



lenovo

WORLDWIDE PARTNER



Hardware Replacement Guide

Type 8822 8823

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Overview

This guide is intended to be used by customers who are replacing Customer Replaceable Units (CRUs). In this guide, CRUs will often be referred to as parts.

This guide does not include procedures for all parts.

It is expected that cables, switches, and certain mechanical parts can be replaced by trained service personnel without the need for step-by-step procedures..

This guide contains procedures for replacing the following parts:

- Keyboard
- Mouse
- speaker

Safety information for replacing CRUs

Do not open your computer or attempt any repair before reading the “Important safety information” in the *«Safety and Warranty Guide»* that was included with your computer.

Tools required

To replace some parts in your computer, you might need a flat-blade or Phillips screwdriver. Additional tools might be needed for certain parts.

Handling static-sensitive devices

Static electricity, although harmless to you, can seriously damage computer components. When you are replacing a part, do not open the static-protective package containing the new part until the defective part has been removed from the computer and you are ready to install the new part. When you handle parts and other computer components, take these precautions to avoid static-electricity damage:

- Limit your movement. Movement can cause static-electricity to build up around you.
- Always handle parts and other computer components carefully. Handle adapters, memory modules, system boards, and microprocessors by the edges. Never touch any exposed circuitry.
- Prevent others from touching the parts and other computer components.
- Before you replace a new part, touch the static-protective package containing the part to a metal expansion-slot cover or other unpainted metal surface on the computer for at least two seconds. This reduces static electricity in the package and your body.
- When possible, remove the new part from the static-protective packaging, and install it directly in the computer without setting the part down. When this is not possible, place the static-protective package that the part came in on a smooth, level surface and place the part on it.
- Do not place the part on the computer cover or other metal surface.

1

Chapter

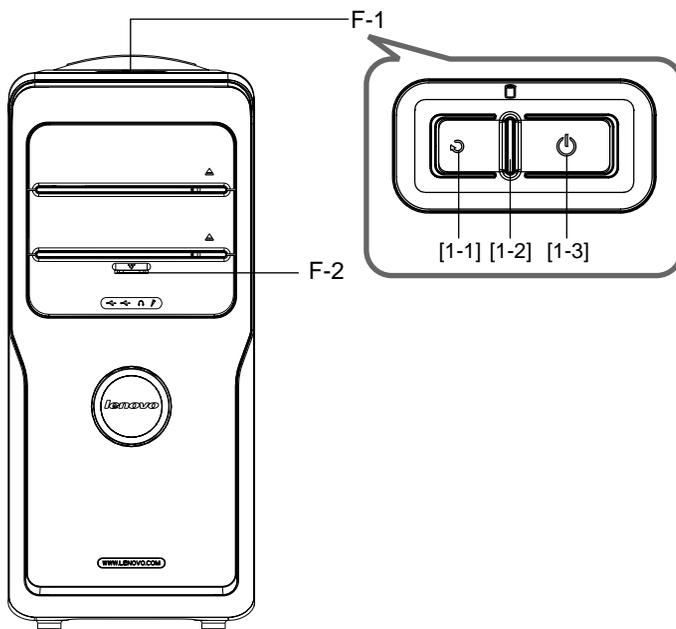
Locations

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

Locating connectors on the front of the computer

This section shows the various external connectors on the computer to which you can attach external devices.

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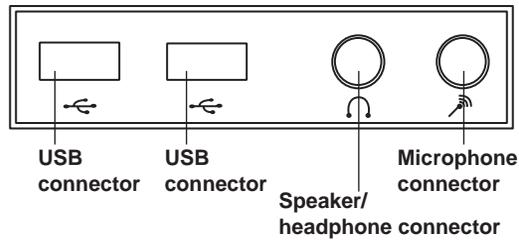
F-1 The top button

[1-1] Reset Key: Press this key to restart computer forcibly. It is recommended to take this operation with caution.

[1-2] Hard Disk Drive Indicator: Indicates read/write operations of the hard disk.

[1-3] Power Switches: Press this key to turn on/off computers.

F-2 Preposition Digital Panel: Open the preposition digital panel and the preposition digital connectors such as USB will be shown as below:

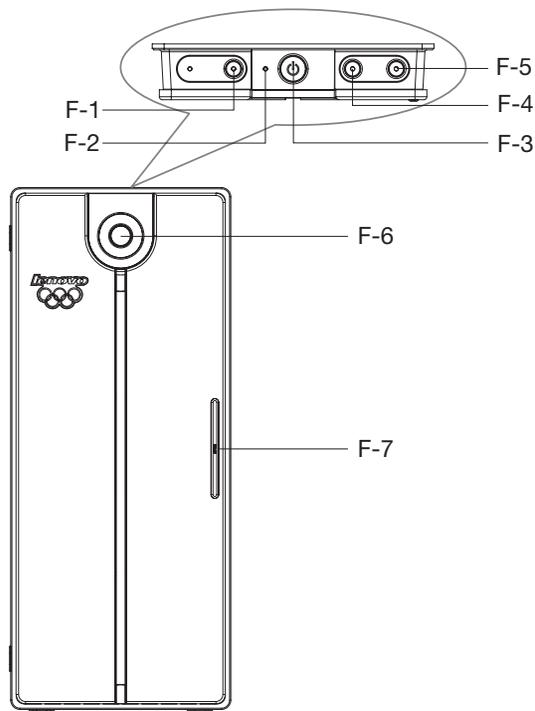


D-1 USB Connector: Used to connect USB devices.

D-2 Speaker/Headphone Connector: Used to connect speakers or headphones. If it is necessary to connect the headphone, remove the speaker plug and insert the headphone plug.

D-3 Microphone Connector: Used to connect the microphone and input the sound received by the microphone into the computer.

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F-1 Low noise Mode: Press this key to reduce the noise of computers after entering the Windows system.

F-2 Hard Disk Drive Indicator: Indicates read/write operations of the hard disk.

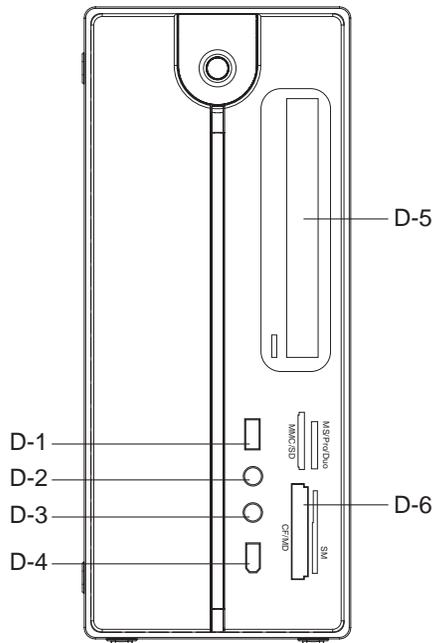
F-3 Power Switches: Press this key to turn on/off computers.

F-4 Reset Key: Press this key to restart computer forcibly. It is recommended to take this operation with caution.

F-5 System Rescue: For models with System Rescue feature, press this key to enable the System Rescue.

F-6 Digital Media Platform Button: Press this key to enable the Digital Media Platform feature in the power-off status.

F-7 Preposition Digital Panel: Open the preposition digital panel and the preposition digital connectors such as USB will be shown as below:



D-1 USB Connector: Used to connect USB devices.

D-2 Speaker/Headphone Connector: Used to connect speakers or headphones. If it is necessary to connect the headphone, remove the speaker plug and insert the headphone plug.

D-3 Microphone Connector: Used to connect the microphone and input the sound received by the microphone into the computer.

D-4 1394 Connector: Used to connect devices with 1394 connector. (Some models are not equipped with this connector)

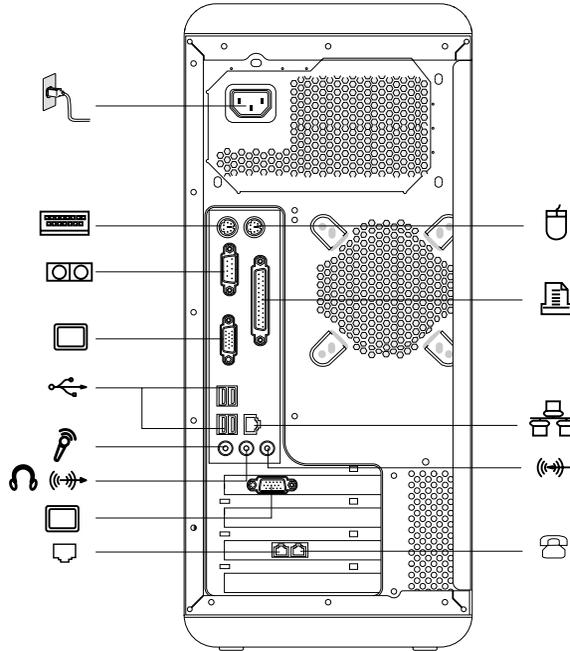
D-5 Optical drives.

D-6 Memory Card Reader: Used to read memory cards such as MS, MS PRO, MS Duo, SD, MMC, SM, CF and MD. (Some models are not equipped with memory card reader)

Locating connectors on the rear of the computer

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

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 — **Power connector:** Used to connect the mainframe to the power supply

 — **PS/2 mouse connector:** Used to connect PS/2 mouse

 — **PS/2 keyboard connector:** Used to connect PS/2 keyboard

 — **Serial port:** Used to connect devices with serial port (COM port)

 — **Parallel port:** Used to connect devices with parallel port

 — **Onboard graphics card connector:** Used to output monitor signals (VGA signals) through the signal cable connected with the monitor. (On models with external graphics card, onboard graphics card signals are shielded with no VGA signal outputs - some models are equipped with this connector)

 — **USB connector:** Used to connect USB devices

 — **Ethernet connector:** Used to connect LAN or broadband devices

-  — **External graphics card connector:** Used to output monitor signals (VGA signals) through the signal cable connected with the monitor. If the graphics card is equipped with S-Video connector and cabled to a TV, pictures displayed on the monitor screen may be redirected to the TV (some models are equipped with external graphics card).

-  — Used to attach your computer to a telephone line for modem use. (some models equipped with this connector)

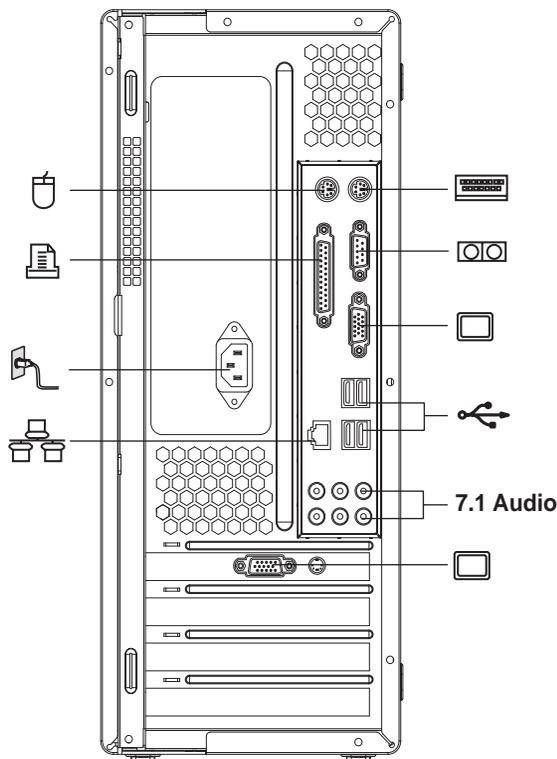
-  — Used to attach a telephone line to your computer for modem use. (some models equipped with this connector)

-  — **Audio in connector:** Used to receive audio signals .

-  — **Audio out connector:** Used to attach a speaker or headphones.

-  — **Microphone connector:** Used to attach a microphone to your computer when you want to record voice or capture other sounds.

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— **Power connector:** Used to connect the mainframe to the power supply



— **PS/2 mouse connector:** Used to connect PS/2 mouse



— **PS/2 keyboard connector:** Used to connect PS/2 keyboard



— **Serial port:** Used to connect devices with serial port (COM port)



— **Parallel port:** Used to connect devices with parallel port



— **Onboard graphics card connector:** Used to output monitor signals (VGA signals) through the signal cable connected with the monitor. (On models with external graphics card, onboard graphics card signals are shielded with no VGA signal outputs - some models are equipped with this connector)



— **USB connector:** Used to connect USB devices



— **Ethernet connector:** Used to connect LAN or broadband devices

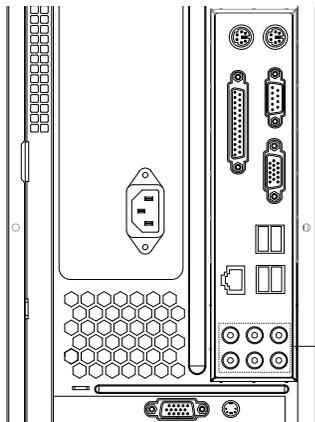


— **External graphics card connector:** Used to output monitor signals (VGA signals) through the signal cable connected with the monitor. If the graphics card is equipped with S-Video connector and cabled to a TV, pictures displayed on the monitor screen may be redirected to the TV (some models are equipped with external graphics card).

7.1 Audio — **7.1 Audio connector:** Refer to the following 7.1 audio settings

7.1 Audio Settings (Windows XP only)

You may connect the audio card to 7.1 speaker if the card supports 7.1 audio output. The I/O connectors for 7.1 Audio are described as below:



7.1 Audio connectors

Six I/O connectors, they are Line In, Mic In, Line Out, Rear Speaker Out, Center/Subwoofer Speaker Out, Side Speaker Out respectively.

Set as below:



Step 1

Right-click the audio settings icon located in the lower right corner of your desktop.

Step 2

Select "Sound Manager" in the audio settings menu as illustrated



Step 3

The illustrated screen appears. You can set items such as Sound Effect, Mixer and 3D Audio Demo. You can open Audio I/O and configure the input and output settings for the audio card.



Step 4

The illustrated audio connectors are simulation of the audio I/O connectors on the rear panel.

Set for speaker pre-configured as 2.0:



Step 1

Select 2CH Speaker on the screen as illustrated. Then connect the Line-in cable of the speaker to the green connector.



Step 2

Check "Line Out" in the dialog box popped up as illustrated.



If you want to connect other audio devices, connect the audio cables respectively to the I/O connectors on the rear panel. Every time a connector is connected, a dialog box pops up as illustrated. Select appropriate name according to the device connected with the audio cable.



You can test whether the connection and setting is correct by clicking the corresponding speaker icon in the picture on the left.



ⓘ Note: The situation must be avoided when connecting devices – microphone must be connected to the connector as illustrated.

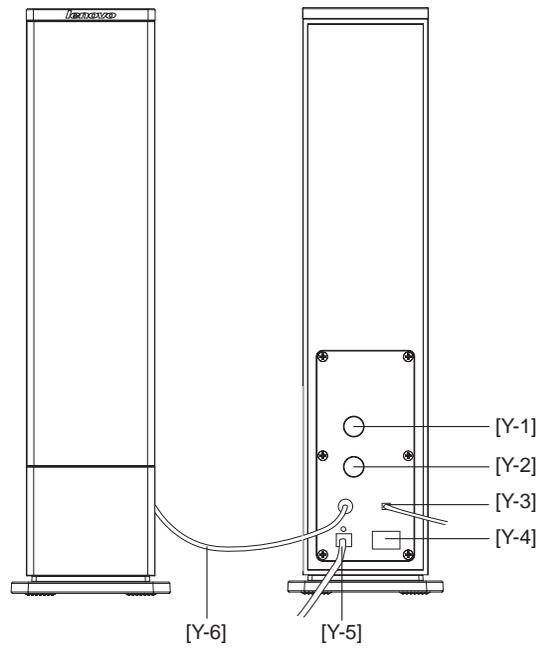


If you haven't connected it to the Mic In connector and check "Mic In" as illustrated in the pop-up window



You will get the error instruction as illustrated. This instruction box will not display if microphone is connected to the front Mic In connector.

Connection of the speaker



Y-1 Volume adjusting knob

Y-2 Bass effect adjusting knob

Y-3 Connect to mainframe Speaker/headphone connector

Y-4 Speaker power switch

Y-5 Speaker power cord

Y-6 Primary/secondary speaker connection cable

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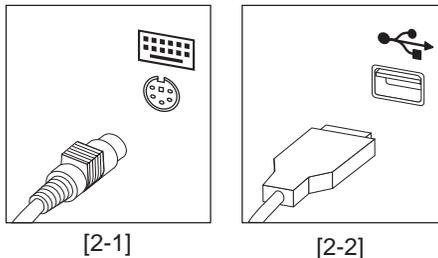
Chapter

Replacing hardware

⚠ Attention: *Do not open your computer or attempt any repair before reading the “Important safety information” in the «Safety and Warranty Guide» that was included with your computer.*

Replacing the keyboard

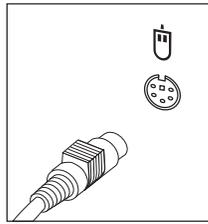
1. Remove any media (diskettes, CDs, or tapes) from the drives, shut down the computer, and turn off all attached devices.
2. Unplug all power cords from electrical outlets.
3. Locate the keyboard connector. See “Locating connectors on the rear of the computer” and “Locating connectors on the front of the computer”. Your keyboard might be connected to the standard keyboard connector [2-1] at the rear of the computer or to a USB connector [2-2] at either the front or rear of the computer. Locate the connector for the keyboard.



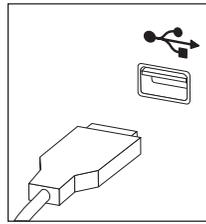
4. Disconnect the failing keyboard cable from the computer and connect the new keyboard cable to the same connector.
5. Go to “Completing the parts replacement”.

Replacing the mouse

1. Remove any media (diskettes, CDs, or tapes) from the drives, shut down the computer, and turn off all attached devices.
2. Unplug all power cords from electrical outlets.
3. Locate the mouse connector. See “Locating connectors on the rear of the computer” and “Locating connectors on the front of the computer”. Your mouse might be connected to the standard mouse connector [2-1] at the rear of the computer or to a USB connector [2-2] at either the front or rear of the computer. Locate the connector for the mouse.



[2-1]

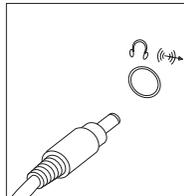


[2-2]

4. Disconnect the failing mouse cable from the computer and connect the new mouse cable to the same connector.
5. Go to “Completing the parts replacement”.

Replacing the internal speaker

1. Remove any media (diskettes, CDs, or tapes) from the drives, shut down the computer, and turn off all attached devices.
2. Unplug all power cords from electrical outlets.
3. Locate the Speaker. See “Locating connectors on the rear of the computer” and “Locating connectors on the front of the computer”. Your speaker might be connected to the Audio connector [2-1] to a Audio connector at either the front or rear of the computer. Locate the connector for the speaker.



[2-1]

4. Disconnect the failing speaker cable from the computer and connect the new speaker cable to the same connector.
5. Go to “Completing the parts replacement”.

Completing the parts replacement

After replacing a failed part, you need to install any other removed parts, install the computer cover, and reconnect any cables, including telephone lines and power cords.

To complete the installation:

1. Ensure that all components have been reassembled correctly and that no tools or loose screws are left inside your computer. See “Locating components” for the location of the various components.
2. Clear any cables that might impede the replacement of the computer cover.
3. Position the computer cover on the chassis so that the rail guides on the bottom of the computer cover engage the rails. Then, push the computer cover closed until it latches.
4. Reconnect the external cables. Plug the power cord into the computer then into a properly grounded power receptacle. See “Locating connectors on the front of the computer” and “Locating connectors on the rear of the computer”

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