

Latitude 7330 Rugged Extreme

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.

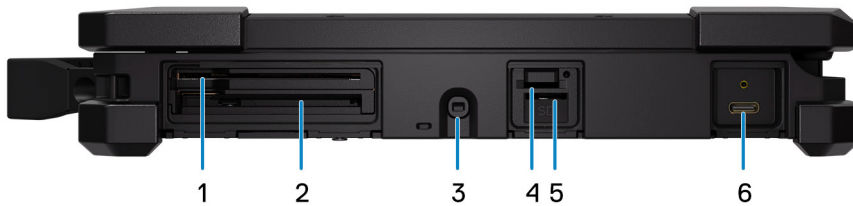
 **WARNING:** A WARNING indicates a potential for property damage, personal injury, or death.

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Views of Latitude 7330 Rugged Extreme

Right



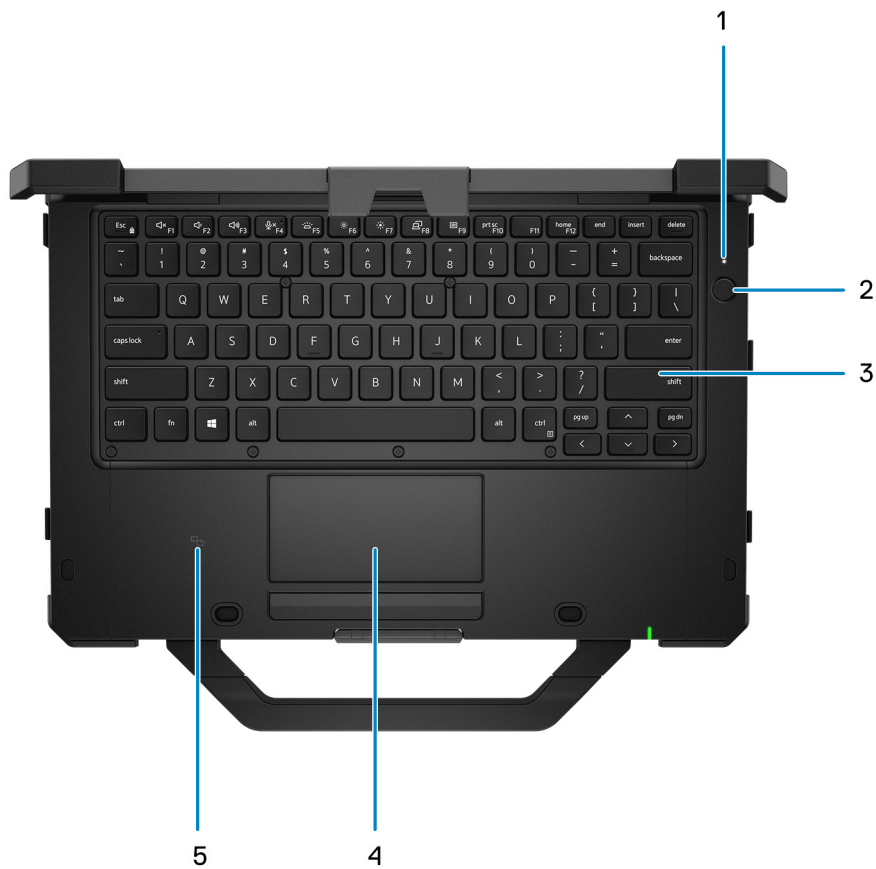
1. Smart-card reader slot (optional)
2. Express card slot (optional)
3. Stylus slot
4. Nano SIM card slot
5. microSD-card slot
6. Thunderbolt 4/USB 3.2 Gen 2 Type-C port with PowerDelivery 3.0 (optional)

Left



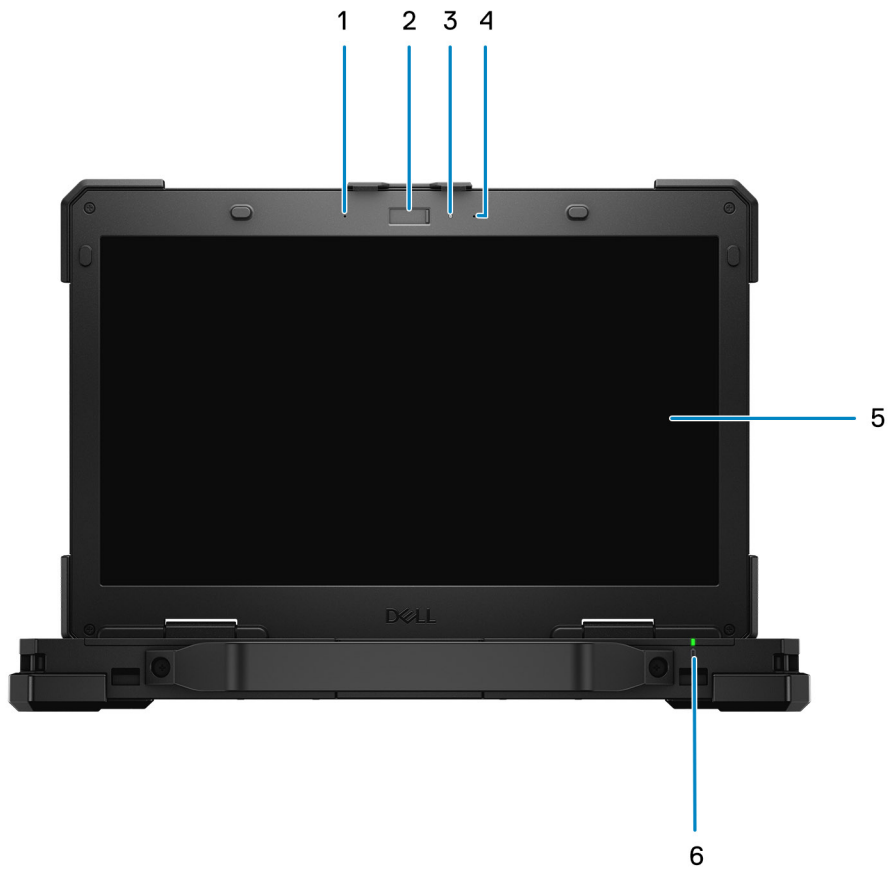
1. Thunderbolt 4/USB 3.2 Gen 2 Type-C port with Power Delivery 3.0
2. Air vent
3. USB 3.2 Gen 1 port with PowerShare
4. USB 3.2 Gen 1 port
5. Headset (headphone and microphone combo) port

Top



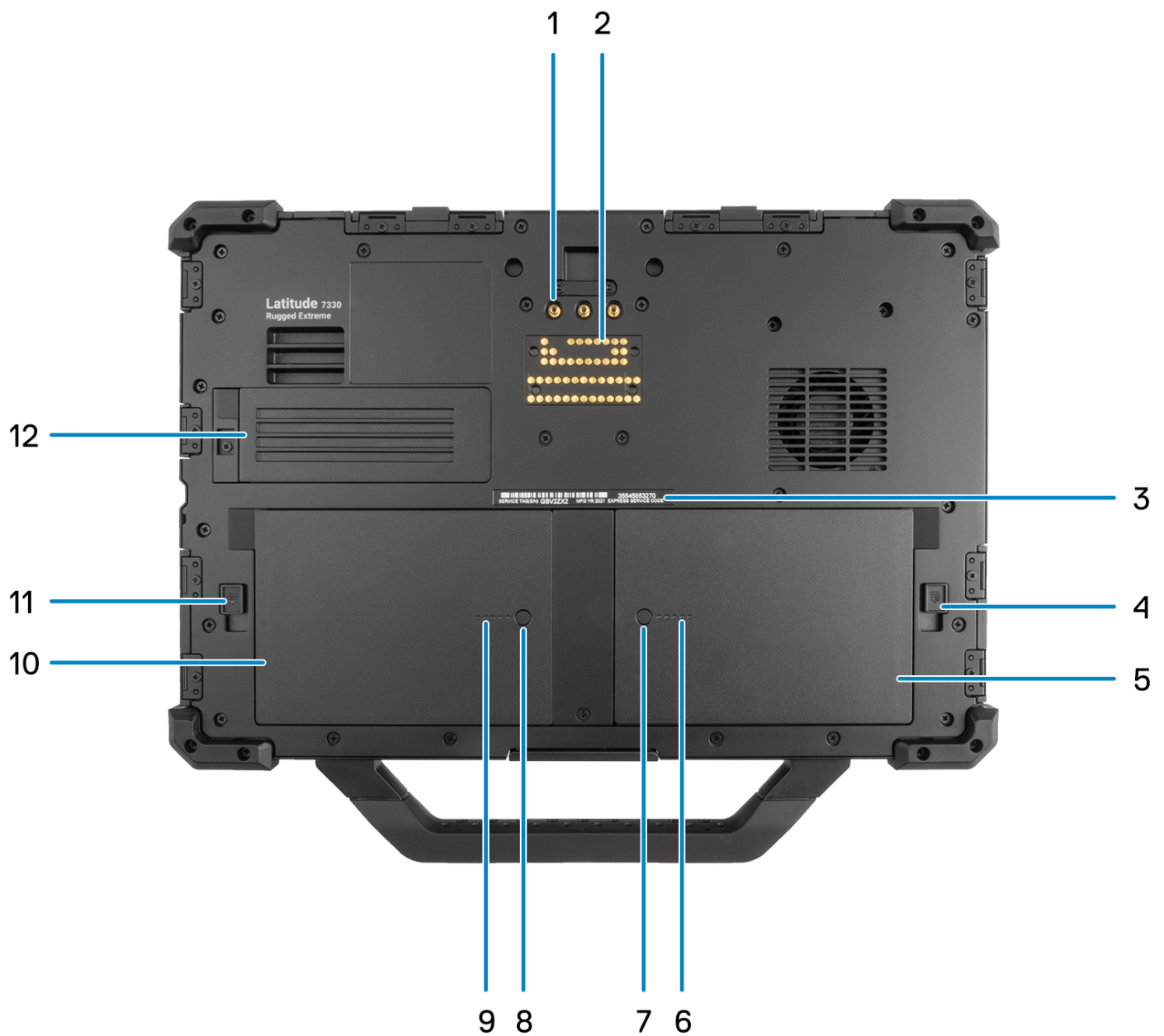
1. Power status light
2. Power button with optional fingerprint reader
3. Keyboard
4. Touchpad
5. Near Field Communication (NFC)

Front



1. Microphone
2. Privacy shutter
3. LED/IR lens
4. Microphone
5. Display
6. Battery-status light/Diagnostic-status light

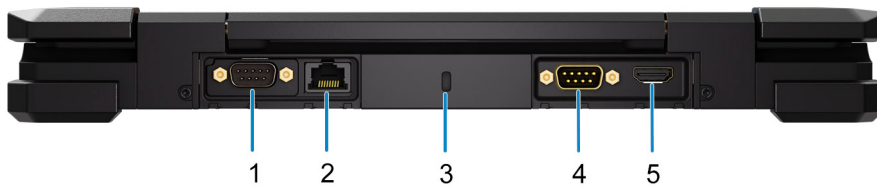
Bottom



1. Radio frequency pass-through connectors
2. Docking port
3. Service tag label
4. Battery 1 latch
5. Battery 1
6. Battery 1 LED indicator
7. Battery 1 button
8. Battery 2 button
9. Battery 2 LED indicator
10. Battery 2
11. Battery 2 latch

12. Solid-state drive door

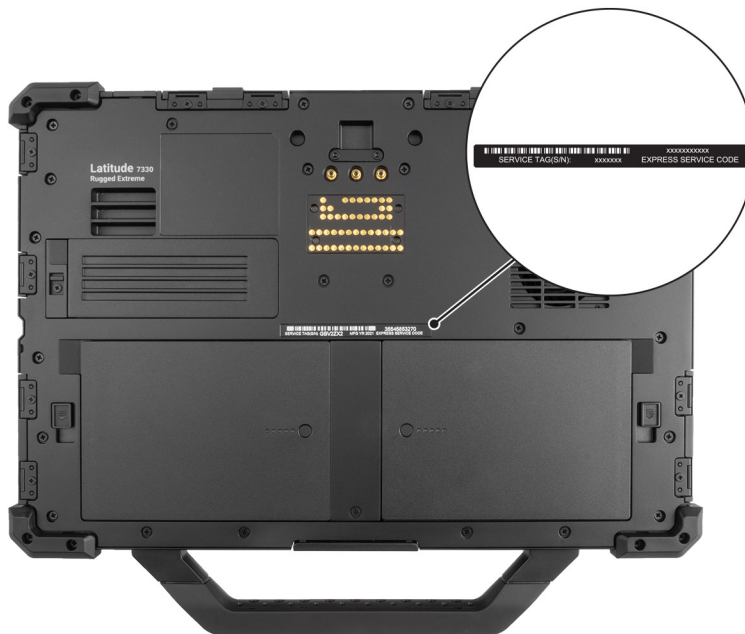
Back



1. Optional I/O bay (RJ45/USB Type-A/Non-native Serial/Fischer USB 3.0 9-pin/Blank)
2. RJ45 Ethernet port
3. Kensington lock slot
4. Serial RS-232 port (Native serial)
5. HDMI 2.0 port

Service Tag

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



Battery charge and status light

The following table lists the battery charge and status light behavior of your Latitude 7330 Rugged Extreme.

Table 1. Battery charge and status light behavior

Power Source	LED Behavior	System Power State	Battery Charge Level
AC Adapter	Off	S0 - S5	Fully Charged
AC Adapter	Green	S0 - S5	< Fully Charged
Battery	Off	S0 - S5	10%<RSOC <=100%
Battery	Solid Amber (590+/-3 nm)	S0	<= 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 7330 Rugged Extreme

Dimensions and weight

The following table lists the height, width, depth, and weight of your Latitude 7330 Rugged Extreme.

Table 2. Dimensions and weight

Description	Values
Height:	
Front height	36.50 mm (1.43 in.)
Rear height	36.50 mm (1.43 in.)
Width	324.00 mm (12.75 in.)
Depth	220.00 mm (8.66 in.)
Weight (minimum)	2.32 kg (5.11 lb)  NOTE: The weight of your computer depends on the configuration ordered and manufacturing variability.

Processor

The following table lists the details of the processors supported by your Latitude 7330 Rugged Extreme.

Table 3. Processor

Description	Option one	Option two	Option three
Processor type	11 th Generation Intel Core i5-1135G7	11 th Generation Intel Core i5-1145G7 vPro	11 th Generation Intel Core i7-1185G7 vPro
Processor wattage	28 W	28 W	28 W
Processor core count	4	4	4
Processor thread count	8	8	8
Processor speed	Up to 4.20 GHz	Up to 4.40 GHz	Up to 4.80 GHz
Processor cache	8 MB	8 MB	12 MB
Integrated graphics	Intel Iris X ^e Graphics	Intel Iris X ^e Graphics	Intel Iris X ^e Graphics

Chipset

The following table lists the details of the chipset supported by your Latitude 7330 Rugged Extreme.

Table 4. Chipset

Description	Values
Chipset	Intel TGL UP3
Processor	11 th Generation Intel Core i5/i7
DRAM bus width	64-bit
Flash EPROM	32 MB
PCIe bus	Up to Gen 4 for Integrated SSD

Operating system

Your Latitude 7330 Rugged Extreme supports the following operating systems:

- Windows 11 Home, 64-bit
- Windows 11 Pro, 64-bit
- Ubuntu Linux 20.04 LTS, 64-bit
- Windows 10 Pro with Windows 11 License, 64-bit

Memory

The following table lists the memory specifications of your Latitude 7330 Rugged Extreme.

Table 5. Memory specifications

Description	Values
Memory slots	Integrated  NOTE: Memory not upgradeable
Memory type	Dual-channel LPDDR4x
Memory speed	4266 MHz
Maximum memory configuration	32 GB
Minimum memory configuration	8 GB
Memory size per slot	4 GB, 8 GB, 16 GB
Memory configurations supported	• 8 GB, dual-channel, LPDDR4x, 4266 MHz • 16 GB, dual-channel, LPDDR4x, 4266 MHz • 32 GB, dual-channel, LPDDR4x, 4266 MHz

External ports

The following table lists the external ports of your Latitude 7330 Rugged Extreme.

Table 6. External ports

Description	Values
Network port	One RJ45 Ethernet port
USB ports	• One USB 3.2 Gen 1 port • One USB 3.2 Gen 1 port with PowerShare • One Thunderbolt 4/USB 3.2 Gen 2 Type-C port with PowerDelivery 3.0 (also functions as charging port) • One Thunderbolt 4/USB 3.2 Gen 2 Type-C port with PowerDelivery 3.0 (optional) • One Optional I/O bay (RJ45/USB Type-A/Non-native Serial/Fischer USB 3.0 9-pin/Blank)
Audio port	Headset (headphone and microphone combo) port
Video port	One HDMI 2.0 port
I/O port	• One Serial RS-232 port (Native) • Nano SIM card slot • Smart card reader (optional) • Express card (optional)
Media-card reader	One microSD-card slot
Power-adaptor port	One USB Type-C port
Security-cable slot	One Kensington lock slot

Internal slots

The following table lists the internal slots of your Latitude 7330 Rugged Extreme.

Table 7. Internal slots

Description	Values
M.2	• One M.2 2230 slot for Wi-Fi and Bluetooth card • One M.2 2230/2280 slot for solid-state drive • One M.2 3042 slot for upsell WWAN card  NOTE: To learn more about the features of different types of M.2 cards, search in the Knowledge Base Resource at www.dell.com/support.

Ethernet

The following table lists the wired Ethernet Local Area Network (LAN) specifications of your Latitude 7330 Rugged Extreme.

Table 8. Ethernet specifications

Description	Values
Model number	Intel i219LM
Transfer rate	10/100/1000 Mbps

Wireless module

The following table lists the Wireless Local Area Network (WLAN) modules that are supported on your Latitude 7330 Rugged Extreme.

Table 9. Wireless module specifications

Description	Option one	Option two
Model number	Intel AX210	Qualcomm WCN6856-DBS
Transfer rate	Up to 2400 Mbps	Up to 3571 Mbps
Frequency bands supported	2.4 GHz/5 GHz/6 GHz	2.4 GHz/5 GHz/6 GHz
Wireless standards	802.11ax (Wi-Fi 6E)	802.11ax (Wi-Fi 6E)
Encryption	64-bit and 128-bit WEP - AES-CCMP - TKIP	64-bit and 128-bit WEP - AES-CCMP - TKIP
Bluetooth wireless card	5.2	5.2
	 NOTE: The version 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) module that is supported on your Latitude 7330 Rugged Extreme.

Table 10. WWAN module specifications

Description	Option one	Option two
Model number	DW5821e, Qualcomm Snapdragon SDX20 Global Gigabit LTE	DW5930e, Qualcomm Snapdragon SDX55 5G
Transfer rate	Up to 1.0 Gbps DL/150 Mbps UL (Cat 16)	Up to 3 Gbps DL/250 Mbps UL (3GPP Release15 NR/LTE CAT20)
Frequency bands supported	- LTE: (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)	- NR: (1, 2, 3, 5, 7, 8, 12, 20, 28, 38, 41, 66, 71, 77, 78, 79) - LTE: 1, 2, 3, 4, 5, 7, 8, 12, 13, 14, 17, 18, 19, 20, 25, 26, 28, 29, 30, 32, 34, 38, 39, 40, 41, 42, 46, 48, 66)

Table 10. WWAN module specifications (continued)

Description	Option one	Option two
		HSPA+: (1, 2, 4, 5, 6, 8, 9, 19)
Wireless standards	- LTE FDD/TDD - WCDMA/HSPA+ - GPS/GLONASS/Beidou/Galileo	- NR FR1(Sub6) FDD/TDD - LTE FDD/TDD - WCDMA/HSPA+ - GPS/GLONASS/Beidou/Galileo
Encryption	Not supported	Not supported
Global Navigation Satellite System (GNSS)	Supports GPS, and GLONASS Location sensor and NMEA	Supports GPS, and GLONASS Location sensor
NOTE: For instructions on how to find your computer's IMEI (International Mobile Station Equipment Identity) number, see the knowledge base article 000143678 at www.dell.com/support .		

Audio

The following table lists the audio specifications of your Latitude 7330 Rugged Extreme.

Table 11. Audio specifications

Description		Values
Audio controller		Realtek ALC3254
Stereo conversion		Supported
Internal audio interface		High definition audio
External audio interface		Headset (headphone and microphone combo) port
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

This section lists the storage options on your Latitude 7330 Rugged Extreme.

Your computer supports one of the following configurations:

- One M.2 2230/2280 solid-state drive (Class 35 or Class 40)

Table 12. Storage specifications

Storage type	Interface type	Capacity
M.2 2230 solid-state drive	PCIe 3 Gen x4 NVMe, Class 35	Up to 1 TB
M.2 2280 solid-state drive	PCIe 4 Gen x4 NVMe, Class 40	Up to 2 TB
M.2 2280 solid-state drive	PCIe 4 Gen x3 NVMe, Class 40, self-encrypting drive	512 GB

Media-card reader

The following table lists the media cards supported by your Latitude 7330 Rugged Extreme.

Table 13. Media-card reader specifications

Description	Values
Media-card type	microSD-card
Media-cards supported	- Secure Digital (MS) - Secure Digital High Capacity (SDHC) - Secure Digital Extended Capacity (SDXC) - Multi-Media Card (MMC)
 NOTE: The maximum capacity supported by the media-card reader varies depending on the standard of the media card installed in your computer.	

Keyboard

The following table lists the keyboard specifications of your Latitude 7330 Rugged Extreme.

Table 14. Keyboard specifications

Description	Values
Keyboard type	- Standard, non-backlit keyboard - Standard, RGB backlit keyboard - Rubberized Sealed RGB backlit keyboard
Keyboard layout	- QWERTY - AZERTY - Kanji
Number of keys	- United States and Canada: 82 keys - United Kingdom: 83 keys - Brazil: 84 keys - Japan: 86 keys
Keyboard size	X= 19.05 mm key pitch Y= 19.05 mm key pitch
Keyboard shortcuts	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.

Table 14. Keyboard specifications (continued)

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

Camera (optional)

The following table lists the camera specifications of your Latitude 7330 Rugged Extreme.

Table 15. Camera specifications

Description	Option 1	Option 2
Number of cameras	One	One
Camera type	HD RGB camera	FHD IR camera
Camera location	Front camera	Front camera
Camera sensor type	CMOS sensor technology	CMOS sensor technology
Camera resolution:		
Still image	0.92 megapixel	2.0 megapixels
Video	1280 x 720 (HD) at 30 fps	1920 x 1080 (FHD) at 30 fps
Infrared camera resolution:		
Still image	NA	0.23
Video	NA	640 x 360
Diagonal viewing angle:		
Camera	87 degrees	87.60 degrees
Infrared camera	NA	87.60 degrees

Touchpad

The following table lists the touchpad specifications of your Latitude 7330 Rugged Extreme.

Table 16. Touchpad specifications

Description	Values
Touchpad resolution:	
Horizontal	1196
Vertical	600
Touchpad dimensions:	
Horizontal	99.50 mm (3.92 in.)
Vertical	49.80 mm (1.96 in.)

Table 16. Touchpad specifications (continued)

Description	Values
Touchpad gestures	For more information about touchpad gestures available on Windows, see the Microsoft knowledge base article at support.microsoft.com .

Power adapter

The following table lists the power adapter specifications of your Latitude 7330 Rugged Extreme.

Table 17. Power adapter specifications

Description	Option one	Option two
Type	Pecos 65 W AC adapter, USB-C	90 W AC adapter, USB-C
Power-adapter dimensions:		
Height	28.00 mm (1.10 in.)	22.00 mm (0.87 in.)
Width	51.00 mm (2.01 in.)	66.00 mm (2.60 in.)
Depth	112.00 mm (4.41 in.)	130.00 mm (5.12 in.)
Input voltage	100 VAC to 240 VAC	100 VAC to 240 VAC
Input frequency	50 Hz to 60 Hz	50 Hz to 60 Hz
Input current (maximum)	1.5 A	1.8 A
Output current (continuous)	20 V/3.25 A 15 V/3 A 9 V/3 A 5 V/3 A	20 V/4.50 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
Temperature range:		
Operating	0°C to 40°C (32°F to 104°F)	0°C to 40°C (32°F to 104°F)
Storage	-40°C to 70°C (-40°F to 158°F)	-40°C to 70°C (-40°F to 158°F)
 CAUTION: Operating and storage temperature ranges may differ among components, so operating or storing the device outside these ranges may impact the performance of specific components.		

Battery

The following table lists the battery specifications of your Latitude 7330 Rugged Extreme.

Table 18. Battery specifications

Description		Option one	Option two
Battery type		3-cell, 53.5 Wh, lithium-ion, ExpressCharge	3-cell, 53.5 Wh, lithium-ion, Long Life Cycle
Battery voltage		11.4 VDC	11.4 VDC
Battery weight (maximum)		0.265 kg (0.584 lb)	0.265 kg (0.584 lb)
Battery dimensions:			
	Height	15.3 mm (0.60 in.)	15.3 mm (0.60 in.)
	Width	86.29 mm (3.39 in)	86.29 mm (3.39 in)
	Depth	128.44 mm (5.05 in.)	128.44 mm (5.05 in.)
Temperature range:			
	Operating	0°C to 45°C (32°F to 113°F)	0°C to 45°C (32°F to 113°F)
	Storage	-20°C to 65°C (-4°F to 149°F)	-20°C to 65°C (-4°F to 149°F)
Battery operating time		Varies depending on operating conditions and can significantly reduce under certain power-intensive conditions.	Varies depending on operating conditions and can significantly reduce under certain power-intensive conditions.
Battery charging time (approximate) <i>i</i> NOTE: Control the charging time, duration, start and end time, and so on using the Dell Power Manager application. For more information on the Dell Power Manager see, <i>Me and My Dell</i> on www.dell.com . <i>i</i> NOTE: For more information on charge behavior and charge time, see Battery life specifications .		Two hours	Two hours
Coin-cell battery		CR2032	CR2032
 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.			

Battery life specifications

The following table lists the battery life specifications of your Latitude 7330 Rugged Extreme.

Table 19. Battery life specifications

Description	Values	
Battery capacity (Wh)	53.5	107 (53.5 x 2)
Estimated MM14 run-time (hrs)	11.7	23.3
Estimated MM18 run-time (hrs)	7.0	14.0

Charge behavior

The initial charge level is set using software:

- Express charge boost
- Charge battery 1 to 35% (Express charge boost)
- Charge battery 1 to 80% (Express charge)
- Charge battery 2 to 35% (Express charge boost)
- Charge battery 2 to 80% (Express charge)
- Top off battery 1 to 100% (Express charge)
- Top off battery 2 to 100% (Express charge)

Discharge behavior

The initial discharge level is set using software:

- Battery 2 will discharge down to 10%
- Battery 1 will discharge down to 10%
- Battery 2 will discharge down to 3%
- Battery 1 will discharge down to 3%
- Battery 2 will discharge down to 1%
- Battery 1 will discharge down to 0%

Charge time

Table 20. Battery charge time

Number of batteries installed	Express charge boost 35%	Express charge 80%	Express charge 100%	Standard charge 80%	Standard charge 100%
1	20 min	1 hr	2 hr	2 hr	4 hr
2	80 min (Battery1 Express charge followed by Battery2 Express charge boost)	2 hr	4 hr	4 hr	8 hr

Display

The following table lists the display specifications of your Latitude 7330 Rugged Extreme.

Table 21. Display specifications

Description		Values
Display type		13.3-inch, Full High Definition (FHD)
Display-panel technology		Wide-viewing angle (WVA)
Display-panel dimensions (active area):		
	Height	165.24 mm (6.50 in.)
	Width	293.76 mm (11.56 in.)
	Diagonal	337.04 mm (13.26 in.)
Display-panel native resolution		1920 x 1080
Luminance (typical)		1400 nits
Megapixels		16.7
Color gamut		sRGB 100% typical
Pixels Per Inch (PPI)		166
Contrast ratio (min)		1500:1
Response time (max)		35 ms
Refresh rate		60 Hz
Total view angle		178 degrees
Horizontal view angle		89 degrees
Vertical view angle		89 degrees
Pixel pitch		0.153 x 0.153 mm
Power consumption (maximum)		7.5 W
Anti-glare vs glossy finish		Anti-glare
Touch options		Yes

Fingerprint reader on the power button (optional)

The following table lists the fingerprint-reader specifications of your Latitude 7330 Rugged Extreme.

Table 22. Fingerprint reader specifications

Description	Values
Fingerprint-reader sensor technology	Capacitive
Fingerprint-reader sensor resolution	363 dpi

Table 22. Fingerprint reader specifications (continued)

Description	Values
Fingerprint-reader sensor area	6.9 mm x 5.25 mm
Fingerprint-reader sensor pixel size	0.07 mm

Sensor

The following table lists the sensor of your Latitude 7330 Rugged Extreme.

Table 23. Sensor

Sensor
Hall Effect sensor

GPU—Integrated

The following table lists the specifications of the integrated Graphics Processing Unit (GPU) supported by your Latitude 7330 Rugged Extreme.

Table 24. GPU—Integrated

Controller	Memory size	Processor
Intel Iris X ^e Graphics	Shared system memory	11 th Generation Intel Core i5/i7

Multiple display support matrix

Table 25. Integrated graphics card

Graphics Card	Intel Iris X ^e graphics
Video ports on Integrated Graphics Card	1 x USB Type-C port + 1 x USB Type-C port (optional) 1 x HDMI2.0 port
Number of displays	4

Hardware security

The following table lists the hardware security of your Latitude 7330 Rugged Extreme.

Table 26. Hardware security

Hardware security
Kensington lock slot
Mechanical camera privacy shutter (optional with camera config)
Trusted Platform Module (TPM) 2.0 discrete
FIPS (Federal Information Processing Standards) 140-2 certification for Trusted Platform Module (TPM)
Trusted Computing Group (TCG) Certification for TPM
Self-Encrypting Drive (SED), Opal 2.0 only - PCIe Interface
ControlVault 3 Advanced Authentication with FIPS 140-2 Level 3 Certification

Table 26. Hardware security (continued)

Hardware security	
Optional Fingerprint Reader with Control Vault 3 (optional)	
Optional Contacted Smart-Card and Control Vault 3 (optional)	
Optional Contactless Smart-Card, NFC, and Control Vault 3 (optional)	
Statement of Non-Volatility	
Chassis Intrusion Detection	
Dell Trusted Device Agent Validation	

Smart-card reader

The following table lists the smart-card reader specifications that are supported by your Latitude 7330 Rugged Extreme.

Table 27. Contactless smart-card reader

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

Contacted smart-card reader

The following table lists the contacted smart-card reader specifications supported by your Latitude 7330 Rugged Extreme.

Table 28. Contacted smart-card reader

Title	Description	Dell ControlVault 3 Smart-card reader
ISO 7816 -3 Class A Card Support	Reader capable of reading 5 V powered smart-card	Yes
ISO 7816 -3 Class B Card Support	Reader capable of reading 3 V powered smart-card	Yes
ISO 7816 -3 Class C Card support	Reader capable of reading 1.8 V powered smart-card	Yes
T=0 support	Cards support character level transmission	Yes
T=1 support	Cards support block level transmission	Yes
EMVCo Compliant	Compliant with EMVCo (for electronic payment standards) smart-card standards as posted to www.emvco.com	Yes
EMVCo Certified	Formally certified based on EMVCO smart-card standards	Yes
PC/SC OS interface	Personal Computer/Smart-Card specification for integration of hardware readers into personal computer environments	Yes
CCID driver compliance	Common driver support for Integrated Circuit Card Interface Device for OS level drivers.	Yes
Windows Certified	Device certified by WHCK	Yes

Table 28. Contacted smart-card reader (continued)

Title	Description	Dell ControlVault 3 Smart-card reader
FIPS 201 (PIV/HSPD-12) Compliant via GSA	Device compliant with FIPS 201/PIV/HSPD-12 requirements	Yes
ISO 7816-1 Compliant	Specification for the reader	Yes
ISO 7816 -2 Compliant	Specification for smart-card device physical characteristics (size, location of connection points, etc.)	N/A
Dell ControlVault support	Device connects to Dell ControlVault for usage and processing	Yes

Contactless smart-card reader

The following table lists the contactless smart-card reader specifications supported by your Latitude 7330 Rugged Extreme.

Table 29. Contactless smart-card reader

Title	Description	Dell ControlVault 3 Contactless Smart-card reader with NFC
Felica Card Support	Reader and software capable of supporting Felica contactless cards	Yes
Prox (Proximity) (125 kHz) Card support	Reader and software capable of supporting Prox/Proximity/125 kHz contactless cards	No
ISO 14443 Type A Card Support	Reader and software capable of supporting ISO 14443 Type A contactless cards	Yes
ISO 14443 Type B Card Support	Reader and software capable of supporting ISO 14443 Type B contactless cards	Yes
ISO/IEC 21481	Reader and software capable of supporting ISO/IEC 21481 compliant contactless cards and tokens	Yes
ISO/IEC 18092	Reader and software capable of supporting ISO/IEC 21481 compliant contactless cards and tokens	Yes
ISO 15693 Card Support	Reader and software capable of supporting ISO15693 contactless cards	Yes
NFC Tag Support	Supports reading and processing of NFC compliant tag information	Yes
NFC Reader Mode	Support for NFC Forum Defined Reader mode	Yes
NFC Writer Mode	Support for NFC Forum Defined Writer mode	Yes
NFC Peer-to-Peer Mode	Support for NFC Forum Defined Peer to Peer mode	Yes
NFC Proximity OS Interface	Enumerates NFP (Near Field Proximity) device for OS to utilize	Yes
PC/SC OS interface	Personal Computer/Smart-Card specification for integration of hardware	Yes

Table 29. Contactless smart-card reader (continued)

Title	Description	Dell ControlVault 3 Contactless Smart-card reader with NFC
	readers into personal computer environments	
CCID driver compliance	Common driver support for Integrated Circuit Card Interface Device for OS level drivers	Yes
Dell ControlVault support	Device connects to Dell ControlVault for usage and processing	Yes

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

Table 30. 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	
	ID-One Cosmo 128K V5.5 card	
Gemalto	TOP DL GX4 144K card	Yes
Sony	Felica RC-S962	Yes
	Felica RC-S966	Yes
PIVKey	C910 PKI	Yes
IDENTIV	PIV programmed cards	Yes

Operating and storage environment

This table lists the operating and storage specifications of your Latitude 7330 Rugged Extreme.

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

Table 31. Computer environment

Description	Operating	Storage
Temperature range	-29°C to 63°C (-20.2°F to 145.4°F)	-51°C to 71°C (-59.8°F to 159.8°F)
Relative humidity (maximum)	• minimum: 10% (non-condensing) • maximum: 95% (non-condensing)	• minimum: 0% (non-condensing) • maximum: 95% (non-condensing)
Vibration (maximum)*	0.66 GRMS random at 5 Hz to 350 Hz	7.7 GRMS random at 5 Hz to 350 Hz
Shock (maximum)	160 G [†]	185 G [†]
Altitude range	12192 m (40,000 ft)	12192 m (40,000 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

Ethernet

Intel Ethernet Connection i219-LM specifications

The following table lists the Intel Ethernet Connection i219-LM specifications.

Table 32. Intel Ethernet Connection i219-LM specifications

Feature	Values
External connector type	RJ45
Data rate	10/100/1000 Mbps
Controller Details	
Controller bus architecture	PCI Express base specification revision 1.1
Integrated memory	Yes
Data transfer mode	Yes (Bus-Master DMA)
Power consumption (Full operation per data rate connection speed)	542 mW (Max)
Power consumption (Standby operation)	76 mW (Max)
IEEE standards compliance	802.3
Hardware certifications	N/A
Boot ROM support	EEPROM (Located in SPI)
Network Transfer Mode	
Network transfer rate	10 Mb (full/half-duplex)
10BASE-T (full-duplex) 20 Mbps	100 Mb (full/half-duplex)
100BASE-TX (half-duplex) 100 Mbps	1000 Mb (full-duplex)
Environmental	
Operating temperature range	0°C–85°C (32°F–185°F)
Operating humidity	20% to 80% (non condensing)
Operating system driver Support	- Windows 10 (x64) - Ubuntu - Neokylin
Manageability	- Wakeup On LAN - PXE 2.1
Management capabilities alerting	Optional Intel Standard Manageability (must be made at time of purchase).

This term does not connote an actual operating speed of 1 Gb/sec. For high-speed transmission, connection to a Gigabit Ethernet server and network infrastructure is required.

Wireless module

Intel AX210, 2x2 MIMO, 2400 Mbps, 2.40 Ghz/5 Ghz/6 GHz, Wi-Fi 6E (WiFi 802.11ax), Bluetooth 5.2

The following table lists the Intel AX210 specifications.

Table 33. Intel AX210 specifications

Host interface	• Wi-Fi - PCIe • Bluetooth - USB
Network standard	IEEE 802.11a/b/g/n/ac/ax, 160 MHz channel use, MU-MIMO
Wi-Fi Alliance certifications	• Wi-Fi CERTIFIED a/b/g/n/ac with wave 2 features • Designed to be Wi-Fi CERTIFIED ax (Wi-Fi 6E) • WMM • WMM-PS • WPA • WPA2 • WPS2 • Protected Management Frames • Wi-Fi Direct (For Windows only)
Operating frequency bands	• 2.4 GHz • 5 GHz • 6 GHz
Data rate	• 2.4 GHz 40M: Up to 574 Mbps • 5/6 GHz 80M: Up to 1200 Mbps • 5/6 GHz 160M: Up to 2400 Mbps
Power consumption	Optimized power modes (sleep states) reduce power consumption during periods of inactivity
Authentication	• WPA and WPA2 Personal and Enterprise • WPA3
Authentication protocols	• 802.1X EAP-TLS • EAP-TTLS/MSCHAPv2 • PEAPv0 -MSCHAPv2 (EAP-SIM, EAP-AKA, EAP-AKA)
Encryption	• 64-bit and 128-bit WEP • TKIP • 128-bit AES-CCMP • 256-bit AES-GCMP
Product safety	• UL • C-UL • CB (IEC60950-1)
Management capabilities alerting	Support for Intel AMT
Government compliance	• FIPS 140-2 • FISMA
Client utility	Intel PRO/Set wireless software v22 and later
Antenna diversity	Supported
Radio On/Off	Supported

Table 33. Intel AX210 specifications (continued)

Roaming	Support seamless roaming between access points
Wake on wireless	supported
Wireless display	Native Miracast support by Windows
Wireless PAN standard	• Dual Mode Bluetooth 5.2 • BLE
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
Bluetooth data encryption	128-bit encryption
Bluetooth output power	Power class 1
Operating temperature	0°C to + 50°C (Full performance at shield temperatures up to 80°C)
Storage temperature	-40°C to +70°C
Humidity	Up to 90% RH non-condensing (at temperatures of 25°C to 35°C)

Qualcomm WCN6856, 2x2, Wi-Fi 6E DBS, Bluetooth 5.3

The following table lists the Intel Qualcomm WCN6856 specifications.

Table 34. Qualcomm WCN6856 specifications

Host interface	• Wi-Fi - PCIe • Bluetooth - USB
Network standard	IEEE 802.11a/b/g/n/ac/ax, 160MHz channel use, MU-MIMO
Wi-Fi Alliance certifications	• 802.11 a/b/g/n/ac R2/ax R2 • WMM • WMM-PS • WPA3 • WPS2 • PMF • WFD • Miracast • Passpoint R2 • Voice Personal
Operating frequency bands	• 2.4 Ghz • 5 Ghz • 6 Ghz
Data rate	• 2.4GHz 40M: Up to 691 Mbps • 5 GHz 160M: Up to 2.88 Gbps • 6 GHz 160M: Up to 2.88 Gbps • DBS mode • 2.4 GHz 40M + 5/6 GHz 160M: Up to 3.57 Gbps
Power consumption	Optimized power modes (sleep states) reduce power consumption during periods of inactivity
Authentication	• WPA and WPA2 Personal and Enterprise

Table 34. Qualcomm WCN6856 specifications (continued)

	WPA3 Personal and Enterprise
Authentication protocols	802.1X EAP-TLS - EAP-TTLS/MSCHAPv2 - PEAPv0 -MSCHAPv2 (EAP-SIM, EAP-AKA, EAP-AKA)
Encryption	64-bit and 128-bit WEP - TKIP 128-bit AES-CCMP 256-bit AES-GCMP
Product safety	- UL - C-UL - CB (IEC60950-1)
Government compliance	- FIPS 140-2 - FISMA
Client utility	Intel PRO/Set wireless software v22 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
Wireless PAN standard	- Dual Mode Bluetooth 5.3 - BLE
Bluetooth data rates	Up to 3Mbps
Bluetooth operating frequency bands	2.4 GHz
Bluetooth profiles supported	Support for Microsoft Inbox Bluetooth profiles in Windows
Bluetooth data encryption	128-bit encryption
Bluetooth output power	Power class 1
Operating temperature	0°C to + 50°C (Full performance at shield temperatures up to 80°C)
Storage temperature	-40°C to +70°C
Humidity	Up to 90% RH non-condensing (at temperatures of 25° C to 35° C)

WWAN module

Qualcomm Snapdragon X20 Global Gigabit LTE

The following table lists the Qualcomm Snapdragon X20 Global Gigabit LTE specifications.

Table 35. Qualcomm Snapdragon X20 specifications

Form factor	M.2 3042 Key.B single side
Host interface	USB 3.0/2.0
Network standard	- LTE FDD/TDD - WCDMA/HSPA+

Table 35. Qualcomm Snapdragon X20 specifications (continued)

	GPS/GLONASS/ Beidou /Galileo
Transfer rate	Up to 1 Gbps DL/150 Mbps UL (Cat 16)
Operating frequency bands	- LTE (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 Duak SIM (DSSA)	Supported  NOTE: The availability of eSIM functionality embedded on the module is dependent on the region and carrier requirements.
Antenna diversity	Supported
Radio On/Off	Supported
Wake on wireless	Supported
Normal operating temperature	-30°C to + 70°C
Extended operating temperature	-40°C to +85°C
Antenna connector	- WWAN Main Antenna X 1 - WWAN Diversity Antenna X 1 4 x 4 MIMO Antenna x 2

Qualcomm Snapdragon X55 Global 5G Modem

The following table lists the Qualcomm Snapdragon X55 Global 5G Modem specifications.

Table 36. Qualcomm Snapdragon X55 specifications

Form factor	M.2 3042 Key.B single side
Host interface	PCIe Gen3
Network standard	- NR FR1(Sub6) FDD/TDD - LTE FDD/TDD - WCDMA/HSPA+ - GPS/GLONASS/Beidou/Galileo
Transfer rate	Up to 3 Gbps DL/250 Mbps UL (3GPP Release15 NR/LTE CAT20)
Operating frequency bands	- NR (1,2,3,5,7,8,12,20,28,38,41,66,71,77,78,79) - LTE(1, 2, 3, 4, 5, 7, 8, 12, 13, 14, 17, 18, 19, 20, 25, 26, 28, 29, 30, 32, 34, 38, 39, 40, 41, 42, 46, 48, 66) - HSPA+ (1,2,4,5,6,8,9,19)
Power supply	DC 3.13 V to 3.63 V, Typical 3.3 V
SIM card	Supported through external SIM slot
eSIM with Dual SIM (DSSA)	Supported  NOTE: The availability of eSIM functionality embedded on the module is dependent on the region and carrier requirements.

Table 36. Qualcomm Snapdragon X55 specifications (continued)

Antenna diversity	Supported
Radio On/Off	Supported
Wake on wireless	Not supported
Normal operating temperature	-30°C to + 70°C
Extended operating temperature	-40°C to +85°C
Antenna connector	• WWAN ANT0 X 1 • WWAN ANT1 X 1 • WWAN ANT2 X 1 • WWAN ANT3 X 1

Optional GPS

Concurrent reception of GPS/QZSS, GLONASS, BeiDou with Industry leading – 167 dBm navigation sensitivity combining low power consumption and high sensitivity

Table 37. GPS Module Specifications

U-blox NEO-M9N dedicated Card	
Interface	UART + USB
Receiver type	92-channel u-blox M9 engine GPS L1 C/A, QZSS L1 C/A/S, GLONASS L10F, BeiDou B1I, Galileo E1 B/C SBAS L1 C/A: WAAS, EGNOS, MSAS, GAGAN
Nav. update rate	Up to 25 Hz (4 concurrent GNSS)
Position accuracy	2.0 m CEP (without SBAS)

GPU—Integrated

Intel Iris X^e Graphics

The following table lists the Intel Iris X^e Graphics specifications.

Table 38. Intel Iris X^e Graphics specifications

Bus type	Integrated graphics  NOTE: Intel Iris X ^e Graphics uses the computers memory as video memory.
Memory type	LPDDR4x
Memory interface	N/A (Unified Memory Architecture)
Estimated maximum power consumption (TDP)	12 W-28 W, included in the CPU power
Maximum color depth	10 bits
Maximum vertical refresh rate	Up to 120 Hz  NOTE: The refresh rate depends on the resolution.
External ports	HDMI 2.0 port, DisplayPort over USB Type-C

Table 38. Intel Iris X^e Graphics specifications (continued)

Multiple display support	Up to 4 displays including laptop display
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Video port and resolution matrix

The following table lists the Video port and resolution matrix of your Latitude 7330 Rugged Extreme.

Table 39. Video port and resolution matrix

Port type	DP++ 1.4/HDCP 2.3 port (UMA Graphics)	HDMI-OUT port—HDMI 2.0
Maximum resolution—single display	5120 x 3200 @60hz 24bpp / 4096 x 2304 @60hz 36bpp	4096 x 2160 @60 Hz
Maximum resolution—dual MST	4096 x 2304 @ 60 Hz, 1400 x 1050 @ 60 Hz or 2880 x 1800 @ 60 Hz, 2880 x 1800 @ 60 Hz	Not applicable
Maximum resolution—triple MST	4096 x 2304 @ 60 Hz, 1360 x 768 @ 60 Hz, 640 x 480 @ 60 Hz or 2304 x 1440 @ 60 Hz, 2304 x 1440 @ 60 Hz, 2304 x 1440 @ 60 Hz	Not applicable

Storage

M.2 2230, 128 GB, PCIe NVMe Gen3 x4, Class 35 SSD

The following table lists the M.2 2230, 128 GB SSD specifications.

Table 40. 128 GB SSD specifications

Capacity	128 GB
Height (approximate)	2.38 mm (0.09 in.)
Width (approximate)	22.00 mm (0.87 in.)
Depth (approximate)	30.00 mm (1.18 in.)
Interface type	PCIe Gen3
Speed (maximum)	32 Gb/s (up to 4 lanes)
MTTF	1.4M hours
Logical blocks	250,069,680
Power source	
Power consumption (reference only)	- Idle: 5 mW (PS4) - Active: 3.50 W
Environmental operating conditions (non-condensing)	
Temperature range	0°C to 70°C
Relative humidity range	10% to 90%
Op shock	1500G
Environmental non-operating conditions (non-condensing)	
Temperature range	-40°C to 70°C
Relative humidity range	5% to 95%

M.2 2230, 256 GB, PCIe NVMe Gen3 x4, Class 35 SSD

The following table lists the M.2 2230, 256 GB SSD specifications.

Table 41. 256 GB SSD specifications

Capacity	256 GB
Height (approximate)	2.38 mm (0.09 in.)
Width (approximate)	22.00 mm (0.87 in.)
Depth (approximate)	30.00 mm (1.18 in.)
Interface type	PCIe Gen3
Speed (maximum)	32 Gb/s (up to 4 lanes)
MTBF	1.4M hours
Logical blocks	500,118,192
Power source	
Power consumption (reference only)	• Idle: 5 mW (PS4) • Active: 3.50 W
Environmental operating conditions (non-condensing)	
Temperature range	0°C to 70°C
Relative humidity range	10% to 90%
Op shock	1500G
Environmental non-operating conditions (non-condensing)	
Temperature range	-40°C to 70°C
Relative humidity range	5% to 95%

M.2 2230, 512 GB, PCIe NVMe Gen3 x4, Class 35 SSD

The following table lists the M.2 2230, 512 GB SSD specifications.

Table 42. 512 GB SSD specifications

Capacity	512 GB
Height (approximate)	2.38 mm (0.09 in.)
Width (approximate)	22.00 mm (0.87 in.)
Depth (approximate)	30.00 mm (1.18 in.)
Interface type	PCIe Gen3
Speed (maximum)	32 Gb/s (up to 4 lanes)
MTBF	1.4M hours
Logical blocks	1,000,215,216
Power source	
Power consumption (reference only)	• Idle: 5 mW (PS4) • Active: 3.50 W
Environmental operating conditions (non-condensing)	
Temperature range	0°C to 70°C

Table 42. 512 GB SSD specifications (continued)

Relative humidity range	10% to 90%
Op shock	1500G
Environmental non-operating conditions (non-condensing)	
Temperature range	-40°C to 70°C
Relative humidity range	5% to 95%

M.2 2230, 1 TB, PCIe NVMe Gen3 x4, Class 35 SSD

The following table lists the M.2 2230, 1 TB SSD specifications.

Table 43. 1 TB SSD specifications

Capacity	1 TB
Height (approximate)	2.38 mm (0.09 in.)
Width (approximate)	22.00 mm (0.87 in.)
Depth (approximate)	30.00 mm (1.18 in.)
Interface type	PCIe Gen3
Speed (maximum)	32 Gb/s (up to 4 lanes)
MTBF	1.4M hours
Logical blocks	2,000,409,264
Power source	
Power consumption (reference only)	- Idle: 5 mW (PS4) - Active: 3.50 W
Environmental operating conditions (non-condensing)	
Temperature range	0°C to 70°C
Relative humidity range	10% to 90%
Op shock	1500G
Environmental non-operating conditions (non-condensing)	
Temperature range	-40°C to 70°C
Relative humidity range	5% to 95%

M.2 2280, 256 GB, PCIe NVMe Gen4 x4, Class 40 SSD

The following table lists the M.2 2280, 256 GB SSD specifications.

Table 44. 256 GB SSD specifications

Capacity	256 GB
Height (approximate)	2.38 mm (0.09 in.)
Width (approximate)	22.00 mm (0.87 in.)
Depth (approximate)	80.00 mm (3.15 in.)
Interface type	PCIe Gen4
Speed (maximum)	64 Gb/s (up to 4 lanes)

Table 44. 256 GB SSD specifications (continued)

MTBF	1.4M hours
Logical blocks	500,118,192
Power source	
Power consumption (reference only)	• Idle: 5 mW (PS4 - L1.2) • Active: 5 W
Environmental operating conditions (non-condensing)	
Temperature range	0°C to 70°C
Relative humidity range	10% to 90%
Op shock	1500G
Environmental non-operating conditions (non-condensing)	
Temperature range	-40°C to 70°C
Relative humidity range	5% to 95%

M.2 2280, 512 GB, PCIe NVMe Gen4 x4, Class 40 SSD

The following table lists the M.2 2280, 512 GB SSD specifications.

Table 45. 512 GB SSD specifications

Capacity	512 GB
Height (approximate)	2.38 mm (0.17 in.)
Width (approximate)	22.00 mm (0.87 in.)
Depth (approximate)	80.00 mm (3.15 in.)
Interface type	PCIe Gen4
Speed (maximum)	64 Gb/s (up to 4 lanes)
MTBF	1.4M hours
Logical blocks	1,000,215,216
Power source	
Power consumption (reference only)	• Idle: 5 mW (PS4 - L1.2) • Active: 5 W
Environmental operating conditions (non-condensing)	
Temperature range	0°C to 70°C
Relative humidity range	10% to 90%
Op shock	1500G
Environmental non-operating conditions (non-condensing)	
Temperature range	-40°C to 70°C
Relative humidity range	5% to 95%

M.2 2280, 1 TB, PCIe NVMe Gen4 x4, Class 40 SSD

The following table lists the M.2 2280, 1 TB SSD specifications.

Table 46. 1 TB SSD specifications

Capacity	1 TB
Height (approximate)	2.38 mm (0.17 in.)
Width (approximate)	22.00 mm (0.87 in.)
Depth (approximate)	80.00 mm (3.15 in.)
Interface type	PCIe Gen4
Speed (maximum)	64 Gb/s (up to 4 lanes)
MTBF	1.4M hours
Logical blocks	2,000,409,264
Power source	
Power consumption (reference only)	• Idle: 5 mW (PS4 - L1.2) • Active: 5 W
Environmental operating conditions (non-condensing)	
Temperature range	0°C to 70°C
Relative humidity range	10% to 90%
Op shock	1500G
Environmental non-operating conditions (non-condensing)	
Temperature range	-40°C to 70°C
Relative humidity range	5% to 95%

M.2 2280, 2 TB, PCIe NVMe Gen4 x4, Class 40 SSD

The following table lists the M.2 2280, 2 TB SSD specifications.

Table 47. 2 TB SSD specifications

Capacity	2 TB
Height (approximate)	2.38 mm (0.09 in.)
Width (approximate)	22.00 mm (0.87 in.)
Depth (approximate)	80.00 mm (3.15 in.)
Interface type	PCIe Gen4
Speed (maximum)	64 Gb/s (up to 4 lanes)
MTBF	1.4M hours
Logical blocks	4,000,797,360
Power source	
Power consumption (reference only)	• Idle: 5 mW (PS4 - L1.2) • Active: 5 W
Environmental operating conditions (non-condensing)	
Temperature range	0°C to 70°C

Table 47. 2 TB SSD specifications (continued)

Relative humidity range	10% to 90%
Op shock	1500G
Environmental non-operating conditions (non-condensing)	
Temperature range	-40°C to 70°C
Relative humidity range	5% to 95%

M.2 2280, 512 GB, PCIe NVMe Gen3 x4, Class 40 SSD, self-encrypting drive

The following table lists the M.2 2280, 512 GB SSD, self-encrypting drive specifications

Table 48. 512 GB SSD, self-encrypting drive specifications

Capacity	512 GB
Height (approximate)	2.38 mm (0.09 in.)
Width (approximate)	22.00 mm (0.87 in.)
Depth (approximate)	80.00 mm (3.15 in.)
Interface type	PCIe Gen3
Speed (maximum)	32 Gb/s (up to 4 lanes)
MTBF	1.4M hours
Logical blocks	1,000,215,216
Power source	
Power consumption (reference only)	- Idle: 5 mW (PS4 - L1.2) - Active: 4.50 W
Environmental operating conditions (non-condensing)	
Temperature range	0°C to 70°C
Relative humidity range	10% to 90%
Op shock	1500G
Environmental non-operating conditions (non-condensing)	
Temperature range	-40°C to 70°C
Relative humidity range	5% to 95%

USB power rating

The following table lists the USB power ratings of your Latitude 7330 Rugged Extreme.

Table 49. USB power ratings

USB Type	Output
USB Type-A	2.1 A
USB Type-C	3 A
65 W Type-C adapter	20 V, 3.25 A
90 W Type-C adapter	20 V, 4.5 A

Media-card reader

The following table lists the media-card reader specifications of your Latitude 7330 Rugged Extreme.

Table 50. Media-card reader (standard offering)

Media supported (Maximum capacity supported will vary by Flash Media Types)	
Media Supported	SDXC, SDHC, Micro-SD Secure Digital (SD) 4.0 UHS-II Secure Digital (SD) 3.0 UHS-I
Support Specification Versions	Secure Digital (SD) 4.0
Power source	
Max Power Requirements	1.2 A
Supply Voltage Range	3.3 V
Power Consumption	MS 0.08 mA
Environmental operating conditions (Non-condensing)	
Operating Temperature Range	0°C to 70°C
Relative Humidity Range	N/A
Environmental non-operating conditions (Non-condensing)	
Operating Temperature Range	N/A
Relative Humidity Range	N/A

Palmrest specifications

The following table lists the palmrest specifications of your Latitude 7330 Rugged Extreme.

Table 51. Palmrest specifications

Description	Values
Left side width	100.54 mm (3.96 in.)
Right side width	121.74 mm (4.79 in.)
Height	78.65 mm (3.10 in.)

Accessories

The following table lists the supported accessories on your Latitude 7330 Rugged Extreme.

Table 52. Accessories

Accessories
Shoulder strap
Rigid handle (optional)
Soft handle (optional)

Security

Software security

The following table lists the software security details of your Latitude 7330 Rugged Extreme.

Table 53. Software security

Security options
Optional Dell Data Security and Management Software
Dell BIOS Verification
Optional Dell Endpoint Security and Management Software
Dell Encryption Enterprise
Dell Encryption Personal
Intel BIOS Guard (BIOS anti-malware)
Intel TXT (Trusted Execution Technology)
Intel Total Memory Encryption (TME)

Fingerprint reader on power button (optional)

The following table lists the fingerprint reader specifications of your Latitude 7330 Rugged Extreme.

Table 54. Fingerprint reader specifications

Sensor technology	Capacitive sensing
Sensor resolution	363 dpi
Sensor size	6.90 mm x 5.25 mm
Sensor pixel size	0.07 mm
Dell ControlVault support	Yes
Dell ControlVault 3.0 support	Yes
Anti-spoofing	Yes
Template storage	Dell ControlVault HW protected and encrypted
Match on chip	Yes
FIPS 201 certified	No

Dell ControlVault 3.0

The following table lists the Dell ControlVault 3.0 specifications of your Latitude 7330 Rugged Extreme.

Dell ControlVault is a dedicated security processor with secure storage that provides hardware isolation for authentication. It helps reduce the risk of malware attacking critical login information that is associated with fingerprint readers and contacted or contactless smartcard readers.

Table 55. Dell ControlVault 3.0 specifications

Title	Description	Dell ControlVault 3.0
CPU technology	N/A	1 GHz ARM Cortex A7
RAM	N/A	1 MB

Table 55. Dell ControlVault 3.0 specifications (continued)

Title	Description	Dell ControlVault 3.0
ROM	N/A	16 MB
Host Interface	N/A	USB 2.0
Fingerprint procession on chip	Fingerprint processing occurs within secure boundary of ControlVault	Yes
Windows WBF support	Support for Windows biometric framework when Fingerprint reader is attached	Yes
FIPS 140-2 level 3 complaint	Device complaint with FIPS 140-2 level 3 requirements	Yes
FIPS 140-2 level 3 certified	Device certified with FIPS 140-2 level 3 requirements	Yes

Trusted Platform Module

The following table lists the Trusted Platform Module (TPM) of your Latitude 7330 Rugged Extreme.

Table 56. Trusted Platform Module (TPM)

TPM: ST/ST33 HTPH2X32AHD8
SPI interface
TPM2.0
FIPs 140-2 certificate

Hall sensor specification

The following table lists the hall sensor specifications of your Latitude 7330 Rugged Extreme.

Table 57. Absolute maximum ratings

Characteristics		Values
Supply voltage, (V_{DD})		4.5 V
Out voltage		4.5 V
Reverse voltage, (V_{DD}) (V_{OUT})		-0.3 V
Input ripple range, (V_{DD})		± 300 mV
Magnetic flux density		Unlimited Gauss
Output current, (I_{OUT})		1 mA
Operating temperature range, (T_a)		-40°C - 85°C
Storage temperature range, (T_s)		-65°C - 150°C
Maximum junction temperature, (T_j)		150°C
Thermal resistance	(θ_{JA})TSOT23/SOT553/TO92/DFN22	310/540/206/543 (°C/W)
	(θ_{JC})TSOT23/SOT553/TO92/DFN22	223/390/148/410 (°C/W)
Package power dissipation, (PD) SOT23/SOT553/TO92/DFN22		400/230/606/200 (mW)
Electro-static discharge, (HMB)		4 kV

NOTE: Exceeding the absolute maximum ratings may cause permanent damage. Exposure to absolute maximum rated conditions for extended periods may affect device reliability.

Table 58. Electrical characteristics

Parameters	Test conditions	Minimum	Typical	Maximum
Supply voltage, (V_{DD})	Operating	1.65 V		3.5 V
Supply current, (I_{DD})	Awake state		1.4 mA	3 μ A
	Sleep state		3.6 μ A	7 μ A
	Average		5 μ A	10 μ A
Output leakage current, (I_{off})	Output off			1 μ A
Output high voltage, (V_{OH})	$I_{OUT} = 0.5$ mA (source)	$V_{DD} - 0.2$ V		
Output low voltage, (V_{OL})	$I_{OUT} = 0.5$ mA (sink)			0.2 V
Awake mode time, (T_{aw})	Operating		40 μ S	80 μ S
Sleep mode time, (T_{SL})	Operating		40 mS	80 mS
Duty cycle, (D,C)			0.1%	

Mil-SPEC

The Latitude 7330 Rugged Extreme meets military specifications for the following MIL-STD 810H tests:

Table 59. Military specifications

Test Category	Test Method	Test Parameters
Non-operating altitude test	Method 500.6 Procedure I - storage	Test specification: - Altitude: 40,000 ft - Temperature: 25°C
Operating altitude test	Method 500.6 Procedure II - operational	Test specification: - Altitude: 40,000 ft - Temperature: 25°C
Non-operating high temperature test	Method 501.7 Procedure I - storage	Test specification: - Temperature: 71°C - Duration: 7 days, Non-Operating.
Operating high temperature test	Method 501.7 Procedure II - operation	Test specification: - Temperature: 63°C - Duration: 5 days, Operating.
Non-operating low temperature test	Method 502.7 Procedure I - Storage	Test specification: - Temperature: -51°C - Duration: 24 hours
Operating low temperature test	Method 502.7 Procedure II - Operation	Test specification: - Temperature: -29°C - Duration: 24 hours

Table 59. Military specifications (continued)

Test Category	Test Method	Test Parameters
Non-operating thermal shock	Method 503.7 Procedure I -	Test specification: • Temperature: -51°C to 71°C • Cyclic temperature exposure with 3 shocks.
Humidity test - aggravated	Method 507.6 Procedure II	Figure 507.6-7 • 0% to 95%, non-condensing humidity - Ten 24-hour cycles • Duration: Temperature cycled between 30°C and 60°C; relative humidity that is maintained at 95%. (Non-operating)
Sand and dust - Blowing dust	Method 510.7 Procedure I	Test specification: • Operating temperature: 60°C • Dust concentration: (10.6±7) g/m³ • Air flow velocity: 8.9 +/- 1.3 m/s
Sand and dust - Blowing sand	Method 510.7 Procedure II	Test specification: • Operating temperature: 60°C • Sand density: 1.2 g/m³ • Air flow velocity: 18 to 29 m/s
Vibration - Minimum integrity test	Method 514.8 Procedure I	Test specification: • Power spectral density - 0.04 g²/Hz at 20 Hz to 1000 Hz, -6 dB/Octave at 1000 Hz to 2000 Hz • 3-axes • Duration: 60 minutes.
Vibration - Composite wheeled vehicle	Method 514.8 Procedure I	Category 4, Figure 514.8C-6 - Unit is not operating, 2 hours for each axis
Vibration - Ground vehicle	Method 514.8 Procedure I	Category 4, Figure 514.8C-1 - unit is operating, 1 hour for each axis
Vibration - Loose cargo	Method 514.8 Procedure II	• 1 in. peak to peak orbital motion at 5 Hz • Unit is not operating during tests with functional test after each axis for 60 minutes total
Shock - Functional shock	Method 516.8 Procedure I	Test specification: • 40 G, 11 ms, saw-tooth, 3 shocks +/- per axis, 3 axes. • Operating.
Shock - 36 in. operating drop	Method 516.8 Procedure IV	Test specification: • 36 in. (3 ft, 0.91 m) drops to 2 in. of plywood over concrete. • Unit is open at 105°C and operating. • 26 total drops on a single test unit.
Shock - 48 in. transit drop	Method 516.8 Procedure IV	Test specification: • 48 in. (4 ft, 1.22 m) drops to 2 in. of plywood over concrete. • Non-operating • 26 total drops on a single test unit.
Shock - 60 in. transit drop	Method 516.8 Procedure IV	Test specification: • 60 in. (5 ft, 1.52 m) drops to 2 in. of plywood over concrete.

Table 59. Military specifications (continued)

Test Category	Test Method	Test Parameters
		- Non-operating 26 total drops on a single test unit which also passed all transit drops at 48 in.
Shock - 72 in. transit drop	Method 516.8 Procedure IV	Test specification: 72 in. (6 ft, 1.83 m) drops to 2 in. of plywood over concrete. - Non-operating 26 total drops on a single test unit which also passed all transit drops at 48 in. and 60 in.
Shock - Transportation	Method 516.8 Procedure II	Test specification: - On-road Shock, 5.1 g / 11 m (Table 516-8-VII) Saw tooth wave form - Off-road Shocks, 15.2 g / 5 ms (Table 516-8-VII) Saw tooth wave form - Test unit orientations at X, Y, and Z axis for both test. - Unit is non-operational during both test
High temperature - Tactical standby to operational	Method 501.7 Procedure III	Test specification: 70°C to 60°C - Unit is pre-soaked at high temperature for 2 hours after temperature stabilization. - Temperature is ramped to lower temperature and operational test is performed
Solar radiation	Method 505.7 Procedure I	Test specification: - Category A1, Paragraph 4.4.2, Figure 505.7-1 (cyclic) - three 24-hour cycles of testing. - Unit shall be tested in operational state. - Test can be performed per MIL-STD-810H or per modified curve as example shown below substituting 730 W anywhere it has a value lower than 730 W.
Rain - Blowing / aggravated	Method 506.6 Procedure I	Test specification: 5.8 in. (147 mm) per hour of blowing rain with a 70 mph wind source - Unit is operating 30 minutes on each surface
Salt fog	Method 509.7 Procedure I	Test specification: 5% saline exposure for 2 cycles x 48 hours (24 hours wet / 24 hours dry) - Requires a model configured with a rubberized keyboard - Unit is not operating
Explosive atmosphere	Method 511.7 Procedure I	Test specification: - Unit must be operating and perform various functions in an explosive environment without igniting the atmosphere - Temperature: 63°C - Test consistency: 95% n-Hexane
Shock - Crash hazard	Method 516.8 Procedure V	Test specification: 185 G, 2 ms half sine, 2 shocks/axis/direction for a total of 12 shocks. - Non-operating.

Table 59. Military specifications (continued)

Test Category	Test Method	Test Parameters
Shock - Bench handling	Method 516.8 Procedure VI	Test specification: - Rise test units at one edge 100 mm (4-inch) or an angle of 45° about a solid wooden bench top. - Non-operating.
Freeze/thaw - Rapid temperature change	Method 524.1 Procedure III	Test specification: - Unit stabilized at 25°C and relative humidity of 97% for 1 hour. - Transferred rapidly to a freezing chamber at -10°C. - Unit is allowed to stabilize for one additional hour and is brought back to above-freezing test. Unit is not operating during the test with operational test performed at the end of cycles

Table 60. IEC ingress protection

Test Name	Test procedure	Description
Dust ingress protection	IEC 60529, IP6X	IP6X - No ingress of dust. Complete protection against contact. Unit is not operating.
Water ingress protection	IEC 60529, IPX5	IPX5 - Water is projected in jets against the enclosure from any direction with no harmful effects. Unit is not operating.
Long Duration Rain Test	IEC 60529, IP-x2	Test Procedure: - Unit orientation: Unit keyboard base shall sit flat on test surface (not at an angle) and Unit display open to 135° C. - Run IPx2 for 6 hours - Unit is operational

Table 61. Emissions and safety

Test Name	Test procedure	Description
Conducted and radiated emissions	EN55022: 2006 ANSI C63.4-2003 FCC 47 CFR Part 15, Class B	Radiated and conducted emission measurements and limits for Information Technology Equipment (ITE). Testing performed with doors open, cables attached.
Electrostatic discharge, various conducted and radiated immunity	EN55024: 1998+A1:00+A2: 03 ANSI C63.4-2003	EN 61000-3-2, EN 61000-3-3, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8, EN 61000-4-11 Testing performed with doors open, cables attached.
Safety	UL/IEC mark - 60950	UL/IEC mark

Table 62. Other testing

Test Name	Test procedure	Description
Vehicle vibration	ASTM D4168-16, Truck Profile, Medium level	1-200 Hz, 0.54 gm in all three axis; 90 minutes per axis
Connector cover cycling Test	Rugged Connector	Test Procedure:

Table 62. Other testing (continued)

Test Name	Test procedure	Description
	Cover and Dust Cover Cycling Test Procedure	- One Complete Door/Cover cycle: Open cover to maximum displacement and completely close door. - One Complete Door cycle with latch: Unlock latch, activate latch, open cover to maximum displacement, completely close door, and lock latch. 25 K cycles
Hard handle strength	Rugged handle strength test procedure	Test Procedure: - Test type: Tie rope to center of handle using a prusik knot. Tie other end of rope to top of ladder. - Drop height: Start at 1 ft from the hanging rest point, increase in 1 foot increments. - Cycles: 10 drops from each height - Minimum requirement: 3 ft
- Rugged shoulder strap strength - Rugged soft handle strength - Rugged cross-strap strength - Rugged chest harness strength	Rugged soft goods strength test procedure	Test Procedure: - Drop height: Start at 1ft from the hanging rest point, increase in 1 foot increments. - Cycles: 10 drops from each height - Minimum requirement: 3 ft
Rugged carry case strength	Rugged carry case strength test procedure	Test Procedure: - Drop height: Start at 1 ft from the hanging rest point, increase in 1 foot increments. - Cycles: 10 drops from each height - Minimum requirement: 3 ft
Latch cycle test	LCD latch cycle testing	Test Procedure: - Open the display using one hand to at least a 45 degree angle. - The entire closing process should take no longer than 1 second. - Cycles: 20K
Heated vibration test	Heated vibration test procedure	Test Procedure: - Non-operational - Display open to 90°C - Temperature: 63°C - Power spectral density - 0.06 g²/Hz at 3 Hz to 10 Hz - Z-axes - Duration: 14 hrs
Dock cycle test	REL0009	Test Procedure: Cycles: 25K for vehicle and desk docks
NB FOS (Front of Screen) loading test	REL0069	Test Procedure: - Test Force: 5 lb increments (10 lbs, 15 lbs, 20lbs and so on). - Crosshead speed: 0.5 in./min - Test probe size: 20 mm diameter
System soft tip stylus life test	REL1078 - FOS Swipe Life Test	Test Procedure: Test Type 1: Low force: 200 gf

Table 62. Other testing (continued)

Test Name	Test procedure	Description
		○ Stylus Orientation: Stylus tip perpendicular to panel test surface (vertical) ○ Cycles: Cycle test until failure occurs. ● Test Type 2: High Force/Cycles: 300 gf for 5 cycles ○ Increase force by 100gf increments for every 5 cycles until failure occurs ○ Stylus Orientation: Stylus tip to panel test surface at 45° angle.
LCD impact - Ball drop test	LCD ball drop test	Test Procedure: ● The drop test shall consist of 20 drops at 30.50 cm (12 in.), 50.80 cm (20 in.), and 76.20 cm (30 in) respectively. ● Test drops: 2 drops at each test point for each height requirement. ● Ball bearing material shall steel, 1 in. diameter, and mass shall be 65 g minimum.

Chemical information

The Latitude 7330 Rugged Extreme meets chemical information for the following MIL-STD 810H tests:

Table 63. Chemical information

Chemical	Source document	Possible uses
Cleaning compound, solvent (Rifle bore cleaner)	MIL-PRF-372	Small arms, textiles, general
Degreasing Solvent Naphtha or Stoddard, dry cleaning, or D-Limonene solvent	MIL=PRF-680 (NATO #S-752, S-753, S-760)	Small arms, textiles, general, helicopters (parts)
Engine oil	MIL=PRF-2140, (NATO #)-1236/15W40), 40, 30 (NATO O-238), 10 W, 10 W (NATO-O-237, SCPL (equipment specific)	Small arms, textiles, general
Lubricant, semi-fluid, automatic weapons	MIL-L-46000 (NATO #O-158)	Small arms, textiles, general
Lubricating oil, general purpose, preservative (water displacing, low temperature)	MIL=PRF-32033 (NATO #O-190)	Small arms, textiles, general
Lubricant, cleaner, and preservative	MIL=PRF-63460 (CLP), (NATO #S-758)	Small arms, textiles, general
Gasoline, commercial, or combat	ASTM D910, Aviation Gasoline; ASTM D4814, Automatic spark ignition engine (Commercial and MOGAS) and others as indicated by test requirements.	Small arms, textiles, general
Aviation Turbine fuels, kerosene types	Aviation turbine fuel JP-8 (NATO F-34); NATO Grade F-24, ASTM D1655; Commercial fuel, Jet A, Jet A-1 and others as indicated by test requirements.	Small arms, textiles, general, helicopters (parts)
Diesel Fuel, (DL-1, DL-2, other Grades)	A-A-52557, ASTM D975, (NATO #F-54)	Small arms, textiles, general

Table 63. Chemical information (continued)

Chemical	Source document	Possible uses
Insect repellent, personal application	NSN 6840-01-284-3982, Creme, approx 32%	Small arms, textiles, general
Dexron III	NSN 9150-00-698-2382, Automatic Transmission Fluid, Commercial	Small arms, textiles, general
Antifreeze, Multi Engine Type, ethylene (I) or propylene glycol (II)	A-A-52624, ASTM D6210 Type I, ASTM D6211 Type II, (NATO #s-750)	Small arms, textiles, general
Water	Water (distilled). Used as baseline where applicable.	Small arms, textiles, general
Simulated sea water or 5% NaCl	ASTM D1141 or ASTM B117	Small arms, textiles, general
Decontamination agent STB	MIL-DTL-12468	Small arms, textiles, general
Lubricating oil, weapons, low temperature	MIL-PRF-14107 (LAW), (NATO #O-157)	Small arms, textiles, general
Hydraulic fluid, synthetic hydrocarbon base, aircraft, missile and ordnance (OHA), others as indicated by test requirements.	MIL-PRF-87257 (NATO #H-538) or MIL-PRF-83282 (NATO #H-537)	Small arms, textiles, general, helicopters (parts)
Hydraulic fluid, rust inhibited, phosphate based synthetic hydrocarbon, fire-resistant	MIL-PRF-46170 (FRH, (NATO #H-544)	Small arms, textiles, general
Hydraulic fluid, petroleum based for preservation and operation (OHT)	MIL-PRF-6083, (NATO #635)	Small arms, textiles, general
DS-200 Decontaminating agent	NSN 6850-01-501-1044, Peroxide based	Small arms, textiles, general
Lubricating oils synthetic, Aircraft turbine engines, transmissions	MIL-PRF-23699, NATO #O-156; MIL-PRF-7808 (NATO O-152, O-154, O-156, O-167)	Aircraft (parts)
De-icers, Anti-Icing	Deicers-Aircraft: Ethylene or propylene glycol mixtures; US antifreeze: AA-52624A (NATO S-750), and others as indicated by test requirements.	Aircraft
Silicone based damping fluid (various viscosities, csts)	Dimethyl silicone (NATO S-1714)	Aircraft (parts)
Aircraft cleaners, aerospace, ground equipment/aircraft interior/exterior	MIL-PRF 87937, MIL-PRF-85570, MIL-C-87936, MIL-PRF-85704 or others as indicated	Small arms, textiles, general, aircraft (parts)
Other solvents	Denatured or Isopropyl alcohol (2-propanol), acetone, etc.	Aircraft (parts)
Deicing and antifreeze fluids	Deicers-Aircraft: Ethylene or propylene glycol mixtures; US antifreeze: AA-52624 (NATO S-750), and others as indicated by test requirements.	Aircraft (parts)

Table 63. Chemical information (continued)

Chemical	Source document	Possible uses
Runway deicers	Potassium-acetate based solution (Cryotech E-36 or other as indicated by test requirements).	Aircraft (parts)
Insecticides	Insecticides (Malathion or pyrethrin as indicated by test requirements).	Aircraft (parts)
Disinfectant (Heavy duty phenolics)	- Clear, soluble phenolics, e.g., phenol or its derivatives dissolved in a surfactant and diluted with water to give a clear solution. - Parachlorometaxylenol (EcoTru-1453, Aircraft Disinfectant or others as indicated by test requirements).	Aircraft (parts)
Coolant dielectric fluid	Polyalphaolefin (PAO) dielectric	Aircraft (parts)

Table 64. Rugged specific testing

Test Name	Test procedure	Semi-Rugged specifications	Fully-Rugged specifications
Cold boot test	Custom - Cold Boot	- Cold soak for 8 hours (unit off), One cycle - Cold soak for 8 hours at varying temperatures (-18°C, -20°C, -23°C, -29°C) - System boot: Remove system from cold environment and begin boot process immediately.	- Cold soak for 8 hours (unit off), One cycle - Cold soak for 8 hours at varying temperatures (-18°C, -20°C, -23°C, -29°C) - System boot: Remove system from cold environment and begin boot process immediately.

Thermal and acoustic improvements

The following table lists the thermal and acoustic improvements of your Latitude 7330 Rugged Extreme.

Table 65. Thermal and acoustic improvements

100% dual heat pipe	Increase the heat capacity to improve thermal dissipation
Better system tuning/setting	Get higher performance and good user experience
Pro-OS enhanced thermal setting (Dynamic PL1)	Increases boot-up time
Linear fan control	Fan speed ramp more smoothly for better user experience, no more significant acoustic changing
DDT SSD setting	Protecting the SSD device in high temperature and worse cases to prevent blue screen of death (BSOD)
IEC 60529 ingress protection: IP-54	- Dust protected - Protected against dripping water
Better acoustic experience	Enhance acoustic to 0.6 sone during daily working conditions and fan off when system is idle

Thermal test result for A09 specification

The following table lists the Thermal test result for A09 specification of your Latitude 7330 Rugged Extreme.

Table 66. Thermal test result for A09 specification - Discrete graphics



Table 66. Thermal test result for A09 specification - Discrete graphics (continued)

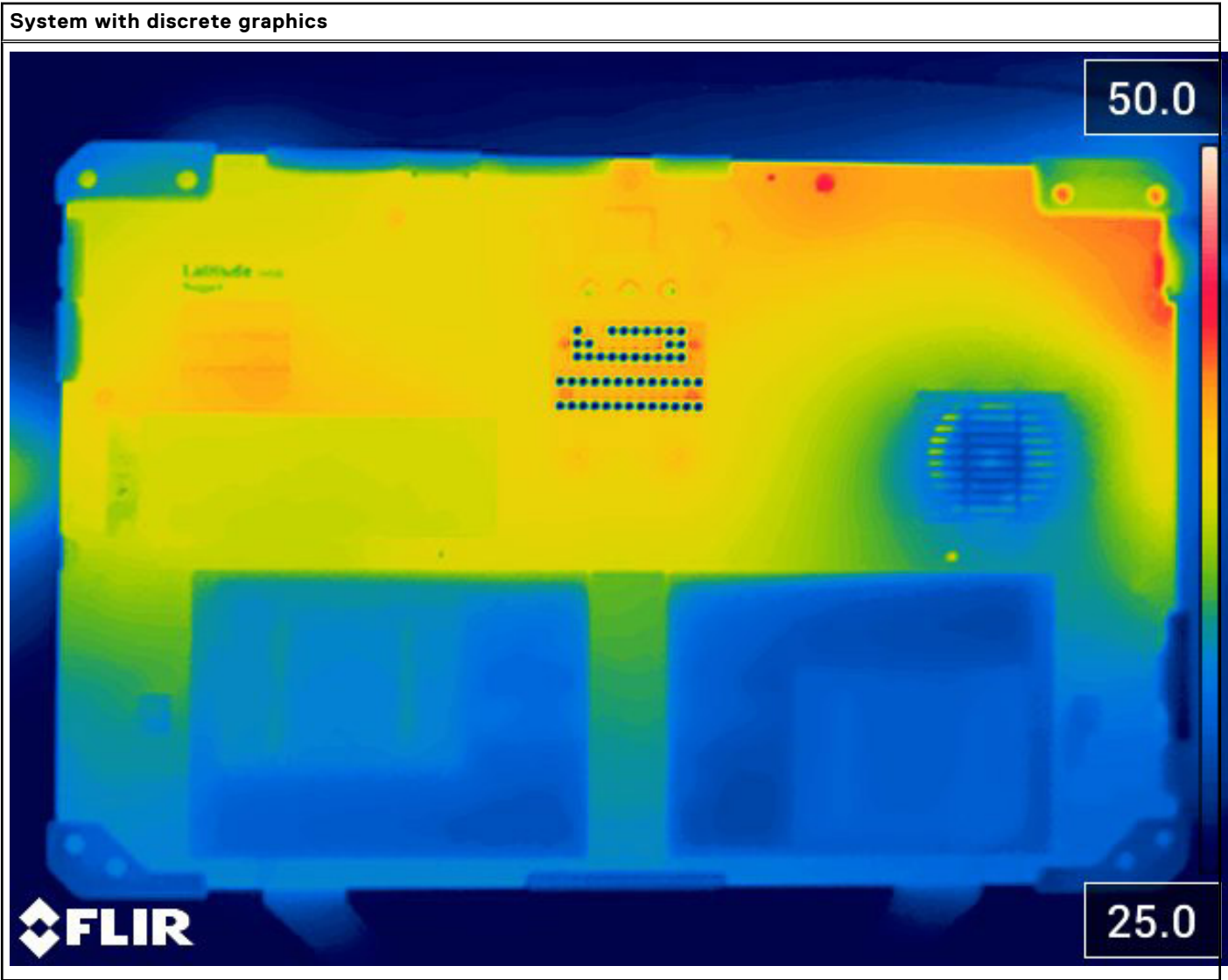


Table 67. Thermal test result for A09 specification - Integrated graphics

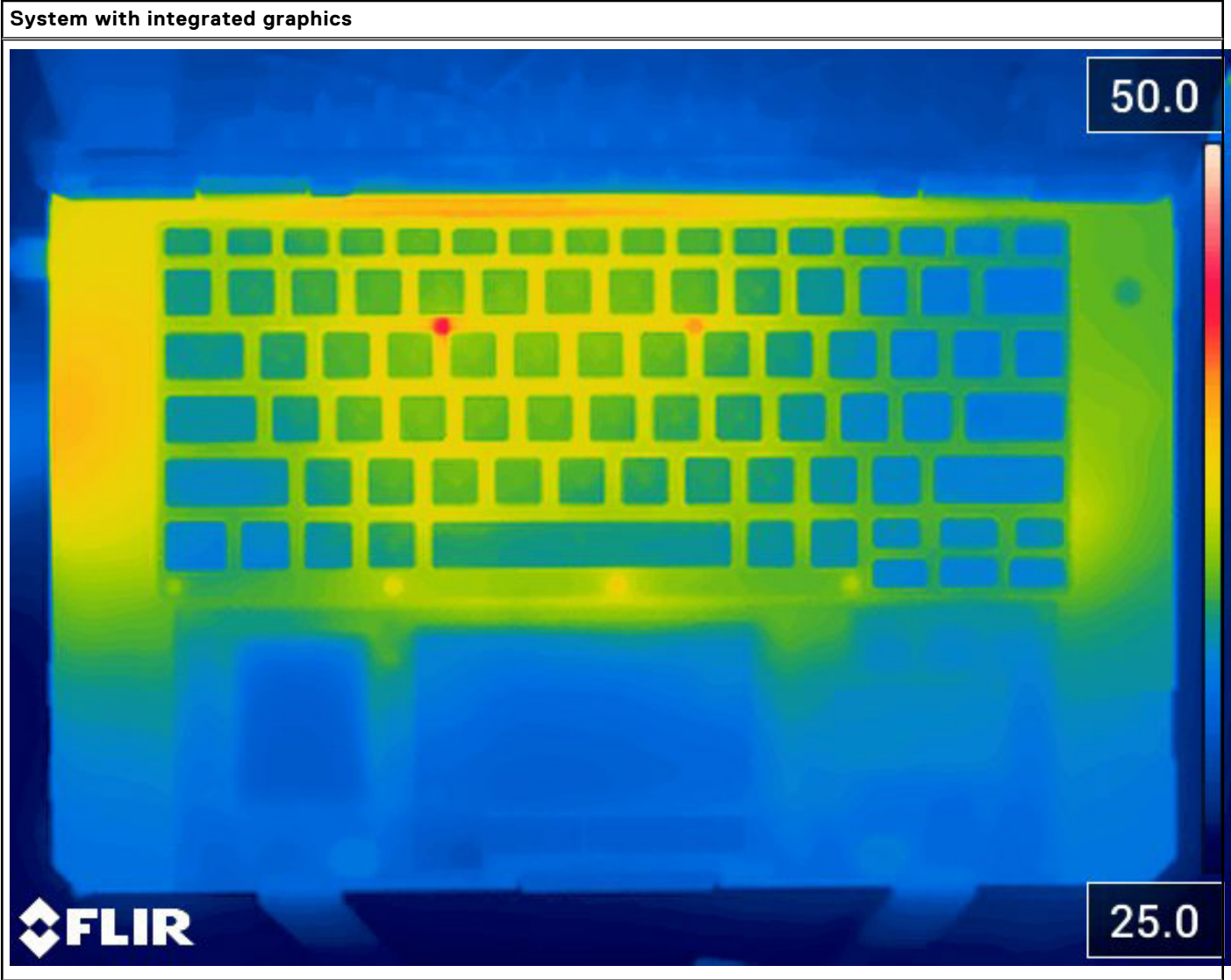
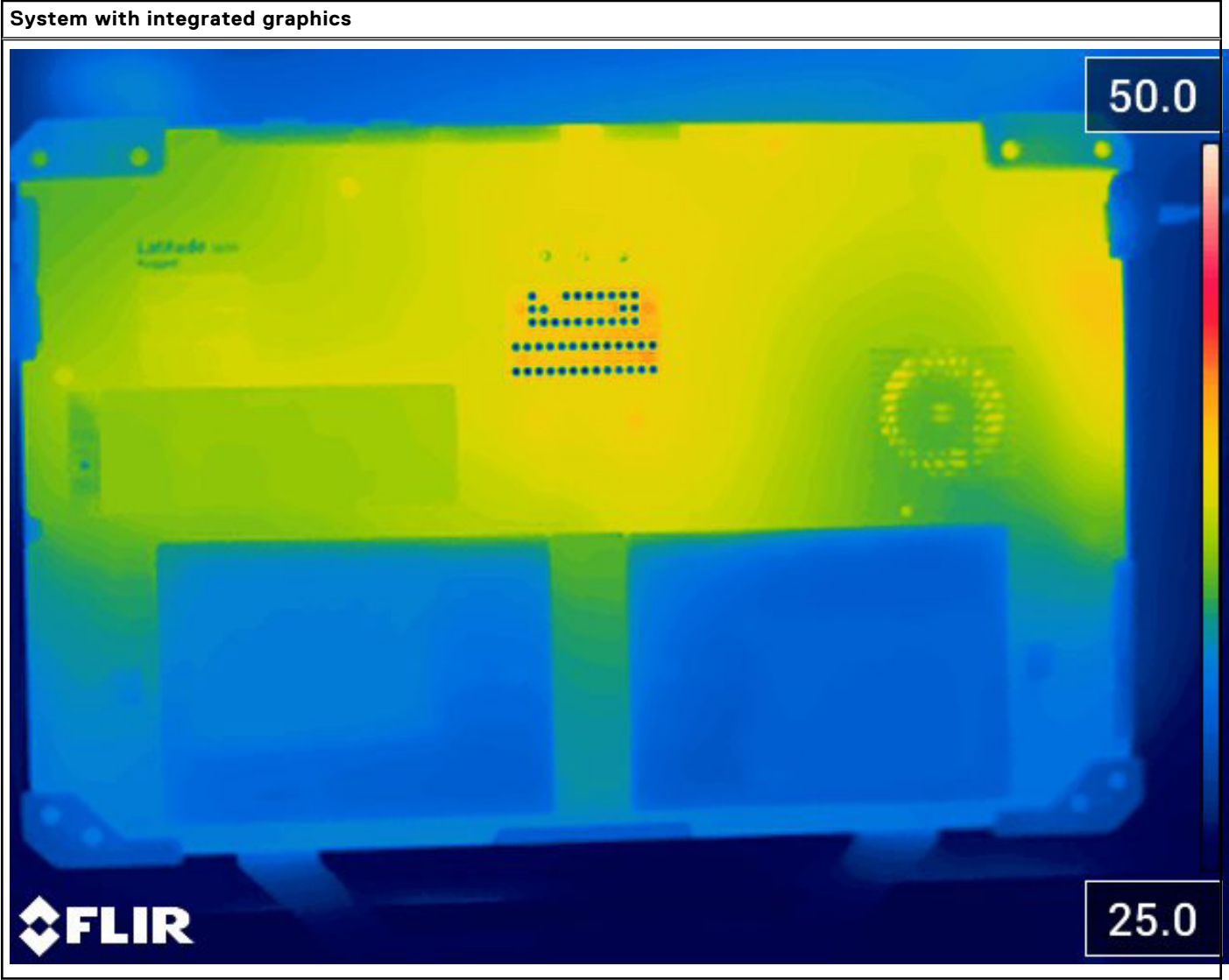


Table 67. Thermal test result for A09 specification - Integrated graphics (continued)



System							DIS		UMA	
	Spec						Typical - WWAN	Heavy - Furmark	Typical - IOMeter	Heavy - Furmark
Ambient (C)							28	28	28	28
CPU power (W)							7.3	15	8.7	25
GPU power (W)							NA	18	NA	NA
Grade	Typical			Heavy			Result			
	A	B	C	A	B	C	Got A	Got C	Got A	Got A
Side Strip	40	43	45	42	44	46	32.4 - A	45.0 - C	35.3 - A	40.6 - A
Top Strip	42	44	46	43	45	47	32.9 - A	43.7 - B	34.1 - A	37.0 - A
D-Cover	42	44	46	43	45	47	40.4 - A	44.3 - B	36.1 - A	40.7 - A
KB Ribbing	42	44	46	43	45	47	32.4 - A	40.3 - A	34.4 - A	38.0 - A

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, 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 unreachable 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

Intel Standard Manageability option **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).

Color, material, and finish

This section details the color, material, and finish (CMF) specifications of your Latitude 7330 Rugged Extreme.

Table 68. CMF specifications

A Cover (Top)	• Dell standard black, resin • Resin + Carbon Fiber + TPE • 5.5±1.5 GU, MT11010
B Cover (Hinge up)	• Maluck black, matte • Resin • 5.5±1.5 GU, MT11010
C Cover (Palmrest)	• Maluck black, matte • Magnesium • 5.5±1.5 GU
D Cover (Bottom)	• Maluck black, matte • Magnesium • 5.5±1.5 GU

Keyboard shortcuts of Latitude 7330 Rugged Extreme

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 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 69. List of keyboard shortcuts

Function key	Primary behavior
F1	Mute audio
F2	Decrease volume
F3	Increase volume
F4	Microphone Mute
F5	KB Illumination/Backlight
F6	Decrease brightness
F7	Increase brightness
F8	Switch to external display
F9	Stealth mode
F10	Print screen
F12	Home

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

Table 70. 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

Table 70. Secondary behavior (continued)

Function key	Secondary 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 + Right Ctrl	Open application menu
Fn + Esc	Toggle Fn-key lock
Fn + C	RGB keyboard backlight color rotation

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 71. Self-help resources

Self-help resources	Resource location
Information about Dell products and services	www.dell.com
My Dell app	
Tips	
Contact Support	In Windows search, type <code>Contact Support</code> , and press Enter.
Online help for operating system	www.dell.com/support/windows www.dell.com/support/linux
Access top solutions, diagnostics, drivers and downloads, and learn more about your computer through videos, manuals, and documents.	Your Dell computer is uniquely identified by a Service Tag or Express Service Code. To view relevant support resources for your Dell computer, enter the Service Tag or Express Service Code at www.dell.com/support . For more information on how to find the Service Tag for your computer, see Locate the Service Tag on your computer .
Dell knowledge base articles for a variety of computer concerns	1. Go to www.dell.com/support. 2. On the menu bar at the top of the Support page, select Support > Knowledge Base. 3. In the Search field on the Knowledge Base page, type the keyword, topic, or model number, and then click or tap the search icon to view the related articles.

Contacting Dell

To contact Dell for sales, technical support, or customer service issues, see www.dell.com/contactdell.

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

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