Overview

HP Elite t755 Thin Client

FRONT

1. Power button (with integrated power indicator)
2. Flash memory activity indicator
3. (2) USB-A 3.2 Gen 1 ports
4. (1) USB 3.2 Gen 2 Type C® port
5. 3.5 mm combo headset/audio jack
6. Access panel to information labels and VESA 100 mounting holes
7. System Stand

BACK

1. (4) DisplayPort™ 1.2 digital video outputs
2. RJ45 GbE network interface connector
3. 19V DC 4.5mm power input
4. Cable lock slot
5. Rear I/O cover removal latch
6. (2) USB-A 2.0 ports
7. (2) USB-A 3.2 Gen 1 ports
8. Configurable Option Port - one of the following:
   - Blank; no optional configured port
   - Serial port with configurable power
   - External Wi-Fi® antenna connector
   - Audio port
9. PCI Express expansion slot; factory options include:
   - Discrete graphics card
   - Fiber Optic NIC interface

Overview

AT A GLANCE

- AMD Ryzen V2546 System on Chip; 3– 3.95 GHz; 6 cores, 12 threads[3]
- AMD Memory Guard technology that encrypts data in main memory
- DDR4 dual-channel SDRAM system memory; up to 3200 MT/s transfer rate; two SODIMM slots

  (4) DisplayPort™ 1.2 video outputs supporting up to UHD/4K (3840 x 2160 @ 60 Hz) resolutions[4]

  NOTE: DisplayPort™ cables and displays sold separately.
- Optional AMD Radeon RX 6300 2GB GDDR6 LP PCIe graphics card provides support for an additional 2 displays, bringing the system support total to six displays at up to UHD/4K (3840 x 2160 @ 60 Hz) resolution.[4]
- Solid-state flash memory storage; M.2 form factor modules; two slots
- All models rated for operation within an ambient operating temperature of up to 40 degrees C.
- Gigabit Ethernet (GbE) network connection.
- Optional Allied Telesis PCI Express Fiber Optic NICs; Fast Ethernet (100 Mb/s) or Gigabit (1,000 Mb/s)
- Optional Realtek 8852BE Wi-Fi 6 + Bluetooth® 5.3 wireless card, 8852CE Wi-Fi 6E +Bluetooth® 5.3 wireless card adapter including antennas integrated internally in the chassis· (Antenna is internally integrated in the chassis with the Wi-fi® SKU)

  NOTE: Fiber optic and Wi-Fi® NIC options cannot be supported together, Wi-Fi 6E not available with Win10

  NOTE: Wireless features, performance and support may vary depending on environmental variables such placement, settings and firmware of your access points. Please contact your wireless vendor for support of your wireless environment
- Optional remote external Wi-Fi® antenna system
- Optional serial port
- Integrated PC speaker for basic audio playback; 3.5 mm combo headset/audio jack on front
- 90W non-PFC external power adapter
- Security features include a TCG Common Criteria and FIPS 140-2 certified TPM version 2.0 and a system UEFI (BIOS) designed to address NIST SP 800-147 BIOS protection guidelines and NIST SP800-155 BIOS integrity measurement guidelines.
- A cable lock slot is provided for use with a cable lock to enable the system's physical security.
- Engineered with an active thermal solution including active thermal management technology that monitors the system operating temperatures, throttles SOC operation if appropriate and prevents unit thermal shutdown.
- ENERGY STAR® certified configurations available and EPEAT® Silver registered in the United States (except for some models configured with Fiber Optic NIC networking options). See http://www.epeat.net for registration status in other countries.
- Post-consumer recycled plastics content greater than 50% total unit plastics (by weight)
- Low halogen[2] material content
- All models TAA compliant in North America

[1] Wireless access point and Internet access is required; availability of public wireless access points is limited

[2] This product is low halogen except for power cords, cables and peripherals, as well as the optional Fiber Optic NIC module; service parts obtained aftermarket may not be low halogen

[3] Multicore is designed to improve performance of certain software products. Not all customers or software applications will necessarily benefit from use of this technology. Performance and clock frequency will vary depending on application workload and your hardware and software configurations. AMD's numbering is not a measurement of clock speed.

[4] DisplayPort™ cables and displays sold separately.

Overview

Warranty

HP one-year hardware limited warranty in most regions; HP Care Packs* are available to extended your protection beyond your standard limited warranty; for more details visit http://www.hp.com/go/cpc

*HP Care Packs are sold separately. Service levels and response times for HP Care Packs may vary depending on your geographic location. Service starts on date of hardware purchase. Restrictions and limitations apply. For details, visit www.hp.com/go/cpc. HP Services are governed by the applicable HP terms and conditions of service provided or indicated to Customer at the time of purchase. Customer may have additional statutory rights according to applicable local laws, and such rights are not in any way affected by the HP terms and conditions of service or the HP Limited Warranty provided with your HP Product.

Technical Specifications

OPERATING SYSTEMS

- HP ThinPro, including HP /Smart Zero Core[2]
- Windows 10 IoT Enterprise LTSC 2021[1]
- IGEL
- No OS

1. Not all features are available in all editions or versions of Windows. Systems may require upgraded and/or separately purchased hardware, drivers, software or BIOS update to take full advantage of Windows functionality. ISP fees may apply, and additional requirements may apply over time for updates. See http://www.windows.com.
2. Not all features are available with HP ThinPro, Smart Zero Core, IGEL and No OS.

PROCESSOR

Model	CPU Frequency Max/Base	Cores/Threads	GPU Type	GPU frequency
AMD Ryzen Embedded V2546	3/3.95 GHz	6/12	RadeonTM Graphics	1.5 GHz

3. Multicore is designed to improve performance of certain software products. Not all customers or software applications will necessarily benefit from use of this technology. Performance and clock frequency will vary depending on application workload and your hardware and software configurations. Intel's numbering, branding and/or naming is not a measurement of higher performance.
4. Processor speed denotes maximum performance mode; processors will run at lower speeds in battery optimization mode.
5. In accordance with Microsoft's support policy, HP does not support the Windows 8 or Windows 7 operating system on products configured with Intel and AMD 7th generation and forward processors or provide any Windows 8 or Windows 7 drivers on http://www.support.hp.com

DISPLAY SUPPORT

Number of displays supported

A maximum of 6 4K displays are supported (with optional Graphics Card)
Up to 1 x 4K60 Hz video playback (full screen mode) on one of the 4K displays, dual channel memory is required.

Combination:

4 x DisplayPort™ (onboard)

4 x DisplayPort™ (onboard) + [(1) DisplayPort™ + (1) HDMI (optional discrete Graphics card)]

Video outputs

4 x DisplayPort™ (onboard)

4 x DisplayPort™ (onboard) + [(1) DisplayPort™ + (1) HDMI (optional discrete Graphics card)]

Video Resolution Support Matrix

Windows 10 IoT Enterprise LTSC 2021	FHD 1920 x 1080 @ 60 Hz	UHD 3840 x 2160 @ 60Hz	UHD 3840 x 2160 @ 60Hz

Technical Specifications

Memory configuration	Single/Dual Channel	Single Channel	Dual Channel
Maximum number of supported displays	6	1	6
1080p playback	✓	✓	✓
UHD/4K video playback		✓*	✓

*Dual channel memory required for 4K video playback for a maximum of one 4K display

Windows 10 IoT 21H2	≤6 x FHD 1920 X 1080 @ 60Hz	1 x UHD/4K 3840 x 2160 @ 60Hz	4 x UHD/4K 3840 x 2160 @ 60Hz (2 x 4G RAM or above)	6 x UHD/4K 3840 x 2160 @ 60Hz (2 x 8G RAM or above)
Static screen (no video)	✓	✓	✓	✓
1080 60fps (or below) video	✓	✓	✓	✓
4K 30fps video		✓*		
4K 60fps video		✓*		

Thinpro 8.1	≤6 x FHD 1920 X 1080 @ 60Hz	1 x UHD/4K 3840 x 2160 @ 60Hz	4 x UHD/4K 3840 x 2160 @ 60Hz (2 x 4G RAM or above)	6 x UHD/4K 3840 x 2160 @ 60Hz (2 x 4G RAM or above)
Static screen (no video)	✓	✓	✓	✓

NOTE: HP highly recommends configuring the HP Elite t755 Thin Client with dual channel memory for optimized video performance. UHD/4K video playback results may vary based on hardware configuration and installed applications.

SYSTEM MEMORY

Type: DDR4 dual channel SDRAM

Data Transfer Rate: Up to 3,200 MT/s

Peak Transfer Rate: Up to 25,600 MB/s

Number of Slots 2 x SODIMM

Capacities: 4, 8, 16 and 32 GB

NOTES:

- The actual transfer rates will be dependent upon the specification of the SODIMM modules used
- The Graphics Processing Unit (GPU) uses part of the total system memory. System memory dedicated to graphics performance is not available for use by other programs
- HP recommends dual channel memory (two SODIMMs) configurations for optimal system performance

Technical Specifications

UEFI

UEFI Specification Revision:	2.7A
TPM 2.0:	Meets requirements for Common Criteria, an independent third-party certification of trustworthiness
	Meets requirements for FIPS 140-2, a standard for cryptographic integrity
Security features:	Security features include a TCG Common Criteria and FIPS 140-2 certified TPM version 2.0 and a system UEFI (BIOS) designed to address NIST SP 800-147 BIOS protection guidelines and NIST SP800-155 BIOS integrity measurement guidelines.

STORAGE

Type:	NAND flash memory; non-volatile
Number of Sockets:	2 x M.2 supporting eMMC and NVMe flash memory modules
Capacities:	32 GB eMMC flash module 64 GB eMMC flash module 128 GB (2 x 64GB) eMMC (Combo) 256 GB M.2 NVMe flash module 512 GB M.2 NVMe flash module

Input/Output

USB Interfaces:	Front access:	(2) USB-A 3.2 Gen 1 port (1) USB-C® 3.2 Gen 2 port
	Rear access:	(2) USB-A 2.0 ports (2) USB-A 3.2 Gen 1 ports
Video Outputs:	Standard:	(4) DisplayPort™ 1.2 digital outputs
	With optional graphics card:	(6) DisplayPort™ 1.2 digital outputs (optional graphics card contains 1xDP™ & 1x HDMI)
I/O Interfaces:	Standard:	• RJ45 network interface • 3.5 mm combo headset/audio jack (rear access)
	Option Port:	• Blank; no optional port • Serial port with configurable power • External Wi-Fi® antenna connector • Audio option
	PCI Express expansion slot:	• Discrete graphics card • Fiber Optic NIC Interface

AUDIO/VIDEO

Audio Subsystem	• Internal amplified speaker system for basic audio playback • 3.5 mm combo headset/headphone/analog microphone audio jack (front access)

Technical Specifications

Audio CODECs
- MP3
- AAC Stereo
- HE AAC
- Includes hardware acceleration support

Video CODECs
- MPEG-4 part 2 (DivX, Xvid)
- MPEG-4 part 10 (H.264, AVC), Advanced Video Coding (AVC) (H.264 encode & decode)
- MPEG-H part 2, High Efficiency Video Coding (HEVC, available with Windows 10 IoT Only) H.265 (8-bit / 10-bit) decode & (8-bit) encode - ?? is HEVC on Thin Pro and IGEL OS?
- WMV 7/8/9 VC-1 & ASF Demuxer
- Includes hardware acceleration support

NETWORKING

Local Area Networking Realtek RTL8111EPH-CG Gigabit Ethernet (GbE) Controller with support for DASH out-of-band remote management and Wake-On-Lan. Realtek RTL8111HSH-CG Gigabit Ethernet (GbE) Controller with support non-DASH and Wake-On-Lan[2]

Wi-Fi® Networking: Realtek 8852BE Wi-Fi 6 + Bluetooth® 5.3 wireless card WW WLAN[2]
Realtek 8852CE W-Fi 6E + Bluetooth® 5.3 wireless card WW WLAN[2]

NOTE:

- 1. Wireless access point and Internet service required and sold separately. Availability of public wireless access points limited. WiFi 6 (802.11ax) is backwards compatible with prior 802.11 specs. Wi-Fi 6 is designed to support gigabit data rate when transferring files between two devices connected to the same router. Requires a wireless router, sold separately, that supports 80MHz and higher channels.
- 2. The term “10/100/1000” or “Gigabit” Ethernet indicates compatibility with IEEE standard 802.3ab for Gigabit Ethernet, and does not connote actual operating speed of 1 Gb/s. For high-speed transmission, connection to a Gigabit Ethernet server and network infrastructure is required.

FIBER OPTIC NETWORKING

Adapter Options: Allied Telesis AT-2715 FX LC 100FX Fiber Network Adapter
Allied Telesis AT-2715 FX SC 100FX Fiber Network Adapter
Allied Telesis AT-2911 SXa LC 1000SX Fiber x 1 PCIe Network Adapter
Allied Telesis AT-2911 SXa SC 1000SX Fiber x 1 PCIe Network Adapter

PCI Express Fast Ethernet Fiber Adapter

Key Features:
- PCIe (PCI-Express) x1 interface
- IEEE 802.1x flow control
- IEEE 802.1p-based traffic prioritization
- TCP checksum RX/TX supported
- Audio/Video Bridging (AVB)
- Jumbo frame up to 9.6KB
- Receive-Side Scaling (RSS)
- MSI and MSI-x

Technical Specifications

- RoHS compliant
- IPv6

Key Features:

- IEEE 802.1p priority encoding/tagging (QoS, CoS)
- IEEE 802.1q VLAN tagging
- IEEE 802.3x flow control
- Buffer/FIFO: 22K transmit and 40K receive
- Loopback mode
- Descriptor-Based Buffer Management
- Link Detection and PHY interface power; the PHY interface, Link detection and Link LED should be enabled by default at power-up

Performance: AT-27M2 >= 85 Mbit/s receive, <= 30% CPU utilization
>= 85 Mbit/s transmit, <= 30% CPU utilization
>= 170 Mbit/s total bi-directional, <= 30% CPU utilization

NOTE: The minimum transfer size at 100 Mbit/s is 1 Gbps

AT-29M2 >= 800 Mbit/s receive, <= 30% CPU utilization
>= 800 Mbit/s transmit, <= 30% CPU utilization
>= 1500 Mbit/s total bi-directional, <= 30% CPU utilization

NOTE: The minimum transfer size at 1000 Mbit/s is 1500 Gbps

External Interface: Complies with IEEE 802.3 100BASE-FX operation (AT-27M2) Complies with IEEE 802.3 1000BASE-X operation (AT-29M2)

Power: Uses less than 1800 mW of power at full performance (AT-27M2)

- Uses less than 2100 mW of power at full performance (AT-29M2)
- Supports all PCI Express bus states L0, L0s, L1 and L2

Non-volatile Storage:
The MAC address is unique for each system; assigned from the board assembly manufacturer's IEEE registered allocation.
The PCI subsystem ID is unique to HP and unique to each design to allow Windows Update to be finally controlled.

SOFTWARE SUPPORT

Host Environment	Protocol	HP ThinPro	Microsoft Windows 10 IoT Enterprise 2021
Remote Desktop Services	Remote FX (RFX), RDP	✓	✓
Citrix®	ICA, HDX	✓	✓
VMware® Horizon	RDP, PCoIP, Blast Extreme	✓	✓

Protocol Clients	HP ThinPro	Microsoft Windows 10 IoT Enterprise 2021
Citrix® Workspace app	✓	✓
Microsoft Remote Desktop Client		✓
Free Remote Desktop Client	✓	
VMware™ Horizon View™ Client	✓	✓
HP Remote Graphics Softwarew	via add-on	via add-on
Turbosoft TTerm for Linux® Terminal emulation Software	via add-on	
Turbosoft TTWin Terminal emulation software		via add-on
AVD/Win365	Via add-on	✓
Amazon WorkSpace	via add-on	via add-on
HP Anyware[1]	via add-on	via add-on

1 HP Anyware supports Windows®, Linux® host environments and Window, Linux end-user devices. For more on the system requirements for installing HP Anyware, refer to the Admin Guides at:
https://docs.teradici.com/find/product/cloud-access-software

Browser Support	HP ThinPro	Microsoft Windows 10 IoT Enterprise 2021
Mozilla Firefox	✓	
Internet Explorer		✓
Microsoft Edge		✓

Security	HP ThinPro	Microsoft Windows 10 IoT Enterprise 2021
Smart Card	✓	✓

Technical Specifications

Log-on Manager	✓	✓
Read only Operating System	✓	✓
802.1x	✓	✓
Microsoft Firewall		✓
HP Write Manager		✓
Microsoft Unified Write Filter		✓
NOTE: the HP Write Manager is the default active write filter. The Microsoft Unified Write Filter is disabled by default but can be enabled by the user if required.		

Management Tools	HP ThinPro	Microsoft Windows 10 IoT Enterprise 2021
HP Device Manager	✓	✓
HP ThinUpdate	✓	✓
HP EasyUpdate	✓	
HP Smart Zero Client Services	✓	
Microsoft SCCM/EDM agent		✓
HP USB Port Manager		✓
HP User State Tool		Add-on only

Additional Windows Components	HP ThinPro	Microsoft Windows 10 IoT Enterprise 2021
HP Easy Shell		✓
Windows Media Player		✓
Microsoft Direct Access		✓
Microsoft BranchCache		✓
Microsoft AppLocker		✓
Microsoft Sideloading		✓
CyberLink Media Player		✓

NOTE: Other add-on software available (see: http://www.hp.com/support for latest list of available add-ons). Software performance and support may vary depending on customer environment and backend.

Audio/Video CODECs	HP	Microsoft

Technical Specifications

	ThinPro	Windows 10 IoT Enterprise 2021
MP3	✓	✓
WMA stereo	✓	✓
AAC stereo & HE AAC	✓	
Microsoft AC3 encoder		✓
MPEG-1	✓	
MPEG-4 part 2 (DivX, Xvid, H.263)	✓	✓
MPEG-4 part 10 (H.264, AVC)	✓	✓
h.265/HEVC	✓	✓
WMV 7/8/9/ VC-1 & ASF Demuxer	✓	✓

WEIGHTS & DIMENSIONS

W x D x H: (vertical orientation) 50 x 210 x 210 mm

Volume: 2.2 liter

System Weight (unit with stand) 1297g

Shipping Weight 3798g

NOTE: All measurements are approximate; the addition of optional modules will increase the weight

EXTERNAL POWER SUPPLY

90 Watt external 3-pin power supply

Worldwide auto-sensing 100-240 VAC; nominal voltage is 120 VAC; 50-60 Hz

Energy saving automatic power-down; surge tolerant

1.8m output cable

External power adapters are sourced from several suppliers in order to ensure adequate supply and availability is maintained. The actual dimensions of the power brick will vary by supplier.

HP P/N	Vendor	Dimensions
L31819-002	Chicony	127 x 51 x 30 mm
L31819-013	Delta	126 x 51 x 30 mm

COMPLIANCE/CERTIFICATIONS

Accessibility:	Section 508 Accessibility. VPAT report available
Environmental Stewardship:	Worldwide (ENERGY STAR® configurations available, EPEAT 2.0, RoHS2, EU ErP Lots 3, 7, and 6/26, TCO Certified, CECP& SEPA, HP GSE, WEEE, Low Halogen, etc.)
Product Safety:	Worldwide (UL, CB, GS, CCC, BSMI, etc.)
Electromagnetic Compliance (EMC):	Worldwide (FCC/CISPR/EN/VCCI/ICES/AS/NZS/CNS/KCC) "Class B" EMI regulations **International Medical Safety Standard:** EN60601-1-2 (Medical Equipment EMC) passed

ENVIRONMENTAL

Operating Temperature Range:	Standard: (any orientation and configured options)	50 deg to 104 deg F 10 deg to 40 deg C
Non-operating Temperature Range:	-22 deg to 140 deg F -30 deg to 65 deg C	
Humidity:	Condensing: Non-condensing:	20% to 80% 10% to 90%

NOTE: Specifications are at sea level with altitude derating of 1° C/300m (1.8° F/1000ft) to a maximum of 3 Km (10,000 ft), with no direct, sustained sunlight. Upper limit may be limited by the type and number of options installed.

Environmental Data	**Eco-Label Certifications & declarations**	This product has received or is in the process of being certified to the following approvals and may be labeled with one or more of these marks: • IT ECO declaration • US ENERGY STAR® • US Federal Energy Management Program (FEMP) • EPEAT[â] Gold: Bronze, Silver, Gold registered in the United States. See http://www.epeat.net for registration status in your country. • TCO Certified: certified in all markets except North America • China Energy Conservation Program (CECP) • China State Environmental Protection Administration (SEPA) • Taiwan Green Mark • Korea Eco-label • Japan PC Green label*
	Sustainable Impact Specifications	• Product Carbon Footprint • Ocean-bound plastic in System fan, Stand • 50% post-consumer recycled plastic • 10% recycled metal • Low halogen • Outside Box and corrugated cushions are 100% sustainably sourced and recyclable • Molded Paper Pulp Cushion inside box is 100% sustainably sourced and recyclable.
	System Configuration	The configuration used for the Energy Consumption and Declared Noise Emissions data for the Notebook model is based on a "Typically Configured Notebook".

Technical Specifications

Energy Consumption (in accordance with US ENERGY STAR® test method)	115VAC, 60Hz	230VAC, 50Hz	100VAC, 50Hz
Normal Operation (Sort idle)	8.3 W	8.26 W	8.23 W
Normal Operation (Long idle)	7.29 W	7.23 W	7.21 W
Sleep	0.83 W	0.82 W	0.8 W
Off	0.74 W	0.71 W	0.69 W
	NOTE: Energy efficiency data listed is for an ENERGY STAR® compliant product if offered within the model family. HP computers marked with the ENERGY STAR® Logo are compliant with the applicable U.S. Environmental Protection Agency (EPA) ENERGY STAR® specifications for computers. If a model family does not offer ENERGY STAR® compliant configurations, then energy efficiency data listed is for a typically configured PC featuring a hard disk drive, a high efficiency power supply, and a Microsoft Windows® operating system.		

Heat Dissipation*	115VAC, 60Hz	230VAC, 50Hz	100VAC, 50Hz
Normal Operation (Short idle)	28.38 BTU/hr	28.24 BTU/hr	28.14 BTU/hr
Normal Operation (Long idle)	24.93 BTU/hr	24.72 BTU/hr	24.65 BTU/hr
Sleep	2.83 BTU/hr	2.80 BTU/hr	2.73 BTU/hr
Off	2.53 BTU/hr	2.42 BTU/hr	2.35 BTU/hr
	*__NOTE:__ Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.		

Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296)	Sound Power (L_{WAd}, bels)	Sound Pressure (L_{pAm}, decibels)
Typically Configured – Idle Mode	3.4	22.8
Fixed Disk – Drive Random Seek	3.4	23.2
Active Mode	3.4	23

Longevity and Upgrading	This product can be upgraded, possibly extending its useful life by several years. Upgradeable features and/or components contained in the Spare parts are available throughout the warranty period and or for up to “5” years after the end of production.

Technical Specifications

Additional Information	• This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive - 2011/65/EC. • This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive – 2002/96/EC. • This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986). • This product is in compliance with the IEEE 1680 (EPEAT) standard at the Gold level, see www.epeat.net • Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1043. • This product is 92.7% recycle-able when properly disposed of at end of life.			
Packaging Materials	**External:**	PAPER/Corrugated	443 g	
		PAPER/Molded Pulp	128 g	
		WOOD/Wood	12 g	
	The plastic packaging material contains at least 0.0% recycled content.			
	The corrugated paper packaging materials contains at least 90% recycled content.			
RoHS Compliance	HP Inc. complies fully with materials regulations. We were among the first companies to extend the restrictions in the European Union (EU) Restriction of Hazardous Substances (RoHS) Directive to our products worldwide through the HP GSE. HP has contributed to the development of related legislation in Europe, as well as China, India, and Vietnam. We believe the RoHS directive and similar laws play an important role in promoting industry-wide elimination of substances of concern. We have supported the inclusion of additional substances—including PVC, BFRs, and certain phthalates—in future RoHS legislation that pertains to electrical and electronics products. We met our voluntary objective to achieve worldwide compliance with the new EU RoHS requirements for virtually all relevant products by July 2013, and we will continue to extend the scope of the commitment to include further restricted substances as regulations continue to evolve. To obtain a copy of the HP RoHS Compliance Statement, see HP RoHS position statement.			
Material Usage	This product does not contain any of the following substances in excess of regulatory limits (refer to the HP General Specification for the Environment at http://www.hp.com/hpinfo/globalcitizenship/environment/supplychain/gen_specifications.html): • Asbestos • Certain Azo Colorants • Certain Brominated Flame Retardants – may not be used as flame retardants in plastics • Cadmium • Chlorinated Hydrocarbons • Chlorinated Paraffins • Bis(2-Ethylhexyl) phthalate (DEHP) • Benzyl butyl phthalate (BBP) • Dibutyl phthalate (DBP)			

	• Diisobutyl phthalate (DIBP) • Formaldehyde • Halogenated Diphenyl Methanes • Lead carbonates and sulfates • Lead and Lead compounds • Mercuric Oxide Batteries • Nickel – finishes must not be used on the external surface designed to be frequently handled or carried by the user. • Ozone Depleting Substances • Polybrominated Biphenyls (PBBs) • Polybrominated Biphenyl Ethers (PBBEs) • Polybrominated Biphenyl Oxides (PBBOs) • Polychlorinated Biphenyl (PCB) • Polychlorinated Terphenyls (PCT) • Polyvinyl Chloride (PVC) – except for wires and cables, and certain retail packaging has been voluntarily removed from most applications. • Radioactive Substances • Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO)
Packaging Usage	HP follows these guidelines to decrease the environmental impact of product packaging: • Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging materials. • Eliminate the use of ozone-depleting substances (ODS) in packaging materials. • Design packaging materials for ease of disassembly. • Maximize the use of post-consumer recycled content materials in packaging materials. • Use readily recyclable packaging materials such as paper and corrugated materials. • Reduce size and weight of packages to improve transportation fuel efficiency. • Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards.
End-of-life Management and Recycling	HP offers end-of-life HP product return and recycling programs in many geographic areas. To recycle your product, please go to: http://www.hp.com/go/reuse-recycle or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner. The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: http://www.hp.com/go/recyclers. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.

Technical Specifications

	HP, Inc. Corporate Environmental Information	For more information about HP's commitment to the environment: Global Citizenship Report http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html Eco-label certifications http://www8.hp.com/us/en/hp-information/environment/ecolabels.html ISO 14001 certificates: http://h20195.www2.hp.com/V2/GetDocument.aspx?docname=c04755842 and http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/cert.pdf
	footnotes	• Percentage of ocean-bound plastic contained in each component varies by product • Recycled plastic content percentage is based on the definition set in the IEEE 1680.1-2018 standard. • External power supplies, WWAN modules, power cords, cables and peripherals excluded. • 100% outer box packaging and corrugated cushions made from sustainably sourced certified and recycled fibers. • Fiber cushions made from 100% recycled wood fiber and organic materials. • Plastic cushions are made from >90% recycled plastic. • Disclaimer: recycled metal is expressed as a percentage of the total weight of the metal according to ISO 14021 definitions for metal parts over 25 grams.

Acoustic Noise Emission Declaration						
Measurement and declaration standards:	ISO 7779: Acoustics – Measurement of airborne noise emitted by information technology and telecommunications equipment					
	ISO 9296: Acoustics – Declared noise emission values of computer and business equipment					
Declared Noise Emission Values in accordance with ISO 9296						
Product Configuration or Operating Mode # (see section below for description)	Declared Sound Power Level, L_{Wad} Bels			Declared Sound Pressure Level, L_{pAm} dBA Tested on ISO Table		
	Idle	Operating		Idle	Operating	
	ECMA-74 C.15.3.2 Idle Mode	ECMA-74 C.9.3.2 Drive Random Seek	ECMA-74 C.15.3.3 g Active Mode	ECMA-74 C.15.3.2 Idle Mode	ECMA-74 C.9.3.2 Drive Random Seek	ECMA-74 C.15.3.3 g Active Mode
Vertical	3.4	3.4	3.4	22.8	23.4	23.1
Horizontal	3.3	3.4	3.4	22.0	22.7	22.1
The Product meets the acoustic noise limits of these voluntary Eco labels:				TCO Certified Blue Angel		
NOTE: Measured under ISO 7779 and ISO 9296 measurement and declaration standards.						

Summary of Changes

Date of change:	Version History:	Type of change	Description of change:
December 11, 2023	From v1 to v2	Changed	ENVIRONMENTAL section
February 15, 2024	From v2 to v3	Changed	AT A GLANCE and PROCESSOR sections
March 18, 2024	From v3 to v4	Changed	DISPLAY SUPPORT section