Precision 3650 Tower

Technical Guidebook

Regulatory Model: D24M
Regulatory Type: D24M005
May 2020
Rev. A00

Notes, cautions, and warnings

NOTE: A NOTE indicates important information that helps you make better use of your product.

CAUTION: A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

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

Contents

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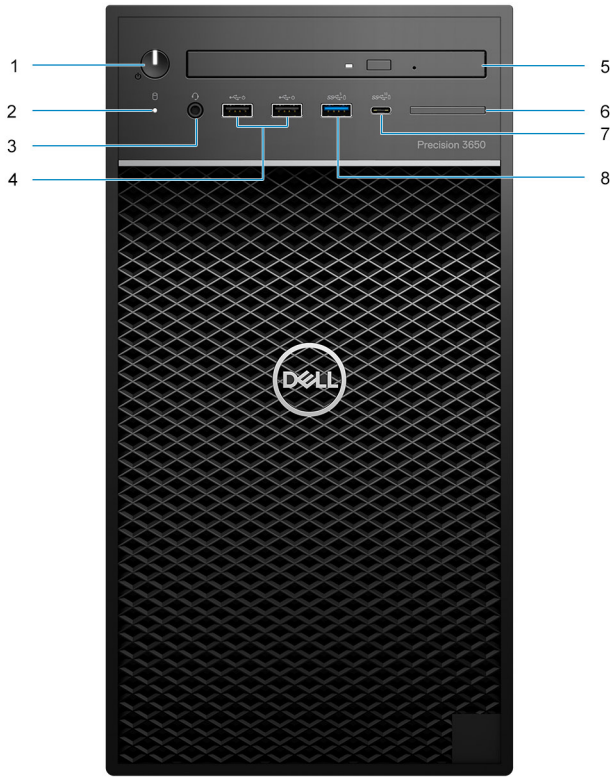
Views of Precision 3650 Tower

Topics:

- Front
- Back
- System board Layout

Front

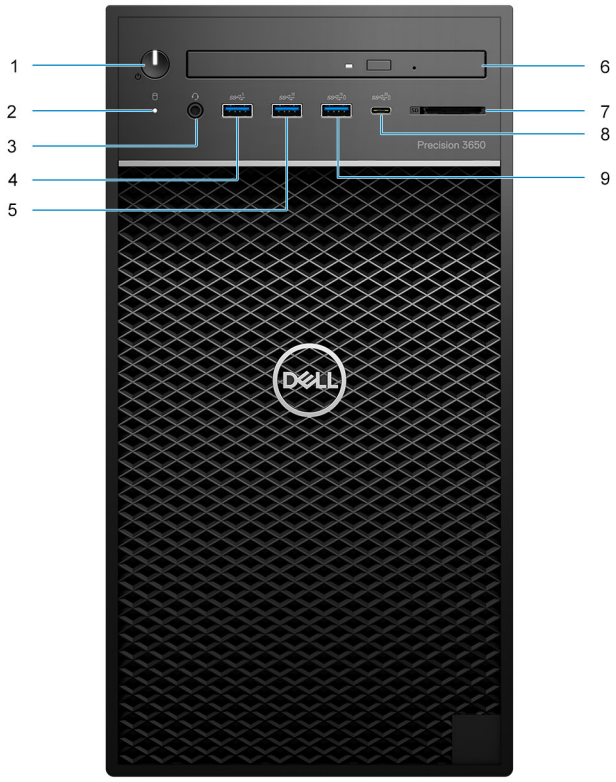
Standard front I/O



1. Power button with diagnostic LED
2. Hard-disk drive activity light
3. Universal audio jack port
4. Two USB 2.0 Type-A ports
5. Bezel for SD card reader

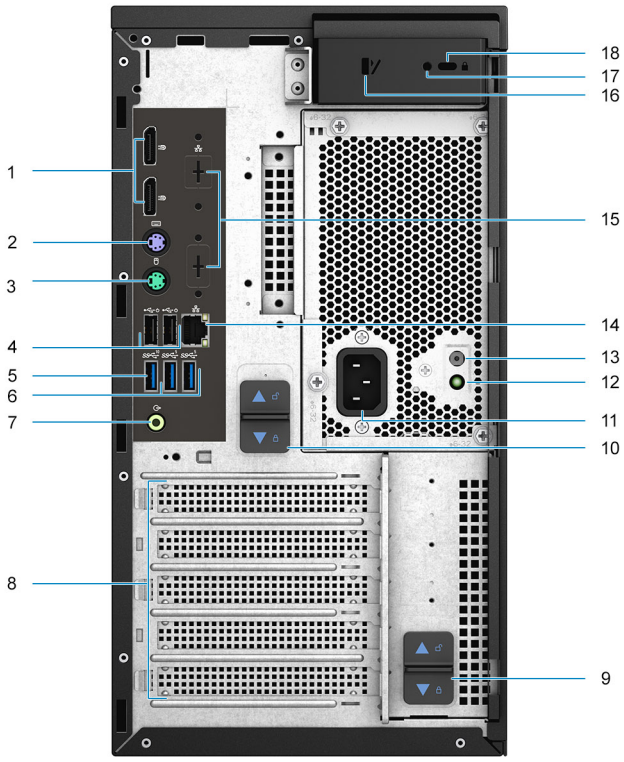
   NOTE: SD card reader is not included with Standard Front I/O
6. Optical Disk Drive (optional)
7. USB 3.2 Gen 2x1 Type-C port (10 Gbps)
8. USB 3.2 Gen 1 Type-A port with PowerShare (5 Gbps)

Advanced front I/O



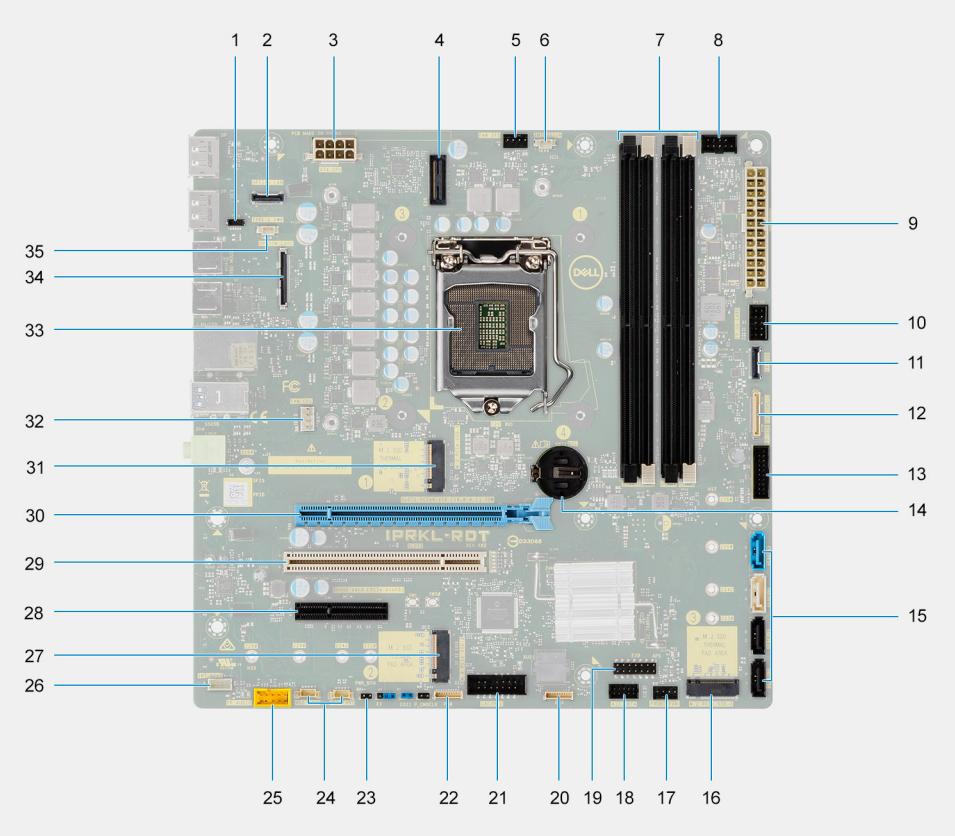
1. Power button with diagnostic LED
2. Hard-disk drive activity light
3. Universal audio jack port
4. One USB 3.2 Gen 1 Type-A port (5 Gbps)
5. USB 3.2 Gen 2 Type-A port (10 Gbps)
6. Optical Disk Drive (optional)
7. SD 4.0 card reader included with Advanced Front I/O
8. USB 3.2 Gen 2x2 Type-C port (20 Gbps)
9. USB 3.2 Gen 2 port with PowerShare (10 Gbps)

Back



1. Two DisplayPort 1.4 ports
2. PS/2 port for keyboard
3. PS/2 port for mouse
4. Two USB 2.0 Type-A ports with Smart Power On
5. One USB 3.2 Gen 2 Type-A port (10 Gbps)
6. Two USB 3.2 Gen 1 Type-A ports (5 Gbps)
7. Line-out re-tasking Line-in audio port
8. Three expansion card slots
9. PSU hinge release latch
10. PSU release latch
11. Power connector port
12. Power supply diagnostic light
13. Power supply diagnostic button
14. RJ-45 port 10/100/1000 Mbps
15. Optional 2.5 GbE RJ-45 / VGA Port/DisplayPort 1.4a Port/HDMI 2.0b Port/ USB 3.2 Gen2 Type-C Port with Alt-mode slots
16. Side cover release latch
17. Security screw
18. Kensington cable lock

System board Layout



1. E24 connector
2. Optional 2.5 GbE RJ-45 connector
3. Processor power connector
4. E25 connector
5. System fan connector
6. Chassis Intrusion Detection connector
7. Memory module slots
8. Power button connector
9. System board power connector
10. SD card connector
11. Front panel USB connector
12. Front panel USB-C connector
13. Front panel USB power connector
14. Cion cell battery
15. SATA 0 (blue), SATA 1 (white), SATA 2 and SATA 3 (black) connectors
16. M.2 PCIe SSD connector
17. System fan connector (front)
18. Thunderbolt 4 AIC connector
19. E20 connector
20. E23 connector
21. CAC_PIV power connector
22. P30 connector
23. Power button connector
24. Hard drive fan connectors
25. Front panel audio connector
26. Internal speaker connector
27. M.2 PCIe SSD connector

28. Full Height PCIe x4 slot (open-ended)
29. PCI-32 slot
30. Full Height PCIe x16 slot
31. M.2 PCIe SSD connector

    NOTE: This slot is only operational with 11th Generation Intel Core i5/i7/i9/Xeon-W processors.
32. Processor fan connector
33. Processor socket
34. Optional video card connector
35. USB-C connector

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Specifications of Precision 3650 Tower

Topics:

Dimensions and weight

The following table lists the height, width, depth, and weight of your Precision 3650 Tower.

Table 1. Dimensions and weight

Description	Values
Height:	
Front	355.00 mm (13.18 in.)
Rear	355.00 mm (13.18 in.)
Width	176.60 mm (6.95 in.)
Depth	345.00 mm (13.60 in.)
Weight (minimum)	8.50 kg (18.74 lb)
Weight (maximum)	10.22 kg (22.53 lb) **NOTE:** The weight of your computer depends on the configuration ordered and the manufacturing variability.

Processors

The following table lists the details of the processors supported by your Precision 3650 Tower

NOTE: Global Standard Products (GSP) are a subset of Dell's relationship products that are managed for availability and synchronized transitions on a worldwide basis. They ensure the same platform is available for purchase globally. This allows customers to reduce the number of configurations managed on a worldwide basis, thereby reducing their costs. They also enable companies to implement global IT standards by locking in specific product configurations worldwide.

Device Guard (DG) and Credential Guard (CG) are the new security features that are only available on Windows 10 Enterprise today.

Device Guard is a combination of enterprise-related hardware and software security features that, when configured together, will lock a device down so that it can only run trusted applications. If it is not a trusted application, it cannot run.

Credential Guard uses virtualization-based security to isolate secrets (credentials) so that only privileged system software can access them. Unauthorized access to these secrets can lead to credential theft attacks. Credential Guard prevents these attacks by protecting NTLM password hashes and Kerberos Ticket Granting Tickets.

NOTE: Processor numbers are not a measure of performance. Processor availability is subject to change and may vary by region/country.

Table 2. Processors

Processors	Wattage	Core count	Thread count	Speed	Cache	Integrated graphics	GSP	DG/CG Ready
10th Generation Intel Core i3-10100	65 W	4	8	3.6 GHz to 4.3 GHz	6 MB	Intel UHD Graphics 630	No	Yes
10th Generation Intel Core i3-10105	65 W	4	8	3.70 GHz to 4.40 GHz	6 MB	Intel UHD Graphics 630	No	Yes
10th Generation Intel Core i5-10500	65 W	6	12	3.1 GHz to 4.5 GHz	12 MB	Intel UHD Graphics 630	No	Yes
10th Generation Intel Core i5-10600	65 W	6	12	3.3 GHz to 4.8 GHz	12 MB	Intel UHD Graphics 630	No	Yes
10th Generation Intel Core i5-10600K	125 W	6	12	4.1 GHz to 4.8 GHz	12 MB	Intel UHD Graphics 630	Yes	Yes
10th Generation Intel Core i7-10700	65 W	8	16	2.9 GHz to 4.8 GHz	16 MB	Intel UHD Graphics 630	Yes	Yes
10th Generation Intel Core i7-10700K	125 W	8	16	3.8 GHz to 5.1 GHz	16 MB	Intel UHD Graphics 630	Yes	Yes
10th Generation Intel Core i9-10900	65 W	10	20	2.8 GHz to 5.2 GHz	20 MB	Intel UHD Graphics 630	Yes	Yes

Table 2. Processors (continued)

Processors	Wattage	Core count	Thread count	Speed	Cache	Integrated graphics	GSP	DG/CG Ready
10th Generation Intel Core i9-10900K	125 W	10	20	3.7 GHz to 5.3 GHz	20 MB	Intel UHD Graphics 630	Yes	Yes
10th Generation Intel Xeon W-1250	80 W	6	12	3.3 GHz to 4.7 GHz	12 MB	Intel UHD Graphics P630	Yes	Yes
10th Generation Intel Xeon W-1250P	125 W	6	12	4.1 GHz to 4.8 GHz	12 MB	Intel UHD Graphics P630	Yes	Yes
10th Generation Intel Xeon W-1270	80 W	8	16	3.4 GHz to 5.0 GHz	16 MB	Intel UHD Graphics P630	Yes	Yes
10th Generation Intel Xeon W-1270P	125 W	8	16	3.8 GHz to 5.1 GHz	16 MB	Intel UHD Graphics P630	Yes	Yes
10th Generation Intel Xeon W-1290	80 W	10	20	3.2 GHz to 5.2 GHz	20 MB	Intel UHD Graphics P630	Yes	Yes
10th Generation Intel Xeon W-1290P	125 W	10	20	3.7 GHz to 5.3 GHz	20 MB	Intel UHD Graphics P630	Yes	Yes
11th Generation Intel Core i5-11500	65 W	6	12	2.70 GHz to 4.60 GHz	12 MB	Intel UHD Graphics 750	No	Yes
11th Generation Intel Core i5-11600	65 W	6	12	2.80 GHz to 4.80 GHz	12 MB	Intel UHD Graphics 750	No	Yes
11th Generation Intel Core i5-11600K	125 W	6	12	3.90 GHz to 4.90 GHz	12 MB	Intel UHD Graphics 750	Yes	Yes
11th Generation Intel Core i7-11700	65 W	8	16	2.50 GHz to 4.90 GHz	16 MB	Intel UHD Graphics 750	Yes	Yes
11th Generation Intel Core i9-11700K	125 W	8	16	3.60 GHz to 5.00 GHz	16 MB	Intel UHD Graphics 750	Yes	Yes

Table 2. Processors (continued)

Processors	Wattage	Core count	Thread count	Speed	Cache	Integrated graphics	GSP	DG/CG Ready
11th Generation Intel Core i9-11900	65 W	8	16	2.50 GHz to 5.20 GHz	16 MB	Intel UHD Graphics 750	Yes	Yes
11th Generation Intel Core i9-11900K	125 W	8	16	3.50 GHz to 5.30 GHz	16 MB	Intel UHD Graphics 750	Yes	Yes
11th Generation Intel Xeon W-1350	80 W	6	12	3.30 GHz to 5.00 GHz	12 MB	Intel UHD Graphics P750	Yes	Yes
11th Generation Intel Xeon W-1350P	125 W	6	12	4.00 GHz to 5.10 GHz	16 MB	Intel UHD Graphics P750	Yes	Yes
11th Generation Intel Xenon W-1370	80 W	8	16	2.9 GHz to 5.1 GHz	16 MB	Intel UHD Graphics P750	Yes	Yes
11th Generation Intel Xenon W-1370P	125 W	8	16	3.6 GHz to 5.2 GHz	16 MB	Intel UHD Graphics P750	Yes	Yes
11th Generation Intel Xenon W-1390	80 W	8	16	2.8 GHz to 5.2 GHz	16 MB	Intel UHD Graphics P750	Yes	Yes
11th Generation Intel Xenon W-1390P	125 W	8	16	3.5 GHz to 5.3 GHz	16 MB	Intel UHD Graphics P750	Yes	Yes

Chipset

The following table lists the details of the chipset supported by your Precision 3650 Tower.

Table 3. Chipset

Description	Values
Chipset	Intel W580
Processor	• 10th Generation Intel Core i3/i5/i7/i9/Xeon-W • 11th Generation Intel Core i5/i7/i9/Xeon-W
DRAM bus width	64 bit (for single channel)
Flash EPROM	256 MB

Table 3. Chipset (continued)

Description	Values
PCIe bus	PCIe Gen3

Operating system

Your Precision 3650 Tower supports the following operating systems:

- Windows 10 Home, 64-bit
- Windows 10 Pro, 64-bit
- Windows 10 IoT Enterprise 2019 LTSC
- Windows 10 CMIT govt V0-H
- Ubuntu 20.04 LTS, 64-bit
- Kylin V 10.1
- Red Hat Enterprise Linux 8.4

Memory

The following table lists the memory specifications of your Precision 3650 Tower.

Table 4. Memory specifications

Description	Values
Memory slots	Four UDIMM
Memory type	DDR4
Maximum Memory speed	2666 MHz for 10th Generation Intel Core i3/i5/Xeon W-1250/W-1250P processors, 2933 MHz for 10th Generation Intel Core i7/i9/Xeon W-1270/W-1270P/W1290/W1290P processors ,3200 MHz for 11th Generation Intel Core i5/i7/i9/Xeon W-1350/W-1350P/W-1370/W-1370P/W1390/W1390P processors
Maximum memory configuration	128 GB
Minimum memory configuration	8 GB
Memory size per slot	8 GB, 16 GB, 32 GB
Memory configurations supported	ECC Memory • 8 GB, (1 x 8 GB), DDR4, 2666 MHz for 10th Generation Intel Core i3/i5/Xeon W-1250/W-1250P processors, 2933 MHz for 10th Generation Intel Core i7/i9/Xeon W-1270/W-1270P/W1290/W1290P processors ,3200 MHz for 11th Generation Intel Core i5/i7/i9/Xeon W-1350/W-1350P/W-1370/W-1370P/W1390/W1390P processors • 16 GB, (2 x 8 GB), DDR4, 2666 MHz for 10th Generation Intel Core i3/i5/Xeon W-1250/W-1250P processors, 2933 MHz for 10th Generation Intel Core i7/i9/Xeon W-1270/W-1270P/W1290/W1290P processors ,3200 MHz for 11th Generation Intel Core i5/i7/i9/Xeon W-1350/W-1350P/W-1370/W-1370P/W1390/W1390P processors • 16 GB, (1 x 16 GB), DDR4, 2666 MHz for 10th Generation Intel Core i3/i5/Xeon W-1250/W-1250P processors, 2933 MHz for 10th Generation Intel Core i7/i9/Xeon W-1270/

Table 4. Memory specifications (continued)

Description	Values
	W-1270P/W1290/W1290P processors ,3200 MHz for 11th Generation Intel Core i5/i7/i9/Xeon W-1350/W-1350P/ W-1370/W-1370P/W1390/W1390P processors ● 32 GB, (4 x 8 GB), DDR4, 2666 MHz for 10th Generation Intel Core i3/i5/Xeon W-1250/W-1250P processors, 2933 MHz for 10th Generation Intel Core i7/i9/Xeon W-1270/ W-1270P/W1290/W1290P processors ,3200 MHz for 11th Generation Intel Core i5/i7/i9/Xeon W-1350/W-1350P/ W-1370/W-1370P/W1390/W1390P processors ● 32 GB, (2 x 16 GB), DDR4, 2666 MHz for 10th Generation Intel Core i3/i5/Xeon W-1250/W-1250P processors, 2933 MHz for 10th Generation Intel Core i7/i9/Xeon W-1270/ W-1270P/W1290/W1290P processors ,3200 MHz for 11th Generation Intel Core i5/i7/i9/Xeon W-1350/W-1350P/ W-1370/W-1370P/W1390/W1390P processors ● 64 GB, (4 x 16 GB), DDR4, 2666 MHz for 10th Generation Intel Core i3/i5/Xeon W-1250/W-1250P processors, 2933 MHz for 10th Generation Intel Core i7/i9/Xeon W-1270/ W-1270P/W1290/W1290P processors ,3200 MHz for 11th Generation Intel Core i5/i7/i9/Xeon W-1350/W-1350P/ W-1370/W-1370P/W1390/W1390P processors ● 64 GB, (2 x 32 GB), DDR4, 2666 MHz for 10th Generation Intel Core i3/i5/Xeon W-1250/W-1250P processors, 2933 MHz for 10th Generation Intel Core i7/i9/Xeon W-1270/ W-1270P/W1290/W1290P processors ,3200 MHz for 11th Generation Intel Core i5/i7/i9/Xeon W-1350/W-1350P/ W-1370/W-1370P/W1390/W1390P processors ● 128 GB, (4 x 32 GB), DDR4, 2666 MHz for 10th Generation Intel Core i3/i5/Xeon W-1250/ W-1250P processors, 2933 MHz for 10th Generation Intel Core i7/i9/Xeon W-1270/W-1270P/W1290/W1290P processors ,2933 MHz for 11th Generation Intel Core i5/i7/i9/Xeon W-1350/W-1350P/W-1370/W-1370P/ W1390/W1390P processors Non-ECC memory ● 8 GB, (2 x 4 GB), DDR4, 2666 MHz for 10th Generation Intel Core i3/i5/Xeon W-1250/W-1250P processors, 2933 MHz for 10th Generation Intel Core i7/i9/Xeon W-1270/ W-1270P/W1290/W1290P processors ,3200 MHz for 11th Generation Intel Core i5/i7/i9/Xeon W-1350/W-1350P/ W-1370/W-1370P/W1390/W1390P processors ● 8 GB, (1 x 8 GB), DDR4, 2666 MHz for 10th Generation Intel Core i3/i5/Xeon W-1250/W-1250P processors, 2933 MHz for 10th Generation Intel Core i7/i9/Xeon W-1270/ W-1270P/W1290/W1290P processors ,3200 MHz for 11th Generation Intel Core i5/i7/i9/Xeon W-1350/W-1350P/ W-1370/W-1370P/W1390/W1390P processors ● 16 GB, (2 x 8 GB), DDR4, 2666 MHz for 10th Generation Intel Core i3/i5/Xeon W-1250/W-1250P processors, 2933 MHz for 10th Generation Intel Core i7/i9/Xeon W-1270/ W-1270P/W1290/W1290P processors ,3200 MHz for 11th Generation Intel Core i5/i7/i9/Xeon W-1350/W-1350P/ W-1370/W-1370P/W1390/W1390P processors ● 32 GB, (4 x 8 GB), DDR4, 2666 MHz for 10th Generation Intel Core i3/i5/Xeon W-1250/W-1250P processors, 2933 MHz for 10th Generation Intel Core i7/i9/Xeon W-1270/ W-1270P/W1290/W1290P processors ,3200 MHz for 11th Generation Intel Core i5/i7/i9/Xeon W-1350/W-1350P/ W-1370/W-1370P/W1390/W1390P processors

Table 4. Memory specifications (continued)

Description	Values
	• 32 GB, (2 x 16 GB), DDR4, 2666 MHz for 10th Generation Intel Core i3/i5/Xeon W-1250/W-1250P processors, 2933 MHz for 10th Generation Intel Core i7/i9/Xeon W-1270/ W-1270P/W1290/W1290P processors ,3200 MHz for 11th Generation Intel Core i5/i7/i9/Xeon W-1350/W-1350P/ W-1370/W-1370P/W1390/W1390P processors • 64 GB, (2 x 32 GB), DDR4, 2666 MHz for 10th Generation Intel Core i3/i5/Xeon W-1250/W-1250P processors, 2933 MHz for 10th Generation Intel Core i7/i9/Xeon W-1270/ W-1270P/W1290/W1290P processors ,3200 MHz for 11th Generation Intel Core i5/i7/i9/Xeon W-1350/W-1350P/ W-1370/W-1370P/W1390/W1390P processors • 64 GB, (4 x 16 GB), DDR4, 2666 MHz for 10th Generation Intel Core i3/i5/Xeon W-1250/W-1250P processors, 2933 MHz for 10th Generation Intel Core i7/i9/Xeon W-1270/ W-1270P/W1290/W1290P processors ,3200 MHz for 11th Generation Intel Core i5/i7/i9/Xeon W-1350/W-1350P/ W-1370/W-1370P/W1390/W1390P processors • 128 GB, (4 x 32 GB), DDR4, 2666 MHz for 10th Generation Intel Core i3/i5/Xeon W-1250/ W-1250P processors, 2933 MHz for 10th Generation Intel Core i7/i9/Xeon W-1270/W-1270P/W1290/W1290P processors ,2933 MHz for 11th Generation Intel Core i5/i7/i9/Xeon W-1350/W-1350P/W-1370/W-1370P/ W1390/W1390P processors

Memory configuration matrix

DIMM configuration to avoid memory speed reduction:

	DIMM #	1 DIMM	2 DIMMs	4 DIMMs
Channel-A	DIMM3			v
Channel-A	DIMM1	v	v	v
Channel-B	DIMM4			v
Channel-B	DIMM2		v	v

Following memory configurations are recommended from Dell to avoid memory speed reduction on 11th generation Rocket Lake processors.:

Config	Total	ECC / non-ECC	DPC	Frequency	CH-A		CH-B	
					DIMM3	DIMM1	DIMM4	DIMM2
2X4GB	8GB	Non-ECC	1	3200		4GB		4GB
1X8GB	8GB	Non-ECC	1	3200		8GB		
2X8GB	16GB	Non-ECC	1	3200		8GB		8GB
4X4GB	16GB	Non-ECC	2	3200	4GB	4GB	4GB	4GB
4X8GB	32GB	Non-ECC	2	3200	8GB	8GB	8GB	8GB
2X16GB	32GB	Non-ECC	1	3200		16GB		16GB
4X16GB	64Gb	Non-ECC	2	3200	16GB	16GB	16GB	16GB
2X32GB	64Gb	Non-ECC	1	3200		32GB		32GB
4X32GB	128GB	Non-ECC	2	2933	32GB	32GB	32GB	32GB
1X8GB	8GB	ECC	1	3200		8GB		
2X8GB	16GB	ECC	1	3200		8GB		8GB
2X16GB	32GB	ECC	1	3200		16GB		16GB
4X8GB	32GB	ECC	2	3200	8GB	8GB	8GB	8GB
4X16GB	64GB	ECC	2	3200	16GB	16GB	16GB	16GB
2X32GB	64GB	ECC	1	3200		32GB		32GB
4X32GB	128GB	ECC	2	2933	32GB	32GB	32GB	32GB

- **NOTE:** Different processor and dual rank will cause memory speed down to 2933MHz or 2666MHz.
- **NOTE:** At least 2 memory modules are required for non-ECC 4GB memory in system.
- **NOTE:** Different Memory Vendors mixing within a channel is not allowed and it would cause memory speed down to 2666Mhz or below.
- **NOTE:** 128 GB configuration can only support up to 2933MHz on 11th Generation Intel Core i5/i7/i9/Xeon W-1350/W-1350P/W-1370/W-1370P/W1390/W1390P processors.

External ports

The following table lists the external ports of your Precision 3650 Tower.

Table 5. External ports

Description	Values
Network port	• One RJ-45 port 10/100/1000 Mbps (rear) • One optional 2nd RJ-45 2.5 Gbps port (rear)
USB ports	**Standard Front I/O:** • Two USB 2.0 ports • One USB 3.2 Gen 1 port with PowerShare (5 Gbps) • One USB 3.2 Gen 2x1 Type-C port (10 Gbps) **Advanced Front I/O:** • One USB 3.2 Gen 1 port (5 Gbps) • One USB 3.2 Gen 2 port with PowerShare (10 Gbps) • One USB 3.2 Gen 2 port (10 Gbps) • One USB 3.2 Gen 2x2 Type-C port (20 Gbps) **Rear I/O:** • Two USB 2.0 ports with SmartPower on • Two USB 3.2 Gen 1 ports (5 Gbps) • One USB 3.2 Gen 2 port (10 Gbps) • One USB 3.2 Gen 2 Type-C Alt-Mode (optional)
Audio port	• One Universal Audio Jack (front) • One Line-out audio port with re-tasking to Line-in (rear)
Video port	• Two DisplayPort 1.4 ports (rear) • One VGA Port/DisplayPort 1.4a Port/HDMI 2.0b Port/ USB 3.2 Gen2 Type-C Port with Alt-mode (optional)

Table 5. External ports (continued)

Description	Values
Media-card reader	One SD-card slot
Power-adapter port	NA
Security-cable slot	NA

Internal slots

The following table lists the internal slots of your Precision 3650 Tower.

Table 6. Internal slots

Description	Values
Expansion	For 10th Generation processors: • One full-height Gen 3 PCIe x16 slot. • One full height PCI-32 (legacy) slot. • One full-height Gen 3 PCIe x4 slot. For 11th Generation processors: • One full-height Gen 4 PCIe x16 slot. • One full height PCI-32 (legacy) slot. • One full-height Gen 3 PCIe x4 slot.
SATA	Four SATA slots for 2.5-inch Hard disk drive/Solid-state drive/Optical Disk Drive
M.2	• Two M.2 2280 slot for solid-state drive with 10th Generation Intel processors • Three M.2 2280 slot for solid-state drive with 11th Generation Intel processors **NOTE:** To learn more about the features of different types of M.2 cards, see the knowledge base article SLN301626 at www.dell.com/support.

Communications

Ethernet

Table 7. Ethernet specifications

Description	Values
Model number	Ethernet controller integrated on system board **NOTE:** Optional 2.5GbE RJ-45 available at the time of purchase
Transfer rate	10/100/1000 Mbps **NOTE:** 2.5 Gbps speed available with the optional 2nd RJ-45 port.

Wireless module

Table 8. Wireless module specifications

Description	Values	
Model number	Qualcomm QCA6174a	Intel Wi-Fi 6 AX210
Transfer rate	Up to 867 Mbps	Up to 2402 Mbps
Frequency bands supported	2.4 GHz/5 GHz	2.4 GHz/5 GHz/6 GHz
Wireless standards	802.11ac	802.11ax
Encryption	• 64-bit and 128-bit WEP • 128-bit AES-CCMP • TKIP	• 128-bit AES-CCMP • 256-bit AES-GCMP
Bluetooth	5.0	5.2

Audio and Speaker

The following table lists the audio specifications of your Precision 3650 Tower.

Table 9. Audio specifications

Description	Values
Type	4 Channel High Definition Audio
Controller	Realtek ALC3246
Stereo conversion	24-bit DAC (Digital-to-Analog) and ADC (Analog-to-Digital)
Internal interface	Intel HDA (high-definition audio)
External interface	• One Universal Audio Jack (front) • One Line-out audio port with re-tasking to Line-in(rear)
Speakers	One (optional)
Internal speaker amplifier	Integrated in ALC3246 (Class-D 2 W)
External volume controls	Keyboard shortcut controls.
Speaker output average	2 W
Speaker output peak	2.5 W
Subwoofer output	Not supported
Microphone	Not supported

Storage

This section lists the storage options on your Precision 3650 Tower.

Your computer supports one of the following storage configurations:

- M.2 solid-state drive Boot + Optional M.2 solid-state drive – This configuration enables boot on M.2 NVMe solid-state drive with up to three additional NVMe solid-state drives depending on the processor installed. No SATA HDDs are configured in this option.
- 2.5-inch SATA hard-disk drive Boot + Optional 2.5-inch SATA hard-disk drive – This configuration enables boot on 2.5-inch SATA hard-disk drive with up to three additional 2.5-inch SATA hard-disk drives.
- 3.5-inch hard-disk drive Boot + Optional 3.5-inch hard-disk drive – This configuration enables boot on 3.5-inch hard-disk drive with up to two additional 3.5-inch hard-disk drives.
- M.2 solid-state drive Boot + Optional M.2 solid-state drive + 2.5-inch SATA hard-disk drive – This configuration enables boot on M.2 NVMe solid-state drive with up to three additional NVMe solid-state drives depending on the processor installed and up to four 2.5-inch SATA hard-disk drives.
- M.2 SSD Boot + Optional M.2 SSD + 3.5-inch hard-disk drive – This configuration enabled boot on M.2 NVMe solid-state drive with up to three additional NVMe solid-state drives depending on the processor installed and up to three 3.5-inch hard-disk drives.

The primary drive of your computer varies with the storage configuration. For computers:

- with a M.2 solid-state drive, the M.2 solid-state drive is the primary drive
- without a M.2 drive, either the 3.5-inch hard-disk drive or one of the 2.5-inch hard-disk drive is the primary drive

Table 10. Storage specifications

Storage type	Interface type	Capacity
2.5-inch, 5400 RPM, hard-disk drive	SATA 3.0	Up to 2 TB
2.5-inch, 7200 RPM, hard-disk drive	SATA 3.0	Up to 1 TB
2.5-inch, 7200 RPM, FIPS Self Encrypting Opal 2.0, hard-disk drive	SATA 3.0	Up to 500 GB
3.5-inch, 5400 RPM, hard-disk drive	SATA 3.0	4 TB
3.5-inch, 7200 RPM, hard-disk drive	SATA 3.0	Up to 8 TB
M.2 2280 solid-state drive	• PCIe Gen 3 x 4 NVMe, Class 50 • PCIe Gen 3 x 4 NVMe, Class 40 • PCIe Gen 4 x 4 NVMe, Class 40	• Up to 1 TB • Up to 2 TB
M.2 2280 Opal Self-Encrypting solid-state drive	PCIe Gen 3 x 4 NVMe, Class 40	Up to 1 TB

Preloaded components included with storage drives

NOTE: Users/Customers would need to install thermal pad for M.2 NVMe drives, SATA cable and tray to install 2.5" or 3.5" SATA hard drives.

Following customer kits are sold separately for 3rd party storage drive installation:

- Thermal pad for M.2 NVMe Solid state drive
- 2.5-inch SATA Tray and cable for 2.5-inch Hard drive
- 3.5-inch SATA Tray and cable for 3.5-inch Hard drive

Power ratings

Table 11. Power adapter specifications

Description	Values			
Type	300 W typical 90% Efficient PSU, 80 Plus Gold	460 W typical 90% Efficient PSU, 80 Plus Gold	550 W typical 90% Efficient PSU, 80 Plus Gold	1000 W typical 90% Efficient PSU, 80 Plus Gold

Table 11. Power adapter specifications (continued)

Description	Values			
Input voltage	90 VAC to 264 VAC	90 VAC to 264 VAC	90 VAC to 264 VAC	90 VAC to 264 VAC
Input frequency	47 Hz to 63 Hz	47 Hz to 63 Hz	47 Hz to 63 Hz	47 Hz to 63 Hz
Input current (maximum)	6 A	8 A	8 A	14 A
Output current (continuous)	• 5.1 V /13 A • 12 VA1/16.5 A • 12 VA2/16.5 A • 12 VB/16 A • 3.3 V/10 A • 5.1 Vaux/4 A	• 5.1 V /20 A • 12 VA1/18 A • 12 VA2/18 A • 12 VB/16 A • 12 VC/18 A • 3.3 V/15 A • 5.1 Vaux/4 A	• 5.1 V /20 A • 12 VA1/18 A • 12 VA2/18 A • 12 VB/16 A • 12 VC1/18 A • 12 VC2/18 A • 3.3 V/15 A • 5.1 Vaux/4 A	• 12 VA / 42 A • 12 VB / 52 A • 12 D / 16 A • 3.3 V / 20 A • 5.1 V / 20 A • -12 V / 0.5 A • 5.1 Vaux / 4 A
Rated output voltage	• 5.1 V • 12 VA1 • 12 VA2 • 12 VB • 3.3 V • 5.1 Vaux	• 5.1 V • 12 VA1 • 12 VA2 • 12 VB • 12 VC • 3.3 V • 5.1 Vaux	• 5.1 V • 12 VA1 • 12 VA2 • 12 VB • 12 VC1 • 12 VC2 • 3.3 V • 5.1 Vaux	• 12 VA • 12 VB • 12 D • 3.3 V • 5.1 V • -12 V • 5.1 Vaux
Temperature range:				
Operating	5°C to 50°C (41°F to 122°F)	5°C to 50°C (41°F to 122°F)	5°C to 50°C (41°F to 122°F)	5°C to 50°C (41°F to 122°F)
Storage	-40°C to 70°C (-40°F to 158°F)	-40°C to 70°C (-40°F to 158°F)	-40°C to 70°C (-40°F to 158°F)	-40°C to 70°C (-40°F to 158°F)

GPU—Integrated

The following table lists the specifications of the integrated Graphics Processing Unit (GPU) supported by your Precision 3650 Tower.

Table 12. GPU—Integrated

Controller	External display support	Memory size	Processor
Intel UHD Graphics 630	• Two DisplayPort 1.4 port • One DisplayPort 1.4 port (optional)	Shared system memory	10th Generation Intel Core i3
Intel UHD Graphics 750	• Two DisplayPort 1.4 port • One DisplayPort 1.4 port (optional)	Shared system memory	11th Generation Intel Core i5/i7/i9
Intel UHD Graphics P750	• Two DisplayPort 1.4 port • One DisplayPort 1.4 port (optional)	Shared system memory	11th Generation Intel Xeon-W

GPU — Discrete

The following table lists the specifications of the discrete graphics processing unit (GPU) supported by your Precision 3650 Tower.

Table 13. GPU — Discrete

Controller	External display support	Memory size	Memory type
NVIDIA Quadro RTX 5000	• Four DisplayPort 1.4 ports • One USB-C port	16 GB	GDDR6
NVIDIA Quadro RTX 4000	• Three DisplayPort 1.4 ports • One USB-C port	8 GB	GDDR6
NVIDIA Quadro P2200	Four DisplayPort 1.4 ports	5 GB	GDDR5X
NVIDIA Quadro P1000	Four mini DisplayPort (mDP) ports	4 GB	GDDR5
NVIDIA Quadro P620	Four mini DisplayPort (mDP) ports	2 GB	GDDR5
NVIDIA Quadro P400	• Three mini DisplayPort (mDP) ports	2 GB	GDDR5
AMD Radeo Pro W5700	• Five mini DisplayPort (mDP) ports • One USB-C port	8 GB	GDDR6
AMD Radeo Pro W5500	Four DisplayPort 1.4 ports	8 GB	GDDR6
AMD Radeon Pro W3200	Four mini DisplayPort (mDP) ports	4 GB	GDDR6

Multiple display support matrix

Table 14. Integrated - Multiple display support matrix

Graphics Card	Intel 630	Intel 750	Intel P750
Memory	UMA	UMA	UMA
Video Ports on Graphics Card	• Two DisplayPorts 1.4 • One optional DisplayPort 1.4	• Two DisplayPorts 1.4 • One optional DisplayPort 1.4	• Two DisplayPorts 1.4 • One optional DisplayPort 1.4
Max Displays (direct connect)	• Two Displays with standard configuration • Three Displays with optional DisplayPorts 1.4	• Two Displays with standard configuration • Three Displays with optional DisplayPorts 1.4	• Two Displays with standard configuration • Three Displays with optional DisplayPorts 1.4
Max Displays (DP multi-stream)	1	1	1
Number of displays	3	3	3
Supported Resolution	DP: 4096 x 2304 @60 Hz, 24 bpp	DP: 5120 x 3200 @60 Hz, 24 bpp	DP: 5120 x 3200 @60 Hz, 24 bpp

Table 14. Integrated - Multiple display support matrix (continued)

Graphics Card	Intel 630	Intel 750	Intel P750
Total Power	65 W	• 65 W • 125 W	• 80 W • 125 W

Environmental

The following table lists the environment specifications supported by your Precision 3650 Tower.

Table 15. Environmental specifications

Feature	Precision 3650 Tower
Recyclable packaging	Yes
BFR/PVC—free chassis	No
MultiPack packaging	Yes (US only) (optional)
Energy-Efficient Power Supply	Standard
ENV0424 compliant	Yes

NOTE: Wood-based fiber packaging contains a minimum of 35% recycled content by total weight of wood-based fiber. Packaging that contains without wood-based fiber can be claimed as Not Applicable.

Energy Star, EPEAT and Trusted Platform Module (TPM)

Table 16. Energy Star, EPEAT and TPM

Features	Specifications
Energy Star 8.0	Compliant configurations available
EPEAT	Gold compliant configurations worldwide (except India) Silver compliant configurations available in India
Trusted Platform Module (TPM) 2.0[1,2]	Integrated on system board
Firmware-TPM (Discrete TPM disabled)	Optional

NOTE:

[1]TPM 2.0 is FIPS 140-2 certified.

[2]TPM is not available in all countries.

Operating and storage environment

This table lists the operating and storage specifications of your Precision 3650 Tower.

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

Table 17. Computer environment

Description	Operating	Storage
Temperature range	10 °C–35°C (50 °F–95°F)	-40°C-65°C (-40°F-149°F)
Relative humidity (maximum)	20% to 80% (non-condensing, Max dew point temperature = 26°C)	5% to 95% (non-condensing, Max dew point temperature = 33°C)
Vibration (maximum)*	0.26 GRMS random at 5 Hz to 350 Hz	1.37 GRMS random at 5 Hz to 350 Hz
Shock (maximum)	Bottom half-sine pulse with a change in velocity of 50.8 cm/sec (20 in./sec)	105G half-sine pulse with a change in velocity of 133 cm/sec (52.5 in./sec)
Altitude range	3048 m (10,000 ft)	10,668 m (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 when the hard drive is in use.

3

Engineering specifications

Topics:

Physical system dimensions

NOTE: System weight and shipping weight are based on a typical configuration and may vary based on your computer configuration. A typical configuration includes integrated graphics, one hard drive, and one optical drive.

Table 18. Physical system dimensions

Feature	Values
Chassis volume (liters)	20.41 L
Chassis Weight (lb/kg)	23.37/10.6
Chassis dimensions	
Height (in/mm)	13.19 in. (335.0 mm)
Width (in/mm)	6.95 in. (176.6 mm)
Depth (in/mm)	13.58 in. (345.0 mm)
Shipping Weight (lb/kg – includes packaging materials)	33 lb (14.97 kg)
Packaging dimensions	
Height (in/mm)	18.5 in. (470 mm)
Width (in/mm)	13.9 in. (353 mm)
Depth (in/mm)	19.37 in.(492 mm)

System board connector maximum add-in card allowable dimensions

Table 19. M.2 2280 slot for SSD

Number of Slots	• 2 PCIe Gen3 slots with Intel Core i3 processors • 2 PCIe Gen3 and 1 PCIe Gen4 slots with Intel Core i5/i7/i9/Xeon processors
Voltage	3.30/12.0 V
Height (inches / millimeters)	0.14/3.5
Length (inches / millimeters)	3.15/80.0
Maximum wattage	5 W

Table 20. PCIe x16 Connector

Number of Slots	• 1 PCIe Gen3 slot for 10th Generation Intel processors • 1 PCIe Gen4 slot for 11th Generation Intel processors
Voltage	3.30/12.0 V
Height (inches / millimeters)	4.41/112
Length (inches / millimeters)	12.28/312
Maximum wattage	75 W
NOTE: Processor attached PCIe lanes (PCIe express graphics x16 slot) are only validated for discrete graphics. For other AIC types like : Ethernet, USB, WLAN, Serial, Parallel and Thunderbolt cards are not supported on PCIe express graphics slot.	

Table 21. PCI -32 Connector

Number of Slots	1
Voltage	3.30/12.0 V
Height (inches / millimeters)	4.21/106.68
Length (inches / millimeters)	6.9/175.26
Maximum wattage	10 W

Table 22. PCIe x4 Connector (Open ended)

Number of Slots	1 PCIe Gen3 slot
Voltage	3.30/12.0 V
Height (inches / millimeters)	4.41/112
Length (inches / millimeters)	4.72-12.28 /119.91-312
Maximum wattage	25 W

Dust Filter and Cable Cover

This topic illustrates the optional dust filters and cable cover attachments for Dell Precision Tower 3650

Dust Filters

Table 23. Dust filter specifications

	Dust filter specifications
Mesh count (cm/inch)	40/100
Weave	PW
Silk diameter (cm)	0.0055
Open area (%)	80
Thickness (cm)	0.01
Remark	PET

Cable Covers

PCIe add-in cards

USB 3.2 Type C PCIe add-in card

Table 24. USB 3.2 Type C PCIe add-in card

Feature	Values
Bus	• PCI Express 3.0

Table 24. USB 3.2 Type C PCIe add-in card (continued)

Feature	Values
	• Single-lane (x1)
Controller	• PCI Express USB 3.2 Host Controller • Asmedia ASM1142
USB standard	eXtensible Host Controller Interface (xHCI)
IRQ and IO	Assigned by system
USB Communication	
Host interface	• Universal Serial Bus 3.2 • Universal Serial Bus 3.0 • Universal Serial Bus 2.0 • Universal Serial Bus 1.1
Speed	• SuperSpeed+ (10 Gbps) • SuperSpeed (5 Gbps) • High Speed (480 Mbps) • Full Speed (12 Mbps) • Low Speed (1.5 Mbps)
Number of ports	Two ports **NOTE:** One port supports data only and the other port supports full feature.
USB connector	USB 3.2 Type C port (Downstream facing port)
Protection	• +/-15KV IEC61000-4-2 Air Gap Discharge • +/-8KV IEC61000-4-2 Contact Discharge
Audio and Video	
Input interface	• Standard DisplayPort Female • DisplayPort 1.2/1.1
Output interface	USB Type C port
Resolution	4096 x 2160 (3840 x 2160) at 60 Hz (Maximum supported resolution) **NOTE:** The resolution depends on the video source connected to the DisplayPort.
Audio	Supported (Audio pass-through)
Power	
Power source	PCI Express Bus Power
Output power capacity	USB Type C Port - Power Delivery +5 VDC/1.5 A/each port **NOTE:** Total power output capacity is limited by the system power supply.
Over current protection	USB Type C Port - +5 VDC/1.5 A/each port/power switch
Power consumption	3.0 W @ 3.3 V (board only without power output to USB device)
Operating System	
Supported operating system	• Windows 7 • Windows 8.1 • Windows 10 • Ubuntu

Table 24. USB 3.2 Type C PCIe add-in card (continued)

Feature	Values
Environment	
Operating temperature	0°C to 60°C (32°F–140°F)
Operating humidity	5% to 95% RH
Storage temperature	-20°C to 70°C (-4°F to 158°F)
Standards and Certifications	
EMC	• Europe - CE, EN55022 Class B, EN55024, EN61000-3-2, and EN61000-3-3 • US - FCC Part 15 Class B • Japan - VCCI • AS/NZS - C-Tick (CISPR22)
Green	• RoHS • CRoHS • WEEE

Thunderbolt PCIe Add-In Card

Thunderbolt 3 PCIe Card	
Connector Type	Thunderbolt 4, DisplayPort 1.4
Data Rates supported	40 Gb/s
Controller Details	
Controller bus architecture (example PCIe 1.0a x1)	PCIe Gen 3 X4
Data transfer mode (example Bus-Master DMA)	4× PCI Express 3.0, DisplayPort 1.4
Power consumption (full operation per data rate connection speed)	2.5 W + 22.5 W Device
Power consumption (standby operation)	300 mW
Standard compliance (example 802.1P)	Thunderbolt 4, DP 1.4, USB 3.2 Gen2
Hardware Certifications (example FCC, B, GS mark…)	FCC B, UL, CE, VCCI, BSMI, CTICK, KCC
Boot ROM Support	No

Environmental	
Operating System Driver Support	• Windows 10, 64 bit • Ubuntu 20.04 LTS, 64-bit
Manageability (examples WOL, PXE)	None
Management Capabilities Alerting (example ASF 2.0)	None

Dell Ultra Speed Drive (PCIe NVMe SSD on Zoom card)

Table 25. Dell Ultra Speed Drive (PCIe NVMe SSD on Zoom card)specifications

Feature	Values
PCB	
Dimension	166.27 mm x 110.45 mm
Layer	6
Processor/Chipset	
Micro controller	NUVOTON_MINI52FDE
Power IC_5V_DC	ON_NCP3170ADR2G
Power IC_+3P3V_PCIE	ON_NCP1589AMNTWG
Clock buffer	PERICOM_P16C20400BHEX
Add-in slots	
M.2 connector	Gen 3 x 4 (75 pins)
Power consumption	
ZOOM2 with NVME device	13.7 W (max)

Common access card / Personal identification verification module

Table 26. CAC/PIV module speficiations

Feature	Values
PCB	
Dimension	74.50 mm x 45.70 mm
Layer	6
Processor/Chipset	
NFC	Broadcom Cortex-A7 BC58202
Card reader driver	NXP TDA8034HN/C2
USB 2.0 Hub	GENESYS GL850G-OHY60
PROM	WINBOND W25Q128JV 128M/bit
Power IC	RICHTEK RT5796AHGJ5
Power LDO (NFC VBAT)	GMT G9141T11U
Add-in slots	
Card reader connector	1 - 10 pin
USB 2.0 header	1 - 5 pin
NFC header	1 - 6 pin
Bracket space	1

Serial Port PCIe Add-In Card

Table 27. Serial Port PCIe Add-In Card

Feature	Values	
Connector Type	RS-232	
Data Rates Supported	50bps ~115.2Kbps	
Controller Details		
Controller	SUNIX SUN2212 (16C950 UART Compatible)	
Controller Bus Architecture	PCI Express Spec 2.0, Single-Lane (x1)	
Driver Support	Windows 10 (X64)	
FH Serial add in dongle	Optional/ NA	
LP Serial add in dongle	NA/ Optional	
Environmental		
Operating Temperature	0 to 60°C (32 to 140°F)	
Operating Humidity	5 to 95% RH	
Storage Temperature	-20 to 85°C (-4 to 185°F)	

Serial and parallel port PCIe add-in card

Table 28. Serial and parallel port PCIe add-in card

Feature	Values
Interface	• RS-232 • IEEE1284
Data rates	• 50 bps ~115.2 Kbps (serial) • maximum 1.8 Mbps (parallel)
Controller details	
Controller	SUNIX SUN2212 (16C950 UART compatible)
Controller bus architecture	• PCI Express 2.0 • Single-Lane (x1)
Driver support	Windows 10 (64-bit)
Full-height serial/parallel add-in dongle	Optional
Environment	
Operating temperature	0°C to 60°C (32°F–140°F)
Operating humidity	5% to 95% RH
Storage temperature	-20°C to 85°C (-4°F to 185°F)

Intel Ethernet server adapter I210-T1

Table 29. Intel Ethernet server adapter I210-T1

Intel Gigabit NIC PCIe card	Precision 3650 Tower
External connector type	RJ45 with two LED visual indicators

Table 29. Intel Ethernet server adapter I210-T1 (continued)

Intel Gigabit NIC PCIe card	Precision 3650 Tower
Data rates supported	802.3z and 802.3x copper media conformance 10/100/1000-BASE-T operations
Controller Details	
Controller bus architecture	PCIe v2.0 x1 (2.5 GT/s)
Low profile	Half-length form factor conforming to PCIe* CEM v1.1
Integrated Memory	Yes
Power consumption (D0)	1.2 W (max)
IEEE standards compliance	802.3z and 802.3x
Hardware certifications	FCC Class B
Boot ROM	SPI (4-wire) FLASH
Environmental	
Temperature	• Operating—0ºC (32ºF) • Nonoperating—55ºC (131ºF)
Storage temperature	-40ºC to 70ºC (-40ºF to 158ºF)—nonoperating
Relative Humidity (RH)	• Nonoperating—RH of 92% at +55 C@ < 25% RH/hr • Operating—RH of 85% at +55 C@ < 25% RH/hr • Packaged product—RH of 92% at +55 C@ < 40% RH/hr
Vibration (random)	Nonoperating—5 Hz–500 Hz, 3.13 G RMS
Shock	• Nonoperating—Trapezoidal, 50 g, 170 inches/sec • Package product—36-inches free fall height
Manageability	WoL and SMBus

Intel Ethernet Converged Network Adapter X550-T2

Table 30. Intel Ethernet Converged Network Adapter X550-T2 card specifications

Description	Values
External connector type	Dual RJ45 Copper
Data rates supported	10 GbE/5 GbE/2.5 GbE/1 GbE/100 Mb
Controller Details	
Controller bus architecture	Intel Ethernet Controller X550
Low profile	Half-length form factor conforming to PCIe* CEM v1.1
Integrated Memory	Yes
IEEE standards compliance	10GBASE-T as per the IEEE 802.3an standard and 1000BASE-T and 100BASE-TX as per the IEEE 802.3 standard
Hardware certifications	Class A: USA-FCC; Canada - ICES-003/NMB-003, European Union - CE, Japan - VCCI, Taiwan - BSMI, Korea - MSIP, Australia/New Zealand - RCM, Safety EN/UL and CSA C22.2 60950-1
Cabling Type	RJ45 Category 6 up to 55m; Category 6A up to 100m
Speed & Slot Width	8.0 GT/s, x 4 Lane

Table 30. Intel Ethernet Converged Network Adapter X550-T2 card specifications (continued)

Description	Values
Environmental	
Temperature	• Operating—0ºC (32ºF) • Nonoperating—55ºC (131ºF)
Storage temperature	-40ºC to 70ºC (-40ºF to 158ºF)—nonoperating
Relative Humidity (RH)	• Nonoperating—RH of 92% at +55 C@ < 25% RH/hr • Operating—RH of 85% at +55 C@ < 25% RH/hr • Packaged product—RH of 92% at +55 C@ < 40% RH/hr
Vibration (random)	Nonoperating—5 Hz–500 Hz, 3.13 G RMS
Shock	• Nonoperating—Trapezoidal, 50 g, 170 inches/sec • Package product—36-inches free fall height
Manageability	WoL and SMBus

Intel Ethernet server adapter I225-V

Table 31. Intel Ethernet server adapter I225-V

Intel Gigabit NIC PCIe card	Precision 3650 Tower
External connector type	RJ45 with two LED visual indicators for speed, link and activity
Data rates supported	10/100/1000-BASE-T operations
Controller Details	
Controller bus architecture	PCIe Gen 2 V3.1x1
Low profile	Custom size for Dell Desktop system
Integrated Memory	Yes
Power consumption (D0)	2 W (max)
IEEE standards compliance	802.3u
Hardware certifications	FCC Class B
Boot ROM	SPI FLASH
Environmental	
Temperature	• Operating—0ºC (32ºF) • Non-operating—55ºC (131ºF)
Storage temperature	-40ºC to 70ºC (-40ºF to 158ºF)—nonoperating
Relative Humidity (RH)	• Non-operating— 35ºC / 95% RH • Operating— 32ºC / 85% RH
Vibration (random)	• Non-operating— 5-500 Hz , 2.0 Grms • Operating— 5-350 Hz, 0.52 Grms
Shock	• Non-operating— 40G, 19 ms • Operating— 40G, 2.5 ms
Manageability	WoL and SMBus

PCIe lane details

Table 32. PCIe lane details

Expansion Slot Type	Voltage	Maximum Height	Maximum Length	Maximum Wattage
PCIe x16 connector	3.3 V / 12 V	167.65 mm	68.9 mm	75 W
PCIe x4 connector	3.3 V / 12 V	167.65 mm	68.9 mm	25 W

Communications

Intel Ethernet Connection i219-LM

Table 33. Integrated Intel i219-LM Gigabit Ethernet LAN 10/100/1000

Feature	Values
External connector type	RJ45
Supported data rates	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)
100BASE-TX (full-duplex) 200 Mbps	
1000BASE-T (full-duplex) 2000 Mbps	
Environmental	
Operating temperature	0 ° C–85° C (32 ° F–185° F)
Operating humidity	20% to 80% (noncondensing)

Table 33. Integrated Intel i219-LM Gigabit Ethernet LAN 10/100/1000 (continued)

Feature	Values
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.

Intel Ethernet server adapter I225-V

Table 34. Intel Ethernet server adapter I225-V

Intel Gigabit NIC PCIe card	Precision 3650 Tower
External connector type	RJ45 with two LED visual indicators for speed, link and activity
Data rates supported	10/100/1000-BASE-T operations
Controller Details	
Controller bus architecture	PCIe Gen 2 V3.1x1
Low profile	Custom size for Dell Desktop system
Integrated Memory	Yes
Power consumption (D0)	2 W (max)
IEEE standards compliance	802.3u
Hardware certifications	FCC Class B
Boot ROM	SPI FLASH
Environmental	
Temperature	• Operating—0ºC (32ºF) • Non-operating—55ºC (131ºF)
Storage temperature	-40ºC to 70ºC (-40ºF to 158ºF)—nonoperating
Relative Humidity (RH)	• Non-operating— 35°C / 95% RH • Operating— 32°C / 85% RH
Vibration (random)	• Non-operating— 5-500 Hz , 2.0 Grms • Operating— 5-350 Hz, 0.52 Grms
Shock	• Non-operating— 40G, 19 ms • Operating— 40G, 2.5 ms
Manageability	WoL and SMBus

Wireless communication

Qualcomm QCA6174a 802.11ac dual band 2x2 + Bluetooth 5.0

Table 35. Qualcomm QCA6174a 802.11ac dual band 2x2 + Bluetooth 5.0 specifications

Feature	Values
Host interface	M.2 2230 form factor: • Wi-Fi: PCIe • Bluetooth: USB
Network standard	IEEE 802.11a/b/g/n/ac/, MU-MIMO
Wi-Fi alliance certifications	• Wi-Fi Certified a/b/g/n/ac with wave 2 features • WMM • WPA2 • Protected Management Frames • Wi-Fi Direct (For Windows only)
Operating frequency bands	• 2.4 Ghz • 5 Ghz
Data rate	• 2.4 GHz 40M - Up to 300 Mbps • 5 GHz 80M - Up to 867 Mbps
Power consumption	Optimized power modes (sleep states) reduce power consumption during periods of inactivity
Authentication	WPA2 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
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
Bluetooth version	Bluetooth 5.0
Bluetooth data rates	Up to 2 Mbps
Bluetooth operating frequency bands	2.4 GHz

Table 35. Qualcomm QCA6174a 802.11ac dual band 2x2 + Bluetooth 5.0 specifications (continued)

Feature	Values
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	• Operating temperature -10°C to + 65°C (Full performance at shield temperatures up to 85°C) • Storage temperature of -10°C to + 85°C
Humidity	Up to 90% RH non-condensing (at temperatures of 25°C to 35°C)

Intel Wi-Fi 6 AX210 160 MHz (Typhoon Peak 2) 2x2 Wi-Fi and Bluetooth 5.2 M.2 wireless card

Table 36. Intel Wi-Fi 6 AX210 160 MHz (Typhoon Peak 2) 2x2 Wi-Fi and Bluetooth 5.2 M.2 wireless card

Feature	Specifications
Type	Intel AX210
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 6), WMM, WMM-PS, WPA, WPA2, WPS2, Protected Management Frames, and Wi-Fi Direct (For Microsoft Windows only)
Transfer rate	Up to 2400 Gbps
Operating Frequency Bands	2.4 GHz, 5 GHz, and 6 GHz
Data Rate	• 2.4 GHz 40 M - Up to 574 Mbps • 5/6 GHz 80 M - Up to 1.2 Gbps • 5/6 GHz 160 M - Up to 2.4 Gbps
Power consumption	Optimized power modes (sleep states) reduce power consumption during periods of inactivity.
Authentication	WPA and WPA2 Personal and Enterprise; WPA3 (pending operating system support)
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
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 10
Wireless PAN Standard	Dual Mode bluetooth 5.2, BLE

Table 36. Intel Wi-Fi 6 AX210 160 MHz (Typhoon Peak 2) 2x2 Wi-Fi and Bluetooth 5.2 M.2 wireless card (continued)

Feature	Specifications
Bluetooth	5.2
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	• Operating temperature 0°C to + 50°C (Full performance at shield temperatures up to 80°C) • Storage temperature of -40°C to +70°C
Humidity	Up to 90% RH non-condensing (at temperatures of 25°C to 35°C)

Graphics options

Intel UHD graphics

Intel UHD graphics 630

Table 37. Intel UHD 630 graphics specifications

Description	Specifications
Bus type	Integrated
Memory type	DDR4
Memory interface	N/A, Unified Memory Architecture (UMA)
Graphics level	10th Generation Intel Core i processors : GT2 (UHD 630)
Estimated Maximum Power Consumption (TDP)	45 W—included in the CPU power
Maximum color depth	224 (non-HDR), 30 (HDR) bit per pixel
Maximum vertical refresh rate	Up to 60 Hz depending on resolution
Maximum number of Displays supported	3 (Two onboard DP 1.4 port and one VGA, HDMI 2.0, DisplayPort++ 1.4 or, USB Type-C with DP 1.4-alt mode optional on rear I/O card.)
Maximum resolution	4096x2304 @60 Hz

Intel UHD Graphics 750

Table 38. Intel UHD Graphics 750 specifications

Intel UHD 750 Graphics	
Bus Type	Integrated
Memory Type	Shared memory
Graphics Level	11th Generation Intel Core i5/i7/i9
Overlay Planes	Yes

Table 38. Intel UHD Graphics 750 specifications (continued)

Intel UHD 750 Graphics	
Operating Systems Graphics/ Video API Support	DirectX 12, OpenGL 4.5
Supports maximum resolution	• DP: 4096 x 2304 @60 Hz, 24 bpp • Option DP: 4096 x 2304 @60 Hz • Option USB type-C Alt mode: 4096 x 2304 @60 Hz • Option VGA: 1920 x 1200 @60 Hz • Option HDMI2.0: 4096 x 2160 @60 Hz
Number of display supported	Up to three displays supported
Multiple Display Support	Two system-board integrated DP1.4 HBR2 + One video option (VGA/DP1.4 HBR2/HDMI2.0/USB3.2 Gen2x2 type-C Alt-mode)
External connectors	Two system-board integrated DP1.4 HBR2 + One video option (VGA/DP1.4 HBR2/HDMI2.0/USB3.2 Gen2 type-C Alt-mode)

Intel UHD Graphics P750

Table 39. Intel UHD Graphics P750 specifications

Intel UHD 750 Graphics	
Bus Type	Integrated
Memory Type	Shared memory
Graphics Level	11th Generation Intel Core i5/i7/i9
Overlay Planes	Yes
Operating Systems Graphics/ Video API Support	DirectX 12, OpenGL 4.5
Supports maximum resolution	• DP: 5120 x 3200 @60 Hz, 24 bpp • Option DP: 5120 x 3200 @60 Hz • Option USB type-C Alt mode: 5120 x 3200 @60 Hz • Option VGA: 1920 x 1200 @60 Hz • Option HDMI2.0: 4096 x 2160 @60 Hz
Number of display supported	Up to three displays supported
Multiple Display Support	Two system-board integrated DP1.4a HBR3 + One video option (VGA/DP1.4a HBR3/HDMI2.0/USB3.2 Gen2x1 type-C Alt-mode)
External connectors	Two system-board integrated DP1.4a HBR3 + One video option (VGA/DP1.4a HBR3/HDMI2.0/USB3.2 Gen2x1 type-C Alt-mode)

NVIDIA Quadro P400

Table 40. NVIDIA Quadro P400 specifications

Description	Values
GPU Memory	2 GB GDDR5
Memory Interface	64-bit
Memory Bandwidth	Up to 32 GB/s

Table 40. NVIDIA Quadro P400 specifications (continued)

Description	Values
NVIDIA CUDA Cores	256
System Interface	PCI Express 3.0 x16
Max Power Consumption	30 W
Thermal Solution	Active
Form Factor	Height: 2.713 in./68.91 mm and Length: 5.7 in./144.78 mm, Single Slot, Low Profile
Display Connectors	3x mDP 1.4
Max Simultaneous Displays	3 displays
Display Resolution	• 3x 4096x2160 @ 120Hz • 1x 5120x2880 @ 60Hz
Graphics APIs	• Shader Model 5.1 • OpenGL 4.5 • DirectX 12.0 • Vulkan 1.0
Compute APIs	• CUDA, DirectCompute • OpenCL

NVIDIA Quadro P1000

Table 41. NVIDIA Quadro P1000 specifications

Description	Values
Graphics memory	4 GB GDDR5
Bus type	PCIe x16 Gen3
Memory Interface	128-bit
Clock Speeds	1088 MHz graphics core (min. at P0) 2430 MHz memory
GPU base clock	3504 MHz (min. at P0)
Maximum Power	47 W
Display Support	Four mDP 1.4
Maximum Color Depth	Up to 10bit/color
Maximum Vertical Refresh Rate	Up to 395 Hz at 1920 x 1080 Up to 118 Hz at 3840 x 2160
Operating Systems Graphics/ Video API Support	DirectX 12, OpenGL 4.5
Supported Resolutions and Max Refresh Rates (Hz)	• Max Digital : Single DisplayPort 1.4 - 7680 x 4320 (8k) @ 30 Hz (mDP/Type-C to DP) • Max Digital : Dual DisplayPort 1.4 - 7680 x 4320 (8k) @ 60 Hz (mDP/Type-C to DP)
Numbers of display supported	Up to four displays

NVIDIA Quadro P620

Table 42. NVIDIA Quadro P620 specifications

Description	Values
Graphics memory	2 GB GDDR5
Bus type	PCIe x16 Gen 3
Memory Interface	128-bit
Clock Speeds	1266 MHz graphics core (min. at P0) 4012 MHz memory
GPU base clock	1266 MHz (min. at P0)
Estimated Maximum Power	40 W
Display Support	4 x mini-DisplayPort
Maximum Color Depth	Up to 10 bit/color
Maximum Vertical Refresh Rate	• Up to 395 Hz at 1920 x 1080 • Up to 118 Hz at 3840 x 2160
Operating Systems Graphics/ Video API Support	DirectX 12, OpenGL 4.5
Supported Resolutions and Max Refresh Rates (Hz)	Max Digital : Single DisplayPort 1.4 - 5120 x 2880 (4k) @ 60 Hz
Numbers of displays supported	Up to four displays

NVIDIA Quadro P2200

Table 43. NVIDIA Quadro P2200 specifications

Description	Values
GPU Memory	5 GB GDDR5X
Memory Interface	160-bit
Memory Bandwidth	Up to 200 GB/s
NVIDIA CUDA Cores	1280
System Interface	PCI Express 3.0 x16
Max Power Consumption	75 W
Thermal Solution	Active
Form Factor	Height: 4.4 in./111.76 mm / Length: 7.9 in./200.66 mm, Single Slot
Display Connectors	4x DP 1.4
Max Simultaneous Displays	4 direct, 4 DP 1.4 Multi-Stream
Display Resolution	• 4x 4096x2160 @ 120Hz • 4x 5120x2880 @ 60Hz
Graphics APIs	• Shader Model 5.1 • OpenGL 4.63 • DirectX 12.04

Table 43. NVIDIA Quadro P2200 specifications (continued)

Description	Values
	• Vulkan 1.13
Compute APIs	• CUDA, DirectCompute • OpenCL

NVIDIA RTX5000

Table 44. NVIDIA RTX5000 specifications

Graphics memory	16 GB GDDR6
Bus type	PCI Express 3.0 x16
Memory Interface	256-bit
Clock Speeds	Base :1620 MHz / Boot :1815 MHz
Display Support	DP/Type-C
Maximum Color Depth	NA
Estimated Maximum Power	265 W
Maximum Vertical Refresh Rate	NA
Operating Systems Graphics/ Video API Support	DirectX 12.07 Shader Model 5.1, OpenGL 4.6, Vulkan 1.1
Supported Resolutions and Max Refresh Rates (Hz)	Display port • 4096 x 2160 x 24bpp at 120 Hz • 2x 7680 x 4320 x 36bpp at 60 Hz • 5120 x 2880 x 24bpp at 60 Hz USB Type-C • 4096 x 2160 x 24bpp at 120 Hz • 7680 x 4320 x 36bpp at 60 Hz • 5120 x 2880 x 24bpp at 60 Hz
Numbers of Display Support	4x DisplayPort , 1x USB Type-C

AMD Radeon Pro WX3200

Table 45. Radeon Pro WX3200 Specifications

Description	Values
GPU Architecture	Polaris
Compute Units	10
Lithography	14nm FinFET
Peak Single Precision (FP32) Performance	1.66 TFLOPs
Peak Double Precision (FP64) Performance	104 GFLOPs
Stream Processors	640
Memory Size/ Type	4 GB DDR5

Table 45. Radeon Pro WX3200 Specifications (continued)

Description	Values
Memory Interface	128-bit
Memory Bandwidth	96 GB/s
Form Factor	PCIe Add-in Card
Bus Type	PCIe 3.0 x16 (x8 electrical)
TBP	50W
Cooling	Active
Board Width	Single Slot
Board Length	6.6 in. (168 mm)
Board Height	Half Height
Display Outputs	4x Mini-DisplayPort 1.4
Software API Support	• DirectX: 12.0 (feature level 12_0) • OpenGL:4.6 • OpenCL: 2.0 • Vulkan: 1.1
Additional Features	• AMD Remote Workstation • Radeon Pro Software • AMD Eyefinity Technology (Professionals) • Radeon ProRender • Unified Video Decoder (UVD) • Video Code Engine (VCE)

AMD Radeon Pro W5700

Table 46. AMD Radeon Pro W5700 Specifications

Description	Values
GPU Architecture	RDNA
Compute Units	36
Lithography	TSMC 7nm FinFET
Peak Single Precision (FP32) Performance	8.89 TFLOPs
Peak Double Precision (FP64) Performance	556 GFLOPs
Stream Processors	2304
Memory Size/ Type	8 GB DDR6
Memory Interface	256-bit
Memory Bandwidth	448 GB/s
Form Factor	PCIe Add-in Card
Bus Type	PCIe 4.0 x16
TBP	205 W
Cooling	Active
Board Width	Double Slot
Board Length	10.5 in. (267 mm)

Table 46. AMD Radeon Pro W5700 Specifications (continued)

Description	Values
Board Height	Full Height
Display Outputs	5x Mini-DisplayPort 1.4 and 1x USB Type-C
Software API Support	• DirectX: 12.0 (feature level 12_0) • OpenGL:4.6 • OpenCL: 2.0 • Vulkan: 1.1
Additional Features	• RDNA Architecture • AMD Remote Workstation • Radeon Media Engine • Radeon Pro Software • Radeon VR Ready Creator • AMD Eyefinity Technology (Professionals) • Radeon ProRender

AMD Radeon Pro W5500

Table 47. AMD Radeon Pro W5500 Specifications

Description	Values
GPU Architecture	RDNA
Compute Units	22
Lithography	TSMC 7nm FinFET
Peak Single Precision (FP32) Performance	5.35 TFLOPs
Peak Double Precision (FP64) Performance	330 GFLOPs
Stream Processors	1408
Memory Size/ Type	8 GB DDR6
Memory Interface	128-bit
Memory Bandwidth	224 GB/s
Form Factor	PCIe Add-in Card
Bus Type	PCIe 3.0 x16 (x8 electrical)
TBP	125 W
Cooling	Active
Board Width	Single Slot
Board Length	9.5 in. (241 mm)
Board Height	Full Height
Display Outputs	4x DisplayPort 1.4
Software API Support	• DirectX: 12.0 (feature level 12_0) • OpenGL:4.6 • OpenCL: 2.0 • Vulkan: 1.1
Additional Features	• RDNA Architecture • AMD Remote Workstation • Radeon Media Engine

Table 47. AMD Radeon Pro W5500 Specifications (continued)

Description	Values
	• Radeon Pro Software • Radeon VR Ready Creator • AMD Eyefinity Technology (Professionals) • Radeon ProRender

NVIDIA Quadro RTX4000

Table 48. NVIDIA Quadro RTX4000 specifications

Graphics memory	8GB GDDR6
Bus type	PCIe x16 Gen3
Memory Interface	256 bit
Clock Speeds	1202 MHz graphics core (min. at P0) 2454 MHz memory
GPU base clock	3003 MHz (min. at P0)
Estimated Maximum Power	100 W
Display Support	eDP/DVI/ DisplayPort/HDMI
Maximum Color Depth	Up to 10bit/color
Maximum Vertical Refresh Rate	Up to 395Hz at 1920x1080 Up to 118Hz at 3840x2160
Operating Systems Graphics/ Video API Support	DirectX 12, OpenGL 4.5
Supported Resolutions and Max Refresh Rates (Hz)	• Max Digital : Single DisplayPort 1.4 - 7680 x 4320 (8k) @ 30 Hz (mDP/type-c to DP) • Max Digital : Dual DisplayPort 1.4 - 7680 x 4320 (8k) @ 60 Hz (mDP/type-c to DP)
Numbers of Display Support	Up to four displays

Graphics card and power supply unit compatibility

Table 49. Graphics card and power supply unit compatibility matrix

Graphics Card	Single GPU TDP	Aux Power Connectors required	I/O on GPU	Single (S)	Dual (D)	300W PSU	460W PSU	550W PSU	1000W PSU
NVIDIA Quadro RTX5000	265W	6-pin, 8-pin	• Four DisplayPort 1.4 • One USB-C port	Yes	NA	NA	NA	S	S

Table 49. Graphics card and power supply unit compatibility matrix (continued)

Graphics Card	Single GPU TDP	Aux Power Connectors required	I/O on GPU	Single (S)	Dual (D)	300W PSU	460W PSU	550W PSU	1000W PSU
NVIDIA Quadro RTX4000	160W	8-pin	• Three DisplayPort 1.4 • One USB-C port	Yes	Yes	NA	S	S	S, D
NVIDIA Quadro P2200	75W	NA	• Four DisplayPort 1.4	Yes	Yes	S	S, D	S, D	S, D
NVIDIA Quadro P1000	47W	NA	• Four mini-DisplayPort	Yes	Yes	S, D	S, D	S, D	S, D
NVIDIA Quadro P620	40W	NA	• Four mini-DisplayPort	Yes	Yes	S, D	S, D	S, D	S, D
NVIDIA Quadro P400	30W	NA	• Three mini-DisplayPort	Yes	Yes	S, D	S, D	S, D	S, D
AMD Radeon Pro W5700	180W	6-pin, 8-pin	• Five mini-DisplayPort • One USB-C port	Yes	No	NA	S	S	S
AMD Radeon Pro W5500	130W	6-pin	• Four DisplayPort 1.4	Yes	Yes	NA	S	S, D	S, D
AMD Radeon Pro WX3200	55W	NA	• Four mini-DisplayPort	Yes	Yes	S	S, D	S, D	S, D

Video port and resolution matrix

Table 50. Video port and resolution matrix

Port type	DP++ 1.4/HDCP 2.3 port (UMA and Discrete Graphics)	HDMI-OUT port—HDMI 1.4b (UMA Graphics)	HDMI-OUT port—HDMI 2.0 (Discrete Graphics)
Maximum resolution—single display	7680 x 4320 @ 60 Hz	4096 x 2160 @ 30 Hz	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	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	Not applicable

Supported hard drives

2.5-inch 1 TB 5400 RPM SATA Hard-Disk Drive

Table 51. 2.5-inch 1 TB 5400 RPM SATA Hard Disk Drive

Features	Specifications
Capacity (TB)	1 TB HDD 5400 RPM
Dimensions (inches) (W x D x H)	Approximately (2.75 in. x 3.955 in. x 0.276 in.)
Interface type and Maximum speed	Up to 6 Gb/s (SATA 3.0)
MTBF	550,000 hours
Logical Blocks	1,953,525,168
Power Source:	
Power Consumption (reference only)	Idle 0.7 W, Active 3.10 W
Environmental Operating Conditions (Non-Condensing):	
Temperature Range	5°C to 60°C
Relative Humidity Range	5 to 90%
Op Shock (@2 ms)	350G
Environmental Non-Operating Conditions (Non-Condensing):	
Temperature Range	-40°C to 65°C
Relative Humidity Range	5% to 95%

2.5-inch 2 TB 5400 RPM SATA Hard-Disk Drive

Table 52. 2.5-inch 2 TB 5400 RPM SATA Hard-Disk Drive

Capacity (GB)	2 TB HDD 5400 RPM
Dimensions (W x D x H)	Approximately (2.75 in. x 3.937 in. x 0.276 in.)

Table 52. 2.5-inch 2 TB 5400 RPM SATA Hard-Disk Drive (continued)

Interface type and maximum speed	Up to 6 Gb/s (SATA 3.0)
MTBF	550,000 hours
Logical blocks	3,907,029,168
Power source	
Power consumption (reference only)	Idle 0.7 W, Active 3.10 W
Environmental Operating Conditions (Non-Condensing)	
Temperature range	5°C to 60°C
Relative humidity range	5% to 90%
Op shock (@ 2ms)	350 G
Environmental Non-Operating Conditions (Non-Condensing)	
Temperature range	-40°C to 65°C
Relative humidity range	5% to 90%

2.5-inch 500 GB 7200 RPM SATA Hard-Disk Drive

Table 53. 2.5-inch 500 GB 7200 RPM SATA Hard-Disk Drive

Features	Specifications
Capacity (GB)	500 GB HDD 7200 RPM
Dimensions (W x D x H)	2.75 in. x 3.955 in. x 0.276 in.
Interface type and Maximum speed	Up to 6 Gb/s (SATA 3.0)
MTBF	550,000 hours
Logical Blocks	976,773,168
Power Source	
Power Consumption (reference only)	Idle 0.7 W, Active 3.25 W
Environmental Operating Conditions (Non-Condensing):	
Temperature Range	5°C to 60°C
Relative Humidity Range	5 to 90%
Op Shock (@2 ms)	350G
Environmental Non-Operating Conditions (Non-Condensing):	
Temperature Range	-40°C to 65°C
Relative Humidity Range	5 to 95%

2.5-inch 1 TB 7200 RPM SATA Hard-Disk Drive

Table 54. 2.5-inch 1TB 7200 RPM SATA Hard-Disk Drive

Features	Specifications
Capacity (TB)	1 TB HDD 7200 RPM
Dimensions (W x D x H)	2.75 in. x 3.955 in. x 0.276 in.
Interface type and Maximum speed	Up to 6 Gb/s (SATA 3.0)
MTBF	550,000 hours
Logical Blocks	1,953,525,168
Power Source	
Power Consumption (reference only)	Idle 0.7 W, Active 3.25 W
Environmental Operating Conditions (Non-Condensing):	
Temperature Range	5°C to 60°C
Relative Humidity Range	5 to 90%
Op Shock (@2 ms)	350G
Environmental Non-Operating Conditions (Non-Condensing):	
Temperature Range	-40°C to 65°C
Relative Humidity Range	5 to 95%

2.5-inch 500 GB SATA 7200 RPM Opal Self-Encrypting FIPS Hard-Disk Drive

Table 55. 2.5-inch 500 GB SATA 7200 RPM Opal Self-Encrypting FIPS Hard-Disk Drive

Features	Specifications
Capacity (GB)	500 GB HDD 7200 RPM OPAL SED FIPS
Dimensions (inches) (W x D x H)	2.75 x 3.955 x 0.276
Interface type and Maximum speed	Up to 6 Gb/s (SATA 3.0)
MTBF	550,000 hours
Logical Blocks	976,773,168
Power Source	
Power Consumption (reference only)	Idle 0.7 W, Active 3.25 W
Environmental Operating Conditions (Non-Condensing):	
Temperature Range	5°C to 60°C
Relative Humidity Range	5 to 90%
Op Shock (@2 ms)	350G
Environmental Non-Operating Conditions (Non-Condensing):	
Temperature Range	-40°C to 65°C
Relative Humidity Range	5 to 95%

3.5-inch 4 TB 5400 RPM SATA Hard-Disk Drive

Table 56. 3.5-inch 4 TB 5400 RPM SATA Hard-Disk Drive

Features	Specifications
Capacity (GB)	4 TB HDD 5400 RPM
Dimensions (W x D x H)	Approximately (5.79 in. x 4.00 in. x 1.00 in.)
Interface type and maximum speed	Up to 6 Gb/s (SATA 3.0)
MTBF	550,000 hours
Logical blocks	7,814,037,168
Power source	
Power consumption (reference only)	Idle 5W, Active 10 W
Environmental Operating Conditions (Non-Condensing)	
Temperature range	5°C to 60°C
Relative humidity range	5% to 90%
Op shock (@ 2ms)	65 G
Environmental Non-Operating Conditions (Non-Condensing)	
Temperature range	-40°C to 65°C
Relative humidity range	5% to 95%

3.5-inch 500 GB 7200 RPM SATA Hard-Disk Drive

Table 57. 3.5-inch 500 GB 7200 RPM SATA Hard-Disk Drive

Features	Specifications
Capacity (GB)	500 GB HDD 7200 RPM
Dimensions (W x D x H)	Approximately (5.79 in. x 4.00 in. x 1.00 in.)
Interface type and maximum speed	Up to 6 Gb/s (SATA 3.0)
MTBF	550,000 hours
Logical blocks	7,814,037,168
Power source	
Power consumption (reference only)	Idle 5W, Active 10 W
Environmental Operating Conditions (Non-Condensing)	
Temperature range	5°C to 60°C
Relative humidity range	5% to 90%
Op shock (@ 2ms)	65 G

Table 57. 3.5-inch 500 GB 7200 RPM SATA Hard-Disk Drive (continued)

Features	Specifications
Environmental Non-Operating Conditions (Non-Condensing)	
Temperature range	-40°C to 65°C
Relative humidity range	5% to 95%

3.5-inch 1 TB 7200 RPM SATA Hard-Disk Drive

Table 58. 3.5-inch 1 TB 7200 RPM SATA Hard-Disk Drive

Features	Specifications
Capacity (GB)	1 TB HDD 7200 RPM
Dimensions (W x D x H)	Approximately (5.79 in. x 4.00 in. x 1.00 in.)
Interface type and maximum speed	Up to 6 Gb/s (SATA 3.0)
MTBF	550,000 hours
Logical blocks	1,953,525,168
Power source	
Power consumption (reference only)	Idle 5 W, Active 10 W
Environmental Operating Conditions (Non-Condensing)	
Temperature range	5°C to 60°C
Relative humidity range	5% to 90%
Op shock (@ 2ms)	65 G
Environmental Non-Operating Conditions (Non-Condensing)	
Temperature range	-40°C to 65°C
Relative humidity range	5% to 90%

3.5-inch 2 TB 7200 RPM SATA Hard-Disk Drive

Table 59. 3.5-inch 2 TB 7200 RPM SATA Hard-Disk Drive

Features	Specifications
Capacity (GB)	2 TB HDD 7200 RPM
Dimensions (W x D x H)	Approximately (5.79 in. x 4.00 in. x 1.00 in.)
Interface type and maximum speed	Up to 6 Gb/s (SATA 3.0)
MTBF	550,000 hours
Logical blocks	3,907,029,168
Power source	

Table 59. 3.5-inch 2 TB 7200 RPM SATA Hard-Disk Drive (continued)

Features	Specifications
Power consumption (reference only)	Idle 5W, Active 10 W
Environmental Operating Conditions (Non-Condensing)	
Temperature range	5°C to 60°C
Relative humidity range	5% to 90%
Op shock (@ 2ms)	65 G
Environmental Non-Operating Conditions (Non-Condensing)	
Temperature range	-40°C to 65°C
Relative humidity range	5% to 90%

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

Table 60. 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
Interface type and maximum speed	Gen 3 PCIe 32 Gb/s
MTTF	1.4 M hours
Logical blocks	500,118,192
Power Source	
Power consumption (reference only)	• Idle : 5 mW (PS4) • Active : 4.5 W
Environmental Operating Conditions (Non-Condensing)	
Temperature range	0°C to 70°C
Relative humidity range	10% to 90%
Non-op shock (@0.5 ms)	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 Gen 3 PCIe x4 NVMe Class 40 Solid-State Drive

Table 61. M.2 2280 512 GB Gen 3 PCIe x4 NVMe 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
Power Source	
Power consumption (reference only)	• Idle : 5 mW (PS4) • Active : 4.5 W
Environmental Operating Conditions (Non-Condensing)	
Temperature range	0°C to 70°C
Relative humidity range	10% to 90%
Non-op shock (@0.5 ms)	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 Gen 3 PCIe x4 NVMe Class 40 Solid-State Drive

Table 62. M.2 2280 1 TB Gen 3 PCIe x4 NVMe 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
Power Source	
Power consumption (reference only)	• Idle : 5 mW (PS4) • Active : 4.5 W
Environmental Operating Conditions (Non-Condensing)	
Temperature range	0°C to 70°C
Relative humidity range	10% to 90%

Table 62. M.2 2280 1 TB Gen 3 PCIe x4 NVMe Class 40 Solid-State Drive (continued)

Features	Specifications
Non-op shock (@0.5 ms)	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 Gen 3 PCIe x4 NVMe Class 40 Solid-State Drive

Table 63. M.2 2280 2 TB Gen 3 PCIe x4 NVMe Class 40 Solid-State Drive

Capacity	2 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	4000,797,360
Power Source	
Power consumption (reference only)	• Idle : 5 mW (PS4) • Active : 4.5 W
Environmental Operating Conditions (Non-Condensing)	
Temperature range	0°C to 70°C
Relative humidity range	10% to 90%
Non-op shock (@0.5 ms)	1500G
Environmental Non-Operating Conditions (Non-Condensing)	
Temperature range	-40°C to 70°C
Relative humidity range	5% to 95%

512 GB Gen 4 PCIe NVMe M.2 2280 solid-state drive

Table 64. 512 GB Gen 4 PCIe NVMe M.2 2280 solid-state drive

Feature	Specifications
Capacity (GB)	512 GB
Dimensions (W x D x H)	22 x 80 x 2.38 mm
Interface type and maximum speed	PCIe Gen4 64 Gb/s (up to 4 lanes)
MTBF	1.4M hours

Table 64. 512 GB Gen 4 PCIe NVMe M.2 2280 solid-state drive (continued)

Feature	Specifications
Logical blocks	1,000,215,216
Power source	
Power consumption (reference only)	Idle 5 mW (PS4) , Active 5 W
Environmental Operating Conditions (Non-Condensing)	
Temperature range	0°C to 70°C
Relative humidity range	10% to 90%
Environmental Non-Operating Conditions (Non-Condensing)	
Temperature range	-40°C to 70°C
Relative humidity range	5% to 95%
Non-Op Shock (@ 0.5 ms)	1,500G

1 TB Gen 4 PCIe NVMe M.2 2280 solid-state drive

Table 65. 1 TB Gen 4 PCIe NVMe M.2 2280 solid-state drive

Feature	Specifications
Capacity (GB)	1 TB
Dimensions (W x D x H)	22 x 80 x 3.73 mm
Interface type and maximum speed	PCIe Gen4 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), Active 5 W
Environmental Operating Conditions (Non-Condensing)	
Temperature range	0°C to 70°C
Relative humidity range	10% to 90%
Environmental Non-Operating Conditions (Non-Condensing)	
Temperature range	-40°C to 70°C
Relative humidity range	5% to 95%
Non-Op Shock (@ 0.5 ms)	1,500G

M.2 2280 2 TB PCIe NVMe Gen 4x4 Class 40 Solid-State Drive

Table 66. M.2 2280 2 TB PCIe NVMe Gen 4x4 Class 40 Solid-State Drive

Capacity	2 TB
Dimensions	22.00 mm x 80.00 mm x 3.73 mm
Interface type and maximum speed	Gen 4x4 PCIe 32 Gb/s
MTTF	1.4 M hours
Logical blocks	4000,797,360
Power Source	
Power consumption (reference only)	• Idle: 5 mW (PS4) • Active: 4.5 W
Environmental Operating Conditions (Non-Condensing)	
Temperature range	0°C to 70°C
Relative humidity range	10% to 90%
Non-op shock (@0.5 ms)	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 Gen 3 PCIe x4 NVMe Opal Self-Encrypting Class 40 Solid-State Drive

Table 67. 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
Power Source	
Power consumption (reference only)	• Idle : 5 mW (PS4) • Active : 4.5 W
Environmental Operating Conditions (Non-Condensing)	
Temperature range	0°C to 70°C
Relative humidity range	10% to 90%

Table 67. M.2 2280 256 GB Gen 3 PCIe x4 NVMe Opal Self-Encrypting Class 40 Solid-State Drive (continued)

Features	Specifications
Non-op shock (@0.5 ms)	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 Gen 3 PCIe x4 NVMe Opal Self-Encrypting Class 40 Solid-State Drive

Table 68. M.2 2280 512 GB Gen 3 PCIe x4 NVMe 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
Power Source	
Power consumption (reference only)	• Idle : 10 mW (PS4) • Active : 4.5 W
Environmental Operating Conditions (Non-Condensing)	
Temperature range	0°C to 70°C
Relative humidity range	5% to 90%
Non-op shock (@0.5 ms)	1500G
Environmental Non-Operating Conditions (Non-Condensing)	
Temperature range	-10°C to 85°C
Relative humidity range	5% to 95%

M.2 2280 1 TB Gen 3 PCIe x4 NVMe Opal Self-Encrypting Class 40 Solid-State Drive

Table 69. M.2 2280 1 TB Gen 3 PCIe x4 NVMe Opal Self-Encrypting Class 40 Solid-State Drive

Capacity	1 TB
Dimensions	22.00 mm x 80.00 mm x 2.38 mm

Table 69. M.2 2280 1 TB Gen 3 PCIe x4 NVMe Opal Self-Encrypting Class 40 Solid-State Drive (continued)

Interface type and maximum speed	Gen 3 PCIe 32 Gb/s (Up to 4 lanes)
MTTF	1.4 M hours
Logical blocks	2000,409,264
Power Source	
Power consumption (reference only)	• Idle : 5 mW (PS4) • Active : 4.5 W
Environmental Operating Conditions (Non-Condensing)	
Temperature range	0°C to 70°C
Relative humidity range	10% to 90%
Non-op shock (@0.5 ms)	1500G
Environmental Non-Operating Conditions (Non-Condensing)	
Temperature range	-40°C to 70°C
Relative humidity range	5% to 95%

512 GB M.2 NVMe PCIe SSD Class 50

Table 70. 512 GB M.2 NVMe PCIe SSD Class 50

Capacity (GB)	512 GB
Dimensions (W x D x H)	Approximately (22.00 in. x 80.00 in. x 2.38 in.)
Interface type and maximum speed	PCIe Gen3 8 Gb/s (up to 4 lanes)
MTBF	1.5 Million hours
Logical blocks	1,000,215,216
Power source	
Power consumption (reference only)	Idle 600 mW, Active 5 mW
Environmental Operating Conditions (Non-Condensing)	
Temperature range	0°C to 70°C
Relative humidity range	5% to 95%
Op shock (@ 2ms)	1500 G
Environmental Non-Operating Conditions (Non-Condensing)	
Temperature range	-40°C to 85°C
Relative humidity range	5% to 95%

1 TB M.2 NVMe PCIe SSD Class 50

Table 71. 1 TB M.2 NVMe PCIe SSD Class 50

Capacity (GB)	1 TB
Dimensions (W x D x H)	Approximately (22 in. x 42 in. x 3.65 in.)
Interface type and maximum speed	PCIe Gen3 8Gb/s (up to 4 lanes)
MTBF	1.5 Million Hours
Logical blocks	2,000,430,432
Power source	
Power consumption (reference only)	Idle 600 mW, Active 5 mW
Environmental Operating Conditions (Non-Condensing)	
Temperature range	0°C to 70°C
Relative humidity range	5% to 95%
Op shock (@ 2ms)	1500G
Environmental Non-Operating Conditions (Non-Condensing)	
Temperature range	-40°C to 85°C
Relative humidity range	5% to 95%

Power supply unit

Table 72. Power supply unit specifications

Description	Values			
Type	300 W Gold	460 W Gold	550 W Gold	1000 W Gold
Input voltage	90 VAC to 264 VAC	90 VAC to 264 VAC	90 VAC to 264 VAC	90 VAC to 264 VAC
Input frequency	47 Hz to 63 Hz	47 Hz to 63 Hz	47 Hz to 63 Hz	47 Hz to 63 Hz
Input current (maximum)	6 A	8 A	8 A	14 A
Output current (continuous)	• 5.1 V /13 A • 12 VA1/16.5 A • 12 VA2/16.5 A • 12 VB/16 A • 3.3 V/10 A • 5.1 Vaux/4 A	• 5.1 V /20 A • 12 VA1/18 A • 12 VA2/18 A • 12 VB/16 A • 12 VC/18 A • 3.3 V/15 A • 5.1 Vaux/4 A	• 5.1 V /20 A • 12 VA1/18 A • 12 VA2/18 A • 12 VB/16 A • 12 VC1/18 A • 12 VC2/18 A • 3.3 V/15 A • 5.1 Vaux/4 A	• 12 VA / 42 A • 12 VB / 52 A • 12 D / 16 A • 3.3 V / 20 A • 5.1 V / 20 A • -12 V / 0.5 A • 5.1 Vaux / 4 A
Rated output voltage	• 5.1 V • 12 VA1 • 12 VA2 • 12 VB	• 5.1 V • 12 VA1 • 12 VA2 • 12 VB	• 5.1 V • 12 VA1 • 12 VA2 • 12 VB	• 12 VA • 12 VB • 12 D • 3.3 V

Table 72. Power supply unit specifications (continued)

Description	Values			
	• 3.3 V • 5.1 Vaux	• 12 VC • 3.3 V • 5.1 Vaux	• 12 VC1 • 12 VC2 • 3.3 V • 5.1 Vaux	• 5.1 V • -12 V • 5.1 Vaux
Temperature range:				
Operating	5°C to 50°C (41°F to 122°F)	5°C to 50°C (41°F to 122°F)	5°C to 50°C (41°F to 122°F)	5°C to 50°C (41°F to 122°F)
Storage	-40°C to 70°C (-40°F to 158°F)	-40°C to 70°C (-40°F to 158°F)	-40°C to 70°C (-40°F to 158°F)	-40°C to 70°C (-40°F to 158°F)

Accessories

Table 73. Accessories

Accessories	
Input Device	• 3Dconnexion SpaceMouse Wireless - SpaceMouse Wireless 3D Mouse • Dell Multi-Device Wireless Keyboard and Mouse Combo - KM7120W • Dell Premier Wireless Keyboard and Mouse - KM717
Audio	• Dell Pro Stereo Soundbar - AE515M • Jabra Evolve 75
Monitors	• Dell UltraSharp 27 4K USB-C Monitor - U2720Q • Dell UltraSharp 43 4K USB-C Monitor - U4320Q • Dell UltraSharp 49 (Curved monitor) - U4919DW
Chassis accessories	• Precision MiniTower Cable Cover • Precision MiniTower Dust Filter

Mil-SPEC

The Precision 3650 Tower meets military specifications for the following MIL-STD 810G tests:

Table 74. Tower - Military specifications

Test Category	Test Method	Test Parameters
Non-operating altitude test	Method 500.5 Procedure I	Test specification: • Altitude: 15,000 ft • Temperature: 21°C
Operating altitude test	Method 500.5 Procedure II	Test specification: • Altitude: 15,000 ft • Temperature: 21°C
Non-operating high temperature test	Method 501.5 Procedure I	Test specification: • High temperature cycles, climatic category A1 - Hot dry • Duration: 7 cycles, Non-Operating

Table 74. Tower - Military specifications (continued)

Test Category	Test Method	Test Parameters
Operating high temperature test	Method 501.5 Procedure II	Test specification: • Temperature: 60°C • Duration: 120 hours constant
Non-operating low temperature test	Method 502.5 Procedure I - Storage	Test specification: • Temperature: -51°C • Duration: 24 hours
Operating low temperature test	Method 502.5 Procedure II - Operation	Test specification: • Temperature: -29°C • Duration: 24 hours
Humidity test	Method 507.5 Procedure I	Induced B3 • Duration: Hot-humid, 15 days exposure Induced B3, Non-operating
Mechanical shock test - I Bench handling	Method 516.6 Procedure VI	Test specification: • The lifted edge of the chassis has been raised 100 mm (4 in.) above the horizontal bench top
Blowing dust test	Method 510.5 Procedure I	Test specification: • Temperature: 25°C and 60°C • Dust concentration: (10.6±7) g/m³ • Air flow velocity: 8.9 m/s
Operating vibration test	Method 514.6 Procedure I	Refer table 514.6C-II: Category 4 - common carrier
Non-operating vibration test	Method 514.6 Procedure I	Refer table 514.7E-1: Category 24 - General minimum integrity exposure
Mechanical shock test - II operating	Requested by Client	Test specification: • Pulse shape: Half-sine • Acceleration: 185 g • Pulse duration: 2 ms • Shock direction: 6 faces (±X, ±Y, ±Z axes) • No. of shock: 1 shock/ face (total 6 shocks)
Mechanical shock test - III non-operating	Requested by Client	Test specification: • Pulse shape: Trapezoidal • Acceleration: 30 g • Velocity change: 304 inch/second • Shock direction: 6 faces (±X, ±Y, ±Z axes) • No. of shock: 1 shock/ face (total 6 shocks)
Mechanical shock test - IV Non-operating	Requested by Client	Test specification: • Pulse shape: Half-sine • Acceleration: 185 g • Pulse duration: 2 ms • Shock direction: 12 faces (±X, ±Y, ±Z axes)

Table 74. Tower - Military specifications (continued)

Test Category	Test Method	Test Parameters
		• No. of shock: 1 shock/ face (total 12 shocks)

Chassis enclosure and ventilation requirements

Enclosure ventilation

If your enclosure has doors, they need to be of a type that allows at least 30% airflow through the enclosure (front and back).

Enclosure minimum clearance

Leave a 10.2 cm (4 in.) minimum clearance on all vented sides of the computer to permit the airflow required for proper ventilation.

Recommended enclosure

Do not install your computer in an enclosure that does not allow airflow/dusty environment/temperate over 35ºC. Do not put any objects to directly block air-vent. This restricts the airflow and impacts your computer's performance, possibly causing it to overheat.

Open desk minimum clearance

If your computer is installed in a corner, on a desk, or under a desk, leave at least 5.1 cm (2 in.) clearance from the back of the computer to the wall to permit the airflow required for proper ventilation.

Acoustic Noise Emission Information Tower

Table 75. Precision 3650 Tower

Component	Test Configuration
CPU	Xeon W-1390P
Memory	DDR4 UDIMM 3200 MHz 32 GB
HDD (#, capacity)	3.5-inch HDD 2 TB 7200 RPM
ODD	Ultra Slim SATA DVD-ROM
Graphics Adapter	NVIDIA GeForce RTX 3090

Table 76. Declared Sound Power (LWAd)

Operating Mode	Declared Sound Power(LWAd)
Idle	3.4
HDD Operating	3.9
CPU Stressed	4.3
ODD Operating	4.3

Table 77. A-Weighted Sound Pressure Level (dB)

Declared Sound Pressure (LpA)				
	Tabletop System		Floor Standing System	
Operating Mode	Operator Position	Bystander Position	Operator Position	Bystander Position
Idle	29.7	24.0	N/A	N/A
CPU Stressed	35.7	31.0	N/A	N/A

All tests are conducted according to ISO 7779 and declared according to ISO 9296 except CPU Stressed. This test mode is not specified in ISO 7779, but was measured using the same microphone distances and measurement techniques defined for the other reported operating modes.

Declared Sound Power rounded to nearest tenth of a bel per ISO 9296 section 4.4.2

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.

Systems management features

Systems Management—From On-Premises To The Cloud

Dell Client Command Suite—A free toolkit available for download, for all Precision PCs at https://dell.com/command, automates and streamlines systems management tasks, saving time, money, and resources. It consists of the following modules that can be used independently, or with various systems management consoles such as SCCM.

- **Dell Command | Deploy**—Enables easy operating system deployment across all major Operating System (OS) deployment methodologies and provides numerous system-specific drivers that have been extracted and reduced to an Operating System-consumable state.
- **Dell Command I Configure**—A graphical user interface (GUI) admin tool for configuring and deploying hardware settings in a pre-Operating System or post-Operating System environment. It operates seamlessly with SCCM and Airwatch and can be self-integrated into LANDesk and KACE. Command I Configure allows you to remotely automate and configure over 150+ BIOS settings for a personalized user experience.
- **Dell Command I PowerShell Provider**—Can do the same things as Command I Configure, but with a different method. PowerShell is a scripting language that allows customers to create a customized and dynamic configuration process.
- **Dell Command I Monitor**—A Windows Management Instrumentation (WMI) agent that provides IT administrators with an extensive inventory of the hardware and health-state data. IT administrators can also configure hardware remotely by using command line and scripting.
- **Dell Command | Update (end-user tool)**—A factory-installed software and allows IT administrators to individually manage and automatically present, install Dell updates to the BIOS drivers, and software. Command Update eliminates the time-consuming process of update installation.
- **Dell Command I Update Catalog**—Provides searchable metadata that allows the management console to retrieve the latest system-specific updates (driver, firmware, 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 Operating System (Dell exclusive features).
- **Dell Command | Integration Suite for System Center**—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).

Intel vPro—Only available on the Dell Precision Tower 3650 with Intel Core i5, i7 and i9 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 Optimizer

Dell Optimizer is a software application that intelligently optimizes the performance of your system by using artificial intelligence and machine learning. Dell Optimizer dynamically configures your system settings to optimize the performance of your applications. It improves the productivity, performance, and user experience through system usage analysis and learning.

On Dell Precision workstations, Dell Optimizer for Precision includes an analytics feature that collects extensive data about your system and helps identify potential issues

To learn more about Dell Optimizer, visit Dell support at: https://www.dell.com/support/home/en-us/product-support/product/dell-optimizer/docs

Environmental

Table 78. Environmental specifications

Feature	Dell Precision 3650 Tower
Recyclable packaging	Yes
BFR/PVC—free chassis	No
Vertical orientation packaging support	Yes
Energy-Efficient Power Supply	Standard
ENV0424 compliant	Yes

NOTE: Wood-based fiber packaging contains a minimum of 35% recycled content by total weight of wood-based fiber. Packaging that contains without wood-based fiber can be claimed as Not Applicable. Anticipated Required Criteria for EPEAT Revision Effective 1H 2018.

4

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 79. Self-help resources

Self-help resources	Resource location
Information about Dell products and services	https://www.dell.com/
Dell Support	
Tips	
Contact Support	In Windows search, type `Contact Support`, and press Enter.
Online help for operating system	• Windows: https://www.dell.com/support/windows • Linux: https://www.dell.com/support/linux
Troubleshooting information, user manuals, set up instructions, product specifications, technical help blogs, drivers, software updates, and so on.	https://www.dell.com/support/home/
Dell knowledge base articles for various of system concerns:	1. Go to https://www.dell.com/support/home/?app=knowledgebase. 2. Type the subject or keyword in the **Search** box. 3. Click **Search** to retrieve the related articles.
Learn and get more information about your product: • Product specifications • Operating system • Setting up and using your product • Data backup • Troubleshooting and diagnostics • Factory and system restore • BIOS information	Dell provides several online and telephone-based support and service options. 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. • Select **Detect Product**. • Locate your product through the drop-down menu under **View Products**. • Enter the **Service Tag number** or **Product ID** in the search bar. • Once on product support page, scroll down to Manuals and Documents section to preview all the Manuals, documents, and other information for your product.

Contacting Dell

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

1. Go to https://www.dell.com/support/.
2. Select your country/region from the drop-down menu on the lower right corner of the page.
3. For **customized support:**
   a. Enter your system Service Tag in the **Enter your Service Tag** field.
   b. Click **submit**.
      - The support page that lists the various support categories is displayed.
4. For **general support:**
   a. Select your product category.
   b. Select your product segment.
   c. Select your product.
      - The support page that lists the various support categories is displayed.
5. For contact details of Dell Global Technical Support, see https://www.dell.com/contactdell.

   NOTE: The Contact Technical Support page is displayed with details to call, chat, or email the Dell Global Technical Support team.

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