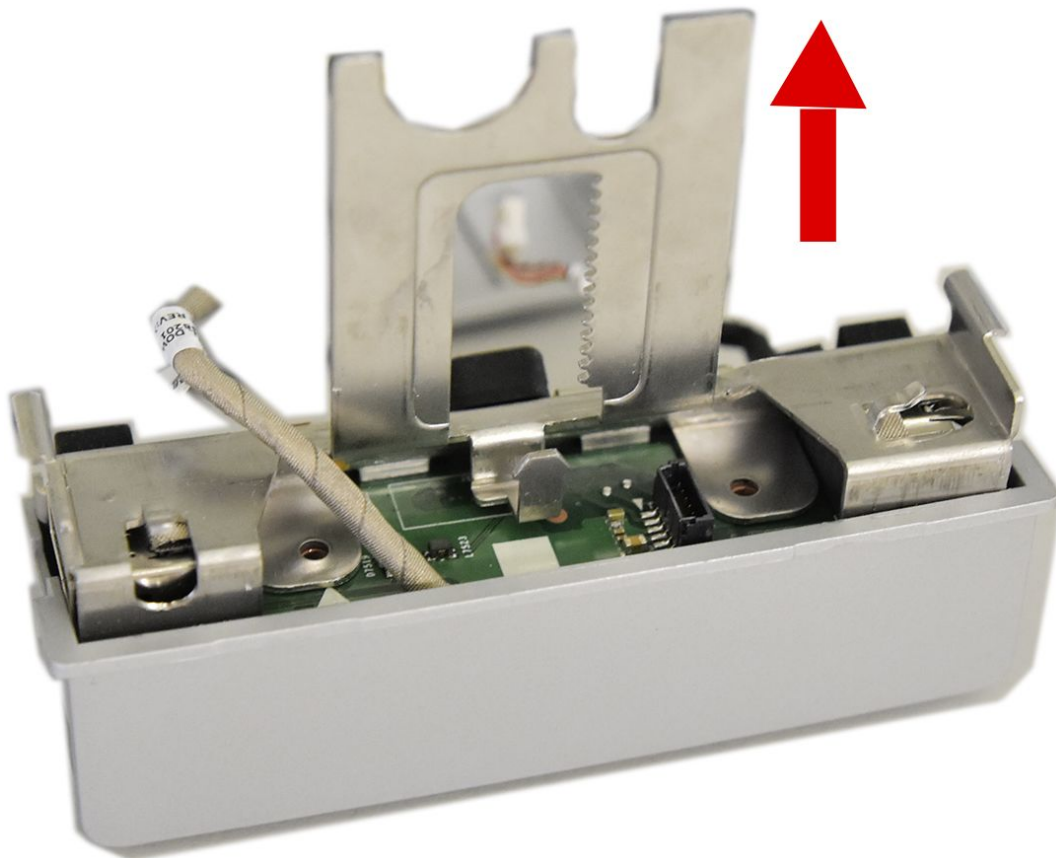
Note: It may be helpful to place the computer face-down on a soft flat surface for this procedure. Lenovo recommends that you use a blanket, towel, or other soft cloth to protect the computer screen from scratches or other damage.

To replace the USB board in the pull down assembly:

Step 1. Remove any media 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 Locating connectors, controls and components to locate the various connectors.

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

Step 5.   Remove the rear cover. Refer to Removing the rear cover.

Step 6.   Remove the stand holder. Refer to Removing the stand holder.

Step 7.   Remove the EMI cover. Refer to Removing the EMI cover.

Step 8.   Remove the motherboard. Refer to Replacing the motherboard.

Step 9.   Remove the pull down assembly. Refer to Removing the pull down assembly.

Step 10. Remove the two screws that secure camera and USB board to the pull down assembly cover.

Step 11. Remove the pull down assembly bracket.

Step 12. Pull the USB board and camera assembly out of the pull down assembly cover.

Step 13. Disconnect the camera data cable from the connector in the USB board.

Step 14. The camera is stick to the USB board by adhesive bandage. Separate the camera from the USB board.

Step 15. To install the new USB board:

      a.   Align the new USB board with the camera, and then stick it to the camera using adhesive bandage.

      b.   Secure the camera and USB board assembly to the pull down assembly cover with two screws.

      c.   Connect the camera cable to the connector in the USB board.

      d.   Place the pull down assembly bracket into position.

Step 16. Reattach the pull down assembly, motherboard, EMI cover, stand holder, rear cover, and stand base.

Replacing the LCD panel module

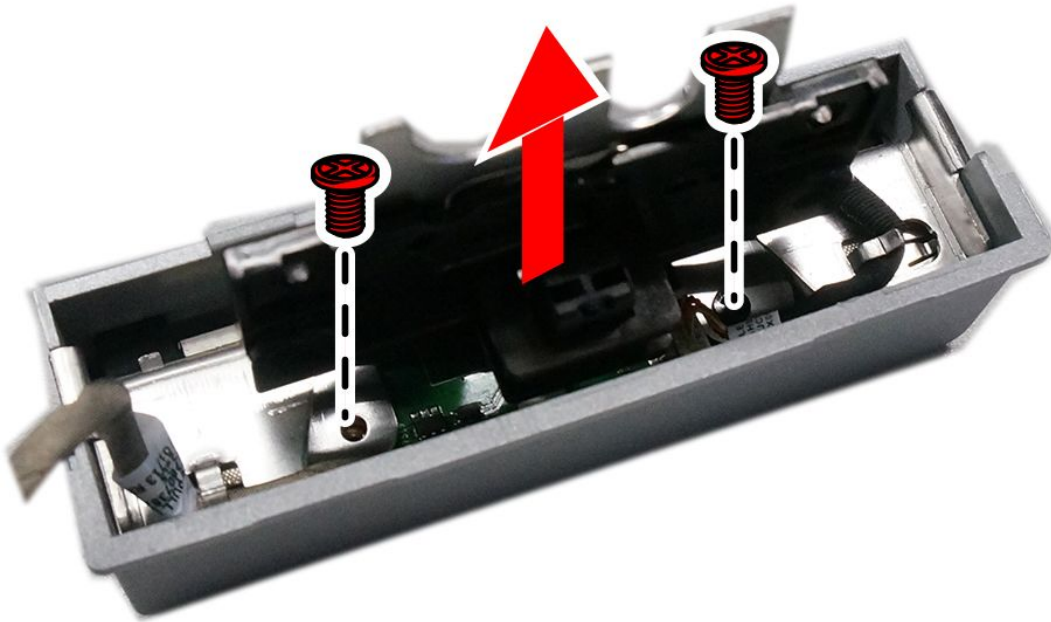**Note:** Turn off the computer and wait 3 to 5 minutes to let it cool down before removing the cover.

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.

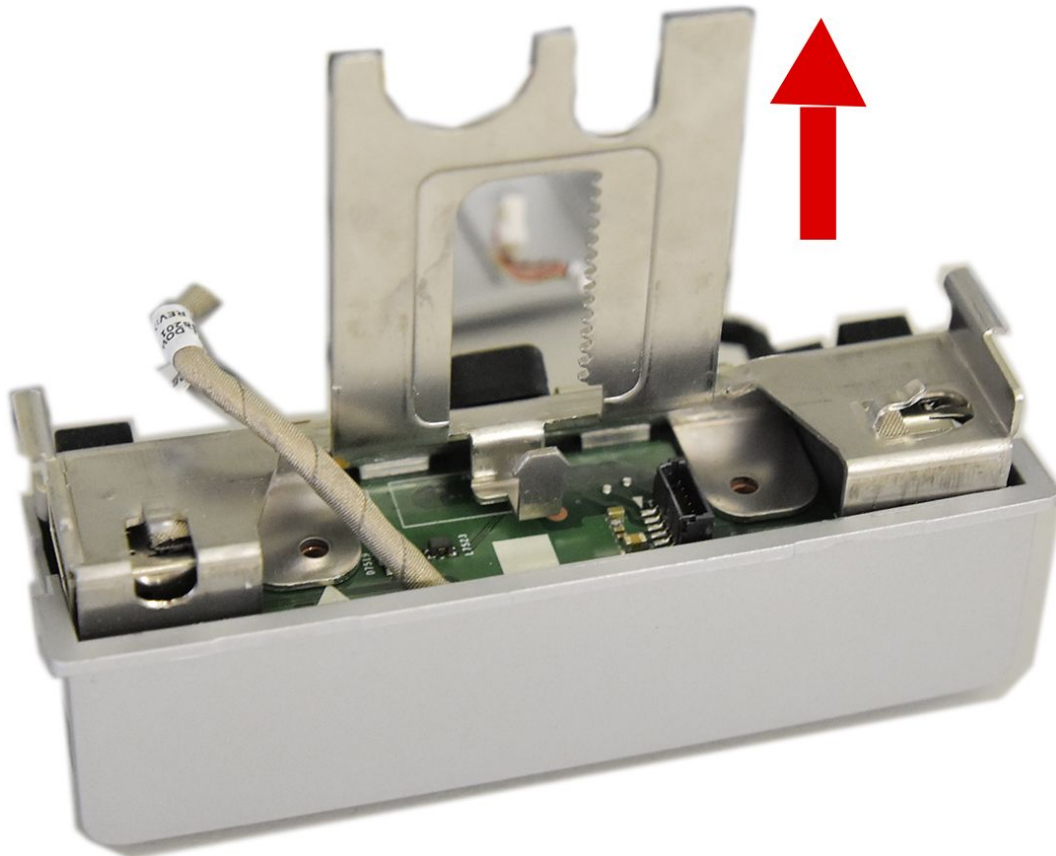**To replace the LCD panel module:**

Step 1. Remove any media 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 Locating connectors, controls and components to locate the various connectors.

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

Step 5. Remove the rear cover. Refer to Removing the rear cover.

Step 6. Remove the stand holder. Refer to Removing the stand holder.

Step 7. Remove the EMI cover. Refer to Removing the EMI cover.

Step 8. Remove the power switch board. Refer to Replacing the power switch board.

Step 9. Remove the system fan. Refer to Replacing the system fan.

Step 10. Remove the motherboard. Refer to Replacing the motherboard.

Step 11. Remove the wind shielding. Refer to Removing the wind shielding.

Step 12. Remove the solid state drive. Refer to Replacing the solid state drive.

Step 13. Remove the speaker system. Refer to Replacing the speaker system.

Step 14. Remove the pull down assembly. Refer to Removing the pull down assembly.

Step 15. Remove the touch cable from the connector in the LCD panel.
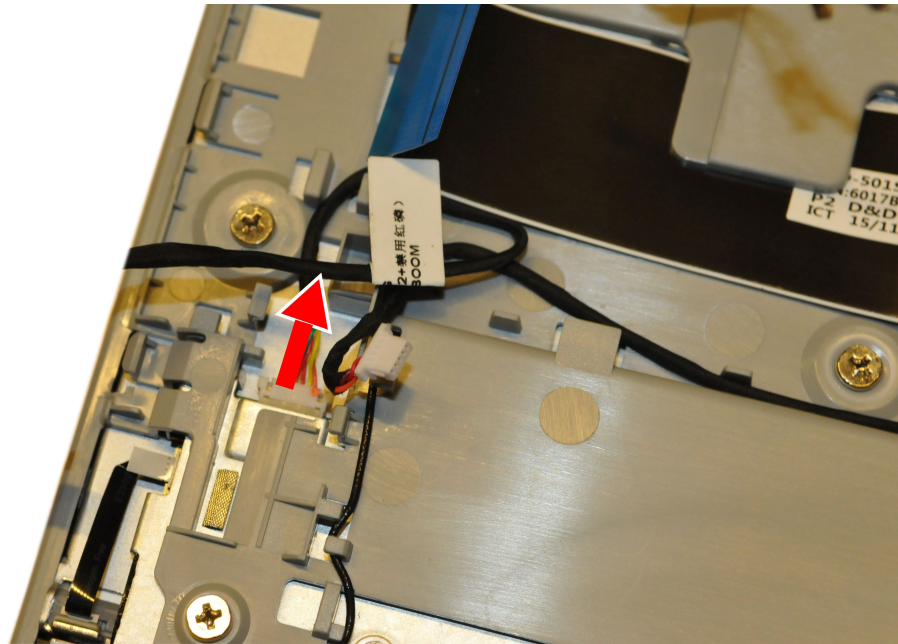
Step 16. Remove the LVDS cable **1** and converter cable **2** from the connectors in the LCD panel.
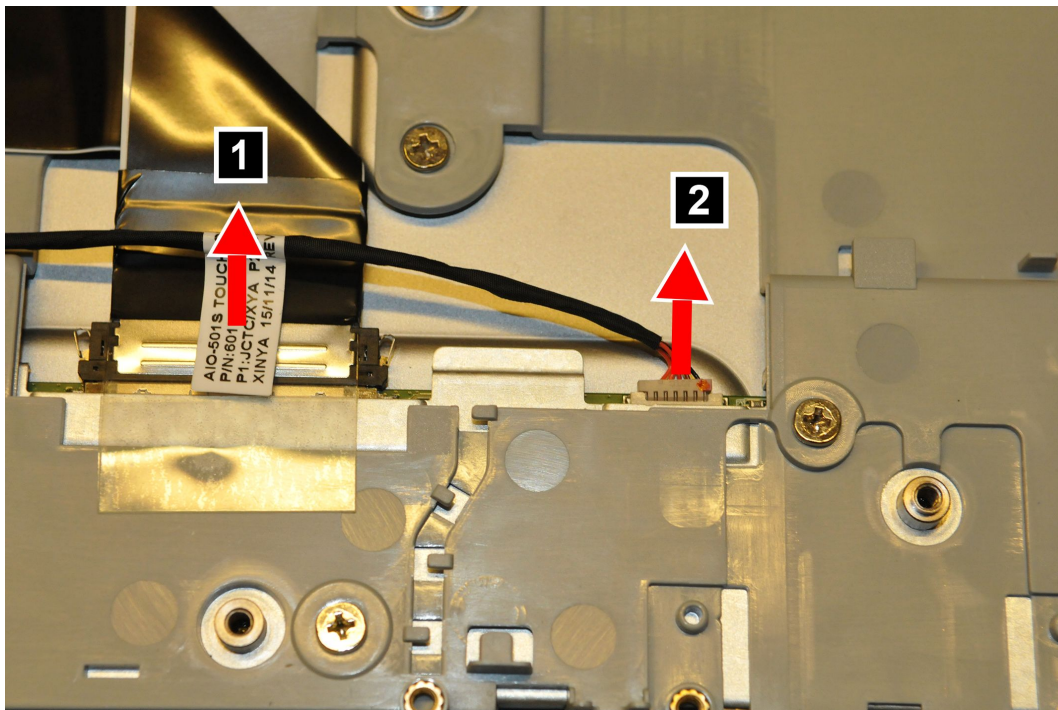
Step 17. Remove the twenty one screws that secure the middle frame to the LCD panel.

Step 18. Pull the middle frame in the directions as shown until the panel and middle frame are separated.

Step 19. Lift up the middle frame to remove it.

Step 20. To install the new the LCD panel module:

The new LCD panel module including:	1. LCD panel
	2. Touch control board
	3. Converter

a. Align the new LCD panel with the middle frame.

b. Secure the new LCD panel to the middle frame with twenty one screws.

c. Connect the LVDS, touch and converter cables to the connectors in the new LCD panel.

d. Reattach the pull down assembly to the chassis.

e. Reattach the speaker system.

f. Reattach the wind shielding.

g. Reattach the motherboard.

h. Connect the LVDS cable, touch cable, pull down assembly cable and speaker system cable to the corresponding connectors on the motherboard.

i. Reattach the system fan.

j. Reattach the solid state drive.

k. Reattach the power switch board.

l. Connect the system fan cable, solid state drive cable and power switch board cable to the corresponding connectors on the motherboard.

m. Reattach the EMI cover to the chassis.

n. Reattach the stand holder to the chassis.

o. Reattach the rear cover.

p. Reattach the stand base.

Replacing the LCD panel module-None Touch

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 LCD panel module:

Step 1. Remove any media 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 Locating connectors, controls and components to locate the various connectors.

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

Step 5. Remove the rear cover. Refer to Removing the rear cover.

Step 6. Remove the stand holder. Refer to Removing the stand holder.

Step 7. Remove the EMI cover. Refer to Removing the EMI cover.

Step 8. Remove the power switch board. Refer to Replacing the power switch board.

Step 9. Remove the system fan. Refer to Replacing the system fan.

Step 10. Remove the motherboard. Refer to Replacing the motherboard.

Step 11. Remove the wind shielding. Refer to Removing the wind shielding.

Step 12. Remove the solid state drive. Refer to Replacing the solid state drive.

Step 13. Remove the speaker system. Refer to Replacing the speaker system.

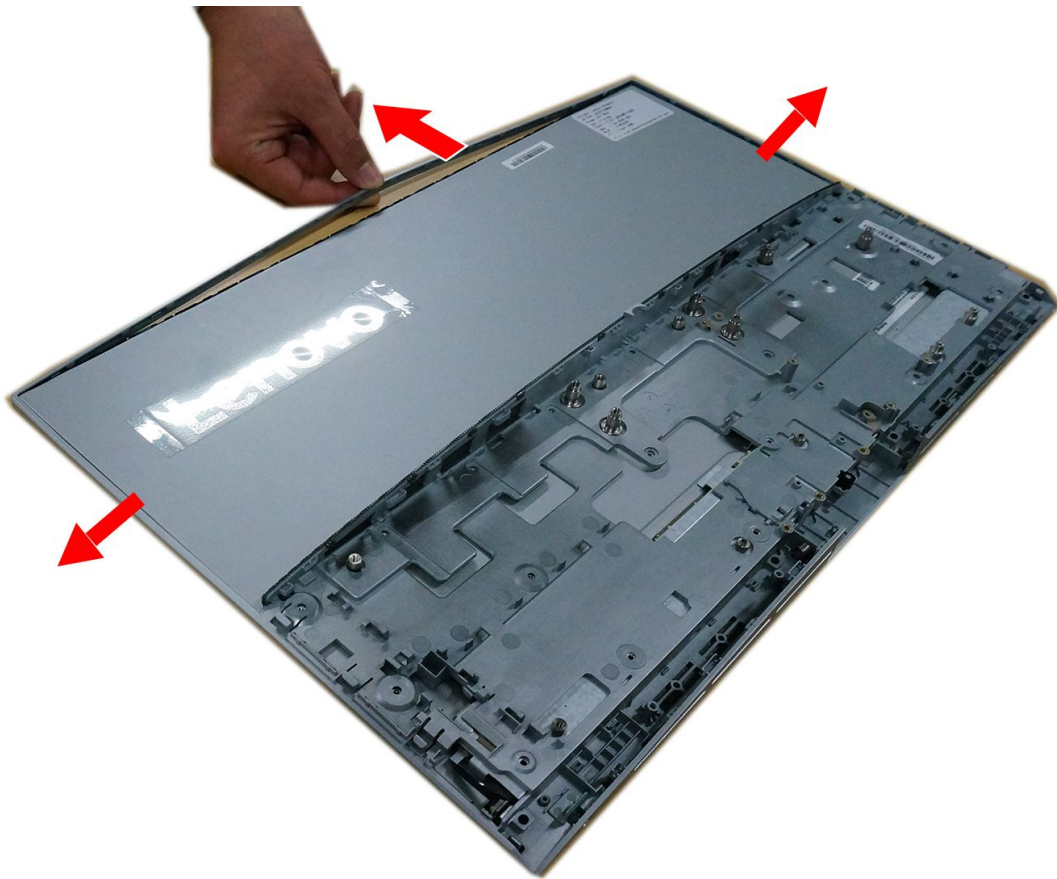Step 14. Remove the pull down assembly. Refer to Removing the pull down assembly.

Step 15. Remove the LVDS cable **1** and converter cable **2** from the connectors in the LCD panel.
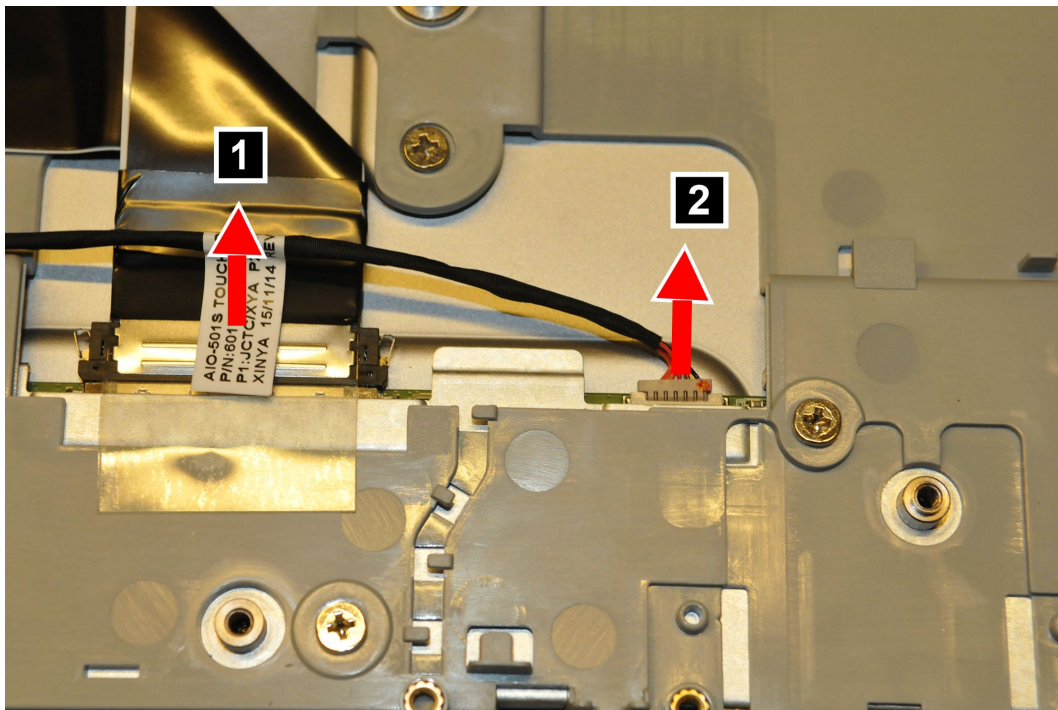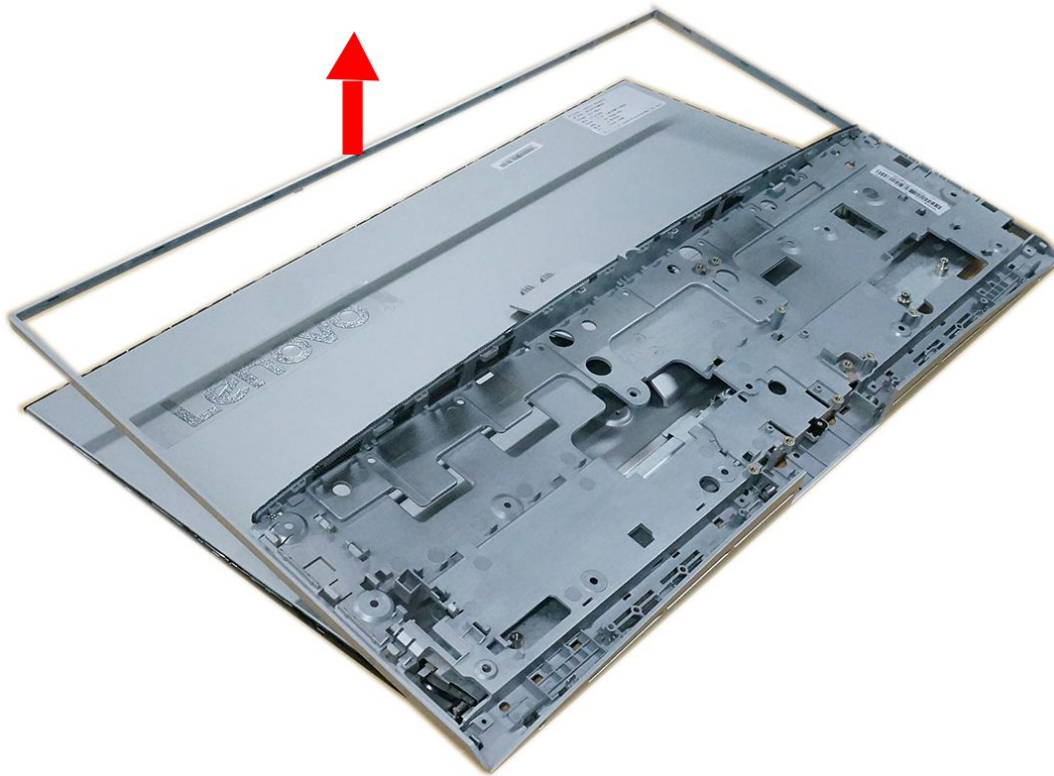

Step 16. Remove the twenty one screws that secure the middle frame to the LCD panel.

Step 17. Pull the middle frame in the directions as shown until the panel and middle frame are separated.

Step 18. Lift up the middle frame to remove it.

Step 19. To install the new the LCD panel module:

The new LCD panel module including:	1. LCD panel
	2. Converter

a. Align the new LCD panel with the middle frame.

b. Secure the new LCD panel to the middle frame with twenty one screws.

c. Connect the LVDS and converter cables to the connectors in the new LCD panel.

d. Reattach the pull down assembly the chassis.

e. Reattach the speaker system.

f. Reattach the wind shielding.

g. Reattach the motherboard.

h. Connect the LVDS cable, pull down assembly cable and speaker system cable to the corresponding connectors on the motherboard.

i. Reattach the system fan.

j. Reattach the solid state drive.

k. Reattach the power switch board.

l. Connect the system fan cable, solid state drive cable and power switch board cable to the corresponding connectors on the motherboard.

m. Reattach the EMI cover to the chassis.

n. Reattach the stand holder to the chassis with the four screws.

o. Reattach the rear cover.

p. Reattach the stand base.

Chapter 9. FRU lists

This chapter lists the information on the field replaceable units (FRUs) for ideacentre All-In-One 510S/520S desktop computer.

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

FRU list of ideacentre AIO 510S-23ISU

FruP/N	Description
AC_ADAPTER	
54Y8966	AC_ADAPTER,90W,100-240V,3P
BDPLANAR	
00UW319	Pentium 4405U GT930A 2G NO DPK
00UW318	Pentium 4405U GT930A 2G WIN DPK
00UW317	I3-6100U GT930A 2G NO DPK
00UW316	I3-6100U GT930A 2G WIN DPK
00UW315	I5-6200U GT930A 2G NO DPK
00UW314	I5-6200U GT930A 2G WIN DPK
00UW323	I7-6500U UMA NO DPK
00UW324	I3-6100U UMA WIN DPK
00UW325	I3-6100U UMA NO DPK
00UW322	I7-6500U UMA WIN DPK
00UW320	I7-6500U UMA WIN DPK
00UW321	I7-6500U UMA NO DPK
00UW327	Pentium 4405U UMA NO DPK
00UW326	Pentium 4405U UMA WIN DPK
00UW312	I7-6500U GT930A 2G WIN DPK
00UW313	I7-6500U GT930A 2G NO DPK
CABLE	
01AG963	LGD touch LM230WF7-SSB2 Silver
00XL221	FRU,CABLE,C.A. A510S Backlight touch
00XJ068	FRU,CABLE, C.A. A510S Touch_Contro
00XJ070	FRU,CABLE, C.A. A510S LVDS_T
01AG961	LGD Touch LM230WF7-SSB3 Gold
00XL221	FRU,CABLE,C.A. A510S Backlight touch
00XJ068	FRU,CABLE, C.A. A510S Touch_Contro
00XJ070	FRU,CABLE, C.A. A510S LVDS_T
01AG964	LGD touch LM230WF7-SSB2 Silver
00XJ069	FRU,CABLE,C.A. A510S Backlight

00XJ071	FRU,CABLE,C.A. A510S LVDS_NT
01AG962	LGD Non-touch LM230WF9-SSB2 Gold
00XJ069	FRU,CABLE,C.A. A510S Backlight
00XJ071	FRU,CABLE,C.A. A510S LVDS_NT
CAMERA	
01AH322	A510S 1080P 2MIC CP
CARDPOP	
01AJ788	Power button Board
01AJ789	Pull down IO Board
DT_KYB	
00PC217	SK-8861(CH) 2.4G KB-improved8
01AH600	2.4G SK-8861 improved8 KB HBW
00PC202	DT_KYB,DOK5321(US)W-Silk USB,US
FAN	
01EF166	AVC 7012 fan for AIO510
HDD_ASM	
00FC429	HDD,1TB,5400,9mm,DT2,SATA3,STD
00FC428	HDD,500G,5400,7mm,DT2,SATA3,STD
00FC432	SSHS,1TB,5400,9mm,DT2,SATA3,STD
HEATSINK	
01EF164	Heatsink 15W AIO510 Intel UMA
01EF165	Heatsink 15W+12W AIO510 Intel D
KYB_MOUSE	
25216265	Liteon SK-8861(IT) 2.4G KB-improved8
25209156	Sunrex EKB-10YA(SW) W-Silk USB KB-LVT8
25216251	Liteon SK-8861(US) 2.4G KB-improved8
25216271	Liteon SK-8861(US-EU) 2.4G KB-improved8
25209151	Sunrex EKB-10YA(RU) W-Silk USB KB-LVT8
25209164	Sunrex EKB-10YA(GK) W-Silk USB KB-LVT8
25209152	Sunrex EKB-10YA(UK) W-Silk USB KB-LVT8
25209165	Sunrex EKB-10YA(HG) W-Silk USB KB-LVT8
25209162	Sunrex EKB-10YA(HB) W-Silk USB KB-LVT8
25209149	Sunrex EKB-10YA(CZ-SL) W-S USB KB-LVT8
25209166	Sunrex EKB-10YA(BG) W-Silk USB KB-LVT8
25216258	Liteon SK-8861(Nordic) 2.4G KB-improved8
25209153	Sunrex EKB-10YA(Nordic) W-S USB KB-LVT8
25209161	Sunrex EKB-10YA(IT) W-Silk USB KB-LVT8
25209172	Sunrex EKB-10YA(US-EU) W-S USB KB-LVT8
25209168	Sunrex EKB-10YA(JP) W-Silk USB KB-LVT8
25216255	Liteon SK-8861(US-IN) 2.4G KB-improved8

25209160	Sunrex EKB-10YA(SL) W-Silk USB KB-LVT8
25216267	Liteon SK-8861(KR) 2.4G KB-improved8
25209155	Sunrex EKB-10YA(AR) W-Silk USB KB-LVT8
25209148	Sunrex EKB-10YA(TH) W-Silk USB KB-LVT8
25216254	Liteon SK-8861(CS-SK) 2.4G KB-improved8
25209146	Primax KB4721(US) W-Silk USB KB-LVT8
25216269	Liteon SK-8861(EN-FR) 2.4G KB-improved8
25209159	Sunrex EKB-10YA(SP) W-Silk USB KB-LVT8
25216259	Liteon SK-8861(LA) 2.4G KB-improved8
25209157	Sunrex EKB-10YA(GE) W-Silk USB KB-LVT8
25209147	Sunrex EKB-10YA(TW) W-Silk USB KB-LVT8
25216257	Liteon SK-8861(GB) 2.4G KB-improved8
25209145	Sunrex EKB-10YA(US) W-Silk USB KB-LVT8
25216266	Liteon SK-8861(FR) 2.4G KB-improved8
25216263	Liteon SK-8861(TR) 2.4G KB-improved8
25216270	Liteon SK-8861(BE-EN) 2.4G KB-improved8
25209169	Sunrex EKB-10YA(EN-FR) W-S USB KB-LVT8
25201322	Sunrex LXH-EMS-10ZA W-Silk Mouse
25216253	Liteon SK-8861(TH) 2.4G KB-improved8
25209158	Sunrex EKB-10YA(TR) W-Silk USB KB-LVT8
25209154	Sunrex EKB-10YA(LA) W-Silk USB KB-LVT8
25216043	Liteon ZTM600 2.4G Mouse (WW) Silver
25216264	Liteon SK-8861(ES) 2.4G KB-improved8
25209170	Sunrex EKB-10YA(PT) W-Silk USB KB-LVT8
25216252	Liteon SK-8861(TW) 2.4G KB-improved8
25209171	Sunrex EKB-10YA(BE-EN) W-S USB KB-LVT8
25209150	Sunrex EKB-10YA(IN) W-Silk USB KB-LVT8
25209163	Sunrex EKB-10YA(FR) W-Silk USB KB-LVT8
25216268	Liteon SK-8861(JP) 2.4G KB-improved8
25201068	Liteon LXH-SM-8825 W-Silk Mouse
25216261	Liteon SK-8861(SA) 2.4G KB-improved8
25216256	Liteon SK-8861(RU) 2.4G KB-improved8
25216262	Liteon SK-8861(DE) 2.4G KB-improved8
25209167	Sunrex EKB-10YA(KR) W-Silk USB KB-LVT8
LINECORD	
00XL059	Fru, LINECORD,AR,1M,3P,NON-LH
00XL062	Fru, LINECORD,BR,1M,3P,NON-LH
00XL073	Fru, LINECORD,IT,1M,3P,NON-LH
00XL078	Fru, LINECORD,AU,1M,3P,NON-LH
00XL093	Fru, LINECORD,TW,1M,3P,NON-LH

00XL067	Fru, LINECORD,DK,1M,3P,NON-LH
00XL068	Fru, LINECORD,DK,1M,3P,NON-LH
00XL069	Fru, LINECORD,CH,1M,3P,NON-LH
00XL089	Fru, LINECORD,CN,1M,3P,NON-LH
00XL086	Fru, LINECORD,IL,1M,3P,NON-LH
00XL092	Fru, LINECORD,TW,1M,3P,NON-LH
00XL081	Fru, LINECORD,ZA,1M,3P,NON-LH
00XL061	Fru, LINECORD,BR,1M,3P,NON-LH
00XL077	Fru, LINECORD,GB,1M,3P,NON-LH
00XL053	Fru, US/CA,1M,3P,NON-LH
00XL066	Fru, LINECORD,DK,1M,3P,NON-LH
00XL070	Fru, LINECORD,CH,1M,3P,NON-LH
00XL085	Fru, LINECORD,IL,1M,3P,NON-LH
00XL074	Fru, LINECORD,IT,1M,3P,NON-LH
00XL057	Fru, LINECORD,AR,1M,3P,NON-LH
00XL096	Fru, LINECORD,IN,1M,3P,NON-LH
00XL076	Fru, LINECORD,GB,1M,3P,NON-LH
00XL065	Fru, EU/KR,1M,3P,NON-LH
00XL082	Fru, LINECORD,ZA,1M,3P,NON-LH
00XL052	Fru, US/CA,1M,3P,NON-LH
00XL064	Fru, EU/KR,1M,3P,NON-LH
00XL080	Fru, LINECORD,AU,1M,3P,NON-LH
00XL063	Fru, EU/KR,1M,3P,NON-LH
00XL071	Fru, LINECORD,CH,1M,3P,NON-LH
00XL051	Fru,US/CA,1M,3P,NON-LH
00XL097	Fru, LINECORD,TH,1M,3P,NON-LH
00XL075	Fru, LINECORD,GB,1M,3P,NON-LH
00XL084	Fru, LINECORD,IL,1M,3P,NON-LH
00XL083	Fru, LINECORD,ZA,1M,3P,NON-LH
00XL091	Fru, LINECORD,TW,1M,3P,NON-LH
00XL058	Fru, LINECORD,AR,1M,3P,NON-LH
00XL072	Fru, LINECORD,IT,1M,3P,NON-LH
00XL003	Fru, JP,Anti-TR,1M,2P,NON-LH
00XL002	Fru, JP,Anti-TR,1M,2P,NON-LH
00XL094	Fru, LINECORD,IN,1M,3P,NON-LH
00XL090	Fru, LINECORD,CN,1M,3P,NON-LH
00XL079	Fru, LINECORD,AU,1M,3P,NON-LH
00XL060	Fru, LINECORD,BR,1M,3P,NON-LH
MECH_ASM	
01EF261	ASSY_Middle_Frame

01EF265	ASSY_Pull-down_Holder
01EF263	ASSY_Rear_cover
01EF266	ASSY_MB_Shield
01EF267	ASSY_HDD_Cage
01EF262	ASSY_Front_Deco
01EF326	WIFI_ANTENNA_L&R_A510S
01EF264	ASSY_Pull-down_Cover
MECHANICAL	
01EF269	Fin_Cover
01EF325	Pull-down_Bracket
MEMORY	
03T7413	4G,SODIMM,DDR4,2133MHz
03T7415	16G,SODIMM,DDR4,2133MHz
03T7414	8G,SODIMM,DDR4,2133MHz
MOUSE	
00PC593	Doking M680B W-Silk USB MC WHT
OPT_DRIVE	
00XG043	EX-ODD DVD Burner DB65
SCREW	
01EF324	SCREW LIST,A510S
SSD_ASM	
00KT011	256G,2.5",7mm,SATA6G,SAMSG,STD
00KT046	ASM LIT V2+ 256GB
STAND	
01EF260	ASSY_M_AIO510S_Base
01EF259	ASSY_M_AIO510S_UP
WIRELESS	
00JT477	Wireless,CMB,LTN,NFA435
00JT507	Wireless,CMB,IN,3165 ac Ind
00JT497	Wireless,CMB,IN,3165 ac

FRU list of ideacentre AIO 520S-23IKU

FruP/N	Description
54Y8966	90w Power Brick
00PC726	AC_ADAPTER,90W,100-240Vac,3P
BDPLANAR	
01LM019	I5-7200U UMA WIN DPK
01LM080	I3-6006U UMA AIO520S NO DPK
01LM017	I7-7500U UMA WIN DPK

01LM079	I3-6006U UMA AIO520S WIN DPK
01LM030	I3-7100U GT930A 2G NO DPK
01LM020	I5-7200U UMA NO DPK
01LM031	4415U GT930A 2G WIN DPK
01LM032	4415U GT930A 2G NO DPK
01LM022	I3-7100U UMA NO DPK
01LM018	I7-7500U UMA NO DPK
01LM021	I3-7100U UMA WIN DPK
01LM023	4415U UMA WIN DPK
01LM024	4415U UMA NO DPK
01LM028	I5-7200U GT930A 2G NO DPK
01LM025	I7-7500U GT930A 2G WIN DPK
01LM082	I3-6006U GT930A2G A520S NO DPK
01LM081	I3-6006U GT930A2G A520S WINDPK
01LM029	I3-7100U GT930A 2G WIN DPK
01LM026	I7-7500U GT930A 2G NO DPK
01LM027	I5-7200U GT930A 2G WIN DPK
CABLE	
00XJ074	C.A. A510S HDD
00XJ073	C.A. A510S Function
00XJ072	C.A. A510S Webcam
00XL221	C.A. A510S Backlight touch
00XJ075	C.A. A510S Pull-down_IO
00XJ068	C.A. A510S Touch_Contro
00XJ069	C.A. A510S Backlight
00XJ070	C.A. A510S LVDS_T
00XJ071	C.A. A510S LVDS_NT
CAMERA	
01AH322	A510S 1080P 2MIC CP
CARDPOP	
01AJ788	Power button Board
01AJ789	Pull down IO Board
DT_KYB	
00PC217	SK-8861(CH) 2.4G KB-improved8
00PC202	DT_KYB,DOK5321(US)W-Silk USB,US
01AH600	2.4G SK-8861 improved8 KB HBW
FAN	
01EF166	AVC 7012 fan for AIO510
HDD_ASM	
00FC428	HDD,500G,5400,7mm,DT2,SATA3,STD

00FC429	HDD,1TB,5400,9mm,DT2,SATA3,STD
00PC557	HDD,1TB,5400,7mm,DT2,SATA3,SMR
00FC432	SSHS,1TB,5400,9mm,DT2,SATA3,STD
HEATSINK	
01EF165	Heatsink 15W+12W AIO510 Intel D
01EF164	Heatsink 15W AIO510 Intel UMA
KYB_MOUSE	
25216258	Liteon SK-8861(Nordic) 2.4G KB-improved8
25209151	Sunrex EKB-10YA(RU) W-Silk USB KB-LVT8
25209162	Sunrex EKB-10YA(HB) W-Silk USB KB-LVT8
25209149	Sunrex EKB-10YA(CZ-SL) W-S USB KB-LVT8
25216257	Liteon SK-8861(GB) 2.4G KB-improved8
25209153	Sunrex EKB-10YA(Nordic) W-S USB KB-LVT8
25209161	Sunrex EKB-10YA(IT) W-Silk USB KB-LVT8
25209172	Sunrex EKB-10YA(US-EU) W-S USB KB-LVT8
25209155	Sunrex EKB-10YA(AR) W-Silk USB KB-LVT8
25209148	Sunrex EKB-10YA(TH) W-Silk USB KB-LVT8
25209159	Sunrex EKB-10YA(SP) W-Silk USB KB-LVT8
25216266	Liteon SK-8861(FR) 2.4G KB-improved8
25216265	Liteon SK-8861(IT) 2.4G KB-improved8
25216254	Liteon SK-8861(CS-SK) 2.4G KB-improved8
25209157	Sunrex EKB-10YA(GE) W-Silk USB KB-LVT8
25216252	Liteon SK-8861(TW) 2.4G KB-improved8
25216253	Liteon SK-8861(TH) 2.4G KB-improved8
25216267	Liteon SK-8861(KR) 2.4G KB-improved8
25209154	Sunrex EKB-10YA(LA) W-Silk USB KB-LVT8
25216268	Liteon SK-8861(JP) 2.4G KB-improved8
25209170	Sunrex EKB-10YA(PT) W-Silk USB KB-LVT8
25209171	Sunrex EKB-10YA(BE-EN) W-S USB KB-LVT8
25216259	Liteon SK-8861(LA) 2.4G KB-improved8
25201068	Liteon LXH-SM-8825 W-Silk Mouse
25216262	Liteon SK-8861(DE) 2.4G KB-improved8
25216261	Liteon SK-8861(SA) 2.4G KB-improved8
25209167	Sunrex EKB-10YA(KR) W-Silk USB KB-LVT8
25209156	Sunrex EKB-10YA(SW) W-Silk USB KB-LVT8
25209164	Sunrex EKB-10YA(GK) W-Silk USB KB-LVT8
25209152	Sunrex EKB-10YA(UK) W-Silk USB KB-LVT8
25209165	Sunrex EKB-10YA(HG) W-Silk USB KB-LVT8
25209166	Sunrex EKB-10YA(BG) W-Silk USB KB-LVT8
25209168	Sunrex EKB-10YA(JP) W-Silk USB KB-LVT8

25209160	Sunrex EKB-10YA(SL) W-Silk USB KB-LVT8
25216271	Liteon SK-8861(US-EU) 2.4G KB-improved8
25216270	Liteon SK-8861(BE-EN) 2.4G KB-improved8
25216264	Liteon SK-8861(ES) 2.4G KB-improved8
25209146	Primax KB4721(US) W-Silk USB KB-LVT8
25216269	Liteon SK-8861(EN-FR) 2.4G KB-improved8
25216044	Liteon ZTM600 2.4G Mouse (No BTY) Silver
25209147	Sunrex EKB-10YA(TW) W-Silk USB KB-LVT8
25216251	Liteon SK-8861(US) 2.4G KB-improved8
25216043	Liteon ZTM600 2.4G Mouse (WW) Silver
25209145	Sunrex EKB-10YA(US) W-Silk USB KB-LVT8
25216263	Liteon SK-8861(TR) 2.4G KB-improved8
25216255	Liteon SK-8861(US-IN) 2.4G KB-improved8
25209169	Sunrex EKB-10YA(EN-FR) W-S USB KB-LVT8
25201322	Sunrex LXH-EMS-10ZA W-Silk Mouse
25209158	Sunrex EKB-10YA(TR) W-Silk USB KB-LVT8
25216256	Liteon SK-8861(RU) 2.4G KB-improved8
25209150	Sunrex EKB-10YA(IN) W-Silk USB KB-LVT8
25209163	Sunrex EKB-10YA(FR) W-Silk USB KB-LVT8
LINECORD	
00XL002	Fru, JP,Anti-TR,1M,2P,NON-LH
00XL052	Fru, US/CA,1M,3P,NON-LH
00XL086	Fru, LINECORD,IL,1M,3P,NON-LH
00XL090	Fru, LINECORD,CN,1M,3P,NON-LH
00XL092	Fru, LINECORD,TW,1M,3P,NON-LH
00XL068	Fru, LINECORD,DK,1M,3P,NON-LH
00XL074	Fru, LINECORD,IT,1M,3P,NON-LH
00XL066	Fru, LINECORD,DK,1M,3P,NON-LH
00XL071	Fru, LINECORD,CH,1M,3P,NON-LH
00XL057	Fru, LINECORD,AR,1M,3P,NON-LH
00XL003	Fru, JP,Anti-TR,1M,2P,NON-LH
00XL079	Fru, LINECORD,AU,1M,3P,NON-LH
00XL060	Fru, LINECORD,BR,1M,3P,NON-LH
00XL058	Fru, LINECORD,AR,1M,3P,NON-LH
00XL062	Fru, LINECORD,BR,1M,3P,NON-LH
00XL096	Fru, LINECORD,IN,1M,3P,NON-LH
00XL084	Fru, LINECORD,IL,1M,3P,NON-LH
00XL070	Fru, LINECORD,CH,1M,3P,NON-LH
00XL064	Fru, EU/KR,1M,3P,NON-LH
00XL097	Fru, LINECORD,TH,1M,3P,NON-LH

00XL065	Fru, EU/KR,1M,3P,NON-LH
00XL091	Fru, LINECORD,TW,1M,3P,NON-LH
00XL063	Fru, EU/KR,1M,3P,NON-LH
00XL059	Fru, LINECORD,AR,1M,3P,NON-LH
00XL072	Fru, LINECORD,IT,1M,3P,NON-LH
00XL061	Fru, LINECORD,BR,1M,3P,NON-LH
00XL069	Fru, LINECORD,CH,1M,3P,NON-LH
00XL093	Fru, LINECORD,TW,1M,3P,NON-LH
00XL081	Fru, LINECORD,ZA,1M,3P,NON-LH
00XL085	Fru, LINECORD,IL,1M,3P,NON-LH
00XL053	Fru, US/CA,1M,3P,NON-LH
00XL082	Fru, LINECORD,ZA,1M,3P,NON-LH
00XL051	Fru,US/CA,1M,3P,NON-LH
00XL077	Fru, LINECORD,GB,1M,3P,NON-LH
00XL073	Fru, LINECORD,IT,1M,3P,NON-LH
00XL075	Fru, LINECORD,GB,1M,3P,NON-LH
00XL067	Fru, LINECORD,DK,1M,3P,NON-LH
00XL078	Fru, LINECORD,AU,1M,3P,NON-LH
00XL083	Fru, LINECORD,ZA,1M,3P,NON-LH
00XL080	Fru, LINECORD,AU,1M,3P,NON-LH
00XL094	Fru, LINECORD,IN,1M,3P,NON-LH
00XL076	Fru, LINECORD,GB,1M,3P,NON-LH
00XL089	Fru, LINECORD,CN,1M,3P,NON-LH
MECH_ASM	
01EF565	ASSY_Pull-down_Cover,Gold
01EF564	ASSY_Rear_cover,Gold
01EF265	ASSY_Pull-down_Holder
01EF266	ASSY_MB_Shield
01EF264	ASSY_Pull-down_Cover
01EF642	Gasket,Mylar,Rubber,AIO 510S,
01EF653	FIN COVER
00XJ067	WIFI_ANTENNA_L&R_A510S
01EF563	ASSY_Front_Deco,Gold
01EF562	ASSY_Middle_Frame,Gold
01EF262	ASSY_Front_Deco
01EF261	ASSY_Middle_Frame
01EF263	ASSY_Rear_cover
01EF267	ASSY_HDD_Cage
MECHANICAL	
01EF656	IO USB GASKET,AIO 510S

01EF655	GASKET,8X3X1.5,AIO 510S
01EF657	Gasket 10*10*10,AIO 510S
01EF654	WIFI MYLAR,AIO 510S
01EF658	Rubber,AIO 510S,
01EF325	Pull-down_Bracket
MEMORY	
01AG708	4GB DDR4 2400 SoDIMM
01AG712	8GB DDR4 2400 SoDIMM
01FR300	4G DDR4 2400 SODIMM
01AG701	4GB DDR4 2400 SoDIMM
01FR302	16G DDR4 2400 SODIMM
01AG711	8GB DDR4 2400 SoDIMM
01AG715	16GB DDR4 2400 SoDIMM
01AG714	16GB DDR4 2400 SoDIMM
01FR301	8G DDR4 2400 SODIMM
01AG702	8GB DDR4 2400 SoDIMM
01AG709	4GB DDR4 2400 SoDIMM
MOUSE	
00PH143	Chicony USB Fingerprint MC B_O
00PH132	USB,Calliope,Mouse,White
00PC593	Doking M680B W-Silk USB MC WHT
OPT_DRIVE	
00XG043	EX-ODD DVD Burner DB65
SCREW	
01EF659	SCREW LIST,A510S,Gold
01EF324	SCREW LIST,A510S
SPEAKERINT	
01AH926	AIO 510S 3W Speaker
SSD_ASM	
00KT011	256G,2.5",7mm,SATA6G,SAMSG,STD
00XK720	256G,2.5",7mm,SATA3,SAM,STD
00KT046	ASM LIT V2+ 256GB
00XK736	LIT CV3 256G 2.5 ASM
STAND	
01EF259	ASSY_M_AIO510S_UP
01EF260	ASSY_M_AIO510S_Base
01EF561	ASSY_M_AIO510S_Base,Gold
01EF560	ASSY_M_AIO510S_UP,Gold
WIRELESS	

00JT507	Wireless,CMB,IN,3165 ac Ind
00JT497	Wireless,CMB,IN,3165 ac

Chapter 10. 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.