Vostro 14-5459
Owner's Manual

Regulatory Model: P68G
Regulatory Type: P68G001



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1

Working on your computer

Safety instructions

Use the following safety guidelines to help protect your computer from potential damage and to help to ensure your personal safety. Unless otherwise noted, each procedure included in this document assumes that the following conditions exist:

- You have read the safety information that shipped with your computer.
- A component can be replaced or--if purchased separately--installed by performing the removal procedure in reverse order.

WARNING: Disconnect 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 to the power source.

WARNING: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance

CAUTION: Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. Read and follow the safety instructions that came with the product.

CAUTION: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface, such as a connector on the back of the computer.

CAUTION: Handle components and cards with care. Do not touch the components or contacts on a card. Hold a card by its edges or by its metal mounting bracket. Hold a component such as a processor by its edges, not by its pins.

CAUTION: When you disconnect a cable, pull on its connector or on its pull-tab, not on the cable itself. Some cables have connectors with locking tabs; if you are disconnecting this type of cable, press in on the locking tabs before you disconnect the cable. As you pull connectors apart, keep them evenly aligned to avoid bending any connector pins. Also, before you connect a cable, ensure that both connectors are correctly oriented and aligned.

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

Before working inside your computer

To avoid damaging your computer, perform the following steps before you begin working inside the computer.

1. Ensure that you follow the Safety instructions.
2. Ensure that your work surface is flat and clean to prevent the computer cover from being scratched.
3. Turn off your computer, see Turning off your computer.

   CAUTION: To disconnect a network cable, first unplug the cable from your computer and then unplug the cable from the network device.
4. Disconnect all the network cables from the computer.
5. Disconnect your computer and all attached devices from the electrical outlets.
6. Press and hold the power button while the computer is unplugged to ground the system board.
7. Remove the cover.

   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.

Turning off your computer

CAUTION: To avoid losing data, save and close all open files and exit all open programs before you turn off your computer.

1. Turning off your computer:
   - In Windows 10 (using a touch enabled device or mouse):
     1. Click or tap .
     2. Click or tap and then click or touch **Shut down**.
   - In Windows 8 (using a touch enabled device):
     1. Swipe in from the right edge of the screen, opening the **Charms** menu and select **Settings**.
     2. Tap and then tap **Shut down**
   - In Windows 8 (using a mouse):
     1. Point to upper-right corner of the screen and click **Settings**.
     2. Click and then click **Shut down**.
   - In Windows 7:
     1. Click **Start**.
     2. Click **Shut Down**.

     or

1. Click **Start**.
2. Click the arrow in the lower-right corner of the **Start** menu and then click **Log off**.

2. Ensure that the computer and all attached devices are turned off. If your computer and attached devices did not automatically turn off when you shut down your operating system, press and hold the power button for about 6 seconds to turn them off.

After working inside your computer

After you complete any replacement procedure, ensure you connect any external devices, cards, and cables before turning on your computer.

CAUTION: To avoid damage to the computer, use only the battery designed for this particular Dell computer. Do not use batteries designed for other Dell computers.

1. Connect any external devices, such as a port replicator or media base, and replace any cards, such as an ExpressCard.
2. Connect any telephone or network cables to your computer.

   CAUTION: To connect a network cable, first plug the cable into the network device and then plug it into the computer.
3. Replace the battery.
4. Replace the base cover.
5. Connect your computer and all attached devices to their electrical outlets.
6. Turn on your computer.

2

Removing and installing components

This section provides detailed information on how to remove or install the components from your computer.

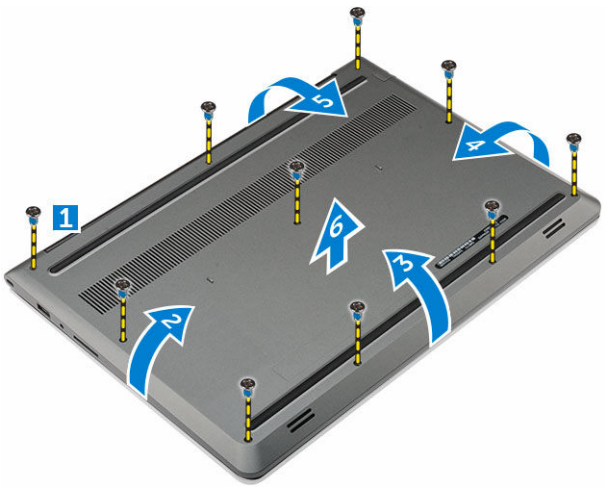
Recommended tools

The procedures in this document require the following tools:

- Small flat blade screwdriver
- Phillips #0 screwdriver
- Phillips #1 screwdriver
- Small plastic scribe

Removing the back cover

1. Follow the procedures in Before working inside your computer.
2. To remove the back cover:
   a. Remove the screws that secure the back cover to the computer [1].
   b. Pry the edges of the back cover from all sides, to release the back cover [2][3][4][5].
   c. Lift the back cover from the computer [6].

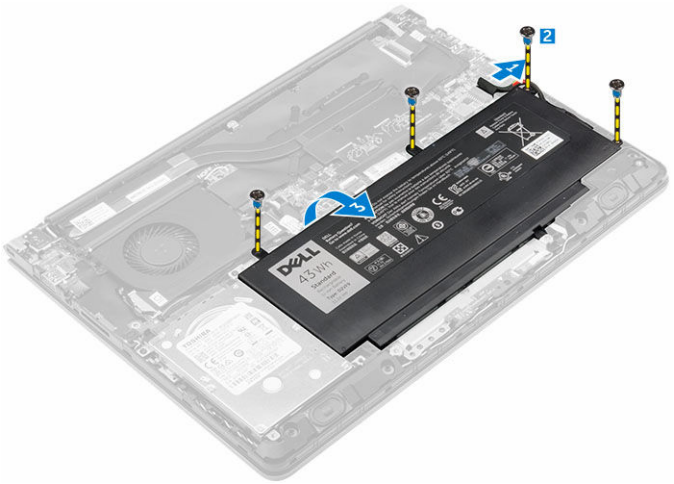


Installing the back cover

1. Align the back cover with the screw holes on the computer.
2. Tighten the screws to secure the base cover to the computer.
3. Follow the procedure in After working inside your computer

Removing the battery

1. Follow the procedure in Before working inside your computer.
2. Remove the back cover.
3. To remove the battery:
   a. Disconnect the battery cable from the connector on the system board [1].
   b. Remove the screws that secure the battery to the computer [2].
   c. Lift and remove the battery from the computer [3].

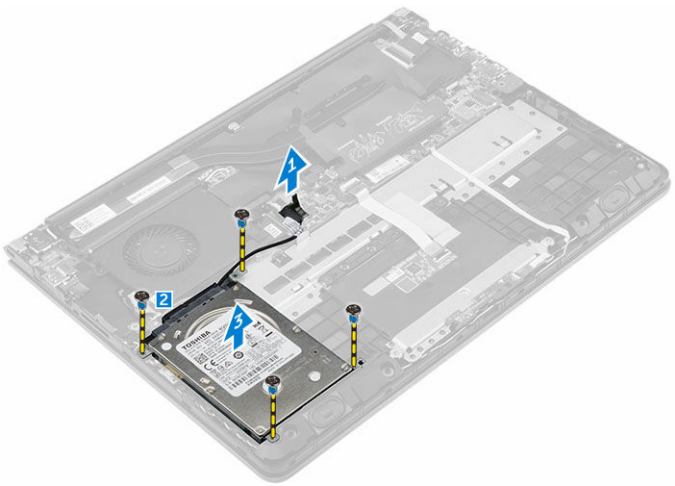


Installing the battery

1. Insert the battery into the slot on the computer.
2. Install the screws that secure the battery to the computer.
3. Connect the battery cable to the connector on the system board.
4. Install the back cover.
5. Follow the procedure in After working inside your computer

Removing the hard drive

1. Follow the procedure in Before working inside your computer.
2. Remove the:
   a. back cover
   b. battery
3. To remove the hard drive:
   a. Disconnect the hard drive cable from the connector on the system board [1] .
   b. Remove the screws that secure the hard drive to the computer [2].
   c. Lift the hard drive from the computer [3].

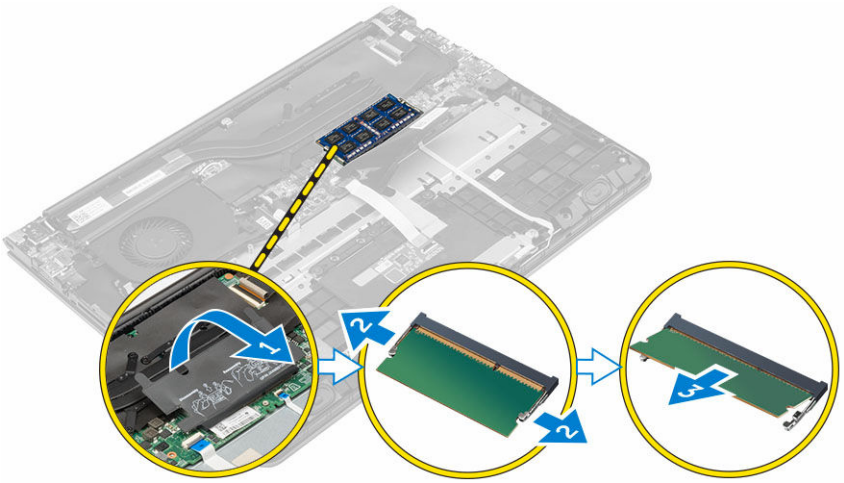


Installing the hard drive

1. Insert the hard drive assembly into its slot on the computer.
2. Tighten the screws that secure the hard drive to the computer
3. Connect the hard drive cable to the connector on the system board.
4. Install the:
   a. battery
   b. back cover
5. Follow the procedure in After working inside your computer

Removing the memory module

1. Follow the procedure in Before working inside your computer.
2. Remove the:
   a. back cover
   b. battery
3. To remove the memory module:
   a. Lift the plastic enclosure covering the top of the memory module compartment [1].
   b. Pull the retention clips from the memory module until it pops up [2].
   c. Remove the memory module from the connector on the system board [3].

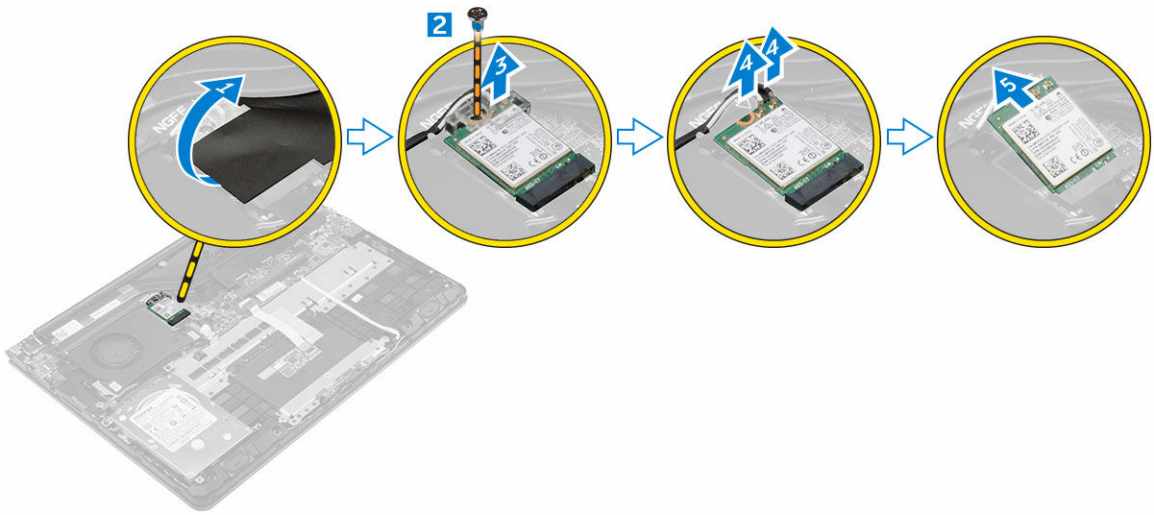


Installing the memory module

1. Insert the memory module into the memory module socket.
2. Press the memory module until it clicks into place.
3. Close the plastic enclosure which covers the memory module.
4. Install the:
   a. back cover
   b. battery
5. Follow the procedure in After working inside your computer

Removing the WLAN card

1. Follow the procedures in Before working inside your computer.
2. Remove the:
   a. back cover
   b. battery
3. To remove WLAN card:
   a. Lift the plastic flap which covers the WLAN card [1].
   b. Remove the screw that secures the WLAN card to the computer [2] [3].
   c. Disconnect the antenna cable from the WLAN card [4].
   d. Remove the WLAN card from the slot on the system board [5].

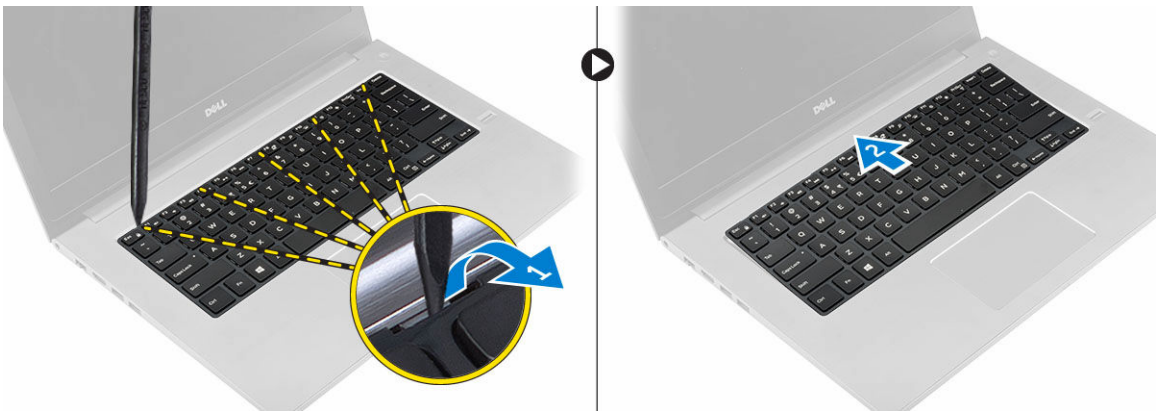


Installing the WLAN card

1. Insert the WLAN card into the connector at a 45–degree angle.
2. Tighten the screw to secure the WLAN card to the computer.
3. Connect the antenna cables to the connectors marked on the WLAN card.
4. Close the plastic cover over the WLAN card.
5. Install the:
   a. battery
   b. back cover
6. Follow the procedure in After working inside your computer

Removing the keyboard

1. Follow the procedure in Before working inside your computer.
2. To remove the keyboard:
   a. Using a plastic scribe, lift the edges of the keyboard at the locations indicated [1].
   b. Slide the keyboard toward the display to release it from the computer [2].



3. To disconnect the keyboard cable:

a. Lift the keyboard and turn it over. [1]
b. Disconnect the keyboard connector cable from the computer chassis. [2] [3] .

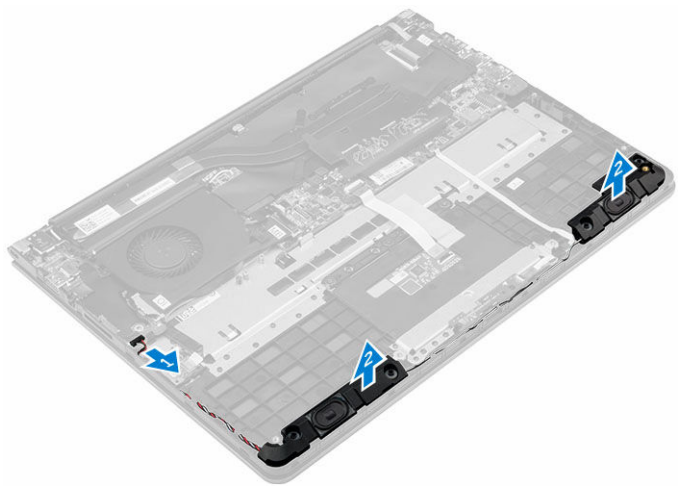


Installing the keyboard

1. Connect the keyboard cable to the computer chassis.
2. Place the keyboard on the chassis and align it along the edges.
3. Press the edges of the keyboard until clicks into place.
4. Follow the procedure in After working inside your computer

Removing the speakers

1. Follow the procedure in Before working inside your computer.
2. Remove the:
   a. back cover
   b. battery
   c. hard drive
3. To remove the speakers:
   a. Disconnect the speaker cable from the system board and unroute it along the routing channel [1].
   b. Lift the speakers from the computer chassis [2].

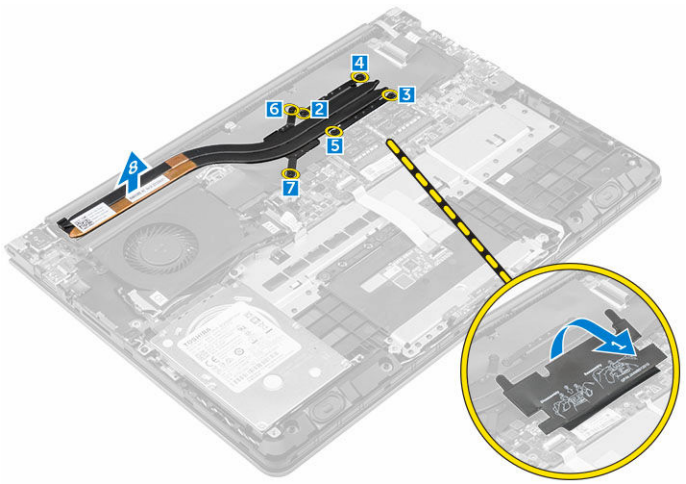


Installing the speakers

1. Insert the speakers into the slot on the computer chassis.
2. Route the speaker cable along the routing channel.
3. Connect the speaker cable to the connector on the system board.
4. Install the:
   a. hard drive
   b. battery
   c. back cover
5. Follow the procedure in After working inside your computer

Removing the heat sink

1. Follow the procedure in Before working inside your computer.
2. Remove the:
   a. back cover
   b. battery
3. To remove the heat sink:
   a. Lift the plastic flap that covers the memory module to access the heat sink module [1].
   b. Remove the screws that secure the heat sink module to the computer chassis [2] [3] [4] [5] [6] [7].
   c. Remove the heat sink module from the slot on the system board [8].



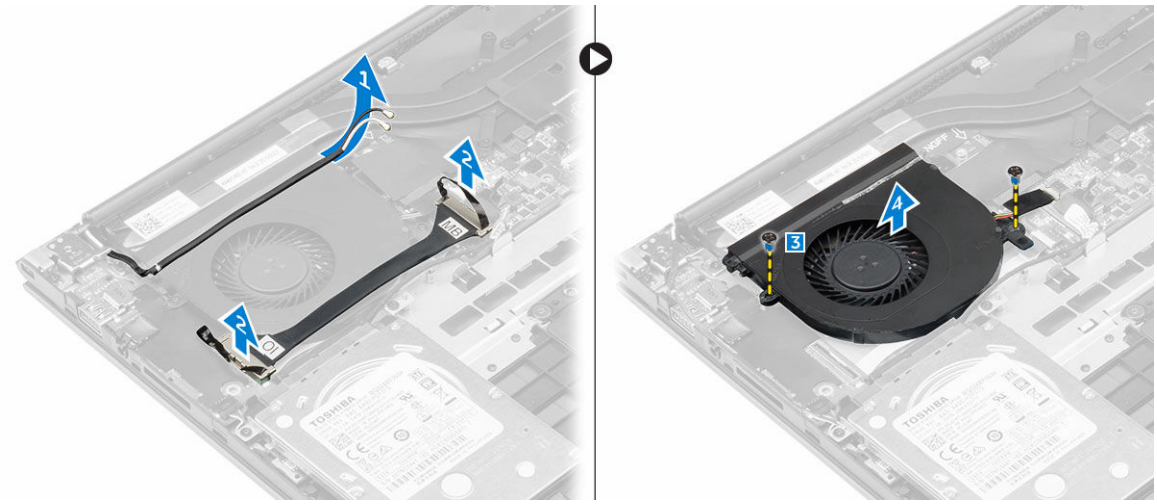
Installing the heat sink

1. Place the heat sink module into its slot on the system board.
2. Tighten the screws to secure the heat sink module to the computer chassis.
3. Close the plastic cover over the memory module.
4. Install the:
   a. battery
   b. back cover

5. Follow the procedure in After working inside your computer

Removing the fan

1. Follow the procedure in Before working inside your computer.
2. Remove the:
   a. back cover
   b. battery
   c. WLAN card
3. To remove the fan:
   a. Lift the WLAN connector cables from the fan module [1].
   b. Disconnect the I/O and system board cables from the connectors on the system board [2].
   c. Remove the screws that secure the fan module to the system board [3].
   d. Lift the fan module from the computer.



Installing the fan

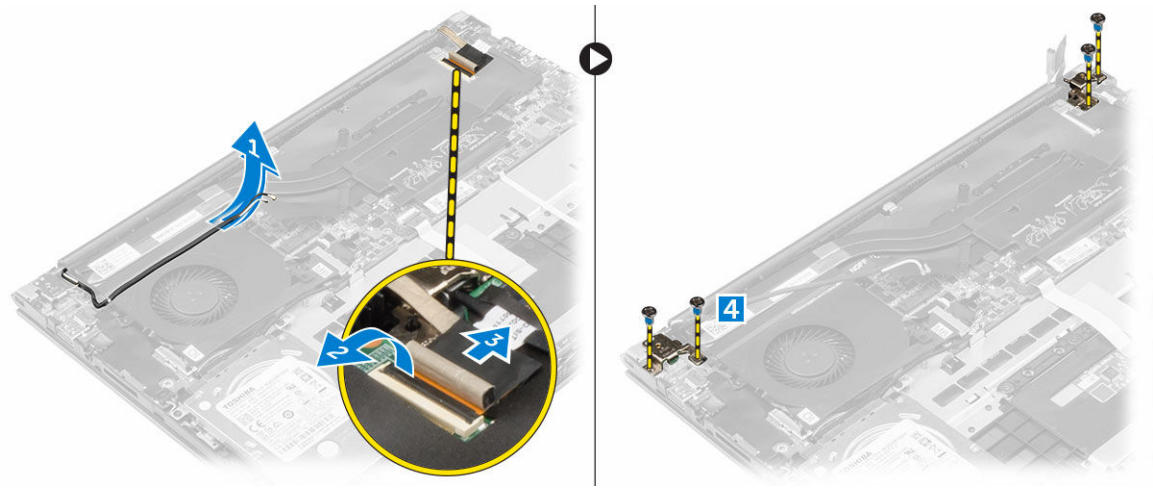
1. Install the fan into the slot on the system board.
2. Tighten the screws to secure the fan module.
3. Connect the I/O and system board cables to the system board connectors.
4. Install the:
   a. WLAN card
   b. battery
   c. back cover
5. Follow the procedure in After working inside your computer

Removing the display assembly

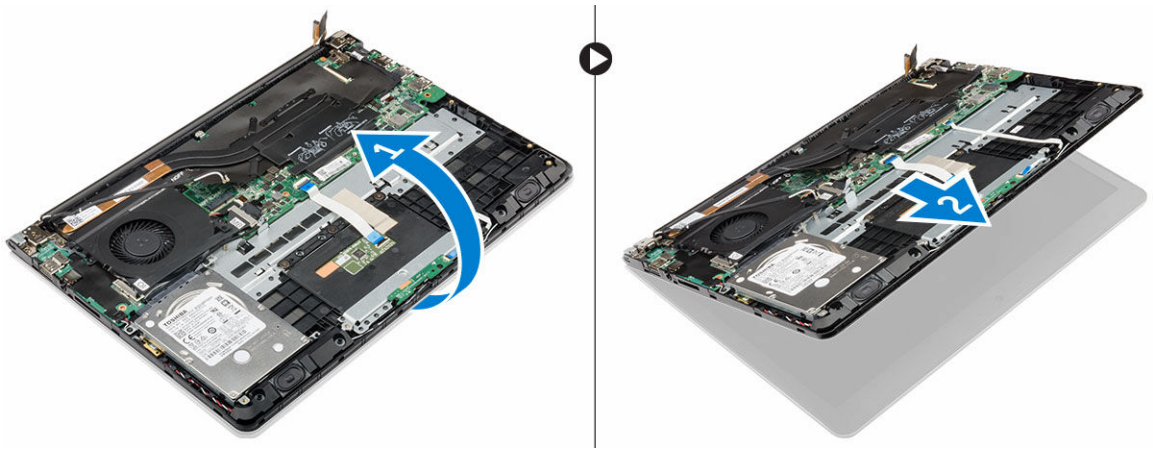
1. Follow the procedure in Before working inside your computer.
2. Remove the:
   a. back cover

b. battery
c. heat sink
d. WLAN card

3. To remove the display hinges:
   a. Lift the WLAN connector cables from the chassis [1].
   b. Disconnect the display cable from the system board [2] [3].
   c. Remove the screws that secure the display hinges to the computer chassis [4].



4. To remove the display:
   a. Lift the computer chassis.
   b. Lift the computer chassis from the display.



Installing the display assembly

1. Align the display assembly with the display hinges of the computer chassis.
2. Tighten the screws that secure the display hinges.
3. Connect the display cable to the connector on the system board.
4. Install the:
   a. heat sink
   b. WLAN card

c. battery
d. back cover

5. Follow the procedure in After working inside your computer

Removing the display bezel

1. Follow the procedure in Before working inside your computer.
2. Remove the:
   a. back cover
   b. battery
   c. heat sink
   d. WLAN card
   e. display assembly
3. To remove the display bezel:
   a. Lift the corners of the bezel with a plastic scribe to remove it [1] [2] [3] [4].



Installing the display bezel

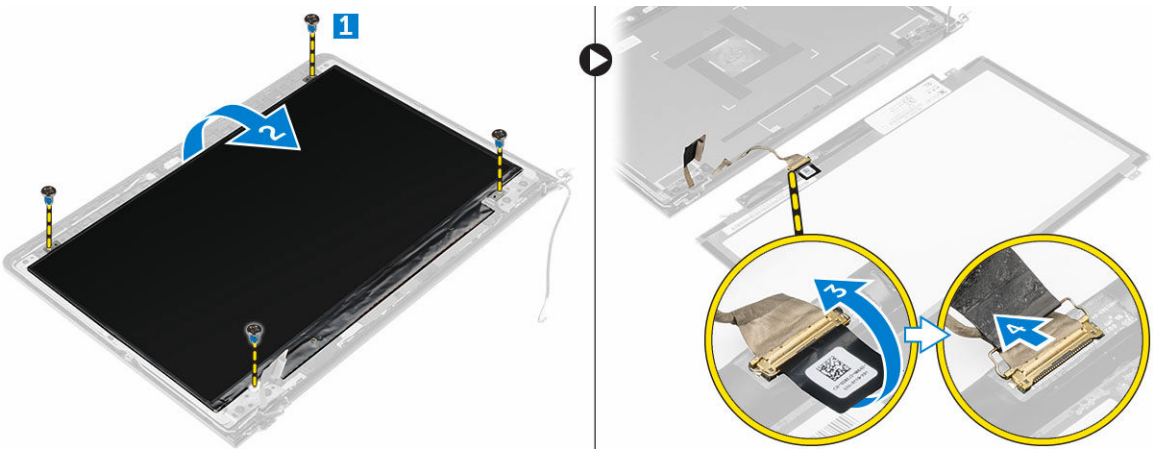
1. Place the display bezel on the display panel and press along the edges until it clicks in place.
2. Install the:
   a. display assembly
   b. heat sink
   c. WLAN card
   d. battery
   e. back cover
3. Follow the procedure in After working inside your computer

Removing the display panel

1. Follow the procedure in Before working inside your computer.
2. Remove the:
   a. back cover

b. battery
c. heat sink
d. WLAN card
e. display assembly
f. display bezel

3. To remove the display panel:
   a. Remove the screws that secure the display panel [1].
   b. Lift the display panel and turn it over [2].
   c. Disconnect the display panel cable from the display panel [3] [4].



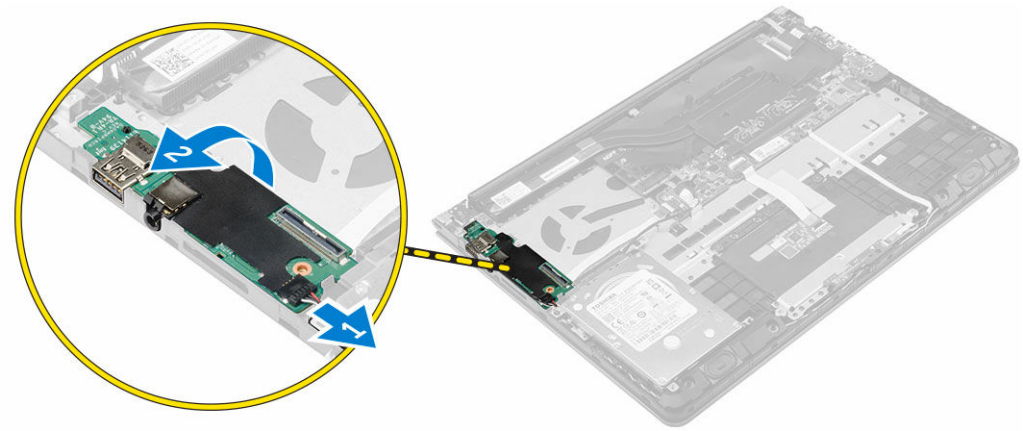
Installing the display panel

1. Connect the display panel cable to the display panel and turn it over to align it with the assembly.
2. Install the screws that secure the display panel.
3. Install the:
   a. display bezel
   b. display assembly
   c. heat sink
   d. WLAN card
   e. battery
   f. back cover
4. Follow the procedure in After working inside your computer

Removing the I/O panel

1. Follow the procedure in Before working inside your computer.
2. Remove the:
   a. back cover
   b. battery
   c. heat sink
   d. WLAN card
   e. fan
3. To remove the I/O panel:

a. Disconnect the I/O panel connector cable from the system board [1].
b. Lift and remove the I/O panel from the computer [2].

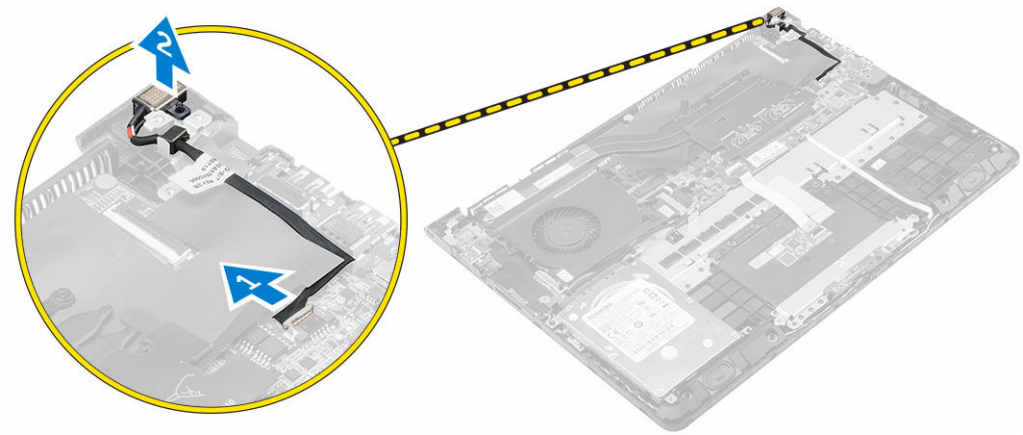


Installing the I/O panel

1. Insert the I/O panel into the slot on the computer chassis.
2. Connect the I/O panel cable to the system board.
3. Install the:
   a. fan
   b. heat sink
   c. WLAN card
   d. battery
   e. back cover
4. Follow the procedure in After working inside your computer

Removing the power connector

1. Follow the procedure in Before working inside your computer.
2. Remove the:
   a. back cover
   b. battery
   c. heat sink
   d. WLAN card
   e. display assembly
3. To remove the power connector:
   a. Disconnect the power connector cable from the system board [1].
   b. Lift the power connector from the computer [2].

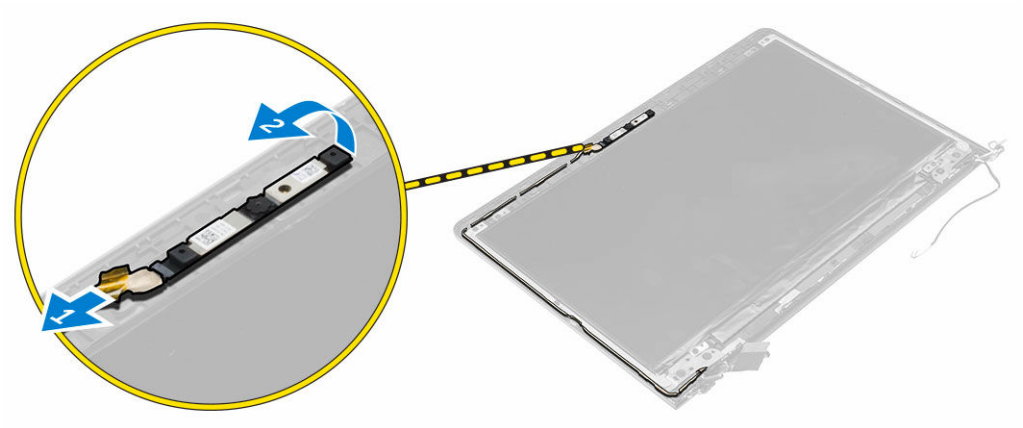


Installing the power connector

1. Install the power connector into the slot on the computer chassis.
2. Connect the power connector cable to the system board.
3. Install the:
   a. display assembly
   b. heat sink
   c. WLAN card
   d. battery
   e. back cover
4. Follow the procedure in After working inside your computer

Removing the camera

1. Follow the procedure in Before working inside your computer.
2. Remove the:
   a. back cover
   b. battery
   c. display assembly
   d. display bezel
3. Disconnect the camera cable and lift the camera to remove it from the computer [1] [2].

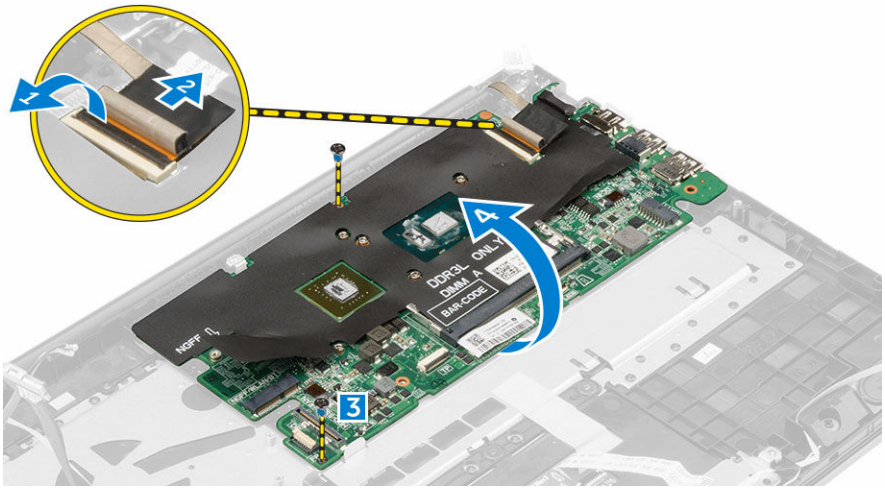


Installing the camera

1. Align the camera to the display panel .
2. Connect the camera cable to the camera.
3. Install the:
   a. battery
   b. back cover
   c. display assembly
   d. display bezel
4. Follow the procedure in After working inside your computer

Removing the system board

1. Follow the procedure in Before working inside your computer.
2. Remove the:
   a. back cover
   b. battery
   c. heat sink
   d. WLAN card
   e. fan
   f. display assembly
   g. power connector
   h. IO Panel
   i. memory module
   j. speakers
3. To remove the system board:
   a. Disconnect the display assembly cable from the system board [1] [2].
   b. Remove the screws that secure the system board to the computer chassis [3].
   c. Lift and remove the system board from the computer.



Installing the system board

1. Install the system board into the slot on the computer chassis.
2. Install the screws that secure the system board to the computer chassis.
3. Connect the display assembly cable to the system board.
4. Install the:
   a. memory module
   b. fan
   c. speakers
   d. keyboard
   e. hard drive
   f. IO panel
   g. power connector
   h. display assembly
   i. heat sink
   j. WLAN card
   k. battery
   l. back cover
5. Follow the procedure in After working inside your computer

3

System Setup

System Setup overview

System Setup allows you to:

- Change the system configuration information after you add, change, or remove any hardware in your computer.
- Set or change a user-selectable option such as the user password.
- Read the current amount of memory or set the type of hard drive installed.
- Check battery health.

Before you use System Setup, it is recommended that you write down the System Setup screen information for future reference.

CAUTION: Unless you are an expert computer user, do not change the settings for this program. Certain changes can cause your computer to work incorrectly.

Boot Sequence

Boot Sequence allows you to bypass the System Setup-defined boot device order and boot directly to a specific device (for example: hard drive). During the Power-on Self Test (POST), when the Dell logo appears, you can:

- Access System Setup by pressing F2 key
- Bring up the one-time boot menu by pressing F12 key

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

- Removable Drive (if available)
- STXXXX Drive

  NOTE: XXX denotes the SATA drive number.
- Optical Drive
- Diagnostics

  NOTE: Choosing Diagnostics, will display the **ePSA diagnostics** screen.

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

Navigation keys

The following table displays the system setup navigation keys.

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

Table 1. Navigation keys

Keys	Navigation
Up arrow	Moves to the previous field.
Down arrow	Moves to the next field.
Enter	Allows you to select 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 till you view the main screen. Pressing Esc in the main screen displays a message that prompts you to save any unsaved changes and restarts the system.
F1	Displays the System Setup help file.

Updating the BIOS

It is recommended to update your BIOS (System Setup), on replacing the system board or if an update is available. For laptops, ensure that your computer battery is fully charged and connected to a power outlet

1. Restart the computer.
2. Go to **Dell.com/support**.
3. Enter the **Service Tag** or **Express Service Code** and click **Submit**.

   NOTE: To locate the Service Tag, click **Where is my Service Tag?**

   NOTE: If you cannot find your Service Tag, click **Detect My Product**. Proceed with the instructions on screen.
4. If you are unable to locate or find the Service Tag, click the Product Category of your computer.
5. Choose the **Product Type** from the list.
6. Select your computer model and the **Product Support** page of your computer appears.
7. Click **Get drivers** and click **View All Drivers**.

   The Drivers and Downloads page opens.
8. On the Drivers and Downloads screen, under the **Operating System** drop-down list, select **BIOS**.
9. Identify the latest BIOS file and click **Download File**.

   You can also analyze which drivers need an update. To do this for your product, click **Analyze System for Updates** and follow the instructions on the screen.
10. Select your preferred download method in the **Please select your download method below** window, click **Download File**.

    The **File Download** window appears.
11. Click **Save** to save the file on your computer.
12. Click **Run** to install the updated BIOS settings on your computer.

Follow the instructions on the screen.

System Setup options

Table 2. Main

System Time	Re-sets the time on the computer's internal clock.
System Date	Re-sets the date on the computer's internal calendar.
BIOS Version	Displays the BIOS revision.
Product Name	Displays the product name and the model number.
Service Tag	Displays the service tag of your computer.
Asset Tag	Displays the asset tag of your computer (if available).
CPU Type	Displays the type of processor.
CPU Speed	Displays the speed of the processor.
CPU ID	Displays the processor ID.
L1 Cache	Displays the processor L1 cache size.
L2 Cache	Displays the processor L2 cache size.
L3 Cache	Displays the processor L3 cache size.
Fixed HDD	Displays the model number and capacity of the hard drive.
mSATA Device	Displays the model number and capacity of the optical drive.
System Memory	Displays the memory in-built on the computer.
Extended Memory	Displays the memory installed on the computer.
Memory Speed	Displays the memory speed.

Table 3. Advanced

Intel SpeedStep	Enable or disable the Intel SpeedStep feature.	Default: Enabled
Virtualization	Enable or disable the Intel Virtualization feature.	Default: Enabled
Integrated NIC	Enable or disable the power supply to the on–board network card.	Default: Enabled
USB Emulation	Enable or disable the USB emulation feature.	Default: Enabled
USB Powershare	Enable or disable the USB powershare feature.	Default: Enabled
SATA Operation	Change the SATA controller mode to either ATA or AHCI.	Default: AHCI
Adapter Warnings	Enable or disable the Adapter Warnings.	Default: Enable

Function Key Behavior	Specifies the behavior of the function key <Fn>.	Default: Function key
Intel Smart Connect Technology	Enable or disable Intel Smart Connect Technology.	Default: Enable
Intel Rapid Start Technology	Enable or disable Inter Rapid Start Technology.	Deafult: Enable
Miscellaneous Devices	These fields let you enable or disable various on-board devices.	
Battery Health	Displays a message about the battery health.	

Table 4. Security

Set Asset Tag	This field displays your system's asset tag. If the asset tag is not already set, this field can be used to enter it.
Set Admin Password	Allows you to change or delete the administrator password.
Set System Password	Allows you to change or delete the system password.
Set HDD Password	Allows you to set a password on the computer's internal hard drive (HDD).
Password Change	Allows you to change the security password.
Password Bypass	Allows you to bypass the system password and the internal HDD password prompts during a system restart/resume from hibernate state.

Table 5. Boot

Boot Priority Order	Specifies the order of different devices in which the computer will boot through at start up.
Windows Boot Manager	Allows windows to search for a hard drive with windows files and boot from it.
Secure Boot	Species if the UEFI secure boot option is enabled or disabled.
Add Boot Option	Allows the user to add an additional boot device.
Delete Boot Option	Allows the user to remove an existing boot device from the boot order.

Exit

This section allows you to save, discard, and load default settings before exiting from System Setup.

4

Troubleshooting

Enhanced Pre-Boot System Assessment (ePSA) diagnostics

The ePSA diagnostics (also known as system diagnostics) performs a complete check of your hardware. The ePSA is embedded with the BIOS and is launched by the BIOS internally. The embedded system diagnostics provides a set of options for particular devices or device groups allowing you to:

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

CAUTION: Use the system diagnostics to test only your computer. Using this program with other computers may cause invalid results or error messages.

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.

1. Power-on the 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.

   The **Enhanced Pre-boot System Assessment** window is displayed, listing all devices detected in the computer. The diagnostics starts running the tests on all the detected devices.
4. To run a diagnostic test on a specific device, press Esc and click **Yes** to stop the diagnostic test.
5. Select the device from the left pane and click **Run Tests**.
6. If there are any issues, error codes are displayed.

   Note the error code and contact Dell.

LED error codes

Table 6. LED error codes

LED flashes	Fault description
1,1	Bad system board

1,2	Bad system board, PSU or cabling
1.3	Bad system board, DIMMS or CPU
1,4	Bad coin cell battery
2,1	CPU problem
2,2	System board: BIOS ROM failure
2,3	Memory issue
2,4	Memory issue
2,5	Memory issue
2,6	System board: Chipset failure
2,7	Display failure (LCD)
3,1	RTC Power failure
3.2	PCI/video
3,3	BIOS recovery 1
3,4	BIOS recovery 2
4,1	CPU configuration or CPU failure
4,2	Generic POST video error (old LED pattern 1110)

Battery status lights

Table 7. Battery LED Behavior

Battery charge LED	Status	LED behavior
AC mode	All	White
	Fully charged	Off
Battery mode	Low to Fully charged	Off
	Discharging when Battery charge is <=10%	Solid Yellow

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Specifications

NOTE: Offerings may vary by region. For more information regarding the configuration of your computer in:

- Windows 10, click or tap **Start** → **Settings** → **System** → **About**.
- Windows 8.1 and Windows 8, click or tap **Start** → **PC Settings** → **PC and devices** → **PC Info**.
- Windows 7, click **Start**, right-click **My Computer**, and then select **Properties**.

Table 8. System Information

Feature	Description
Chipset	• 6th generation Intel Core i3 Processor • 6th generation Intel Core i5 Processor • 6th generation Intel Core i7 Processor
Chipset	Integrated in processor

Table 9. Memory

Feature	Description
Slot	One SODIMM slot
Memory type	DDR3L
Speed	1600 MHz
Configurations supported	4 GB and 8 GB

Table 10. Audio

Feature	Description
Controller	Conexant CX6008 with Waves MaxxAudio Pro
Microphone	Digital array microphones
Speakers	Two
Speaker output	2 W
Volume Controls	Media-control shortcut keys

Table 11. Video

Feature	Description
Video Controller:	
UMA	Intel HD graphics 520
Discrete	Nvidia GeForce 930M
Memory	
UMA	Shared system memory
Discrete	Upto 4 GB DDR3L

Table 12. Storage

Feature	Description
Interface	SATA 6 Gbps
Hard drive	One 2.5–inch drive

Table 13. Media-card reader

Feature	Description
Type	SD card slot (Supports SD 3.0)

Table 14. Camera

Feature	Description
Image resolution	0.92 megapixel
Video Resolution (maximum)	1280 x 720 pixels (HD) at 30 fps
Diagonal viewing angle	74–degree

Table 15. Communication

Feature	Description
Ethernet	10/100/1000 Mbps Ethernet controller integrated on system board
Wireless	• 2x2 802.11 a/b/g/n/AC+BT • 1x1 802.11 a/b/g/n/AC+BT • Bluetooth 4.0 • Intel WiDi • Wi-Fi Display

Table 16. Ports and Connectors

Feature	Description
External	
Network	One RJ–45 port (Ethernet 10/100/1000 Base-T)

Feature	Description
USB	Three USB 3.0 ports (one with PowerShare)
Audio/Video	• One HDMI port • One headset (headphone and microphone combo) port
Internal	
Mini-card	One NGFF card slot for Wi-Fi and Bluetooth combo card

Table 17. Display

Feature	Description
Type	HD
Dimensions:	
Height	206.44 mm (8.12 inches)
Width	326.18 mm (12.84 inches)
Diagonal	14.0"
Active area (X/Y)	309.4 mm (12.18 inches) x 173.95 mm (6.84 inches)
Maximum resolution	1366 x 768 pixels
Maximum Brightness	200 nits
Operating angle	135–degree
Refresh rate	60 Hz/40 Hz
Minimum Viewing angles:	
Horizontal	40 (L)/40 (R)
Vertical	10 (up)/30 (down)
Pixel pitch	0.2265 (H) x 0.2265 (V) mm

Table 18. Keyboard

Feature	Description
Number of keys	80

Table 19. Touchpad

Feature	Description
Resolution	
Horizontal	1223 dpi
Vertical	1573 dpi

Table 20. Battery

Feature	Description
Type	ICP666480
Dimensions	
Height	99.5 mm (3.91 inches)
Width	198.5 mm (7.81 inches)
Depth	7.5 mm (0.30 inch)
Weight	269 grams (0.60 lb)
Charge time	3 hour
Voltage	11.4 V
Life span	300 discharge/charge cycles
Temperature range	
Operating	0℃ to 50℃
Non-operating	0℃ to 65℃
Coin cell battery	LI 3V 83 MAH

Table 21. AC adapter

Feature	Description
Type	• 45 W • 65 W
Input voltage	100–240 V AC
Input current (maximum)	• 45 W- 1.3 A • 65 W- 1.6 A/1.7 A
Input frequency	50 Hz–60 Hz
Output current	• 45 W- 2.31 A • 65 W- 3.34 A
Rated output voltage	19.5 V DC
Temperature range:	
Operating	0℃ to 40℃
Non-Operating	–40℃ to –70℃

Table 22. Physical

Feature	Non-touch	Touch
Height	18.30 mm (0.72 inch)	19.35 mm (0.76 inch)
Width	337.60 mm (13.29 inches)	337.60 mm (13.29 inches)

Feature	Non-touch	Touch
Depth	233.50 mm (9.19 inch)	233.50 mm (9.19 inch)
Weight (minimum)	1.53 kg (3.37 lb)	1.62 kg (3.57 lb)

Table 23. Environmental

Feature	Description
Temperature:	
Operating	0℃ to 35℃
Storage	-20℃ to 60℃
Relative humidity (maximum):	
Operating	20% – 90%
Storage	20% – 95%
Altitude (maximum)	
Operating	–15.2 m to 3048 m (–50 to 10,000 ft)
	0° to 35°C
Non-operating	–15.2 m to 10,668 m (–50 ft to 35,000 ft)
Airborne contaminant level	G2 or lower as defined by ISA - S71.04 – 1985

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Contacting Dell

Contacting Dell

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

Dell provides several online and telephone-based support and service options. Availability varies by country and product, and some services may not be available in your area. To contact Dell for sales, technical support, or customer service issues:

1. Go to **Dell.com/support.**
2. Select your support category.
3. Verify your country or region in the **Choose a Country/Region** drop-down list at the bottom of the page.
4. Select the appropriate service or support link based on your need.