

Dell Pro Max 14

MC14250

Owner's Manual

Notes, cautions, and warnings

 **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.

Chapter 1: Views of Dell Pro Max 14 MC14250.....	7
Right.....	7
Left.....	7
Top.....	9
Front.....	10
Bottom.....	11
Locate the Service Tag or Express Service Code label of your computer.....	11
Battery-charge status light.....	12
Chapter 2: Set up your Dell Pro Max 14 MC14250.....	13
Chapter 3: Specifications of Dell Pro Max 14 MC14250.....	15
Dimensions and weight.....	15
Processor.....	15
Chipset.....	16
Operating system.....	16
Memory.....	16
External ports and slots.....	17
Internal slots.....	17
Ethernet.....	18
Wireless module.....	18
Audio.....	19
Storage.....	19
Keyboard.....	19
Keyboard shortcuts of Dell Pro Max 14 MC14250.....	20
Camera.....	21
Touchpad.....	22
Power adapter.....	23
Power adapter requirements of Dell Pro Max 14 MC14250.....	23
Battery.....	24
Power requirements	25
Display.....	25
Fingerprint reader (optional).....	26
Sensor	27
GPU—Integrated.....	27
Multiple display support matrix.....	27
Hardware security.....	27
Smart-card reader.....	28
Contactless smart-card reader.....	28
Contacted smart-card reader.....	31
Operating and storage environment.....	31
Chapter 4: Working inside your computer.....	33
Safety instructions.....	33

Before working inside your computer.....	33
Safety precautions.....	34
Electrostatic discharge—ESD protection.....	34
ESD Field Service kit	35
Transporting sensitive components.....	36
After working inside your computer.....	36
BitLocker.....	36
Recommended tools.....	36
Screw list.....	37
Major components of Dell Pro Max 14 MC14250.....	38
Chapter 5: Removing and installing Customer Replaceable Units (CRUs).....	41
Base cover.....	41
Removing the base cover.....	41
Installing the base cover.....	44
Battery.....	46
Rechargeable Li-ion battery precautions.....	46
Removing the battery	47
Installing the battery	48
Memory module.....	48
Removing the memory module	48
Installing the memory module	49
Solid State Drive (SSD).....	50
Removing the M.2 2230 solid state drive.....	50
Installing the M.2 2230 solid state drive.....	51
Removing the M.2 2280 solid state drive.....	52
Installing the M.2 2280 solid state drive.....	53
Wireless card.....	54
Removing the wireless card	54
Installing the wireless card	55
Speakers.....	57
Removing the speakers	57
Installing the speakers	58
Fan.....	59
Removing the fan	59
Installing the fan	60
Chapter 6: Removing and installing Field Replaceable Units (FRUs).....	62
Battery cable.....	62
Disconnecting the battery cable	62
Connecting the battery cable	63
Battery frame.....	64
Removing the battery frame.....	64
Installing the battery frame.....	65
USH board.....	66
Removing the USH board.....	66
Installing the USH board.....	67
Smart-card reader.....	68
Removing the smart-card reader.....	68

Installing the smart-card reader.....	69
Heat sink.....	70
Removing the heat sink	70
Installing the heat sink	71
I/O board.....	72
Removing the I/O board.....	72
Installing the I/O board.....	73
Power button.....	75
Removing the power button	75
Installing the power button	76
Display assembly.....	76
Removing the display assembly	76
Installing the display assembly	79
Display bezel.....	81
Removing the display bezel	81
Installing the display bezel	86
Display panel.....	87
Removing the display panel	87
Installing the display panel	90
Display hinges.....	92
Removing the display hinges	92
Installing the display hinges	94
Display cable.....	95
Removing the display cable	95
Installing the display cable	96
Camera.....	98
Removing the camera	98
Installing the camera	99
Display back-cover and antenna assembly.....	100
Removing the display back-cover and antenna assembly	100
Installing the display back-cover and antenna assembly	101
System board.....	102
Removing the system board	102
Installing the system board	106
USB Type-C module.....	111
Removing the USB Type-C module.....	111
Installing the USB Type-C module	112
Keyboard.....	113
Removing the keyboard.....	113
Installing the keyboard	116
Palm-rest assembly.....	118
Removing the palm-rest assembly	118
Installing the palm-rest assembly	119
Chapter 7: Software.....	121
Operating system.....	121
Drivers and downloads.....	121
Chapter 8: BIOS Setup.....	122

Entering BIOS Setup program.....	122
Navigation keys.....	122
F12 One Time Boot menu.....	122
View Advanced Setup options.....	123
View Service options.....	123
System Setup options.....	123
Updating the BIOS.....	141
Updating the BIOS in Windows.....	141
Updating the BIOS in Linux and Ubuntu.....	142
Updating the BIOS using the USB drive in Windows.....	142
Updating the BIOS from the One-Time boot menu.....	142
System and setup password.....	143
Assigning a System Setup password.....	144
Deleting or changing an existing system password or setup password.....	144
Clearing system and setup passwords.....	144
Chapter 9: Troubleshooting.....	145
Handling swollen rechargeable Li-ion batteries.....	145
Dell SupportAssist Pre-boot System Performance Check diagnostics.....	145
Running the SupportAssist Pre-Boot System Performance Check.....	146
Built-in self-test (BIST).....	146
(Motherboard Built-In Self-Test) M-BIST.....	146
Logic Built-in Self-test (L-BIST).....	147
LCD Built-in Self-Test (LCD-BIST).....	147
System-diagnostic lights.....	147
Recovering the operating system.....	148
Real-Time Clock (RTC Reset).....	149
Backup media and recovery options.....	149
Network power cycle.....	149
Drain flea power (perform hard reset).....	149
Chapter 10: Getting help and contacting Dell.....	151

Views of Dell Pro Max 14 MC14250

Right



Figure 1. Right view

1. Global headset port

Connect headphones or a headset (headphone and microphone combo).

2. USB 3.2 Gen 1 (5 Gbps) port with PowerShare

Connect devices such as external storage devices and printers.

Provides data transfer speeds up to 5 Gbps. PowerShare enables you to charge your USB devices even when your computer is turned off.

NOTE: If your computer is turned off or in a hibernation state, you must connect the power adapter to charge your devices using the PowerShare port. You must enable this feature in the BIOS setup program.

NOTE: Certain USB devices may not charge when the computer is turned off or in a sleep state. In such cases, turn on the computer to charge the device.

3. RJ45 ethernet port (1 Gbps)

Connect an RJ45 ethernet cable from a router or a broadband modem for network or Internet access, with a transfer rate of 10/100/1000 Mbps (maximum 1 Gbps).

4. Security-cable slot (wedge-shaped)

Connect a security cable to prevent unauthorized movement of your computer.

Left

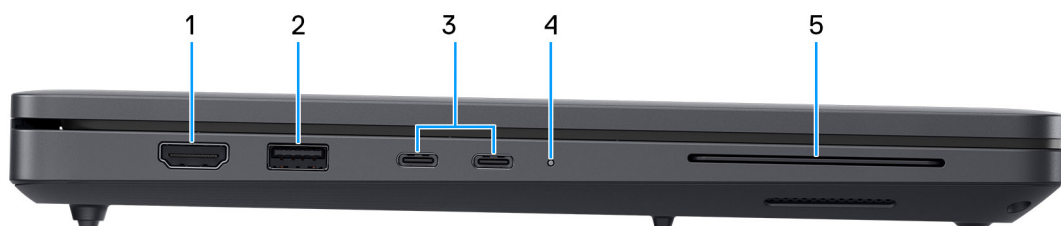


Figure 2. Left view

1. **HDMI 2.1 port**

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


2. **USB 3.2 Gen 1 (5 Gbps) port**


Connect devices such as external storage devices and printers. Provides data transfer speeds up to 5 Gbps.


3. **Two Thunderbolt 4 (40 Gbps) ports with Power Delivery and DisplayPort**


Supports USB4, DisplayPort 2.1, Thunderbolt 4 and also enables you to connect to an external display using a display adapter. Provides data transfer rates of up to 40 Gbps for USB4 and Thunderbolt 4.

 **NOTE:** The power adapter is to be connected to one of these Thunderbolt 4 ports.

 **NOTE:** You can connect a Dell Docking Station to the Thunderbolt 4 ports. For more information, search in the Knowledge Base Resource at [Dell Support Site](#).

 **NOTE:** A USB Type-C to DisplayPort adapter (sold separately) is required to connect a DisplayPort device.

 **NOTE:** USB4 is backward compatible with USB 3.2, USB 2.0, and Thunderbolt 3.

 **NOTE:** Thunderbolt 4 supports two 4K displays or one 8K display.


4. **Power and battery-status light**

Indicates the power state and battery state of the computer.

Solid white—Power adapter is connected and the battery is charging.

Solid amber—Computer is running on battery and the battery charge is low or critical.

Off—Power adapter is disconnected or the battery is fully charged.

 **NOTE:** On certain computer models, the power and battery-status light are also used for diagnostics. For more information, see the *Troubleshooting* section in this document.

5. **Smart-card reader slot (optional)**

Reads information from a smart card with a built-in-chip.

Top



Figure 3. Top view

1. Power button with optional fingerprint reader

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 ten seconds to force shut-down the computer.

If the power button has a fingerprint reader, place your finger on the power button to log in.

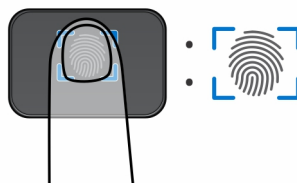


Figure 4. Active area of the fingerprint reader

NOTE: The highlighted area indicates the actual active fingerprint reader area, and the image is for illustration purposes only.

NOTE: You can customize power-button behavior in Windows. For more information, see [Manuals at Dell Support Site](#).

2. Precision touchpad

Move your finger on the touchpad to move the mouse pointer. Tap to left-click and two fingers tap to right-click.

Front

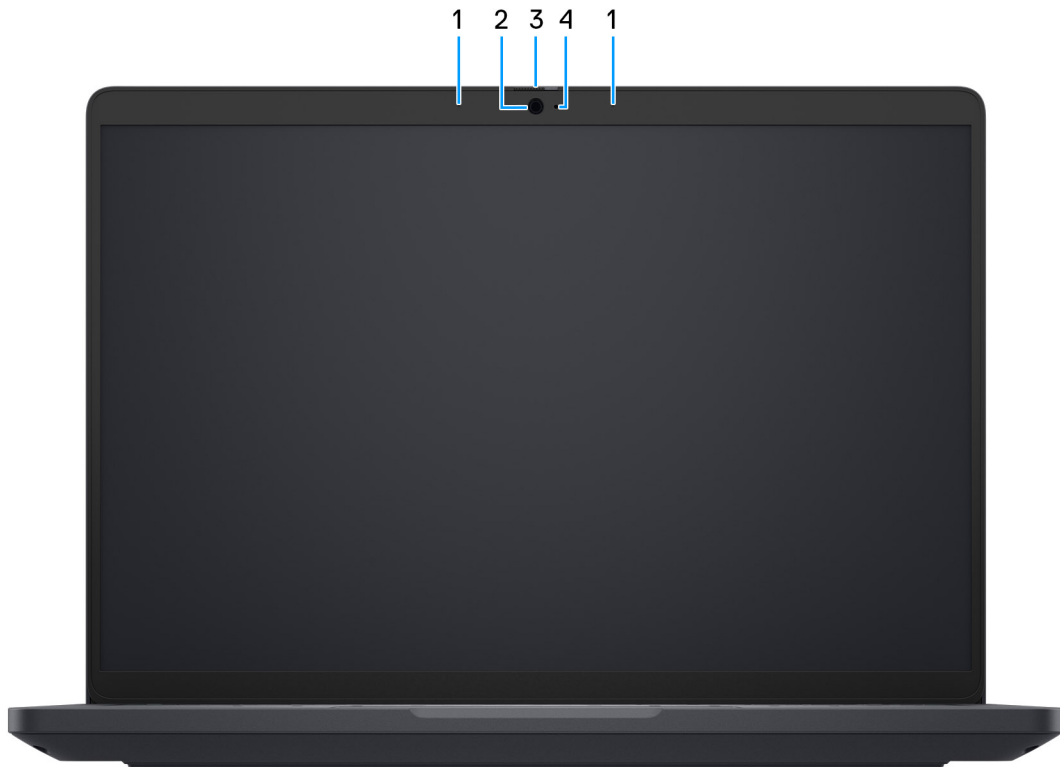


Figure 5. Front view

1. Microphones

Provide digital sound input for audio recording and voice calls.

2. Camera

Enables you to video chat, capture photos, and record videos.

3. Privacy shutter

Slide the privacy shutter to cover the camera lens and protect your privacy when the camera is not in use.

4. Camera-status light

Turns on when the camera is in use.

Bottom

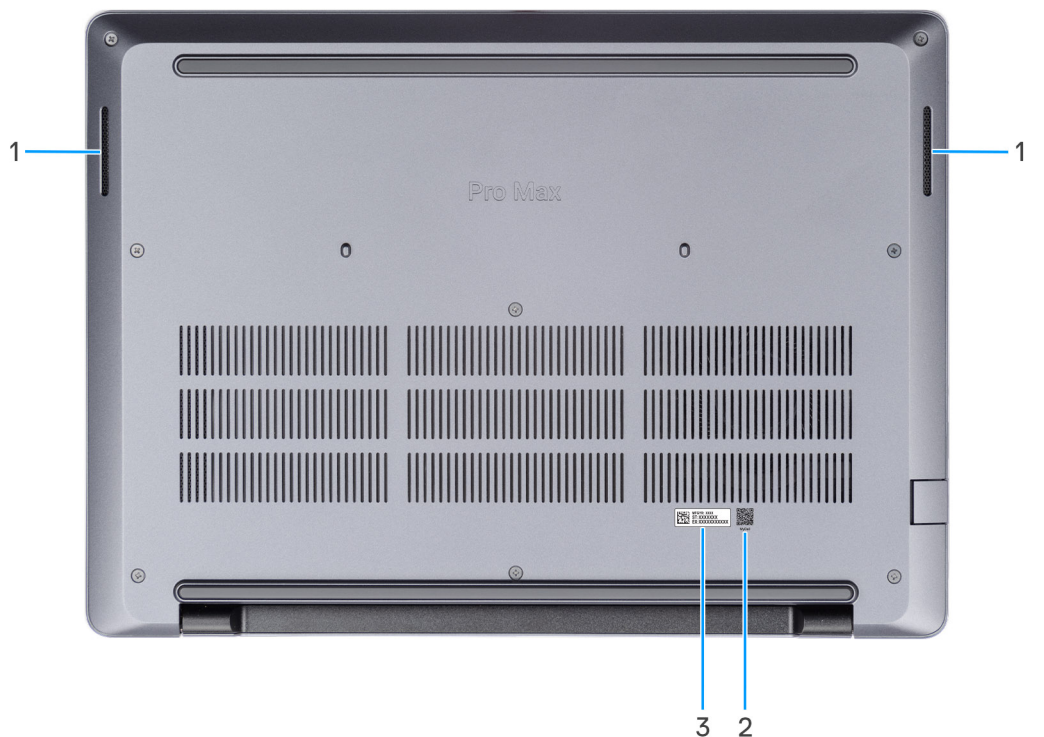


Figure 6. Bottom view

1. **Speakers**

Provide audio output.

2. **MyDell QR code**

MyDell is your hub for content that is personalized for your Dell Pro Max 14 MC14250, including videos, articles, manuals, and access to support.

3. **Service Tag/Express Service Code 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. The Express Service Code is a numeric version of the Service Tag.

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

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. The Express Service Code is a numeric version of the Service Tag.

For more information about how to find the Service Tag of your computer, search in the Knowledge Base Resource at the [Dell Support Site](#).

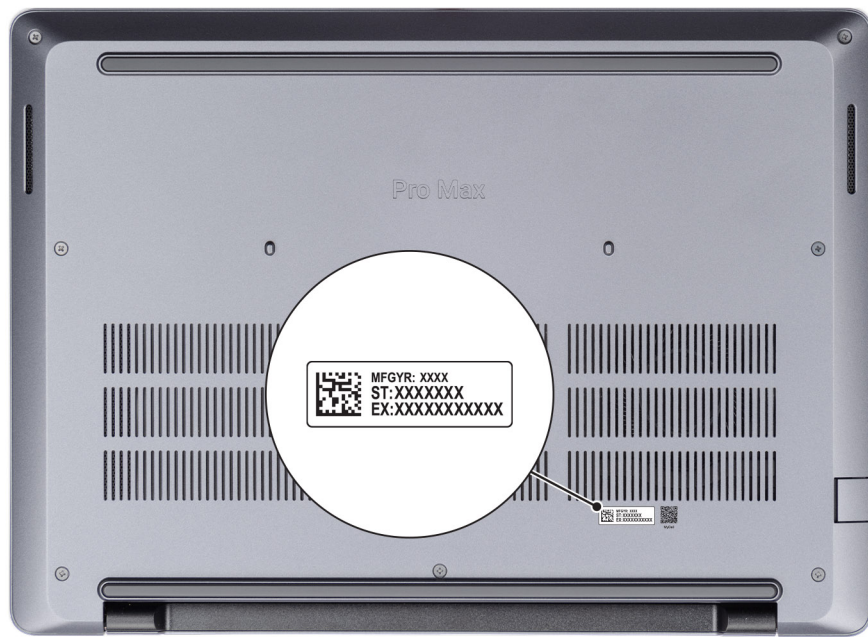


Figure 7. Service Tag/Express Service Code location

Battery-charge status light

The following table lists the battery-charge status light of your Dell Pro Max 14 MC14250.

Table 1. Battery charge and status light behavior

Power source	LED behavior	System power state	Battery charge level
AC adapter	Off	S0 or S5	Fully charged
AC adapter	Solid white	S0 or S5	< Fully charged
Battery	Off	S0 or S5	11-100%
Battery	Solid amber (590+/-3 nm)	S0 or S5	< 10%

- S0 (ON): Computer is turned on.
- S4 (Hibernate): The computer consumes the least power in the Hibernate state than in the ON or OFF state. The computer is almost in the OFF state. The context data is written to a storage device, allowing you to resume from where you left when the computer is turned on.
- S5 (OFF): The computer is in a shutdown state.

Set up your Dell Pro Max 14 MC14250

About this task

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

Steps

1. Connect the power adapter to one of the Thunderbolt 4 ports and press the power button.



Figure 8. Connect the power adapter and press the power button

NOTE: The battery may go into power-saving mode during shipment to conserve charge on the battery. Ensure that the power adapter is connected to your computer when it is turned on for the first time.

2. Finish the operating system setup.

For Ubuntu:

Follow the on-screen instructions to complete the setup. For more information about installing and configuring Ubuntu, search in the Knowledge Base Resource at [Dell Support Site](#).

For Windows:

Follow the on-screen instructions to complete the setup. When setting up, it is recommended that you:






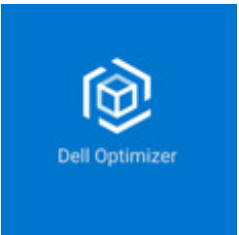
- Connect to a network for Windows updates.

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 an existing Microsoft account or create a new account.
- On the **Support and Protection** screen, enter your contact details.

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

Table 2. Locate Dell apps


Resources	Description
	Dell Product Registration Register your computer with Dell.
	Dell Help & Support Access help and support for your computer.
	SupportAssist SupportAssist keeps your computer running at its best by optimizing settings, detecting issue, and removing viruses. It also notifies when updates are available for your computer. SupportAssist proactively checks the health of your computer hardware and software. When an issue is detected, the necessary system state information is sent to Dell to begin troubleshooting. SupportAssist is preinstalled on most of the Dell devices running the Windows operating system. For more information, see Support Assist documentation at Dell Support Site .  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 about using Dell Update, see the product guides and third-party license documents at Dell Support Site .
	Dell Optimizer Dell Optimizer is an AI-based software application that allows you to customize your computer settings for power and battery, and more. For Dell Pro Max 14 MC14250 with Dell Optimizer, you can: <ul style="list-style-type: none">• Tune the performance, power consumption, cooling, and fan noise with selectable thermal modes.• Download and redeem the apps that are purchased with your computer. For more information about configuring and using these features, search for <i>Dell Optimizer</i> at Dell Support Site .

Specifications of Dell Pro Max 14 MC14250

Dimensions and weight

The following table lists the height, width, depth, and weight of your Dell Pro Max 14 MC14250.

Table 3. Dimensions and weight

Description	Values
Height:	
Front height	14.79 mm (0.58 in.)
Rear height	18.90 mm (0.74 in.)
Width	313 mm (12.32 in.)
Depth	227.30 mm (8.75 in.)
Weight  NOTE: The weight of your computer depends on the configuration that is ordered.	Minimum: 1.83 kg (4.04 lb)

Processor

The following table lists the details of the processors that are supported by your Dell Pro Max 14 MC14250.

Table 4. Processor


Description	Option one	Option two	Option three	Option four
Processor type	Intel Core Ultra 5 225H	Intel Core Ultra 5 235H vPro	Intel Core Ultra 7 255H	Intel Core Ultra 7 265H vPro
Processor wattage	28 W	28 W	28 W	28 W
Processor total core count	14	14	16	16
Performance-cores	4	4	6	6
Efficient-cores	10	10	10	10
Processor total thread count  NOTE: Intel Hyper-Threading Technology is only available on Performance-cores.	14	14	16	16
Processor speed	Up to 4.90 GHz	Up to 5.00 GHz	Up to 5.10 GHz	Up to 5.30 GHz

Table 4. Processor (continued)

Description		Option one	Option two	Option three	Option four
Performance-cores frequency					
	Processor base frequency	1.70 GHz	2.40 GHz	2.00 GHz	2.20 GHz
	Maximum turbo frequency	4.90 GHz	5.00 GHz	5.10 GHz	5.30 GHz
Efficient-cores frequency					
	Processor base frequency	1.30 GHz	1.80 GHz	1.50 GHz	1.70 GHz
	Maximum turbo frequency	4.30 GHz	4.40 GHz	4.40 GHz	4.50 GHz
Processor cache		18 MB	18 MB	24 MB	24 MB
Integrated graphics		Intel Graphics	Intel Graphics	Intel Graphics	Intel Graphics

Chipset

The following table lists the details of the chipset that is supported by your Dell Pro Max 14 MC14250.

Table 5. Chipset

Description	Values
Chipset	Integrated with the processor
Processor	Intel Core Ultra 5/7 non-vPro/vPro processors
DRAM bus width	64-bit
Flash EPROM	Up to 64 MB
PCIe bus	Up to Gen5

Operating system

Your Dell Pro Max 14 MC14250 supports the following operating systems:

- Windows 11 Home
- Windows 11 Pro
- Ubuntu Linux 22.04 LTS, 64-bit

Memory

The following table lists the memory specifications that are supported by your Dell Pro Max 14 MC14250.

Table 6. Memory specifications

Description	Values
Memory slots	One LPCAMM2 slot
Memory type	LPDDR5x

Table 6. Memory specifications (continued)

Description	Values
Memory speed	7467 MT/s
Maximum memory configuration	64 GB
Minimum memory configuration	16 GB
Memory size per slot	16 GB, 32 GB or 64 GB
Memory configurations supported	<ul style="list-style-type: none"> 16 GB: 1 x 16 GB, LPCAMM LPDDR5x, 7467 MT/s, dual-channel 32 GB: 1 x 32 GB, LPCAMM LPDDR5x, 7467 MT/s, dual-channel 64 GB: 1 x 64 GB, LPCAMM LPDDR5x, 7467 MT/s, dual-channel

External ports and slots

The following table lists the external ports and slots of your Dell Pro Max 14 MC14250.

Table 7. External ports and slots

Description	Values
Network port	One RJ45 ethernet port (1 Gbps)
USB ports	<ul style="list-style-type: none"> Two Thunderbolt 4 (40 Gbps) ports with Power Delivery and DisplayPort One USB 3.2 Gen 1 (5 Gbps) port with PowerShare One USB 3.2 Gen 1 (5 Gbps) port
Audio port	One global headset port
Video port(s)	<ul style="list-style-type: none"> Two Thunderbolt 4 (40 Gbps) ports with Power Delivery and DisplayPort One HDMI 2.1 port
Media-card reader	One optional smart-card reader slot
Power-adaptor port	Supported via two Thunderbolt 4 (40 Gbps) ports with Power Delivery and DisplayPort
Security-cable slot	One wedge-shaped lock slot


Internal slots

The following table lists the internal slots of your Dell Pro Max 14 MC14250.

Table 8. Internal slots

Description	Values
M.2	<ul style="list-style-type: none"> One M.2 Key-M (2230/2280) slot for solid-state drive One M.2 2230 Key-E slot for Wi-Fi and Bluetooth combo card

Table 8. Internal slots

Description	Values
	 NOTE: To learn more about the features of different types of M.2 cards, search in the Knowledge Base Resource at Dell Support Site .

Ethernet

The following table lists the wired Ethernet Local Area Network (LAN) specifications of your Dell Pro Max 14 MC14250.


Table 9. Ethernet specifications

Description	Values
Model	<ul style="list-style-type: none"> Intel I219-LM for vPro configurations Intel I219-V for non-vPro configurations
Transfer rate	10/100/1000 Mbps

Wireless module

The following table lists the Wireless Local Area Network (WLAN) modules that are supported on your Dell Pro Max 14 MC14250.

Table 10. Wireless module specifications

Description	Option one	Option two
Model number	Intel Wi-Fi 6E AX211	Intel Wi-Fi 7 BE201
Transfer rate	Up to 2400 Mbps	Up to 5760 Mbps
Frequency bands supported	2.4 GHz/5 GHz/6 GHz	2.4 GHz/5 GHz/6 GHz
Wireless standards	<ul style="list-style-type: none"> Wi-Fi 802.11 a/b/g Wi-Fi 4 (WiFi 802.11n) Wi-Fi 5 (WiFi 802.11ac) Wi-Fi 6E (WiFi 802.11ax) 	<ul style="list-style-type: none"> Wi-Fi 802.11 a/b/g Wi-Fi 4 (WiFi 802.11n) Wi-Fi 5 (WiFi 802.11ac) Wi-Fi 6E (WiFi 802.11ax) Wi-Fi 7 (WiFi 802.11be)
Encryption	<ul style="list-style-type: none"> 64-bit/128-bit WEP AES-CCMP TKIP 	<ul style="list-style-type: none"> 64-bit/128-bit WEP AES-CCMP TKIP
Bluetooth wireless card	Bluetooth 5.3	Bluetooth 5.4
	 NOTE: The functionality of the Bluetooth wireless card may vary depending on the operating system that is installed on your computer.	

Audio

The following table lists the audio specifications of your Dell Pro Max 14 MC14250.

Table 11. Audio specifications

Description		Values
Audio controller		Realtek ALC3329
Stereo conversion		Supported with Waves MaxxAudio Pro
Internal audio interface		Soundwire interface
External audio interface		One global headset port
Number of speakers		Two
Internal-speaker amplifier		Supported via Realtek ALC1708
External volume controls		Keyboard shortcut controls
Speaker output:		
	Average	2 W x 2 = 4 W
	Peak	2.5 W x 2 = 5 W
Microphone		Dual-array digital microphones

Storage

This section lists the storage options on your Dell Pro Max 14 MC14250.

Your Dell Pro Max 14 MC14250 supports one M.2 2230/2280 solid state drive. The M.2 2230/2280 solid state drive is the primary storage drive of your computer.

Table 12. Storage specifications

Storage type	Interface type	Capacity
M.2 2230 solid state drive	Gen 4 x4 PCIe NVMe	256 GB or 512 GB
M.2 2280 solid state drive, Self-Encrypting	Gen 4 x4 PCIe NVMe	1 TB or 2 TB

Keyboard

The following table lists the keyboard specifications of your Dell Pro Max 14 MC14250.

Table 13. Keyboard specifications

Description	Values
Keyboard type	<ul style="list-style-type: none">• Magnetite, Standard AI hotkey backlit keyboard• Magnetite, Standard AI hotkey non-backlit keyboard
Keyboard layout	QWERTY

Table 13. Keyboard specifications (continued)

Description	Values
Number of keys	<ul style="list-style-type: none">• United States and Canada: 79 keys• United Kingdom: 80 keys• Japan: 83 keys
Keyboard size	X = 19.05 mm key pitch Y = 18.05 mm key pitch
Keyboard shortcuts	<p>Some keys on your keyboard have two symbols on them. These keys can be used to type alternate characters or to perform secondary functions. To type the alternate character, press Shift and the desired key. To perform secondary functions, press Fn and the desired key.</p> <p>i NOTE: You can define the primary behavior of the function keys (F1–F12) changing Function Key Behavior in the BIOS setup program.</p> <p>i NOTE: If Copilot in Windows is not available on your computer, pressing the Copilot key launches Windows search. For more information about Copilot in Windows, search in the Knowledge Base Resource at the Dell Support site.</p>

Keyboard shortcuts of Dell Pro Max 14 MC14250

i **NOTE:** Keyboard characters may differ depending on the keyboard language configuration. Keys that are used for shortcuts remain the same across all language configurations.

Some keys on your keyboard have two symbols on them. These keys can be used to type alternate characters or to perform secondary functions. The symbol that is shown on the lower part of the key refers to the character that is typed out when the key is pressed. If you press shift and the key, the symbol that is shown on the upper part of the key is typed out. For example, if you press **2**, 2 is typed out; if you press **Shift + 2**, @ is typed out.

The keys F1-F12 at the top row of the keyboard are function keys for multimedia control, as indicated by the icon on the key. Press the function key to enable the task represented by the icon. For example, pressing F1 mutes the audio (see the table below).

However, if the function keys F1-F12 are needed for specific software applications, multimedia functionality can be disabled by pressing **Fn + Esc**. Later, multimedia control can be invoked by pressing **Fn** and the respective function key. For example, mute audio by pressing **Fn + F1**.

i **NOTE:** You can also define the primary behavior of the function keys (F1–F12) by changing **Function Key Behavior** in the BIOS setup program.

Table 14. Function key primary behavior

Function key	Primary behavior
F1	Mute or unmute audio
F2	Decrease volume
F3	Increase volume
F4	Microphone Mute
F5	Keyboard Illumination/Backlight
F6	Decrease brightness
F7	Increase brightness
F8	Switch to external display

Table 14. Function key primary behavior (continued)

Function key	Primary behavior
F10	Print screen
F11	Home
F12	End

The **Fn** key is also used with selected keys on the keyboard to invoke secondary functions.

Table 15. Secondary behavior

Function key	Secondary behavior
Fn + F1	Operating system and application-specific F1 behavior
Fn + F2	Operating system and application-specific F2 behavior
Fn + F3	Operating system and application-specific F3 behavior
Fn + F4	Operating system and application-specific F4 behavior
Fn + F5	Operating system and application-specific F5 behavior
Fn + F6	Operating system and application-specific F6 behavior
Fn + F7	Operating system and application-specific F6 behavior
Fn + F8	Operating system and application-specific F8 behavior
Fn + F9	Operating system and application-specific F9 behavior
Fn + F10	Operating system and application-specific F10 behavior
Fn + F11	Operating system and application-specific F11 behavior
Fn + F12	Operating system and application-specific F12 behavior
Fn + Ctrl	Open the application menu
Fn + Esc	Toggle between multimedia and function key behavior
Fn + PgUp	Scroll up the document or page
Fn + PgDn	Scroll down the document or page
Fn + Home	Move to the beginning of the document
Fn + End	Move to the end of the document
Copilot	<p>Launch Copilot in Windows</p> <p>NOTE: If Copilot in Windows is not available on your computer, the Copilot key launches Recall. If both Recall and Copilot in Windows are not available on your computer, the Copilot key launches Windows Search. For more information about Copilot in Windows and Recall, search in the Knowledge Base Resource at the Dell Support Site.</p>

Camera

The following table lists the camera specifications of your Dell Pro Max 14 MC14250.

Table 16. Camera specifications

Description	Option one	Option two
Number of cameras	One	Two

Table 16. Camera specifications (continued)

Description		Option one	Option two
Camera type		FHD RGB camera	FHD RGB and IR 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	N/A	0.23 megapixel
	Video	N/A	640 x 360 at 15 fps
Diagonal viewing angle:			
	Camera	80.20 degrees	80.20 degrees
	Infrared camera	N/A	86.60 degrees

Touchpad

The following table lists the touchpad specifications of your Dell Pro Max 14 MC14250.


Table 17. Touchpad specifications

Description		Values
Touchpad resolution:		
	Horizontal	>= 300 dpi
	Vertical	>= 300 dpi
Touchpad dimensions:		
	Horizontal	125 mm (4.92 in.)
	Vertical	73 mm (2.87 in.)
Touchpad gestures		<p>For more information about the touchpad gestures that are available on:</p> <ul style="list-style-type: none"> Windows, see the Microsoft Knowledge Base article at Microsoft Support Site. Ubuntu, see Ubuntu Support Site.


Power adapter

The following table lists the power adapter specifications of your Dell Pro Max 14 MC14250.

Table 18. Power-adapter specifications

Description		Option one	Option two
Type		100 W AC adapter, USB Type-C	130 W AC adapter, USB Type-C
Power-adapter dimensions:			
	Height	26.50 mm (1.04 in.)	22 mm (0.87 in.)
	Width	60 mm (2.36 in.)	66 mm (2.60 in.)
	Depth	122 mm (4.80 in.)	143 mm (5.63 in.)
Input voltage		100 VAC - 240 VAC	100 VAC - 240 VAC
Input frequency		50 Hz - 60 Hz	50 Hz - 60 Hz
Input current (maximum)		1.70 A	1.80 A
Output current (continuous)		<ul style="list-style-type: none">• 20 V/5 A• 15 V/3 A• 9 V/3 A• 5 V/3 A	<ul style="list-style-type: none">• 20 V/6.50 A• 5 V/1 A
Rated output voltage		<ul style="list-style-type: none">• 20 VDC• 15 VDC• 9 VDC• 5 VDC	<ul style="list-style-type: none">• 20 VDC• 5 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.			

Power adapter requirements of Dell Pro Max 14 MC14250

 **NOTE:** If you did not purchase the Dell-branded power adapter that is recommended for your computer, ensure that the power adapter you use meets the following requirements.

The following table lists the power adapter requirements for your Dell Pro Max 14 MC14250.

Table 19. Power adapter requirements

Description	Value
Power that is required from a power adapter to achieve optimal performance	100 W
Power that charges the computer at a slower speed	Less than 60 W

Table 19. Power adapter requirements (continued)

Description	Value
<p>i NOTE: A warning message may appear informing you about the use of a lower-powered adapter and slower charging speed.</p>	
<p>Minimum power that is required from a power adapter to operate the computer and charge the battery</p> <p>i NOTE: A warning message appears informing you about the use of a lower-powered adapter and slower charging speed.</p>	45 W
USB Power Delivery (PD) fast charging	Supported
ExpressCharge mode	<p>Supported</p> <p>i NOTE: Ensure that the computer with a 72 Wh battery is connected to a 100 W power adapter for this feature to be supported.</p> <p>i NOTE: ExpressCharge mode must also be enabled in the BIOS Setup screen. Select Power > Battery Configuration > ExpressCharge, then press Enter.</p>

Battery

The following table lists the battery specifications of your Dell Pro Max 14 MC14250.

Table 20. Battery specifications

Description		Option one	Option two
Battery type		4-cell, 72 Wh, Lithium Ion Polymer, Standard Life, ExpressCharge, ExpressCharge Boost	4-cell, 72 Wh, Lithium Ion Polymer, Long Cycle Life, ExpressCharge, ExpressCharge Boost
Battery voltage		15.60 VDC	15.60 VDC
Battery weight (maximum)		0.27 kg (0.60 lb)	0.27 kg (0.60 lb)
Battery dimensions:			
	Height	7.64 mm (0.30 in.)	7.64 mm (0.30 in.)
	Width	266.62 mm (10.45 in.)	266.62 mm (10.45 in.)
	Depth	72.68 mm (2.86 in.)	72.68 mm (2.86 in.)
Temperature range:			
	Operating	<ul style="list-style-type: none">Charge: 0°C to 50°C (32°F to 122°F)Discharge: 0°C to 60°C (32°F to 140°F)	<ul style="list-style-type: none">Charge: 0°C to 50°C (32°F to 122°F)Discharge: 0°C to 60°C (32°F to 140°F)
	Storage	–20°C to 65°C (–4°F to 149°F)	–20°C to 65°C (–4°F to 149°F)
Battery operating time		Varies depending on operating conditions and can significantly reduce under certain power-intensive conditions.	Varies depending on operating conditions and can significantly reduce under certain power-intensive conditions.

Table 20. Battery specifications (continued)

Description	Option one	Option two
Battery charging time (approximate) i NOTE: You can control the charging time, duration, start and end time, and so on, using the Dell Power Manager application. For more information about Dell Power Manager, search in the Knowledge Base Resource at Dell Support Site .	<ul style="list-style-type: none"> ExpressCharge Boost - From 0% to 35% in almost 20 minutes ExpressCharge - 2 hours Standard charge - 3 hours 	<ul style="list-style-type: none"> ExpressCharge Boost - From 0% to 35% in almost 20 minutes ExpressCharge - 2 hours Standard charge - 3 hours
Coin-cell battery	Not supported	Not supported
⚠ 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. ⚠ CAUTION: Dell Technologies recommends that you charge the battery regularly for optimal power consumption.		

Power requirements

i NOTE: The information in this section is applicable to the European Union (EU) countries.

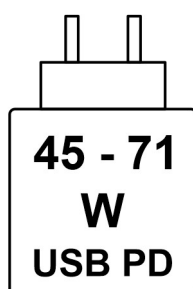


Figure 9. Pictogram for 72 Wh battery

The power that is delivered by the charger must be between a minimum of 45 Watts that is required by the radio equipment, and a maximum of 71 Watts in order to achieve the maximum charging speed.

This computer supports USB Power Delivery (PD) fast charging.

Display

The following table lists the display specifications of your Dell Pro Max 14 MC14250.

Table 21. Display specifications

Description	Option one	Option two
Display type	14" Full High Definition Plus (FHD+)	14" Full High Definition Plus (FHD+)
Touch options	Not supported	Supported
Display-panel technology	Wide-Viewing Angle (WVA)	Wide-Viewing Angle (WVA)
Display-panel dimensions (active area):		
Height	188.50 mm (7.42 in.)	188.50 mm (7.42 in.)

Table 21. Display specifications (continued)

Description		Option one	Option two
	Width	301.59 mm (11.87 in.)	301.59 mm (11.87 in.)
	Diagonal	355.65 mm (14 in.)	355.65 mm (14 in.)
Display-panel native resolution		1920 x 1200	1920 x 1200
Luminance (typical)		300 nits	300 nits
Megapixels		2.3	2.3
Color gamut		45% NTSC	100% sRGB
Pixels Per Inch (PPI)		162	162
Contrast ratio (minimum)		800:1	800:1
Response time (maximum)		35 ms	35 ms
Refresh rate		60 Hz	60 Hz
Horizontal view angle		<ul style="list-style-type: none"> Minimum: 80 +/- degrees Typical: 85 +/- degrees 	<ul style="list-style-type: none"> Minimum: 80 +/- degrees Typical: 85 +/- degrees
Vertical view angle		<ul style="list-style-type: none"> Minimum: 80 +/- degrees Typical: 85 +/- degrees 	<ul style="list-style-type: none"> Minimum: 80 +/- degrees Typical: 85 +/- degrees
Pixel pitch		0.157 x 0.157	0.157 x 0.157
Power consumption (maximum)		3.68 W	4.4 W
Anti-glare vs glossy finish		Anti-glare	Anti-glare

Fingerprint reader (optional)

The following table lists the specifications of the optional fingerprint reader of your Dell Pro Max 14 MC14250.


 **NOTE:** The fingerprint reader is on the power button.

Table 22. Fingerprint reader specifications

Description	Values
Sensor technology	Capacitive sensing
Sensor resolution	500 dpi
Sensor pixel size	108 x 88 pixels

Sensor

The following table lists the sensor of your Dell Pro Max 14 MC14250.

Table 23. Sensor

Sensor support
Accelerometer (for positional sensing)
Hall Effect Sensor

GPU—Integrated

The following table lists the specifications of the integrated Graphics Processing Unit (GPU) supported by your Dell Pro Max 14 MC14250.

Table 24. GPU—Integrated

Controller	Memory size	Processor
Intel Graphics	Shared system memory	Intel Core Ultra 5/7 non-vPro/vPro processors

Multiple display support matrix

The following table lists the multiple display support matrix for your Dell Pro Max 14 MC14250.

Table 25. Multiple display support matrix

Graphics Card	Direct Graphics Controller Direct Output Mode	Supported external displays with computer internal display on	Supported external displays with computer internal display off
Intel Graphics	Not supported	3	4

Hardware security

The following table lists the hardware security of your Dell Pro Max 14 MC14250.

Table 26. Hardware security

Hardware security
One wedge-shaped lock slot
Windows Hello - Fingerprint Reader (optional)
Trusted Platform Module (TPM) 2.0 discrete
FIPS 140-2 certification for TPM
TCG Certification for TPM (Trusted Computing Group)
Finger Print Reader in Power Button available with and without ControlVault 3 Plus
ControlVault 3 Plus Advanced Authentication with FIPS 140-3 Level 3 Certification
Contacted Smart Card and ControlVault 3 Plus
Contactless Smart Card, NFC, and ControlVault 3 Plus
SED SSD NVMe, SSD per SDL

Smart-card reader

Contactless smart-card reader

This section lists the contactless smart-card reader specifications of your Dell Pro Max 14 MC14250. This module is only available in computers shipped with Smart-card readers.

Table 27. Contactless smart-card reader specifications

Title	Description	Dell ControlVault 3 Plus Contactless smart-card reader with NFC
Felica Card Support	Reader and software capable of supporting Felica contactless cards	Yes
Prox (Proximity) (125kHz) Card support	Reader and software capable of supporting Prox /Proximity/125 kHz contactless cards	No
ISO 14443 Type A Card Support	Reader and software capable of supporting ISO 14443 Type A contactless cards	Yes
ISO 14443 Type B Card Support	Reader and software capable of supporting ISO 14443 Type B contactless cards	Yes
ISO/IEC 21481	Reader and software capable of supporting ISO/IEC 21481 compliant contactless cards and tokens	Yes
ISO/IEC 18092	Reader and software capable of supporting ISO/IEC 21481 compliant contactless cards and tokens	Yes
ISO 15693 Card Support	Reader and software capable of supporting ISO15693 contactless cards	Yes
NFC Tag Support	Supports reading and processing of NFC compliant tag information	Yes
NFC Reader Mode	Support for NFC Forum Defined Reader mode	Yes
NFC Writer Mode	Support for NFC Forum Defined Writer mode	Yes
NFC Peer-to-Peer Mode	Support for NFC Forum Defined Peer to Peer mode	Yes
NFC Proximity OS Interface	Enumerates NFP (Near Field Proximity) device for operating system to utilize	Yes
PC/SC operating system interface	Personal Computer/Smart Card specification for integration of hardware readers into personal computer environments	Yes
CCID driver compliance	Common driver support for Integrated Circuit Card Interface Device for operating system level drivers	Yes
Dell ControlVault support	The device connects to Dell ControlVault for usage and processing	Yes


 **NOTE:** 125 KHz proximity cards are not supported.

Table 28. Supported contactless smart-card types

Interface	Card type	Supported functionality
NFC Forum (Microsoft Proximity Device)	Type 1 tag	Read/Write NDEF
	Type 2 tag	Read/Write NDEF
	Type 3 tag	Read/Write NDEF
	Type 4 tag	Read/Write NDEF
	Type 5 tag	Read/Write NDEF
	P2P	Exchange NDEF
RFID (Microsoft Smartcard Device)	ISO14443A	Read UUID and APDU Exchange (ISO7816)
	ISO14443B	Read UUID and APDU Exchange (ISO7816)
	Sony FeliCa	Read UUID only
	Legacy iClass (ISO15693)	Read UUID only
	Mifare Classic	Read UUID only
	Low Frequency (125 KHz)	Not supported

Table 29. Supported cards

Manufacturer	Card
HID	jCOP readertest3 A card (14443a)
	1430 1L
	DESFire D8H
	DESFIRE 4K Standard - 1450NGGNN
	iClass 16K/16 - 2002PGGMN
	iClass SR 16K/16 - 2002HPGGMN
	iCLASS 2K tag
	iCLASS GP - 2003 PGGMN
	iClass Clamshell - 2080PMSMV
	iClass Prox 16K/16 - 2022BGGMNN
	Mifare M1P 1430 NGGNN
	iclass Prox 2020BGGMNM
	DesFire D8P 1456CSGMN
	iCLASS MIFARE Px GM49Y 2623BNPGGBNAB
	iCLASS MIFARE Px 8M1L
	iClass SEOS JW 5006PGGMN
	Crescendo iCLASS Px G8H
	iCLASS Seos IY
	SEOS JMC4 J1Y 5806VNG1NNN4
	SEOS Key FOB 5266PNNA
	SEOS Clamshell 5656PMSAV
	SEOS + Prox 5106RGGMNN

Table 29. Supported cards (continued)

Manufacturer	Card
	SEOS + DESFire 5906PNG1ANN7
	SEOS iClass 5006PGGMN7
	Seos Essential + Prox 551PPGGANN
	iCLASS 2K 2000PGGMN
	iCLASS 2K 3000PGGMN
	MIFARE DESFire 3700CPGGAN
	iCLASS DP
	DESFire 1Y
NXP/Mifare	Mifare DESFire 8K White PVC card
	Mifare Classic 1K White PVC card
	NXP Mifare Classic S50 ISO card
	Mifare DESFire 2K
	Mifare Plus S 2K/4K
	Mifare Plus X 4K
G&D	idOnDemand - SCE3.2 144K
	SCE6.0 FIPS 80K Dual + 1K Mifare
	SCE6.0 nonFIPS 80K Dual + 1K Mifare
	SCE6.0 FIPS 144K Dual + 1K Mifare
	SCE6.0 nonFIPS 144K Dual + 1K Mifare
	SCE7.0 FIPS 144K
Oberthur	idOnDemand - OCS5.2 80K
	ID-One Cosmo 64 RSA D V5.4 T = 0 card
	ID-One Cosmo 128K V5.5 card
Gemalto	TOP DL GX4 144K card
Sony	Felica RC-S962
	Felica RC-S965
	Felica RC-S966
PIVKey	C910 PKI
NIST	PIV1
IDENTIV	PIV programmed cards
	uTrust
Transport cards	Oyster (London) MIFARE DESFire
	T-Money (Korea)
	Octopus Card (Hong Kong)
	SUICA (Japan)

Contacted smart-card reader

The following table lists the contacted smart-card reader specifications of your Dell Pro Max 14 MC14250.

Table 30. Contacted smart-card reader specifications

Title	Description	Dell ControlVault 3 smart-card reader
ISO 7816 -3 Class A Card Support	Reader capable of reading 5V powered smart mcard	Yes
ISO 7816 -3 Class B Card Support	Reader capable of reading 3V powered smart card	Yes
ISO 7816 -3 Class C Card support	Reader capable of reading 1.8V powered smart card	Yes
ISO 7816-1 Compliant	Specification for the reader	Yes
ISO 7816 -2 Compliant	Specification for smart card device physical characteristics (size, location of connection points, etc.)	Yes
T=0 support	Cards support character level transmission	Yes
T=1 support	Cards support block level transmission	Yes
EMVCo Compliant	Compliant with EMVCo (for electronic payment standards) smart card standards as posted to www.emvco.com	Yes
EMVCo Certified	Formally certified based on EMVCO smart card standards	Yes
PC/SC OS interface	Personal Computer/Smart Card specification for integration of hardware readers into personal computer environments	Yes
CCID driver compliance	Common driver support for Integrated Circuit Card Interface Device for OS level drivers.	Yes
Windows Certified	Device certified by WHCK	Yes
FIPS 201 (PIV/HSPD-12) Compliant via GSA	Device compliant with FIPS 201/PIV/HSPD-12 requirements	Yes
FIDO2 compliance	Dell ControlVault 3 Smart-card reader is compliant with the FIDO SPEC	Yes

Operating and storage environment


This table lists the operating and storage specifications of your Dell Pro Max 14 MC14250.

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

Table 31. 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

Table 31. Computer environment (continued)

Description	Operating	Storage
Shock (maximum)	110 G†	160 G†
Altitude range	-15.2 m to 3048 m (-49.87 ft to 10,000 ft)	-15.2 m to 10,668 m (-49.87 ft to 35,000 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.

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 [Dell Regulatory Compliance Home Page](#).
-  **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:** You should only perform troubleshooting and repairs as authorized or directed by the Dell technical support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. See the safety instructions that are shipped with the product or at [Dell Regulatory Compliance Home Page](#).
-  **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:** To avoid damaging the components and cards, handle them by their edges, and avoid touching the pins and the contacts.
-  **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 connector on the cable is correctly oriented and aligned with the port.
-  **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.

Before working inside your computer

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**.
 **NOTE:** If you are using a different operating system, see the documentation of your operating system for instructions.
3. Turn off all the attached peripherals.
4. Disconnect your computer from the electrical outlet.
5. Disconnect all attached network devices and peripherals, such as keyboard, mouse, and monitor from your computer.
6. Remove any media card and optical drive from your computer, if applicable.
7. To clean the air vents, use a soft brush and move vertically.


 **NOTE:** Do not remove the base cover or use any blower to clean the vents.

8. Enter the Service Mode.

Service Mode

Service Mode is used to cut off power without disconnecting the battery cable from the system board before conducting repairs in the computer.

 **CAUTION:** If you are unable to turn on the computer to put it into Service Mode, proceed to disconnect the battery cable. To disconnect the battery cable, follow the steps in [Removing the battery](#).

 **NOTE:** Ensure that your computer is shut down and the power adapter is disconnected.

- a. Press and hold the B key and the power button for 3 seconds or until the Dell logo appears on the screen.
- b. Press any key to continue.
- c. If the power adapter is not disconnected, a message prompting you to disconnect the power adapter appears on the screen. Disconnect the power adapter and then press any key to enter into the Service Mode. The Service Mode process automatically skips the following step if the **Owner Tag** of the computer is not set up in advance by the user.
- d. When the **ready-to-proceed** message appears on the screen, press any key to proceed. The computer emits three short beeps and shuts down immediately.
The computer shuts down and enters the Service Mode.

Safety precautions

This section details the primary steps to be followed before disassembling any device or component.

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

- Turn off the computer and all attached peripherals.
- Disconnect the computer from AC power.
- Disconnect all network cables and peripherals from the computer.
- Use an ESD field service kit when working inside your computer to avoid electrostatic discharge (ESD) damage.
- Place the removed component on an anti-static mat after removing it from the computer.
- Wear shoes with nonconductive rubber soles to reduce the chance of getting electrocuted.
- Press and hold the power button for 15 seconds to discharge the residual power in the system board.

Standby power

Dell products with standby power must be unplugged before you open the back cover. Systems that are equipped with 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.

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. Ensure that the wrist strap is secure and in full contact with your skin. Remove all jewelry, watches, bracelets, or rings before grounding 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 modules, and system boards. A slight charge 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.

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 module 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 memory module 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.


Intermittent failures that are also called latent or "walking wounded" are difficult to detect and troubleshoot.

Perform the following steps to prevent ESD damage:

- Use a wired ESD wrist strap that is properly grounded. Wireless anti-static straps 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, use the anti-static wrist strap to discharge the static electricity from your body. For more information about the wrist strap and ESD wrist strap tester, see [Components of an ESD Field Service Kit](#).
- 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.

 **CAUTION: It is critical to keep ESD-sensitive devices away from internal parts that are insulated and often highly charged, such as plastic heat sink casings.**

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 component using the same ESD bag and packaging that the new part arrived in. The ESD bag should be folded over and taped shut and all the same foam packing material should be used in the original box that the new part arrived in. ESD-sensitive devices should be removed from packaging only at an ESD-protected work surface, and parts should never be placed on top of the ESD bag because only the inside of the bag is shielded. Always place parts in your hand, on the anti-static mat, in the computer, or inside an ESD bag.


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 anti-static 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 anti-static mat. ESD-sensitive items are safe in your hand, on the anti-static mat, in the computer, or inside an ESD 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 anti-static mat is not required, or connect 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 anti-static mat, and the hardware is known as bonding. Use only Field Service kits with a wrist strap, anti-static mat, and

bonding wire. Never use wireless wrist straps. Always be cautious 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 before each service, and at a minimum, test once per week. A wrist strap tester is the best method for doing this test. To perform the test, plug the bonding-wire of the wrist-strap 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.

 **NOTE:** It is recommended to always use the traditional wired ESD grounding wrist strap and protective anti-static mat when servicing Dell products. In addition, it is critical to keep sensitive parts separate from all insulator parts while servicing the computer.

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.

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, disks, or any other parts that you removed before working on your computer.
4. Connect your computer to their electrical outlets.

 **NOTE:** To exit service mode, ensure to connect the AC adapter to the power-adapter port on your computer.

5. Press the power button to turn on the computer.

BitLocker

 **CAUTION:** If BitLocker is not suspended before updating the BIOS, the BitLocker key is not recognized the next time that you reboot the computer. You will be prompted to enter the recovery key to progress, and the computer displays a prompt for the recovery key on each reboot. If the recovery key is not known, this can result in data loss or an operating system reinstall. For more information, see Knowledge Article: [updating the BIOS on Dell computers 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
- Flat-headed screwdriver (maximum width: 4 mm)
- Plastic scribe

Screw list




-  **NOTE:** When removing screws from a component, it is recommended to note the screw type and 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 depending on the configuration ordered.

Table 32. Screw list



























Component	Screw type	Quantity	Screw image
Base cover	Captive screw  NOTE: Screws are part of the base cover.	8	
Battery	M2x4	5	
Memory-module bracket	M2x6	3	
Solid state drive bracket	M2x3	2	
Solid state drive	M2x4	1	
Wireless-card bracket	M2x3	1	
Speakers	M1.6x3	4	
Fan	M2x4	2	
Battery frame	M2x3	7	
USH board	M2x2	2	
Smart-card reader	M2x2.2	4	
Heat sink	Captive screw  NOTE: Screws are part of the heat sink.	4	
I/O board	M2x3	2	
Fingerprint-reader bracket	M2x4	1	
Power button	M2x2	1	
Display-cable bracket	M2x3	3	

Table 32. Screw list (continued)

Component	Screw type	Quantity	Screw image
Display assembly	M2.5x4.5	6	
Display panel	M2x3	4	
Display hinges	M2.5x3.5	6	
System board	M2x6	2	
	M2x3	3	
USB Type-C module	M2x5	3	
Keyboard	M2x2.2	18	
Keyboard bracket	M2x2.2	3	

Major components of Dell Pro Max 14 MC14250

The following image shows the major components of Dell Pro Max 14 MC14250.

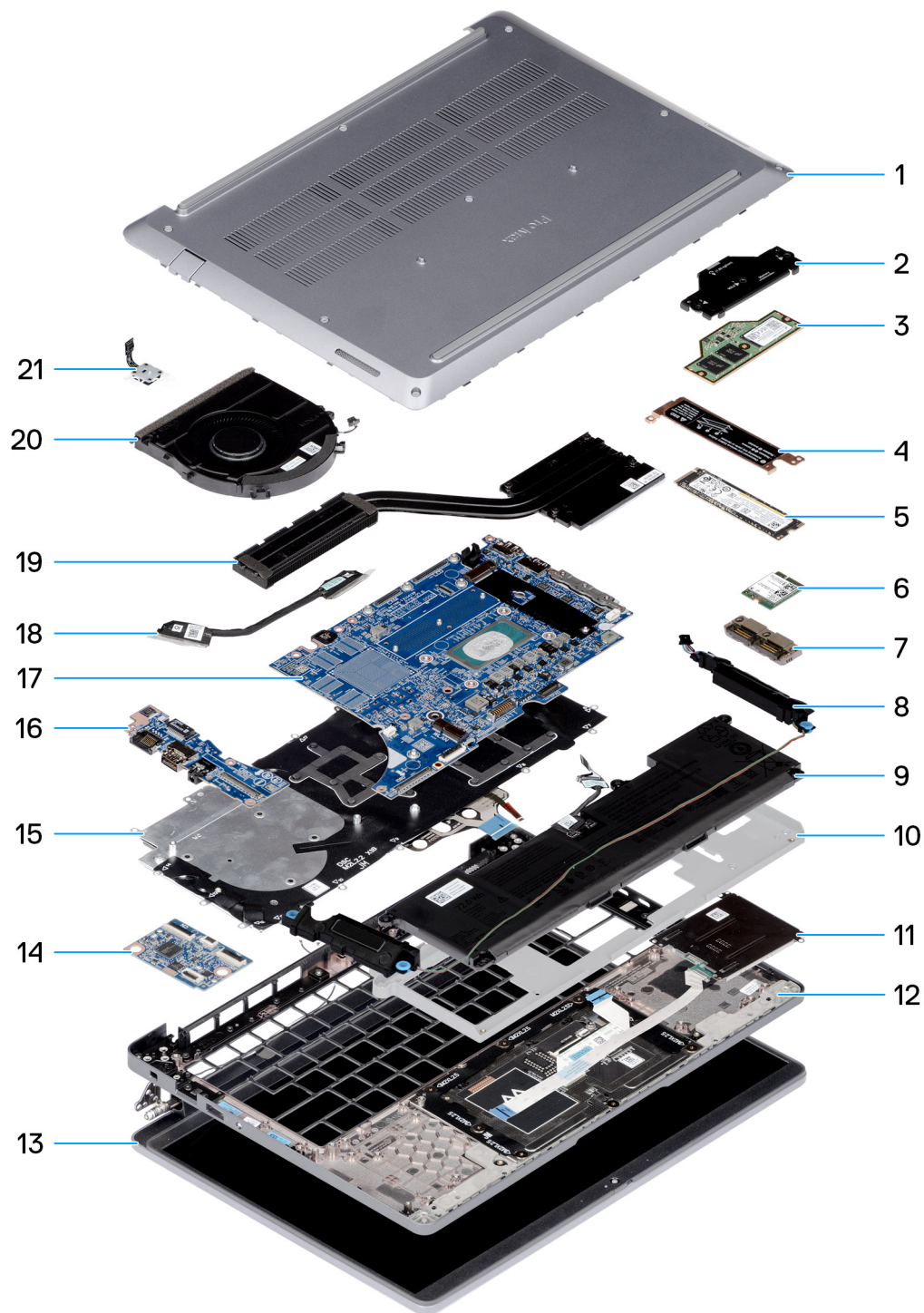



Figure 10. Major components of your Dell Pro Max 14 MC14250

1. Base cover
2. Memory-module bracket
3. Memory module
4. Solid state drive bracket
5. Solid state drive
6. Wireless card
7. USB Type-C module
8. Speakers
9. Battery

10. Battery frame
11. Smart-card reader
12. Palm-rest assembly
13. Display assembly
14. USH board
15. Keyboard assembly
16. I/O board
17. System board
18. I/O-board cable
19. Heat sink
20. Fan
21. Power button with optional fingerprint reader

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