Inspiron 27 7720 All-in-One

Owner's 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

Views of Inspiron 27 7720 All-in-One

Right

Figure 1. Right view

1. **USB 3.2 Gen 2 Type-C port**

   Connect devices such as external storage devices and printers.

Provides data transfer speeds up to 10 Gbps.

ⓘ **NOTE:** Connected USB devices will not charge when the computer is turned off or in sleep state. Turn on the computer to charge the connected USB devices.

Front

Figure 2. Front view

1. **Retractable-camera assembly**

   Enables you to videochat, capture photos, and record videos. This camera can be retracted to protect your privacy.
2. **Display panel**

   Provides visual output to the user.
3. **Speakers**

   Provides audio output.

Back
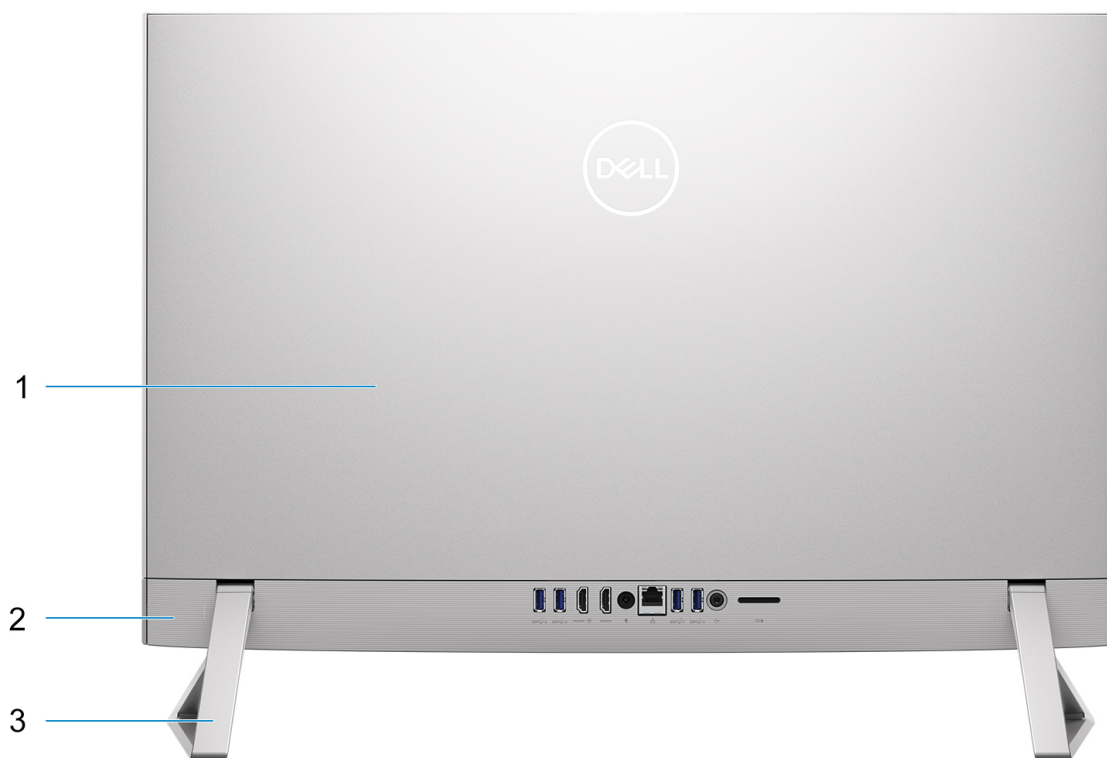
Figure 3. Back view

1. **Back cover**

   Removable chassis that covers the internal components of your computer.

2. **Back panel**

   Connect USB, audio, video, and other devices.

3. **Stand**

   Allows the system to be mounted vertically.

Back panel
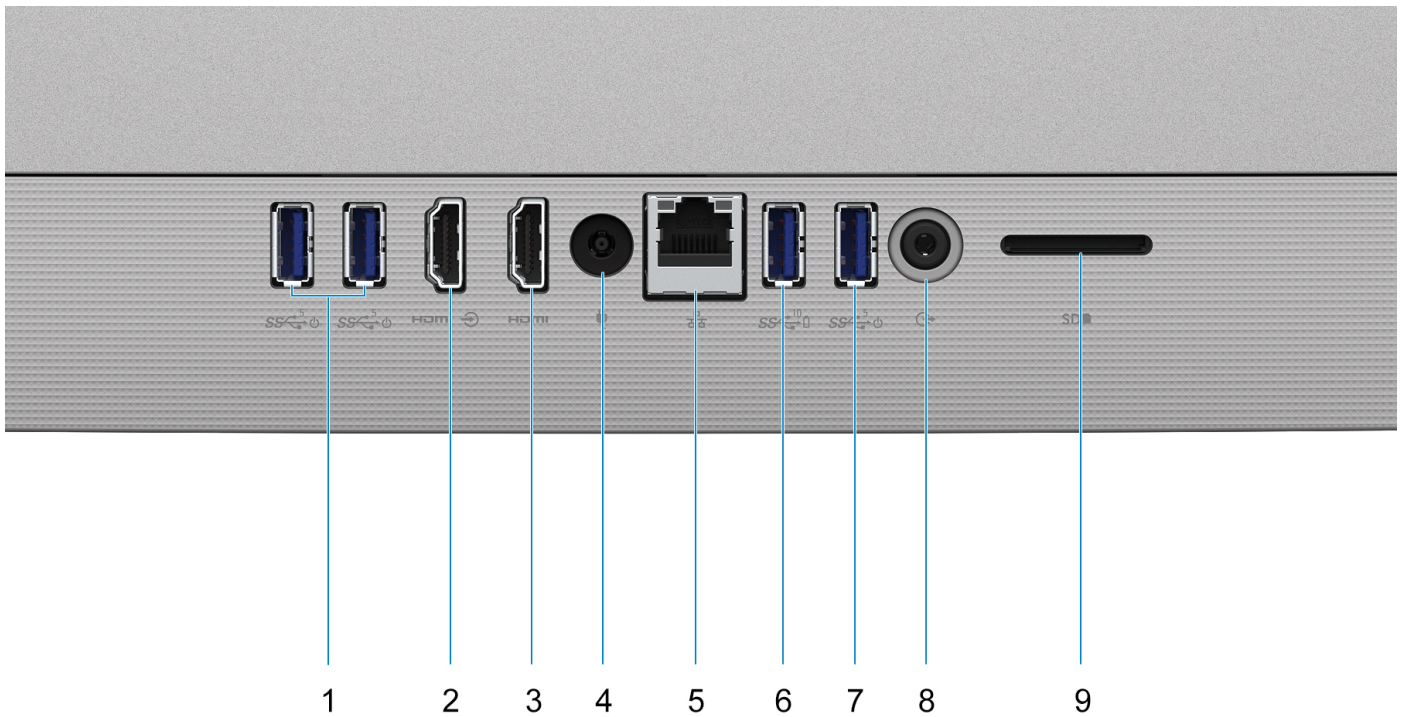
Figure 4. Back panel

1. **2 USB 3.2 Gen 1 port with Power on/Wake-up support**

   Connect peripherals such as external storage devices and printers. Provides data transfer speeds up to 5 Gbps. Wake the computer from standby with the keyboard or mouse connected to this port.

   ⓘ **NOTE:** Set the BIOS Deep Sleep control to disabled to enable Wake up when the computer is powered off.

2. **HDMI-in port**

   Connect a gaming console, Blu-ray player, or other HDMI-out enabled device.

3. **HDMI port**

   Connect to a TV, external display or another HDMI-in enabled device. Provides video and audio output.

4. **Power-adapter port**

   Connect a power adapter to provide power to your computer and charge the battery.

5. **Network port**

   Connect an Ethernet (RJ45) cable from a router or a broadband modem for network or Internet access.

6. **USB 3.2 Gen 2 port with PowerShare**

   Connect peripherals such as external storage devices and printers.

   Provides data transfer speeds up to 10 Gbps. PowerShare enables you to charge connected USB devices.

   ⓘ **NOTE:** Connected USB devices will not charge when the computer is turned off. Please set BIOS Deep Sleep control to disabled to start charging when the computer is powered off.

7. **USB 3.2 Gen 1 port with Power on/Wake-up support**

   Connect peripherals such as external storage devices and printers. Provides data transfer speeds up to 5 Gbps. Wake the computer from standby with the keyboard or mouse connected to this port.

   ⓘ **NOTE:** Set the BIOS Deep Sleep control to disabled to enable Wake up when the computer is powered off.

8. **Universal headset jack**

   Connect audio-output devices such as speakers, amplifiers, and so on.

9. **SD-card slot**

   Reads from and writes to the SD card. The computer supports the following card types:

   - Secure Digital (SD)
   - Secure Digital High Capacity (SDHC)
   - Secure Digital Extended Capacity (SDXC)

Bottom
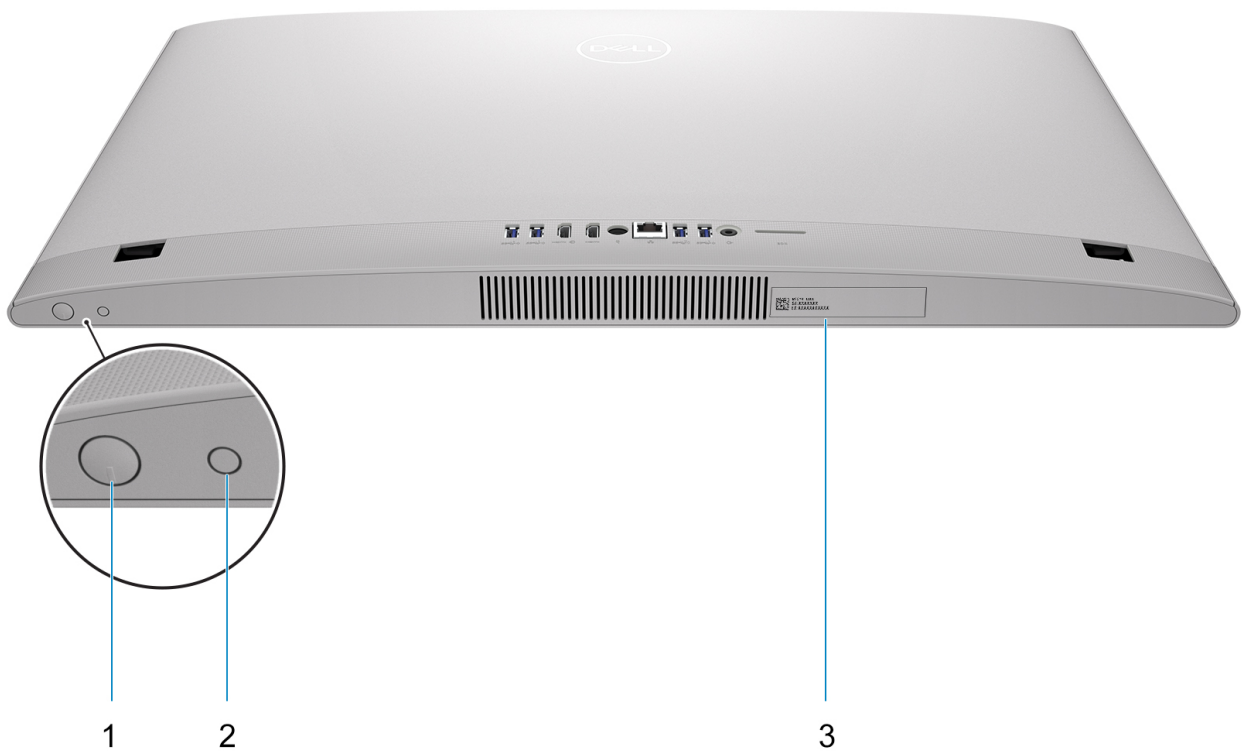
Figure 5. Bottom view

1. **Power button**

   Press to turn on the computer if it is turned off, in sleep state, or in hibernate state.

   When the computer is turned on, press the power button to put the computer into sleep state; press and hold the power button for 10 seconds to force shut-down the computer.

   ⓘ **NOTE:** You can customize the power-button behavior in Windows.

2. **Display Built-in Self Test button/Input-source selection button**

   This button has two functions:

   - When the computer is on, use this button to select the video input-source.

     Press the button to switch the display between the internal system display and HDMI input.

   - When the computer is off (there is no power; neither is it in sleep state nor hibernate state), use this button to run the built-in self-test for the display.

Press and hold down this button, and then press the power button to turn on the computer. The built-in color pattern for the LCD monitor will appear on the screen.

For more information, see the Troubleshooting section in the Service Manual at www.dell.com/support/manuals

3. **Service Tag label**

The Service Tag is a unique alphanumeric identifier that enables Dell service technicians to identify the hardware components in your computer and access warranty information.

Service Tag

The service tag is a unique alphanumeric identifier that allows Dell service technicians to identify the hardware components in your computer and access warranty information.

Figure 6. Service Tag location

Tilt

Y stand

25°

Isosceles stand

25°

Inside view of your computer
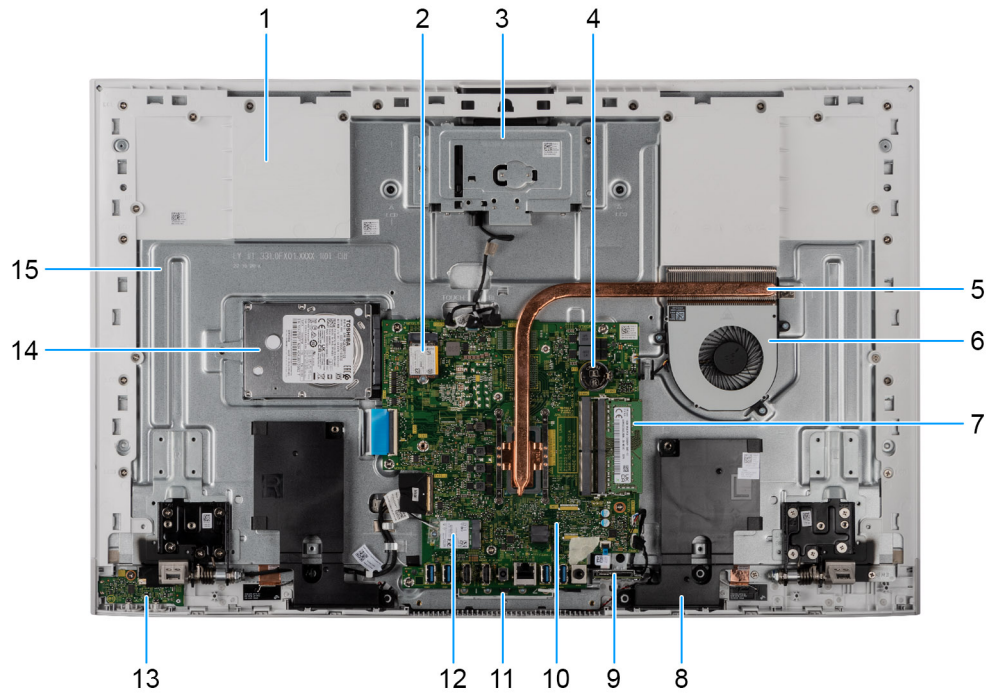
Figure 7. Inside view of your computer

1. Base Panel
2. Solid-state drive slot
3. Camera module
4. Coin-cell battery
5. Heat sink
6. Fan
7. Memory module
8. Speakers
9. Media-card reader
10. System board
11. Microphone module
12. Wireless card slot
13. Power-button board
14. Hard-disk drive
15. Display-assembly base

Retractable camera

Push the top of camera to extend or retract the camera. Extend the camera before use and retract the camera to protect your privacy when not in use.

Set up your computer

Steps

1. Set up the stand by inserting it into the slot on the back cover until it snaps into place.

Figure 8. Installing the stand

2. Connect the keyboard and mouse.

   ⓘ **NOTE:** To connect your wireless keyboard and mouse, find User Guides and other resources for your products at https://www.dell.com/support
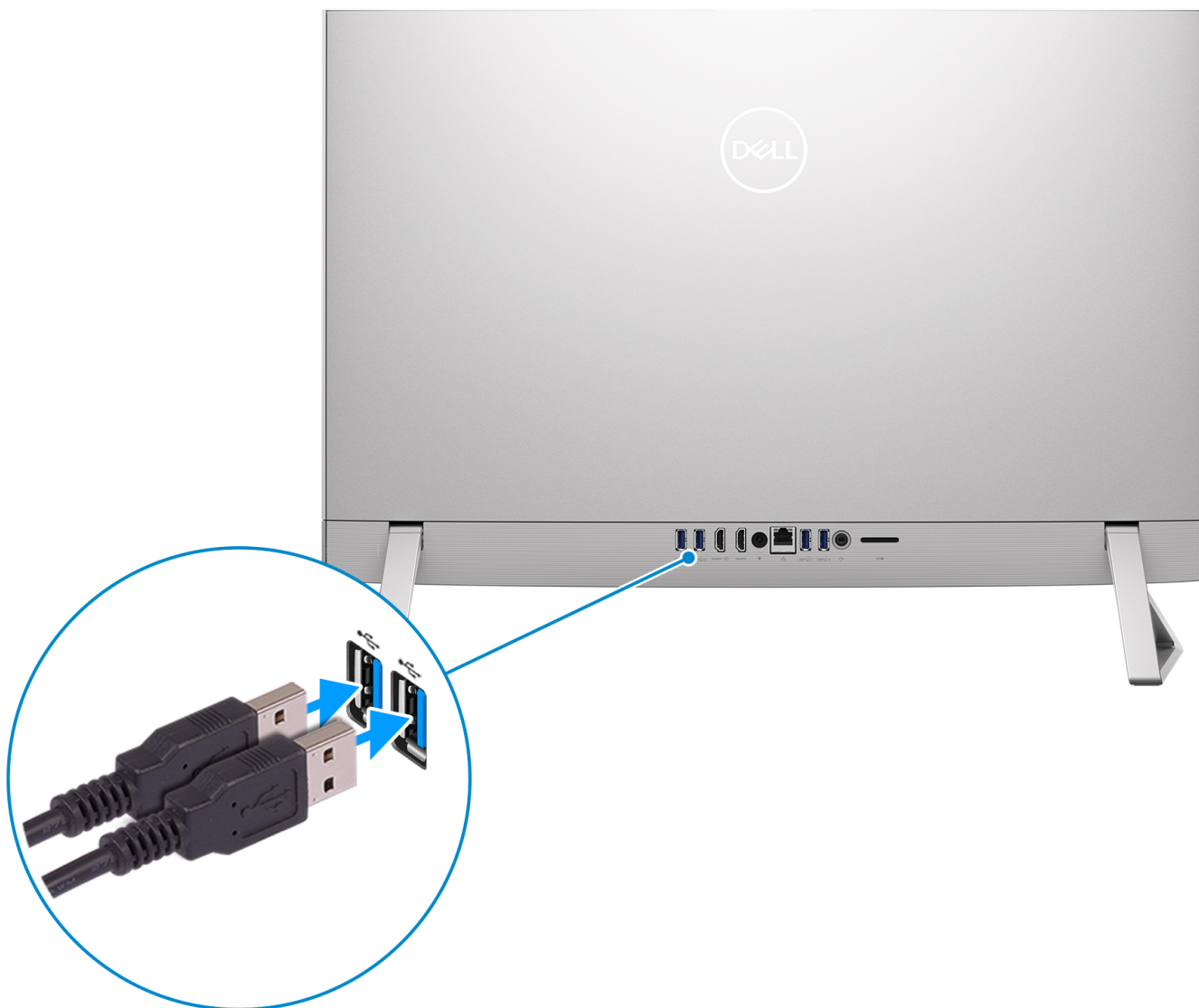
Figure 9. Connect the keyboard and mouse

3. Connect to your network using a cable.
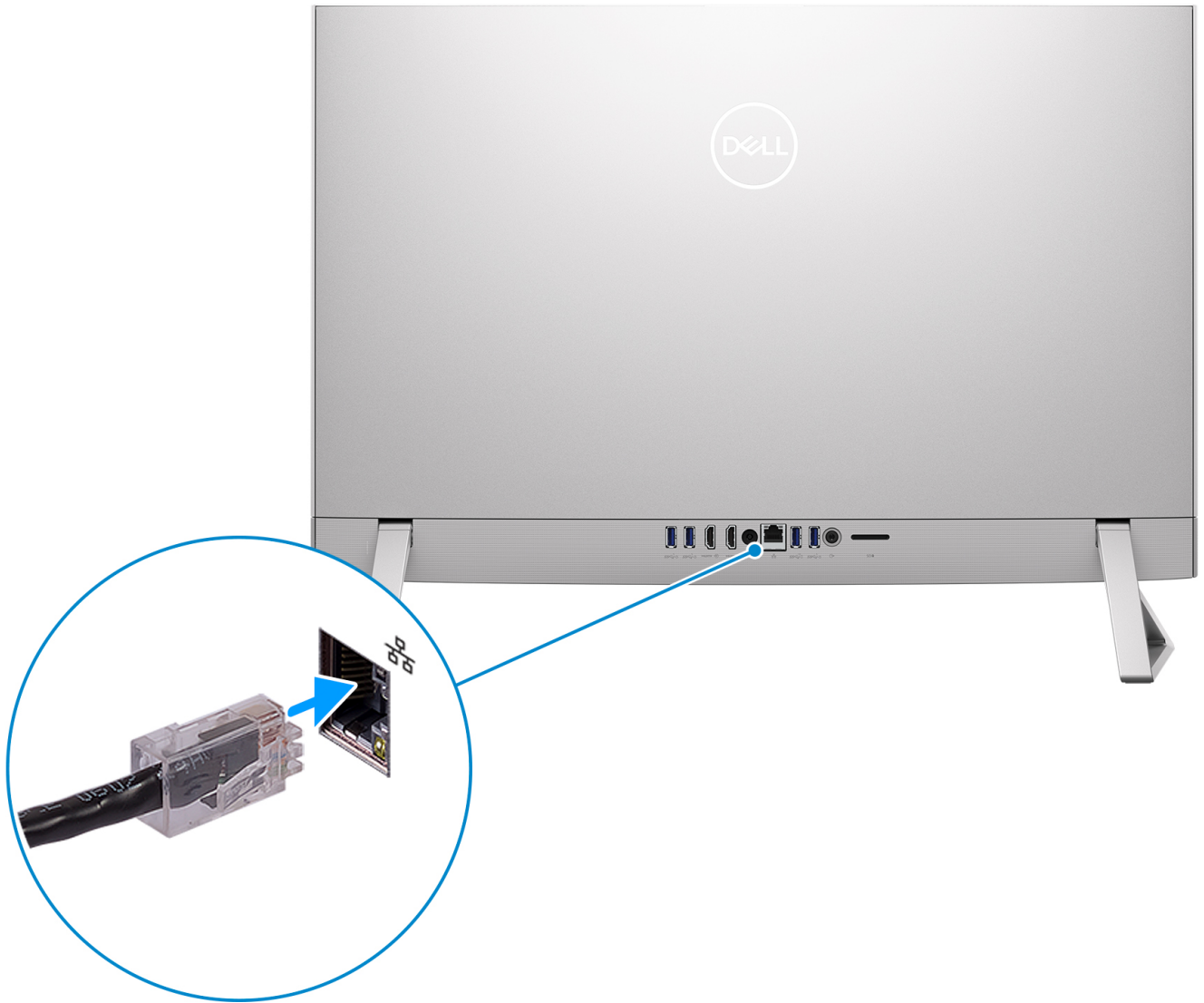
Figure 10. Connect to a network

ⓘ| **NOTE:** Alternatively, you can connect to a wireless network.

4. Connect the power cable.
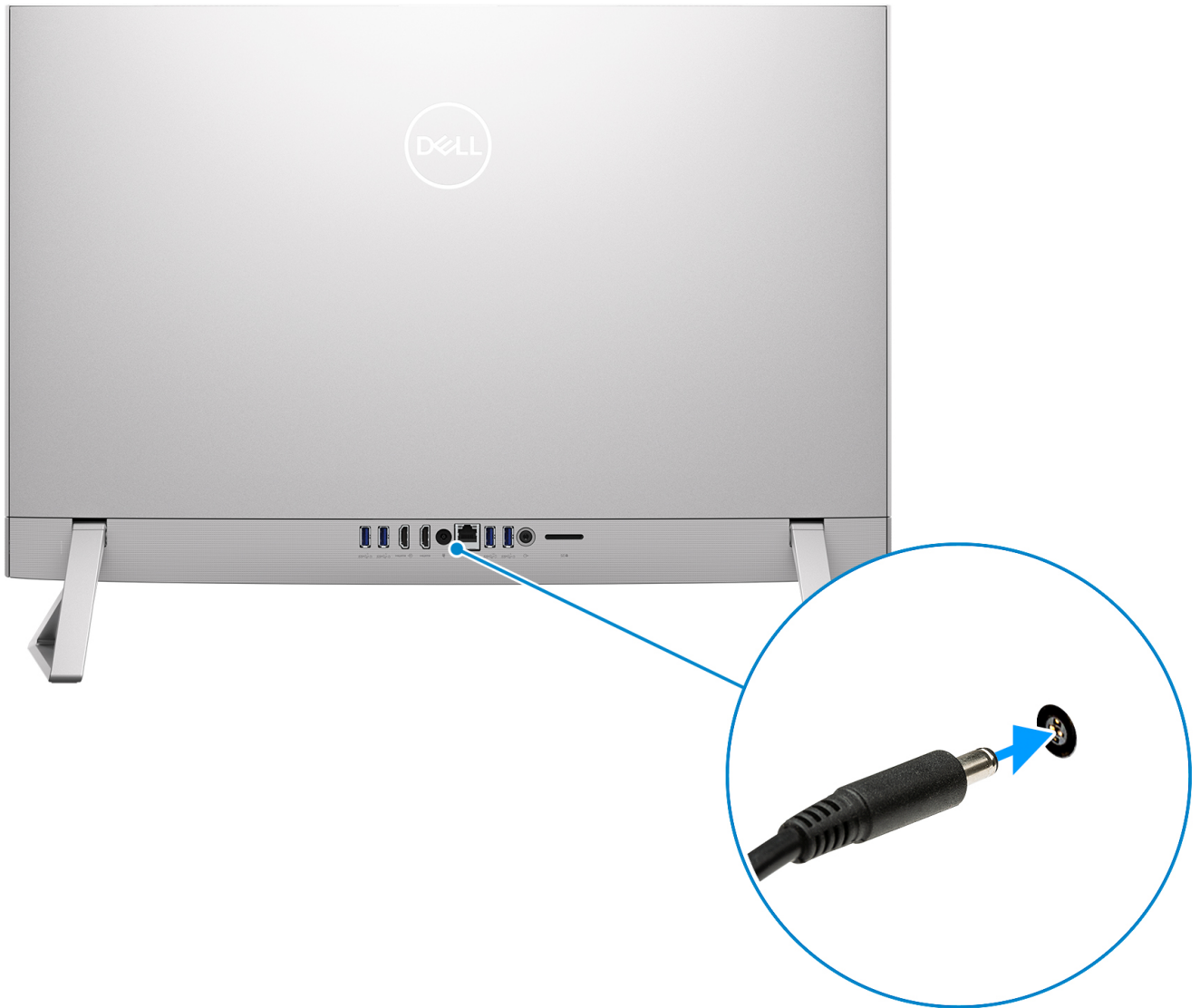
Figure 11. Connect the power cable

5. Press the power button.

Figure 12. Press the power button

6. Finish Windows setup.

   Follow the on-screen instructions to complete the setup. When setting up, Dell recommends that you:
   - Connect to a network for Windows updates.
     - ⓘ **NOTE:** If connecting to a secured wireless network, enter the password for the wireless network access when prompted.
   - If connected to the internet, sign-in with or create a Microsoft account. If not connected to the internet, create an offline account.
   - On the **Support and Protection** screen, enter your contact details.

7. Locate and use Dell apps from the Windows Start menu—Recommended

Table 1. Locate Dell apps

Resources	Description
DELL	**My Dell**

Table 1. Locate Dell apps (continued)

Resources	Description
	Centralized location for key Dell applications, help articles, and other important information about your computer. It also notifies you about the warranty status, recommended accessories, and software updates if available.
	SupportAssist SupportAssist proactively and predictively identifies hardware and software issues on your computer and automates the engagement process with Dell Technical support. It addresses performance and stabilization issues, prevents security threats, monitors, and detects hardware failures. For more information, see *SupportAssist for Home PCs User's Guide* at www.dell.com/serviceabilitytools. Click **SupportAssist** and then, click **SupportAssist for Home PCs**. ⓘ **NOTE:** In SupportAssist, click the warranty expiry date to renew or upgrade your warranty.
	Dell Update Updates your computer with critical fixes and latest device drivers as they become available. For more information on using Dell Update, search in the Knowledge Base Resource at www.dell.com/support.
	Dell Digital Delivery Download software applications, which are purchased but not preinstalled on your computer. For more information on using Dell Digital Delivery, search in the Knowledge Base Resource at www.dell.com/support.

Specifications of Inspiron 27 7720 All-in-One

Dimensions and weight

The following table lists the height, width, depth, and weight of your Inspiron 27 7720 All-in-One.

Table 2. Computer dimensions and weight (without stand)

Description		Values
Height		
	Front	394.82 mm (15.54 in.) ⓘ **NOTE:** The height of your computer varies depending on the stand installed.
	Rear	399.74 mm (15.73 in.) ⓘ **NOTE:** The height of your computer varies depending on the stand installed.
Width		614.70 mm (24.20 in.)
Depth		41.80 mm (1.64 in.)
Weight		● Non-touchscreen: 6.89 kg (15.19 lb) ● Touchscreen: 7.18 kg (15.83 lb) ⓘ **NOTE:** The weight of your computer varies depending on the configuration ordered and the manufacturing variability.

Stand

The following table provides the height, width, depth, and weight of the stand supported by your Inspiron 27 7720 All-in-One.

Table 3. Stand

Description	Y stand	Isosceles stand
Height	96.81 mm (3.81 in.)	97.56 mm (3.84 in.)
Width	72.25 mm (2.84 in.)	66.95 mm (2.63 in.)
Depth	199.55 mm (7.85 in.)	200.46 mm (7.89 in.)
Weight	0.24 kg (0.53 lb)	0.32 kg (0.71 lb)

Y stand

The following table provides the dimensions of Y stand dimensions along with the computer.

Table 4. Y stand

Description	Dimensions
❶	455.50 mm (17.93 in.)
❷	199.55 mm (7.85 in.)
❸	427.50 mm (16.83 in.)
❹	244.84 mm (9.63 in.)
❺	480.40 mm (18.91 in.)
❻	611.11 mm (24.05 in.)

Isosceles stand
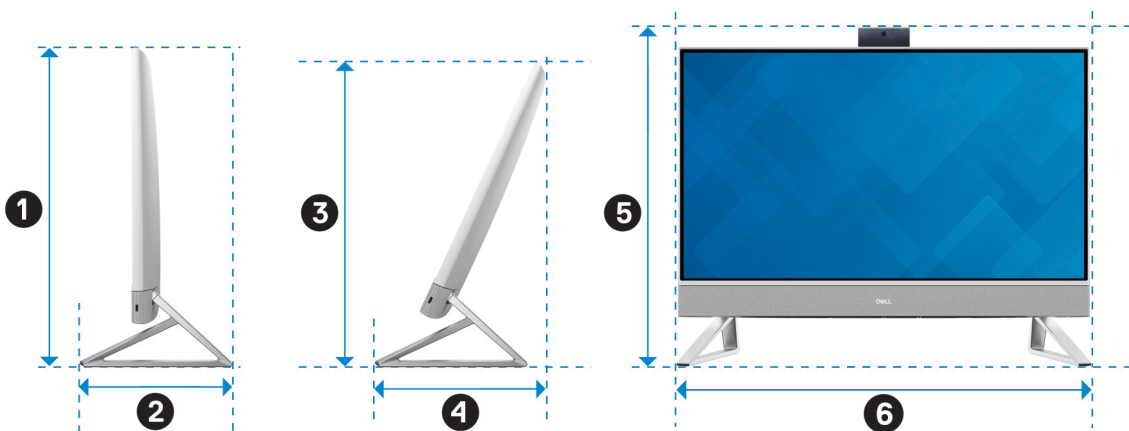
The following table provides the dimensions of Isosceles stand dimensions along with the computer.

Table 5. Isosceles stand

Description	Dimensions
❶	455.50 mm (17.93 in.)
❷	200.70 mm (7.90 in.)
❸	427.50 mm (16.83 in.)
❹	244.84 mm (9.63 in.)
❺	480.40 mm (18.91 in.)
❻	603.70 mm (23.76 in.)

Processor

The following table lists the details of the processors supported by your Inspiron 27 7720 All-in-One.

Table 6. Processor

Description		Option one	Option two
Processor type		13th Generation Intel Core i7-1355U	13th Generation Intel Core i5-1335U
Processor wattage		15 W	15 W
Processor total core count		10	10
Performance-cores		2	2
Efficient-cores		8	8
Processor total thread counts ⓘ **NOTE:** Intel® Hyper-Threading Technology is only available on Performance-cores.		12	12
Processor speed		Up to 5 GHz	Up to 4.60 GHz
Performance-cores frequency			
	Processor base frequency	1.70 GHz	1.30 GHz
	Maximum turbo frequency	5 GHz	4.60 GHz
Efficient-cores frequency			
	Processor base frequency	1.20 GHz	0.90 GHz
	Maximum turbo frequency	3.70 GHz	3.40 GHz
Processor cache		12 MB	12 MB
Integrated graphics		● Intel UHD Graphics (For computers shipped with i5/i7 processors with Single Channel Memory Support)	● Intel UHD Graphics (For computers shipped with i5/i7 processors with Single Channel Memory Support)

Table 6. Processor (continued)

Description	Option one	Option two
	● Intel Iris Xe Graphics (For computers shipped with i5/i7 processors with Dual Channel Memory Support)	● Intel Iris Xe Graphics (For computers shipped with i5/i7 processors with Dual Channel Memory Support)

Chipset

The following table lists the details of the chipset that is supported for your Inspiron 27 7720 All-in-One.

Table 7. Chipset

Description	Values
Chipset	Integrated in the processor
Processor	13th Generation Intel Core i5/i7
DRAM bus width	128-bit
Flash EPROM	32 MB
PCIe bus	Up to Gen4

Operating system

Your Inspiron 27 7720 All-in-One supports the following operating systems:

● Windows 11 Pro
● Windows 11 Home

Memory

The following table lists the memory specifications of your Inspiron 27 7720 All-in-One.

Table 8. Memory specifications

Description	Values
Memory slots	Two SODIMM slots
Memory type	DDR4
Memory speed	3200 MHz
Maximum memory configuration	32 GB
Minimum memory configuration	8 GB
Memory size per slot	4 GB, 8 GB, 16 GB and 32 GB
Memory configurations supported	● 8 GB, 1 x 8 GB, DDR4, 3200 MHz ● 12 GB, 1 x 4 GB + 1 x 8 GB, DDR4, 3200 MHz, dual-channel ● 16 GB, 1 x 16 GB, DDR4, 3200 MHz ● 16 GB, 2 x 8 GB, DDR4, 3200 MHz, dual-channel

Table 8. Memory specifications (continued)

Description	Values
	● 32 GB, 1 x 32 GB, DDR4, 3200 MHz ● 32 GB, 2 x 16 GB, DDR4, 3200 MHz, dual-channel

External ports

The following table lists the external ports of your Inspiron 27 7720 All-in-One.

Table 9. External ports

Description	Values
Network port	One RJ45 ethernet port
USB ports	● Three USB 3.2 Gen 1 ports with Power on/Wake-up support ● One USB 3.2 Gen 2 ports ● One USB 3.2 Type-C Gen 2 port
Audio port	One Universal headset jack
Video port	● One HDMI-out 1.4 / HDCP 2.3 port ● One HDMI-in 1.4 / HDCP 1.4 port
Media-card reader	One SD-card 3.0 slot
Power-adapter port	One 4.50 mm x 2.90 mm DC-in port
Security-cable slot	Not supported

Internal slots

The following table lists the internal slots of your Inspiron 27 7720 All-in-One.

Table 10. Internal slots

Description	Values
M.2	● One M.2 2230/2280 slot for PCIe solid-state drive ● One M.2 2230 slot for WiFi and Bluetooth combo card ⓘ **NOTE:** To learn more about the features of different types of M.2 cards, search in the Knowledge Base Resource at www.dell.com/support.
SATA	One SATA slot for 2.5-inch HDD

Ethernet

The following table lists the wired Ethernet Local Area Network (LAN) specifications of your Inspiron 27 7720 All-in-One.

Table 11. Ethernet specifications

Description	Values
Model number	RTL8111HSD-CG
Transfer rate	10/100/1000 Mbps

Wireless module

The following table lists the Wireless Local Area Network (WLAN) modules supported on your Inspiron 27 7720 All-in-One.

Table 12. Wireless module specifications

Description	Option one	Option two
Model number	Intel AX201	Intel AX211
Transfer rate	Up to 2400 Mbps	Up to 2400 Mbps
Frequency bands supported	2.40 GHz/5 GHz	2.40 GHz/5 GHz/6 GHz
Wireless standards	- WiFi 802.11a/b/g - Wi-Fi 4 (WiFi 802.11n) - Wi-Fi 5 (WiFi 802.11ac) - Wi-Fi 6 (WiFi 802.11ax)	- WiFi 802.11a/b/g - Wi-Fi 4 (WiFi 802.11n) - Wi-Fi 5 (WiFi 802.11ac) - Wi-Fi 6/6E (WiFi 802.11ax)
Encryption	64-bit/128-bit WEP - AES-CCMP - TKIP	64-bit/128-bit WEP - AES-CCMP - TKIP
Bluetooth wireless card	Bluetooth 5.2 wireless card (i) **NOTE:** Particular versions of Microsoft Windows may not support the full Bluetooth wireless card functionality.	Bluetooth 5.3 wireless card (i) **NOTE:** Particular versions of Microsoft Windows may not support the full Bluetooth wireless card functionality.

Audio

The following table lists the audio specifications of your Inspiron 27 7720 All-in-One.

Table 13. Audio specifications

Description	Values
Audio controller	Realtek ALC3289
Stereo conversion	Supported
Internal audio interface	High definition audio interface
External audio interface	One Universal headset Jack
Number of speakers	2

Table 13. Audio specifications (continued)

Description	Values
Internal-speaker amplifier	Supported
External volume controls	Not supported
Speaker output:	
	Average speaker output	5 W x 2 = 10
	Peak speaker output	6 W x 2 = 12
Subwoofer output	Not supported
Microphone	Digital-array microphones in camera assembly

Storage

This section lists the storage options on your Inspiron 27 7720 All-in-One.

Table 14. Storage matrix

Storage Options		M.2 solid-state drive	2.5-inch hard drive	Bootable Device
M.2 solid-state drive		Y	N	Y
M.2 solid-state drive	2.5-inch hard drive	Y	Y	Y

Table 15. Storage specifications

Storage type	Interface type	Capacity
2.5-inch hard-drive, 5400 RPM	SATA AHCI, up to 6 Gbps	Up to 1 TB
2.5-inch hard-drive, 7200 RPM	SATA AHCI, up to 6 Gbps	Up to 1 TB
M.2 2230, solid-state drive	PCIe NVMe Gen3 x4, up to 32 Gbps	Up to 1 TB
M.2 2230, solid-state drive	PCIe NVMe Gen4 x4, up to 64 Gbps	Up to 1 TB

Media-card reader

The following table lists the media cards that are supported on your Inspiron 27 7720 All-in-One.

Table 16. Media-card reader specifications

Description	Values
Media-card type	One SD-card 3.0 slot
Media-cards supported	- Secure Digital (SD) - Secure Digital High Capacity (SDHC) - Secure Digital Extended Capacity (SDXC)
ⓘ **NOTE:** The maximum capacity supported by the media-card reader varies depending on the standard of the media card that is installed on your computer.	

Camera

The following table lists the camera specifications of your Inspiron 27 7720 All-in-One.

Table 17. Camera specifications

Description		Option one	Option two
Number of cameras		One	One
Camera type		FHD RGB camera	FHD RGB + Infrared camera
Camera location		Front camera	Front camera
Camera sensor type		CMOS sensor technology	CMOS sensor technology
Camera resolution:			
	Still image	2.07 megapixel	2.07 megapixel
	Video	1920 x 1080 (FHD) at 30 fps	1920 x 1080 (FHD) at 30 fps
Infrared camera resolution:			
	Still image	Not supported	0.31 megapixel
	Video	Not supported	640 x 480 (VGA) at 40 fps
Diagonal viewing angle:			
	Camera	82 degrees	82 degrees
	Infrared camera	Not supported	77.30 degrees

Power adapter

The following table lists the power adapter specifications of your Inspiron 27 7720 All-in-One.

Table 18. Power adapter specifications

Description		Option one	Option two
Type		90 W AC	130 W AC
Connector dimensions:			
	External diameter	4.50 mm (0.17 in.)	4.50 mm (0.17 in.)
	Internal diameter	2.90 mm (0.11 in.)	2.90 mm (0.11 in.)
Power-adapter dimensions:			
	Height	32 mm (1.50 in.)	25.4 mm (1 in.)
	Width	52 mm (2 in.)	76.20 mm (3 in.)
	Depth	128 mm (5 in.)	154.7 mm (6.1 in.)
Input voltage		100 VAC−240 VAC	100 VAC−240 VAC
Input frequency		50 Hz−60 Hz	50 Hz−60 Hz

Table 18. Power adapter specifications (continued)

Description		Option one	Option two
Input current (maximum)		1.50 A	2.50 A
Output current (continuous)		4.62 A (continuous)	6.70 A (continuous)
Rated output voltage		19.50 VDC	19.50 VDC
Temperature range:			
	Operating	0°C to 40°C (32°F to 104°F)	0°C to 40°C (32°F to 104°F)
	Storage	-40°C to 70°C (-40°F to 158°F)	-40°C to 70°C (-40°F to 158°F)

⚠ **CAUTION: Operating and storage temperature ranges may differ among components, so operating or storing the device outside these ranges may impact the performance of specific components.**

Display

The following table lists the display specifications of your Inspiron 27 7720 All-in-One.

Table 19. Display specifications

Description		Option one	Option two
Display type		27-inch, Full High Definition (FHD)	27-inch, Full High definition (FHD)
Touch options		Touch support with 10 touch points	Not supported
Display-panel technology		Wide View Angle (WVA)	Wide view Angle (WVA)
Display-panel dimensions (active area):			
	Height	336.31 mm (13.24 in.)	336.31 mm (13.24 in.)
	Width	597.88 mm (23.54 in.)	597.88 mm (23.54 in.)
	Diagonal	685.98 mm (27.01 in.)	685.98 mm (27.01 in.)
Display-panel native resolution		1920 x 1080	1920 x 1080
Luminance (typical)		250 nits	300 nits
Megapixels		2.07 M	2.07 M
Color gamut		99% (sRGB) - typical	99% (sRGB) - typical
Pixels Per Inch (PPI)		81	81
Contrast ratio (minimum)		700:1	700:1
Response time (maximum)		28 ms	25 ms
Refresh rate		60 Hz	60 Hz
Horizontal view angle		+/- 80 degrees (min.)	+/- 80 degrees (min.)
Vertical view angle		+/- 80 degrees (min.)	+/- 80 degrees (min.)

Table 19. Display specifications (continued)

Description	Option one	Option two
Pixel pitch	0.3114 mm x 0.3114 mm	0.3114 mm x 0.3114 mm
Power consumption (maximum)	19.64 W	19.24 W
Anti-glare vs glossy finish	TrueLife	Anti-glare

GPU—Integrated

The following table lists the specifications of the integrated Graphics Processing Unit (GPU) supported by your Inspiron 27 7720 All-in-One.

Table 20. GPU—Integrated

Controller	Memory size	Processor
Intel UHD Graphics (For computers shipped with i5/i7 processors with Single Channel Memory Support)	Shares system memory	• 13th Generation Intel Core i5/i7
Intel Iris Xe Graphics (For computers shipped with i5/i7 processors with Dual Channel Memory Support)	Shares system memory	• 13th Generation Intel Core i5/i7

GPU—Discrete

The following table lists the specifications of the discrete Graphics Processing Unit (GPU) supported by your Inspiron 27 7720 All-in-One.

Table 21. GPU—Discrete

Controller	Memory size	Memory type
NVIDIA GeForce MX550	2 GB	GDDR6

Environmental

The following table lists the environmental specifications of your Inspiron 27 7720 All-in-One.

Table 22. Environmental

Feature	Values
Recyclable packaging	Yes
BFR/PVC—free chassis	No
Vertical orientation packaging support	Yes
Multi-Pack packaging	No
Energy-Efficient Power Supply	Standard
ENV0424 compliant	Yes

(i) **NOTE:** Wood-based fiber packaging contains a minimum of 35% recycled content by total weight of wood-based fiber. Packaging that contains without wood-based fiber can be claimed as Not Applicable. The anticipated required criteria for EPEAT 2018.

Regulatory compliance

The following table lists the regulatory compliance of your Inspiron 27 7720 All-in-One.

Table 23. Regulatory compliance

Regulatory compliance
EPEAT registered configurations available
ENERGY STAR compliant configurations available
TCO 8.0 certified configurations available
US CEC MEPS compliant configurations available
Australia and New Zealand MEPS compliant configurations available
CEL
WEEE
Japan Energy Law
South Korea E-standby
EU RoHS
China RoHS

Operating and storage environment

This table lists the operating and storage specifications of your Inspiron 27 7720 All-in-One.

Airborne contaminant level: G1 as defined by ISA-S71.04-1985

Table 24. Computer environment

Description	Operating	Storage
Temperature range	0°C to 35°C (32°F to 95°F)	-40°C to 65°C (-40°F to 149°F)
Relative humidity (maximum)	10% to 90% (non-condensing)	0% to 95% (non-condensing)
Vibration (maximum)*	0.66 GRMS	1.30 GRMS
Shock (maximum)	110 G†	160 G†
Altitude range	0 m to 3048 m (0 ft to 10000 ft)	0 m to 10668 m (0 ft to 35000 ft)
⚠ **CAUTION: Operating and storage temperature ranges may differ among components, so operating or storing the device outside these ranges may impact the performance of specific components.**		

* Measured using a random vibration spectrum that simulates the user environment.

† Measured using a 2 ms half-sine pulse.

Dell support policy

For information about Dell support policy, search in the Knowledge Base Resource at www.dell.com/support.

Working inside your computer

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 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 rechargeable Li-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.

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. For Windows operating system, click **Start** > ⏻ **Power** > **Shut down**.

> (i) **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 precautions

The safety precautions chapter details the primary steps to be taken before performing any disassembly instructions.

Observe the following safety precautions before you perform any installation or break or fix procedures involving disassembly or reassembly:

- Turn off the computer and all attached peripherals.
- Disconnect the computer and all attached peripherals from AC power.
- Disconnect all network cables, telephone, and telecommunications lines from the computer.
- Use an ESD field service kit when working inside any desktop to avoid electrostatic discharge (ESD) damage.
- After removing any computer component, carefully place the removed component on an anti-static mat.
- Wear shoes with non-conductive rubber soles to reduce the chance of getting electrocuted.

Standby power

Dell products with standby power must be unplugged before you open the case. Systems that incorporate standby power are powered while turned off. The internal power enables the computer to be remotely turned on (Wake-on-LAN) and suspended into a sleep mode and has other advanced power management features.

Unplugging, pressing, and holding the power button for 15 seconds should discharge residual power in the system board.

Bonding

Bonding is a method for connecting two or more grounding conductors to the same electrical potential. This is done by using a field service electrostatic discharge (ESD) kit. When connecting a bonding wire, ensure that it is connected to bare metal and never to a painted or nonmetal surface. The wrist strap should be secure and in full contact with your skin, and ensure that you remove all jewelry such as watches, bracelets, or rings prior to bonding yourself and the equipment.

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. 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 that is 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 that are 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, and so on.

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 computer 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 computer, 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 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 laptop environment. Servers are typically installed in a rack within a data center; desktops or laptops 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 computer 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 the bag is shielded. Always place parts in your hand, on the ESD mat, in the computer, 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 to use the traditional wired ESD grounding wrist strap and protective anti-static mat always when servicing Dell products. In addition, it is critical to 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.

BitLocker

⚠️ **CAUTION: If BitLocker is not suspended before updating the BIOS, the next time you reboot the system it will not recognize the BitLocker key. You will then be prompted to enter the recovery key to progress, and the system will ask for the recovery key on each reboot. If the recovery key is not known, this can result in data loss or an unnecessary operating system reinstall. For more information about this subject, see Knowledge Article: updating the BIOS on Dell systems with BitLocker enabled.**

The installation of the following components triggers BitLocker:
- Hard disk drive or solid-state drive
- System board

Recommended tools

The procedures in this document may require the following tools:

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

Screw list

ⓘ **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.

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

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

Table 25. Screw list

Component	Screw type	Quantity	Screw image
I/O cover	M3x5	5	
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/M.2 2280 solid-sate drive	M2x3.5	1	
Solid-state drive screw mount	M3x4	1	
Retractable camera assembly	M3x5	2	
Fan	M2x3.5	3	
Stand hinges	M3x4.5	10	
Media-card reader	M3x3.5	1	
Power-button board	M3x5	1	
System board	M3x5	6	
Microphones	M2x2.5	4	

Table 25. Screw list (continued)

Component	Screw type	Quantity	Screw image
Display assembly	M3x5	12	
Display panel	M3x3	5	

Major components of Inspiron 27 7720 All-in-One

The following image shows the major components of Inspiron 27 7720 All-in-One.
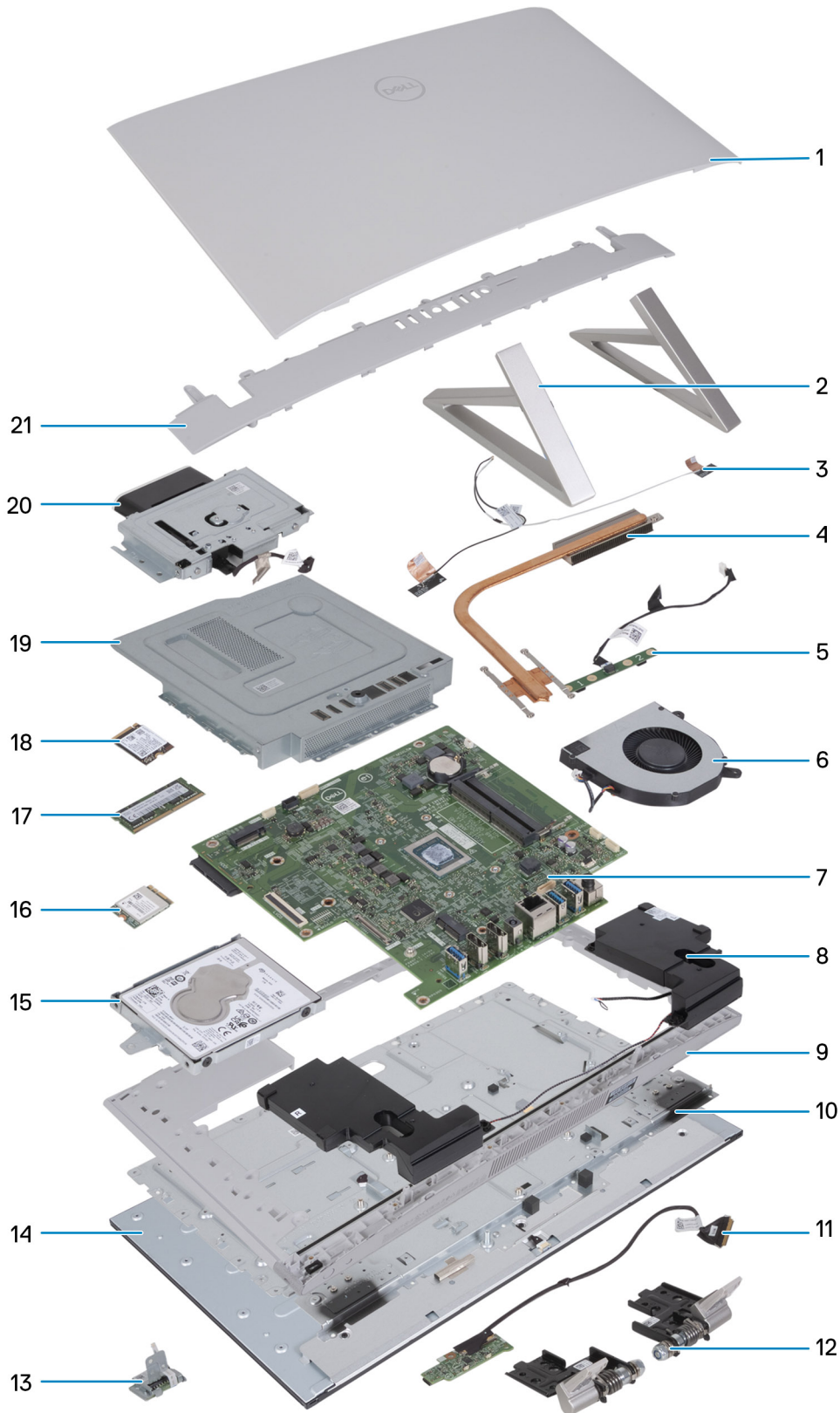
1. Back cover
2. Isosceles stand
3. Antennas
4. Heat sink
5. Microphone module
6. Fan
7. System board
8. Speaker

9. Middle frame
11. Power-button board with USB and connector cable
13. Media-card reader
15. Hard-disk drive
17. M.2 2230 solid-state drive
19. System-board shield
21. I/O cover

10. Base panel
12. Stand hinge
14. Display panel
16. Wireless card
18. M.2 2280 solid-state drive
20. Camera module

Removing and installing Customer Replaceable Units (CRUs)

The replaceable components in this chapter are Customer Replaceable Units (CRUs).

⚠️ **CAUTION: Customers can replace only the Customer Replaceable Units (CRUs) following the safety precautions and replacement procedures.**

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

Stand

Removing the stand

Prerequisites

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 over the edge of the surface. It is recommended to remove the stand to avoid accidental damage to the computer display when servicing.**
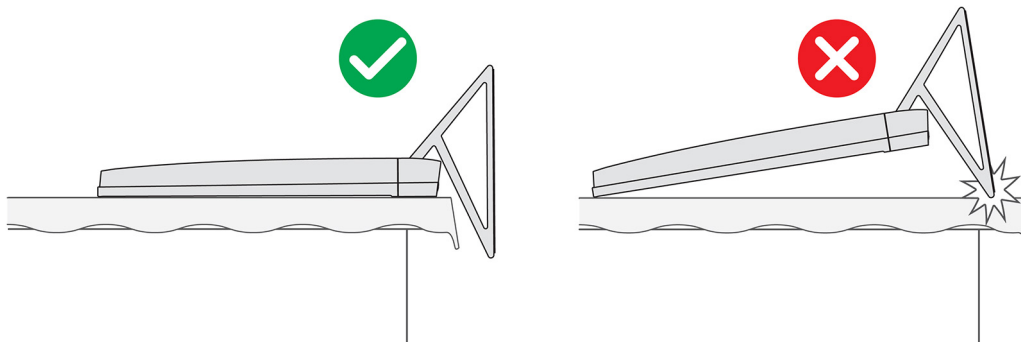
Figure 13. Caution for stand

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

ⓘ **NOTE:** For replacement of stand or stand hinges, the replacement kit is shipped with both stand and stand hinges. Both components are replaced together. Refer to the procedure for removing the stand and installing the stand.

About this task

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

Figure 14. Removing the stand

Steps

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

Installing the stand

Prerequisites

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

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

ⓘ **NOTE:** For replacement of stand or stand hinges, the replacement kit is shipped with both stand and stand hinges. Both components are replaced together. Refer to the procedure for removing the stand and installing the stand.

About this task

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

Figure 15. Installing the stand

Insert the stands into the slots on the back cover until they snap into place on the display-assembly base.

Next steps

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 over the edge. It is recommended to remove the stand to avoid accidental damage to the computer display when servicing.**

Figure 16. Caution for stand

About this task

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

Figure 17. Removing back cover

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 procedure.

About this task

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

Figure 18. Installing the back cover

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.
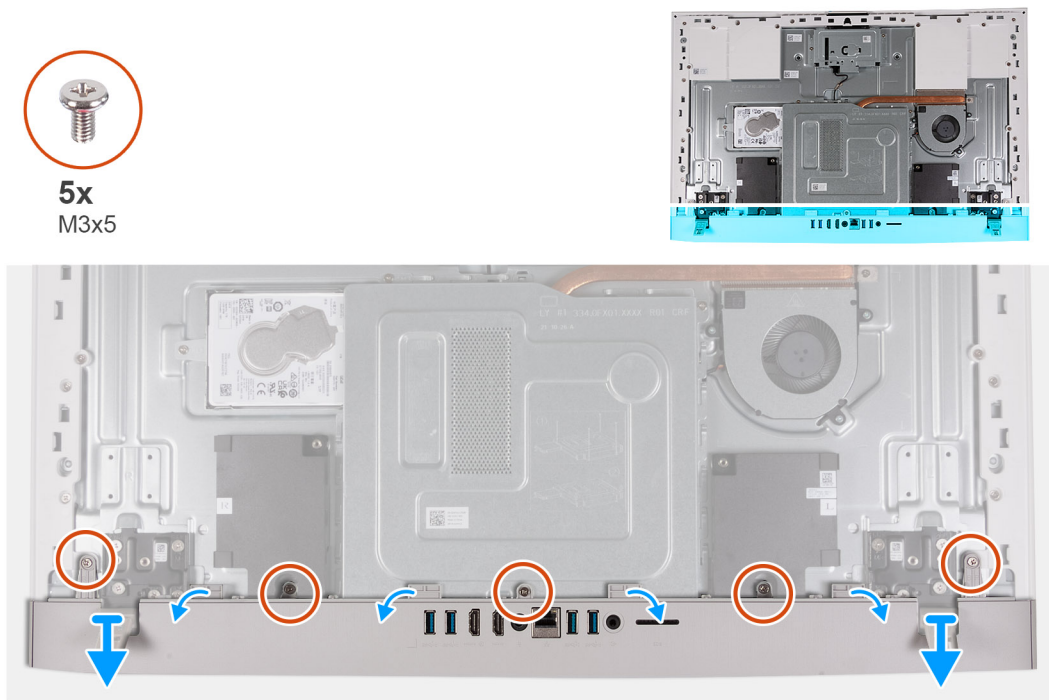
Figure 19. Removing I/O cover

Steps

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

Installing the I/O cover

Prerequisites

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

About this task

The following image indicates the location of the I/O cover and provides a visual representation of the installation procedure.
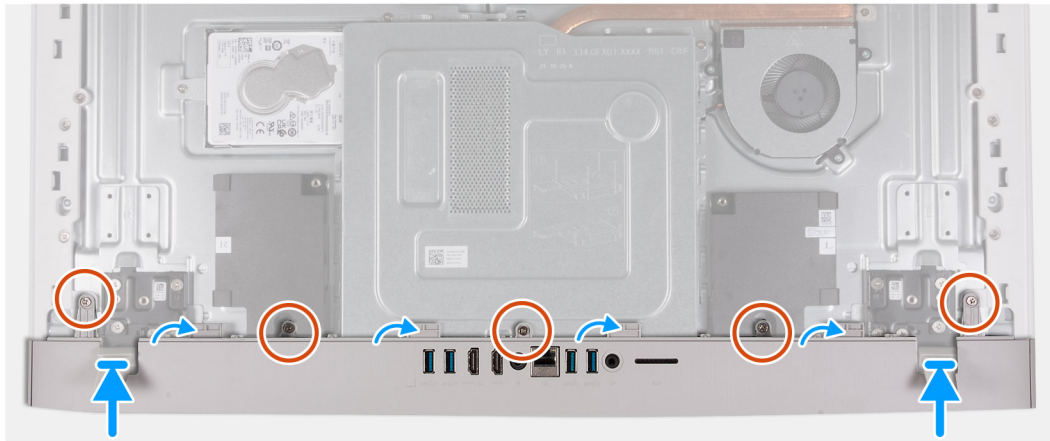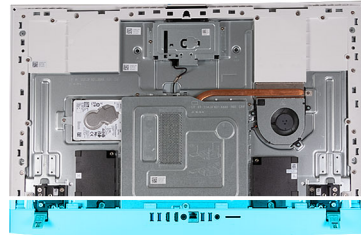
Figure 20. Installing bottom cover

Steps

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

Next steps

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

Stand hinges

Removing the stand 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.
5. Remove the system-board shield.

ⓘ **NOTE:** For replacement of stand or stand hinges, the replacement kit is shipped with both stand and stand hinges. Both components are replaced together. Refer to the procedure for removing the stand and installing the stand.

About this task

The following image indicates the location of the stand hinges and provides a visual representation of the removal procedure.
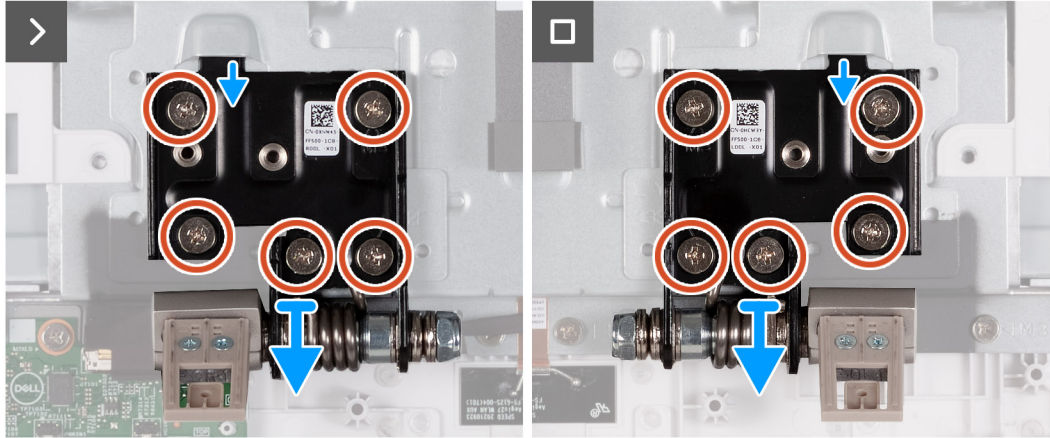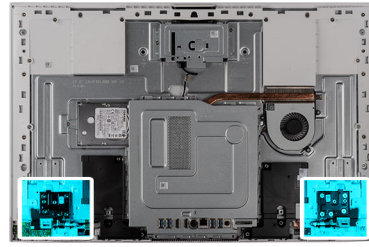
Figure 21. Removing the stand hinges

Steps

1. Remove the 10 screws (M3x4.5) that secure the right and left stand hinges to the display-assembly base.
2. Lift the stand hinges off the display-assembly base.

Installing the stand hinges

Prerequisites

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

ⓘ **NOTE:** For replacement of stand or stand hinges, the replacement kit is shipped with both stand and stand hinges. Both components are replaced together. Refer to the procedure for removing the stand and installing the stand.
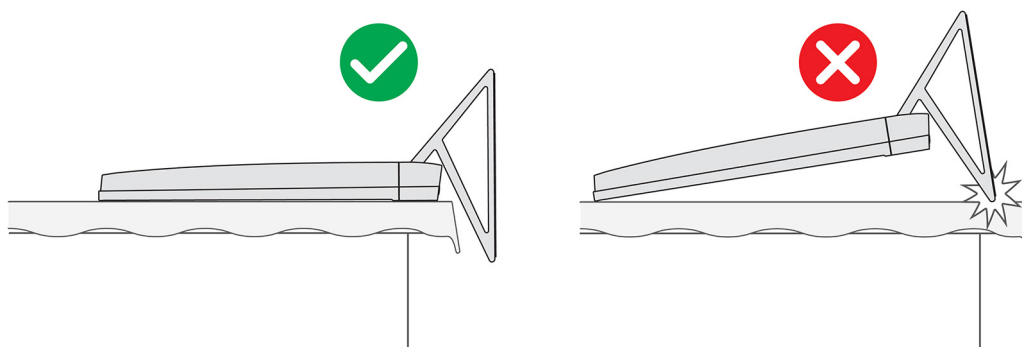
About this task

The following image indicates the location of the stand hinges and provides a visual representation of the installation procedure.
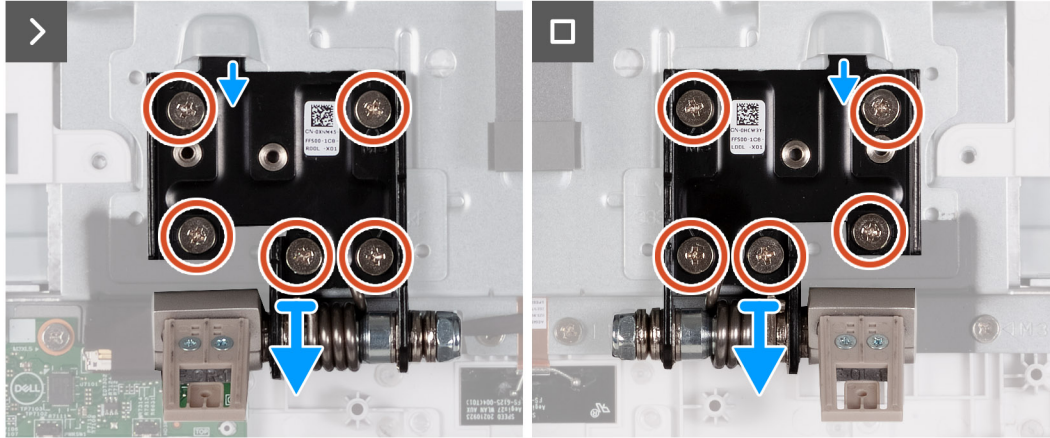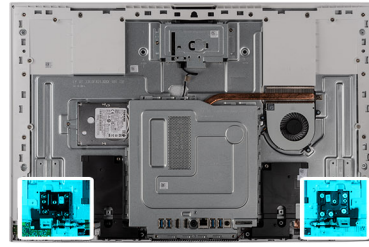
Figure 22. Installing the stand hinges

Steps

1. Align the screw holes on the stand hinges with the screw holes on the display-assembly base.
2. Replace the 10 screws (M3x4.5) that secure the stand hinges 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.

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.
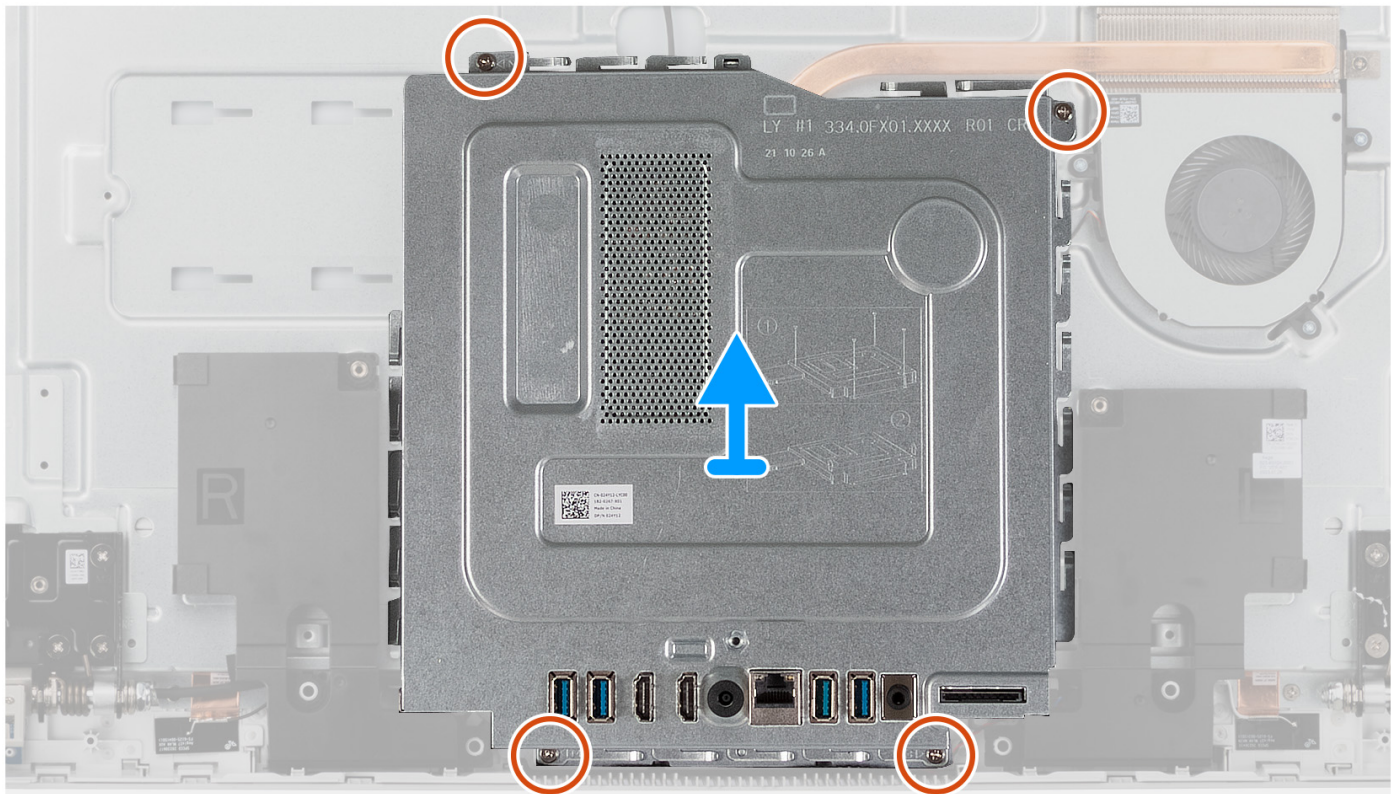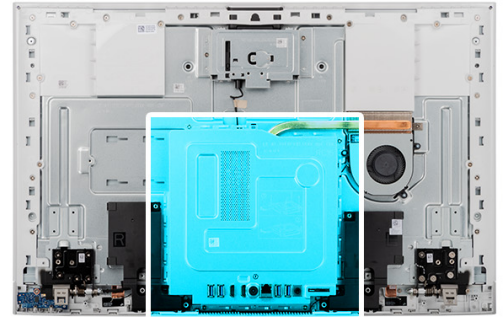
Figure 23. Removing the system-board shield

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 procedure.

About this task

The following image indicates the location of the system-board shield and provides a visual representation of the installation procedure.
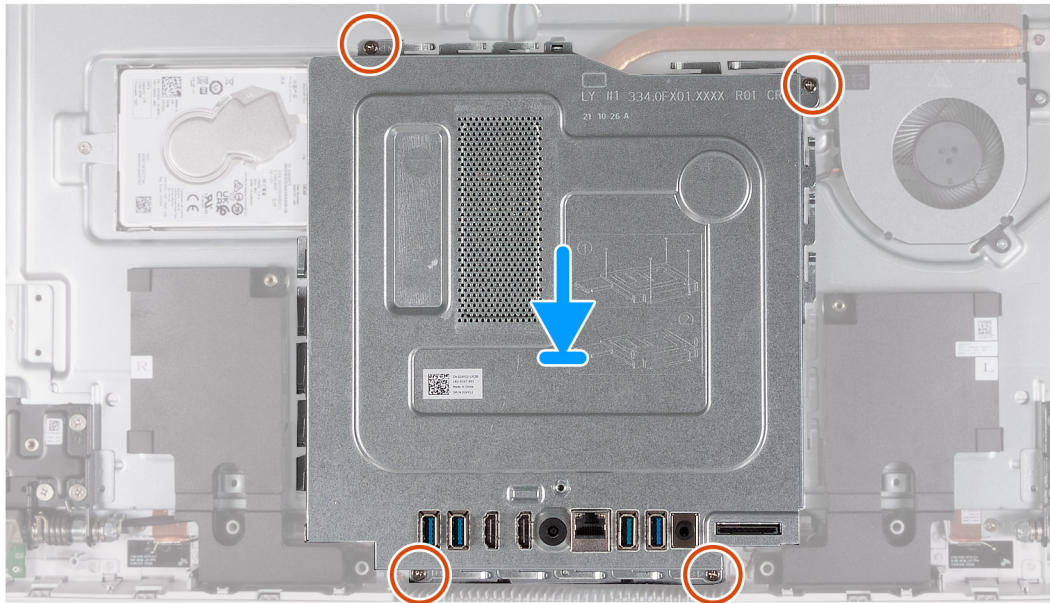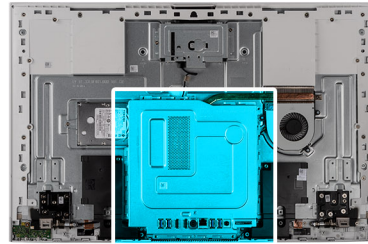
Figure 24. Installing the system-board shield

Steps

1. Align the screw holes on the system-board shield with the slots on the display-assembly base.
2. Place system-board shield on the display-assembly base.
3. 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.

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.
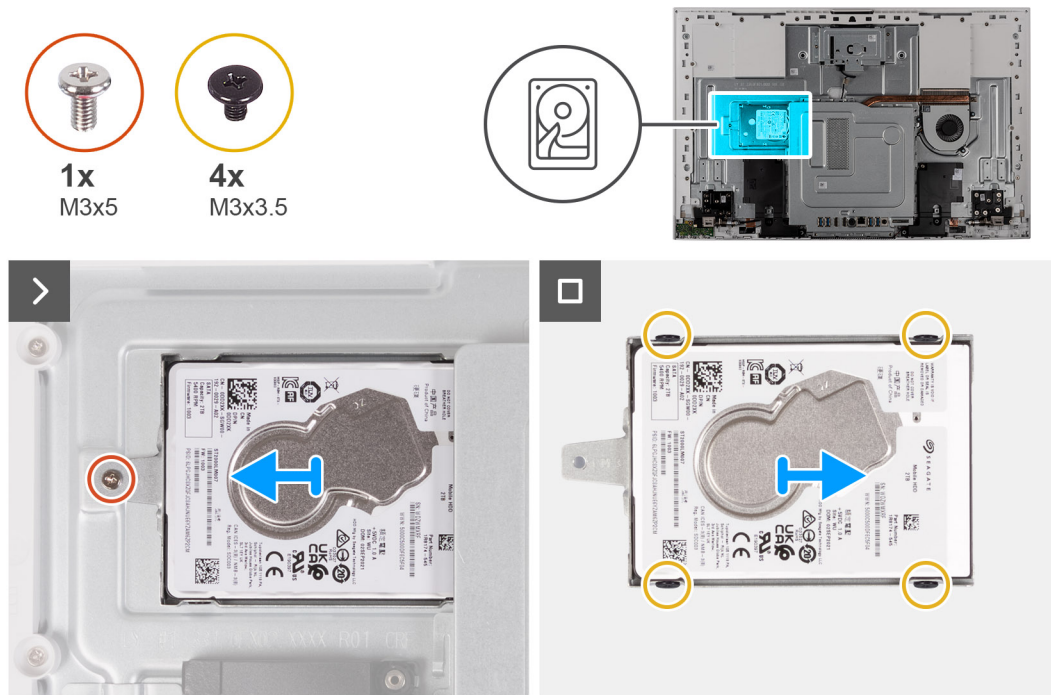
Figure 25. Removing the hard drive

Steps

1. Remove the screw (M3x5) that secures 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 procedure.

⚠ **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.
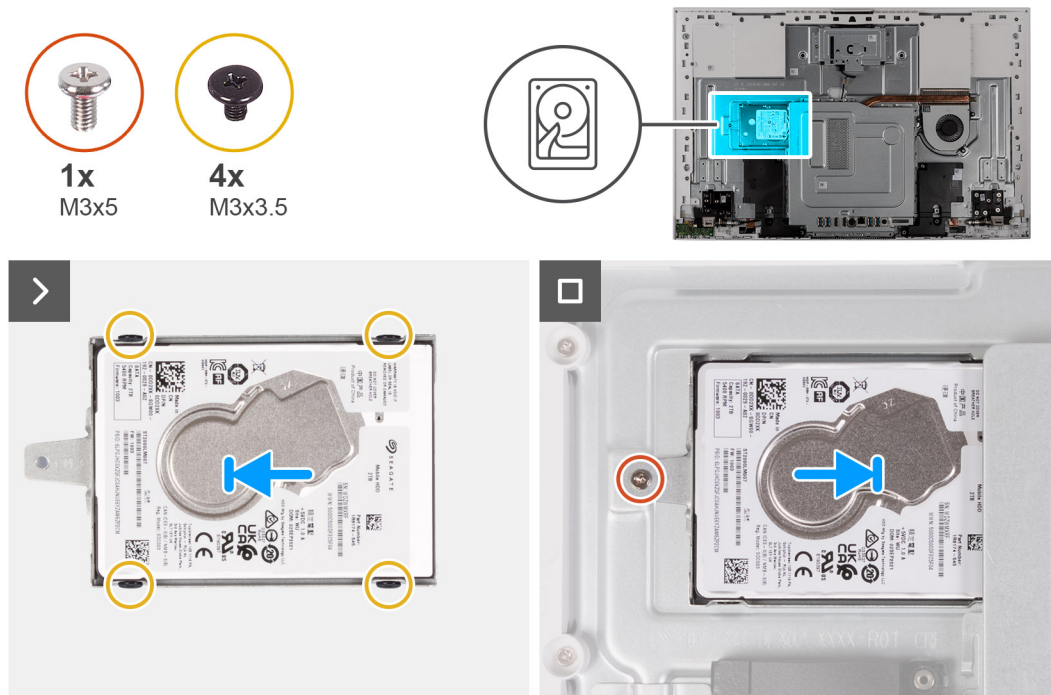
Figure 26. Installing the hard drive

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.

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

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

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


Figure 27. Removing the M.2 2230 solid-state drive

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

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

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

About this task

ⓘ **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 an M.2 2230 solid-state drive.

Before replacing an M.2 2280 solid-state drive with an M.2 2230 solid-state drive, move the screw mount as shown in the following figure.
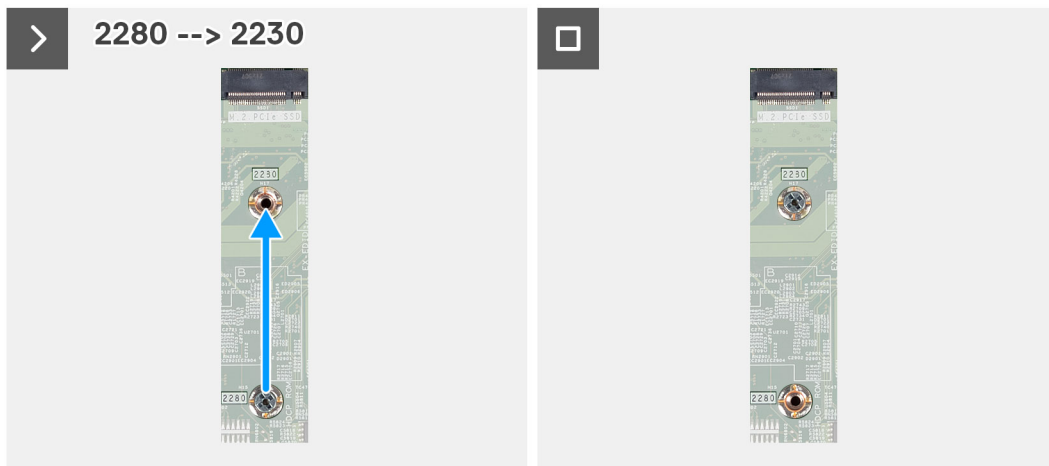
Figure 28. Changing 2280 to 2230

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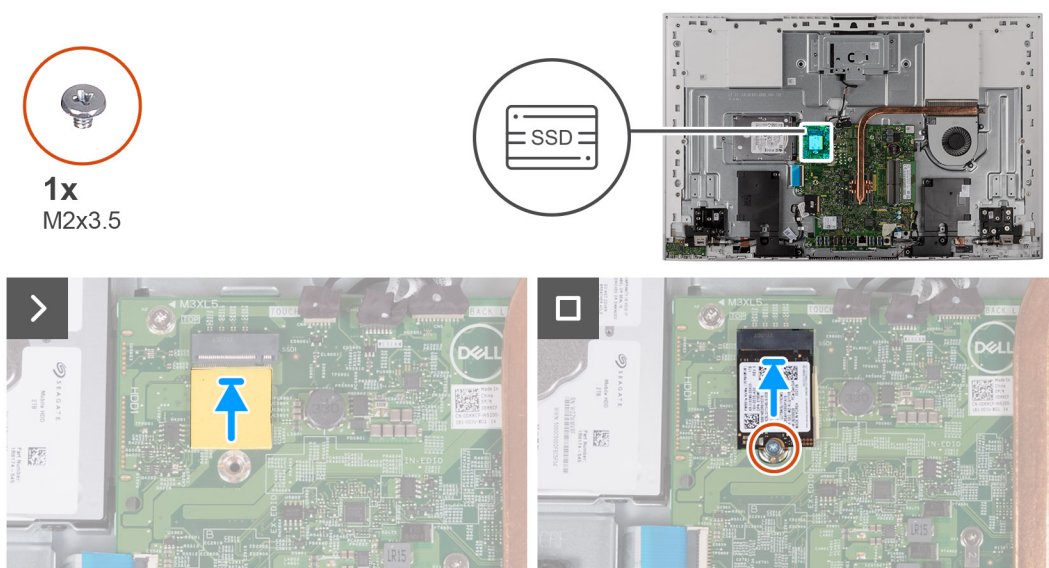

Figure 29. Installing the M.2 2230 solid-state drive

Steps

1. Ensure that the thermal pad covering the M.2 2230 slot on the system board is in place.
2. Align the notch on the solid-state drive with the tab on the M.2 card slot.
3. Slide the solid-state drive into the M.2 card 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.

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


Figure 30. Removing the M.2 2280 solid-state drive

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 2280 solid-state drive

Prerequisites

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

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

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 2280 solid-state drive.

Before replacing an M.2 2280 solid-state drive with an M.2 2230 solid-state drive, move the screw mount as shown in the following figure.

Figure 31. Changing 2230 to 2280

The following image indicates the location of the solid-state drive and provides a visual representation of the installation procedure.
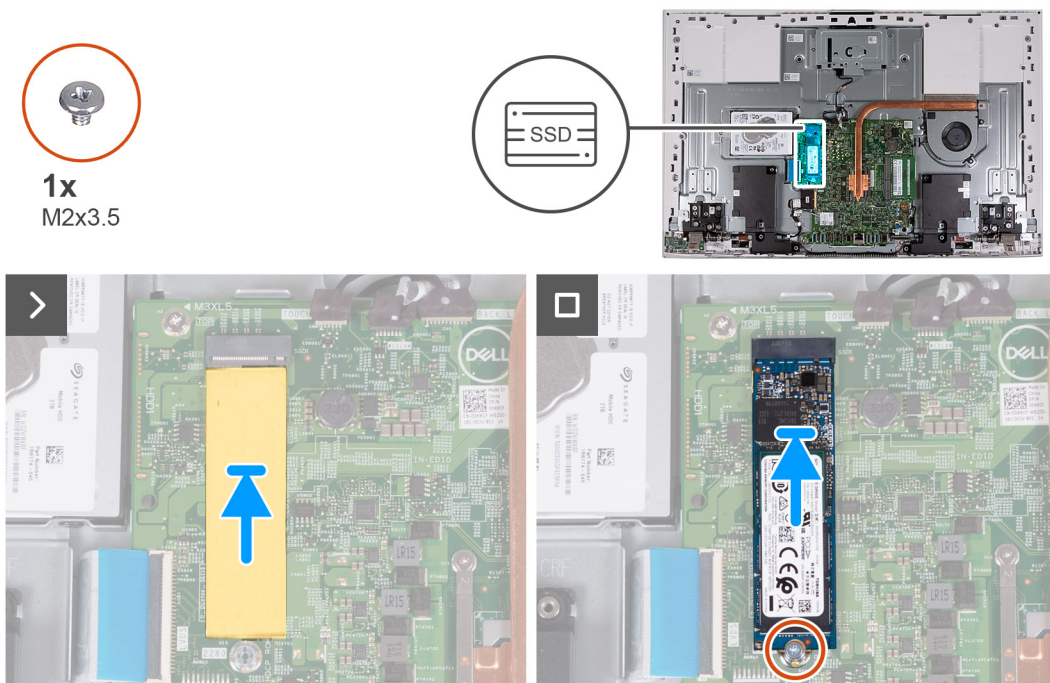
Figure 32. Installing the M.2 2280 solid-state drive

Steps

1. Ensure that the thermal pad covering the M.2 2280 slot on the system board is in place.
2. Align the notch on the solid-state drive with the tab on the M.2 card slot.

3. Slide the solid-state drive into the M.2 card 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.

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 module and provides a visual representation of the removal procedure.
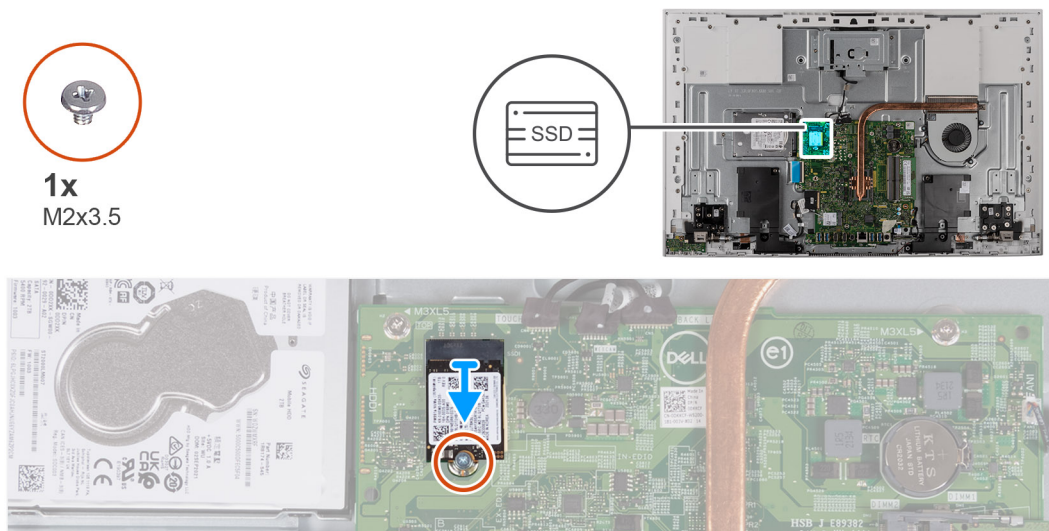

Figure 33. Removing the memory module

Steps

1. Carefully spread apart the securing-clips on each end of 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 steps 1 and 2 if you want to remove the other memory module.

Installing the memory module

Prerequisites

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

About this task

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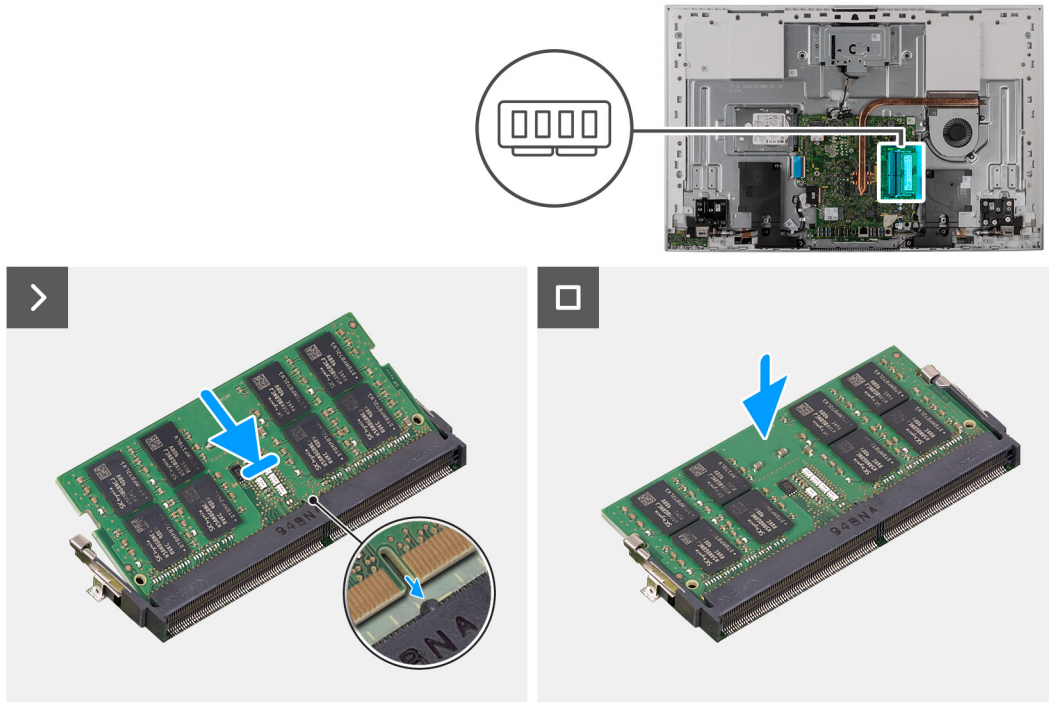

Figure 34. Installing the memory module

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.

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

   (i) **NOTE:** Repeat steps 1 and 2 if you want to install 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.
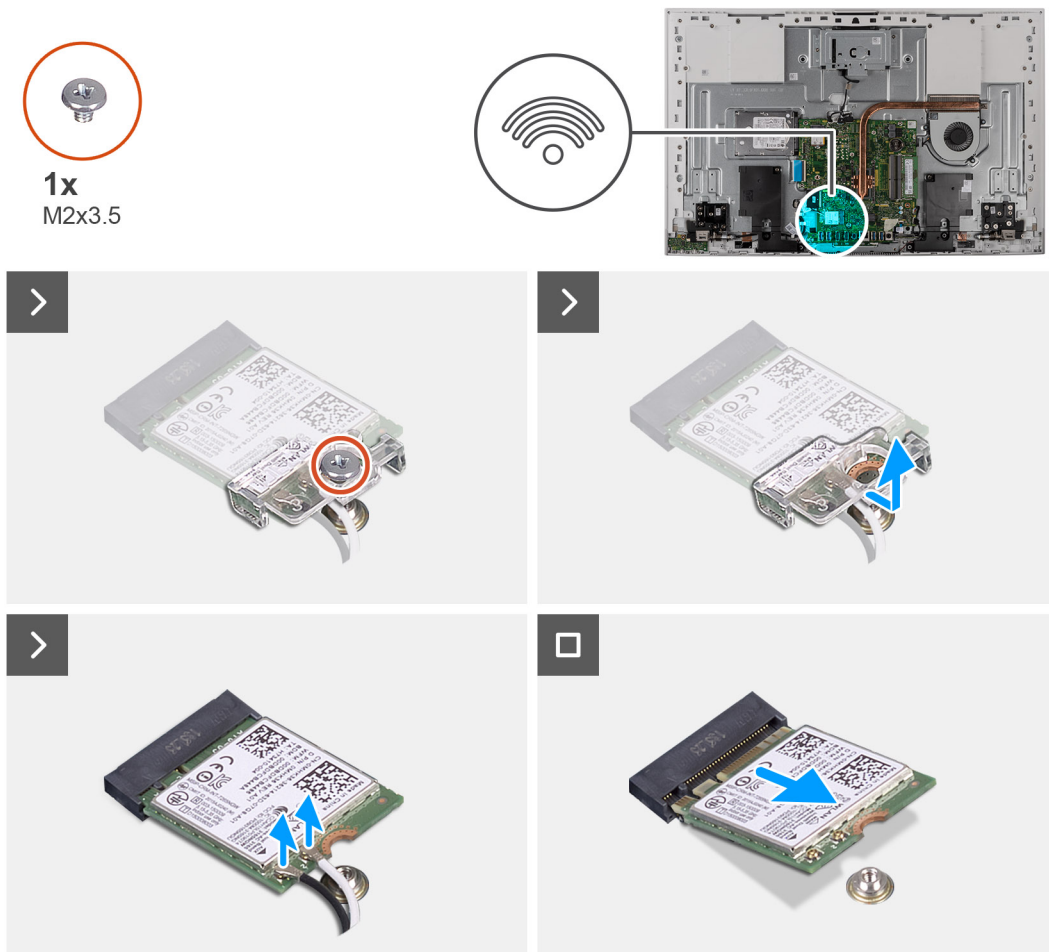
Figure 35. Removing the wireless card

Steps

1. Remove the screw (M2x3.5) that secures the wireless-card bracket to the wireless card.
2. Slide and lift 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 procedure.

⚠ **CAUTION: To avoid damage to the wireless card, do not place any cables under it.**

About this task

The following image indicates the location of the wireless card and provides a visual representation of the installation procedure.
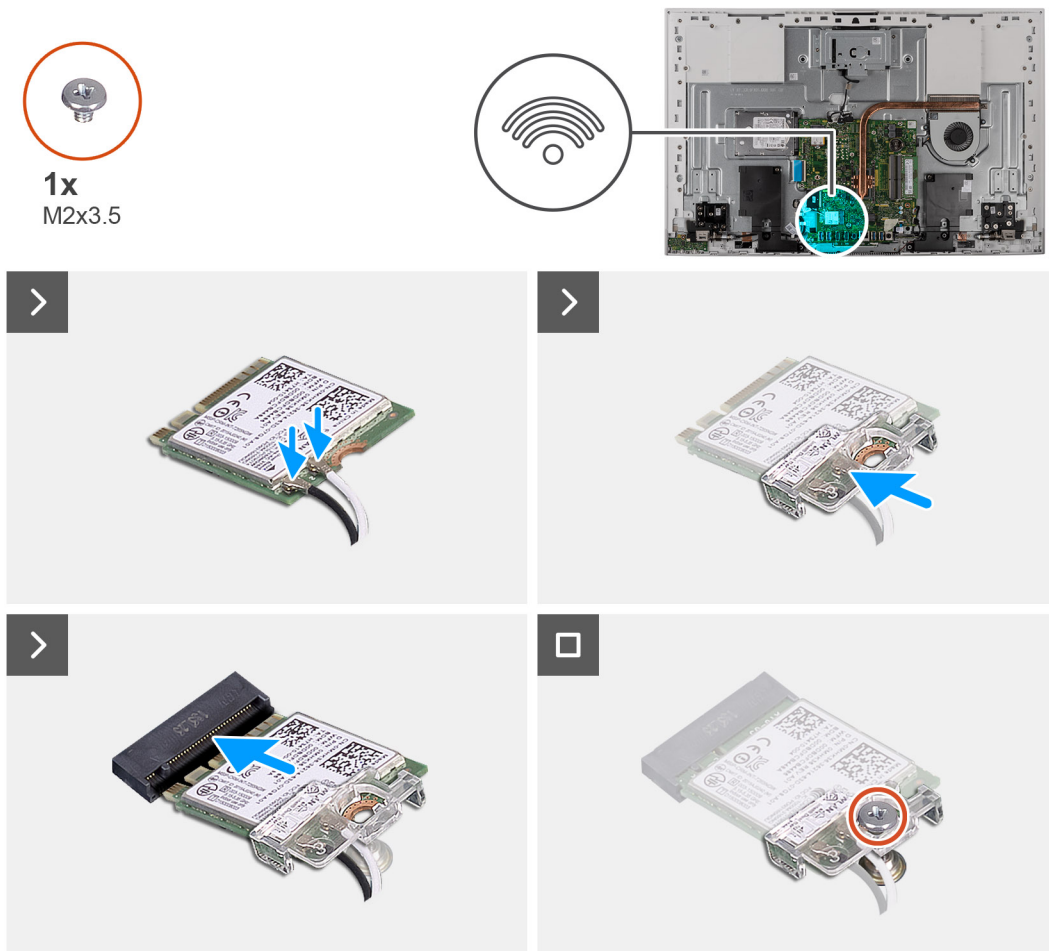
Figure 36. Installing the wireless card

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 26. Antenna-cable color scheme

Connectors on the wireless card	Antenna-cable color
Main (white triangle)	White
Auxiliary (black triangle)	Black

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.

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.
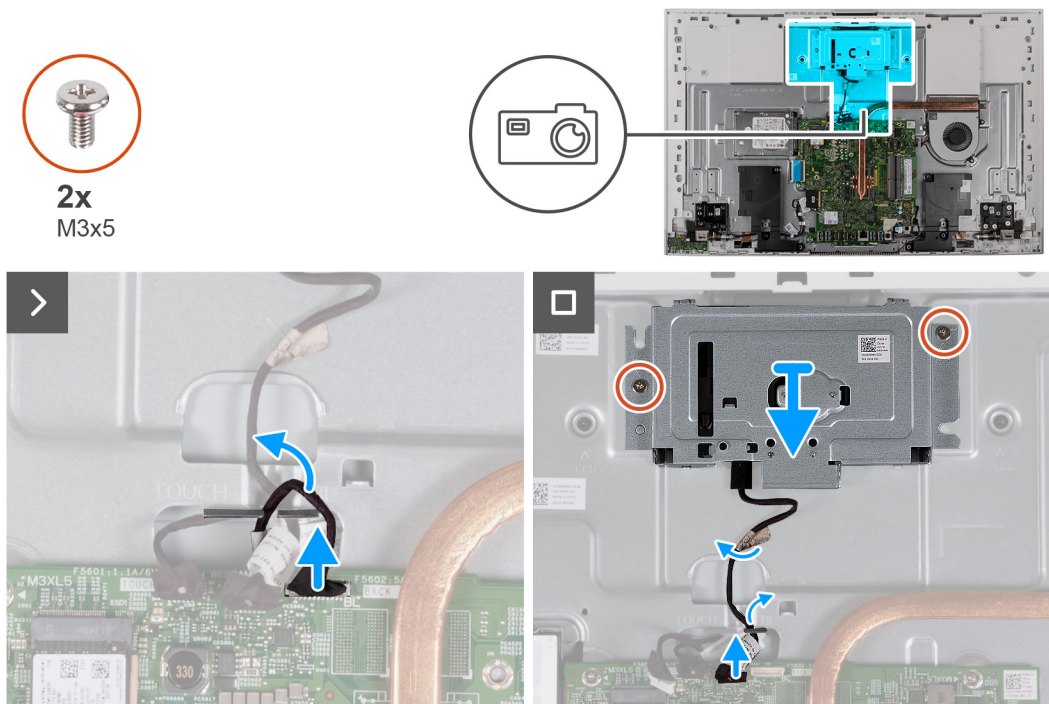
Figure 37. Removing the camera

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 two screws (M3x5) that secure the retractable-camera assembly to the display-assembly base.
4. 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 procedure.

About this task

The following image indicates the location of the retractable-camera assembly and provides a visual representation of the installation procedure.
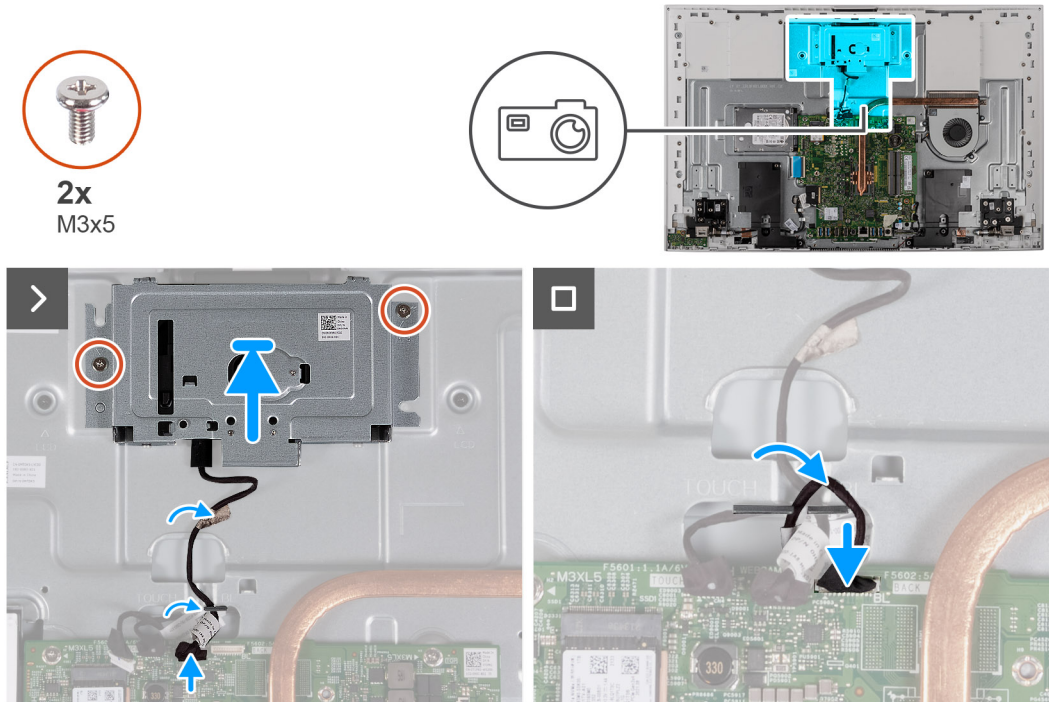
Figure 38. Installing the camera

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. Adhere the tape that secures the camera cable to the display-assembly base.
4. 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

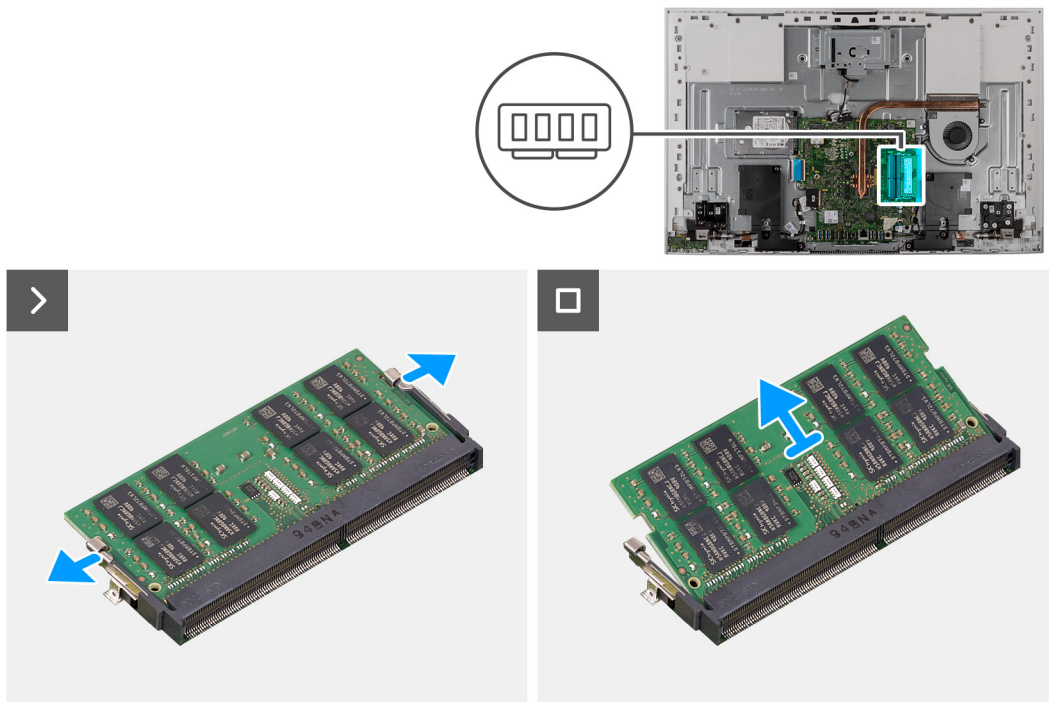The following image indicates the location of the fan and provides a visual representation of the removal procedure.
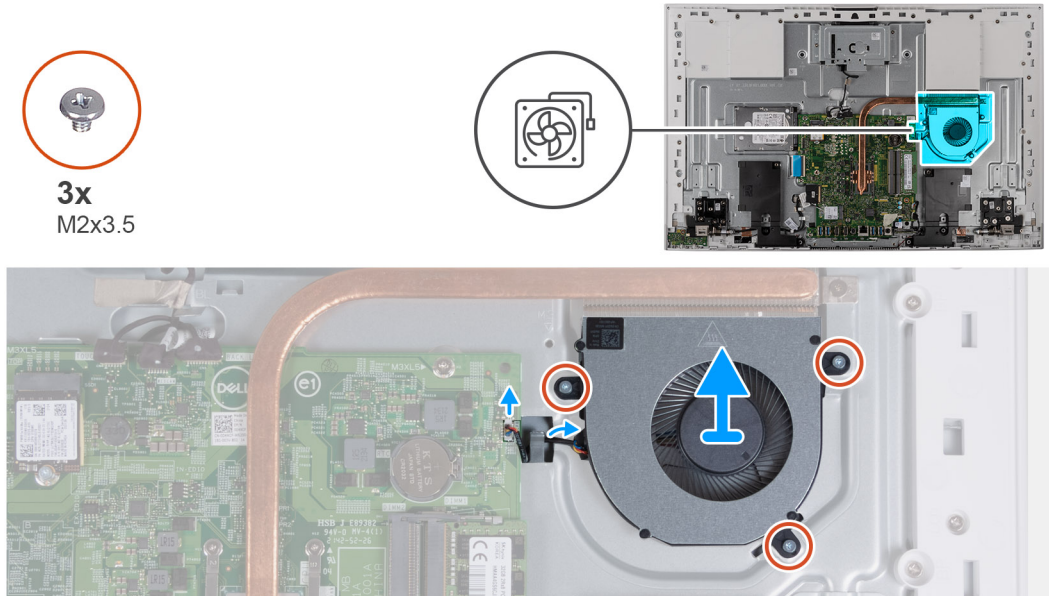
**Figure 39. Removing the fan**

Steps

1. Disconnect the fan cable from the system board.
2. Remove the fan cable from the routing post on the display-assembly base.
3. Remove the three screws (M2x3.5) 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 procedure.

About this task

The following image indicates the location of the fan and provides a visual representation of the installation procedure.
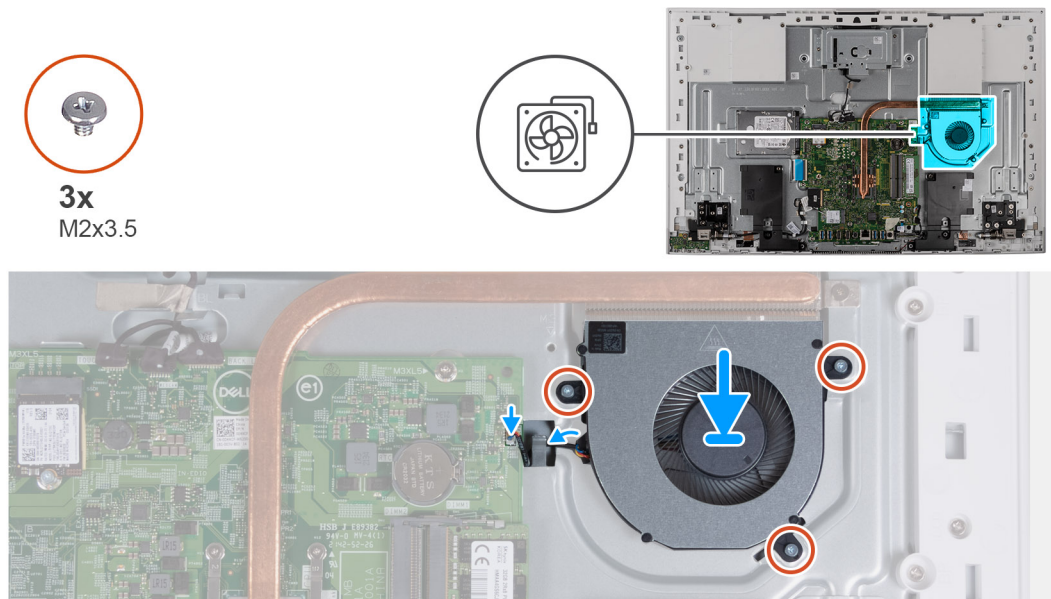
Figure 40. Installing the fan

Steps

1. Align the screw holes on the fan with the screw holes on the display-assembly base.
2. Replace the three screws (M2x3.5) that secure the fan to the display-assembly base.
3. Route the fan cable through the routing post 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.
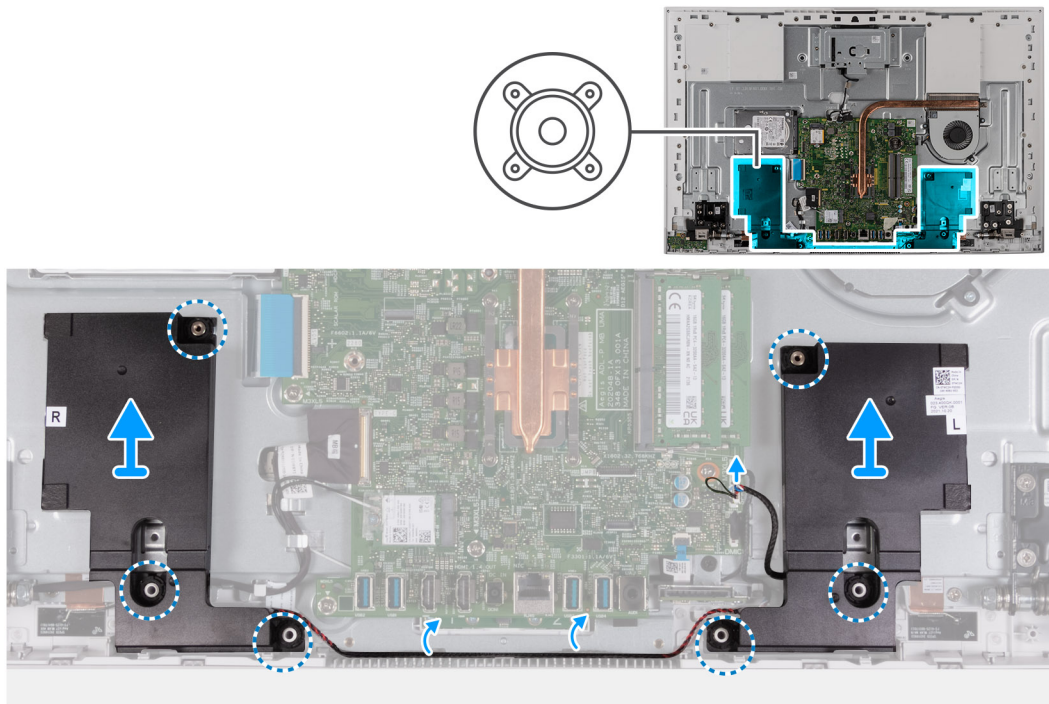
**Figure 41. Removing the speakers**

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 procedure.

About this task

The following image indicates the location of the speakers and provides a visual representation of the installation procedure.
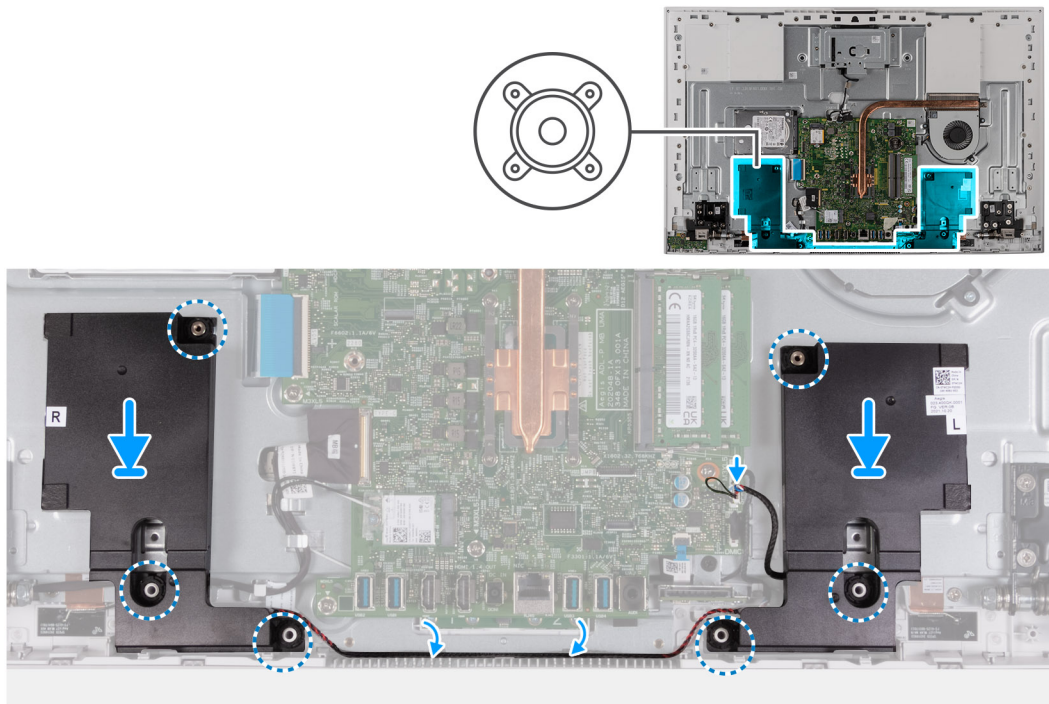
Figure 42. Installing the speakers

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 the 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.
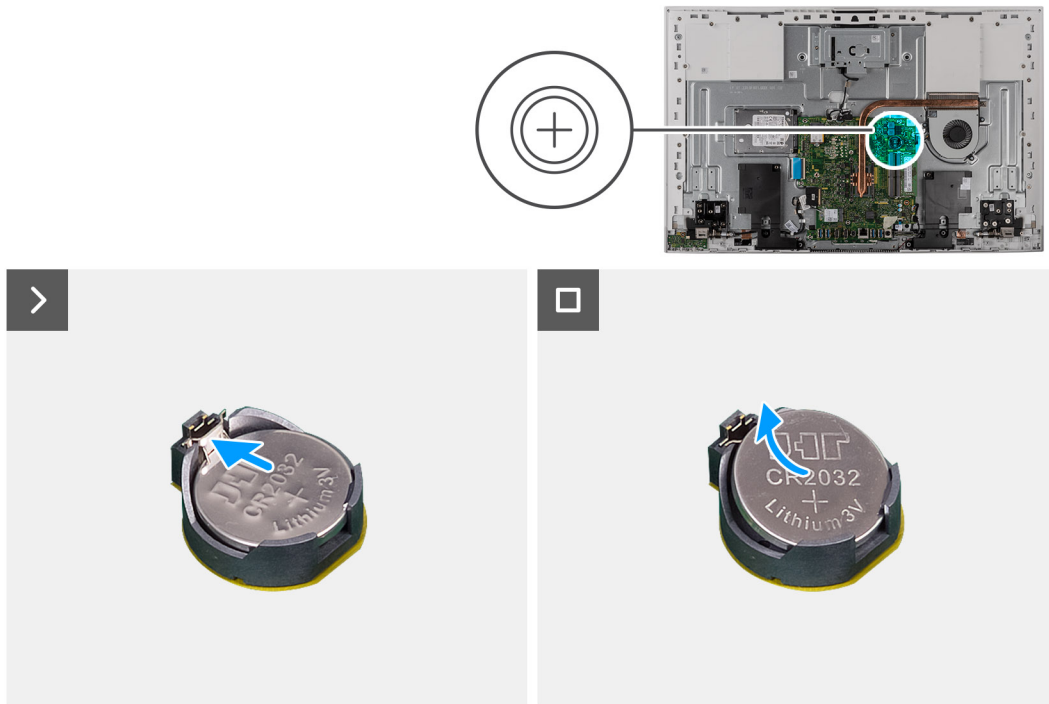
Figure 43. Removing the coin-cell battery

Steps

1. Press 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 procedure.

About this task

The following image indicates the location of the coin-cell battery and provides a visual representation of the installation procedure.
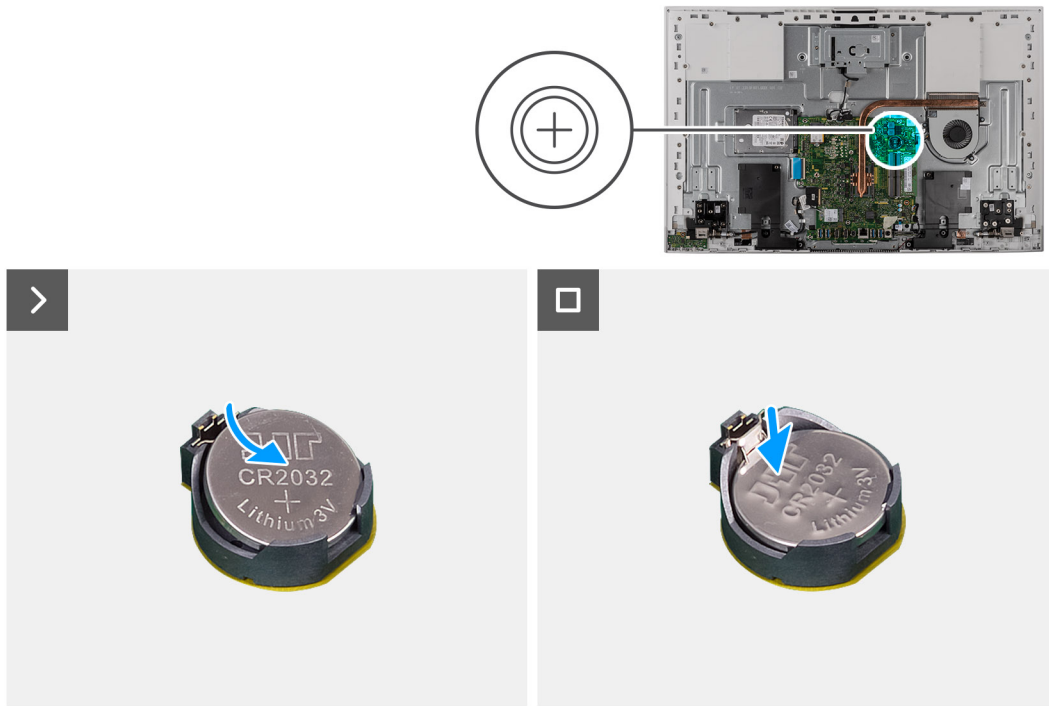
Figure 44. Installing the coin-cell battery

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.

Removing and installing Field Replaceable Units (FRUs)

The replaceable components in this chapter are Field Replaceable Units (FRUs).

⚠️ **CAUTION: The information in this removing and installing FRUs section is intended for authorized service technicians only.**

⚠️ **CAUTION: To avoid any potential damage to the component or loss of data, ensure that an authorized service technician replaces the Field Replaceable Units (FRUs).**

⚠️ **CAUTION: Dell Technologies recommends that this set of repairs, if needed, to be conducted by trained technical repair specialists.**

⚠️ **CAUTION: As a reminder, your warranty does not cover damages that may occur during the courses of FRU repairs that are not authorized by Dell Technologies.**

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

Heat sink

Removing the heat sink- UMA

⚠️ **CAUTION: The information in this section is intended for authorized service technicians only.**

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.
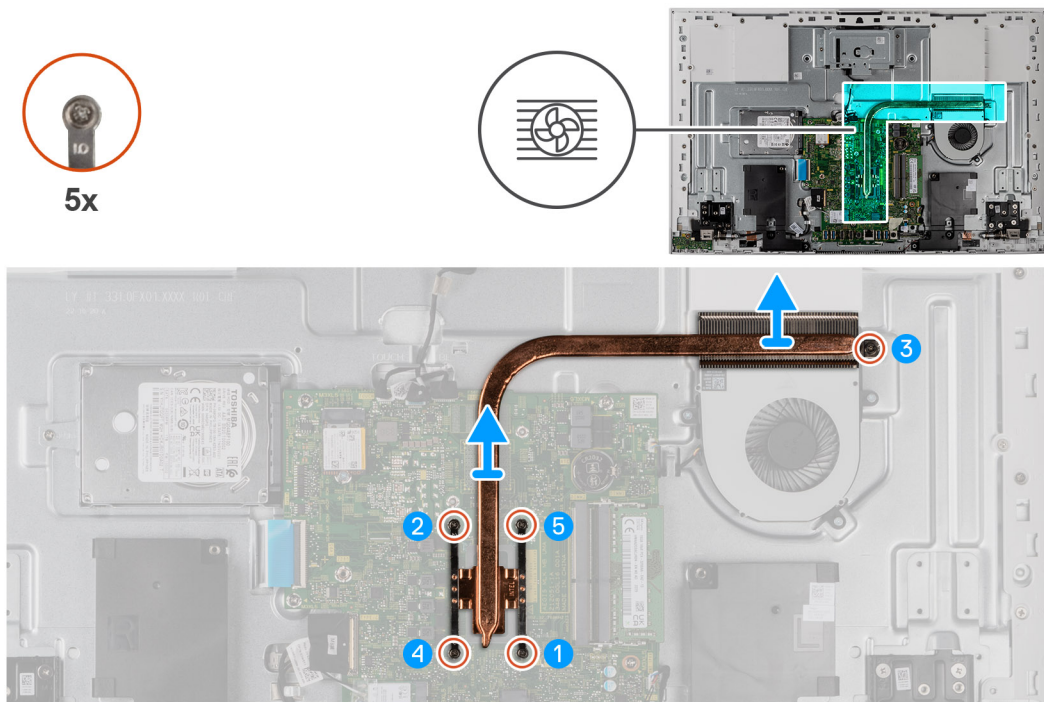
Figure 45. Removing the heat sink- UMA

Steps

1. In reverse sequential order (5>4>3>2>1), loosen the five captive screws 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- UMA

⚠️ **CAUTION: The information in this section is intended for authorized service technicians only.**

Prerequisites

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

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

About this task

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

Figure 46. Installing the heat sink- UMA

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 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.

Removing the heat sink- discrete

⚠ **CAUTION: The information in this section is intended for authorized service technicians only.**

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.

Figure 47. Removing the heat sink- discrete

Steps

1. In reverse sequential order (7>6>5>4>3>2>1), loosen the seven captive screws 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- discrete

⚠ **CAUTION: The information in this section is intended for authorized service technicians only.**

Prerequisites

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

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

About this task

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

Figure 48. Installing the heat sink- discrete

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>6>7), tighten the seven captive screws 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

⚠️ **CAUTION: The information in this section is intended for authorized service technicians only.**

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.
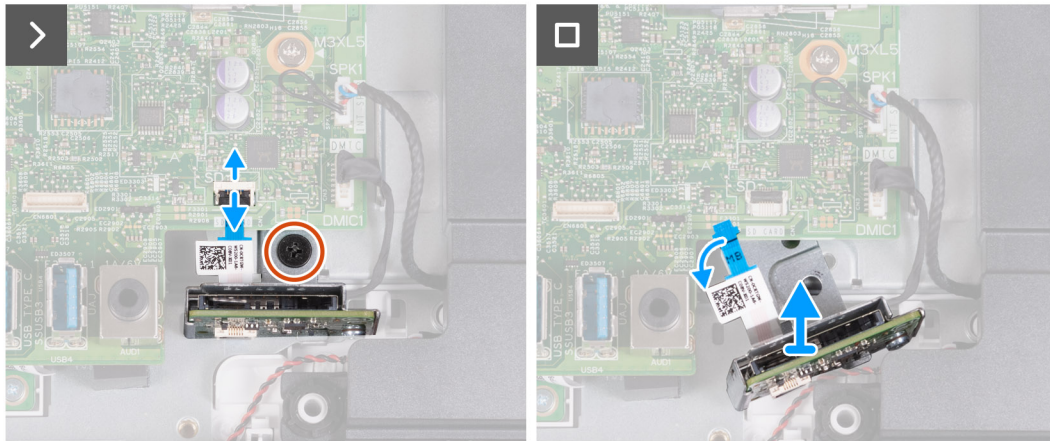
Figure 49. Removing the media-card reader

Steps

1. Remove the screw (M3x3.5) that secures 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

⚠ **CAUTION: The information in this section is intended for authorized service technicians only.**

Prerequisites

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

About this task

The following image indicates the location of the media-card reader and provides a visual representation of the installation procedure.
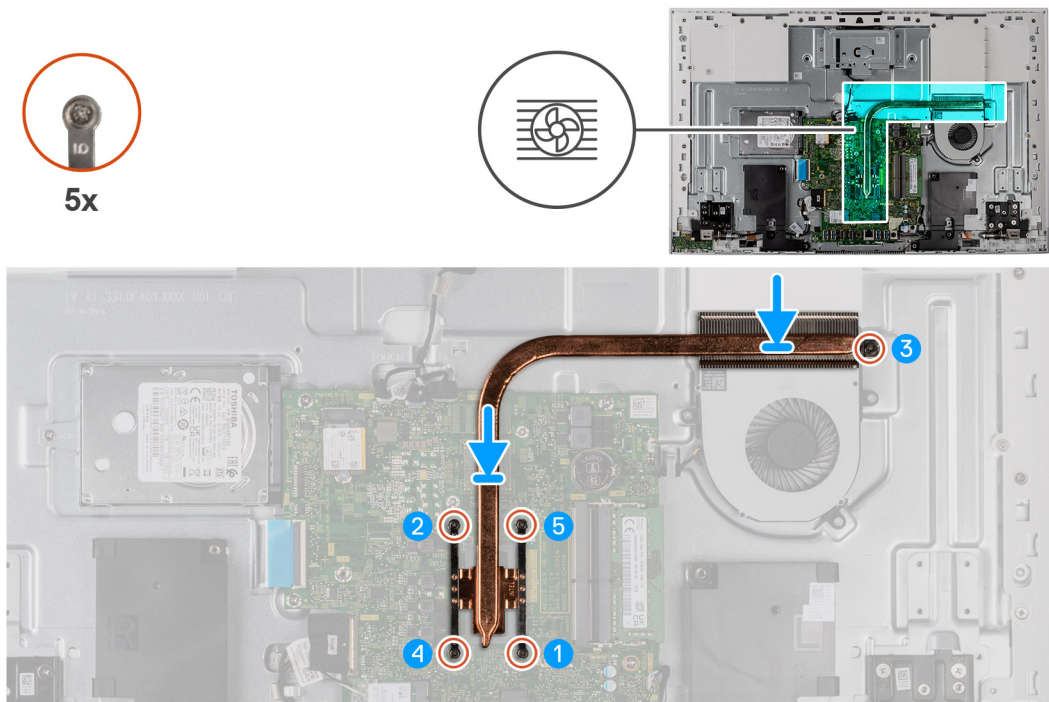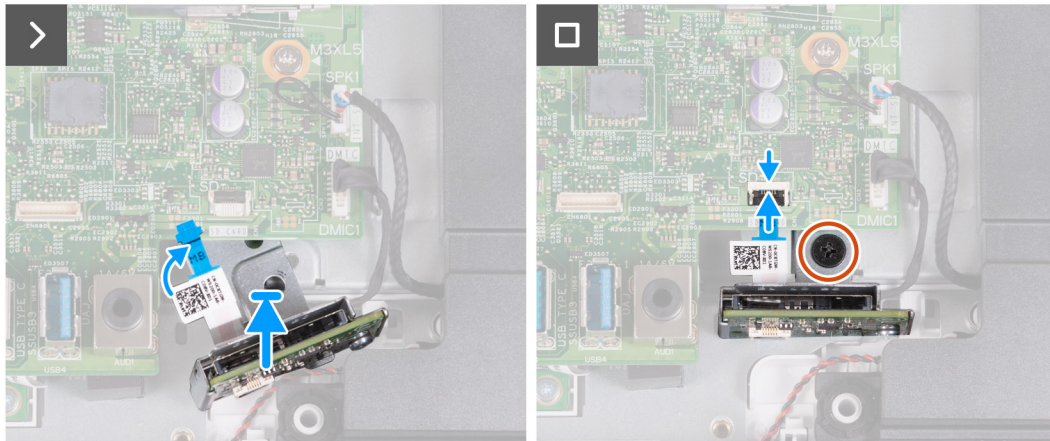
Figure 50. Installing the media-card reader

Steps

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

   (i) **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 secures 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 stand.
4. Install the back cover.
5. Follow the procedure in After working inside your computer.

Power-button board with USB

Removing the power-button board with USB

⚠ **CAUTION: The information in this section is intended for authorized service technicians only.**

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 with USB and provides a visual representation of the removal procedure.
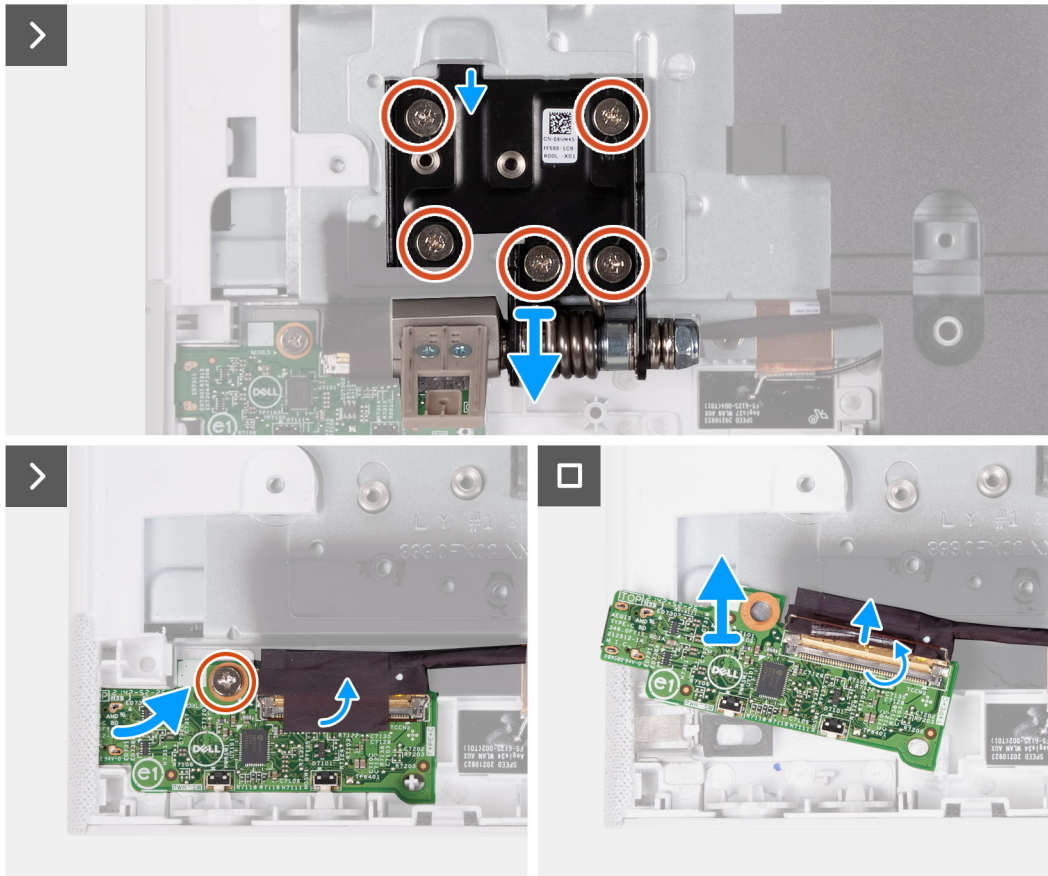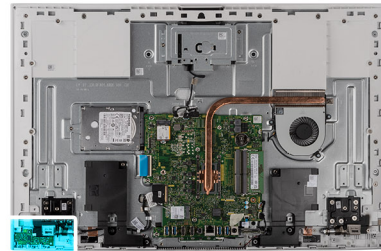
Figure 51. Removing the power-button board with USB

Steps

1. Remove the five screws (M3x4.5) that secure the left stand 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 with USB

⚠ CAUTION: **The information in this section is intended for authorized service technicians only.**

Prerequisites

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

About this task

The following image indicates the location of the power-button board with USB and provides a visual representation of the installation procedure.
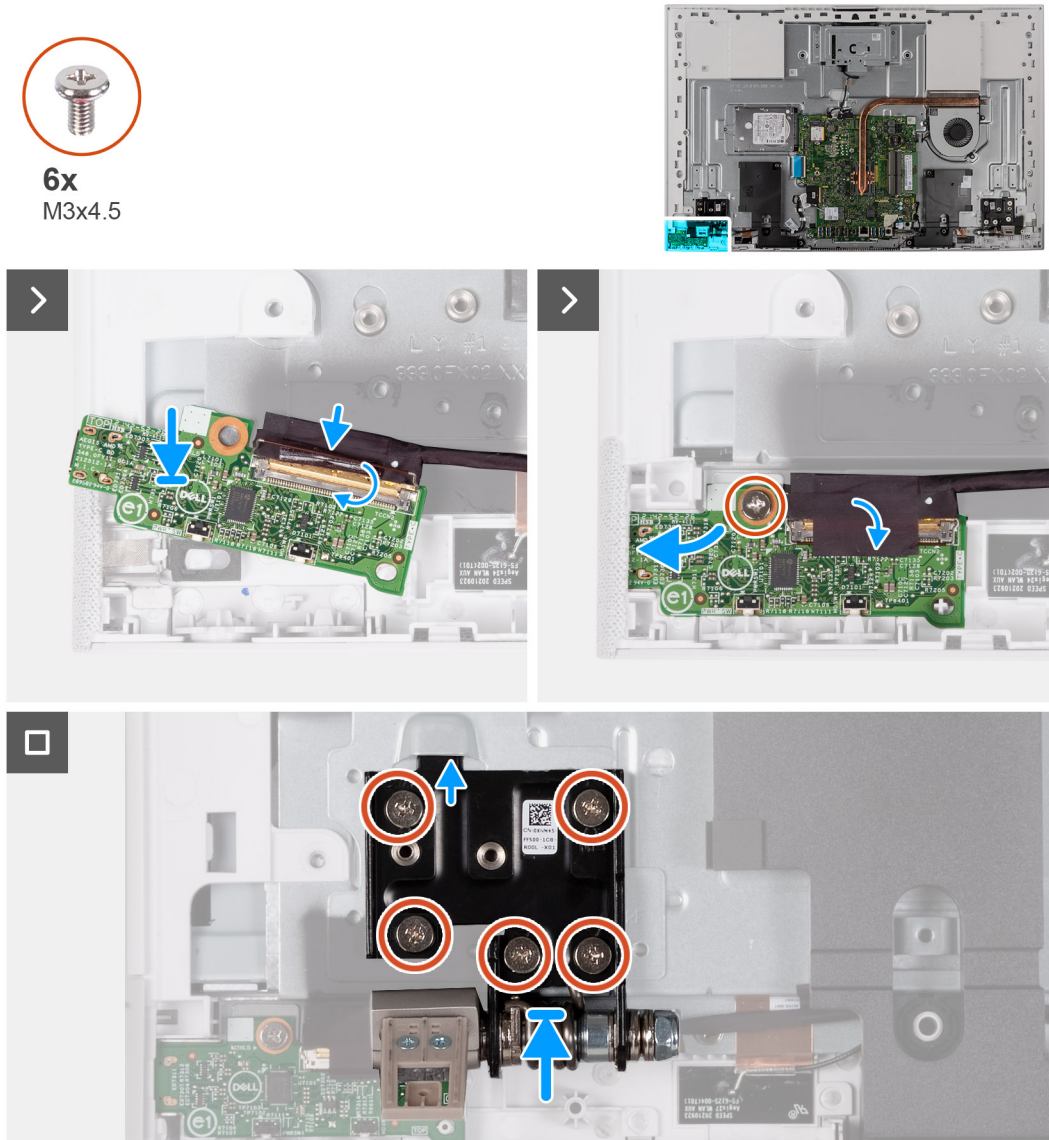
Figure 52. Installing the power-button board with USB

Steps

1. Connect the power-button board cable to the power-button board and close the latch to secure the cable.
2. Using the alignment tabs as reference, align and place the power-button board in the slot on the display-assembly base.
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 (M3x4.5) that secure the left stand 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

⚠ CAUTION: **The information in this section is intended for authorized service technicians only.**

Prerequisites

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

   ⓘ **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.

   ⓘ **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 hard drive.
6. Remove the system-board shield.
7. Remove the memory module.
8. Remove the wireless card.
9. Remove the M.2 2230 solid-state drive or M.2 2280 solid-state drive, as applicable.
10. Remove the integrated heat sink or discrete heat sink.

About this task

The following image indicates the connectors on your system board.
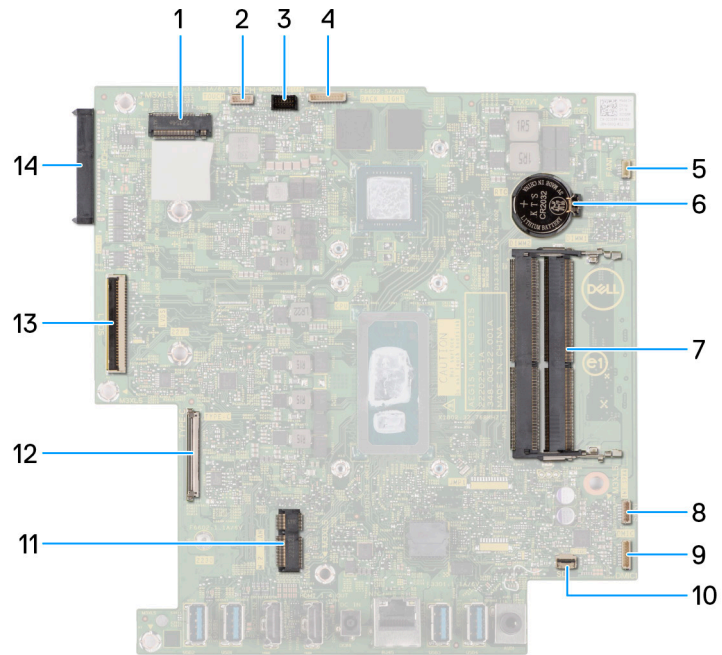
Figure 53. System-board connectors

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 slots
8. Speaker-cable connector
9. Microphone-module cable connector
10. Media-card reader cable connector
11. Wireless-card slot
12. Power-button board cable connector
13. Display-cable connector
14. Hard-disk drive connector

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

Figure 54. Removing the system board
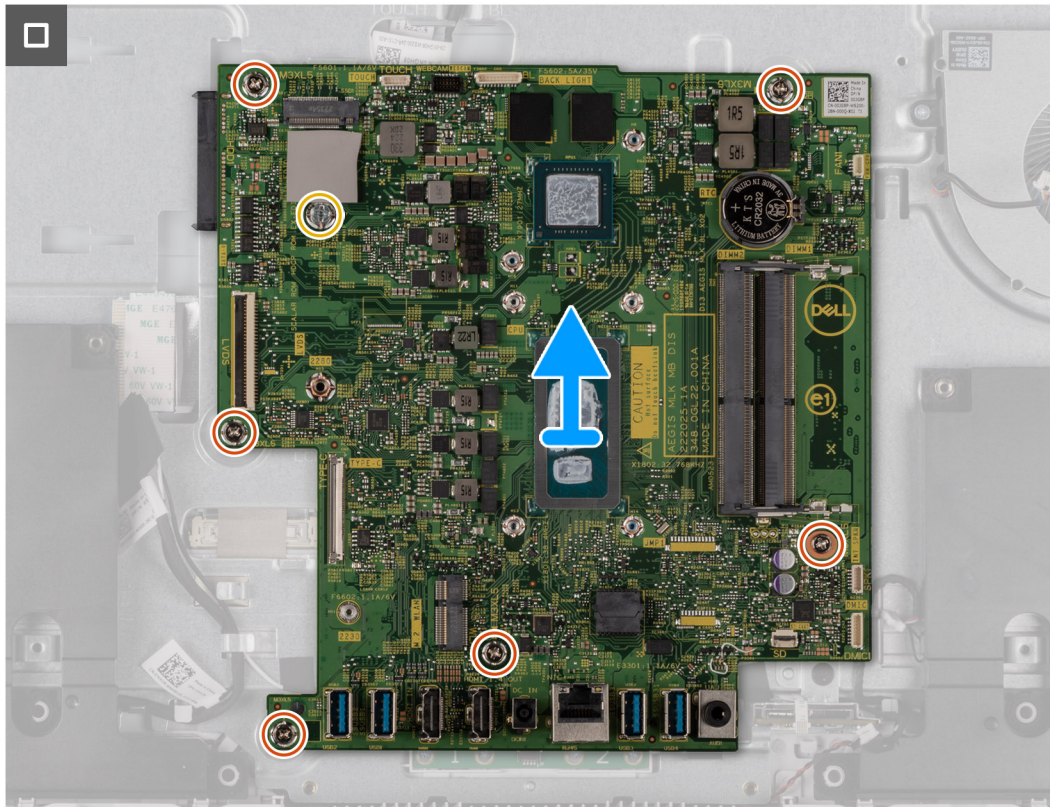
Figure 55. Lifting the system board off the chassis

Steps

1. Disconnect the touchscreen cable from the system board.

   (i) **NOTE:** This cable is only available on computers that support the 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. Open the latch and 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. Open the latch and 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

⚠ **CAUTION: The information in this section is intended for authorized service technicians only.**

Prerequisites

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

About this task

The following image indicates the connectors on your system board.
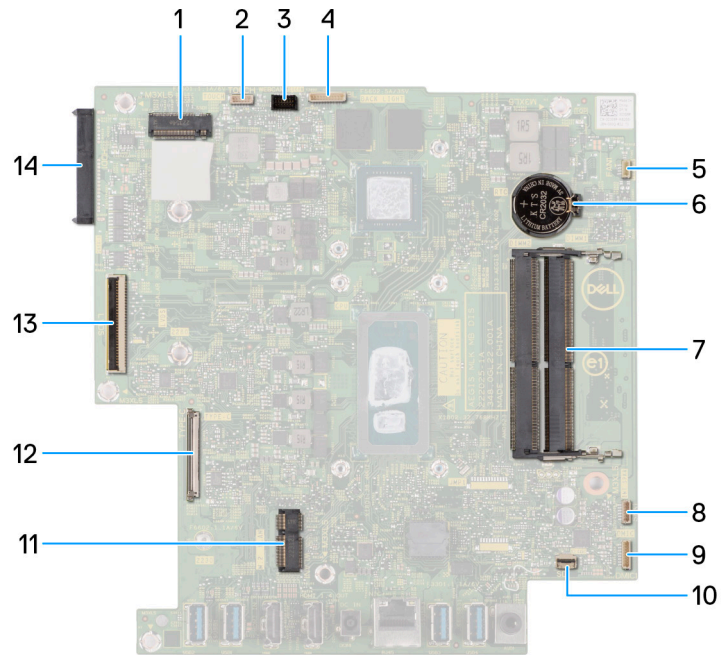
Figure 56. System-board connectors

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 slots
8. Speaker-cable connector
9. Microphone-module cable connector
10. Media-card reader cable connector
11. Wireless-card slot
12. Power-button board cable connector
13. Display-cable connector
14. Hard-disk drive connector

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

**Figure 57. Placing the system board in the chassis**
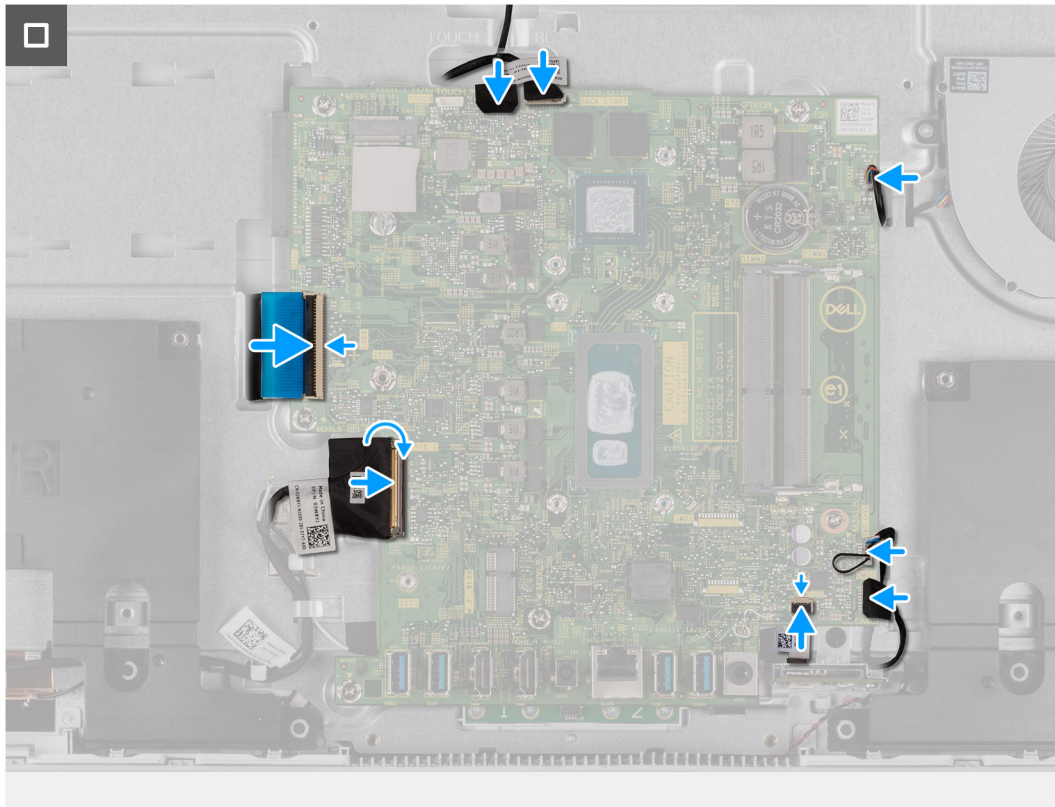
Figure 58. Installing the system board

Steps

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

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

Next steps

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

10. 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.

(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.

Microphones

Removing the microphones

⚠ **CAUTION: The information in this section is intended for authorized service technicians only.**

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 media-card reader.
8. Remove the memory module.
9. Remove the wireless card.
10. Remove the M.2 2230 solid-state drive or, M.2 2280 solid-state drive, as applicable.
11. Remove the integrated heat sink or, discrete heat sink.
12. 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.

**Figure 59. Removing the microphones**

Steps

1. Remove the four screws (M2X3.5) that secure the microphone module 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 module off the display-assembly base.

Installing the microphones

⚠️ **CAUTION: The information in this section is intended for authorized service technicians only.**

Prerequisites

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

About this task

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

Figure 60. Installing the microphones

Steps

1. Align and place the microphone module into the slot on the display-assembly base.
2. Replace the four screws (M2X3.5) that secure the microphone module 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 integrated heat sink or, discrete heat sink.
3. Install the M.2 2230 solid-state drive or, M.2 2280 solid-state drive, as applicable.
4. Install the wireless card.
5. Install the memory module.
6. Install the media-card reader.
7. Install the system-board shield.
8. Install the hard drive.
9. Install the I/O cover.
10. Install the back cover.
11. Install the stand.

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

Antennas

Removing the antennas

⚠ CAUTION: **The information in this section is intended for authorized service technicians only.**

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 media-card reader.
8. Remove the memory module.
9. Remove the wireless card.
10. Remove the M.2 2230 solid-state drive or, M.2 2280 solid-state drive, whichever applicable.
11. Remove the integrated heat sink or discrete heat sink
12. Remove the system board.
13. Remove the speakers.
14. Remove the stand 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.
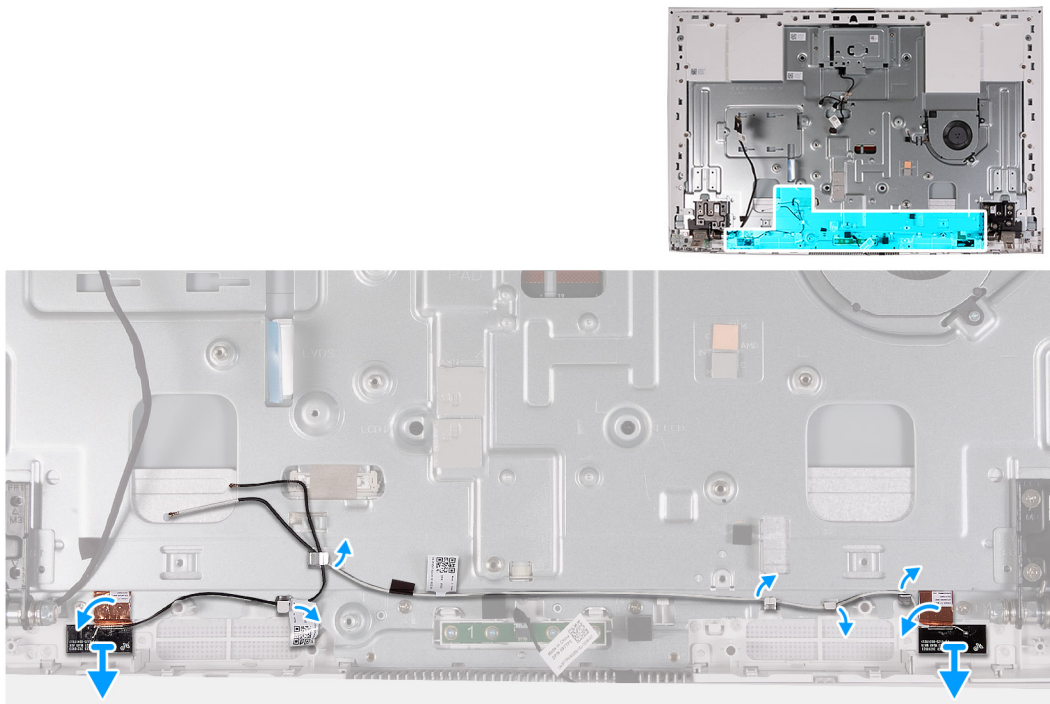
Figure 61. Removing the antennas

Steps

1. Remove the antenna cables from the routing guides on the display-assembly base.

   (i) **NOTE:** Make a note of the cable routing, before removing the them form the routing guides. Also, the location of the antenna modules are printed on the display-assembly base as ANT-B (black) and ANT-W (white).

2. Carefully peel the copper foil that secures the antenna cables on both sides of the display-assembly base.
3. Lift the antenna modules off the display-assembly base.

Installing the antennas

⚠ **CAUTION: The information in this section is intended for authorized service technicians only.**

Prerequisites

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

About this task

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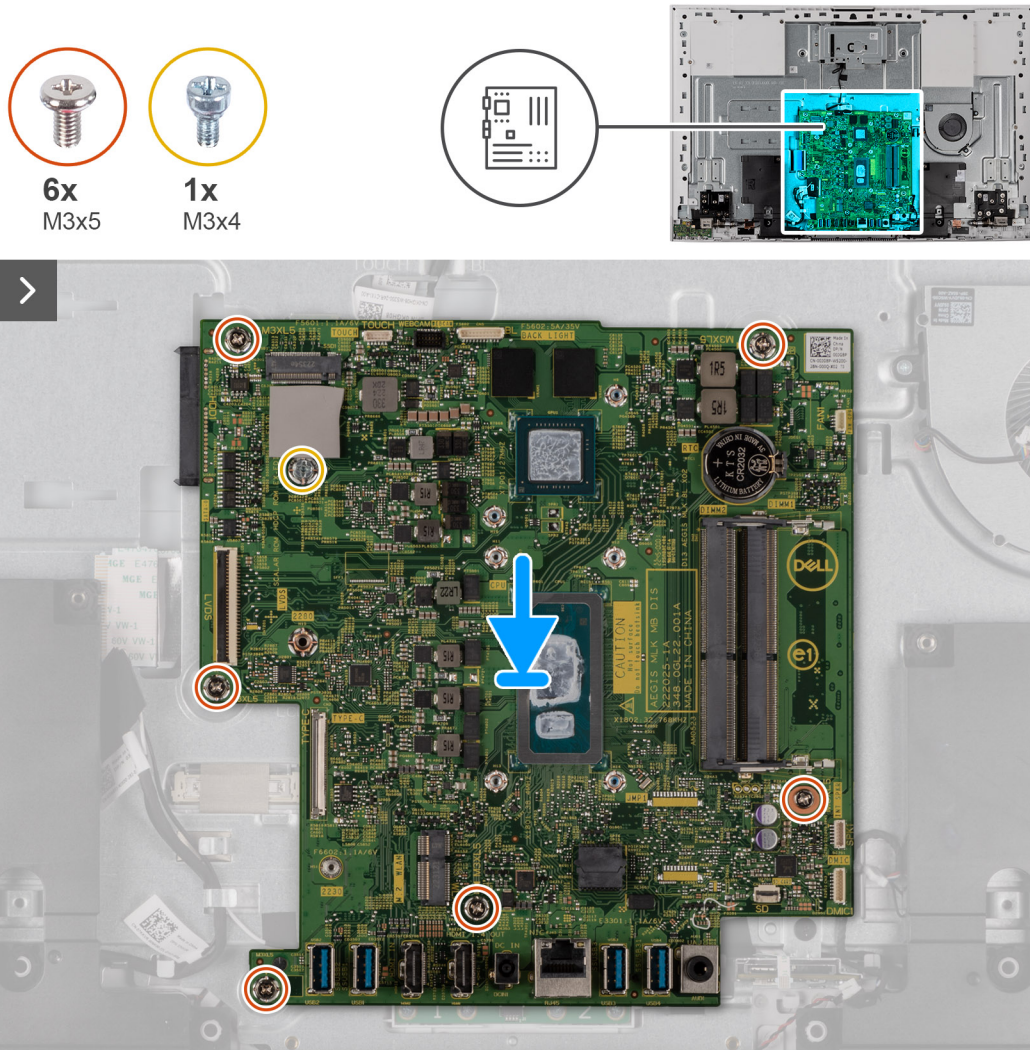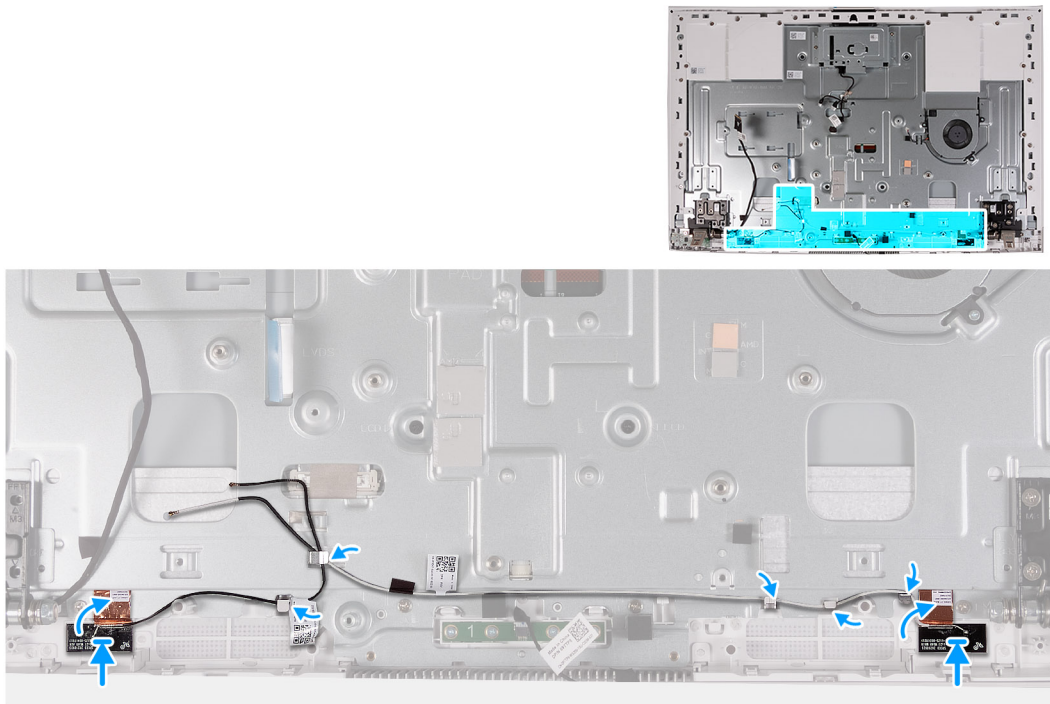

Figure 62. Installing the antennas

Steps

1. Align and place the antenna modules into the slots on the display-assembly base.

   (i) **NOTE:** The location of the antenna modules are printed on the display-assembly base as ANT-B (black) and ANT-W (white).

2. Adhere the copper foil that secures the antenna cables on both sides of 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 stand hinges.

3. Install the speakers.
4. Install the system board.
5. Install the integrated heat sink or discrete heat sink.
6. Install the M.2 2230 solid-state drive or M.2 2280 solid-state drive, as applicable.
7. Install the wireless card.
8. Install the memory module.
9. Install the media-card reader.
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

⚠ **CAUTION: The information in this section is intended for authorized service technicians only.**

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 wireless card.
9. Remove the M.2 2230 solid-state drive or, M.2 2280 solid-state drive, which ever applicable.
10. Remove the integrated heat sink or, discrete heat sink.
11. Remove the system board.

About this task

The following image indicates the location of the display panel and provides a visual representation of the removal procedure.
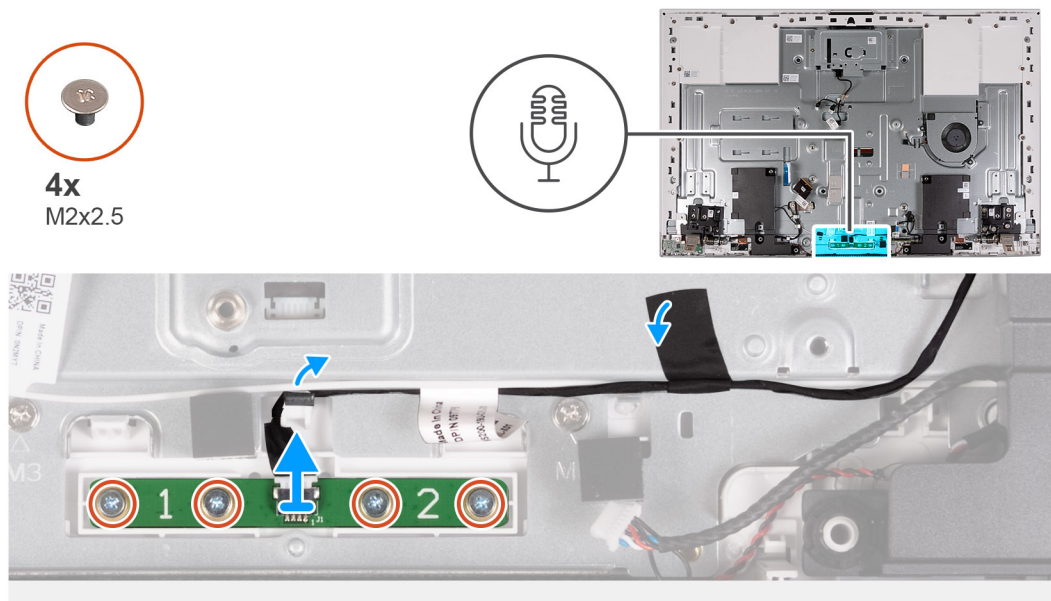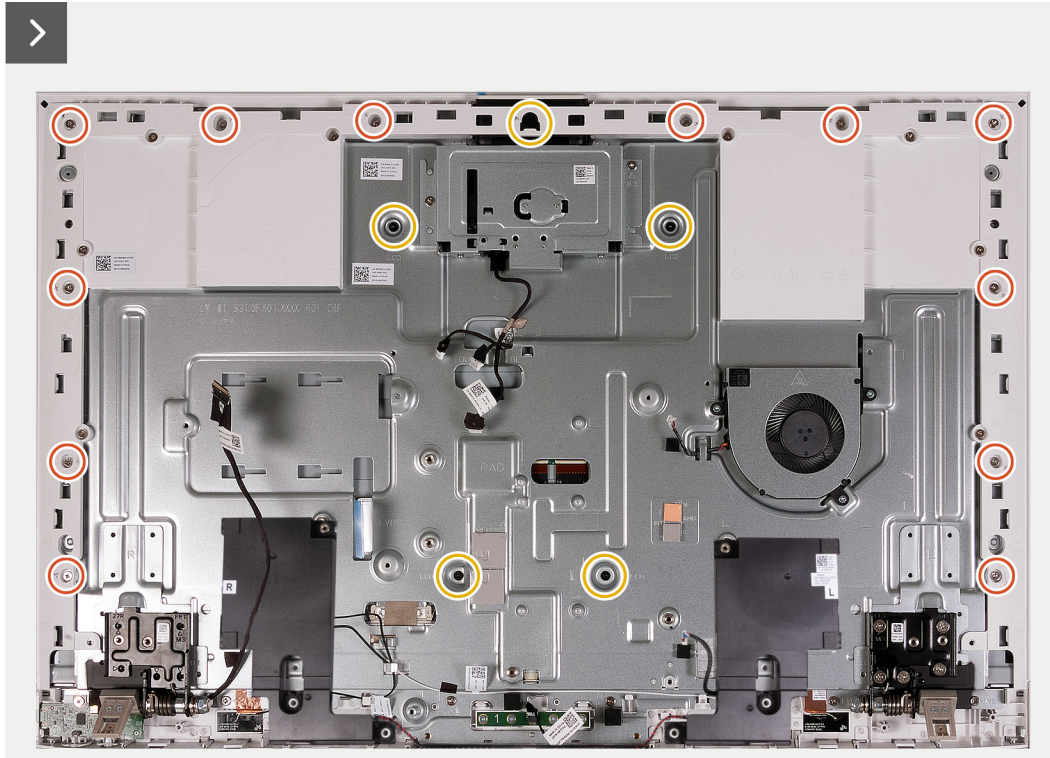
Figure 63. Removing the screws

Figure 64. Removing the display panel

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 cable, touchscreen cable, and display cable on the display panel through the slots on the display-assembly base.
6. Lift the display panel up from the display-assembly base.

Installing the display panel

⚠ CAUTION: **The information in this section is intended for authorized service technicians only.**

Prerequisites

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

About this task

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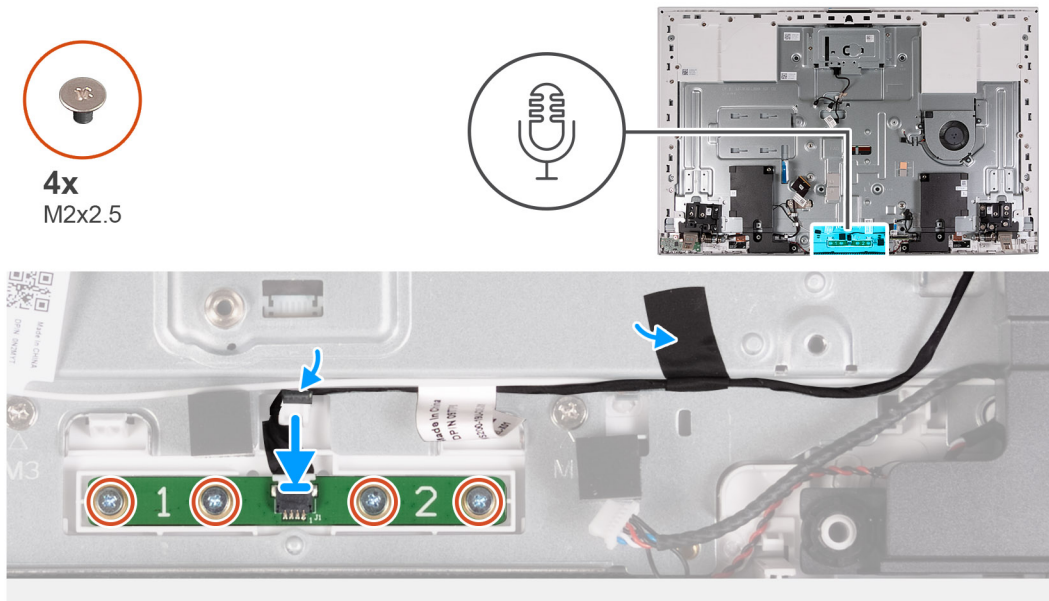

Figure 65. Installing the display panel
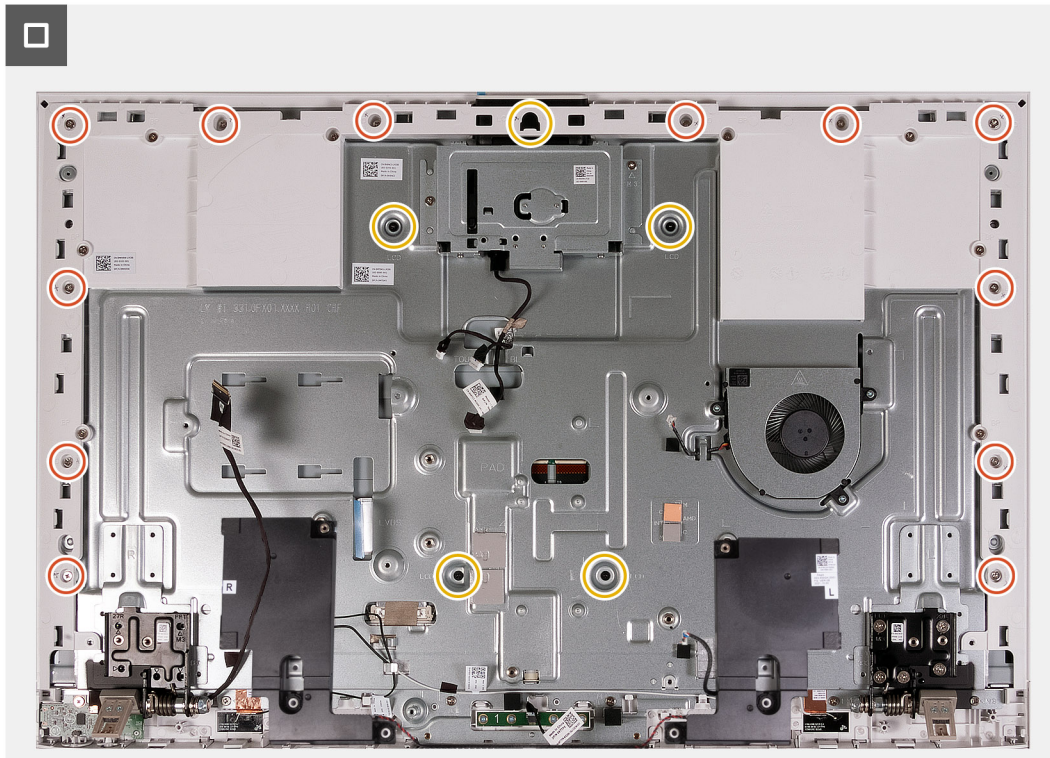
Figure 66. Replacing the screws

Steps

1. Slide and insert the display panel into the slot on the display-assembly base.
2. Route the display-backlight cable, touchscreen cable, and display cable on the display panel 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 (M3x3) 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 integrated heat sink or, discrete heat sink.
3. Install the M.2 2230 solid-state drive or, M.2 2280 solid-state drive, which ever applicable.
4. Install the wireless card.
5. Install the media-card reader.
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.

Middle frame assembly

Removing the middle-frame assembly

⚠️ **CAUTION: The information in this section is intended for authorized service technicians only.**

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 media-card reader.
8. Remove the fan.
9. Remove the memory module.
10. Remove the wireless card.
11. Remove the retractable-camera assembly.
12. Remove the M.2 2230 solid-state drive or, M.2 2280 solid-state drive, which ever applicable.
13. Remove the integrated heat sink or, discrete heat sink.
14. Remove the system board.
15. Remove the speakers.
16. Remove the microphones.
17. Remove the stand hinges.
18. Remove the power-button board with USB.
19. Remove the display panel.

About this task

The following image indicates the location of the middle-frame assembly and provides a visual representation of the removal procedure.
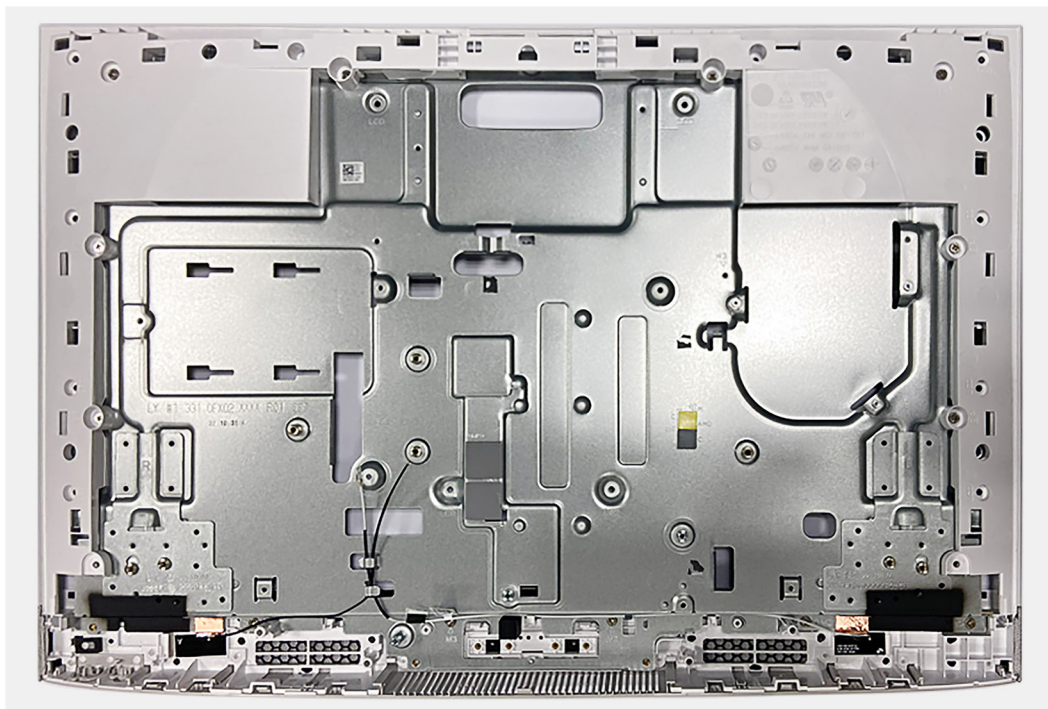

Figure 67. Removing the middle-frame assembly

Steps

After performing the pre-requisites, you are left with the middle-frame assembly.

ⓘ **NOTE:** The middle-frame assembly consists of the following:

- Middle frame
- Base panel
- Wireless antennas (2)

Installing the middle-frame assembly

⚠ **CAUTION: The information in this section is intended for authorized service technicians only.**

Prerequisites

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

About this task

The following image indicates the location of the middle-frame assembly and provides a visual representation of the installation procedure.
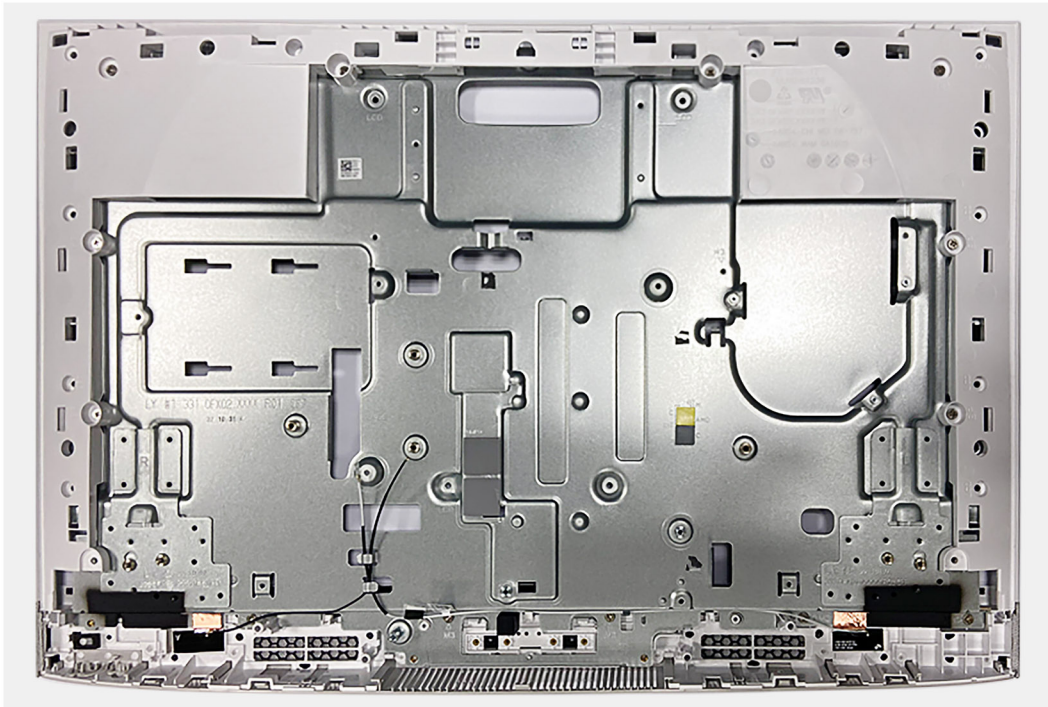

Figure 68. Installing the middle-frame assembly

Steps

Place the middle-frame assembly on a flat and clean surface and perform the steps in the Post-requisites to install the middle-frame assembly.

ⓘ **NOTE:** The middle-frame assembly consists of the following:

- Middle frame
- Base panel
- Wireless antenna

Next steps

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

Software

This chapter details the supported operating systems along with instructions on how to install the drivers.

Operating system

Your Inspiron 27 7720 All-in-One supports the following operating systems:

- Windows 11 Pro
- Windows 11 Home

Drivers and downloads

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

BIOS Setup

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

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

ⓘ **NOTE:** Before you change the settings in BIOS Setup, it is recommended that you note down the original settings for future reference.

Use BIOS Setup 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.
ⓘ **NOTE:** If you are connected to the Dell Pro Wireless Keyboard KM5221W, press Fn+F2.

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 computer.

Table 27. Navigation keys

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. ⓘ **NOTE:** For the standard graphics browser only.
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 computer.

One time boot menu

To enter **one time boot menu**, turn on your computer, and then press F12 immediately.

NOTE: If you are connected to the Dell Pro Wireless Keyboard KM5221W, press Fn+F12.

NOTE: It is recommended to shutdown the computer if it is on.

The one-time boot menu displays the devices that you can boot from including the diagnostic option. The boot menu options are:

- Windows Boot Manager
- UEFI HTTPs Boot
- UEFI RST Micron 2450 SSD
- Onboard NIC (IPV4)
- Onboard NIC (IPV6)

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

System setup options

NOTE: Depending on your system and its installed devices, the items that are listed in this section may or may not appear.

Table 28. System setup options—System information menu

Overview	
Inspiron 27 7720 All-in-One	
BIOS Version	Displays the BIOS version number.
Service Tag	Displays the Service Tag of the system.
Asset Tag	Displays the Asset Tag of the system.
Manufacture Date	Displays the manufacture date of the system.
Ownership Date	Displays the ownership date of the system.
Express Service Code	Displays the express service code of the system.
Ownership Tag	Displays the Ownership Tag of the system.
Signed Firmware Update	Displays whether the Signed Firmware Update is enabled on your system.
Processor Information	
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 Information	
Memory Installed	Displays the total system memory installed.
Memory Available	Displays the total system memory available.
Memory Speed	Displays the memory speed.
Memory Channel Mode	Displays single or dual channel mode.

Table 28. System setup options—System information menu (continued)

Overview	
Memory Technology	Displays the technology that is used for the memory.
DIMM 1 Size	Displays the DIMM type and memory capacity or if the memory slot is empty.
DIMM 2 Size	Displays the DIMM type and memory capacity or if the memory slot is empty.
Devices Information	
Panel Type	Displays the Panel Type of the system.
Video Controller	Displays the video controller type of the system.
Video Memory	Displays the video memory information of the system.
Wi-Fi Device	Displays the wireless device information of the system.
Native Resolution	Displays the native resolution of the system.
Video BIOS Version	Displays the video BIOS version of the system.
Audio Controller	Displays the audio controller information of the system.
Bluetooth Device	Displays the Bluetooth device information of the system.
LOM MAC Address	Displays the LOM MAC Address of the system.

Table 29. System setup options—Boot Configuration menu

Boot Configuration	
Boot Sequence	
Boot mode	Displays the boot mode.
	By default the Boot Mode is UEFI only.
Boot Sequence	Displays the available Boot Options and to configure Boot Options.
Secure Digital (SD) Card Boot	Enable or disable the SD card read-only boot.
	By default, the **Secure Digital (SD) Card Boot** option is not enabled.
Secure Boot	
Enable Secure Boot	Enable or disable the secure boot feature.
	By default, the option is not enabled.
Enable Microsoft UEFI CA	Enable or disable Microsoft UEFI CA (Certificate Authority).
	By default, Microsoft UEFI CA is enabled.
Secure Boot Mode	Enable or disable to change the secure boot mode options.
	By default, the **Deployed Mode** is enabled.
Expert Key Management	
Enable Custom Mode	Enable or disable custom mode.
	By default, the **Custom Mode** option is not enabled.
Custom Mode Key Management	Select the custom values for expert key management.

Table 30. System setup options—Integrated Devices menu

Integrated Devices	
Date/Time	Displays the current date in MM/DD/YYYY format and current time in HH:MM:SS AM/PM format.
Camera	Enables or disable the camera.
	By default, the **Enable Camera** option is selected

Table 30. System setup options—Integrated Devices menu (continued)

Integrated Devices	
Audio	
Enable Audio	Enable or disable the integrated audio controller.
	By default, all the options are enabled.
USB Configuration	● Enable or disable booting from USB mass storage devices that are connected to external USB ports.
	By default, all options are enabled.

Table 31. System setup options—Storage menu

Storage	
SATA/NVMe Operation	
SATA/NVMe Operation	Set the operating mode of the integrated storage device controller.
	By default, the **RAID On** option is enabled.
Storage interface	
Port Enablement	This page allows you to enable the onboard drives.
	By default, all the options are enabled.
SMART Reporting	
Enable SMART Reporting	Enable or disable Self-Monitoring, Analysis, and Reporting Technology (SMART) during system startup.
	By default, the **Enable SMART Reporting** option is not enabled.
Drive Information	
SATA-0	
Type	Displays the SATA-0 type information of the system.
Device	Displays the SATA-0 device information of the system.
M.2 PCIe SSD	
Type	Displays the M.2 PCIe SSD type information of the system.
Device	Displays the M.2 PCIe SSD device information of the system.

Table 32. System setup options—Display menu

Display	
OSD Button management	
Disable OSD Buttons	Enable or disable the OSD (On-Screen Display) buttons of the system.
	By default, the option is disabled.
Full Screen Logo	Enable or disable full screen logo.
	By default, the option is not enabled.

Table 33. System setup options—Connection menu

Connection	
Network Controller Configuration	
Integrated NIC	Displays the options for on-board LAN controller.
	By default, the **Enabled with PXE** option is selected.
Wireless Device Enable	

Table 33. System setup options—Connection menu (continued)

Connection	
WLAN	Enable or disable the internal WLAN device.
	By default, the option enabled.
Bluetooth	Enable or disable the internal Bluetooth device
	By default, the option enabled.
Enable UEFI Network Stack	Enable or disable UEFI Network Stack and controls the on-board LAN Controller.
	By default, the **Enable UEFI Network Stack** option is enabled.
HTTP(s) Boot Feature	
HTTP(s) Boot	Enable or disable the HTTP(s) Boot feature.
	By default, the **HTTP(s) Boot** option is disabled.
HTTP(s) Boot Modes	Displays the options for HTTP(s) Boot Modes.
	By default, the **Auto Mode** option is selected.

Table 34. System setup options—Power menu

Power	
USB PowerShare	Enable or disable USB PowerShare for the system.
	By default, the option is enabled.
USB Wake Support	
Enable USB Wake Support	When enabled, the USB devices like a mouse or keyboard can be used to wake the system from Standby, Hibernate, and Power Off.
	ⓘ **NOTE:** This feature requires Deep Sleep Control to be disabled.
	ⓘ **NOTE:** This feature is only functional when the AC power adapter is connected. If the AC power adapter is removed before Standby, the BIOS will remove power from all of the USB ports to conserve battery power.
	By default, the **Enable USB Wake Support** option is disabled.
AC Behaviour	
AC Recovery	Displays the options for AC Behavior when there is a sudden loss of power.
	By default, the **PowerOff** option is selected.
Block Sleep	
Block Sleep	Enable or disable Block Sleep in the operating system.
	By default, the option is enabled.
Deep Sleep Control	Enable or disable the Deep Sleep Control.
	By default, the option **Disabled** is selected.
Intel Speed Shift Technology	Enable or disable the Intel speed shift technology support.
	By default, the option is enabled.

Table 35. System setup options—Security menu

Security	
Intel Platform Trust Technology	
Intel Platform Trust Technology On	Enable or disable the Intel Platform Trust Technology (PTT) feature in the OS.

Table 35. System setup options—Security menu (continued)

Security	
	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	Enable or disable additional UEFI SMM Security Mitigation protections.
	By default, the option is enabled.
Data Wipe on Next Boot	
Start Data Wipe	Enable or disable the data wipe on next boot.
	By default, the **Start Data Wipe** option is disabled.
	⚠ **WARNING: The Secure Wipe Operation will delete information in a way that it cannot be reconstructed.**
Absolute	Enable or disable or permanently disable the BIOS module interface of the optional Absolute Persistence Module service from Absolute software.
	By default, the option **Enable Absolute** option is selected.
	⚠ **WARNING: The 'Permanently Disabled' option can only be selected once. When 'Permanently Disabled' is selected, Absolute Persistence cannot be re-enabled. No further changes to the Enable/Disable states are allowed.**
	ⓘ **NOTE:** The Enable/Disable options will be unavailable while Computrace is in the activated state.
UEFI Boot Path Security	Controls whether the system will prompt the user to enter the admin password (if set) when booting to a UEFI boot path device from the One Time Boot menu.
	By default, the **Always Except Internal HDD** option is enabled.
Authenticated BIOS Interface	
Enabled Authenticated BIOS Interface	Enables or disables the Authenticated BIOS Interface
	By default, the option is disabled.
Clear Certificate Store	Enable or disable clearance of all certificates in KMS storage
	By default, the option is disabled.
Legacy Manageability Interface Access	Displays the options for the platform administrator to control access via the Legacy Manageability Interface.
	By default, the **Enabled** option is selected.
Firmware Device Tamper Detection	Displays the options for the Firmware Device Tamper Detection feature.
	By default, the **Silent** option is selected.

Table 36. System setup options—Passwords menu

Passwords	
Admin Password	Set, change, or delete the administrator password.

Table 36. System setup options—Passwords menu (continued)

Passwords	
System Password	Set, change, or delete the system password.
Internal HDD-0	Enables the user to set, change, or delete the HDD password.
NVMe SSD0	Set, change, or delete the NVMe SSD0 password.
Password Configuration	
Upper Case Letter	Reinforces password must have at least one upper case letter.
	By default, the option is disabled.
Lower Case Letter	Reinforces password must have at least one lower case letter.
	By default, the option is disabled.
Digit	Reinforces password must have at least one digit number.
	By default, the option is disabled.
Special Character	Reinforces password must have at least one special character.
	By default, the option is disabled.
Minimum Characters	Set the minimum characters allowed for password.
Password Bypass	When enabled, this always prompts for system and internal hard drive passwords when powered on from the off state.
	By default, the **Disabled** option is selected.
Password Changes	
Enable Non-Admin Password Changes	Enable or disable to change system and hard drive password without the need for admin password.
	By default, the option is enabled.
Admin Setup Lockout	
Enable Admin Setup Lockout	Enables administrators control over how their users can or cannot access BIOS setup.
	By default, the option is disabled.
Master Password Lockout	
Enable Master Password Lockout	When enabled, this disables the master password support.
	By default, the option is disabled.
Allow Non-Admin PSID Revert	
Enable Allow Non-Admin PSID Revert	Controls access to the Physical Security ID (PSID) revert of NVMe hard-drives from the Dell Security Manager prompt.
	By default, the option is disabled.

Table 37. System setup options—Update, Recovery menu

Update, Recovery	
UEFI Capsule Firmware Updates	Enable or disable BIOS updates through UEFI capsule update packages.
	ⓘ **NOTE:** Disabling this option will block BIOS updates from services such as Microsoft Windows Update and Linux Vendor Firmware Service (LVFS).
	By default, the option is enabled.
BIOS Recovery from Hard Drive	Enables the user to recover from certain corrupted BIOS conditions from a recovery file on the user primary hard drive or an external USB key.
	By default, the option is enabled.

Table 37. System setup options—Update, Recovery menu (continued)

Update, Recovery	
	ⓘ **NOTE:** BIOS Recovery from Hard Drive is not available for self-encrypting drives (SED).
BIOS Downgrade	
Allow BIOS Downgrade	This field controls the flashing of the system firmware to previous revisions.
	By default, the option is enabled.
SupportAssist OS Recovery	Enable or disable the boot flow for SupportAssist OS Recovery tool in the event of certain system errors.
	By default, the option is enabled.
BIOSConnect	Enable or disable cloud Service operating system recovery if the main operating system fails to boot with the number of failures equal to or greater than the value specified by the Auto operating system Recovery Threshold setup option and local Service operating system does not boot or is not installed.
	By default, the option is enabled.
Dell Auto operating system Recovery Threshold	Controls the automatic boot flow for SupportAssist System Resolution Console and for Dell operating system Recovery Tool.
	By default, the threshold value is set to 2.

Table 38. System setup options—System Management menu

System Management	
Service Tag	Displays the Service Tag of the system.
Asset Tag	Create a system Asset Tag.
AC Behavior	
Wake on LAN/WAN	Displays the options for Wake on LAN/WAN.
	By default, the **Disabled** option is selected.
Diagnostics	
OS Agent Request	Enable or disable Dell OS agents to schedule onboard diagnostics.
	By default, the option is enabled.
Power-on-Self-Test Automatic Recovery	Enable or disable the BIOS to automatically recover the system.
	By default, the option is enabled.

Table 39. System setup options—Keyboard menu

Keyboard	
Keyboard Errors	
Enable Keyboard Error Detection	Enable or disable keyboard related errors to be reported when the system boots.
	By default, the option is enabled.
Numlock LED	
Enable Numlock LED	Enable or disable whether Numlock LED should be on when the system boots
	By default, the system is enabled.

Table 40. System setup options—Pre-boot Behavior menu

Pre-boot Behavior	
Adapter Warnings	
Enable Adapter Warnings	Enable or disable the warning messages during boot when the adapters with less power capacity are detected.
	By default, the option is enabled.
Warning and Errors	Enable or disable the action to be done when a warning or error is encountered.
	By default, the **Prompt on Warnings and Errors** option is enabled.
Fastboot	Allows you to configure the speed of the UEFI boot process.
	By default, the **Minimal** option is enabled.
Extend BIOS POST Time	Set the BIOS POST load time.
	By default, the **0 seconds** option is enabled.

Table 41. System setup options—Virtualization menu

Virtualization	
Intel Virtualization Technology	
Enable Intel Virtualization Technology (VT)	When enabled, the system will be able to run a Virtual Machine Monitor (VMM).
	By default, the option is enabled.
VT for Direct I/O	When enabled, the system will be able to perform Virtualization Technology for Direct I/O (VT-d).
	By default, the option is enabled.
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 42. System setup options—Performance menu

Performance	
Multi-Core Support	
All cores	By default, **All Cores** are selected.
Active Core Selection	By default, the number of cores is set at **01**.
Multiple Atom Cores	Enables to change the number of CPU cores available to the operating system.
	By default, the **All Cores** option is selected.
Intel SpeedStep	
Enable Intel SpeedStep Technology	Enables the system to dynamically adjust processor voltage and core frequency, decreasing average power consumption and heat production.
	By default, the option is enabled.
C-States Control	
Enable C-State Control	Enable the ability of the CPU to enter and exit low power state. When disabled, it disabled all C-states. When enabled, it enabled all C-states that the chipset or platform allows.

Table 42. System setup options—Performance menu (continued)

Performance	
	By default, the option is enabled.
Intel Turbo Boost Technology	
Enable Intel Turbo Boost Technology	Enable or disable the Intel TurboBoost mode of the processor.
	By default, the option is enabled.
Intel Hyper-Threading Technology	
Enable Intel Hyper-Threading Technology	Enable or disable Hyper-Threading in the processor.
	By default, the option is enabled.

Table 43. System setup options—System Logs menu

System Logs	
BIOS Event Log	
Clear Bios Event Log	Displays BIOS events.
	By default, the **Keep Log** option is enabled.

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 about how to update the system BIOS, search in the Knowledge Base Resource 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, search the Knowledge Base Resource 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** .

   ⓘ **NOTE:** If you are connected to the Dell Pro Wireless Keyboard KM5221W, press Fn+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 in Linux and Ubuntu

To update the system BIOS on a computer that is installed with Linux or Ubuntu, see the knowledge base article 000131486 at www.dell.com/support.

Updating the BIOS from the 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 **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 **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 **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 **One Time Boot** menu can use this function.

Updating from the One Time Boot menu

To update your BIOS from the **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 One Time Boot 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.

   ⓘ **NOTE:** If you are connected to the Dell Pro Wireless Keyboard KM5221W, press Fn+F12.

   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.

System and setup password

Table 44. System and setup password

Password type	Description
System password	Password that you must enter to log in 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 that is stored on your computer, when 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.

ⓘ **NOTE:** If you are connected to the Dell Pro Wireless Keyboard KM5221W, press Fn+F12.

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.

ⓘ **NOTE:** If you are connected to the Dell Pro Wireless Keyboard KM5221W, press Fn+F12.

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.

   ⓘ **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 about how to reset Windows or application passwords, see the documentation accompanying Windows or your application.

Troubleshooting

Dell SupportAssist Pre-boot System Performance Check diagnostics

About this task

SupportAssist diagnostics (also known as system diagnostics) performs a complete check of your hardware. The Dell SupportAssist Pre-boot System Performance Check diagnostics is embedded with the BIOS and launched by the BIOS internally. The embedded system diagnostics provides options for particular devices or device groups allowing you to:

- Run tests automatically or in an interactive mode.
- Repeat the tests.
- Display or save test results.
- Run thorough tests to introduce additional test options to provide extra information about one or more failed devices.
- View status messages that inform you the tests are completed successfully.
- View error messages that inform you of problems encountered during testing.

(i) **NOTE:** Some tests for specific devices require user interaction. Always ensure that you are present at the computer terminal when the diagnostic tests are performed.

For more information, see the knowledge base article 000180971.

Running the SupportAssist Pre-Boot System Performance Check

Steps

1. Turn on your computer.
2. As the computer boots, press the F12 key as the Dell logo appears.
3. On the boot menu screen, select the **Diagnostics** option.
4. Click the arrow at the bottom left corner.
   Diagnostics front page is displayed.
5. Click the arrow in the lower-right corner to go to the page listing.
   The items that are detected are listed.
6. To run a diagnostic test on a specific device, press Esc and click **Yes** to stop the diagnostic test.
7. Select the device from the left pane and click **Run Tests**.
8. If there are any issues, error codes are displayed.
   Note the error code and validation number and contact Dell.

System-diagnostic lights

This section lists the system-diagnostic lights of your Inspiron 27 7720 All-in-One.

Table 45. System-diagnostic lights

Blinking pattern		Problem description	Suggested resolution
Amber	White		
1	1	TPM detection failure	Replace the system board.
1	2	Unrecoverable SPI Flash Failure	Replace the system board.

Table 45. System-diagnostic lights (continued)

Blinking pattern		Problem description	Suggested resolution
Amber	**White**		
1	5	EC unable to program i-Fuse	Replace the system board.
1	6	Generic catch-all for ungraceful EC code flow errors	Disconnect all power source (AC, battery, coin cell) and drain flea power by pressing and holding down power button for 3~5 seconds.
2	1	CPU failure	● Run the Dell Support Assist/Dell Diagnostics tool. ● If problem persists, replace the system board.
2	2	System board failure (included BIOS corruption or ROM error)	● Flash latest BIOS version ● If problem persists, replace the system board.
2	3	No memory/RAM detected	● Confirm that the memory module is installed properly. ● If problem persists, replace the memory module.
2	4	Memory/RAM failure	● Reset and swap memory modules among the slots. ● If problem persists, replace the memory module.
2	5	Invalid memory installed	● Reset and swap memory modules among the slots. ● If problem persists, replace the memory module.
2	6	System board/Chipset Error	Replace the system board.
2	7	LCD failure (SBIOS message)	Replace the LCD module.
2	8	LCD failure (EC detection of power rail failure)	Replace the system board.
3	1	CMOS battery failure	● Reset the main battery connection. ● If problem persists, replace the main battery.
3	2	PCI or Video card/chip failure	Replace the system board.
3	3	BIOS Recovery image not found	● Flash latest BIOS version ● If problem persists, replace the system board.
3	4	BIOS Recovery image found but invalid	● Flash latest BIOS version ● If problem persists, replace the system board.
3	5	Power rail failure	Replace the system board.

Table 45. System-diagnostic lights (continued)

Blinking pattern		Problem description	Suggested resolution
Amber	**White**		
3	6	Flash corruption detected by SBIOS.	- Press power button for over 25 seconds to do RTC reset. If problem persists, replace the system board. - Disconnect all power source (AC, battery, coin cell) and drain flea power by pressing and holding down power button 3~5 seconds to ensure all power are drained. - Run "BIOS recovery from USB", and the instructions are in the website Dell support. - If problem persists, replace the system board.
3	7	Timeout waiting on ME to reply to HECI message.	Replace the system board.
4	1	Memory DIMM power rail failure	Replace the system board.
4	2	CPU power cable connection issue	Replace the system board.

ⓘ **NOTE:** Blinking pattern 3-3-3 on Lock LED (Caps-Lock or Num-Lock), Power button LED (without Fingerprint reader), and Diagnostic LED indicates failure to provide input during LCD panel test on the "Dell SupportAssist Pre-boot System Performance Check" diagnostics.

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 stand-alone tool that is preinstalled in all Dell computers that are installed with the 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**.

Backup media and recovery options

It is recommended to create a recovery drive to troubleshoot and fix problems that may occur with Windows. Dell proposes multiple options for recovering the Windows operating system on your Dell computer. For more information, see Dell Windows Backup Media and Recovery Options.

Wi-Fi power cycle

About this task

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

(i) **NOTE:** Some Internet Service Providers (ISPs) provide a modem or 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.

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 46. 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 www.dell.com/support/linux
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 about how to find the Service Tag for your computer, see Locate the Service Tag on your computer.
Dell knowledge base articles	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.

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

ⓘ **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.