Inspiron 27 7710 All-in-One

Service Manual

Notes, cautions, and warnings

(i) **NOTE:** A NOTE indicates important information that helps you make better use of your product.

⚠ **CAUTION: A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.**

⚠ **WARNING: A WARNING indicates a potential for property damage, personal injury, or death.**

Contents

Working inside your computer

Before working inside your computer

About this task

ⓘ **NOTE:** The images in this document may differ from your computer depending on the configuration you ordered.

Steps

1. Save and close all open files and exit all open applications.
2. Shut down your computer. Click **Start** > ⏻ **Power** > **Shut down**.

   ⓘ **NOTE:** If you are using a different operating system, see the documentation of your operating system for shut-down instructions.

3. Disconnect your computer and all attached devices from their electrical outlets.
4. Disconnect all attached network devices and peripherals, such as keyboard, mouse, and monitor from your computer.

   ⚠ **CAUTION: To disconnect a network cable, first unplug the cable from your computer and then unplug the cable from the network device.**

5. Remove any media card and optical disc from your computer, if applicable.

Safety instructions

Use the following safety guidelines to protect your computer from potential damage and to ensure your personal safety. Unless otherwise noted, each procedure included in this document assumes that you have read the safety information that shipped with your computer.

⚠ **WARNING: Before working inside your computer, read the safety information that is shipped with your computer. For more safety best practices, see the Regulatory Compliance home page at www.dell.com/ regulatory_compliance.**

⚠ **WARNING: Disconnect your computer from all power sources before opening the computer cover or panels. After you finish working inside the computer, replace all covers, panels, and screws before connecting your computer to an electrical outlet.**

⚠ **CAUTION: To avoid damaging the computer, ensure that the work surface is flat, dry, and clean.**

⚠ **CAUTION: To avoid damaging the components and cards, handle them by their edges, and avoid touching the pins and the contacts.**

⚠ **CAUTION: You should only perform troubleshooting and repairs as authorized or directed by the Dell technical assistance team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. See the safety instructions that is shipped with the product or at www.dell.com/regulatory_compliance.**

⚠ **CAUTION: Before touching anything inside your computer, ground yourself by touching an unpainted metal surface, such as the metal at the back of the computer. While you work, periodically touch an unpainted metal surface to dissipate static electricity which could harm internal components.**

⚠ **CAUTION: When you disconnect a cable, pull it by its connector or its pull tab, not the cable itself. Some cables have connectors with locking tabs or thumbscrews that you must disengage before disconnecting the cable.**

When disconnecting cables, keep them evenly aligned to avoid bending the connector pins. When connecting cables, ensure that the ports and the connectors are correctly oriented and aligned.

△ **CAUTION: Press and eject any installed card from the media-card reader.**

△ **CAUTION: Exercise caution when handling Lithium-ion batteries in laptops. Swollen batteries should not be used and should be replaced and disposed properly.**

ⓘ **NOTE:** The color of your computer and certain components may appear differently than shown in this document.

Electrostatic discharge—ESD protection

ESD is a major concern when you handle electronic components, especially sensitive components such as expansion cards, processors, memory DIMMs, and system boards. Very slight charges can damage circuits in ways that may not be obvious, such as intermittent problems or a shortened product life span. As the industry pushes for lower power requirements and increased density, ESD protection is an increasing concern.

Due to the increased density of semiconductors used in recent Dell products, the sensitivity to static damage is now higher than in previous Dell products. For this reason, some previously approved methods of handling parts are no longer applicable.

Two recognized types of ESD damage are catastrophic and intermittent failures.

- **Catastrophic** – Catastrophic failures represent approximately 20 percent of ESD-related failures. The damage causes an immediate and complete loss of device functionality. An example of catastrophic failure is a memory DIMM that has received a static shock and immediately generates a "No POST/No Video" symptom with a beep code emitted for missing or nonfunctional memory.
- **Intermittent** – Intermittent failures represent approximately 80 percent of ESD-related failures. The high rate of intermittent failures means that most of the time when damage occurs, it is not immediately recognizable. The DIMM receives a static shock, but the tracing is merely weakened and does not immediately produce outward symptoms related to the damage. The weakened trace may take weeks or months to melt, and in the meantime may cause degradation of memory integrity, intermittent memory errors, etc.

The more difficult type of damage to recognize and troubleshoot is the intermittent (also called latent or "walking wounded") failure.

Perform the following steps to prevent ESD damage:

- Use a wired ESD wrist strap that is properly grounded. The use of wireless anti-static straps is no longer allowed; they do not provide adequate protection. Touching the chassis before handling parts does not ensure adequate ESD protection on parts with increased sensitivity to ESD damage.
- Handle all static-sensitive components in a static-safe area. If possible, use anti-static floor pads and workbench pads.
- When unpacking a static-sensitive component from its shipping carton, do not remove the component from the anti-static packing material until you are ready to install the component. Before unwrapping the anti-static packaging, ensure that you discharge static electricity from your body.
- Before transporting a static-sensitive component, place it in an anti-static container or packaging.

ESD field service kit

The unmonitored Field Service kit is the most commonly used service kit. Each Field Service kit includes three main components: anti-static mat, wrist strap, and bonding wire.

Components of an ESD field service kit

The components of an ESD field service kit are:

- **Anti-Static Mat** – The anti-static mat is dissipative and parts can be placed on it during service procedures. When using an anti-static mat, your wrist strap should be snug and the bonding wire should be connected to the mat and to any bare metal on the system being worked on. Once deployed properly, service parts can be removed from the ESD bag and placed directly on the mat. ESD-sensitive items are safe in your hand, on the ESD mat, in the system, or inside a bag.
- **Wrist Strap and Bonding Wire** – The wrist strap and bonding wire can be either directly connected between your wrist and bare metal on the hardware if the ESD mat is not required, or connected to the anti-static mat to protect hardware that is temporarily placed on the mat. The physical connection of the wrist strap and bonding wire between your skin, the ESD mat, and the hardware is known as bonding. Use only Field Service kits with a wrist strap, mat, and bonding wire. Never

use wireless wrist straps. Always be aware that the internal wires of a wrist strap are prone to damage from normal wear and tear, and must be checked regularly with a wrist strap tester in order to avoid accidental ESD hardware damage. It is recommended to test the wrist strap and bonding wire at least once per week.

● **ESD Wrist Strap Tester** – The wires inside of an ESD strap are prone to damage over time. When using an unmonitored kit, it is a best practice to regularly test the strap prior to each service call, and at a minimum, test once per week. A wrist strap tester is the best method for doing this test. If you do not have your own wrist strap tester, check with your regional office to find out if they have one. To perform the test, plug the wrist-strap's bonding-wire into the tester while it is strapped to your wrist and push the button to test. A green LED is lit if the test is successful; a red LED is lit and an alarm sounds if the test fails.
● **Insulator Elements** – It is critical to keep ESD sensitive devices, such as plastic heat sink casings, away from internal parts that are insulators and often highly charged.
● **Working Environment** – Before deploying the ESD Field Service kit, assess the situation at the customer location. For example, deploying the kit for a server environment is different than for a desktop or portable environment. Servers are typically installed in a rack within a data center; desktops or portables are typically placed on office desks or cubicles. Always look for a large open flat work area that is free of clutter and large enough to deploy the ESD kit with additional space to accommodate the type of system that is being repaired. The workspace should also be free of insulators that can cause an ESD event. On the work area, insulators such as Styrofoam and other plastics should always be moved at least 12 inches or 30 centimeters away from sensitive parts before physically handling any hardware components
● **ESD Packaging** – All ESD-sensitive devices must be shipped and received in static-safe packaging. Metal, static-shielded bags are preferred. However, you should always return the damaged part using the same ESD bag and packaging that the new part arrived in. The ESD bag should be folded over and taped shut and all the same foam packing material should be used in the original box that the new part arrived in. ESD-sensitive devices should be removed from packaging only at an ESD-protected work surface, and parts should never be placed on top of the ESD bag because only the inside of the bag is shielded. Always place parts in your hand, on the ESD mat, in the system, or inside an anti-static bag.
● **Transporting Sensitive Components** – When transporting ESD sensitive components such as replacement parts or parts to be returned to Dell, it is critical to place these parts in anti-static bags for safe transport.

ESD protection summary

It is recommended that all field service technicians use the traditional wired ESD grounding wrist strap and protective anti-static mat at all times when servicing Dell products. In addition, it is critical that technicians keep sensitive parts separate from all insulator parts while performing service and that they use anti-static bags for transporting sensitive components.

Transporting sensitive components

When transporting ESD sensitive components such as replacement parts or parts to be returned to Dell, it is critical to place these parts in anti-static bags for safe transport.

Lifting equipment

Adhere to the following guidelines when lifting heavy weight equipment:

⚠ **CAUTION: Do not lift greater than 50 pounds. Always obtain additional resources or use a mechanical lifting device.**

1. Get a firm balanced footing. Keep your feet apart for a stable base, and point your toes out.
2. Tighten stomach muscles. Abdominal muscles support your spine when you lift, offsetting the force of the load.
3. Lift with your legs, not your back.
4. Keep the load close. The closer it is to your spine, the less force it exerts on your back.
5. Keep your back upright, whether lifting or setting down the load. Do not add the weight of your body to the load. Avoid twisting your body and back.
6. Follow the same techniques in reverse to set the load down.

After working inside your computer

About this task

⚠️ **CAUTION: Leaving stray or loose screws inside your computer may severely damage your computer.**

Steps

1. Replace all screws and ensure that no stray screws remain inside your computer.
2. Connect any external devices, peripherals, or cables you removed before working on your computer.
3. Replace any media cards, discs, or any other parts that you removed before working on your computer.
4. Connect your computer and all attached devices to their electrical outlets.
5. Turn on your computer.

2

Removing and installing components

> (i) **NOTE:** The images in this document may differ from your computer depending on the configuration you ordered.

Recommended tools

The procedures in this document may require the following tools:

- Phillips screwdriver #0
- Phillips screwdriver #1
- Phillips screwdriver #2
- Plastic scribe

Screw list

> (i) **NOTE:** When removing screws from a component, it is recommended to note the screw type, the quantity of screws, and then place them in a screw storage box. This is to ensure that the correct number of screws and correct screw type is restored when the component is replaced.

> (i) **NOTE:** Some computers have magnetic surfaces. Ensure that the screws are not left attached to such surfaces when replacing a component.

> (i) **NOTE:** Screw color may vary with the configuration ordered.

Table 1. Screw list

Component	Screw type	Quantity	Screw image
I/O cover	M3x5	5	
Display hinges	M3x5	10	
Hard-drive assembly	M3x5	1	
Hard-drive bracket	M3x3.5	4	
System-board shield	M3x5	4	
Wireless-card bracket	M2x3.5	1	
M.2 2230 solid-sate drive	M2x3.5	1	
M.2 2280 solid-sate drive	M2x3.5	1	

Table 1. Screw list (continued)

Component	Screw type	Quantity	Screw image
Solid-state drive screw mount	M3x4	1	
Retractable camera assembly	M3x5	2	
Fan	M2x3.5	3	
Media-card reader	M3x3.5	1	
Power-button board	M3x5	1	
System board	M3x5	6	
Microphones	M2x2.5	4	
Base panel	M3x5	13	

Major components of Inspiron 27 7710 All-in-One

The following image shows the major components of Inspiron 27 7710 All-in-One.

(i) **NOTE:** Depending on the configuration ordered, some components may or may not be present in your computer.
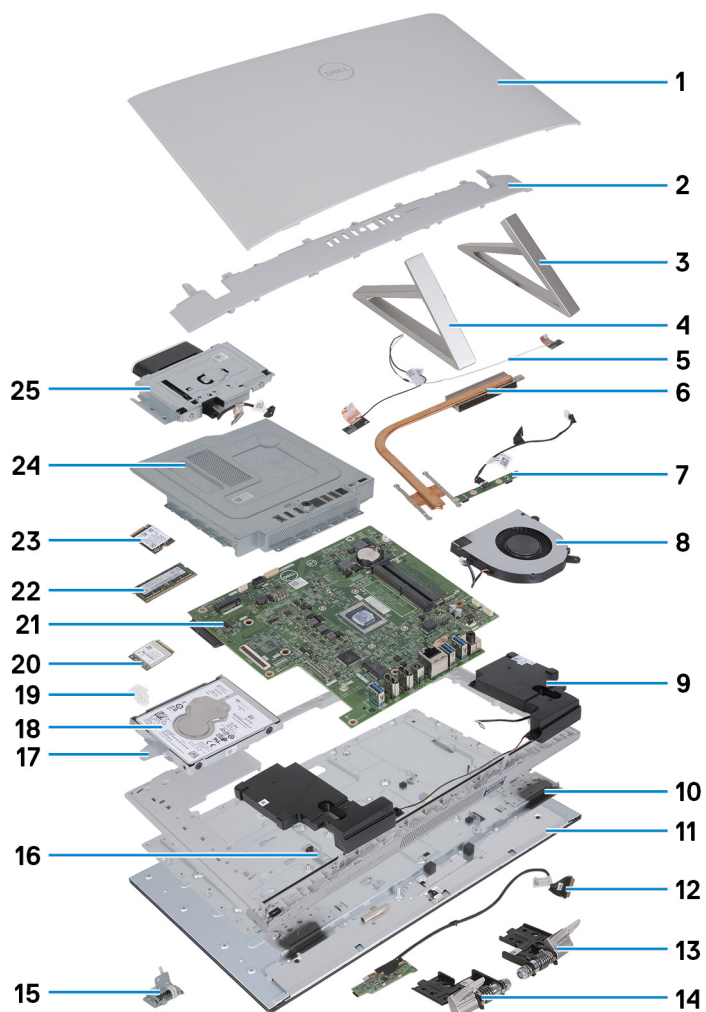
1. Back cover
2. I/O cover
3. Right-side stand
4. Left-side stand
5. Antennas
6. Heat sink
7. Microphone module
8. Fan
9. Speakers
10. Middle panel
11. Display panel
12. Power-button board with cable
13. Left Hinge
14. Right Hinge
15. Media card reader
16. Base panel
17. Hard drive
18. Hard-drive bracket
19. Wireless-card bracket
20. Wireless card
21. System board
22. M.2 2280 solid-state drive, if installed
23. M.2 2230 solid-state drive, if installed
24. System board shield

25. Retractable camera assembly

Dell provides a list of components and their part numbers for the original system configuration purchased. These parts are available according to warranty coverages purchased by the customer. Contact your Dell sales representative for purchase options.

Stand

Removing the stand

Prerequisites

1. Follow the procedure in Before working inside your computer.

⚠️ **CAUTION: When servicing the computer, place it on an elevated, clean, and flat surface. Place the display flat on the surface with the stand hanging over the edge. It is recommended to remove the stand to avoid accidental damage to the computer display during servicing.**
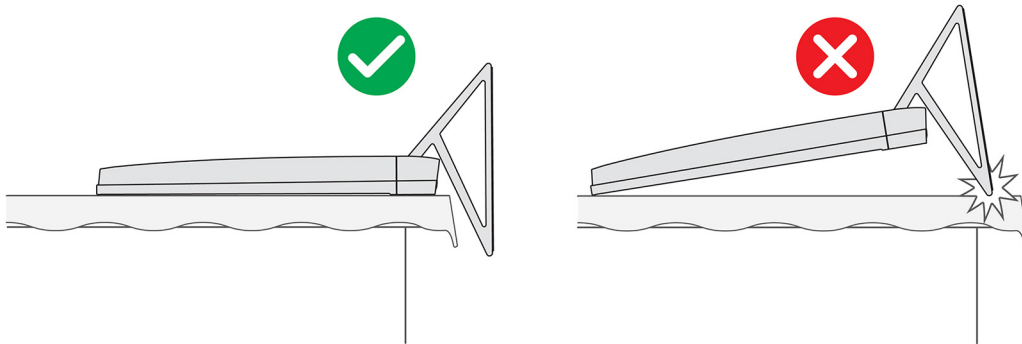
ⓘ **NOTE:** The following procedure is applicable for both Y stand and Isosceles stand.

ⓘ **NOTE:** For replacement of stand or hinges, the replacement kit is shipped with both stand and hinges, and the service technician must replace both of these components together. Please refer to the procedure for removing the hinges and installing the hinges.

About this task

The following image indicates the location of the stand and provides a visual representation of the removal procedure.

Steps

1. Locate the tab on the stands, and push a scribe into the tab to release the stands from the display-assembly base.
2. Lift the stands off the display-assembly base.

Installing the stand

Prerequisites

If you are replacing a component, remove the existing component before performing the installation process.

About this task

ⓘ **NOTE:** The following procedure is applicable for both Y stand and Isosceles stand.

ⓘ **NOTE:** For replacement of stand or hinges, the replacement kit is shipped with both stand and hinges, and the service technician must replace both of these components together. Please refer to the procedure for removing the hinges and installing the hinges.

The following image indicates the location of the stand and provides a visual representation of the installation procedure.

Steps

Insert the stands into the slot on the back cover until it snaps into place on the display-assembly base.

Next steps

1. Follow the procedure in After working inside your computer.

Back cover

Removing the back cover

Prerequisites

1. Follow the procedure in Before working inside your computer.

⚠ **CAUTION: When servicing the computer, place it on an elevated, clean, and flat surface. Place the display flat on the surface with the stand hanging over the edge. It is recommended to remove the stand to avoid accidental damage to the computer display during servicing.**
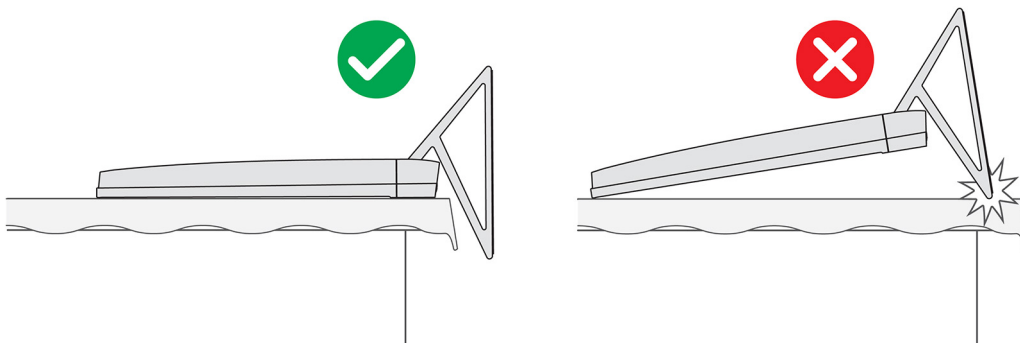
About this task

The following image indicates the location of the back cover and provides a visual representation of the removal procedure.

Steps

1. Place your palm in the middle of the back cover and then pry the back cover from the display-assembly base starting from the top corners.
2. Remove the back cover from the display-assembly base.

Installing the back cover

Prerequisites

If you are replacing a component, remove the existing component before performing the installation process.

About this task

The following image indicates the location of the back cover and provides a visual representation of the installation procedure.

Steps

Align the slots on the back cover with the slots on the computer and press along the side to snap the back cover into place.

Next steps

1. Follow the procedure in After working inside your computer.

I/O cover

Removing the I/O cover

Prerequisites

1. Follow the procedure in Before working inside your computer.
2. Remove the stand.
3. Remove the back cover.

About this task

The following image indicates the location of the I/O cover and provides a visual representation of the removal procedure.

5x
M3x5
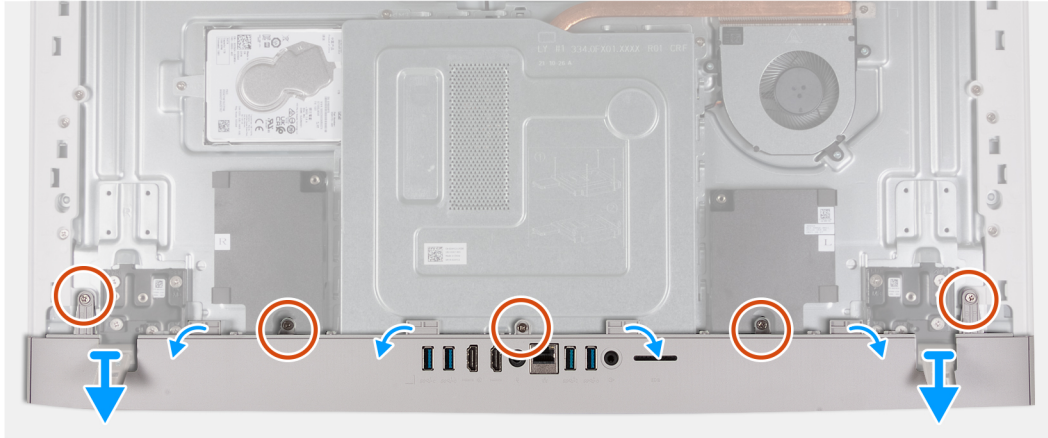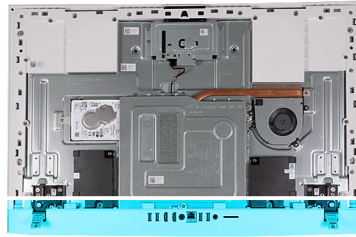
Steps

1. Remove the five screws (M3x5) that secure the I/O cover to the display-assembly base.
2. Remove the I/O cover from the slots on the display-assembly base.

Installing the I/O cover

Prerequisites

If you are replacing a component, remove the existing component before performing the installation process.

About this task

The following image indicates the location of the I/O cover and provides a visual representation of the installation procedure.
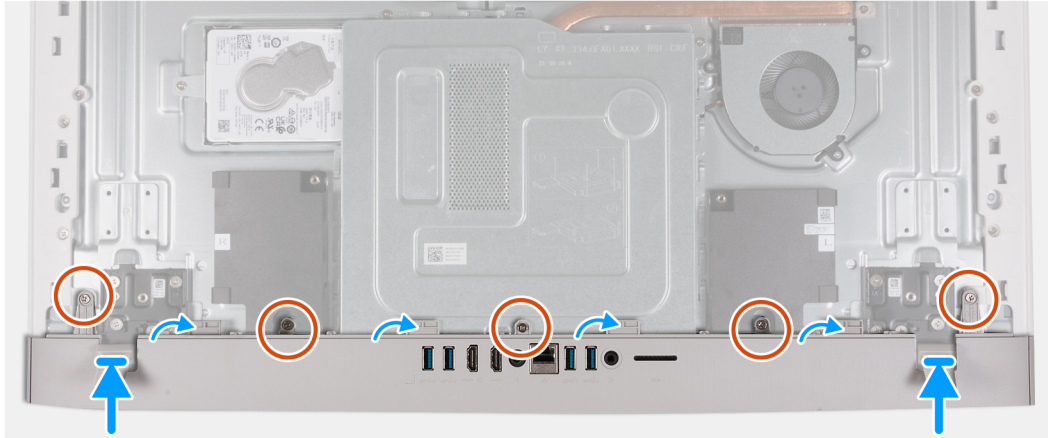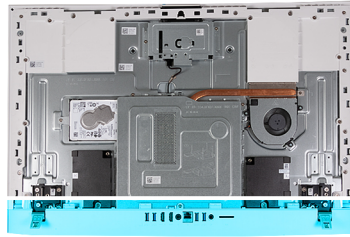
Steps

1. Align the screw holes on the I/O cover with the screw holes on the display-assembly base and snap the I/O cover back into place.
2. Replace the five screws (M3x5) that secure the I/O cover to the display-assembly base.

Next steps

1. Install the back cover.
2. Install the stand.
3. Follow the procedure in After working inside your computer.

Display hinges

Removing the display hinges

Prerequisites

1. Follow the procedure in Before working inside your computer.
2. Remove the stand.
3. Remove the back cover.
4. Remove the I/O cover.

ⓘ **NOTE:**

For replacement of stand or hinges, the replacement kit is shipped with both stand and hinges, and the service technician must replace both of these components together. For more information about removing or installing the stand, see removing the stand and installing the stand.

About this task

The following image indicates the location of the hinges and provides a visual representation of the removal procedure.

10x
M3x5
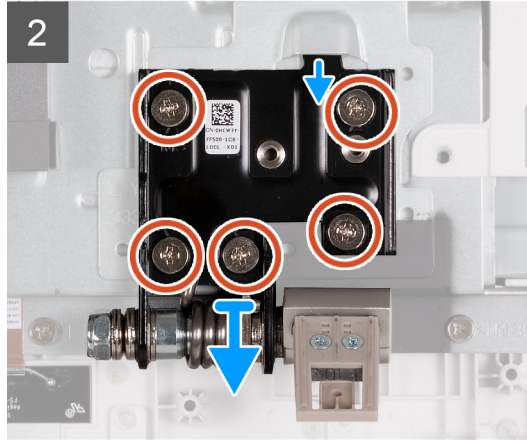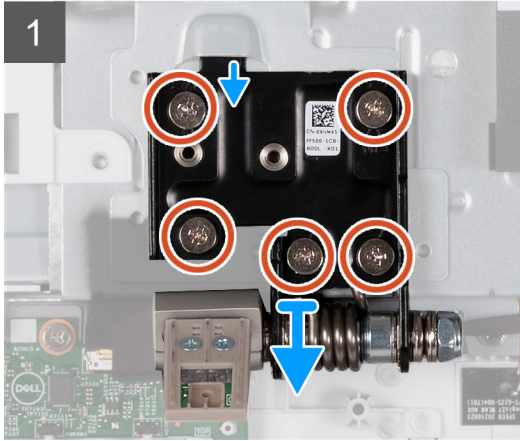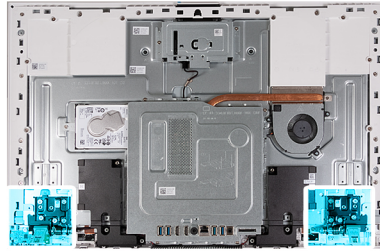
Steps

1. Remove the 10 screws (M3x5) that secure the right and left display hinges to the display-assembly base.
2. Lift the right and left hinges off the display-assembly base.

Installing the display hinges

Prerequisites

If you are replacing a component, remove the existing component before performing the installation process.

About this task

ⓘ **NOTE:**

> For replacement of stand or hinges, the replacement kit is shipped with both stand and hinges, and the service technician must replace both of these components together. For more information about removing or installing the stand, see removing the stand and installing the stand.

The following image indicates the location of the hinges and provides a visual representation of the installation procedure.
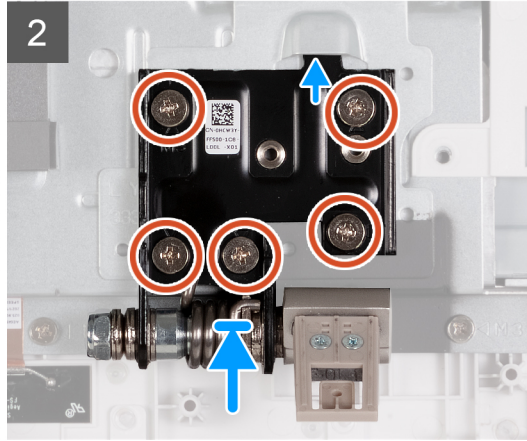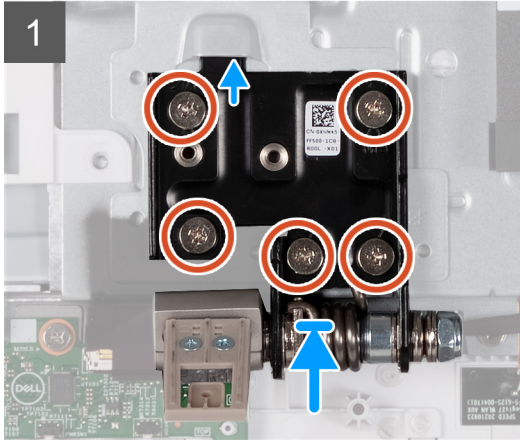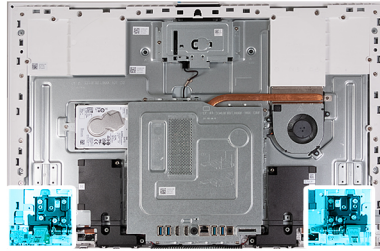
Steps

1. Align the screw holes on the left hinge and right hinge with the screw holes on the display-assembly base.
2. Replace the 10 screws (M3x5) that secure the left hinge and right hinge to the display-assembly base.

Next steps

1. Install the I/O cover.
2. Install the back cover.
3. Install the stand.
4. Follow the procedure in After working inside your computer.

Hard drive

Removing the hard drive

Prerequisites

1. Follow the procedure in Before working inside your computer.
2. Remove the stand.
3. Remove the back cover.

About this task

The following image indicates the location of the hard drive and provides a visual representation of the removal procedure.
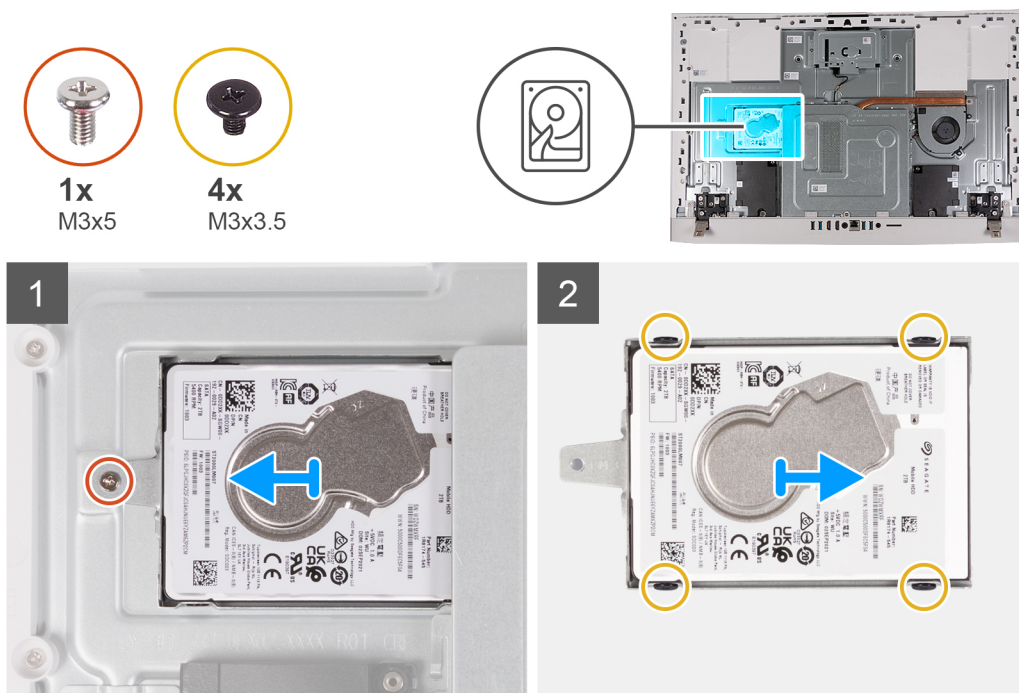
Steps

1. Remove the screw (M3x5) that secure the hard-drive assembly to the display-assembly base.
2. Slide the hard-drive assembly away from the hard-drive slot on the display-assembly base.
3. Remove the four screws (M3x3.5) that secure the hard-drive bracket to the hard drive.
4. Remove the hard-drive bracket off the hard drive.

Installing the hard drive

Prerequisites

If you are replacing a component, remove the existing component before performing the installation process.

⚠️ **CAUTION: Hard drives are fragile. Exercise care when handling the hard drive.**

About this task

The following image indicates the location of the hard drive and provides a visual representation of the installation procedure.

Steps

1. Align the screw holes on the hard drive with the screw holes on the hard-drive bracket.
2. Replace the four screws (M3x3.5) that secure the hard-drive bracket to the hard drive.
3. Slide the hard-drive assembly into the slot on the display-assembly base.
4. Replace the screw (M3x5) that secures the hard-drive assembly to the display-assembly base.

Next steps

1. Install the back cover.
2. Install the stand.
3. Follow the procedure in After working inside your computer.

System-board shield

Removing the system-board shield

Prerequisites

1. Follow the procedure in Before working inside your computer.
2. Remove the stand.
3. Remove the back cover.
4. Remove the I/O cover.

About this task

The following image indicates the location of the system-board shield and provides a visual representation of the removal procedure.
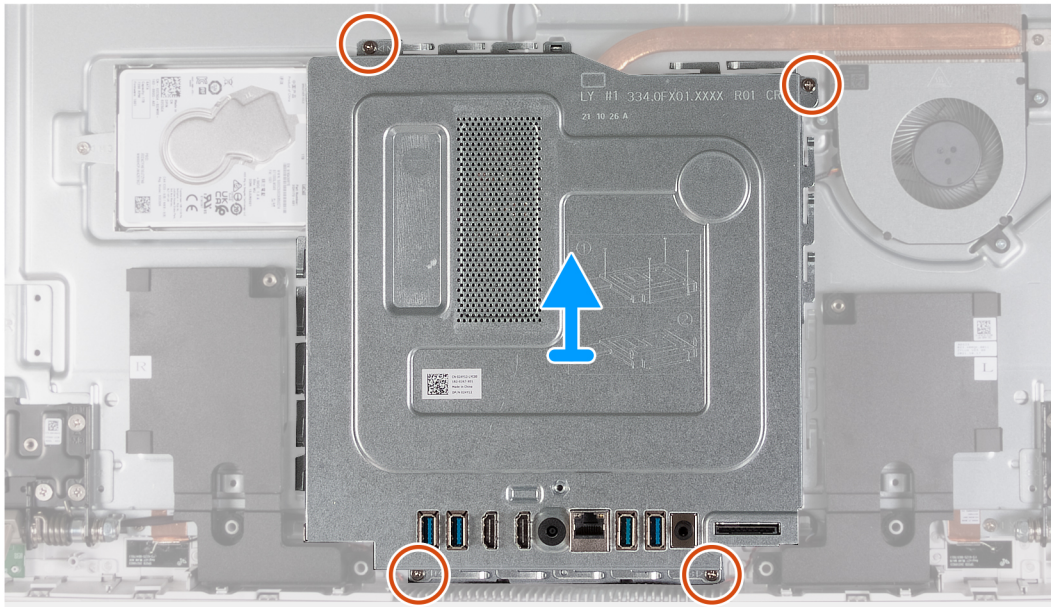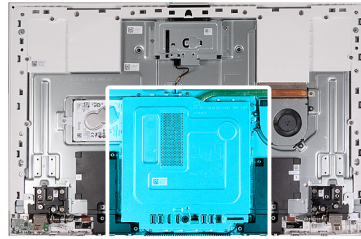
Steps

1. Remove the four screws (M3x5) that secure the system-board shield to the display-assembly base.
2. Lift the system-board shield off the display-assembly base.

Installing the system-board shield

Prerequisites

If you are replacing a component, remove the existing component before performing the installation process.

About this task

The following image indicates the location of the system-board shield and provides a visual representation of the installation procedure.

4x
M3x5
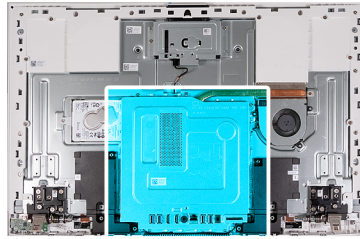
Steps

1. Align the slots on the system-board shield with the ports on the computer.
2. Replace the four screws (M3x5) that secure the system-board shield to the display-assembly base.

Next steps

1. Install the I/O cover.
2. Install the back cover.
3. Install the stand.
4. Follow the procedure in After working inside your computer.

Memory module

Removing the memory module

Prerequisites

1. Follow the procedure in Before working inside your computer.
2. Remove the stand.
3. Remove the back cover.
4. Remove the I/O cover.
5. Remove the system-board shield.

About this task

The following image indicates the location of the memory modules and provides a visual representation of the removal procedure.

Steps

1. Using your fingertips, spread apart the securing clips on the memory-module slot until the memory module pops up.
2. Slide and remove the memory module from the memory-module slot.

   (i) **NOTE:** Repeat step 1 and 2 if there are more than one memory module.

Installing the memory module

Prerequisites

If you are replacing a component, remove the existing component before performing the installation process.

About this task

The following image indicates the location of the memory module and provides a visual representation of the installation procedure.
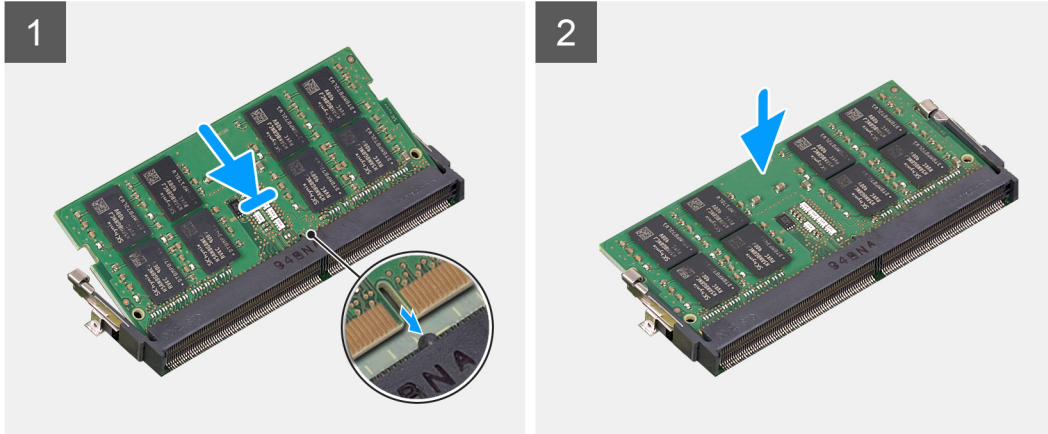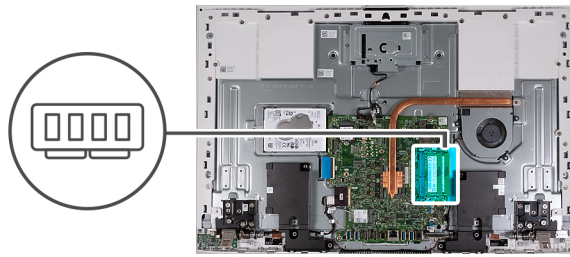
Steps

1. Align the notch on the memory module with the tab on the memory-module slot.
2. Slide the memory module firmly into the slot at an angle and press the memory module down until it clicks into place.

   ⓘ **NOTE:** If you do not hear the click, remove the memory module and reinstall it.

   ⓘ **NOTE:** Repeat steps 1 and 2 if you want to remove the other memory module.

Next steps

1. Install the system-board shield.
2. Install the I/O cover.
3. Install the back cover.
4. Install the stand.
5. Follow the procedure in After working inside your computer.

Wireless card

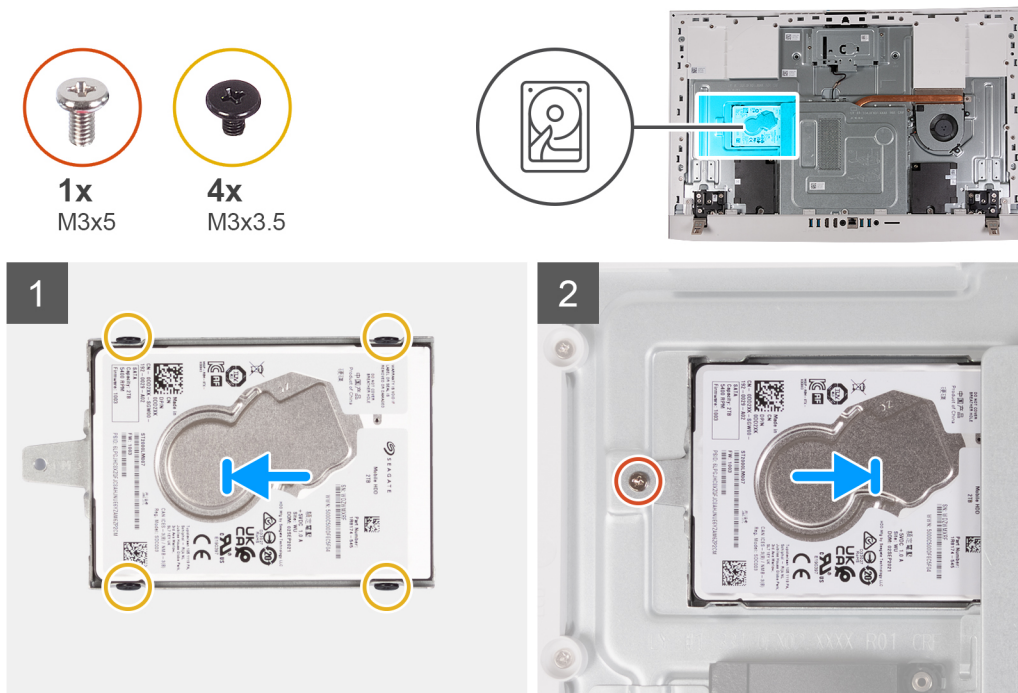## Removing the wireless card

Prerequisites

1. Follow the procedure in Before working inside your computer.
2. Remove the stand.
3. Remove the back cover.
4. Remove the I/O cover.
5. Remove the system-board shield.

About this task

The following image indicates the location of the wireless card and provides a visual representation of the removal procedure.
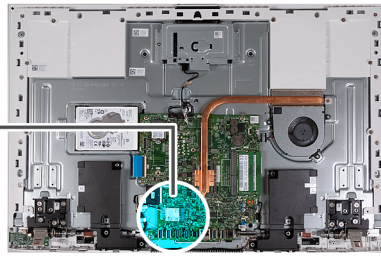
Steps

1. Remove the screw (M2x3.5) that secures the wireless-card bracket to the wireless card.
2. Slide the wireless-card bracket off the wireless card.
3. Disconnect the antenna cables from the wireless card.
4. Slide and remove the wireless card from the wireless-card slot.

Installing the wireless card

Prerequisites

If you are replacing a component, remove the existing component before performing the installation process.

About this task

The following image indicates the location of the wireless card and provides a visual representation of the installation procedure.

1x
M2x3.5
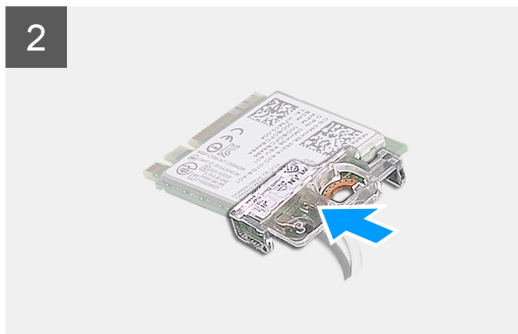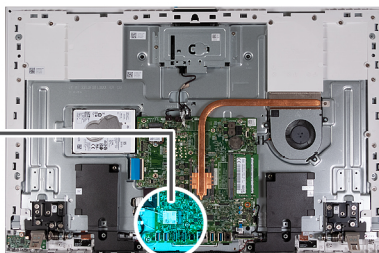
Steps

1. Connect the antenna cables to the wireless card.

   The following table provides the antenna-cable color scheme for the wireless card that is supported by your computer.

   Table 2. Antenna-cable color scheme

Connectors on the wireless card	Antenna-cable color	Silkscreen marking	
Main	White	MAIN	△ (white triangle)
Auxiliary	Black	AUX	▲ (black triangle)

2. Place the wireless-card bracket on the wireless card.
3. Align the notch on the wireless card with the tab on the wireless-card slot.
4. Slide the wireless card at an angle into the wireless-card slot.
5. Replace the screw (M2x3.5) that secures the wireless-card bracket to the wireless card.

Next steps

1. Install the system-board shield.
2. Install the I/O cover.
3. Install the back cover.
4. Install the stand.
5. Follow the procedure in After working inside your computer.

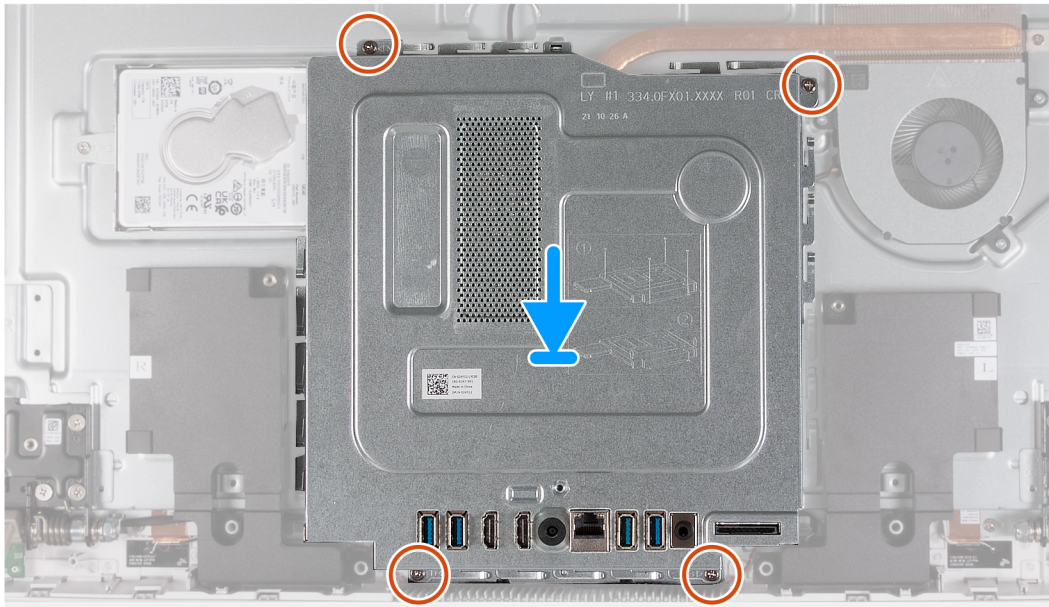# Solid-state drive

Removing the M.2 2230 solid-state drive

Prerequisites

1. Follow the procedure in Before working inside your computer.
2. Remove the stand.
3. Remove the back cover.
4. Remove the I/O cover.
5. Remove the system-board shield.

About this task

(i) **NOTE:** The M.2 card that is installed on your computer depends on the configuration ordered. The supported card configurations on the M.2 card slot are:

- M.2 2230 solid-state drive
- M.2 2280 solid-state drive

(i) **NOTE:** This procedure applies only to computers shipped with an M.2 2230 solid-state drive installed.

The following image indicates the location of the solid-state drive and provides a visual representation of the removal procedure.

Steps

1. Remove the screw (M2x3.5) that secures the solid-state drive to the system board.
2. Slide and remove the solid-state drive from the M.2 card slot on the system board.
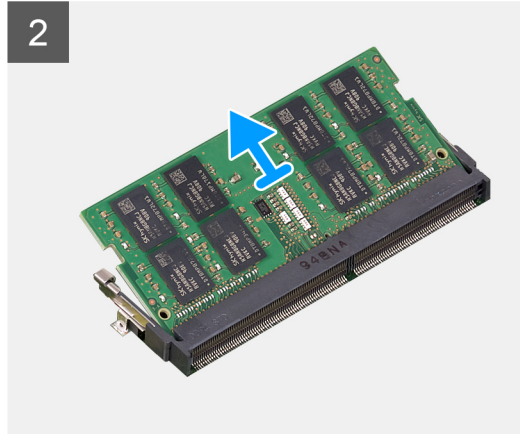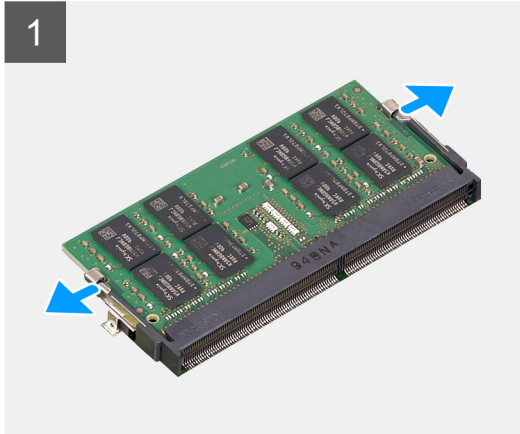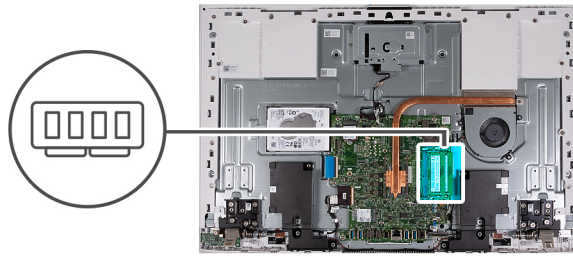
Installing the M.2 2230 solid-state drive

Prerequisites

If you are replacing a component, remove the existing component before performing the installation process.

⚠ **CAUTION: Solid-state drives are fragile. Exercise care when handling the solid-state drive.**

About this task

(i) **NOTE:** The M.2 card that is installed on your computer depends on the configuration ordered. The supported card configurations on the M.2 card slot are:

- M.2 2230 solid-state drive
- M.2 2280 solid-state drive

(i) **NOTE:** This procedure applies if you are installing an M.2 2230 solid-state drive.

If you are replacing an M.2 2230 solid-state drive with an M.2 2280 solid-state drive, move the screw mount as shown in the following figure, before you perform the other steps in the installation procedure.

The following image indicates the location of the solid-state drive and provides a visual representation of the installation procedure.

1x
M2x3.5

Steps

1. Ensure that the thermal pad covering the M.2 2230 solid-state drive slot on the system board is in place.
2. Align the notch on the solid-state drive with the tab on the M.2 2230 solid-state drive slot.
3. Slide the solid-state drive into the M.2 solid-state drive slot on the system board.
4. Replace the screw (M2x3.5) that secures the solid-state drive to the system board.

Next steps

1. Install the system-board shield.
2. Install the I/O cover.
3. Install the back cover.
4. Install the stand.
5. Follow the procedure in After working inside your computer.

Removing the M.2 2280 solid-state drive

Prerequisites

1. Follow the procedure in Before working inside your computer.
2. Remove the stand.
3. Remove the back cover.
4. Remove the I/O cover.
5. Remove the system-board shield.

About this task

(i) **NOTE:** The M.2 card that is installed on your computer depends on the configuration ordered. The supported card configurations on the M.2 card slot are:
   - M.2 2230 solid-state drive
   - M.2 2280 solid-state drive

(i) **NOTE:** This procedure applies only to computers shipped with an M.2 2280 solid-state drive installed.

The following image indicates the location of the solid-state drive and provides a visual representation of the removal procedure.

Steps

1. Remove the screw (M2x3.5) that secures the M.2 2280 solid-state drive to the system board.
2. Slide and remove the solid-state drive from the M.2 solid-state drive slot on the system board.

Installing the M.2 2280 solid-state drive

Prerequisites

If you are replacing a component, remove the existing component before performing the installation process.

⚠ **CAUTION: Solid-state drives are fragile. Exercise care when handling the solid-state drive.**

About this task

(i) **NOTE:** The M.2 card that is installed on your computer depends on the configuration ordered. The supported card configurations on the M.2 card slot are:

- M.2 2230 solid-state drive
- M.2 2280 solid-state drive

ⓘ **NOTE:** This procedure applies if you are installing a M.2 2280 solid-state drive.

If you are replacing an M.2 2230 solid-state drive with an M.2 2280 solid-state drive, move the screw mount as shown in the following figure, before you perform the other steps in the installation procedure.
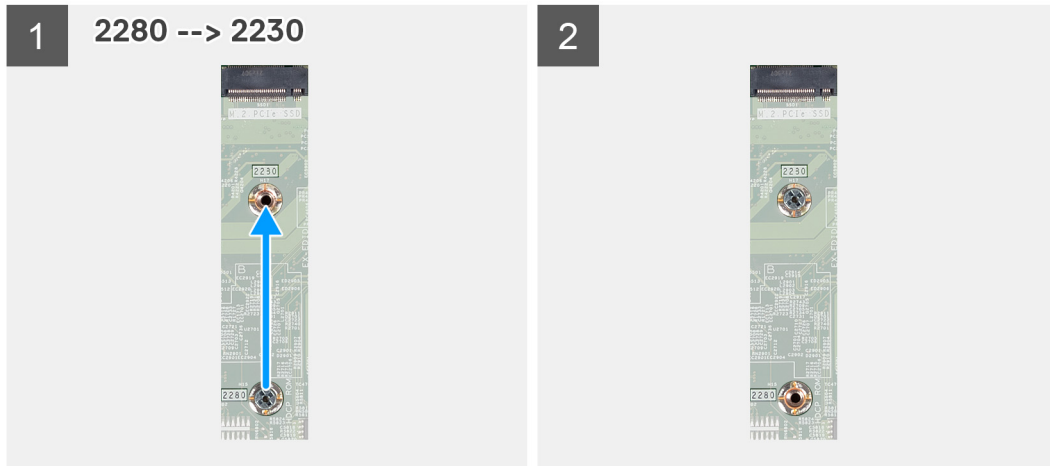
The following image indicates the location of the solid-state drive and provides a visual representation of the installation procedure.
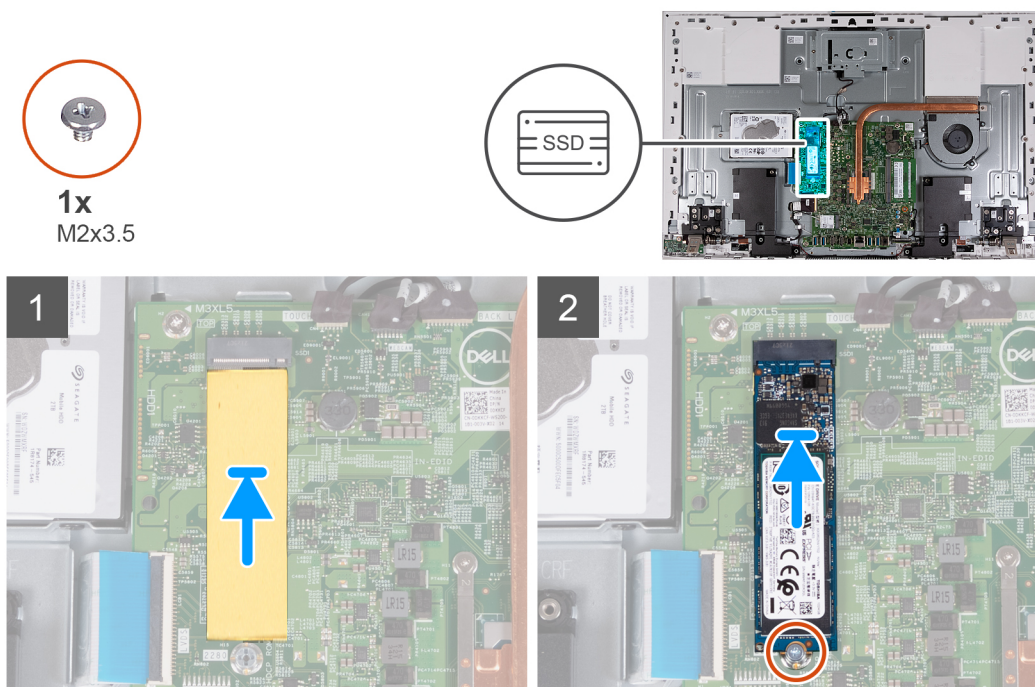
Steps

1. Ensure that the thermal pad covering the M.2 2280 solid-state drive slot on the system board is in place.
2. Align the notch on the solid-state drive with the tab on the M.2 2280 solid-state drive slot.
3. Slide the solid-state drive into the M.2 2280 solid-state drive slot on the system board.
4. Replace the screw (M2x3.5) that secures the solid-state drive to the system board.

Next steps

1. Install the system-board shield.
2. Install the I/O cover.

3. Install the back cover.
4. Install the stand.
5. Follow the procedure in After working inside your computer.

Retractable-camera assembly
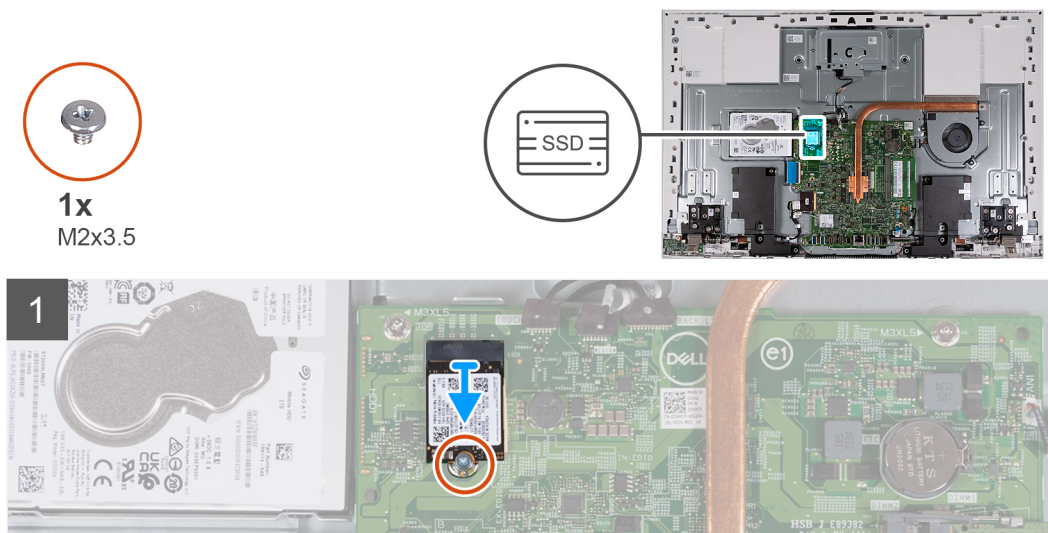
Removing the retractable-camera assembly

Prerequisites

1. Follow the procedure in Before working inside your computer.
2. Remove the stand.
3. Remove the back cover.
4. Remove the I/O cover.
5. Remove the system-board shield.

About this task

The following image indicates the location of the retractable-camera assembly and provides a visual representation of the removal procedure.
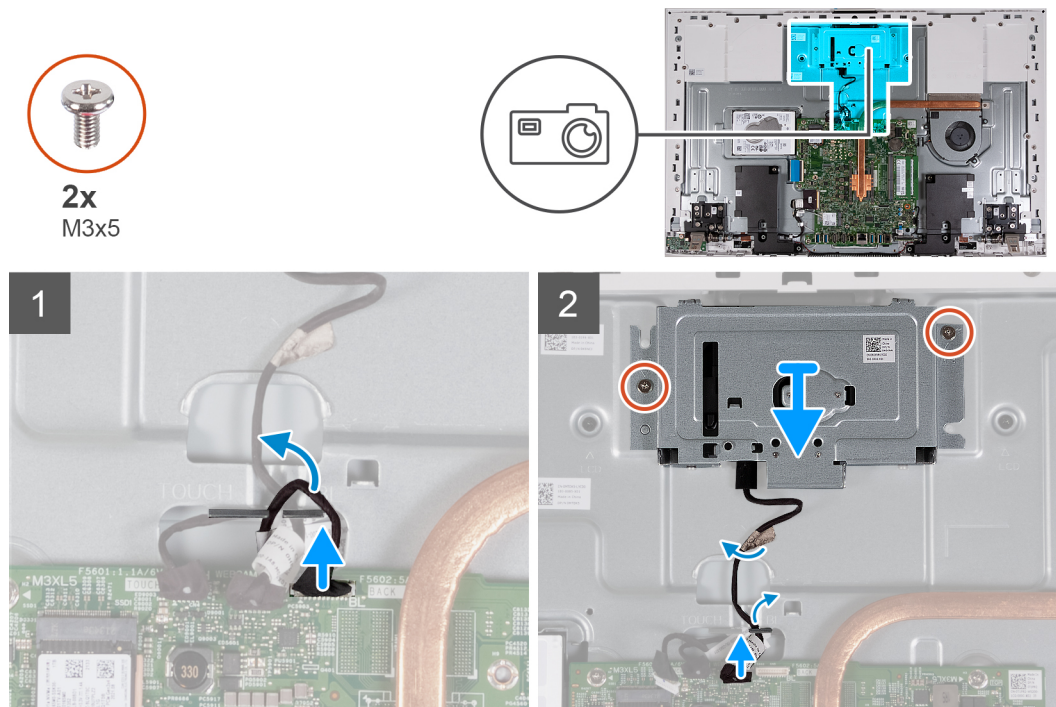
Steps

1. Disconnect the camera cable from the system board.
2. Peel the tape that secures the camera cable to the display-assembly base.
3. Remove the camera cable from the routing guide on the display-assembly base.
4. Remove the two screws (M3x5) that secure the retractable-camera assembly to the display-assembly base.
5. Remove the retractable-camera assembly from the display-assembly base.

Installing the retractable-camera assembly

Prerequisites

If you are replacing a component, remove the existing component before performing the installation process.

About this task

The following image indicates the location of the retractable-camera assembly and provides a visual representation of the installation procedure.
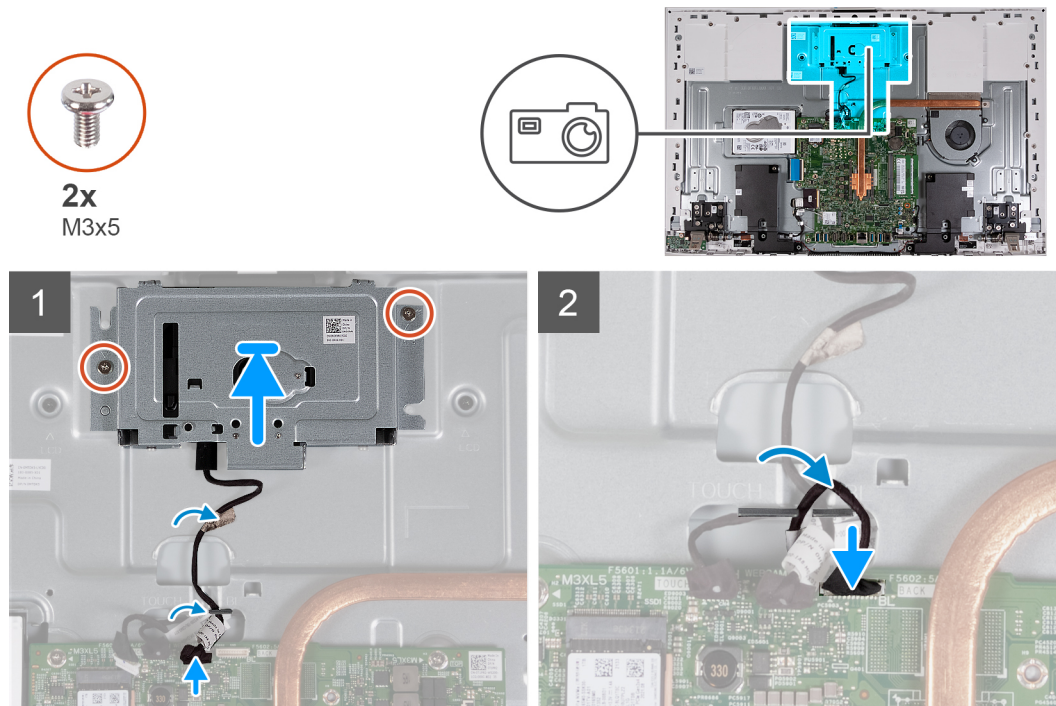
Steps

1. Slide and place the retractable-camera assembly on the display-assembly base.
2. Replace the two screws (M3x5) that secure the retractable-camera assembly to the display-assembly base.
3. Route the camera cable through the routing guide on the display-assembly base.
4. Adhere the tape that secures the camera cable to the display-assembly base.
5. Connect the camera cable to the system board.

Next steps

1. Install the system-board shield.
2. Install the I/O cover.
3. Install the back cover.
4. Install the stand.
5. Follow the procedure in After working inside your computer.

Fan

Removing the fan

Prerequisites

1. Follow the procedure in Before working inside your computer.

2. Remove the stand.
3. Remove the back cover .
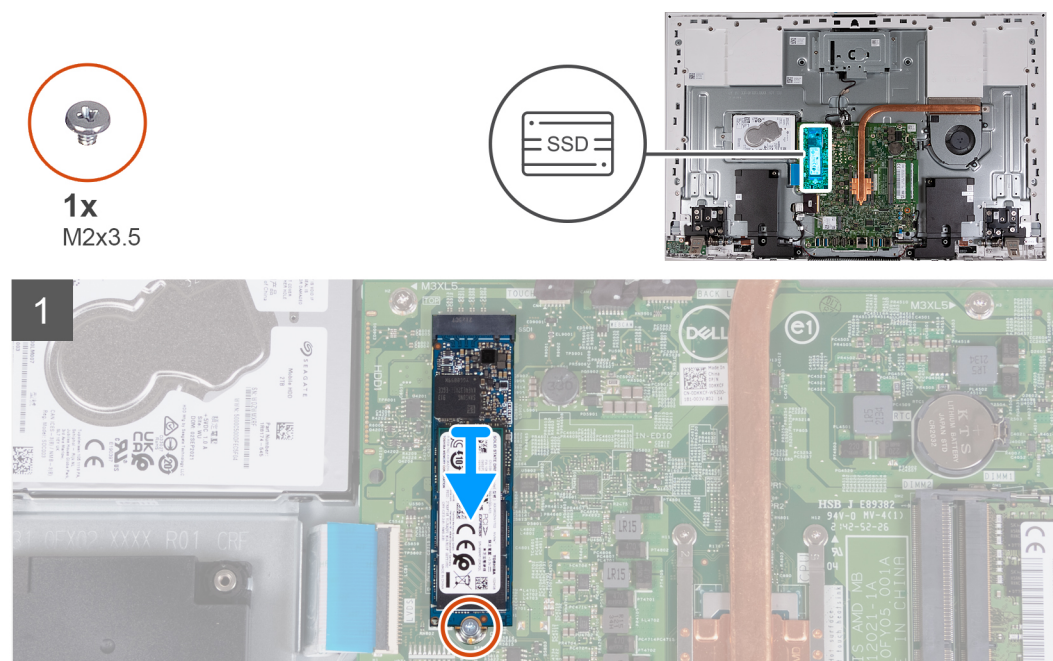4. Remove the I/O cover.
5. Remove the system-board shield.

About this task

The following image indicates the location of the fan and provides a visual representation of the removal procedure.

3x
M2x3.5
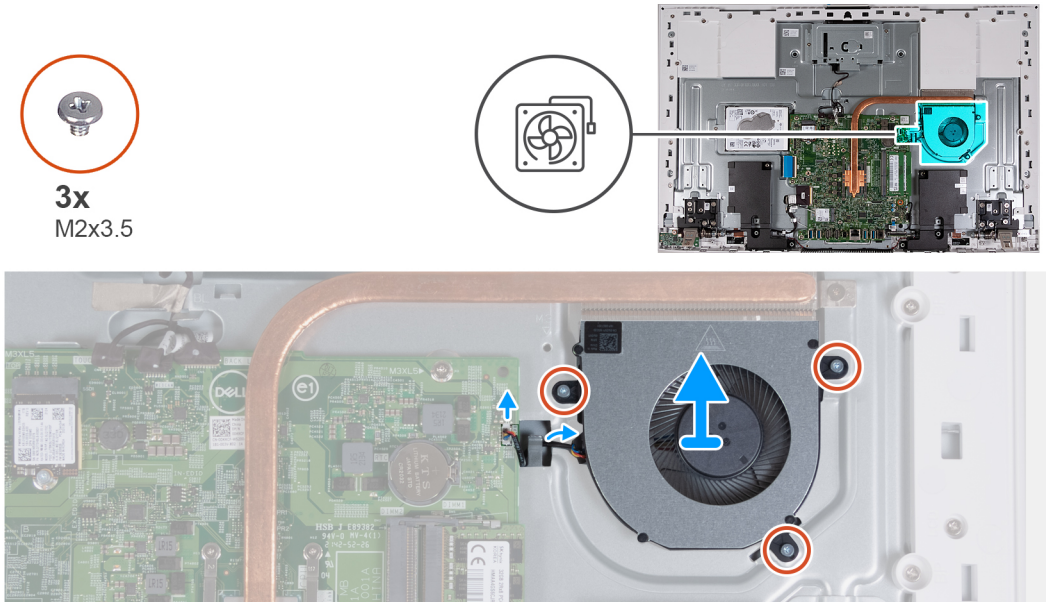
Steps

1. Disconnect the fan cable from the system board.
2. Remove the fan cable from the routing guide on the display-assembly base.
3. Remove the three screws (M2x2.5) that secure the fan to the display-assembly base.
4. Lift the fan, along with its cable, off the display-assembly base.

Installing the fan

Prerequisites

If you are replacing a component, remove the existing component before performing the installation process.

About this task

The following image indicates the location of the fan and provides a visual representation of the installation procedure.
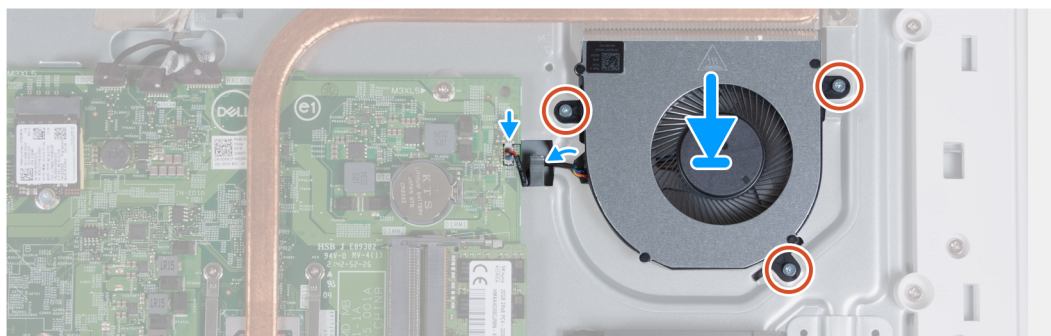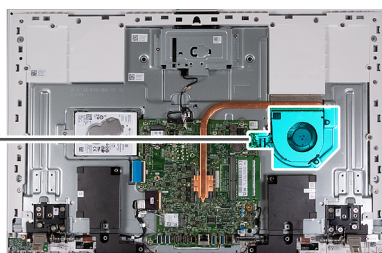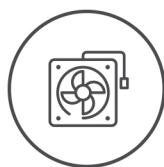
Steps

1. Align the screw holes on the fan with the screw holes on the display-assembly base.
2. Replace the three screws (M2x2.5) that secure the fan to the display-assembly base.
3. Route the fan cable through the routing guide on the display-assembly base.
4. Connect the fan cable to the system board.

Next steps

1. Install the system-board shield.
2. Install the I/O cover.
3. Install the back cover.
4. Install the stand.
5. Follow the procedure in After working inside your computer.

Speakers

Removing the speakers

Prerequisites

1. Follow the procedure in Before working inside your computer.
2. Remove the stand.
3. Remove the back cover.
4. Remove the I/O cover.
5. Remove the system-board shield.

About this task

The following image indicates the location of the speakers and provides a visual representation of the removal procedure.
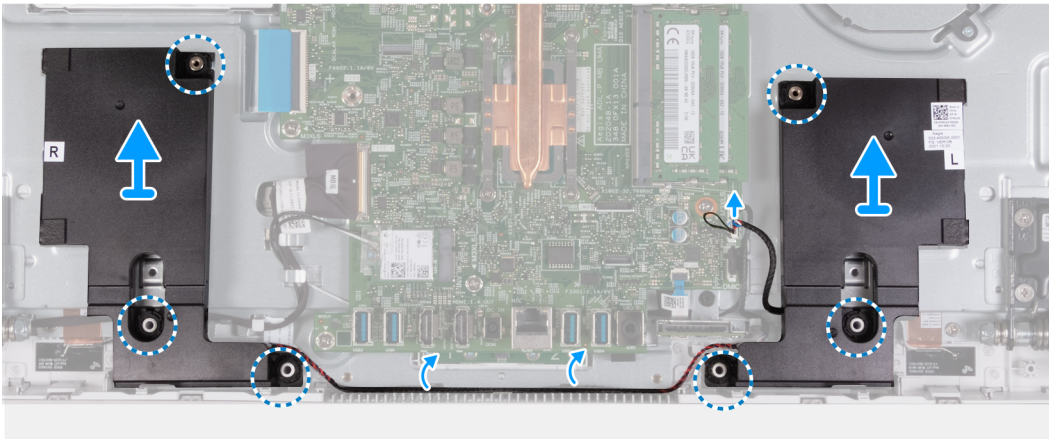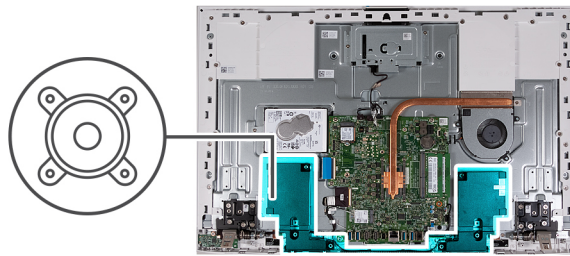
Steps

1. Disconnect the speaker cable from the system board.
2. Remove the speaker cable from the routing guides on the display-assembly base.
3. Lift the speakers, along with the cable, off the display-assembly base.

Installing the speakers

Prerequisites

If you are replacing a component, remove the existing component before performing the installation process.

About this task

The following image indicates the location of the speakers and provides a visual representation of the installation procedure.
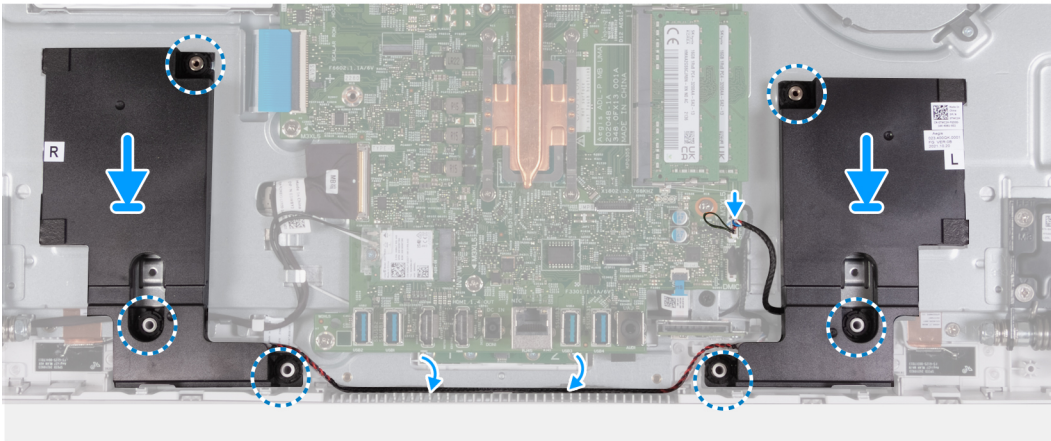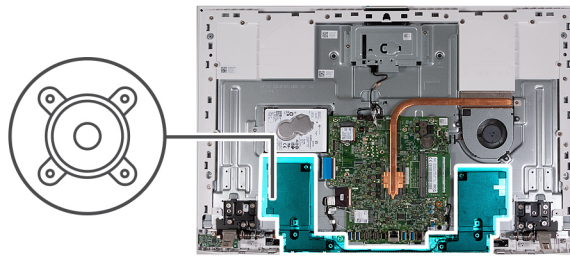
Steps

1. Using the alignment posts and rubber grommets, place the speakers on the slots on the display-assembly base.
2. Route the speaker cable through the routing guide on display-assembly base.
3. Connect the speaker cable to the system board.

Next steps

1. Install the system-board shield.
2. Install the I/O cover.
3. Install the back cover.
4. Install the stand.
5. Follow the procedure in After working inside your computer.

Coin-cell battery

## Removing the coin-cell battery

Prerequisites

1. Follow the procedure in Before working inside your computer.
2. Remove the stand.
3. Remove the back cover.
4. Remove the I/O cover.
5. Remove the system-board shield.

About this task

The following image indicates the location of the coin-cell battery and provides a visual representation of the removal procedure.
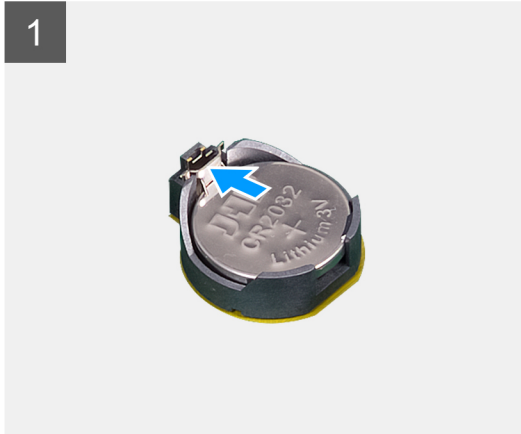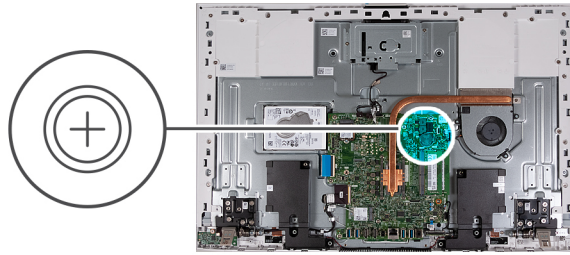
Steps

1. Using your fingertip, press on the metal tab to release the coin-cell battery from the coin-cell battery socket.
2. Lift the coin-cell battery from the coin-cell battery socket.

Installing the coin-cell battery

Prerequisites

If you are replacing a component, remove the existing component before performing the installation process.

About this task

The following image indicates the location of the coin-cell battery and provides a visual representation of the installation procedure.
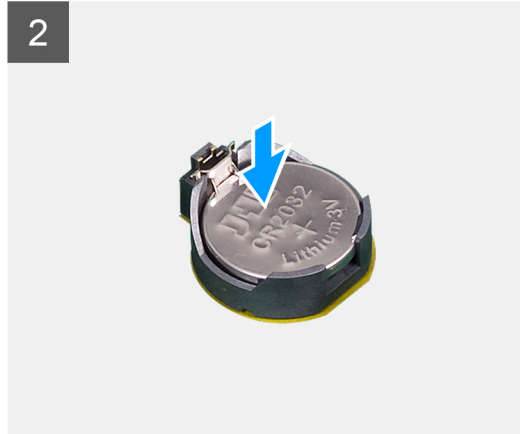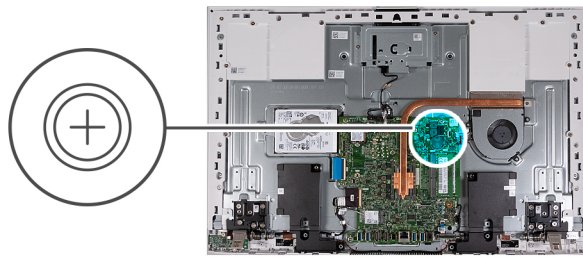
Steps

With the positive-side facing up, insert the coin-cell battery into the battery socket on the system board and snap the battery into place.

Next steps

1. Install the system-board shield.
2. Install the I/O cover.
3. Install the back cover.
4. Install the stand.
5. Follow the procedure in After working inside your computer.

Heat sink

Removing the heat sink

**Prerequisites**

1. Follow the procedure in Before working inside your computer.
2. Remove the stand.
3. Remove the back cover.
4. Remove the I/O cover.
5. Remove the system-board shield.

About this task

The following image indicates the location of the heat sink and provides a visual representation of the removal procedure.
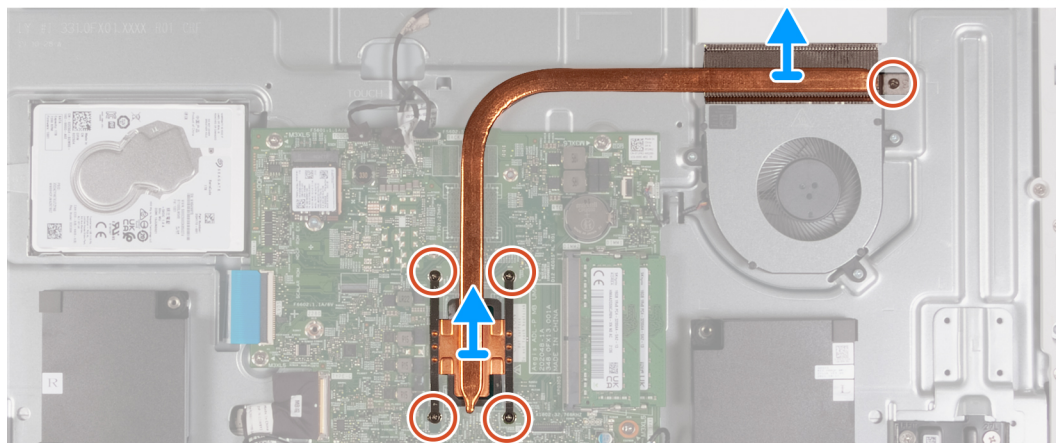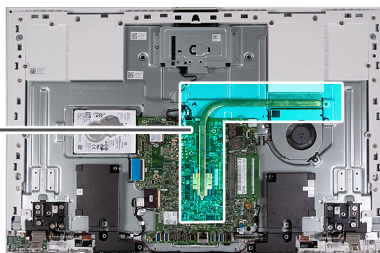
Steps

1. In reverse sequential order (5>4>3>2>1), loosen the five captive screws (M2x3) that secure the heat sink to the system board and the display-assembly base.

2. Lift the heat sink off the system board and display-assembly base.

Installing the heat sink

Prerequisites

If you are replacing a component, remove the existing component before performing the installation process.

About this task

ⓘ **NOTE:** If either the system board or the heat sink is replaced, use the thermal pad/paste provided in the kit to ensure that thermal conductivity is achieved.

The following image indicates the location of the heat sink and provides a visual representation of the installation procedure.
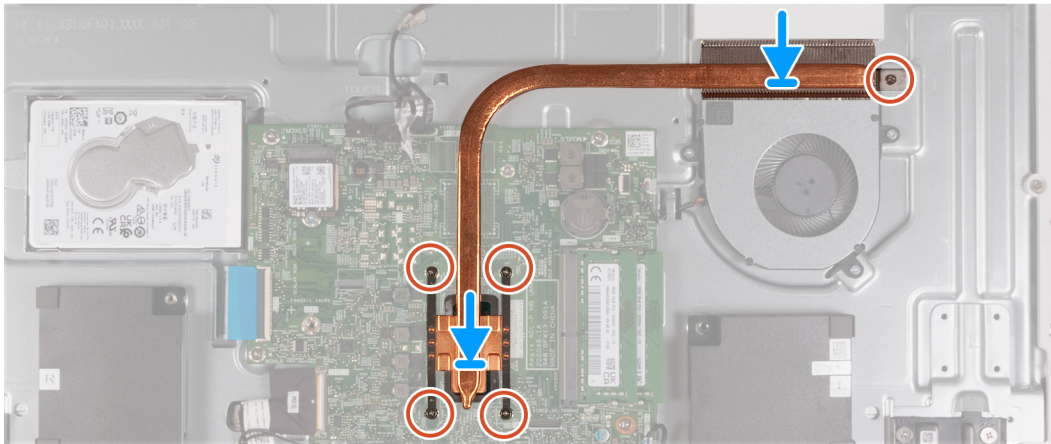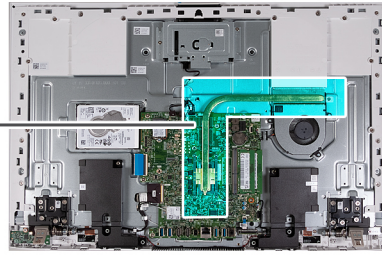
Steps

1. Align the screw holes on the heat sink with the screw holes on the system board and the display-assembly base.
2. In sequential order (1>2>3>4>5), tighten the five captive screws (M2x3) that secure the heat sink to the system board and display-assembly base.

Next steps

1. Install the system-board shield.
2. Install the I/O cover.
3. Install the back cover.
4. Install the stand.
5. Follow the procedure in After working inside your computer.

# Media-card reader

Removing the media-card reader

Prerequisites

1. Follow the procedure in Before working inside your computer.
2. Remove the stand.
3. Remove the back cover.
4. Remove the I/O cover.
5. Remove the system-board shield.

About this task

The following image indicates the location of the media-card reader and provides a visual representation of the removal procedure.

1x
M3x3.5
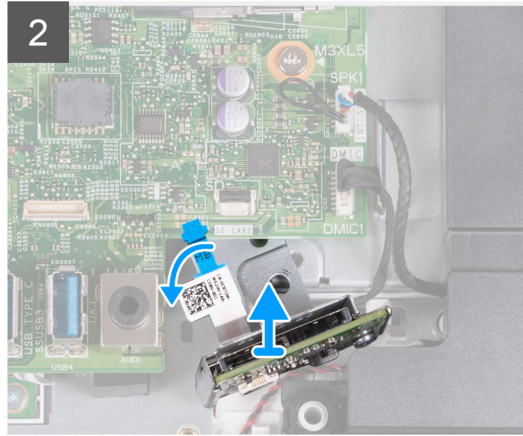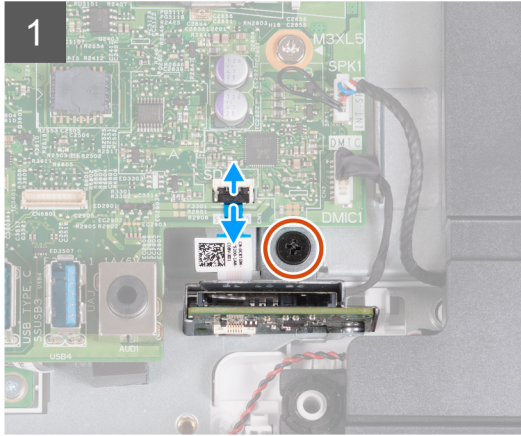
Steps

1. Remove the screw (M3x3.5) that secure the media-card reader to the display-assembly base.
2. Open the latch and disconnect the media-card reader cable from the system board.
3. Gently slide and remove the media-card reader, along with its cable, from the media-card reader slot.

Installing the media-card reader

Prerequisites

If you are replacing a component, remove the existing component before performing the installation process.

About this task

The following image indicates the location of the media-card reader and provides a visual representation of the installation procedure.
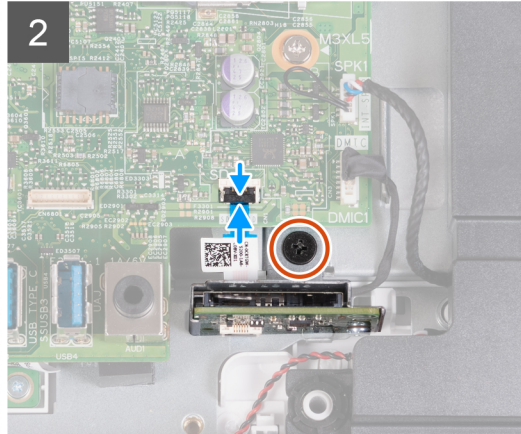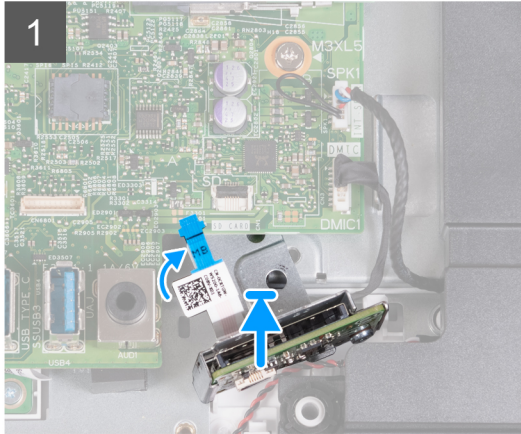
Steps

1. Place the media-card reader under the system board and then align the screw hole on the media-card reader with the screw hole on the display-assembly base.

   ⓘ **NOTE:** Ensure that the media-card reader cable stays above the system board.

2. Connect the media-card reader cable to the system board and close the latch to secure the cable.

3. Replace the screw (M3x3.5) that secure the media-card reader to the display-assembly base.

Next steps

1. Install the system-board shield.
2. Install the I/O cover.
3. Install the back cover.
4. Install the stand.
5. Follow the procedure in After working inside your computer.

Power-button board

## Removing the power-button board

Prerequisites

1. Follow the procedure in Before working inside your computer.
2. Remove the stand.
3. Remove the back cover.
4. Remove the I/O cover.
5. Remove the system-board shield.

About this task

The following image indicates the location of the power-button board and provides a visual representation of the removal procedure.
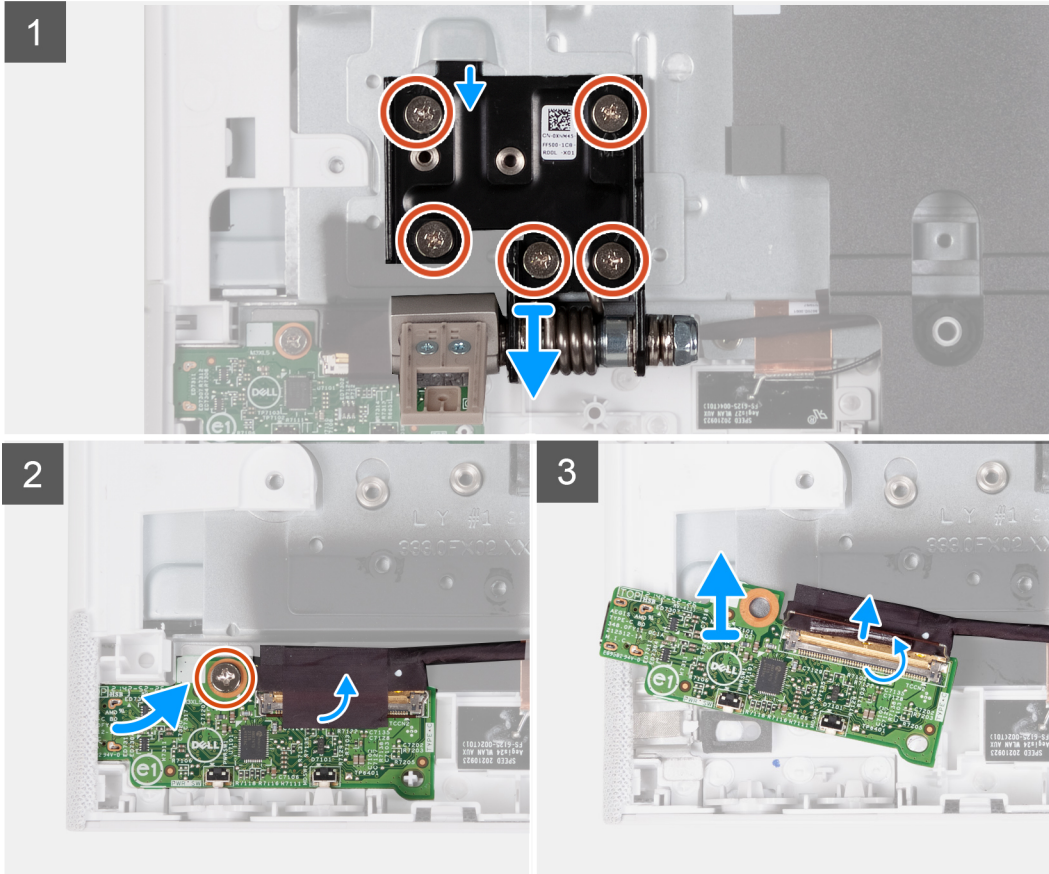
Steps

1. Remove the five screws (M3x5) that secures the left-display hinge to the display-assembly base.
2. Remove the screw (M3x5) that secures the power-button board to the display-assembly base.
3. Peel the tape that secures the power-button board cable to the power-button board.
4. Gently lift the power-button board from the tabs on the display-assembly base.
5. Open the latch and disconnect the power-button board cable from the power-button board.
6. Lift the power-button board off the display-assembly base.

Installing the power-button board

Prerequisites

If you are replacing a component, remove the existing component before performing the installation process.

About this task

The following image indicates the location of the power-button board and provides a visual representation of the installation procedure.
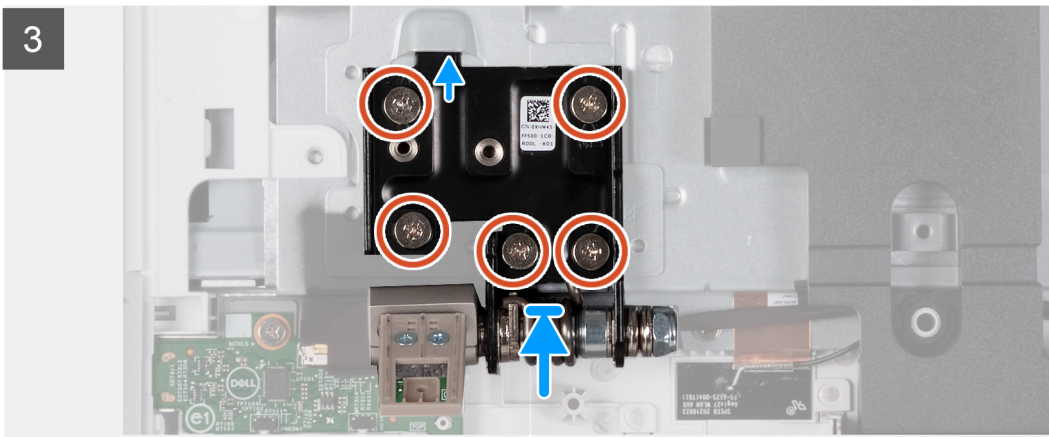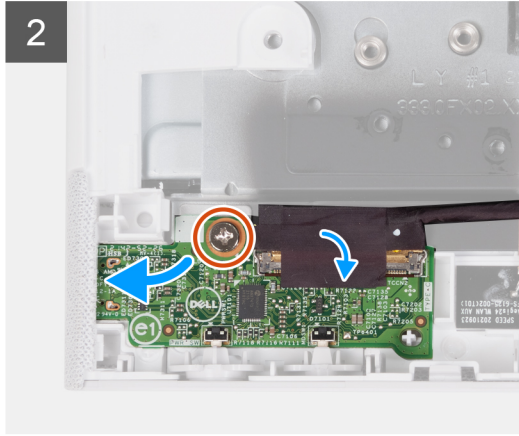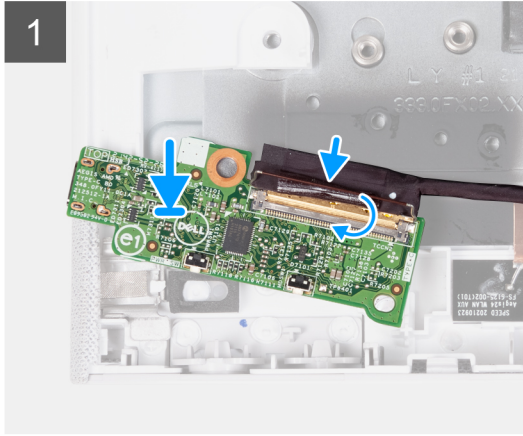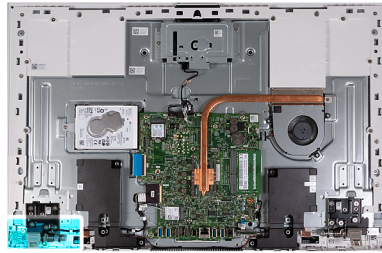
Steps

1. Connect the power-button board cable to the power-button board and close the latch to secure the cable.
2. Align and place the power-button board in the slot on the display-assembly base and snap it into place.
3. Replace the screw (M3x5) that secures the power-button board to the display-assembly base.
4. Adhere the tape that secures the power-button cable to the power-button board.
5. Replace the five screws (M3x5) that secures the left-display hinge to the display-assembly base.

Next steps

1. Install the system-board shield.
2. Install the I/O cover.
3. Install the back cover.
4. Install the stand.
5. Follow the procedure in After working inside your computer.

System board

Removing the system board

Prerequisites

1. Follow the procedure in Before working inside your computer.
   > (i) **NOTE:** Your computer's Service Tag is stored in the system board. You must enter the Service Tag in the BIOS setup program after you replace the system board.

   > (i) **NOTE:** Replacing the system board removes any changes that you have made to the BIOS using the BIOS setup program. You must make the appropriate changes again after you replace the system board.

   > (i) **NOTE:** Before disconnecting the cables from the system board, note the location of the connectors so that you can reconnect the cables correctly after you replace the system board.

2. Remove the stand.
3. Remove the back cover.
4. Remove the I/O cover.
5. Remove the system-board shield.
6. Remove the memory module.
7. Remove the wireless card.
8. Remove the M.2 2230 solid-state drive or M.2 2280 solid-state drive, as applicable.
9. Remove the heat sink.

About this task

The following image indicates the connectors on your system board.
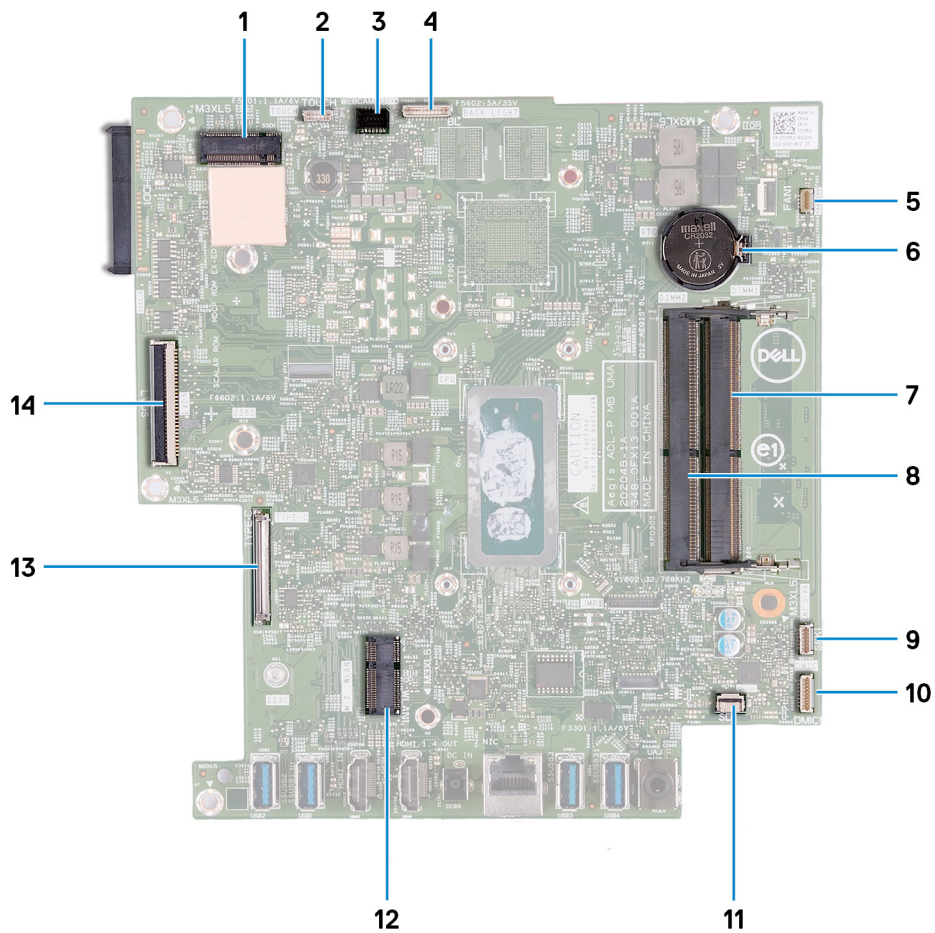
Figure 1. System-board connectors

1. Solid-state drive slot
2. Touchscreen-cable connector (optional)
3. Camera-cable connector
4. Backlight-cable connector
5. Fan-cable connector
6. Coin-cell battery
7. Memory-module slot (DIMM1)
8. Memory-module slot (DIMM2)
9. Speaker-cable connector
10. Microphone-module cable connector
11. Media-card reader cable connector
12. Wireless-card slot
13. Power-button board cable connector
14. Display-cable connector

The following image indicates the location of system board and provides a visual representation of the removal procedure.

6x
M3x5

1x
M3x4
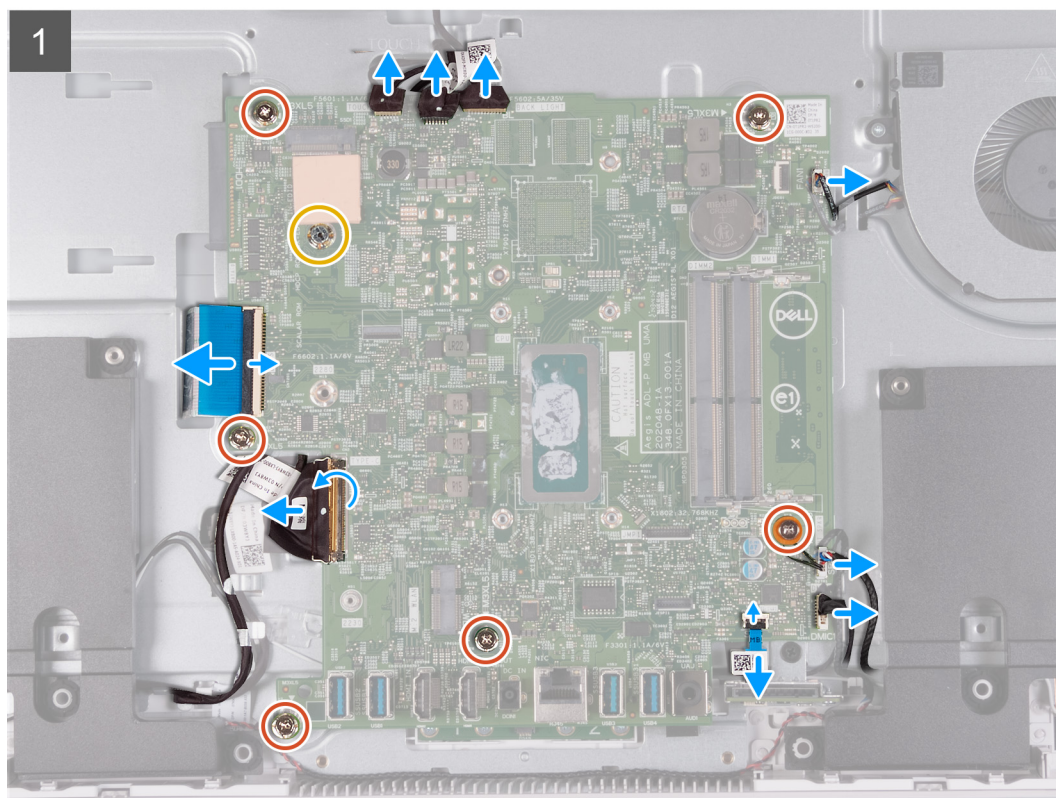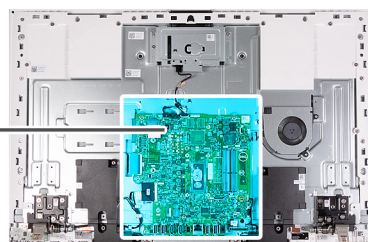
Steps

1. Disconnect the touchscreen cable from the system board.

   ⓘ **NOTE:** This cable is only available on computers that support touch option.

2. Disconnect the camera cable from the system board.
3. Disconnect the backlight cable from the system board.
4. Disconnect the fan cable from the system board.
5. Disconnect the speaker cable from the system board.
6. Disconnect the microphone-module cable from the system board.
7. Disconnect the media-card reader cable from the system board.
8. Open the latch and disconnect the power-button board cable from the system board.
9. Disconnect the display cable from the system board.
10. Remove the six screws (M3x5) that secure the system board to the display-assembly base.
11. Remove the solid-state drive screw mount (M3x4) that secures the system board to the display-assembly base.
12. Lift the system board off the display-assembly base.

Installing the system board

Prerequisites

If you are replacing a component, remove the existing component before performing the installation process.

About this task

The following image indicates the connectors on your system board.
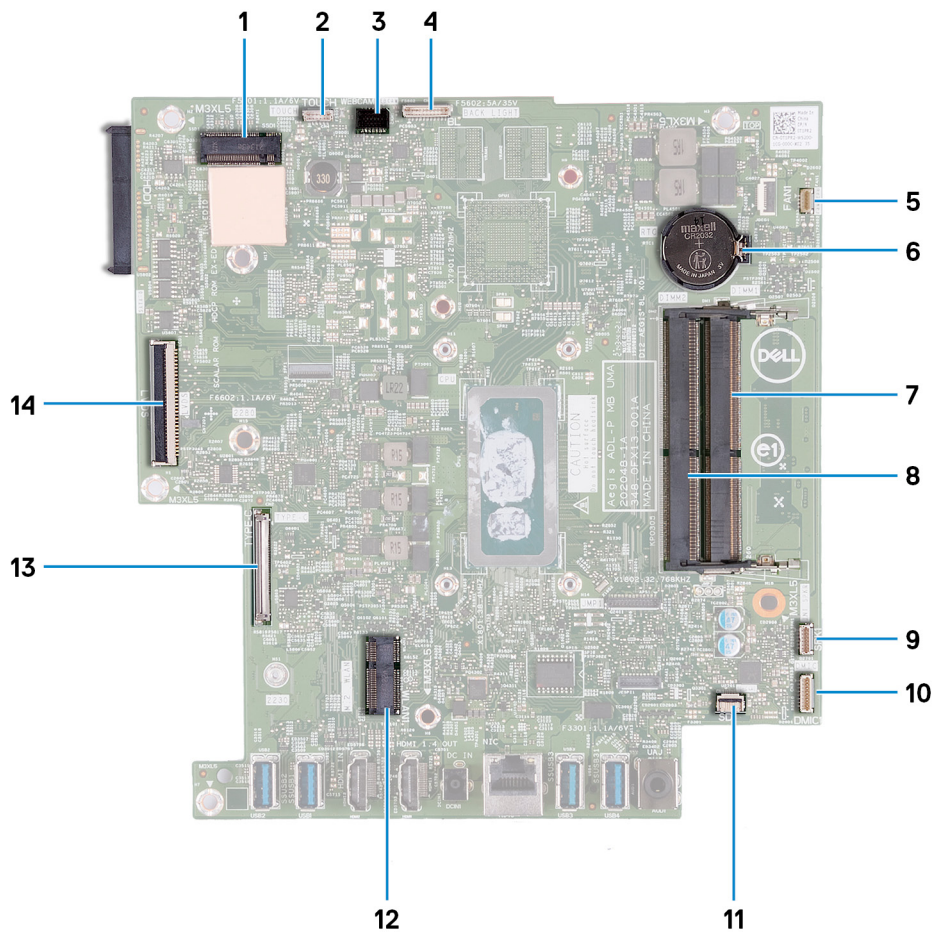
Figure 2. System-board connectors

1. Solid-state drive slot
2. Touchscreen-cable connector (optional)
3. Camera-cable connector
4. Backlight-cable connector
5. Fan-cable connector
6. Coin-cell battery
7. Memory-module slot (DIMM1)
8. Memory-module slot (DIMM2)
9. Speaker-cable connector
10. Microphone-module cable connector
11. Media-card reader cable connector
12. Wireless-card slot
13. Power-button board cable connector
14. Display-cable connector

The following image indicates the location of system board and provides a visual representation of the installation procedure.

Steps

1. Align the screw holes on the system board with the screw holes on the display-assembly base.
2. Replace the six screws (M3x5) that secure the system board to the display-assembly base.
3. Replace the solid-state drive screw mount (M3x4) that secures the system board to the display-assembly base.
4. Connect the display cable to the system board.
5. Connect the power-button board cable to the system board and close the latch to secure the cable.
6. Connect the media-card reader cable to the system board.
7. Connect the microphone-module cable to the system board.
8. Connect the speaker cable to the system board.
9. Connect the fan cable to the system board.
10. Connect the backlight cable to the system board.
11. Connect the camera cable to the system board.
12. Connect the touchscreen cable to the system board.

   (i) **NOTE:** This cable is only available on computers that support touch option.

Next steps

1. Install the heat sink.
2. Install the M.2 2230 solid-state drive or M.2 2280 solid-state drive.
3. Install the wireless card.
4. Install the memory module.
5. Install the system-board shield.
6. Install the I/O cover.
7. Install the back cover.
8. Install the stand.
9. Follow the procedure in After working inside your computer.
   (i) **NOTE:** Your computer's Service Tag is stored in the system board. You must enter the Service Tag in the BIOS setup program after you replace the system board.

Microphones

Removing the microphones

Prerequisites

1. Follow the procedure in Before working inside your computer.
2. Remove the stand.
3. Remove the back cover.
4. Remove the I/O cover.
5. Remove the system-board shield.
6. Remove the memory module.
7. Remove the hard drive.
8. Remove the M.2 2230 solid-state drive or M.2 2280 solid-state drive, as applicable.
9. Remove the wireless card.
10. Remove the fan.
11. Remove the heat sink.
12. Remove the media-card reader.
13. Remove the system board.

About this task

The following image indicates the location of the microphones and provides a visual representation of the removal procedure.
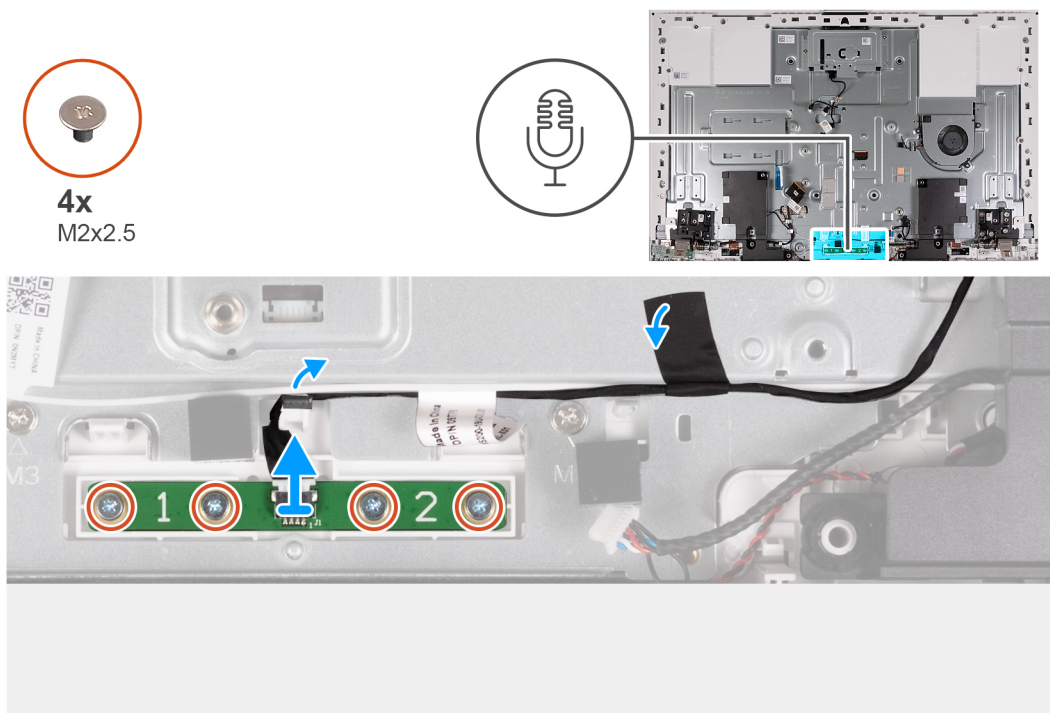
Steps

1. Remove the four screws (M2X2.5) that secure the microphone modules to the display-assembly base.
2. Peel the tape that secures the microphone cable to the display-assembly base.
3. Remove the microphone cable from the routing guides on the display-assembly base.
4. Lift the microphone modules (2) off the slots on the display-assembly base.

Installing the microphones

Prerequisites

If you are replacing a component, remove the existing component before performing the installation process.

About this task

The following image indicates the location of the microphones and provides a visual representation of the installation procedure.
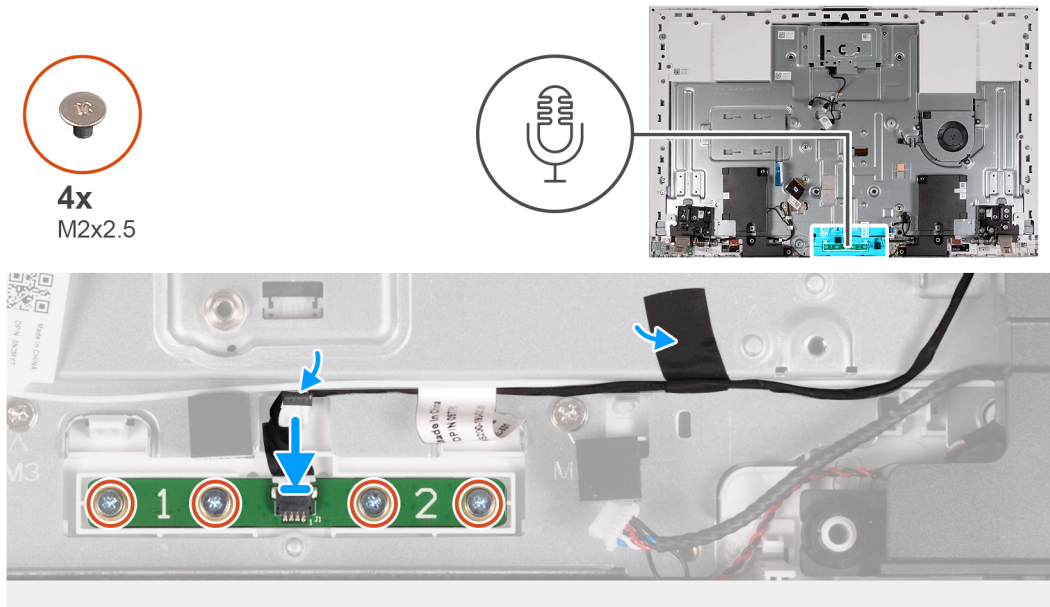
Steps

1. Align the microphone modules (2) with their slots on the display-assembly base.
2. Replace the four screws (M2X2.5) that secure the microphone modules to the display-assembly base.
3. Route the microphone cable through the routing guides on the display-assembly base .
4. Adhere the tape that secures the microphone cable to the display-assembly base.

Next steps

1. Install the system board.
2. Install the media-card reader.
3. Install the heat sink.
4. Install the fan.
5. Install the wireless card.
6. Install the M.2 2230 solid-state drive or M.2 2280 solid-state drive.
7. Install the hard drive.
8. Install the memory module.
9. Install the system-board shield.
10. Install the I/O cover.
11. Install the back cover.
12. Install the stand.
13. Follow the procedure in After working inside your computer.

Antennas

Removing the antennas

Prerequisites

1. Follow the procedure in Before working inside your computer.
2. Remove the stand.
3. Remove the back cover.
4. Remove the I/O cover.
5. Remove the hard drive.
6. Remove the system-board shield.
7. Remove the memory module.
8. Remove the M.2 2230 solid-state drive or M.2 2280 solid-state drive, as applicable.
9. Remove the wireless card.
10. Remove the heat sink.
11. Remove the speakers.
12. Remove the system board.
13. Remove the media-card reader.
14. Remove the display hinges.
15. Remove the power-button board.

About this task

The following image indicates the location of the antennas and provides a visual representation of the removal procedure.
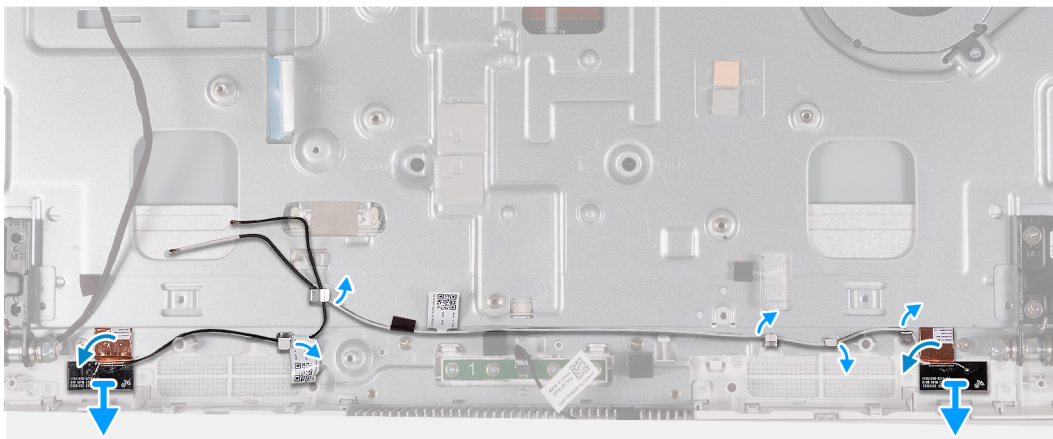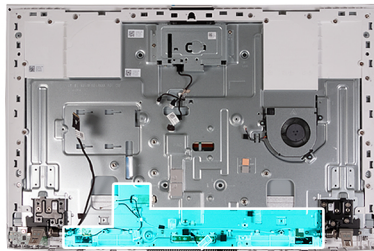
> (i) **NOTE:** Note the routing of the antenna cables, before removing the antenna cables form the routing guides. Also, note the location of the antenna modules that are printed on the display-assembly base as ANT-B (black) and ANT-W (white).

Steps

1. Remove the antenna cables from the routing guides on the display-assembly base.
2. Carefully peel the copper foil that secures the antenna cables (2) to the display-assembly base.
3. Lift the antenna modules off the display-assembly base.

Installing the antennas

Prerequisites

If you are replacing a component, remove the existing component before performing the installation process.

About this task
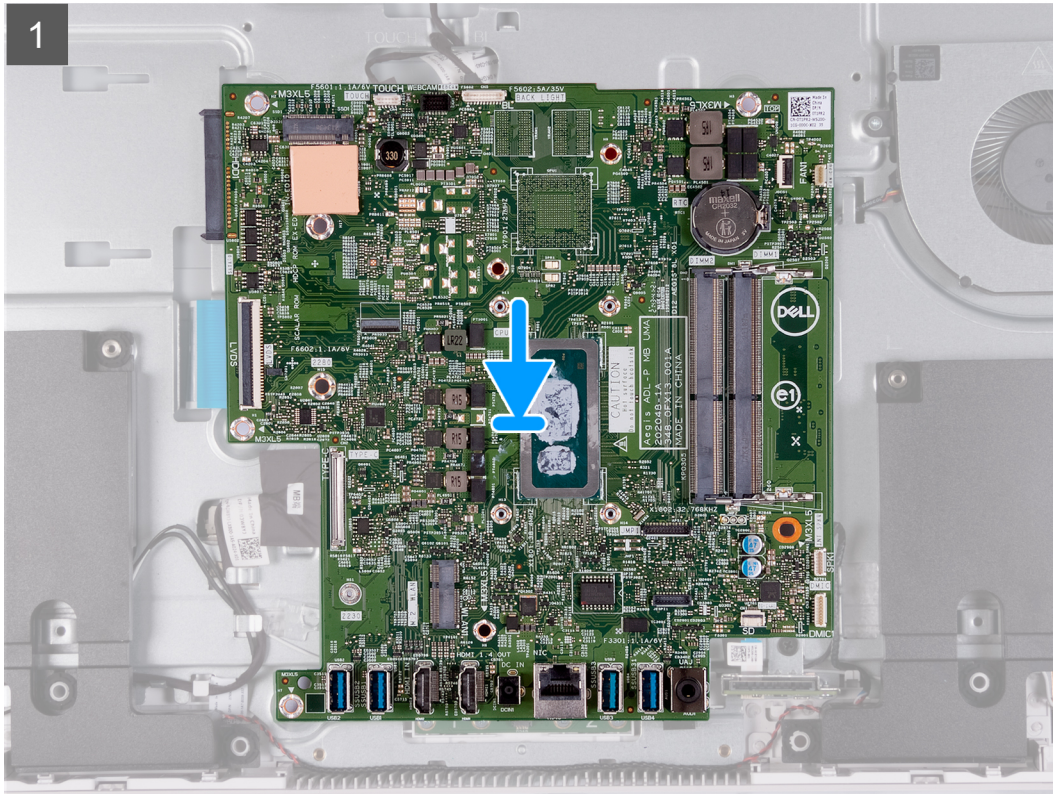
The following image indicates the location of the antennas and provides a visual representation of the installation procedure.
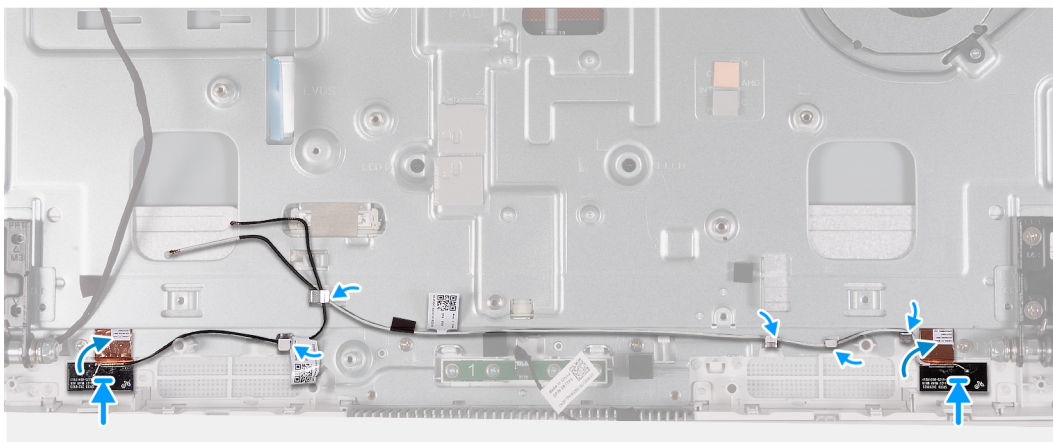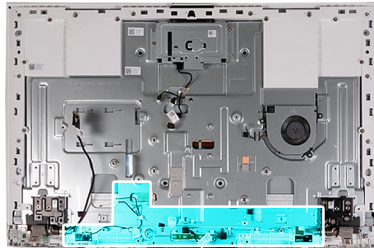
ⓘ **NOTE:** Note the location of the antenna modules that are printed on the display-assembly base as ANT-B (black) and ANT-W (white).

Steps

1. Align and place the antenna modules (2) into the slots on the display-assembly base and adhere it in place.
2. Adhere the copper foil that secures the antenna cables (2) to the display-assembly base.
3. Route the antenna cables through the routing guides on the display-assembly base.

Next steps

1. Install the power-button board.
2. Install the display hinges.
3. Install the media-card reader.
4. Install the system board.
5. Install the speakers.
6. Install the heat sink.
7. Install the wireless card.
8. Install the M.2 2230 solid-state drive or M.2 2280 solid-state drive.
9. Install the memory module.
10. Install the system-board shield.
11. Install the hard drive.
12. Install the I/O cover.
13. Install the back cover.
14. Install the stand.
15. Follow the procedure in After working inside your computer.

Display panel

Removing the display panel

Prerequisites

1. Follow the procedure in Before working inside your computer.
2. Remove the stand.
3. Remove the back cover.
4. Remove the I/O cover.
5. Remove the hard drive.
6. Remove the system-board shield.
7. Remove the memory module.
8. Remove the M.2 2230 solid-state drive or M.2 2280 solid-state drive, as applicable.
9. Remove the wireless card.
10. Remove the heat sink.
11. Remove the system board.

About this task

The following image indicates the location of display panel and provides a visual representation of the removal procedure.

12x
M3x5

5x
M3x3
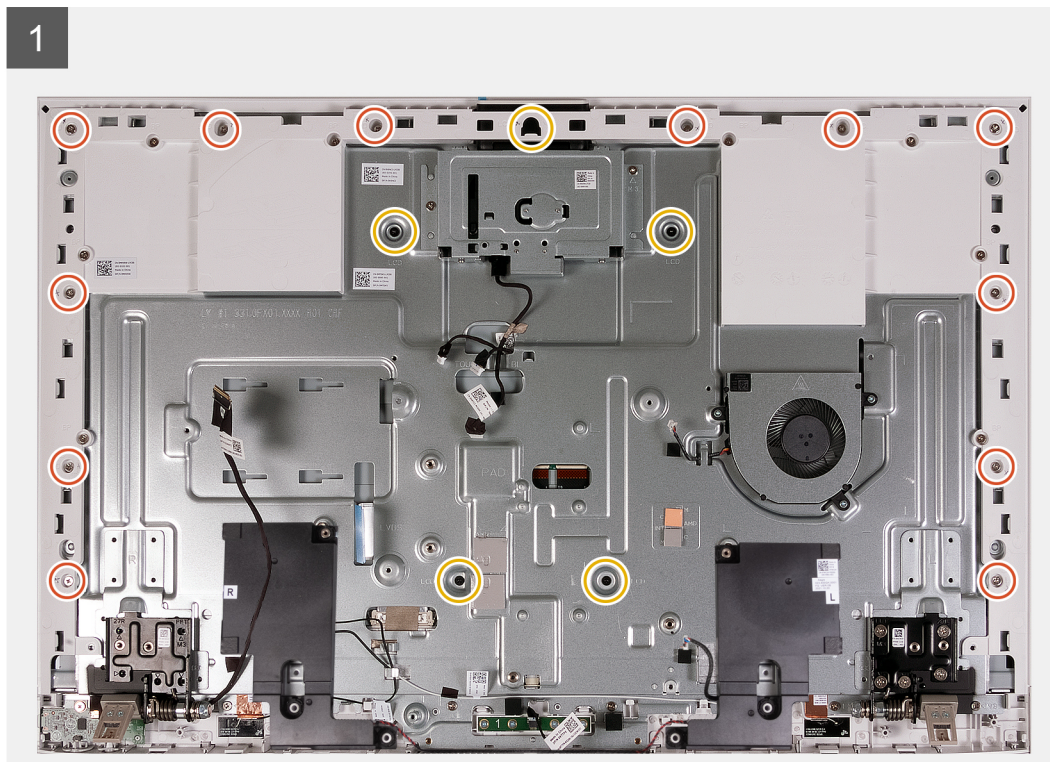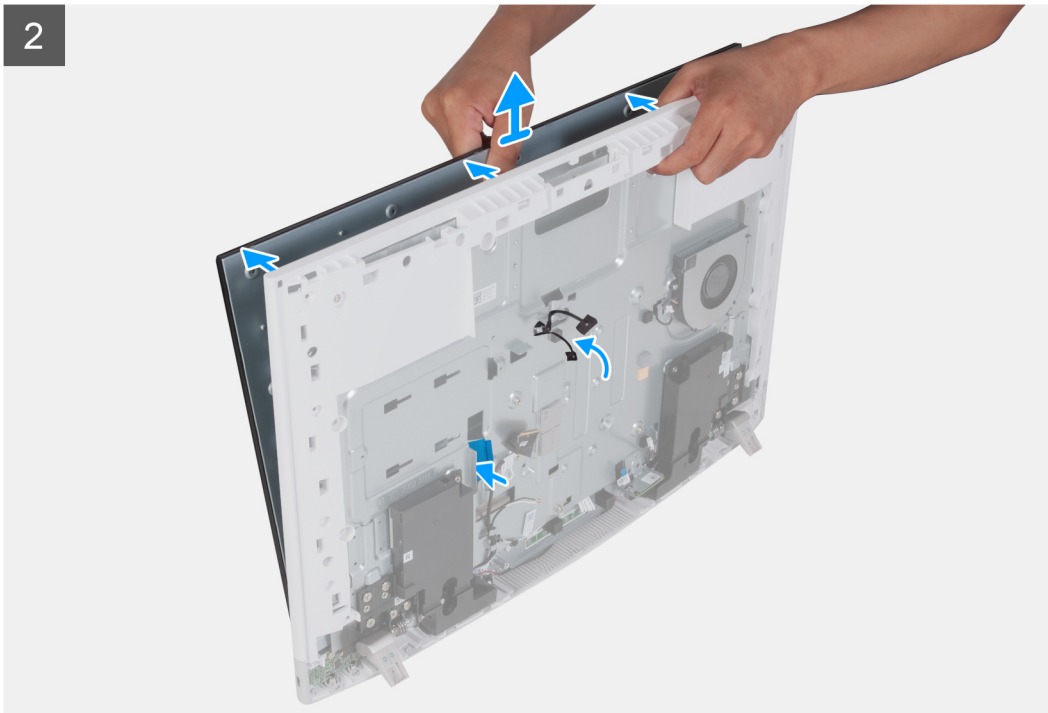
Steps

1. Remove the 12 screws (M3x5) that secure the display panel to the display-assembly base.
2. Remove the five screws (M3x3) that secure the display panel to the display-assembly base.
3. Place the computer in an upright position.
4. Holding the top corner, push the display panel away from the display-assembly base using the push holes available on the display-assembly base.
5. Slide the display backlight, touchscreen and display cable on the display panel through slots on the display assembly base.
6. Lift the display panel up from the display-assembly base.

Installing the display panel

Prerequisites

If you are replacing a component, remove the existing component before performing the installation process.

About this task

The following image indicates the location of display panel and provides a visual representation of the installation procedure.

12x
M3x5

5x
M3x3
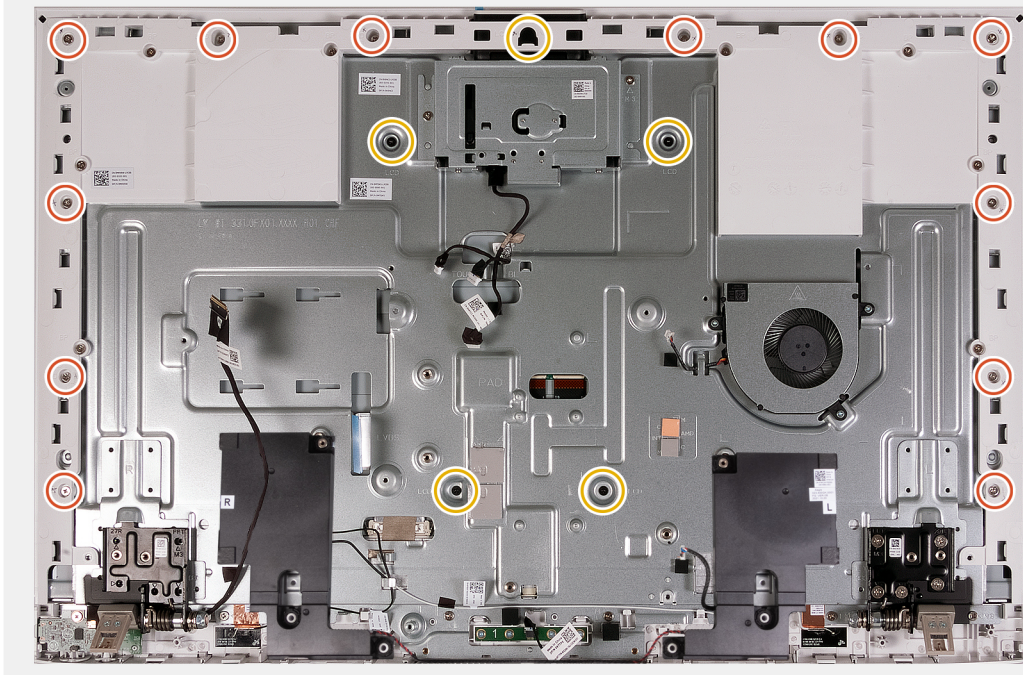
Steps

1. Align and place the display panel on the slots of the display-assembly base.
2. Route the display backlight, touchscreen and display cable through the slots on the display assembly base.
3. Place the display-assembly base on a clean and flat surface with the display panel facing down.
4. Replace the 12 screws (M3x5) that secure the display panel to the display-assembly base.
5. Replace the five screws (M3x5) that secure the display panel to the display-assembly base.

   (i) **NOTE:** The screws that secure the middle frame and display panel to the display-assembly base are silver in color and etched with "LCD" around the screw holes.

Next steps

1. Install the system board.
2. Install the heat sink.
3. Install the wireless card.
4. Install the M.2 2230 solid-state drive or M.2 2280 solid-state drive.
5. Install the memory module.
6. Install the system-board shield.
7. Install the hard drive.
8. Install the I/O cover.
9. Install the back cover.
10. Install the stand.
11. Follow the procedure in After working inside your computer.

Base panel

Removing the base panel

Prerequisites

1. Follow the procedure in Before working inside your computer.
2. Remove the stand.
3. Remove the back cover.
4. Remove the I/O cover.
5. Remove the hard drive.
6. Remove the system-board shield.
7. Remove the memory module.
8. Remove the M.2 2230 solid-state drive or M.2 2280 solid-state drive, as applicable.
9. Remove the wireless card.
10. Remove the fan.
11. Remove the heat sink.
12. Remove the coin-cell battery.
13. Remove the speakers.
14. Remove the retractable-camera assembly.
15. Remove the system board.
16. Remove the media-card reader.
17. Remove the microphones.
18. Remove the display hinges.
19. Remove the power-button board.
20. Remove the antennas.
21. Remove the display panel.

About this task

The following image indicates the location of the base panel and provides a visual representation of the removal procedure.

13x
M3x5
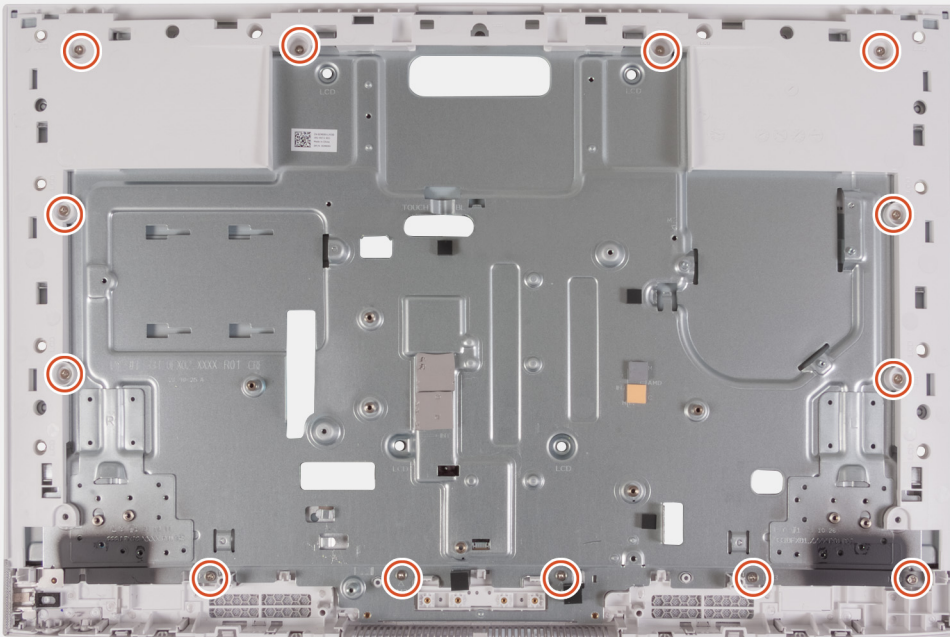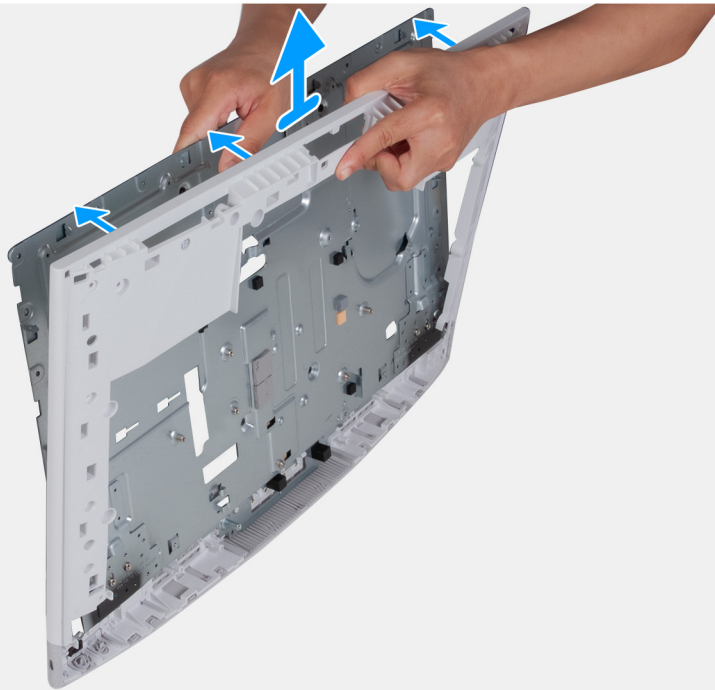
Steps

1. Remove the 13 screws (M3x5) that secure the base panel to the display-assembly base.

2. Place the base panel in an upright position.
3. Remove the base panel and lift the base panel off the display-assembly base.

Installing the base panel

Prerequisites

If you are replacing a component, remove the existing component before performing the installation process.

About this task

The following image indicates the location of the base panel and provides a visual representation of the installation procedure.

13x
M3x5

2
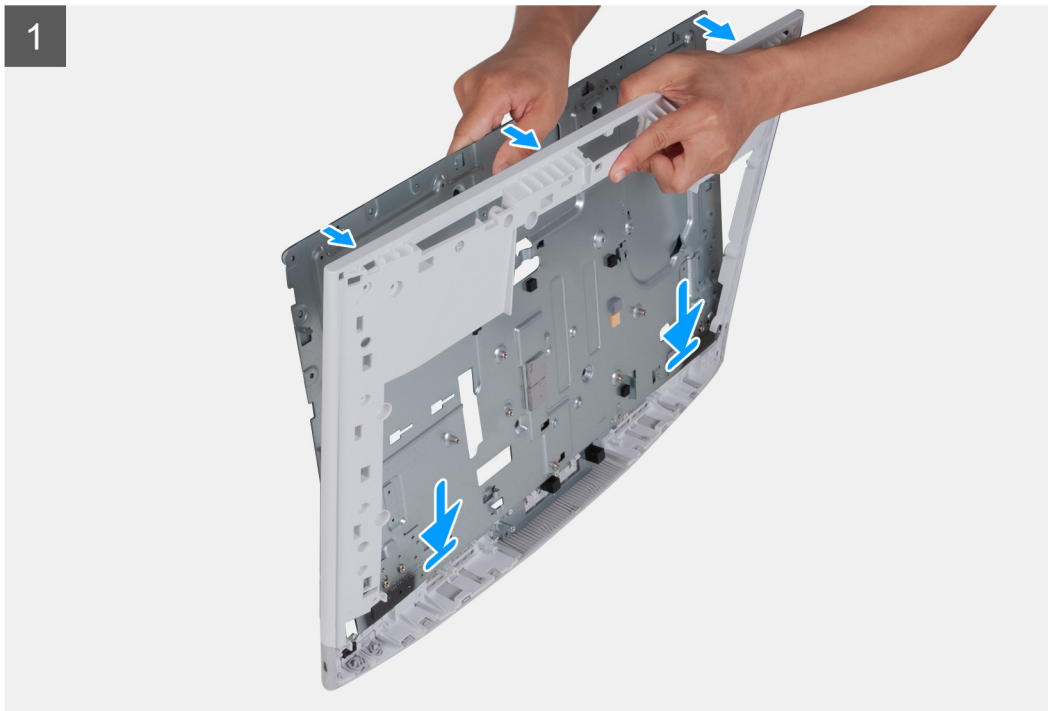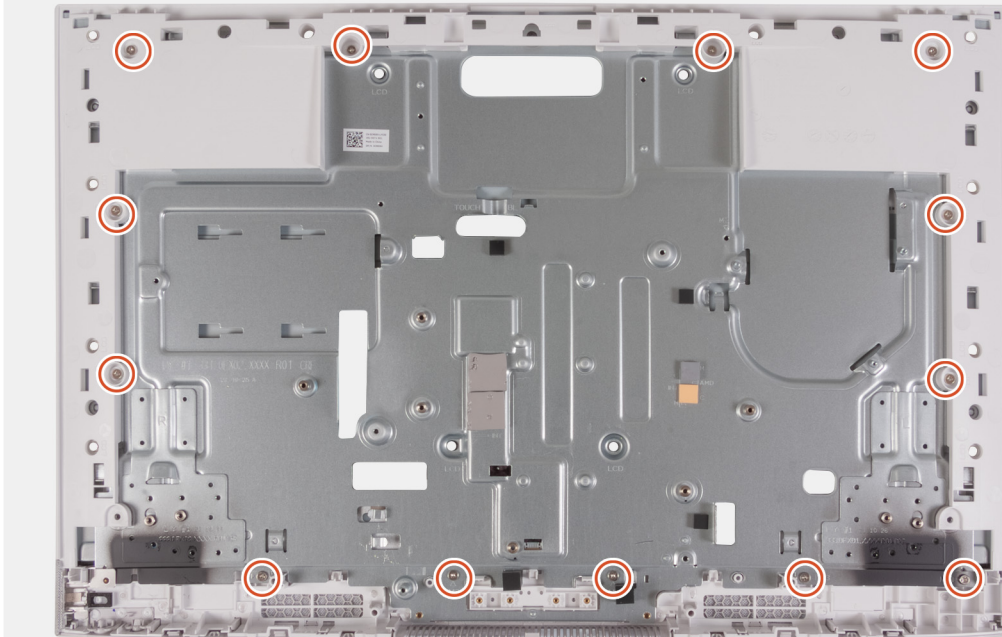
Steps

1. Place the base panel in an upright position.
2. Align the screw holes on the base panel with the screw holes on the display-assembly base.
3. Replace the 13 screws (M3x5) that secures the base panel to the display-assembly base.

Next steps

1. Install the display panel.
2. Install the antennas.
3. Install the power-button board.
4. Install the display hinges.
5. Install the microphones.
6. Install the media-card reader.
7. Install the system board.
8. Install the retractable-camera assembly.
9. Install the speakers.
10. Install the heat sink.
11. Install the fan.
12. Install the coin-cell battery.
13. Install the wireless card.
14. Install the M.2 2230 solid-state drive or M.2 2280 solid-state drive.
15. Install the memory module.
16. Install the system-board shield.
17. Install the hard drive.
18. Install the I/O cover.
19. Install the back cover.
20. Install the stand.
21. Follow the procedure in After working inside your computer.

Drivers and downloads

When troubleshooting, downloading or installing drivers it is recommended that you read the Dell Knowledge Based article, Drivers and Downloads FAQ 000123347.

4

System setup

⚠️ **CAUTION: Unless you are an expert computer user, do not change the settings in the BIOS Setup program. Certain changes can make your computer work incorrectly.**

ⓘ **NOTE:** Before you change BIOS Setup program, it is recommended that you write down the BIOS Setup program screen information for future reference.

Use the BIOS Setup program for the following purposes:
- Get information about the hardware installed in your computer, such as the amount of RAM and the size of the hard drive.
- Change the system configuration information.
- Set or change a user-selectable option, such as the user password, type of hard drive installed, and enabling or disabling base devices.

Entering BIOS setup program

About this task

Turn on (or restart) your computer and press F2 immediately.

Navigation keys

ⓘ **NOTE:** For most of the System Setup options, changes that you make are recorded but do not take effect until you restart the system.

Keys	Navigation
Up arrow	Moves to the previous field.
Down arrow	Moves to the next field.
Enter	Selects a value in the selected field (if applicable) or follow the link in the field.
Spacebar	Expands or collapses a drop-down list, if applicable.
Tab	Moves to the next focus area.
Esc	Moves to the previous page until you view the main screen. Pressing Esc in the main screen displays a message that prompts you to save any unsaved changes and restarts the system.

Boot Sequence

Boot Sequence allows you to bypass the System Setup–defined boot device order and boot directly to a specific device (for example: optical drive or hard drive). During the Power-on Self Test (POST), when the Dell logo appears, you can:
- Access System Setup by pressing F2 key
- Bring up the one-time boot menu by pressing F12 key

The one-time boot menu displays the devices that you can boot from including the diagnostic option. The boot menu options are:
- Removable Drive (if available)
- STXXXX Drive (if available)

  ⓘ **NOTE:** XXX denotes the SATA drive number.
- Optical Drive (if available)

- SATA Hard Drive (if available)
- Diagnostics

The boot sequence screen also displays the option to access the System Setup screen.

System setup options

ⓘ **NOTE:** Depending on this computer and its installed devices, the items that are listed in this section may or may not be displayed.

Table 3. System setup options—System information menu

Overview		
Inspiron 27 7710 All-in-One		
BIOS Version	Displays the BIOS version number.	
Service Tag	Displays the Service Tag of the computer.	
Asset Tag	Displays the Asset Tag of the computer.	
Manufacture Date	Displays the manufacture date of the computer.	
Ownership Date	Displays the ownership date of the computer.	
Express Service Code	Displays the express service code of the computer.	
Ownership Tag	Displays the ownership tag of the computer.	
Signed Firmware Update	Displays whether the signed firmware update is enabled.	
	Default: Enabled	
Processor		
Processor Type	Displays the processor type.	
Maximum Clock Speed	Displays the maximum processor clock speed.	
Minimum Clock Speed	Displays the minimum processor clock speed.	
Current Clock Speed	Displays the current processor clock speed.	
Core Count	Displays the number of cores on the processor.	
Processor ID	Displays the processor identification code.	
Processor L2 Cache	Displays the processor L2 Cache size.	
Processor L3 Cache	Displays the processor L3 Cache size.	
Microcode Version	Displays the microcode version.	
Intel Hyper-Threading Capable	Displays whether the processor is Hyper-Threading (HT) capable.	
64-Bit Technology	Displays whether 64-bit technology is used.	
Memory		
Memory Installed	Displays the total computer memory installed.	
Memory Available	Displays the total computer memory available.	
Memory Speed	Displays the memory speed.	
Memory Channel Mode	Displays single or dual channel mode.	
Memory Technology	Displays the technology that is used for the memory.	
DIMM 1 Size	Displays the capacity of DIMM 1 module.	
DIMM 2 Size	Displays the capacity of DIMM 2 module.	
Devices		
Panel Type	Displays the Panel Type of the computer.	

Table 3. System setup options—System information menu (continued)

Overview	
Video Controller	Displays the integrate graphics information of the computer.
Video Memory	Displays the video memory information of the computer.
Wi-Fi Device	Displays the Wi-Fi device installed in the computer.
Native Resolution	Displays the native resolution of the computer.
Video BIOS Version	Displays the video BIOS version of the computer.
Audio Controller	Displays the audio controller information of the computer.
Bluetooth Device	Displays whether a Bluetooth device is installed in the computer.
LOW MAC Address	Displays the MAC address of the computer.
dGPU Video Controller	Displays the discrete graphics controller.

Table 4. System setup options—Boot Configuration menu

Boot Configuration	
Boot Sequence	
Boot Mode: UEFI only	Displays the boot mode of this computer.
Boot Sequence	Enables or disables Windows Boot Manager and UEFI Hard Drive.
	By default, Windows Boot Manager is selected
	By default, UEFI Hard Drive is selected
Secure Boot	
Enable Secure Boot	Enables secure boot using only validated boot software.
	Default: OFF
Enable Microsoft UEFI CA	Enables Microsoft UEFI CA.
	Default: ON
Secure Boot Mode	Changes to the Secure Boot operation mode. Allows to switch between Deployed Mode and Audit Mode.
	Default: Deployed Mode
Expert Key Management	
Enable Custom Mode	Allows the PK, KEK, db, and dbx security key databases to be modified.
Custom Mode Key Management	Allows for selection of key database.

Table 5. System setup options—Integrated Devices menu

Integrated Devices	
Date/Time	
Date	Sets the computer date in MM/DD/YYYY format. Changes to the date take effect immediately.
Time	Sets the computer time in HH/MM/SS 24-hour format. You can switch between 12-hour and 24-hour clock. Changes to the time take effect immediately.
Camera	
Enable Camera	Enables or disables the camera.
	By default, Enable Camera is selected.
Audio	

Table 5. System setup options—Integrated Devices menu (continued)

Integrated Devices	
Enable Audio	Enables or disables all integrated audio controller.
	Default: ON
Enable Microphone	Enables or disables microphone.
	By default, Enable Microphone is selected.
Enable Internal Speaker	Enables or disables internal speaker.
	By default, Enable Internal Speaker is selected.
USB Configuration	
Enable Rear USB Ports	Enables or disables rear USB ports.
	By default, Enable Rear USB Ports is selected.
Enable Side USB Ports	Enables or disables side USB ports. .
	By default, Enable side USB Ports is selected.
Enable USB Boot Support	Enables or disables USB Boot Support.
	Default: ON

Table 6. System setup options—Storage menu

Storage	
SATA/NVMe Operation	
SATA/NVMe Operation	Configures operating mode of the integrated storage device controller.
	Default: RAID On. Storage device is configured to support RAID functions. When enabled, all NVMe and SATA devices will be mapped under VMD controller. Windows RST (Intel Rapid Restore Technology) driver, or Linux kernel VMD driver must be loaded in order to boot the OS.
Storage Interface	
Port Enablement	Enables or disables the onboard drives.
	Default: ON
SMART Reporting	
Enable SMART Reporting	Enables or disables Self-Monitoring, Analysis, and Reporting Technology (SMART).
	Default: OFF
Drive Information	Displays the information of various onboard drives.

Table 7. System setup options—Display menu

Display	
Touchscreen	Enables or disables the touchscreen.
	Default: ON
OSD Button Management	Enables or disables OSD buttons.
	Default: OFF
Full Screen Logo	When turned on, the full screen logo is displayed if the image matches the screen resolution.
	Default: OFF

Table 8. System setup options—Connection menu

Connection	
Network Controller Configuration	
Integrated NIC	Enables or disables integrated NIC.
	Default: Enabled with PXE
Wireless Device Enable	
WLAN	Enable or disable internal WLAN devices.
	By default, WLAN is selected.
Bluetooth	Enable or disable internal Bluetooth devices.
	By default, WLAN and Bluetooth are selected.
Enable UEFI Network Stack	Enables or disables UEFI networking protocols, if they are installed and available.
	Default: Auto Enabled
HTTP(s) Boot Feature	
HTTP(s) Boot	Enables or disables HTTP(s) boot.
	Default: ON
HTTP(s) Boot Feature	Enables or disables HTTP(s) boot modes
	Default: Auto mode

Table 9. System setup options—Power menu

Power	
USB PowerShare	
Enable USB PowerShare	Enables or disables USB PowerShare.
	Default: OFF
USB Wake Support	
Enable USB Wake Support	Enables or disables USB Wake Support.
	Default: ON
AC Behavior	
AC Recovery	Enables to recover the last power state.
	Default: Power Off
Block Sleep	Blocks the computer from entering Sleep (S3) mode in the operating system.
	Default: OFF
	(i) **NOTE:** If enabled, the computer will not go to sleep, Intel Rapid Start will be disabled automatically, and the operating system power option will be blank if it was set to Sleep.
Deep Sleep Control	
Deep Sleep Control	Enable or disable the deep sleep control.
	Default: Disabled
Intel Speed Shift Technology	Enables or disables the Intel Speed Shift Technology support. Setting this option to enable allows the operating system to select the appropriate processor performance automatically.
	Default: ON

Table 10. System setup options—Security menu

Security	
Intel Speed Shift Technology	
Intel Speed Shift Technology	Enable or disable the Intel Speed Shift Technology feature in the OS. Default: ON
Intel Platform Trust Technology	
Intel Platform Trust Technology On	Enable or disable the Intel Platform Trust Technology (PTT) feature in the OS. Default: ON
PPI Bypass for Clear Commands	Enables or disables the Trusted Platform Model (TPM) Physical Presence Interface (PPI). When enabled, the OS will skip BIOS Physical Presence Interface (PPI) user prompts when issuing the Clear command. Default: OFF
Clear	Enables or disables the computer to clear the PTT owner information, and returns the PTT to the default state. Default: OFF
SMM Security Mitigation	Enables or disables additional UEFI SMM Security Mitigation protections. Default: OFF ⓘ **NOTE:** This feature may cause compatibility issues or loss of functionality with some legacy tools and applications.
Data Wipe on Next Boot	When enabled, the BIOS will schedule a data wipe cycle for all storage devices connected to the system board on the next reboot. Default: OFF
Absolute	Enables, disables or permanently disable the BIOS module interface of the optional Absolute Persistence Module service from Absolute Software. Default: Enabled
UEFI Boot Path Security	Determines if the system will prompt the user to enter the admin password (if set) when booting to a UEFI boot path device from the F12 boot menu. Default: Always Except Internal HDD.

Table 11. System setup options—Passwords menu

Passwords	
Admin Password	Enables the user to set, change, or delete the administrator (admin) password. The admin password enables several security features
System Password	Enables the user to set, change, or delete the system password.
Internal HDD-0	Enables the user to set, change, or delete the HDD password.
M.2 PCIe SSD-0	Enables the user to set, change, or delete the SSD password.
Password Configuration	
Upper Case Letter	Enforces password restriction that the password must contain at least one upper case letter. Default: OFF
Lower Case Letter	Enforces password restriction that the password must contain at least one lower case letter. Default: OFF

Table 11. System setup options—Passwords menu (continued)

Passwords	
Digit	Enforces password restriction that the password must contain at least one digit.
	Default: OFF
Special Character	Enforces password restriction that the password must contain at least one special character.
	Default: OFF
Minimum Characters	Controls the minimum number of characters allowed for password.
	Default: 04
Password Changes	
Enable Non-Admin Password Changes	Enables or disables the user to change the system and hard drive password without the need for admin password.
	Default: ON
Admin Setup Lockout	
Enable Admin Setup Lockout	Enables or disables the user from entering BIOS Setup when an Admin Password is set.
	Default: OFF
Master Password Lockout	
Enable Master Password Lockout	Enables or disables master password support.
	Default: OFF
	ⓘ **NOTE:** Hard drive passwords must be cleared before the setting can be changed.
Allow Non-Admin PSID Revert	
Enable Allow Non-Admin PSID Revert	Enables or disables Non-Admin PSID Revert.
	Default: OFF

Table 12. System setup options—Update, Recovery menu

Update ,Recovery	
UEFI Capsule Firmware Updates	
Enable UEFI Capsule Firmware Updates	Enables or disables BIOS updates through UEFI capsule update packages.
	Default: ON
BIOS Recovery from Hard Drive	Enables the computer to recover from a bad BIOS image, as long as the Boot Block portion is intact and functioning.
	Default: ON
	ⓘ **NOTE:** BIOS recovery is designed to fix the main BIOS block and cannot work if the Boot Block is damaged. In addition, this feature cannot work in the event of EC corruption, ME corruption, or a hardware issue. The recovery image must exist on an unencrypted partition on the drive.
BIOS Downgrade	
Allow BIOS Downgrade	Controls flashing of the system firmware to previous revisions.
	Default: ON

Table 12. System setup options—Update, Recovery menu (continued)

Update ,Recovery	
SupportAssist OS Recovery	Enables or disables the boot flow for SupportAssist OS Recovery tool, in the event of certain system error. Default: ON
BIOSConnect	Enables or disables cloud Service OS recovery if the main OS fails to boot within the number of failures equal or greater than the value specified by Dell Auto OS Recovery Threshold, and local Service does not boot, or is not installed. Default: ON
Dell Auto OS Recovery Threshold	Controls the automatic boot flow for SupportAssist System Resolution Console and for Dell operating system Recovery tool. Default: 2

Table 13. System setup options—System Management menu

System Management	
Service Tag	Displays the Service Tag of the computer.
Asset Tag	Creates a system Asset Tag that can be used by an IT administrator to uniquely identify a particular system. Once set in BIOS, the Asset Tag cannot be changed.
Wake on LAN/WLAN	
Wake on LAN/WLAN	Enable or disable Wake on LAN/WLAN. Default: Disabled
Auto On Time	Controls automatic powering up of system for defined days and times. Default: Disabled
First Power On Date	
Set Ownership date	Enables to set the ownership date. Default: OFF
Diagnostics	
OS Agent Requests	Enables OS agent requests. Default: ON
Power-on-Self-Test Automatic Recovery	
Power-on-Self-Test Automatic Recovery	Enables or disables Power-on-Self-Test Automatic Recovery. Default: ON

Table 14. System setup options—Keyboard menu

Keyboard	
Keyboard Errors	
Enable keyboard Error Detection	Enables or disables keyboard Error Detection. Default: ON
Numlock LED	Enables or disables Numlock LED. Default: ON

Table 15. System setup options—Pre-boot Behavior menu

Pre-boot Behavior	
Adapter warnings	
Enable Adapter warnings	Enables or disables the computer to display adapter warning messages when adapters with too little power capacity are detected.
	Default: ON
Warnings and Errors	Selects an action on encountering a warning or error during boot.
	Default: Prompt on Warnings and Errors. Stop, prompt, and wait for user input when warnings or errors are detected.
	ⓘ **NOTE:** Errors deemed critical to the operation of the computer hardware will always halt the computer.
Fastboot	Configures the speed of the UEFI boot process.
	Default: Thorough. Performs complete hardware and configuration initialization during boot.
Extend BIOS POST Time	Configures the BIOS POST (Power-On Self-Test) load time.
	Default: 0 seconds

Table 16. System setup options—Virtualization menu

Virtualization	
Intel Virtualization Technology	
Enable Intel Virtualization Technology (VT)	Enables the computer to run a virtual machine monitor (VMM).
	Default: ON
VT for Direct I/O	
Enable Intel VT for Direct I/O	Enables the computer to perform Virtualization Technology for Direct I/O (VT-d). VT-d is an Intel method that provides virtualization for memory map I/O.
	Default: ON
DMA protection	
Enable Pre-Boot DMA Support	Enables or disables Pre-Boot DMA Support
	Default: ON
Enable OS Kernel DMA Support	Enables or disables OS Kernel DMA Support
	Default: ON

Table 17. System setup options—Performance menu

Performance	
Multi-Core Support	
Active Cores	Changes the number of CPU cores available to the operating system. The default value is set to the maximum number of cores.
	Default: All Cores
Intel SpeedStep	
Enable Intel SpeedStep Technology	Enables or disables the Intel SpeedStep Technology to dynamically adjust processor voltage and core frequency, decreasing average power consumption and heat production.
	Default: ON
C-State Control	

Table 17. System setup options—Performance menu (continued)

Performance

Enable C-State Control	Enables or disables the CPU's ability to enter and exit low-power states.
	Default: ON
Intel Turbo Boost Technology	
Enable Intel Turbo Boost Technology	Enabled or disabled the Intel TurboBoost mode of the processor. If enabled, the Intel TurboBoost driver increases the performance of the CPU or graphics processor.
	Default: ON
Intel Hyper-Threading Technology	
Enable Intel Hyper-Threading Technology	Enabled or disabled the Intel Hyper-Threading mode of the processor. If enabled, the Intel Hyper-Threading increases the efficiency of the processor resources when multiple threads run on each core.
	Default: ON

Table 18. System setup options—System Logs menu

System Logs	
BIOS Event Log	
Clear Bios Event Log	Select keep or clear BIOS events.
	Default: Keep

System and setup password

Table 19. System and setup password

Password type	Description
System password	Password that you must enter to log on to your system.
Setup password	Password that you must enter to access and make changes to the BIOS settings of your computer.

You can create a system password and a setup password to secure your computer.

⚠ **CAUTION: The password features provide a basic level of security for the data on your computer.**

⚠ **CAUTION: Anyone can access the data stored on your computer if it is not locked and left unattended.**

ⓘ **NOTE:** System and setup password feature is disabled.

Assigning a system setup password

Prerequisites

You can assign a new **System or Admin Password** only when the status is in **Not Set**.

About this task

To enter the system setup, press F12 immediately after a power-on or reboot.

Steps

1. In the **System BIOS** or **System Setup** screen, select **Security** and press Enter.

The **Security** screen is displayed.

2. Select **System/Admin Password** and create a password in the **Enter the new password** field.

   Use the following guidelines to assign the system password:
   - A password can have up to 32 characters.
   - At least one special character: ! " # $ % & ' ( ) * + , - . / : ; < = > ? @ [\ ] ^ _ ` { | }
   - Numbers 0 through 9.
   - Upper case letters from A to Z.
   - Lower case letters from a to z.

3. Type the system password that you entered earlier in the **Confirm new password** field and click **OK**.
4. Press Esc and save the changes as prompted by the pop-up message.
5. Press Y to save the changes.
   The computer restarts.

Deleting or changing an existing system setup password

Prerequisites

Ensure that the **Password Status** is Unlocked (in the System Setup) before attempting to delete or change the existing System and/or Setup password. You cannot delete or change an existing System or Setup password, if the **Password Status** is Locked.

About this task

To enter the System Setup, press F12 immediately after a power-on or reboot.

Steps

1. In the **System BIOS** or **System Setup** screen, select **System Security** and press Enter.
   The **System Security** screen is displayed.
2. In the **System Security** screen, verify that **Password Status** is **Unlocked**.
3. Select **System Password**, update, or delete the existing system password, and press Enter or Tab.
4. Select **Setup Password**, update, or delete the existing setup password, and press Enter or Tab.

   (i) **NOTE:** If you change the System and/or Setup password, reenter the new password when prompted. If you delete the System and/or Setup password, confirm the deletion when prompted.

5. Press Esc and a message prompts you to save the changes.
6. Press Y to save the changes and exit from System Setup.
   The computer restarts.

Clearing CMOS settings

About this task

⚠ **CAUTION: Clearing CMOS settings will reset the BIOS settings on your computer.**

Steps

1. Turn off your computer, while keeping the AC adapter plugged in.
2. Press and hold the power button for around 25 to 40 seconds until the power LED shows blinking white light.

   When you release the power button, the CMOS settings are cleared and the computer restarts. A dialog box is displayed, with options to run **BIOS-Setup** and **Diagnostics**.

Clearing BIOS (System Setup) and System passwords

About this task

To clear the system or BIOS passwords, contact Dell technical support as described at www.dell.com/contactdell.

ⓘ **NOTE:** For information on how to reset Windows or application passwords, refer to the documentation accompanying Windows or your application.

Updating the BIOS

Updating the BIOS in Windows

Steps

1. Go to www.dell.com/support.
2. Click **Product support**. In the **Search support** box, enter the Service Tag of your computer, and then click **Search**.

   ⓘ **NOTE:** If you do not have the Service Tag, use the SupportAssist feature to automatically identify your computer. You can also use the product ID or manually browse for your computer model.

3. Click **Drivers & Downloads**. Expand **Find drivers**.
4. Select the operating system installed on your computer.
5. In the **Category** drop-down list, select **BIOS**.
6. Select the latest version of BIOS, and click **Download** to download the BIOS file for your computer.
7. After the download is complete, browse the folder where you saved the BIOS update file.
8. Double-click the BIOS update file icon and follow the on-screen instructions.

   For more information, see knowledge base article 000124211 at www.dell.com/support.

Updating the BIOS using the USB drive in Windows

Steps

1. Follow the procedure from step 1 to step 6 in Updating the BIOS in Windows to download the latest BIOS setup program file.
2. Create a bootable USB drive. For more information, see the knowledge base article 000145519 at www.dell.com/support.
3. Copy the BIOS setup program file to the bootable USB drive.
4. Connect the bootable USB drive to the computer that needs the BIOS update.
5. Restart the computer and press **F12** .
6. Select the USB drive from the **One Time Boot Menu**.
7. Type the BIOS setup program filename and press **Enter**.
   The **BIOS Update Utility** appears.
8. Follow the on-screen instructions to complete the BIOS update.

Updating the BIOS from the F12 One-Time boot menu

Update your computer BIOS using the BIOS update.exe file that is copied to a FAT32 USB drive and booting from the F12 One-Time boot menu.

About this task

BIOS Update

You can run the BIOS update file from Windows using a bootable USB drive or you can also update the BIOS from the F12 One-Time boot menu on the computer.

Most of the Dell computers built after 2012 have this capability, and you can confirm by booting your computer to the F12 One-Time Boot Menu to see if BIOS FLASH UPDATE is listed as a boot option for your computer. If the option is listed, then the BIOS supports this BIOS update option.

ⓘ **NOTE:** Only computers with BIOS Flash Update option in the F12 One-Time boot menu can use this function.

Updating from the One-Time boot menu

To update your BIOS from the F12 One-Time boot menu, you need the following:

● USB drive formatted to the FAT32 file system (key does not have to be bootable)
● BIOS executable file that you downloaded from the Dell Support website and copied to the root of the USB drive
● AC power adapter that is connected to the computer
● Functional computer battery to flash the BIOS

Perform the following steps to perform the BIOS update flash process from the F12 menu:

⚠ **CAUTION: Do not turn off the computer during the BIOS update process. The computer may not boot if you turn off your computer.**

Steps

1. From a turn off state, insert the USB drive where you copied the flash into a USB port of the computer.
2. Turn on the computer and press F12 to access the One-Time Boot Menu, select BIOS Update using the mouse or arrow keys then press Enter.
   The flash BIOS menu is displayed.
3. Click **Flash from file**.
4. Select external USB device.
5. Select the file and double-click the flash target file, and then click **Submit**.
6. Click **Update BIOS**. The computer restarts to flash the BIOS.
7. The computer will restart after the BIOS update is completed.

Troubleshooting

Locate the Service Tag or Express Service Code of your Dell computer

Your Dell computer is uniquely identified by a Service Tag or Express Service Code. To view relevant support resources for your Dell computer, we recommend entering the Service Tag or Express Service Code at www.dell.com/support.

For more information on how to find the Service Tag for your computer, see Locate the Service Tag for your Dell Laptop.

Diagnostics

Power status light: Indicates the power status.

The following table shows the power LED states:

Table 20. Power LED status

Power LED state	Description
Off	Computer is in hibernation or turned off.
Solid Amber	The computer is unable to boot to the operating system. This indicates that the power supply or another device in the computer is failing.
Blinking Amber	The computer is unable to boot to the operating system. This indicates that the power supply is normal but another device in the computer is failing or not installed properly.

For example, the power status light blinks amber two times followed by a pause, and then blinks white three times followed by a pause. This 2,3 pattern continues until the computer is turned off indicating No memory/RAM detected.

The following table shows different light patterns and what they indicate:

Table 21. System diagnostic lights

Light pattern	Problem description
1,1	TPM Detection failure
1,2	Unrecoverable SPI flash failure
1,5	Failure EC unable to program i-Fuse
1,6	Failure Generic catch-all for ungraceful EC code flow errors
2,1	CPU failure
2,2	System board failure, corrupt BIOS, ROM error
2,3	No memory/RAM detected
2,4	Memory or RAM failure
2,5	Invalid memory installed
2,6	System board error, chipset error, clock failure, gate A20 failure, keyboard controller failure

Table 21. System diagnostic lights (continued)

Light pattern	Problem description
2,7	Display failure
2,8	LCD power rail failure
3,1	CMOS battery failure
3,2	PCIe or video card/chip failure
3,3	BIOS recovery image not found
3,4	BIOS recovery image found but invalid
3,5	Power rail failure
3,6	System BIOS Flash incomplete
3,7	Management Engine (ME) error
4,1	Memory DIMM power rail failure
4,2	CPU power cable connection issue

SupportAssist diagnostics

About this task

The SupportAssist diagnostics (previously known as ePSA diagnostics) performs a complete check of your hardware. The SupportAssist diagnostics is embedded in the BIOS and is launched by it internally. The SupportAssist diagnostics provides a set of options for particular devices or device groups. It allows you to:

- Run tests automatically or in an interactive mode.
- Repeat tests
- Display or save test results
- Run thorough tests to introduce additional test options and provide extra information about the failed device(s)
- View status messages that indicate if the tests are completed successfully
- View error messages that indicate if problems were encountered during the test

(i) **NOTE:** Some tests are meant for specific devices and require user interaction. Ensure that you are present in front of the computer when the diagnostic tests are performed.

For more information, see SupportAssist Pre-Boot System Performance Check.

Built-in self-test (BIST)

LCD Built-in Self Test (BIST)

Dell All-in-One (AIO) have a built-in diagnostic tool that helps you determine if the screen abnormality you are experiencing is an inherent problem with the LCD (screen) of the Dell AIO or with the video card (GPU) and PC settings.

When you notice screen abnormalities such as flickering, distortion, clarity issues, fuzzy or blurry image, horizontal or vertical lines, color fade and so on, it is always a good practice to isolate the LCD (screen) by running the Built-In Self Test (BIST).

How to invoke LCD BIST Test

1. Power off the Dell AIO.
2. Ensure that the LCD screen is clean and there are no dust particles on the surface of the screen.
3. Press and hold **Mode** button and power on the AIO to enter LCD built-in self test (BIST) mode. Continue to hold the **Mode** button, until the computer boots up.

   The screen will display solid colors and change colors on the entire screen to white, black, red, green, and blue for 20 seconds.

4. Carefully inspect the screen for abnormalities (any lines, fuzzy color or distortion on the screen).
5. After the BIST is complete, the computer will continue with POST.

ⓘ **NOTE:** Dell SupportAssist Pre-boot diagnostics upon launch, initiates an LCD BIST first, expecting a user intervention confirm functionality of the LCD.

Recovering the operating system

When your computer is unable to boot to the operating system even after repeated attempts, it automatically starts Dell SupportAssist OS Recovery.

Dell SupportAssist OS Recovery is a standalone tool that is preinstalled in all Dell computers installed with Windows operating system. It consists of tools to diagnose and troubleshoot issues that may occur before your computer boots to the operating system. It enables you to diagnose hardware issues, repair your computer, back up your files, or restore your computer to its factory state.

You can also download it from the Dell Support website to troubleshoot and fix your computer when it fails to boot into their primary operating system due to software or hardware failures.

For more information about the Dell SupportAssist OS Recovery, see *Dell SupportAssist OS Recovery User's Guide* at www.dell.com/serviceabilitytools. Click **SupportAssist** and then, click **SupportAssist OS Recovery**.

WiFi power cycle

About this task

If your computer is unable to access the internet due to WiFi connectivity issues a WiFi power cycle procedure may be performed. The following procedure provides the instructions on how to conduct a WiFi power cycle:

ⓘ **NOTE:** Some ISPs (Internet Service Providers) provide a modem/router combo device.

Steps

1. Turn off your computer.
2. Turn off the modem.
3. Turn off the wireless router.
4. Wait for 30 seconds.
5. Turn on the wireless router.
6. Turn on the modem.
7. Turn on your computer.

Drain residual flea power (perform hard reset)

About this task

Flea power is the residual static electricity that remains in the computer even after it has been powered off.

For your safety, and to protect the sensitive electronic components in your computer, you are requested to drain residual flea power before removing or replacing any components in your computer.

Draining residual flea power, also known as a performing a "hard reset", is also a common troubleshooting step if your computer does not power on or boot into the operating system.

To drain residual flea power (perform a hard reset)

Steps

1. Turn off your computer.
2. Disconnect the power adapter from your computer.
3. Press and hold the power button for 20 seconds to drain the flea power.
4. Connect the power adapter to your computer.

5. Turn on your computer.

   ⓘ **NOTE:** For more information about performing a hard reset, see the knowledge base article 000130881 at www.dell.com/support.

Getting help and contacting Dell

Self-help resources

You can get information and help on Dell products and services using these self-help resources:

Table 22. Self-help resources

Self-help resources	Resource location
Information about Dell products and services	www.dell.com
My Dell app	
Tips	
Contact Support	In Windows search, type `Contact Support`, and press Enter.
Online help for operating system	www.dell.com/support/windows
Access top solutions, diagnostics, drivers and downloads, and learn more about your computer through videos, manuals and documents.	Your Dell computer is uniquely identified by a Service Tag or Express Service Code. To view relevant support resources for your Dell computer, enter the Service Tag or Express Service Code at www.dell.com/support. For more information on how to find the Service Tag for your computer, see Locate the Service Tag on your computer.
Dell knowledge base articles for a variety of computer concerns	1. Go to www.dell.com/support. 2. On the menu bar at the top of the Support page, select **Support** > **Knowledge Base**. 3. In the Search field on the Knowledge Base page, type the keyword, topic, or model number, and then click or tap the search icon to view the related articles.

Contacting Dell

To contact Dell for sales, technical support, or customer service issues, see www.dell.com/contactdell.

(i) **NOTE:** Availability varies by country/region and product, and some services may not be available in your country/region.

(i) **NOTE:** If you do not have an active Internet connection, you can find contact information about your purchase invoice, packing slip, bill, or Dell product catalog.