


# Latitude 7420

## Technical Guidebook



## 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.

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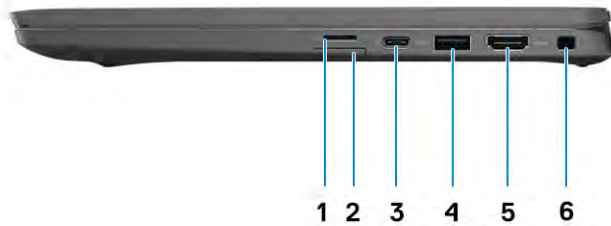
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# Views of Latitude 7420

## Topics:

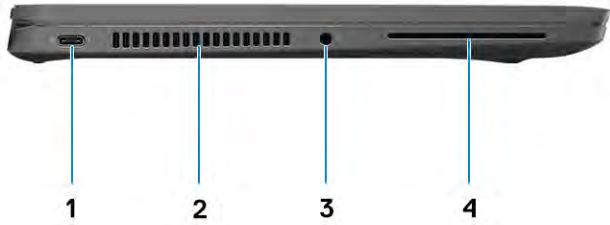
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## Right



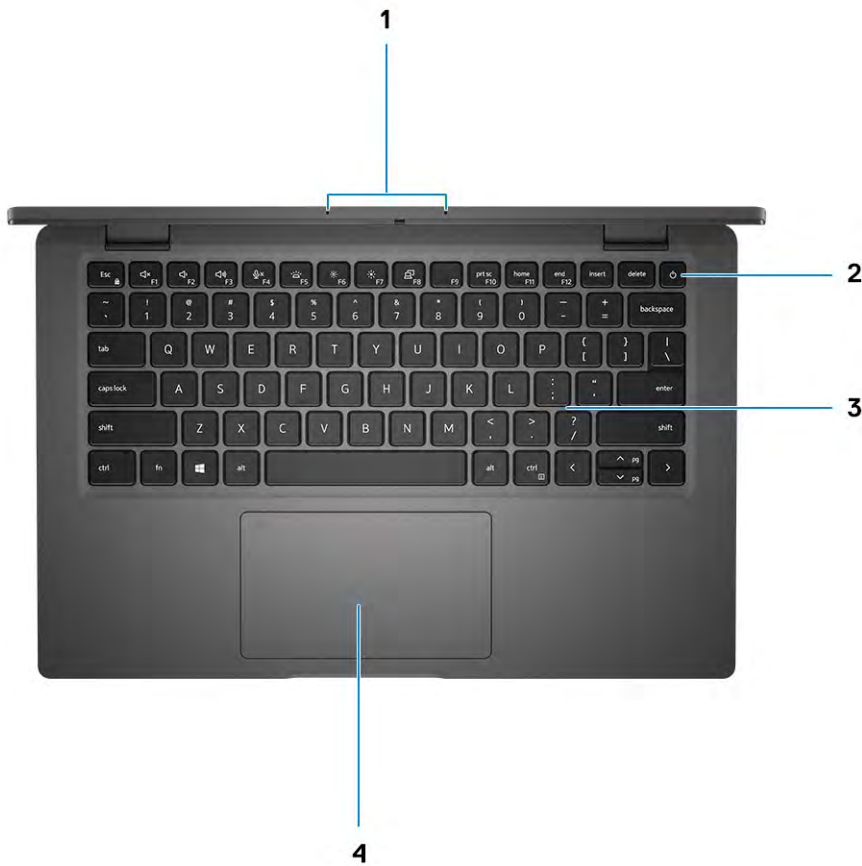
1. microSD-card slot
2. micro-SIM card slot (optional with WWAN configuration only)
3. Thunderbolt 4 port with DisplayPort Alt Mode/USB4/Power Delivery
4. USB 3.2 Gen 1 port with PowerShare
5. HDMI 2.0 port
6. Wedge-shaped lock slot

# Left



- 1. Thunderbolt 4 port with DisplayPort Alt Mode/USB4/Power Delivery
- 2. Air vents
- 3. Headset (headphone and microphone combo) port
- 4. Smart card reader slot (optional)

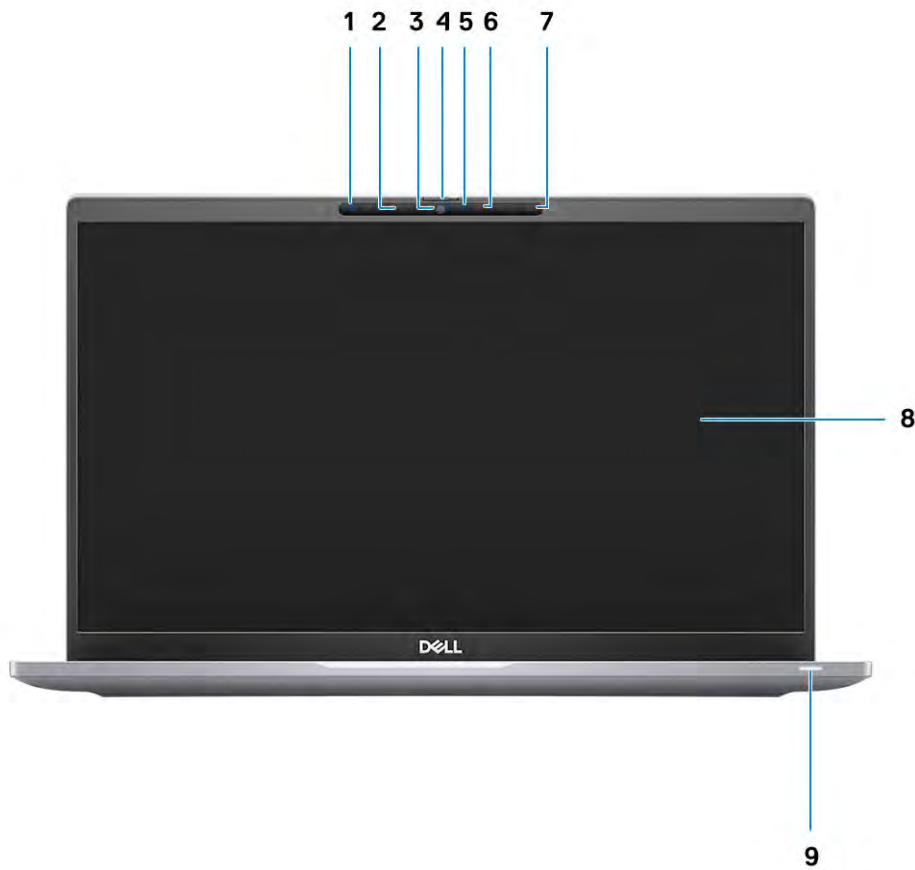
# Top



1. Microphone array
3. Keyboard

2. Power button (with optional Fingerprint reader)
4. Touchpad

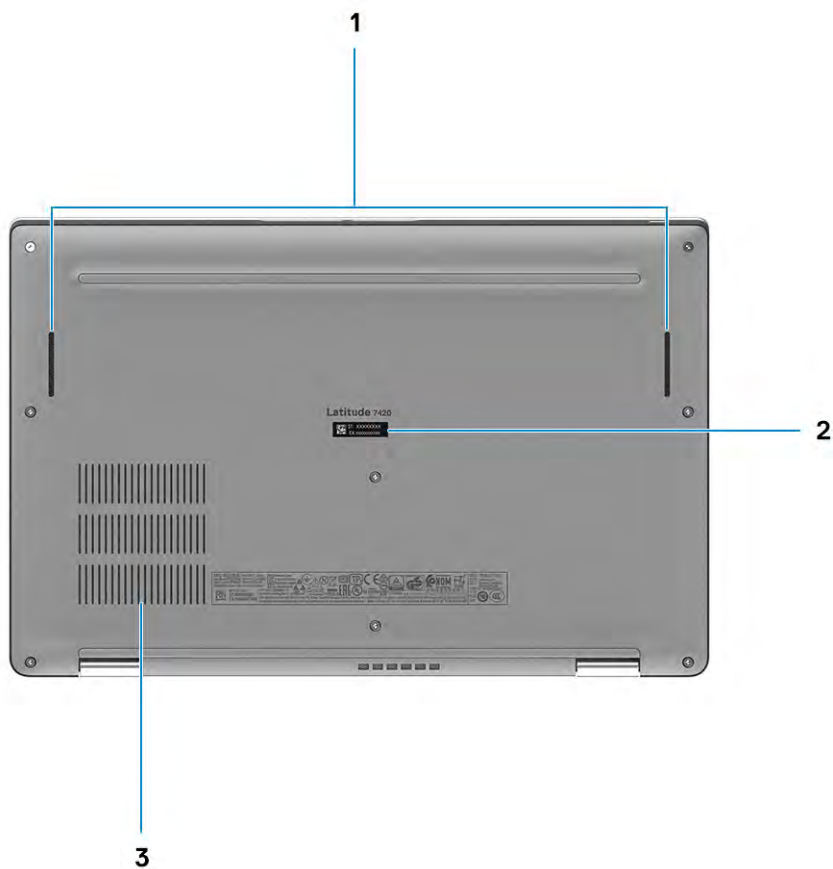
## Display



1. Proximity sensor (optional)
3. RGB or IR Camera (optional)
5. Camera status LED
7. Ambient Light Sensor (ALS) (optional)
9. LED indicator

2. IR emitter (optional)
4. Camera shutter
6. IR emitter (optional)
8. LCD panel

## Bottom



1. Speakers
2. Service tag label
3. Air vents

## Modes

**NOTE:** The modes are applicable only to Latitude 7420 2-in-1 (an upsell option).



Laptop mode



Tablet mode



## Stand mode



## Tent mode



# Battery Charge and Status LED

Table 1. Battery Charge and Status LED Indicator

Power Source	LED Behavior	System Power State	Battery Charge Level
AC Adapter	Off	S0 - S5	Fully Charged
AC Adapter	Solid White	S0 - S5	< Fully Charged
Battery	Off	S0 - S5	11-100%
Battery	Solid Amber (590+/-3 nm)	S0 - S5	< 10%

- S0 (ON) - System is turned on.
- S4 (Hibernate) - The system consumes the least power compared to all other sleep states. The system is almost at an OFF state, expect for a trickle power. The context data is written to hard drive.
- S5 (OFF) - The system is in a shutdown state.

# Specifications of Latitude 7420

## Topics:

- Dimensions and weight
- Processor
- Chipset
- Operating system
- Memory
- External ports
- Internal slots
- Wireless module
- Audio
- Storage
- Media-card reader
- Keyboard
- Camera
- Touchpad
- Power adapter
- Battery
- Display
- Fingerprint reader
- GPU—Integrated
- Operating and storage environment

## Dimensions and weight

The following table lists the height, width, depth, and weight of your Latitude 7420.

**Table 2. Dimensions and weight**

Description	Values
Height:	
Front height	<ul style="list-style-type: none"> <li>• 17.27 mm (0.68 in.) - Carbon Fiber</li> <li>• 16.90 mm (0.67 in.) - Aluminium</li> <li>• 17.06 mm (0.67 in.) - Carbon Fiber (2-in-1)</li> <li>• 16.40 mm (0.64 in.) - Aluminium (2-in-1)</li> </ul>
Rear height	<ul style="list-style-type: none"> <li>• 18.88 mm (0.74 in.) - Carbon Fiber</li> <li>• 18.00 mm (0.708 in.) - Aluminium</li> <li>• 18.91 mm (0.74 in.) - Carbon Fiber (2-in-1)</li> <li>• 18.70 mm (0.736 in.) - Aluminium (2-in-1)</li> </ul>
Width	<ul style="list-style-type: none"> <li>• 321.35 mm (12.65 in.) - Carbon Fiber</li> <li>• 321.35 mm (12.65 in.) - Aluminium</li> <li>• 321.35 mm (12.65 in.) - Carbon Fiber (2-in-1)</li> <li>• 321.35 mm (12.65 in.) - Aluminium (2-in-1)</li> </ul>
Depth	<ul style="list-style-type: none"> <li>• 208.69 mm (8.22 in.) - Carbon Fiber</li> <li>• 208.69 mm (8.22 in.) - Aluminium</li> </ul>

**Table 2. Dimensions and weight (continued)**

Description	Values
	<ul style="list-style-type: none"> <li>208.69 mm (8.22 in.) - Carbon Fiber (2-in-1)</li> <li>208.69 mm (8.22 in.) - Aluminium (2-in-1)</li> </ul>
Weight (minimum)	<ul style="list-style-type: none"> <li>1.22 kg (2.70 lb) - Carbon Fiber</li> <li>1.31 kg (2.89 lb) - Aluminium</li> <li>1.36 kg (3.00 lb) - Carbon Fiber (2-in-1)</li> <li>1.46 kg (3.23 lb) - Aluminium (2-in-1)</li> </ul> <p><b>NOTE:</b> The weight of your computer depends on the configuration ordered and manufacturing variability.</p>

## Processor

The following table lists the details of the processors supported by your Latitude 7420.

**Table 3. Processor**

Description	Option one	Option two	Option three	Option four
Processor type	11 <sup>th</sup> Generation Intel Core i5-1135G7 Non-vPro	11 <sup>th</sup> Generation Intel Core i5-1145G7 vPro	11 <sup>th</sup> Generation Intel Core i7-1165G7 Non-vPro	11 <sup>th</sup> Generation Intel Core i7-1185G7 vPro
Processor wattage	<ul style="list-style-type: none"> <li>Maximum TDP: 28 W</li> <li>cTDP: 13 W - 15 W</li> </ul>	<ul style="list-style-type: none"> <li>Maximum TDP: 28 W</li> <li>cTDP: 13 W - 15 W</li> </ul>	<ul style="list-style-type: none"> <li>Maximum TDP: 28 W</li> <li>cTDP: 13 W - 15 W</li> </ul>	<ul style="list-style-type: none"> <li>Maximum TDP: 28 W</li> <li>cTDP: 13 W - 15 W</li> </ul>
Processor core count	4	4	4	4
Processor thread count	8	8	8	8
Processor speed	2.40 GHz to 4.20 GHz	2.60 GHz to 4.40 GHz	2.80 GHz to 4.70 GHz	3.00 GHz to 4.80 GHz
Processor cache	8 MB	8 MB	12 MB	12 MB
Integrated graphics	Intel Iris X <sup>e</sup> Graphics	Intel Iris X <sup>e</sup> Graphics	Intel Iris X <sup>e</sup> Graphics	Intel Iris X <sup>e</sup> Graphics

## Chipset

The following table lists the details of the chipset supported by your Latitude 7420.

**Table 4. Chipset**

Description	Values
Chipset	Tiger Lake U PCH
Processor	11 <sup>th</sup> Generation Intel Core i5/i7
DRAM bus width	64-bit
Flash EPROM	32 MB
PCIe bus	Up to Gen4


# Operating system

Your Latitude 7420 supports the following operating systems:

- Windows 11 Home, 64-bit
- Windows 11 Pro, 64-bit
- Windows 11 Pro National Academic, 64-bit
- Windows 10 Home, 64-bit
- Windows 10 Pro, 64-bit
- Ubuntu 20.04 LTS, 64-bit

# Memory

**Table 5. Memory specifications**

Description	Values
Slots	Integrated on the system board.  <b>NOTE:</b> You cannot upgrade the memory on your Latitude 7420
Type	Dual-channel LPDDR4x
Speed	<ul style="list-style-type: none"><li>• 32 GB: 4267 MHz</li><li>• 8 GB/16 GB: 3733 MHz</li></ul>
Maximum memory	32 GB
Minimum memory	8 GB
Configurations supported	<ul style="list-style-type: none"><li>• 8 GB</li><li>• 16 GB</li><li>• 32 GB</li></ul>

# External ports

The following table lists the external ports on your Latitude 7420.


**Table 6. External ports**

Description	Values
USB ports	<ul style="list-style-type: none"><li>• One USB 3.2 Gen 1 port with PowerShare</li><li>• Two Thunderbolt 4 ports with DisplayPort Alt Mode/USB4/Power Delivery</li></ul>
Audio port	Universal audio jack
Video port/ports	<ul style="list-style-type: none"><li>• One HDMI 2.0 port</li><li>• Two Thunderbolt 4 ports with DisplayPort Alt Mode/USB4/Power Delivery</li></ul>
Media-card reader	One microSD-card slot
Power-adaptor port	USB Type-C port with Power Delivery
Security-cable slot	One wedge-shaped lock slot

## Internal slots

The following table lists the internal slots of your Latitude 7420.


**Table 7. Internal slots**

Description	Values
M.2	One M.2 2230/2280 Keyed M slot for solid-state drive  <b>NOTE:</b> To learn more about the features of different types of M.2 cards, search in the Knowledge Base Resource at <a href="http://www.dell.com/support">www.dell.com/support</a> .

## Wireless module

The following table lists the Wireless Local Area Network (WLAN) module that is supported on your Latitude 7420.

**Table 8. Wireless module specifications**

Description	Values
Model number	Intel AX201  <b>NOTE:</b> Built on system board and not replaceable as a standalone part
Transfer rate	<ul style="list-style-type: none"> <li>2.4 GHz 40M: Up to 574 Mbps</li> <li>5 GHz 80M: Up to 1.2 Gbps</li> <li>5 GHz 160M: Up to 2.4 Gbps</li> </ul>
Frequency bands supported	2.4 GHz/5 GHz
Wireless standards	<ul style="list-style-type: none"> <li>WiFi 802.11a/b/g</li> <li>Wi-Fi 4 (WiFi 802.11n)</li> <li>Wi-Fi 5 (WiFi 802.11ac)</li> <li>Wi-Fi 6 (802.11ax)</li> </ul>
Encryption	<ul style="list-style-type: none"> <li>64-bit and 128-bit WEP</li> <li>TKIP</li> <li>128-bit AES-CCMP</li> <li>256-bit AES-GCMP</li> </ul>
Bluetooth	Bluetooth 5.1

## WWAN modules

The following list provides the mobile broadband module options available on Latitude 7420

- Qualcomm Snapdragon X20 Gigabit LTE CAT 16 (DW5821e; e-SIM enabled), WW excluding China, Turkey, US
  - Qualcomm Snapdragon X20 Gigabit LTE CAT 16 (DW5821e) WW
  - Qualcomm Snapdragon X20 Gigabit LTE CAT 16 (DW5821e) for AT&T, Verizon, and Sprint, US only
- Qualcomm Snapdragon X20 LTE-A CAT 9 (DW5829e; e-SIM enabled) WW excluding China, Turkey, US
  - Qualcomm Snapdragon X20 LTE-A CAT 9 (DW5829e) WW
  - Qualcomm Snapdragon X20 LTE-A CAT 9 (DW5829e) for AT&T, Verizon, and Sprint, US only

# Audio

The following table lists the audio specifications of your Latitude 7420.

**Table 9. Audio specifications**

Description		Values
Audio controller		Realtek ALC3281-CG
Stereo conversion		Supported
Internal audio interface		High-definition audio
External audio interface		Universal audio jack
Number of speakers		Two
Internal-speaker amplifier		Supported (audio codec integrated)
External volume controls		Keyboard shortcut controls
Speaker output:		
	Average speaker output	2 W
	Peak speaker output	2.5 W
Subwoofer output		Not supported
Microphone		Dual-array microphones

# Storage

Your computer supports the following configuration: The primary drive of your computer varies with the storage configuration.

- M.2 2230, PCIe x4 NVMe, Class 35 solid-state drive
- M.2 2280, PCIe x4 NVMe, Class 40 solid-state drive
- M.2 2280, PCIe x4 NVMe, Class 40 Self encrypting solid-state drive

**Table 10. Storage specifications**

Form factor	Interface type	Capacity
M.2 2230, Class 35 solid-state drive	Gen 3 PCIe x4 NVMe	Up to 512 GB
M.2 2280, Class 40 solid-state drive	Gen 3 PCIe x4 NVMe	Up to 1 TB
M.2 2280, Class 40 Self encrypting solid-state drive	Gen 3 PCIe x4 NVMe	Up to 512 GB

# Media-card reader

**Table 11. Media-card reader specifications**

Description	Values
Type	One micro-SD card slot
Cards supported	<ul style="list-style-type: none"><li>• Micro Secure Digital (mSD)</li></ul>



**Table 11. Media-card reader specifications (continued)**

Description	Values
	<ul style="list-style-type: none"> <li>• Micro Secure Digital High Capacity (mSDHC)</li> <li>• Micro Secure Digital Extended Capacity (mSDXC)</li> </ul>

## Keyboard

**Table 12. Keyboard specifications**

Description	Values
Type	<ul style="list-style-type: none"> <li>• Standard non-backlit keyboard</li> <li>• Standard backlit keyboard</li> </ul>
Layout	QWERTY/KANJI
Number of keys	<ul style="list-style-type: none"> <li>• United States and Canada: 79 keys</li> <li>• United Kingdom: 80 keys</li> <li>• Japan: 83 keys</li> </ul>
Size	X=19.05 mm key pitch Y=18.05 mm key pitch
Shortcut keys	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. ⓘ <b>NOTE:</b> You can define the primary behavior of the function keys (F1–F12) changing <b>Function Key Behavior</b> in BIOS setup program.

## Camera

The following table lists the camera specifications of your Latitude 7420.

**Table 13. Camera specifications**

Description	Option 1	Option 2	Option 3	Option 4	Option 5
Number of cameras	One	One	One	One	One
Type	Integrated 2.7 mm HD RGB Webcam	Integrated 2.7 mm HD RGB/IR Webcam with Proximity Sensor and optional ALS	Integrated 6 mm HD RGB Webcam	Integrated 6 mm HD RGB/IR Webcam with Proximity Sensor and optional ALS	Integrated 6 mm FHD RGB/IR Webcam with Proximity Sensor and optional ALS
Location	Front	Front	Front	Front	Front
Sensor type	CMOS sensor technology	CMOS sensor technology	CMOS sensor technology	CMOS sensor technology	CMOS sensor technology
Resolution (RGB):					
Still Image	0.92	0.92	0.92	0.92	2

**Table 13. Camera specifications (continued)**

Description	Option 1	Option 2	Option 3	Option 4	Option 5
Video	1280 x 720 at 30 fps	1280 x 720 at 30 fps	1280 x 720 at 30 fps	1280 x 720 at 30 fps	1920 x 1080 at 30 fps
Diagonal viewing angle	74.9°	75.8°	78.6°	87°	87.6°
Resolution (IR):					
Still Image	NA	0.23	NA	0.23	0.23
Video	NA	640 x 360 at 15 fps	NA	640 x 360 at 15 fps	640 x 360 at 15 fps
Diagonal viewing angle	NA	75.8°	NA	87°	87.6°

## Touchpad

The following table lists the touchpad specifications of your Latitude 7420.

**Table 14. Touchpad specifications**

Description	Option 1	Option 2
Touchpad resolution:		
Horizontal	3339	1337
Vertical	1994	761
Touchpad dimensions:		
Horizontal	115 mm (4.52 in.)	115 mm (4.52 in.)
Vertical	65 mm (2.56 in.)	65 mm (2.56 in.)
Touchpad gestures	For more information about touchpad gestures available on Windows 10, see the Microsoft knowledge base article <a href="https://support.microsoft.com">4027871</a> at <a href="https://support.microsoft.com">support.microsoft.com</a> .	For more information about touchpad gestures available on Windows 10, see the Microsoft knowledge base article <a href="https://support.microsoft.com">4027871</a> at <a href="https://support.microsoft.com">support.microsoft.com</a> .

## Power adapter

The following table lists the power adapter specifications of your Latitude 7420.

**Table 15. Power adapter specifications**

Description	Option one	Option two
Type	65 W AC adapter, USB-C	90 W AC adapter, USB-C
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	1.50 A

**Table 15. Power adapter specifications (continued)**

Description		Option one	Option two
Output current (continuous)		<ul style="list-style-type: none"> <li>5 V/3 A (Continuous)</li> <li>9 V/3 A (Continuous)</li> <li>15 V/3 A (Continuous)</li> <li>20 V/3.25 A (Continuous)</li> </ul>	<ul style="list-style-type: none"> <li>5 V/3 A (Continuous)</li> <li>9 V/3 A (Continuous)</li> <li>15 V/3 A (Continuous)</li> <li>20 V/4.5 A (Continuous)</li> </ul>
Rated output voltage		<ul style="list-style-type: none"> <li>5 VDC</li> <li>9 VDC</li> <li>15 VDC</li> <li>20 VDC</li> </ul>	<ul style="list-style-type: none"> <li>5 VDC</li> <li>9 VDC</li> <li>15 VDC</li> <li>20 VDC</li> </ul>
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)
Dimensions			
	Width (mm/inch)	112 mm (4.41 in.)	130 mm (5.1 in.)
	Depth (mm/inch)	51 mm (2.01 in.)	66 mm (2.6 in.)
	Height (mm/inch)	28 mm (1.1 in.)	22 mm (0.8 in.)
Weight (kg/lb)		201 g (0.44 lb)	291 g (0.64 lb)

## Battery

The following table lists the battery specifications of your Latitude 7420.

**Table 16. Battery specifications**

Specifications		Option 1	Option 2
Type		4-cell, 63 WHr, optional with ExpressCharge or Long Life Cycle	3-cell, 42 WHr, optional with ExpressCharge or Long Life Cycle
Voltage (VDC)		15.2 VDC	11.40 VDC
Weight (maximum)		0.26 kg (0.58 lb)	0.21 kg (0.46 lb)
Dimensions:			
	Height	92.8 mm (3.654 in.)	92.8 mm (3.654 in.)
	Width	238 mm (9.37 in.)	238 mm (9.37 in.)
	Depth	5.7 mm (0.224 in.)	5.7 mm (0.224 in.)
Temperature range:			
	Operating	<ul style="list-style-type: none"> <li>Charging: 0°C to 45°C (32°F to 113°F)</li> <li>Discharging: 0°C to 65°C (32°F to 149°F)</li> </ul>	
	Storage	-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.	
Battery Charging time (approximate)		<ul style="list-style-type: none"> <li>ExpressCharge Boost (0% up to 35%) : 20 minutes</li> </ul>	

**Table 16. Battery specifications (continued)**

Specifications	Option 1	Option 2
	<ul style="list-style-type: none"> <li>Express charge : 2 hours</li> <li>Standard charge: 3 hours</li> </ul> <p><b>i</b> <b>NOTE:</b> Control the charging time, duration, start and end time, and so on using the Dell Power Manger application. For more information on the Dell Power Manger see, <a href="https://www.dell.com/support/home/product-support/product/power-manager/docs">https://www.dell.com/support/home/product-support/product/power-manager/docs</a></p>	
Life span (approximate)	<ul style="list-style-type: none"> <li>Standard: 1 Year or 300 discharge/charge cycles</li> <li>Long Life Cycle (LCL) capable: 3 Years or 1000 discharge/charge cycles (Optional)</li> </ul>	
ExpressCharge	Supported on Express Charge Capable Battery	Supported on Express Charge Capable Battery
User replaceable	No (FRU <sup>†</sup> )	No (FRU)
Coin-cell battery	Main battery reserves 2% of capacity for RTC function.	
Coin-cell Operating time	68 days with 3-cell 42 WHr battery	
	<p><b>i</b> <b>NOTE:</b> Varies depending on operating conditions and can significantly reduce under certain power-intensive conditions.</p>	

**i** **NOTE:**

For batteries with the ExpressCharge feature, the battery will typically have at least an 80% charge after about an hour of charging with the system off, and fully charged in about 2 hours with the system off.

Enabling ExpressCharge requires that both the computer and the battery used be ExpressCharge capable. If these requirements are not met, ExpressCharge will not be enabled.

<sup>†</sup> : Field Replaceable Part

## Display

The following table lists the display specifications of your Latitude 7420.

**Table 17. Display specifications**


Description	Values					
Type	14-inch. Full High Definition (FHD)	14-inch. Full High Definition (FHD)	14-inch. Full High Definition (FHD)	14-inch. Full High Definition (FHD)	14-inch. Ultra High Definition (UHD)	14-inch. Full High Definition (FHD) for 2-in-1
Panel technology	Wide Viewing Angle (WVA)	WVA	WVA	WVA	WVA	WVA
Luminance (typical)	250 nits	400 nits	300 nits	300 nits	400 nits	300 nits
Dimensions (Active Area):						

**Table 17. Display specifications (continued)**

<b>Description</b>	<b>Values</b>					
Height	173.95 mm (6.85 in.)	173.95 mm (6.85 in.)	173.95 mm (6.85 in.)	173.95 mm (6.85 in.)	173.95 mm (6.85 in.)	173.95 mm (6.85 in.)
Width	309.40 mm (12.18 in.)	309.40 mm (12.18 in.)	309.40 mm (12.18 in.)	309.40 mm (12.18 in.)	309.40 mm (12.18 in.)	309.40 mm (12.18 in.)
Diagonal	355.60 mm (14 in.)	355.60 mm (14 in.)	355.60 mm (14 in.)	355.60 mm (14 in.)	355.60 mm (14.00 in.)	355.60 mm (14.00 in.)
Native Resolution	1920 x 1080	1920 x 1080	1920 x 1080	1920 x 1080	3840 x 2160	1920 x 1080
Megapixels	2.07	2.07	2.07	2.07	8.29	2.07
Pixels per Inch (PPI)	157	157	157	157	314.7	157
Contrast Ratio (typ)	500:1	600:1	1000:1	600:1	1000:1	1000:1
Response Time (max)	35 ms	35 ms	35 ms	35 ms	40 ms	35 ms
Refresh Rate	60 Hz	60 Hz	60 Hz	60 Hz	60 Hz	60 Hz
Horizontal View Angle	80°	80°	80°	80°	80°	80°
Vertical View Angle	80°	80°	80°	80°	80°	80°
Pixel Pitch	0.161 x 0.161	0.161 x 0.161	0.161 x 0.161	0.161 x 0.161	0.0805 x 0.0805	0.161 x 0.161
Power Consumption (maximum)	3.2 W	2.5 W	4.1 W	3.5 W	3.75 W	1.8 W
Anti-glare vs glossy finish	Anti-glare	Anti-glare	Anti-glare	Anti-Glare, SafeScreen	Anti-glare	Anti-Reflection/ Anti-Smudge coating
Touch options	No	No	Yes	Yes	No	Yes
Stylus support	No	No	No	No	No	Yes (optional Wacom pen)

## Fingerprint reader

The following table lists the fingerprint reader specifications of your Latitude 7420.

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

**Table 18. Fingerprint reader specifications**

<b>Description</b>	<b>Values</b>
Sensor technology	Capacitive
Sensor resolution	500 dpi

**Table 18. Fingerprint reader specifications (continued)**

Description	Values
Sensor pixel size	108 x 88

## GPU—Integrated

The following table lists the specifications of the integrated Graphics Processing Unit (GPU) supported by your Latitude 7420.

**Table 19. GPU—Integrated**

Controller	External display support	Memory size	Processor
Intel Iris Xe Graphics	<ul style="list-style-type: none"><li>One HDMI 2.0 port</li><li>Two Thunderbolt 4 ports with DisplayPort Alt Mode</li></ul>	Shared system memory	11 <sup>th</sup> Generation Intel Core i5/i7


## Operating and storage environment

This table lists the operating and storage specifications of your Latitude 7420.

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

**Table 20. 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 80% (non-condensing)	0% to 95% (non-condensing)
Vibration (maximum)*	0.26 GRMS	1.37 GRMS
Shock (maximum)	140 G†	160 G†
Altitude range	-15.2 m to 3048 m (-50 ft to 10,000 ft)	-15.2 m to 10668 m (-50 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 user environment.

† Measured using a 2 ms half-sine pulse.

# Engineering specifications

## Topics:

- Communications
- Graphics options
- Supported hard drives
- Accessories
- NFC
- Smart-card reader
- Security
- System management features
- Dell low blue light display

## Communications

### Wireless module

#### Intel Wi-Fi 6 AX201 2x2 (Gig+) + Bluetooth 5.1

**Table 21. Intel Wi-Fi 6 AX201 2x2 (Gig+) + Bluetooth 5.1 specifications**

Feature	Values
Host interface	M.2 2230 form factor: <ul style="list-style-type: none"> <li>• Wi-Fi - PCIe</li> <li>• Bluetooth - USB</li> </ul>
Network standard	IEEE 802.11a/b/g/n/ac/ax, 160MHz channel use, MU-MIMO
Wi-Fi alliance certifications	<ul style="list-style-type: none"> <li>• Wi-Fi Certified a/b/g/n/ac with wave 2 features</li> <li>• Designed to be Wi-Fi Certified ax (Wi-Fi 6)</li> <li>• WMM</li> <li>• WMM-PS</li> <li>• WPA</li> <li>• WPA2</li> <li>• WPS2</li> <li>• Protected Management Frames</li> <li>• Wi-Fi Direct (For Windows only)</li> </ul>
Operating frequency bands	<ul style="list-style-type: none"> <li>• 2.4 Ghz</li> <li>• 5 Ghz</li> </ul>
Data rate	<ul style="list-style-type: none"> <li>• 2.4 GHz 40M - Up to 574 Mbps</li> <li>• 5 GHz 80M - Up to 1.2 Gbps</li> <li>• 5 GHz 160M - Up to 2.4 Gbps</li> </ul>
Power consumption	Optimized power modes (sleep states) reduce power consumption during periods of inactivity
Authentication	<ul style="list-style-type: none"> <li>• WPA and WPA2 Personal and Enterprise</li> <li>• WPA3 (pending OS support)</li> </ul>

**Table 21. Intel Wi-Fi 6 AX201 2x2 (Gig+) + Bluetooth 5.1 specifications (continued)**

Feature	Values
Authentication protocols	<ul style="list-style-type: none"> <li>● 802.1X EAP-TLS</li> <li>● EAP-TTLS/MSCHAPv2</li> <li>● PEAPv0 -MSCHAPv2 (EAP-SIM, EAP-AKA, EAP-AKA)</li> </ul>
Encryption	<ul style="list-style-type: none"> <li>● 64-bit and 128-bit WEP</li> <li>● TKIP</li> <li>● 128-bit AES-CCMP</li> <li>● 256-bit AES-GCMP</li> </ul>
Product safety	<ul style="list-style-type: none"> <li>● UL</li> <li>● C-UL</li> <li>● CB(IEC60950-1)</li> </ul>
Management capabilities alerting	Support for Intel AMT
Government compliance	<ul style="list-style-type: none"> <li>● FIPS 140-2</li> <li>● FISMA</li> </ul>
Client utility	Intel PRO/Set Wireless Software v21 and later
Antenna diversity	Supported
Radio On/Off	Supported
Roaming	Support seamless roaming between access points
Wake On wireless	Supported
Wireless display	Native Miracast support by Windows 10
Wireless PAN standard	Dual Mode Bluetooth 5.1, BLE
Bluetooth version	Bluetooth 5.1
Bluetooth data rates	Up to 3 Mbps
Bluetooth operating frequency bands	2.4 GHz
Bluetooth profiles supported	Support for Microsoft Inbox Bluetooth profiles in Windows 10
Bluetooth data encryption	128-bit encryption
Bluetooth output power	Power class 1
Temperature	<ul style="list-style-type: none"> <li>● Operating temperature 0°C to + 50°C (Full performance at shield temperatures up to 80°C)</li> <li>● Storage temperature of -40°C to +70°C</li> </ul>
Humidity	Up to 90% RH non-condensing (at temperatures of 25°C to 35°C)




## Mobile Broadband - LTE-A WWAN

### Qualcomm Snapdragon X20 Gigabit LTE, CAT 16, DW5821e WWAN Module

**Table 22. Qualcomm Snapdragon X20 LTE, CAT 16, DW5821e, WWAN Module for AT&T, Verizon, and Sprint, US (DAO), South Korea, Taiwan, Indonesia and (EMEA/APJ/ROW)**

Specifications	Values
Form Factor	M.2 3042 Key-B single side
Host interface	USB 3.0/2.0
Network standard	LTE FDD/TDD, WCDMA/HSPA+, GPS/GLONASS/ Beidou / Galileo
Transfer rate	Up to 1 Gbps DL/150 Mbps UL (Cat 16)
Operating Frequency Bands	(1,2,3,4,5,7,8,12,13,14,17,18,19,20,25,26,28,29,30,32,38,39,40,41,42,43,46,66), HSPA+ (1, 2, 4, 5, 6, 8, 9, 19)
Power supply	DC 3.135 V to 4.4 V, Typical 3.3 V
SIM card	Supported through external SIM slot
eSIM with Dual SIM (DSSA)	Supported
Antenna Diversity	Availability dependent on the region and carrier requirements
Radio On/Off	Supported
Wake On Wireless	Supported
Temperature	<ul style="list-style-type: none"> <li>Operating: -30°C to 70°C (-22°F to 158°F)</li> <li>Storage: -40°C to 85°C (-40°F to 185°F)</li> </ul>
Antenna connector	<ul style="list-style-type: none"> <li>WWAN Main Antenna X 1</li> <li>WWAN Diversity Antenna X 1</li> <li>4 x 4 MIMO Antenna x 2</li> </ul>

 **NOTE:** This module is available only on 2-in-1 configurations.

### Qualcomm Snapdragon X20 LTE-A, CAT 9, DW5829e WWAN Module

**Table 23. Qualcomm Snapdragon X20 LTE-A, DW5829e, CAT 9, WWAN Module for AT&T, Verizon, and Sprint, US (DAO), South Korea, Taiwan, Indonesia and (EMEA/APJ/ROW)**

Specifications	Values
Form Factor	M.2 3042 Key-B single side
Host interface	USB 3.0/2.0
Network standard	LTE FDD/TDD, WCDMA/HSPA+, GPS/GLONASS/ Beidou / Galileo
Transfer rate	Up to 450 Mbps DL/75 Mbps UL (Cat 9)
Operating Frequency Bands	(1,2,3,4,5,7,8,12,13,14,17,18,19,20,25,26,28,29,30,32,38,39,40,41,66), HSPA+ (1, 2, 4, 5, 8)
Power supply	DC 3.135 V to 4.4 V, Typical 3.3 V

**Table 23. Qualcomm Snapdragon X20 LTE-A, DW5829e, CAT 9, WWAN Module for AT&T, Verizon, and Sprint, US (DAO), South Korea, Taiwan, Indonesia and (EMEA/APJ/ROW) (continued)**

Specifications	Values
SIM card	Supported through external SIM slot
eSIM with Dual SIM (DSSA)	Supported
Antenna Diversity	Availability dependent on the region and carrier requirements
Radio On/Off	Supported
Wake On Wireless	Supported
Temperature	<ul style="list-style-type: none"> <li>Operating: -30°C to 70°C (-22°F to 158°F)</li> <li>Storage: -40°C to 85°C (-40°F to 185°F)</li> </ul>
Antenna connector	<ul style="list-style-type: none"> <li>WWAN Main Antenna X 1</li> <li>WWAN Diversity Antenna X 1</li> </ul>

**NOTE:** This module is available only on laptop configurations.

## Graphics options

### Intel Iris Xe Graphics

**Table 24. Intel Iris Xe Graphics specifications**

Intel Iris Graphics	
Bus Type	Integrated
Dynamic Frequency Max Graph	1.3 GHz
Execution Unit	<ul style="list-style-type: none"> <li>11th Generation Intel Core i5-1135G7 and i5-1145G7: 80</li> <li>11th Generation Intel Core i7-1165G7 and i7-1185G7: 96</li> </ul>
Memory interface	Unified Memory Architecture (UMA)
Graphics level	11 <sup>th</sup> Generation Intel Tiger Lake Intel Core i processors: GT2
Estimated Maximum Power Consumption (TDP)	28 W—included in the CPU power
Maximum Resolution	4096 x 2304 @60 Hz
Maximum color depth	24 bits
Maximum vertical refresh rate	Up to 85 Hz depending on resolution
Number of Supported Displays	4
Technology supported	DirectX 12.1, OpenGL 4.6, Intel Quick Sync Video, OpenCL 2.2 Support

# Supported hard drives

## M.2 2230 128 GB Gen 3 PCIe x4 NVMe Class 35 Solid-State Drive

Table 25. M.2 2230 128 GB Gen 3 PCIe x4 NVMe Class 35 Solid-State Drive

Features	Specifications
Capacity	128 GB
Dimensions	22.00 mm x 30.00 mm x 2.38 mm
Interface type and maximum speed	Gen 3 PCIe 32 Gb/s (Up to 4 lanes)
MTTF	1.4 M hours
Logical blocks	250,069,680
<b>Power Source</b>	
Power consumption (reference only)	<ul style="list-style-type: none"> <li>• Idle : 5 mW (PS4)</li> <li>• Active : 3.5 W</li> </ul>
<b>Environmental Operating Conditions (Non-Condensing)</b>	
Temperature range	0°C to 70°C
Relative humidity range	10% to 90%
Non-op shock (@0.5 ms)	1500G
<b>Environmental Non-Operating Conditions (Non-Condensing)</b>	
Temperature range	-40°C to 70°C
Relative humidity range	5% to 95%

## M.2 2230 256 GB PCIe NVMe Gen3 x4 Class 35 Solid-State Drive

Table 26. M.2 2230 256 GB PCIe NVMe Gen3 x4 NVMe Class 35 Solid-State Drive

Features	Specifications
Capacity	256 GB
Dimensions	22.00 mm x 30.00 mm x 2.38 mm
Interface type and maximum speed	Gen 3 PCIe 32 Gb/s (Up to 4 lanes)
MTTF	1.4 M hours
Logical blocks	500,118,192
<b>Power Source</b>	
Power consumption (reference only)	<ul style="list-style-type: none"> <li>• Idle : 5 mW (PS4)</li> <li>• Active : 3.5 W</li> </ul>
<b>Environmental Operating Conditions (Non-Condensing)</b>	

**Table 26. M.2 2230 256 GB PCIe NVMe Gen3 x4 NVMe Class 35 Solid-State Drive (continued)**

Features	Specifications
Temperature range	0°C to 70°C
Relative humidity range	10% to 90%
Non-op shock (@0.5 ms)	1500G
<b>Environmental Non-Operating Conditions (Non-Condensing)</b>	
Temperature range	-40°C to 70°C
Relative humidity range	5% to 95%

## M.2 2230 512 GB PCIe NVMe Gen3 x4 Class 35 Solid-State Drive

**Table 27. M.2 2230 512 GB PCIe NVMe Gen3 x4 Class 35 Solid-State Drive**

Features	Specifications
Capacity	512 GB
Dimensions	22.00 mm x 30.00 mm x 2.38 mm
Interface type and maximum speed	Gen 3 PCIe 32 Gb/s (Up to 4 lanes)
MTTF	1.4 M hours
Logical blocks	1,000,215,216
<b>Power Source</b>	
Power consumption (reference only)	<ul style="list-style-type: none"> <li>• Idle : 5 mW (PS4)</li> <li>• Active : 3.5 W</li> </ul>
<b>Environmental Operating Conditions (Non-Condensing)</b>	
Temperature range	0°C to 70°C
Relative humidity range	10% to 90%
Non-op shock (@0.5 ms)	1500G
<b>Environmental Non-Operating Conditions (Non-Condensing)</b>	
Temperature range	-40°C to 70°C
Relative humidity range	5% to 95%

## M.2 2280 256 GB Gen 3 PCIe x4 NVMe Class 40 Solid-State Drive

**Table 28. M.2 2280 256 GB Gen 3 PCIe x4 NVMe Class 40 Solid-State Drive**

Features	Specifications
Capacity	256 GB
Dimensions	22.00 mm x 80.00 mm x 2.38 mm

**Table 28. M.2 2280 256 GB Gen 3 PCIe x4 NVMe Class 40 Solid-State Drive (continued)**

Features	Specifications
Interface type and maximum speed	Gen 3 PCIe 32 Gb/s
MTTF	1.4 M hours
Logical blocks	500,118,192
<b>Power Source</b>	
Power consumption (reference only)	<ul style="list-style-type: none"> <li>• Idle : 5 mW (PS4)</li> <li>• Active : 4.5 W</li> </ul>
<b>Environmental Operating Conditions (Non-Condensing)</b>	
Temperature range	0°C to 70°C
Relative humidity range	10% to 90%
Non-op shock (@0.5 ms)	1500G
<b>Environmental Non-Operating Conditions (Non-Condensing)</b>	
Temperature range	-40°C to 70°C
Relative humidity range	5% to 95%

## M.2 2280 512 GB PCIe NVMe Gen3 x4 Class 40 Solid-State Drive

**Table 29. M.2 2280 512 GB PCIe NVMe Gen3 x4 Class 40 Solid-State Drive**

Features	Specifications
Capacity	512 GB
Dimensions	22.00 mm x 80.00 mm x 2.38 mm
Interface type and maximum speed	Gen 3 PCIe 32 Gb/s
MTTF	1.4 M hours
Logical blocks	1000,215,216
<b>Power Source</b>	
Power consumption (reference only)	<ul style="list-style-type: none"> <li>• Idle : 5 mW (PS4)</li> <li>• Active : 4.5 W</li> </ul>
<b>Environmental Operating Conditions (Non-Condensing)</b>	
Temperature range	0°C to 70°C
Relative humidity range	10% to 90%
Non-op shock (@0.5 ms)	1500G
<b>Environmental Non-Operating Conditions (Non-Condensing)</b>	
Temperature range	-40°C to 70°C

**Table 29. M.2 2280 512 GB PCIe NVMe Gen3 x4 Class 40 Solid-State Drive (continued)**

Features	Specifications
Relative humidity range	5% to 95%

## M.2 2280 1 TB PCIe NVMe Gen3 x4 Class 40 Solid-State Drive

**Table 30. M.2 2280 1 TB PCIe NVMe Gen3 x4 Class 40 Solid-State Drive**

Features	Specifications
Capacity	1 TB
Dimensions	22.00 mm x 80.00 mm x 3.73 mm
Interface type and maximum speed	Gen 3 PCIe 32 Gb/s
MTTF	1.4 M hours
Logical blocks	2000,409,264
<b>Power Source</b>	
Power consumption (reference only)	<ul style="list-style-type: none"> <li>• Idle : 5 mW (PS4)</li> <li>• Active : 4.5 W</li> </ul>
<b>Environmental Operating Conditions (Non-Condensing)</b>	
Temperature range	0°C to 70°C
Relative humidity range	10% to 90%
Non-op shock (@0.5 ms)	1500G
<b>Environmental Non-Operating Conditions (Non-Condensing)</b>	
Temperature range	-40°C to 70°C
Relative humidity range	5% to 95%

## M.2 2280 256 GB Gen 3 PCIe x4 NVMe Opal Self-Encrypting Class 40 Solid-State Drive

**Table 31. M.2 2280 256 GB Gen 3 PCIe x4 NVMe Opal Self-Encrypting Class 40 Solid-State Drive**

Features	Specifications
Capacity	256 GB
Dimensions	22.00 mm x 80.00 mm x 2.38 mm
Interface type and maximum speed	Gen 3 PCIe 32 Gb/s (Up to 4 lanes)
MTTF	1.4 M hours
Logical blocks	500,118,192
<b>Power Source</b>	

**Table 31. M.2 2280 256 GB Gen 3 PCIe x4 NVMe Opal Self-Encrypting Class 40 Solid-State Drive (continued)**

Features	Specifications
Power consumption (reference only)	<ul style="list-style-type: none"> <li>Idle : 5 mW (PS4)</li> <li>Active : 4.5 W</li> </ul>
<b>Environmental Operating Conditions (Non-Condensing)</b>	
Temperature range	0°C to 70°C
Relative humidity range	10% to 90%
Non-op shock (@0.5 ms)	1500G
<b>Environmental Non-Operating Conditions (Non-Condensing)</b>	
Temperature range	-40°C to 70°C
Relative humidity range	5% to 95%

## M.2 2280 512 GB PCIe NVMe Gen3 x4 Opal Self-Encrypting Class 40 Solid-State Drive

**Table 32. M.2 2280 512 GB PCIe NVMe Gen3 x4 Opal Self-Encrypting Class 40 Solid-State Drive**

Features	Specifications
Capacity	512 GB
Dimensions	22.00 mm x 80.00 mm x 2.3 mm
Interface type and maximum speed	Gen 3 PCIe 32 Gb/s
MTTF	1.6 M hours
Logical blocks	1000,215,216
<b>Power Source</b>	
Power consumption (reference only)	<ul style="list-style-type: none"> <li>Idle : 10 mW (PS4)</li> <li>Active : 4.5 W</li> </ul>
<b>Environmental Operating Conditions (Non-Condensing)</b>	
Temperature range	0°C to 70°C
Relative humidity range	5% to 90%
Non-op shock (@0.5 ms)	1500G
<b>Environmental Non-Operating Conditions (Non-Condensing)</b>	
Temperature range	-10°C to 85°C
Relative humidity range	5% to 95%

# Accessories

**Table 33. Accessories**

Accessories	
Mouse	Dell Premium Rechargeable Mobile Wireless Mouse - MS7421W
Monitor	Dell UltraSharp 27 4K USB-C Monitor - U2720Q
Dock	Dell Thunderbolt Dock – WD19TB
Cables, Dongles, Adapters	<ul style="list-style-type: none"> <li>● Dell Mobile Adapter Speakerphone - MH3021P</li> <li>● Dell USB-C Mobile Adapter - DA300</li> <li>● Dell USB-C Mobile Adapter - DA310</li> </ul>
Power	Dell Notebook Power Bank Plus USBC, 65 Wh - PW7018LC
Carrying cases	Dell Professional Sleeve 14
Keyboards	Dell Premium Wireless Keyboard and Mouse - KM7321W
Stylus	Dell Premium Active Pen - PN579X
Sensors	<ul style="list-style-type: none"> <li>● Ambient Light Sensor</li> <li>● IR User Proximity Detection</li> <li>● Digital Compass(Magnetometer)</li> <li>● Accelerometer</li> <li>● Gyro</li> <li>● Adaptive Thermal Performance (Lap vs. Desk mode) requires Gyro/Accelerometer - note, for thermal only.</li> <li>● Proximity for SAR compliance (for the WWAN module) Near Field Proximity Sensor</li> <li>● Hall Effect Sensor</li> </ul>

# NFC

**Table 34. NFC Specifications**

NFC: Near Field Communications	
NFC Standard	ISO/IEC 18092 and ISO/IEC 21481
Cards Supported	Type1 / Type 2 / Type 3 / Type 4; ISO/IEC 14443-4 stands-based PICC; ISO/IEC 15693 stands-based VICC ; ISO/IEC 18000-3 ; Kovio
Operating temperature	-30°C (86°F) to +85° C (185°F)
Humidity	Up to 90% RH non-condensing (at temperatures of 25°C to 35°C)



# Smart-card reader

The following table lists the smart-card reader specifications supported by your Latitude 7420.

**Table 35. Contactless smart-card reader**

Type	FIPS 201 Contacted/Contactless Smart-card reader
ISO certification	ISO14443A

# Security options—Contacted smartcard reader


**Table 36. Contacted smartcard reader**

Title	Description	Dell ControlVault 3 Smartcard reader
ISO 7816 -3 Class A Card Support	Reader capable of reading 5V powered smartcard	Yes
ISO 7816 -3 Class B Card Support	Reader capable of reading 3V powered smartcard	Yes
ISO 7816 -3 Class C Card support	Reader capable of reading 1.8V powered smartcard	Yes
ISO 7816-1 Compliant	Specification for the reader	Yes
ISO 7816 -2 Compliant	Specification for smartcard 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) smartcard standards as posted to <a href="http://www.emvco.com">www.emvco.com</a>	Yes
EMVCo Certified	Formally certified based on EMVCO smartcard 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 Smartcard reader is compliant with the FIDO SPEC	Yes

## Security options—Contactless smartcard reader

**Table 37. Contactless smartcard reader**

Title	Description	Dell ControlVault 3 Contactless Smartcard reader with NFC
Felica Card Support	Reader and software capable of supporting Felica contactless cards	Yes
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
EMVCo Compliant	Compliant with EMVCO smartcard standards as posted to <a href="http://www.emvco.com">www.emvco.com</a>	Yes
EMVCo Certified	Formally certified based on EMVCO smartcard standards	Yes
NFC Proximity OS Interface	Enumerates NFP (Near Field Proximity) device for OS to utilize	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 Microsoft WHCK	Yes
Dell ControlVault support	Device connects to Dell ControlVault for usage and processing	Yes
FIDO2 compliance	Dell ControlVault 3 Smartcard reader is compliant with the FIDO SPEC	Yes

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

**Table 38. Supported cards**

Manufacturer	Card	Supported
HID	jCOP readertest3 A card (14443a)	Yes
	1430 1L	
	DESFire D8H	
	iClass (Legacy)	
	iClass SEOS	
NXP/Mifare	Mifare DESFire 8K White PVC Cards	Yes
	Mifare Classic 1K White PVC Cards	
	NXP Mifare Classic S50 ISO Card	
G&D	idOnDemand - SCE3.2 144K	Yes
	SCE6.0 FIPS 80K Dual+ 1 K Mifare	
	SCE6.0 nonFIPS 80K Dual+ 1 K Mifare	
	SCE6.0 FIPS 144K Dual + 1K Mifare	
	SCE6.0 nonFIPS 144K Dual + 1 K Mifare	
	SCE7.0 FIPS 144K	
Oberthur	idOnDemand - OCS5.2 80K	Yes
	ID-One Cosmo 64 RSA D V5.4 T=0 card	

## Security

**Table 39. Security specifications**

Features	Specifications
Trusted Platform Module (TPM) 2.0	Integrated on system board
Fingerprint reader	Optional
Wedge-shaped lock slot	Standard

## Security Software

**Table 40. Security Software specifications**

Specifications
Dell Client Command Suite
Dell Supply Chain Defense
Optional Dell Data Security and Management Software
Dell BIOS Verification
Optional Dell Endpoint Security and Management Software
VMware Carbon Black Endpoint Standard
VMware Carbon Black Endpoint Standard + Secureworks Threat Detection and Response

**Table 40. Security Software specifications (continued)**

Specifications
Dell Encryption Enterprise
Dell Encryption Personal
Carbonite
VMware Workspace ONE
Absolute Endpoint Visibility and Control
Netskope

## System management features

Dell commercial systems come with a number of systems management options that are include by default for In-Band management with our Dell Client Command Suite. In-Band management meaning that the Operating System is functional and the device is connected to a network so that it can be managed. The Dell Client Command Suite of tools can be leveraged individually or with a systems management console like SCCM, LANDESK, KACE, etc.

We also offer Out-of-Band management as an option. Out-of-band management is when the system does not have a functional operating system or is turned off and you still want to be able to manage the system in that state.

## Dell Client Command Suite for In-Band systems management

**Dell Client Command Suite** is a free toolkit available for download, for all Latitude Rugged tablets at [dell.com/support](http://dell.com/support), that automates and streamlines systems management tasks, saving time, money, and resources. It consists of the following modules that can be used independently, or with a variety of systems management consoles such as SCCM.

Dell Client Command Suite's integration with VMware Workspace ONE Powered by AirWatch, now allows customers to manage their Dell client hardware from the cloud, using a single Workspace ONE console.

**Dell Command | Deploy** enables easy operating system (OS) deployment across all major OS deployment methodologies and provides numerous system-specific drivers that have been extracted and reduced to an OS-consumable state.

**Dell Command | Configure** is a graphical user interface (GUI) admin tool for configuring and deploying hardware settings in a pre-OS or post-OS environment, and it operates seamlessly with SCCM and Airwatch and can be self-integrated into LANDesk and KACE. Simply, this is all about the BIOS. Command | Configure allows you to remotely automate and configure over 150+ BIOS settings for a personalized user experience.

**Dell Command | PowerShell Provider** can do the same things as Command | Configure, but with a different method. PowerShell is a scripting language that allows customers to create a customized and dynamic configuration process.

**Dell Command | Monitor** is a Windows Management Instrumentation (WMI) agent that provides IT admins with an extensive inventory of the hardware and health-state data. Admins can also configure hardware remotely by using command line and scripting.

**Dell Command | Power Manager (end-user tool)** is a GUI-based factory-installed battery management tool that allows end users to choose the battery management methods that meet their personal preferences or work schedule without sacrificing IT's capability to control those settings with Group Policy.

**Dell Command | Update (end-user tool)** is factory-installed and allows admins to individually manage and automatically present and install Dell updates to the BIOS, drivers, and software. Command | Update eliminates the time-consuming hunting and pecking process of update installation.

**Dell Command | Update Catalog** provides searchable metadata that allows the management console to retrieve the latest system-specific updates (driver, firmware or BIOS). The updates are then delivered seamlessly to end-users using the customer's systems management infrastructure that is consuming the catalog (like SCCM).

**Dell Command | vPro Out of Band** console extends hardware management to systems that are offline or have an un-reachable OS (Dell exclusive features).

**Dell Command | Integration Suite for System Center** - This suite integrates all the key components of the Client Command Suite into Microsoft System Center Configuration Manager 2012 and Current Branch versions.

## Out of Band Systems Management

Both the Intel vPro and Intel Standard Manageability options **must be configured in our factory at the time of purchase, as they are NOT field upgradable**. They offer out-of-band management and DASH compliance ([https://registry.dmtf.org/registry/results/field\\_initiative\\_name%3A%22DASH%201.0%22](https://registry.dmtf.org/registry/results/field_initiative_name%3A%22DASH%201.0%22)).

**Intel vPro**—Available on the Latitude 7420 with Intel Core i5 and i7 processors and offers the most complete set of out-of-band management features including KVM, IPv6 support, graceful shutdown, and all the features from previous versions of vPro. It uses the latest version of Intel’s Active Management Technology (AMT) which is currently at version 12.0.


To learn more about Intel ISM, visit Intel’s website at <https://software.intel.com/en-us/blogs/2009/03/27/what-is-standard-manageability>.

**Intel Standard Manageability (ISM)**—ISM offers a limited set of out-of-band features like remote power on/off, Serial-over-LAN redirect, and Wake-on-LAN.

To learn more about Intel ISM, visit Intel’s website at <https://software.intel.com/en-us/blogs/2009/03/27/what-is-standard-manageability>.

## Dell low blue light display

This section explains about Dell low blue light 4K display panel.

 **WARNING: The possible long-term effects of blue light emission from the display may cause personal injury such as digital eye strain, eye fatigue, and damage to the eyes. Using the monitor for extended periods of time may also cause pain in parts of the body such as neck, arm, back, and shoulder.**

Dell low blue light display optimizes eye comfort with a flicker-free screen. This feature is designed to reduce the amount of blue light that is emitted from the monitor to optimize eye comfort.

To reduce the risk of eye strain and neck/arm/back/shoulder pain from using the monitor for long periods of time, we suggest you to:

1. Set the distance of the screen between 20 inches to 28 inches (50 cm-70 cm) from your eyes.
2. Blink frequently to moisten your eyes or wet your eyes with water after prolonged usage of the monitor.
3. Take regular and frequent breaks for 20 minutes every two hours.
4. Look away from your monitor and gaze at a distant object at 20 ft away for at least 20 s during the breaks.
5. Perform stretches to relieve tension in the neck, arm, back, and shoulders during the breaks.

## Keyboard shortcuts

**NOTE:** Keyboard characters may differ depending on the keyboard language configuration. Keys 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 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 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 multi-media control, as indicated by the icon at the bottom of the key. Press the function key to invoke the task represented by the icon. For example, pressing F1 mutes the audio (refer to the table below).

However, if the function keys F1-F12 are needed for specific software applications, multi-media functionality can be disabled by pressing **Fn + Esc**. Subsequently, multi-media 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 BIOS setup program.

**Table 41. List of keyboard shortcuts**

Function key	Redefined key (for multimedia control)	Behavior
F1	Fn + F1	Mute audio
F2	Fn + F2	Decrease volume
F3	Fn + F3	Increase volume
F4	Fn + F4	Mic Mute
F5	Fn + F5	Keyboard backlight <b>NOTE:</b> Not applicable for non-backlight keyboard.
F6	Fn + F6	Decrease screen brightness
F7	Fn + F7	Increase screen brightness
F8	Fn + F8	Switch to external display
F10	Fn + F10	Print Screen
F11	Fn + F11	Home
F12	Fn + F12	End

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

**Table 42. Secondary behavior**

Function key	Behavior
Fn + Ctrl	Open application menu
Fn + Esc	Toggle Fn-key lock

**Table 42. Secondary behavior (continued)**



<b>Function key</b>	<b>Behavior</b>
Fn + Home	Home
Fn + End	End

# Getting help and contacting Dell

## Self-help resources


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


**Table 43. Self-help resources**

Self-help resources	Resource location
Information about Dell products and services	<a href="http://www.dell.com">www.dell.com</a>
My Dell app	
Tips	
Contact Support	In Windows search, type <code>Contact Support</code> , and press Enter.
Online help for operating system	<a href="http://www.dell.com/support/windows">www.dell.com/support/windows</a> <a href="http://www.dell.com/support/linux">www.dell.com/support/linux</a>
Access top solutions, diagnostics, drivers and downloads, and learn more about your computer through videos, manuals and documents.	Your Dell computer is uniquely identified by a Service Tag or Express Service Code. To view relevant support resources for your Dell computer, enter the Service Tag or Express Service Code at <a href="http://www.dell.com/support">www.dell.com/support</a> .  For more information on how to find the Service Tag for your computer, see <a href="#">Locate the Service Tag on your computer</a> .
Dell knowledge base articles for a variety of computer concerns	<ol style="list-style-type: none"> <li>1. Go to <a href="http://www.dell.com/support">www.dell.com/support</a>.</li> <li>2. On the menu bar at the top of the Support page, select <b>Support &gt; Knowledge Base</b>.</li> <li>3. In the Search field on the Knowledge Base page, type the keyword, topic, or model number, and then click or tap the search icon to view the related articles.</li> </ol>

## Contacting Dell

To contact Dell for sales, technical support, or customer service issues, see [www.dell.com/contactdell](http://www.dell.com/contactdell).

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

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