

Dell Pro 14 Plus/Dell Pro 14 Plus 2-in-1
PB14250/PB14250 2-in-1
(Intel Core Ultra 200U Series/Intel Core 100U and
200U Series)
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.

Contents

Chapter 1: Views of Dell Pro 14 Plus/Dell Pro 14 Plus 2-in-1.....	7
Right.....	7
Left.....	7
Top.....	9
Front.....	10
Bottom.....	11
Locate the Service Tag or Express Service Code label of your computer.....	11
Modes.....	12
Battery-charge status light.....	14
Chapter 2: Set up your Dell Pro 14 Plus/Dell Pro 14 Plus 2-in-1.....	15
Chapter 3: Specifications of Dell Pro 14 Plus/Dell Pro 14 Plus 2-in-1.....	17
Dimensions and weight.....	17
Processor.....	17
Chipset.....	18
Operating system.....	18
Memory.....	18
External ports and slots.....	19
Internal slots.....	19
Ethernet.....	20
Wireless module.....	20
WWAN module.....	21
Audio.....	22
Keyboard.....	22
Keyboard shortcuts of Dell Pro 14 Plus/Dell Pro 14 Plus 2-in-1.....	23
Storage.....	24
Camera.....	25
Touchpad.....	25
Power adapter.....	26
Power adapter requirements (for computers shipped with 3-cell, 45 Wh battery)	27
Power adapter requirements (for computers shipped with 3-cell, 55 Wh battery)	27
Battery.....	28
Power requirements (for computers shipped with 3-cell, 45 Wh battery).....	29
Power requirements (for computers shipped with 3-cell, 55 Wh battery).....	30
Display.....	30
Fingerprint reader (optional).....	31
GPU—Integrated.....	32
Hardware security.....	32
Operating and storage environment.....	32
Chapter 4: Working inside your computer.....	34
Safety instructions.....	34
Before working inside your computer.....	34

Safety precautions.....	37
Electrostatic discharge—ESD protection.....	37
ESD Field Service kit	38
Transporting sensitive components.....	39
After working inside your computer.....	39
BitLocker.....	39
Recommended tools.....	39
Screw list.....	40
Major components of Dell Pro 14 Plus/Dell Pro 14 Plus 2-in-1.....	41
Chapter 5: Removing and installing Customer Replaceable Units (CRUs).....	44
SIM-card tray.....	44
Removing the SIM-card tray.....	44
Installing the SIM-card tray.....	45
Base cover.....	46
Removing the base cover.....	46
Installing the base cover.....	49
Battery.....	52
Rechargeable Li-ion battery precautions.....	52
Removing the battery.....	52
Installing the battery.....	53
Battery cable.....	54
Removing the battery cable.....	54
Installing the battery cable.....	55
Memory module.....	56
Removing the memory module.....	56
Installing the memory module	57
Wireless Wide Area Network (WWAN) card.....	58
Removing the WWAN card.....	58
Installing the WWAN card.....	60
Solid State Drive (SSD).....	61
Removing the M.2 2230 solid state drive (SSD).....	61
Installing the M.2 2230 solid state drive (SSD)	62
Removing the M.2 2280 solid state drive (SSD)	63
Installing the M.2 2280 solid state drive (SSD).....	63
Wireless Local Area Network (WLAN) card.....	64
Removing the WLAN card.....	64
Installing the WLAN card.....	65
Speakers.....	66
Removing the speakers.....	66
Installing the speakers.....	67
Chapter 6: Removing and installing Field Replaceable Units (FRUs).....	69
Fan and heat-sink assembly.....	69
Removing the fan and heat-sink assembly.....	69
Installing the fan and heat-sink assembly.....	70
USH daughterboard.....	72
Removing the USH daughterboard.....	72
Installing the USH daughterboard	73

Smart-card reader.....	74
Removing the smart-card reader	74
Installing the smart-card reader	76
System board.....	78
Removing the system board.....	78
Installing the system board	80
Wireless Local Area Network (WLAN) antenna module.....	82
Removing the WLAN antenna module.....	82
Installing the WLAN antenna module.....	84
USB Type-C connector module.....	85
Removing the USB Type-C connector module.....	85
Installing the USB Type-C connector module.....	86
I/O board.....	87
Removing the I/O board.....	87
Installing the I/O board.....	89
Power button with optional fingerprint reader.....	91
Removing the power button with optional fingerprint reader.....	91
Installing the power button with optional fingerprint reader.....	92
Display assembly.....	93
Removing the display assembly	93
Installing the display assembly	95
Display bezel.....	98
Removing the display bezel	98
Installing the display bezel	103
Display panel.....	105
Removing the display panel.....	105
Installing the display panel.....	108
Display hinge caps.....	111
Removing the display hinge caps	111
Installing the display hinge caps	112
RGB/IR camera.....	114
Removing the RGB/IR camera.....	114
Installing the RGB/IR camera.....	115
Display cable for RGB/IR camera.....	116
Removing the display cable for RGB/IR camera	116
Installing the display cable for RGB/IR camera	117
MIPI camera.....	119
Removing the MIPI camera.....	119
Installing the MIPI camera.....	120
Display cable for MIPI camera.....	121
Removing the display cable for MIPI camera.....	121
Installing the display cable for MIPI camera.....	122
Middle-daughterboard cable.....	123
Removing the middle-daughterboard cable	123
Installing the middle-daughterboard cable	124
Middle daughterboard.....	126
Removing the middle daughterboard	126
Installing the middle daughterboard	127
Display back-cover and antenna assembly.....	128
Removing the display back-cover and antenna assembly	128

Installing the display back-cover and antenna assembly.....	129
Keyboard.....	130
Removing the keyboard.....	130
Installing the keyboard.....	132
Palm-rest assembly.....	135
Removing the palm-rest assembly.....	135
Installing the palm-rest assembly.....	136
Chapter 7: Software.....	139
Operating system.....	139
Drivers and downloads.....	139
Chapter 8: BIOS Setup.....	140
Entering BIOS Setup program.....	140
Navigation keys.....	140
F12 One Time Boot menu.....	140
View Advanced Setup options.....	141
View Service options.....	141
System setup options.....	141
Updating the BIOS.....	157
Updating the BIOS in Windows.....	157
Updating the BIOS in Linux and Ubuntu.....	157
Updating the BIOS using the USB drive in Windows.....	158
Updating the BIOS from the One-Time boot menu.....	158
System and setup password.....	159
Assigning a System Setup password.....	159
Deleting or changing an existing system password or setup password.....	160
Clearing system and setup passwords.....	160
Chapter 9: Troubleshooting.....	161
Handling swollen rechargeable Li-ion batteries.....	161
Dell SupportAssist Pre-boot System Performance Check diagnostics.....	161
Running the SupportAssist Pre-Boot System Performance Check.....	162
Built-in self-test (BIST).....	162
(Motherboard Built-In Self-Test) M-BIST.....	162
Logical Built-in Self-test (L-BIST).....	163
LCD Built-in Self-Test (LCD-BIST).....	163
System-diagnostic lights.....	163
Recovering the operating system.....	164
Real-Time Clock (RTC Reset).....	165
Backup media and recovery options.....	165
Network power cycle.....	165
Drain flea power (perform hard reset).....	165
Chapter 10: Getting help and contacting Dell.....	167

Views of Dell Pro 14 Plus/Dell Pro 14 Plus 2-in-1

Right

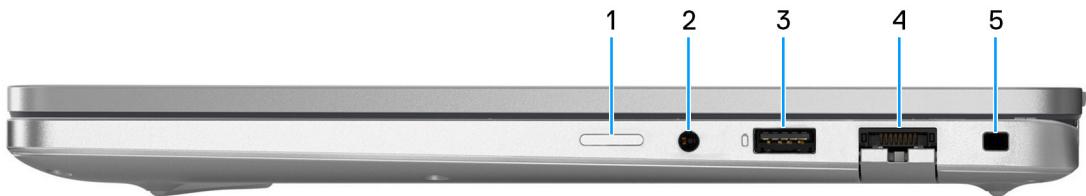


Figure 1. Right view

1. Nano-SIM card slot (optional)

Insert a SIM card to connect to a mobile broadband network.

i **NOTE:** Availability of the SIM card slot depends on the region and configuration ordered.

2. Global headset jack

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

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

Connect devices such as external storage devices and printers. It provides data transfer speeds up to 5 Gbps. PowerShare enables you to charge your USB devices even when your computer is turned off.

i **NOTE:** If your computer is turned off or in a hibernate 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.

4. Optional RJ45 ethernet (1 Gbps) port

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).

5. Security-cable slot (wedge-shaped)

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

Left

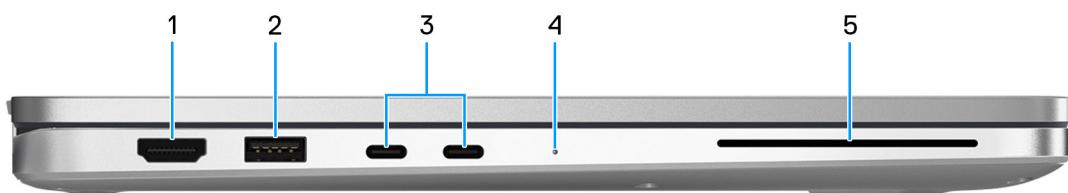


Figure 2. Left view

1. HDMI 2.1 Transition-minimized differential signaling (TMDS) port

Connect to a TV, external display or another HDMI-in enables 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 rate of up to 5 Gbps.

3. Thunderbolt 4 (40 Gbps) with DisplayPort Alt Mode/USB Type-C/USB4/Power Delivery

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.

i | 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](#).

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

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

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

4. Battery-status light

Indicates the battery-charge status.

- White—Battery is charging.
- Solid yellow—Battery charge is low.
- Blinking yellow—Battery charge is critical.
- Off—Battery is fully charged.

5. Smart-card reader slot (optional)

Using smart card provides authentication in corporate networks.

Top

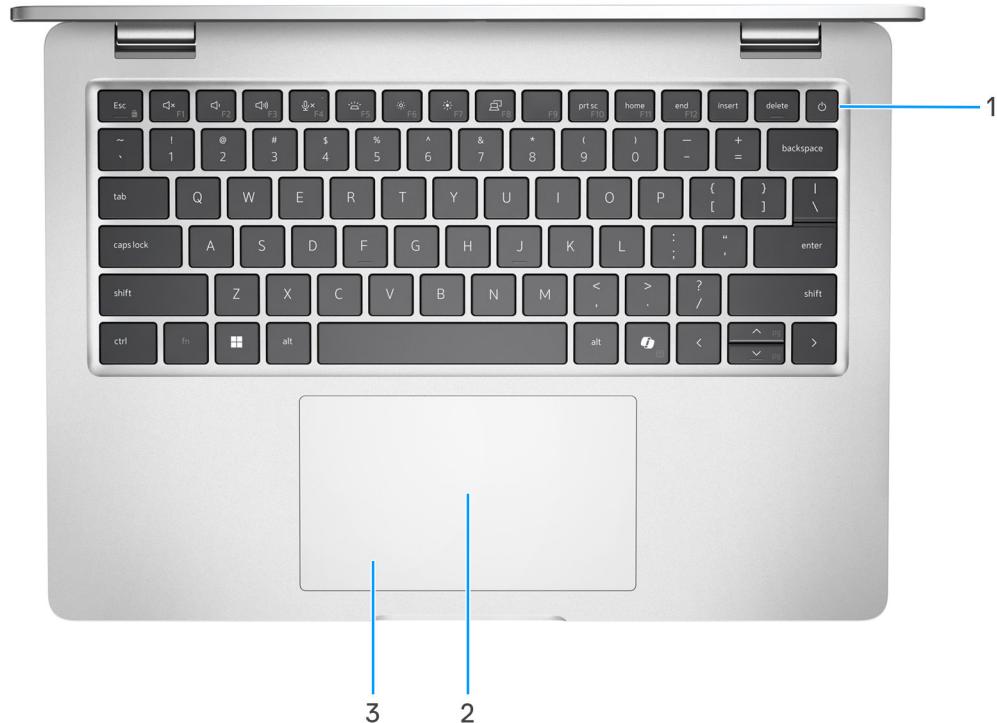


Figure 3. Top view

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.

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

i **NOTE:** The power-status light on the power button is available only on computers without the fingerprint reader. Computers that are shipped with the fingerprint reader that is integrated on the power button will not have the power-status light on the power button.

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

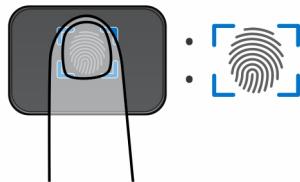


Figure 4. Active area of the fingerprint reader

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

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

2. NFC/Contactless smart card reader (optional)

Enables NFC-enabled devices to communicate with your computer.

3. Touchpad

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

Front

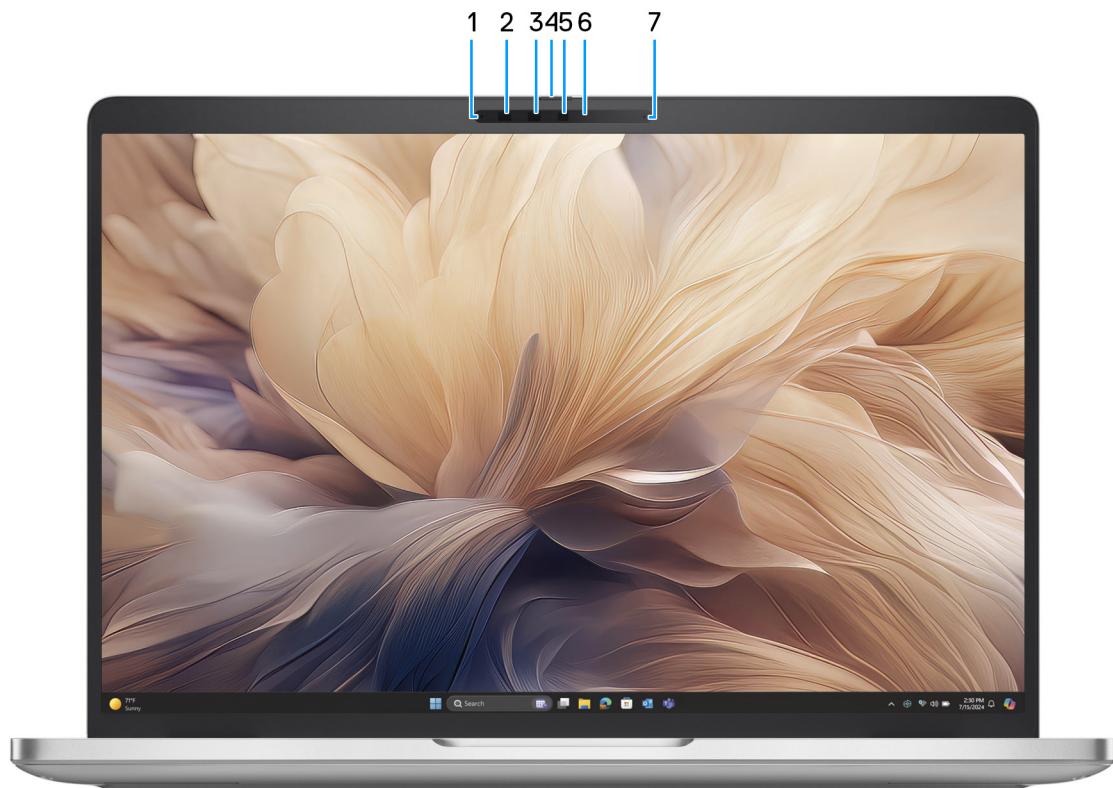


Figure 5. Front view

1. Left microphone

Provides digital sound input for audio recording and voice calls.

2. Infrared camera (optional)

Enhances security when paired with Windows Hello face authentication.

3. Infrared emitter (optional)

The infrared emitter emits infrared light, which enables the infrared camera to sense and track motion.

4. Camera shutter

Slide the privacy shutter to the left to access the camera lens.

5. Camera

A camera enables you to video chat, capture photos, and record videos.

6. Camera-status light

Turns on when the camera is in use.

7. Right microphone

Provides digital sound input for audio recording and voice calls.

Bottom

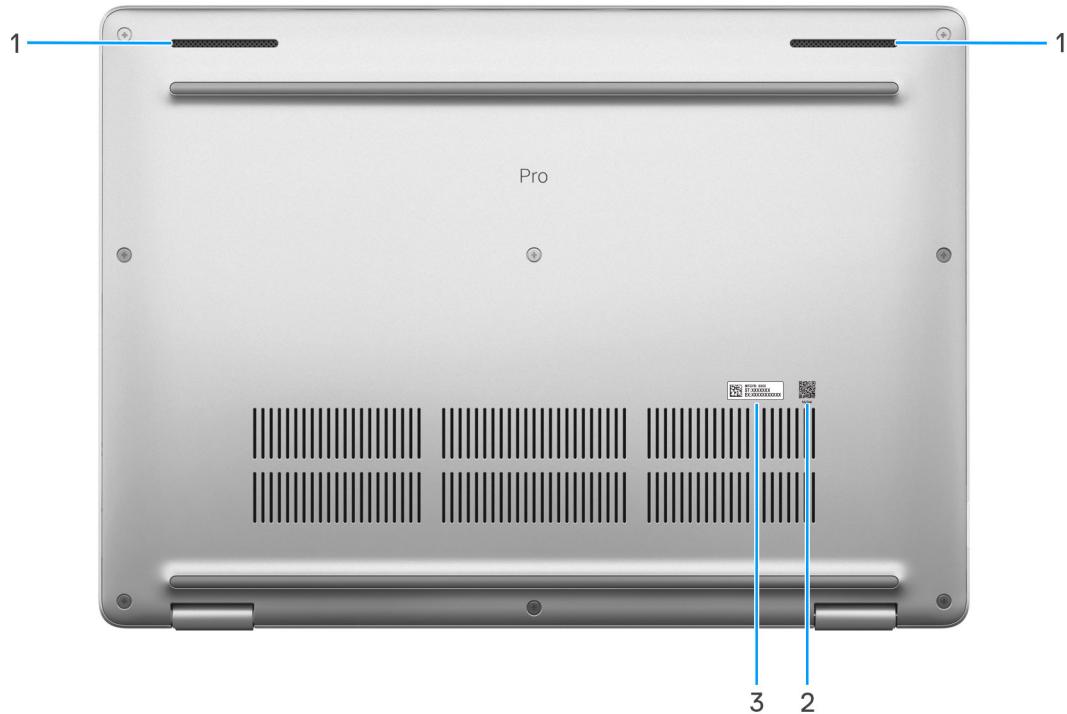


Figure 6. Bottom View

1. Speakers (2)

Provide audio output.

2. MyDell QR Code

MyDell is your hub for content personalized to your Dell Pro 14 Plus/Dell Pro 14 Plus 2-in-1, including videos, articles, manuals, and easy access to support.

3. Service Tag label

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

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](#).

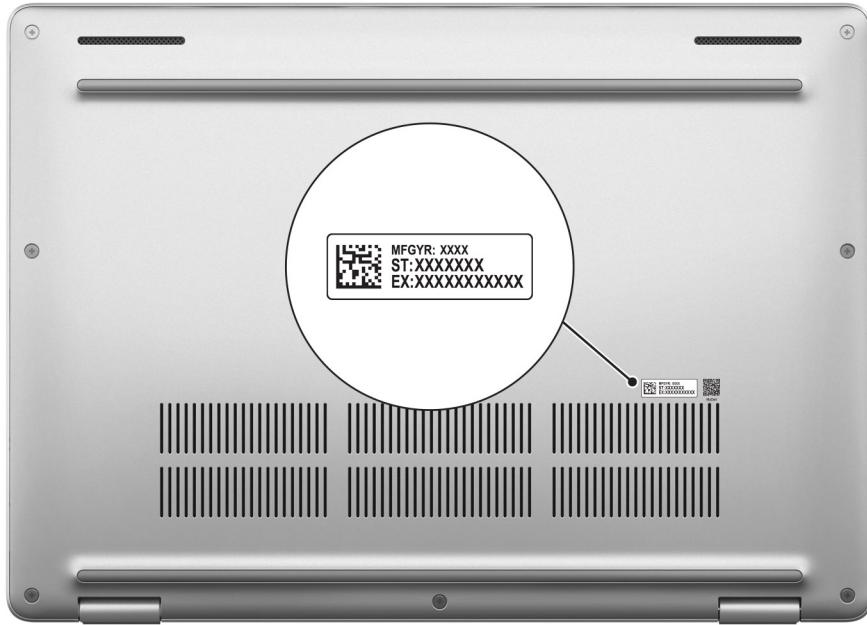


Figure 7. Service Tag/Express Service Code location

Modes

The following modes are supported only on Dell Pro Plus 14 2-in-1 configuration.

Notebook



Figure 8. Notebook mode

Tablet



Figure 9. Tablet Mode

Stand



Figure 10. Stand mode

Tent



Figure 11. Tent mode

Battery-charge status light

The following table lists the battery-charge status light of your Dell Pro 14 Plus/Dell Pro 14 Plus 2-in-1.

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 14 Plus/Dell Pro 14 Plus 2-in-1

About this task

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

Steps

1. Connect the power adapter and press the power button.

Figure 12. Connect the power adapter and press the power button.



i **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.

i **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 an account. If not connected to the Internet, create an offline 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 Optimizer	<p>Dell Optimizer is an application that is designed to enhance computer performance and productivity by optimizing settings for power, battery, display, collaboration touchpad, and presence detection. It also provides access to applications purchased with your new computer.</p> <p>For more information, see Dell Optimizer User's Guide at Dell Support Site.</p>
	<p>Dell Product Registration</p> <p>Register your computer with Dell.</p>
	<p>Dell Help & Support</p> <p>Access help and support for your computer.</p>
	<p>SupportAssist</p> <p>SupportAssist is a proactive and predictive technology that offers automated technical support for Dell computers. It proactively monitors both hardware and software, addressing performance issues, preventing security threats, and automating engagement with Dell Technical Support.</p> <p>For more information, see SupportAssist documentation at Dell Support Site.</p> <p>i NOTE: In SupportAssist, click the warranty expiry date to renew or upgrade your warranty.</p>

Specifications of Dell Pro 14 Plus/Dell Pro 14 Plus 2-in-1

Dimensions and weight

The following table lists the height, width, depth, and weight of your Dell Pro 14 Plus/Dell Pro 14 Plus 2-in-1.

Table 3. Dimensions and weight

Description	400 nits (non-touch)	300 nits (touch and non-touch)	2-in-1 300 nits (touch)
Height:			
Front height	19.78 mm (0.78 in.)	19.50 mm (0.77 in.)	19.92 mm (0.78 in.)
Rear height	19.77 mm (0.77 in.)	19.98 mm (0.79 in.)	20.17 mm (0.79 in.)
Maximum height	19.95 mm (0.79 in.)	21.20 mm (0.83 in.)	20.25 mm (0.80 in.)
Width	313.50 mm (12.34 in.)	313.50 mm (12.34 in.)	313.50 mm (12.34 in.)
Depth	224 mm (8.82 in.)	224 mm (8.82 in.)	224 mm (8.82 in.)
Weight ① NOTE: The weight of your computer depends on the configuration ordered and manufacturing variability.	1.40 kg (3.10 lb)	1.53 kg (3.37 lb)	1.56 kg (3.45 lb)

Processor

The following table lists the details of the processors that are supported by your Dell Pro 14 Plus/Dell Pro 14 Plus 2-in-1 .

Table 4. Processor

Description	Option one	Option two	Option three	Option four	Option five	Option six	Option seven	Option eight	Option nine
Processor type	Intel Core Ultra 5 225U	Intel Core Ultra 5 235U	Intel Core Ultra 7 255U	Intel Core Ultra 7 265U	Intel Core 3 100U	Intel Core 5 120U	Intel Core 5 220U	Intel Core 7 150U	Intel Core 7 250U
Processor wattage	15 W	15 W	15 W	15 W	15 W	15 W	15 W	15 W	15 W
Processor core count	12	12	12	12	6	10	10	10	10
Processor thread count	14	14	14	14	8	12	12	12	12
Processor speed	Up to 4.8 GHz	Up to 4.9 GHz	Up to 5.2 GHz	Up to 5.3 GHz	Up to 4.7 GHz	Up to 5 GHz	Up to 5 GHz	Up to 5.4 GHz	Up to 5.4 GHz

Table 4. Processor (continued)

Description	Option one	Option two	Option three	Option four	Option five	Option six	Option seven	Option eight	Option nine
Processor cache	12 MB	12 MB	12 MB	12 MB	10 MB	12 MB	12 MB	12 MB	12 MB
Integrated graphics	Intel Xe LPG Graphics	Intel Graphics							

Chipset

The following table lists the details of the chipset that is supported by your Dell Pro 14 Plus/Dell Pro 14 Plus 2-in-1.

Table 5. Chipset

Description	Option one	Option two
Processors	Intel Core Ultra 200U series	Intel Core 100U and 200U series
Chipset	Integrated in the processor	Integrated in the processor
DRAM bus width	64-bit	64-bit
Flash EPROM	64 MB	64 MB
PCIe bus	Up to Gen4	Up to Gen4

Operating system

Your Dell Pro 14 Plus/Dell Pro 14 Plus 2-in-1 supports the following operating systems:

- Windows 11 Pro
- Windows 11 Home
- Ubuntu Linux 24.04

(i) NOTE: If you downgrade your computer from Windows 11 to Windows 10 22H2, Dell Technologies support will follow the Microsoft Windows 10 End of Support plan.

Memory

The following table lists the memory specifications that are supported by your Dell Pro 14 Plus/Dell Pro 14 Plus 2-in-1.

Table 6. Memory specifications

Description	Values
Memory slots	Two SODIMM slots
Memory type	DDR5
Memory speed	<ul style="list-style-type: none"> • Intel Core Ultra 200U series: 5600 MT/s • Intel Core 100U and 200U series: 5200 MT/s
Maximum memory configuration	64 GB
Minimum memory configuration	8 GB

Table 6. Memory specifications (continued)

Description	Values
Memory size per slot	8 GB, 16 GB, 32 GB or 64 GB
Memory configurations supported	<ul style="list-style-type: none"> • 8 GB: 1 x 8 GB, DDR5 • 16 GB: 2 x 8 GB, DDR5 • 32 GB: 2 x 16 GB, DDR5 • 32 GB: 1 x 32 GB, DDR5 • 64 GB: 2 x 32 GB, DDR5

External ports and slots

The following table lists the external ports and slots of your Dell Pro 14 Plus/Dell Pro 14 Plus 2-in-1.

Table 7. External ports and slots

Description	Values
Network port	One optional RJ45 ethernet port (1 Gbps)
USB ports	<ul style="list-style-type: none"> • Thunderbolt 4.0 (40 Gbps) with DisplayPort Alt Mode/USB Type-C/USB4/Power Delivery <p>NOTE: You can connect a Dell Docking Station to these ports. For more information, search in the Knowledge Base Resource at Dell Support Site.</p> <ul style="list-style-type: none"> • 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 jack
Video port(s)	One HDMI 2.1 Transition-minimized differential signaling (TMDS) port
Media-card reader	One smart-card reader slot (optional)
Power-adapter port	Supported through the USB Type-C ports
Security-cable slot	One wedge-shaped lock slot
SIM-card slot	Nano-SIM card slot (optional)

Internal slots

The following table lists the internal slots of your Dell Pro 14 Plus/Dell Pro 14 Plus 2-in-1.

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 • One M.2 3042/3052 for WWAN card (optional)

Table 8. Internal slots

Description	Values
	i 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 14 Plus/Dell Pro 14 Plus 2-in-1.

Table 9. Ethernet specifications

Description	Values
Model	<ul style="list-style-type: none"> Intel I219-LM (1000BASE-T) for vPRO configurations Intel I219-V (1000BASE-T) 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 14 Plus/Dell Pro 14 Plus 2-in-1.

Table 10. Wireless module specifications

Description	Option one	Option two
Model number	Intel Wi-Fi 7 BE201	Intel Wi-Fi 6E AX211
Transfer rate	Up to 5760 Mbps	Up to 2400 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"> WiFi 802.11a/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) 	<ul style="list-style-type: none"> WiFi 802.11a/b/g Wi-Fi 4 (WiFi 802.11n) Wi-Fi 5 (WiFi 802.11ac) Wi-Fi 6E (WiFi 802.11ax)
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 5.4	Bluetooth 5.3
	i NOTE: The functionality of the Bluetooth wireless card may vary depending on the operating system that is installed on your computer.	

WWAN module

The following table lists the Wireless Wide Area Network (WWAN) modules that are supported in your Dell Pro 14 Plus/Dell Pro 14 Plus 2-in-1.

i **NOTE:** The WWAN module is available only on certain configurations and in certain regions.

i **NOTE:** Availability of the eSIM feature on this module depends on your region and mobile carrier's requirements.

i **NOTE:** For instructions on how to setup SIM or eSIM connections on your computer, see the *SIM/eSIM Setup Guide for Windows* available with your product documentation at [Dell Support Site](#).

Table 11. WWAN module specifications

Description	Option one	Option two
Model number	DW5934e Qualcomm Snapdragon X72 Global 5G Modem	DW5826e Qualcomm Snapdragon SDX12 Global LTE-Advanced
Form factor	M.2 3052 Key-B	M.2 3042 Key-B
Host interface	PCIe Gen3	PCIe Gen3
Network standard	<ul style="list-style-type: none"> • NR FR1(Sub6) FDD/TDD • LTE FDD/TDD • WCDMA/HSPA+ • GPS/GLONASS/Galileo/Beidou 	<ul style="list-style-type: none"> • LTE FDD/TDD • WCDMA/HSPA+ • GPS/BDS/GLONASS/Galileo
Transfer data rate	<ul style="list-style-type: none"> • 5G NR: DL 4.14 Gbps/ UL 900 Mbps • LTE: DL 2.0 Gbps (CAT20)/UL 211 Mbps (CAT18) • UMTS: DL DC-HSPA+ Rel8:42 Mbps/UL 5.76 Mbps 	<ul style="list-style-type: none"> • Up to 600 Mbps DL (CAT12) • Up to 150 Mbps UL
Operating frequency bands	<ul style="list-style-type: none"> • NR (n1, n2, n3, n5, n7, n8, n12, n13, n14, 18, n20, n25, n26, n28, n29, n30, n38, n40, n41, n48, n66, n67, n70, n71, n75, n76, n77, n78, n79, n91, n92, n93, n94) • LTE (B1, B2, B3, B4, B5, B7, B8, B12, B13, B14, B17, B18, B19, B20, B25, B26, B28, B29, B30, B32, B34, B38, B39, B40, B41, B42, B43, B46, B48, B66, B67, B68, B70, B71) • WCDMA/HSPA+ (1, 2, 4, 5, 8) 	<ul style="list-style-type: none"> • LTE(B1, B2, B3, B4, B5, B7, B8, B12, B13, B14, B18, B19, B20, B25, B26, B28, B29, B32, B38, B39, B40, B41, B42, B43, B48, B66, B71) • HSPA+ (1, 2, 4, 5, 6, 8, 9, 19)
Power supply	DC 3.135 V to 3.63 V, typical 3.3 V	DC 3.135 V to 4.4 V, typical 3.3 V
SIM card	Supported through external SIM slot	Supported through external SIM slot
eSIM with dual SIM (DSSA)	Supported i NOTE: The availability of eSIM functionality embedded on the module is dependent on the region and specific carrier requirements.	Supported i NOTE: The availability of eSIM functionality embedded on the module is dependent on the region and specific carrier requirements.
Antenna diversity	Supported	Supported
Radio on/off	Supported	Supported
Wake on wireless	Supported	Supported

Table 11. WWAN module specifications (continued)

Description	Option one	Option two
Temperature	<ul style="list-style-type: none"> Normal operating temperature: –30°C to +70°C Extended operating temperature: –40°C to +85°C Storage temperature: –40°C to +85°C 	<ul style="list-style-type: none"> Normal operating temperature: –10°C to +55°C Extended operating temperature: –30°C to +75°C
Antenna connector	<ul style="list-style-type: none"> WWAN Main Antenna X 1 WWAN Diversity Antenna X 1 4 x 4 MIMO Antenna x 2 	<ul style="list-style-type: none"> WWAN Main Antenna X 1 WWAN Diversity Antenna X 1
<p>(i) NOTE: For instructions to find your computer's International Mobile Equipment Identity (IMEI) number, search in the Knowledge Base Resource at Dell Support Site.</p>		

Audio

The following table lists the audio specifications of your Dell Pro 14 Plus/Dell Pro 14 Plus 2-in-1.

Table 12. Audio specifications

Description	Values
Audio controller	Cirrus Logic CS42L43
Stereo conversion	Supported
Internal audio interface	Soundwire interface
External audio interface	Global headset jack
Number of speakers	Two
Internal-speaker amplifier	Not supported
External volume controls	Keyboard shortcut controls
Speaker output:	
Average	2 W
Peak	2.5 W
Microphone	Digital-array microphones in camera assembly

Keyboard

The following table lists the keyboard specifications of your Dell Pro 14 Plus/Dell Pro 14 Plus 2-in-1.

Table 13. Keyboard specifications

Description	Values
Keyboard type	<ul style="list-style-type: none"> Standard non-backlit keyboard Standard backlit keyboard

Table 13. Keyboard specifications (continued)

Description	Values
Keyboard layout	QWERTY
Number of keys	<ul style="list-style-type: none"> United States and Canada: 79 keys United Kingdom: 80 keys Japan: 83 keys French Canadian Quebec (ACNOR): 81 key
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>NOTE: You can define the primary behavior of the function keys (F1–F12) changing Function Key Behavior in the BIOS setup program.</p> <p>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 14 Plus/Dell Pro 14 Plus 2-in-1

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**.

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	Mute or unmute microphone
F5	Turn on or turn off keyboardbacklight (optional).

Table 14. Function key primary behavior (continued)

Function key	Primary behavior
	<p>NOTE: Nonbacklight keyboards have the F10 function key without the backlight icon and do not support the toggle keyboard backlight function.</p> <p>NOTE: Toggle to cycle the keyboard backlight status through off, low-backlight, and high-backlight.</p>
F6	Decrease display brightness
F7	Increase display brightness
F8	Switch to external display
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 F7 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 + Copilot	Operating system Context menu behavior.
fn + Esc	Toggle Function key lock
fn + PgUp (cursor up)	Scroll up the document or page
fn + PgDn (cursor down)	Scroll down the document or page

Storage

This section lists the storage options on your Dell Pro 14 Plus/Dell Pro 14 Plus 2-in-1.

Your computer 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 16. Storage specifications

Storage type	Interface type	Capacity
M.2 2280 solid state drive, self-encrypting, TLC	PCIe Gen4 NVMe, up to 64 Gbps	Up to 2 TB
M.2 2230 solid state drive, TLC	PCIe Gen4 NVMe, up to 64 Gbps	Up to 1 TB
M.2 2230 solid state drive, QLC	PCIe Gen4 NVMe, up to 64 Gbps	512 GB

Camera

The following table lists the camera specifications of your Dell Pro 14 Plus/Dell Pro 14 Plus 2-in-1.

Table 17. Camera specifications

Description	Values
Number of cameras	One
Camera type	There are three camera options: <ul style="list-style-type: none"> • RGB camera • RGB + IR camera • MIPI + IR camera
Camera location	Front camera
Camera sensor type	CMOS sensor technology
Camera resolution:	
Still image	<ul style="list-style-type: none"> • 2.07 megapixels • 5.20 megapixels
Video	<ul style="list-style-type: none"> • 1920 x 1080 at 30 fps • 2560 x 1440 at 30 fps
Infrared camera resolution:	
Still image	0.23 megapixels
Video	640 x 360 at 15 fps
Diagonal viewing angle:	
Camera	<ul style="list-style-type: none"> • 80.2 degrees • 91.2 degrees
Infrared camera	86.6 degrees

Touchpad

The following table lists the touchpad specifications of your Dell Pro 14 Plus/Dell Pro 14 Plus 2-in-1.

Table 18. Touchpad specifications

Description	Values
Touchpad resolution:	>= 300 dpi

Table 18. Touchpad specifications (continued)

Description	Values
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 14 Plus/Dell Pro 14 Plus 2-in-1.

Table 19. Power-adapter specifications

Description	Option one	Option two	Option three
Type	60 W AC adapter, USB Type-C	65 W AC adapter, USB Type-C	100 W AC adapter, USB Type-C
Power-adapter dimensions:			
Height	22 mm (0.87 in.)	28 mm (1.10 in.)	26.50 mm (1.04 in.)
Width	55 mm (2.16 in.)	51 mm (2.01 in.)	60 mm (2.36 in.)
Depth	66 mm (2.60 in.)	112 mm (4.41 in.)	122 mm (4.80 in.)
Input voltage	100 to 240 VAC	100 to 240 VAC	100 to 240 VAC
Input frequency	50 Hz to 60 Hz	50 to 60 Hz	50 to 60 Hz
Input current (maximum)	1.70 A	1.70 A	1.70 A
Output current (continuous)	<ul style="list-style-type: none"> • 20 V/3 A • 15 V/3 A • 9 V/3 A • 5 V/3 A 	<ul style="list-style-type: none"> • 20 V/3.25 A • 15 V/3 A • 9 V/3 A • 5 V/3 A 	<ul style="list-style-type: none"> • 20 V/5 A • 15 V/3 A • 9 V/3 A • 5 V/3 A
Rated output voltage	20 VDC/15 VDC/9 VDC/5 VDC	20 VDC/15 VDC/9 VDC/5 VDC	20 VDC/15 VDC/9 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)	0°C to 35°C (32°F to 95°F)
Storage	-20°C to 70°C (-4°F to 158°F)	-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 (for computers shipped with 3-cell, 45 Wh battery)

This section contains the power adapter requirements for the Dell Pro 14 Plus/Dell Pro 14 Plus 2-in-1.

(i) 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:

Table 20. Power adapter requirements for Dell Pro 14 Plus/Dell Pro 14 Plus 2-in-1

Description	Value
Power that is required from a power adapter to achieve optimal performance.	65 W
Power that is required to charge the computer at a slower speed. (i) NOTE: A warning message may appear informing you about the use of a lower-powered adapter and slower charging speed.	Less than 60 W
Minimum power that is required from a power adapter to operate the computer and charge the battery. (i) NOTE: A warning message appears informing you about the use of a lower-powered adapter and slower charging speed.	27 W
USB Power Delivery (PD) fast charging	Supported
ExpressCharge mode	(i) NOTE: Ensure that the computer with a 45 Wh battery is connected to a 65 W power adapter for this feature to be supported. (i) NOTE: ExpressCharge mode must also be enabled in the BIOS Setup screen by selecting Power > Battery Configuration > ExpressCharge , then pressing Enter.

Power adapter requirements (for computers shipped with 3-cell, 55 Wh battery)

This section contains the power adapter requirements for the Dell Pro 14 Plus/Dell Pro 14 Plus 2-in-1.

(i) 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:

Table 21. Power adapter requirements for Dell Pro 14 Plus/Dell Pro 14 Plus 2-in-1

Description	Value
Power that is required from a power adapter to achieve optimal performance.	100 W
Power that is required to charge the computer at a slower speed. (i) NOTE: A warning message may appear informing you about the use of a lower-powered adapter and slower charging speed.	Less than 60 W
Minimum power that is required from a power adapter to operate the computer and charge the battery.	27 W

Table 21. Power adapter requirements for Dell Pro 14 Plus/Dell Pro 14 Plus 2-in-1 (continued)

Description	Value
(i) NOTE: A warning message appears informing you about the use of a lower-powered adapter and slower charging speed.	
USB Power Delivery (PD) fast charging	Supported
ExpressCharge mode	<p>(i) NOTE: Ensure that the computer with a 55 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 by selecting Power > Battery Configuration > ExpressCharge, then pressing Enter.</p>

Battery

The following table lists the battery specifications of your Dell Pro 14 Plus/Dell Pro 14 Plus 2-in-1.

Table 22. Battery specifications

Description	Option one	Option two	Option three	Option four
Battery type	3-cell, 45 Wh, ExpressCharge, ExpressCharge Boost	3-cell, 55 Wh, ExpressCharge, ExpressCharge Boost	3-cell, 45 Wh, Long Life Cycle, ExpressCharge	3-cell, 55 Wh, Long Life Cycle, ExpressCharge
Battery voltage	11.25 V	11.70 VDC	11.25 VDC	11.70 VDC
Battery weight (minimum)	0.20 kg (0.44 lb)	0.22 kg (0.48 lb)	0.20 kg (0.44 lb)	0.22 kg (0.48 lb)
Battery dimensions:				
Height	72.80 mm (2.83 in.)			
Width	254.80 mm (10.03 in.)			
Depth	6.30 mm (0.25 in.)			
Temperature range:				
Operating	0°C to 45°C (32°F to 113°F)	0°C to 45°C (32°F to 113°F)	0°C to 60°C (32°F to 140°F)	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)	-20°C to 60°C (-4°F to 140°F)	-20°C to 60°C (-4°F to 140°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.	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.
Battery charging time (approximate)				
(i) NOTE: Control the charging time, duration, start and end time, and so	Standard charge/Predominately AC User Charge Method:			

Table 22. Battery specifications (continued)

Description	Option one	Option two	Option three	Option four
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"> • 0-15°C maximum allowable charge time from 0 to 100% RSOC is 4 hours • 16-45°C maximum allowable charge time from 0 to 100% RSOC is 3 hours <p>Express Charge Method :</p> <ul style="list-style-type: none"> • 16-45°C maximum allowable charge time from 0 to 60% RSOC is 1 hours • 16-45°C maximum allowable charge time from 0 to 100% RSOC is 2 hours <p>Express Charge Boost charge Method :</p> <ul style="list-style-type: none"> • 16-45°C maximum allowable charge time from 0 to 35% RSOC is 20 min 	<ul style="list-style-type: none"> • 0-15°C maximum allowable charge time from 0 to 100% RSOC is 4 hours • 16-45°C maximum allowable charge time from 0 to 100% RSOC is 3 hours <p>Express Charge Method :</p> <ul style="list-style-type: none"> • 16-45°C maximum allowable charge time from 0 to 60% RSOC is 1 hours • 16-45°C maximum allowable charge time from 0 to 100% RSOC is 2 hours <p>Express Charge Boost charge Method :</p> <ul style="list-style-type: none"> • 16-45°C maximum allowable charge time from 0 to 35% RSOC is 20 min 	<ul style="list-style-type: none"> • 0-15°C maximum allowable charge time from 0 to 100% RSOC is 4 hours • 16-45°C maximum allowable charge time from 0 to 100% RSOC is 3 hours <p>Express Charge Method :</p> <ul style="list-style-type: none"> • 16-45°C maximum allowable charge time from 0 to 60% RSOC is 1 hours • 16-45°C maximum allowable charge time from 0 to 100% RSOC is 2 hours 	<ul style="list-style-type: none"> • 0-15°C maximum allowable charge time from 0 to 100% RSOC is 4 hours • 16-45°C maximum allowable charge time from 0 to 100% RSOC is 3 hours <p>Express Charge Method :</p> <ul style="list-style-type: none"> • 16-45°C maximum allowable charge time from 0 to 60% RSOC is 1 hours • 16-45°C maximum allowable charge time from 0 to 100% RSOC is 2 hours
Coin-cell battery	Not supported	Not supported	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 recommends that you charge the battery regularly for optimal power consumption. If your battery charge is completely depleted, connect the power adapter, turn on your computer, and then restart your computer to reduce the power consumption.

Power requirements (for computers shipped with 3-cell, 45 Wh battery)

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

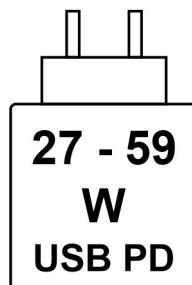


Figure 13. Pictogram for 45 Wh battery

The power that is delivered by the charger must be between a minimum of 27 Watts that is required by the radio equipment, and a maximum of 59 Watts in order to achieve the maximum charging speed.

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

Power requirements (for computers shipped with 3-cell, 55 Wh battery)

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

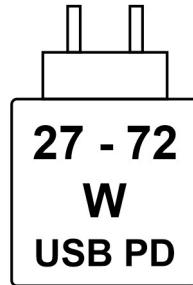


Figure 14. Pictogram for 55 Wh battery

The power that is delivered by the charger must be between a minimum of 27 Watts that is required by the radio equipment, and a maximum of 72 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 14 Plus/Dell Pro 14 Plus 2-in-1.

Table 23. Display specifications

Description	Option one	Option two	Option three	Option four	Option five
Display type	14-inch Full High Definition (FHD+)  NOTE: For Dell Pro 14 Plus laptops only.	14-inch Full High Definition (FHD+)  NOTE: For Dell Pro 14 Plus laptops only.	14-inch Quad High Definition (QHD+)  NOTE: For Dell Pro 14 Plus laptops only.	14-inch Full High Definition (FHD+)  NOTE: For Dell Pro 14 Plus laptops only.	14-inch Full High Definition (FHD+)  NOTE: For Dell Pro 14 Plus 2-in-1 only.
Touch options	No	Yes	No	No	Yes
Anti-glare vs glossy finish	Anti-glare	Anti-glare	Anti-glare	Anti-glare	Anti-reflection
Display-panel technology	In-Plane Switching (IPS)	In-Plane Switching (IPS)	In-Plane Switching (IPS)	In-Plane Switching (IPS)	In-Plane Switching (IPS)
Display-panel dimensions (active area):					
Height	188.50 mm (7.42 in.)	188.50 mm (7.42 in.)			

Table 23. Display specifications (continued)

Description	Option one	Option two	Option three	Option four	Option five
Width	301.59 mm (11.87 in.)				
Diagonal	355.60 mm (14 in.)				
Display-panel native resolution	1920 x 1200	1920 x 1200	2560 x 1600	1920 x 1200	1920 x 1200
Luminance (typical)	300 nits	300 nits	300 nits	400 nits	300 nits
Megapixels	2.3	2.3	4.1	2.3	2.3
Color gamut	45% NTSC	100% sRGB	100% sRGB	100% sRGB	100% sRGB
Pixels Per Inch (PPI)	162	162	215.6	162	162
Contrast ratio (typical)	600:1	600:1	1000:1	1000:1	1000:1
Response time (maximum)	35 ms				
Refresh rate	60 Hz	60 Hz	90 Hz	60 Hz	60 Hz
Horizontal view angle	+/- 80 degrees (minimum)	+/- 80 degrees (minimum)	+/- 80 degrees (minimum)	+/- 88 degrees (minimum)	+/- 88 degrees (minimum)
Vertical view angle	+/- 80 degrees (minimum)	+/- 80 degrees (minimum)	+/- 80 degrees (minimum)	+/- 88 degrees (minimum)	+/- 88 degrees (minimum)
Pixel pitch	0.157 mm				
Power consumption (maximum)	3.68 W	4.40 W	4.40 W	2.50 W	3.10 W

Fingerprint reader (optional)

The following table lists the specifications of the optional fingerprint-reader of your Dell Pro 14 Plus/Dell Pro 14 Plus 2-in-1.

Table 24. Fingerprint reader specifications

Description	Values
Sensor technology	Trans-capacitive sensing
Sensor resolution	500 dpi
Sensor pixel size	<ul style="list-style-type: none"> • X: 108 • Y: 88

GPU—Integrated

The following table lists the specifications of the integrated Graphics Processing Unit (GPU) supported by your Dell Pro 14 Plus/Dell Pro 14 Plus 2-in-1.

Table 25. GPU—Integrated

Controller	Memory size	Processor
Intel Xe LPG Graphics	Shared system memory	Intel Core Ultra 200U series
Intel Graphics	Shared system memory	Intel Core 100U and 200U series

Hardware security

The following table lists the hardware security of your Dell Pro 14 Plus/Dell Pro 14 Plus 2-in-1.

Table 26. Hardware security

Hardware security
Noble Lock
Trusted Platform Module (TPM) 2.0 discrete
FIPS 140-2 certification for TPM
TCG Certification for TPM (Trusted Computing Group)
Touch fingerprint reader in the power button available with ControlVault 3+
Contacted Smart Card with ControlVault 3+
Contactless Smart Card and NFC with ControlVault 3+
SED SSD NVMe, SSD and HDD (Opal and non-Opal) per SDL
Chassis Intrusion Detection
BIOS - TPM clear and/or system boot lock after chassis intrusion detection

Operating and storage environment

This table lists the operating and storage specifications of your Dell Pro 14 Plus/Dell Pro 14 Plus 2-in-1.

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

Table 27. Computer environment

Description	Operating	Storage
Temperature range	0°C to 35°C (32°F to 95°F)	-40°C to 65°C (-40°F to 149°F)
Relative humidity (maximum)	10% to 90% (non-condensing)	0% to 95% (non-condensing)
Vibration (maximum)*	0.66 GRMS	1.30 GRMS
Shock (maximum)	110 G†	160 G†
Altitude range	-15.2 m to 3048 m (4.64 ft to 5518.4 ft)	-15.2 m to 10668 m (4.64 ft to 19234.4 ft)

Table 27. Computer environment (continued)

Description	Operating	Storage
 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**.
 - i 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.

(i) 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](#).

(i) 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.

Service mode

Service Mode allows users to immediately cut off power from the computer and conduct repairs without disconnecting the battery cable from the system board:

1. Shut down the computer and disconnect the AC adapter.
2. Press and hold the **** key on the keyboard and then press the power button. The computer boots up.



Figure 15. Logo screen

3. When the Owner Tag information appears on the screen for models that are configured with owner tag, press any key to proceed.

(i) NOTE: The Service Mode procedure will automatically skip this step if the Owner Tag of the computer is not set up in advance by the manufacturer.

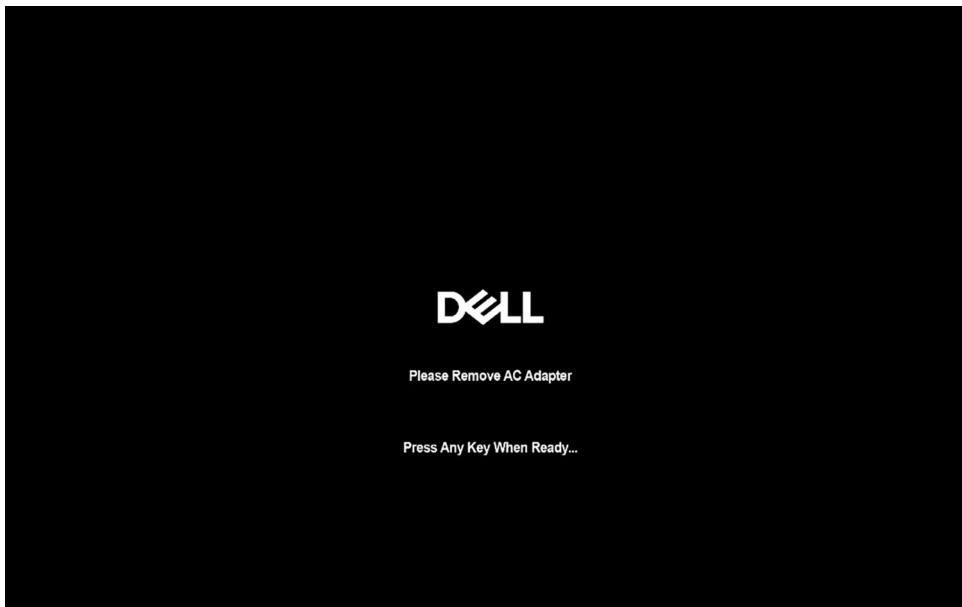


Figure 16. Booting screen

4. Ensure that the AC adapter has been disconnected and press any key to proceed.

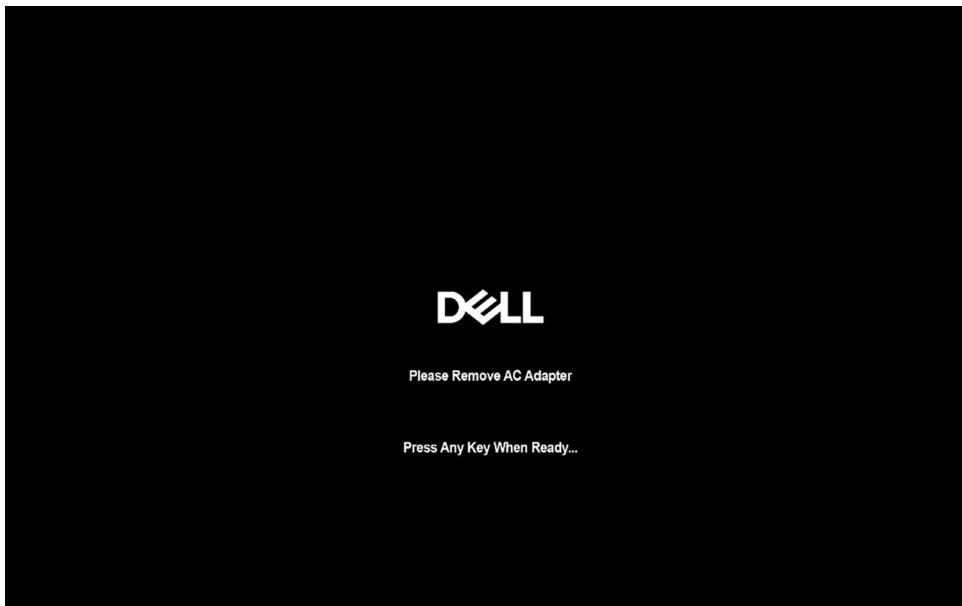


Figure 17. Booting screen

5. 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.

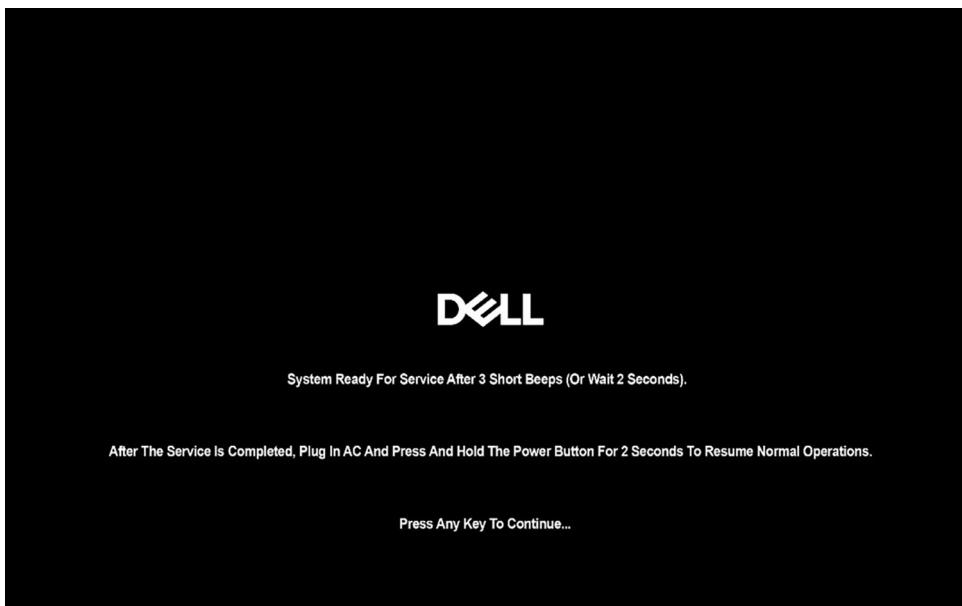


Figure 18. Booting screen

Once the computer shuts down, you can perform replacement procedures.

To exit **Service Mode**, connect the AC adapter and press the power button to power on the computer. The computer boots up and returns to normal functioning 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
- Phillips screwdriver #1
- Flat head slotted screwdriver (maximum width: 4 mm)
- Plastic scribe

Screw list

- i** **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.
- i** **NOTE:** Some computers have magnetic surfaces. Ensure that the screws are not left attached to such surfaces when replacing a component.
- i** **NOTE:** Screw color may vary depending on the configuration ordered.

Table 28. Screw list

Component	Screw type	Quantity	Screw image
Base cover	M2x8.5 captive screws	6	
	M2x6 captive screws	2	
Battery	M2x5 captive screws	4	
WWAN-card shielding cover	M2x4	3	
SSD-shielding cover	M2x3	3	
M.2 2230 solid state drive	M2x4	1	
WLAN-card bracket	M2x3	1	
Speakers	M1.6x1.5	6	
Fan and heat-sink assembly	M2x4	2	
	M2x3 captive screws	4	
USH daughterboard	M1.6x1.5	2	
Smart-card reader	M2x2	4	
System board	M2x3	4	
	M2x4	• For models without WWAN card: 2	

Table 28. Screw list (continued)

Component	Screw type	Quantity	Screw image
		<ul style="list-style-type: none">For models with WWAN card: 3	
Fingerprint-reader bracket	M2x3	1	
WLAN-antenna module	M1.6x2.5	4	
USB Type-C connector module	M2x5	3	
I/O board	M2x3	3	
Power button with optional fingerprint reader	M1.6x1.7	2	
Display-cable bracket	M2x3	2	
Display assembly	M2.5x4	4	
Display panel	M1.6x1.4	4	
Display hinge cap	M2x3	2	
	M2.5x3.5	4	
MIPI camera	M1.6x1.4	2	
Display cable for MIPI camera	M1.6x1.4	2	
Middle-daughterboard cable	M1.6x1.4	2	
Keyboard	M1.6x1.7	18	
Keyboard bracket	M2x2	2	

Major components of Dell Pro 14 Plus/Dell Pro 14 Plus 2-in-1

The following image shows the major components of Dell Pro 14 Plus/Dell Pro 14 Plus 2-in-1.

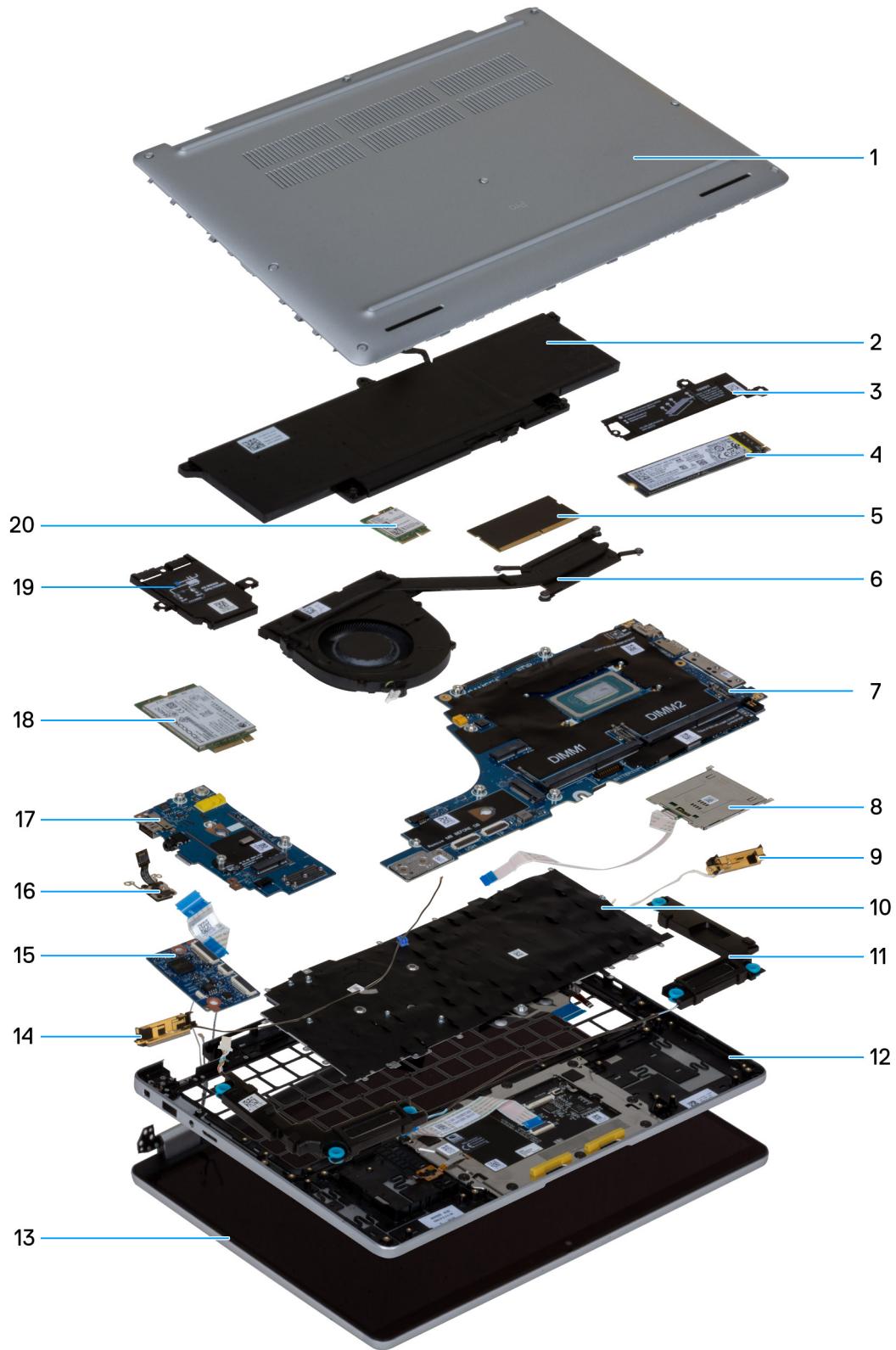


Figure 19. Major components of Dell Pro 14 Plus/Dell Pro 14 Plus 2-in-1

1. Base cover
2. Battery

3. SSD shielding cover
4. Solid state drive (SSD)
5. Memory module
6. Fan and heat-sink assembly
7. System board
8. Smart-card reader
9. WLAN-antenna module
10. Keyboard
11. Speakers
12. Palm-rest assembly
13. Display assembly
14. WLAN-antenna module
15. USH daughterboard
16. Power button with optional fingerprint reader
17. I/O board
18. WWAN card
19. WWAN-card shielding cover
20. WLAN card

(i) NOTE: Dell provides a list of components and their part numbers for the original computer configuration purchased. These parts are available according to warranty coverage purchased by the customer. Contact your Dell sales representative for purchase options.