Overview

HP ZBook Ultra 14" G1a Mobile Workstation PC

	Left	
1	Internal microphones (2)	5	Extra Large Clickpad
2	Webcam and IR Camera	6	Security lock slot (Lock sold separately.)
3	Webcam LED	7	USB Type-A 10Gbps
4	Fingerprint reader / Power button	8	USB 3.1 Gen 1 charging port
		9	Woofer

Not all configuration components are available in all regions/countries.

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Page 1

HP ZBook Ultra 14" G1a Mobile Workstation PC

Overview

Right

1	USB Type-C™ with Thunderbolt™	3	Audio combo jack
2	USB 3.1 Gen 1 charging port	4	HDMI 2.1
		5	Woofer

Not all configuration components are available in all regions/countries.
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Overview

At A Glance

- Preinstall Windows 11, Ubuntu 24.04, or FreeDOS
- Choice of AMD Ryzen™ AI Max+ PRO 395, or AMD Ryzen™ AI Max PRO 390, 385, or 380
- Display include your choice of 35.56 cm (14") diagonal , FHD Non-Touch or QHD Touch
- Integrated AMD Radeon Graphics
- Enhanced security features including TPM2.0, HP Sure Start self-healing BIOS, HP Client Security,
- Self-Encrypting storage drives, and Fingerprint reader"
- Undergoes MIL-STD 810H tests [1]
- Weight starting at OLED 1.599 kg (3.52 lbs,), FHD 1.568 Kg (3.45 lbs,)
- Battery life up to x hours and x minutes
- Supports wireless LAN for connectivity on the go
- Up to 4 TB Solid State Drives
- Up to 128 GB shared system memory
- Up to 96 GB VRAM Carveout
- 5MP webcam, IR camera for face authentication with Windows Hello [5,12]
- Full size, backlit, Keyboard and Extra Large Clickpad, multi-touch gestures enabled, taps enabled as default

NOTE: See important legal disclosures for all listed specs in their respective features sections.

Not all configuration components are available in all regions/countries.

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Features

OPERATING SYSTEM

Preinstalled OS   Windows 11 Pro[1]
Windows 11 Pro Education[1]
Windows 11 Home - HP recommends Windows 11 Pro for business [1]
Windows 11 Home Single Language - HP recommends Windows 11 Pro for business [1]
Windows 11 Pro (Windows 11 Enterprise or Windows 10 Enterprise available with a Volume Licensing Agreement)[1]
FreeDOS
Ubuntu 24.04 LTS

[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. Windows is automatically updated and enabled. High speed internet and Microsoft account required. ISP fees may apply and additional requirements may apply over time for updates. See http://www.windows.com.

NOTE: Your product does not support Windows 8 or Windows 7. 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. A full list of HP products and the Windows 10 versions tested is available on the HP support website. https://support.hp.com/us-en/document/c05195282

PROCESSOR

AMD Ryzen™ AI Max+ PRO 395 processor with PRO technologies (16 core/32 thread, 16MB L2 Cache, 64MB L3 cache, up to 5.1 GHz max boost) c[1,2,3]

AMD Ryzen™ AI Max PRO 390 Processor with PRO technologies (12 core/24 thread, 12MB L2 Cache, 64MB L3 cache, up to 5.0 GHz max boost) [1,2,3]

AMD Ryzen™ AI Max PRO 385 Processor with PRO technologies (8 core/16 thread, 8MB L2 Cache, 32MB L3 cache, up to 5.0 GHz max boost) [1,2,3]

AMD Ryzen™ AI Max PRO 380 Processor with PRO technologies (6 core/12 thread, 6MB L2 Cache, 16MB L3 cache, up to 4.9 GHz max boost) [1,2,3]

AMD Ryzen™ AI Max+ PRO 395 processor (16 core/32 thread, 16MB L2 Cache, 64MB L3 cache, up to 5.1 GHz max boost) [1,2,3]

AMD Ryzen™ AI Max PRO 390 Processor (12 core/24 thread, 12MB L2 Cache, 64MB L3 cache, up to 5.0 GHz max boost) [1,2,3]

AMD Ryzen™ AI Max PRO 385 Processor(8 core/16 thread, 8MB L2 Cache, 32MB L3 cache, up to 5.0 GHz max boost) [1,2,3]

[1] 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, branding and/or naming is not a measurement of higher

Not all configuration components are available in all regions/countries.
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Features

performance.

[4] 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.

[5] Processor speed denotes maximum performance mode; processors will run at lower speeds in battery optimization mode.

[6] Features and software that require a NPU may require software purchase, subscription or enablement by a software or platform provider, and third party software may have specific configuration or compatibility requirements. Potential NPU inferencing performance varies by use, configuration, and other factors.

CHIPSET

Chipset is integrated with processor

GRAPHICS

Integrated

AMD Radeon™ Graphics

Supports

HDMI2.1, DP2.1

Not all configuration components are available in all regions/countries.
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Features

DISPLAY

Non-touch
- 35.6 cm (14") diagonal, WUXGA (1920 x 1200), UWVA, Anti-Glare, 400 nits, sRGB 100% [1,3]

Touch
- 35.6 cm (14") diagonal, 2.8K (2880 x 1800), OLED, UWVA, Touch, 120Hz (VRR), BrightView, Low Blue Light, 400 nits, DCI-P3 100% [1,3,4,5]

Display Size
14"
35.6 cm (14")

[1]HD content required to view HD images.
[2] HDMI cable sold separately.
[3]Resolutions are dependent upon monitor capability, and resolution and color depth settings.
[4]HP Sure View Reflect integrated privacy screen is an optional feature that must be configured at purchase and is designed to function in landscape orientation.
[5]Actual brightness will be lower with touchscreen or Sure View.

STORAGE AND DRIVES*

Primary M.2 Storage
4 TB PCIe® Gen4 x4 NVMe™ M.2 TLC SSD
2 TB PCIe® Gen4 x4 NVMe™ M.2 TLC SSD
1 TB PCIe® Gen4 x4 NVMe™ M.2 TLC SSD
512 GB PCIe® Gen4 x4 NVMe™ M.2 TLC SSD
512 GB PCIe® Gen4x4 NVMe™ SED TLC OPAL2

* For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 35GB of disk is reserved for system recovery software.

MEMORY

Memory
128 GB LPDDR5X-8533 MT/s RAM
64 GB LPDDR5X-8533 MT/s RAM
32 GB LPDDR5X-8533 MT/s RAM
16 GB LPDDR5X-8533 MT/s RAM

Not all configuration components are available in all regions/countries.
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Features

Memory Slots
Memory soldered down
Supports Dual Channel Memory

NETWORKING/COMMUNICATIONS

WLAN

MediaTek MT7925 1418 Wi-Fi7 + BT5.4 (802.11be 2x2, AMD AIM-T) [1]

[1]Wi-Fi 6E requires a Wi-Fi 6E router, sold separately, and Windows 11 to function in the 6GHz band. Availability of public wireless access points limited. Wi-Fi 6E is backwards compatible with prior 802.11 specs. And available in countries where Wi-Fi 6E is supported.

Near Field Communication (NFC) module

NFC Mirage WNC XRAV-1

[1]Sold separately or as an optional feature.

Miracast

Native Miracast Support

NOTE: Miracast is a wireless technology your PC can use to project your screen to TVs, projectors, and streaming.

AUDIO/MULTIMEDIA

Audio
Audio by Poly Studio
4 Integrated stereo speakers
2 Integrated dual array microphone

Speaker Power
1w / 8 OHM Per Speaker

Webcam
5MP+Infrared camera

Sensors
Hall Sensor

Not all configuration components are available in all regions/countries.
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Features

KEYBOARDS/POINTING DEVICES/BUTTONS & FUNCTION KEYS

Keyboard
TBD
Pointing Devices
TBD
Function Keys
ESC: system information
F1 - Display Switching
F2 - Blank or SureView On/Off
F3 - Brightness Down
F4 - Brightness Up
F5 - Blank or Backlit Toggle
F6 - Audio Mute
F7 - Volume Down
F8 - Volume Up
F9 - Mic Mute
F10 - Play and Pause
F11 - Programmable key
F12 – Home
Power Button (with LED)
Delete
Hidden Keys
Fn+R - Break
Fn+S - Sys Rq
Fn+C - Scroll Lock
Fn+E - Insert
Fn+W - Pause

SOFTWARE AND SECURITY

Software
HP PC Hardware Diagnostics UEFI
HP PC Hardware Diagnostics Windows
HP Privacy Settings
HP Touchpoint Customizer
Buy Microsoft Office (Sold separately)
HP Hotkey Support
HPX
HP Connection Optimizer[10]
HP Support Assistant[1]
HP Services Scan[34]

Not all configuration components are available in all regions/countries.
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Features

Manageability Features

HP Connect for Microsoft Endpoint Manager[26]

HP Manageability Integration Kit[12]

Security Management

HP Wolf Security for Business [29]

HP Sure Sense[19]

HP Sure Run Gen4[31]

HP Sure Recover Gen4 with Embedded Reimaging[14]

HP Sure Start Gen6[16]

HP Client Security Manager[18]

HP TPM Configuration Utility

Secured-core PC capable

TPM 2.0 Embedded Security Chip

HP Image Assistant Gen4.6

[1] HP Support Assistant - Requires Windows and Internet Access.

[10] HP Connection Optimizer requires Windows 10 and Windows 11.

[12] HP Manageability Integration Kit can be downloaded from https://ftp.ext.hp.com/pub/caps-softpaq/cmit/HPMIK.html.

[14] HP Sure Recover Gen5 with Embedded Reimaging is an optional feature which requires Windows 10 and higher must be configured at purchase. You must back up important files, data, photos, videos, etc. before use to avoid loss of data. Network based recovery using Wi-Fi is only available on PCs with Intel Wi-Fi Module

[16] HP Sure Start Gen7 is available on select HP PCs and requires Windows 10 and higher

[18] HP Client Security Manager Gen7 requires Windows and is available on select HP Pro, Elite and ZBook PCs. See product specifications for details.

[19] HP Sure Sense is available on select HP PCs with Windows 10 Pro, Windows 10 Enterprise, Windows 11 Pro, or Windows 11 Enterprise OS.

[26] HP Connect for Microsoft Endpoint Manager is available from the Azure Market Place for HP Pro, Elite, Z and Point-of-Sale PCs managed with Microsoft Endpoint Manager. Subscription to Microsoft Endpoint Manager required and sold separately. Network connection required.

[29] HP Wolf Security for Business requires Windows 10 or higher, includes various HP security features and is available on HP Pro, Elite, RPOS and Workstation products. See product details for included security features and OS requirement.

[31] HP Sure Run Gen5 is available on select HP PCs and requires Windows 10 and higher.

[34] HP Services Scan is provided with Windows Update on select products and will check entitlement on each hardware device to determine if an HP TechPulse-enabled service has been purchased, and will download applicable software automatically. HP TechPulse is a telemetry and analytics platform that provides critical data around devices and applications. For full system requirements or to disable this feature, please visit http://www.hpdaas.com/requirements . Not applicable in China.

POWER

Power Supply

140 W USB Type-C® slim adapter

Battery

HP XL-Long Life 4 cell, 74.5Whr Polymer[3,4]

Power Cord

3-wire plug - 1m

Not all configuration components are available in all regions/countries.

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Features

Battery life
TBD - POR is Up to 14.5 Hours[1]

[1] MM25 battery life will vary depending on various factors including product model, configuration, loaded applications, features, use, wireless functionality, and power management settings. The maximum capacity of the battery will naturally decrease with time and usage. See www.bapco.com for additional details.

[3]Battery is internal and not replaceable by customer. Serviceable by warranty.

[4] For new batteries, actual battery Watt-hours (Wh) may differ from the design capacity and may have a full charge capacity that differs by up to 10, which is typical for lithium-ion batteries. Battery capacity naturally decreases over time and with use, depending on several factors such as battery health management settings, shelf life, temperature, environment, loaded apps, features, system configuration, and power settings.

WEIGHTS & DIMENSIONS

Product Dimensions (w x d x h)
12.18x 8.37x 0.71 in
31.22x21.465x1.81 cm

Weights*

Product Weight
FHD Starting at 1.568 Kg (3.46 lbs.)
OLED Starting at 1.599 Kg (3.52 lbs.)

*Weight will vary by configuration. Does not include power adapter.

PORTS/SLOTS

2 x Thunderbolt™ 4 with USB Type-C® 40Gbps signaling rate (USB Power Delivery, DisplayPort™ 2.1)*
1x USB Type-C® 10Gbps signaling rate (USB Power Delivery, DisplayPort™ 2.1)
1 x HDMI 2.1**
1 x headphone/mic combo jack
1 x USB Type-A 10Gbps signaling rate (1 charging)
1 x Security lock slot

*USB 20Gbps is not available with Thunderbolt™ 4.
**HDMI cable sold separately.

SERVICE AND SUPPORT

Features

TBD

Certification and Compliance

EPEAT® 2019 registered where applicable. EPEAT ® registration varies by country. See www.epeat.net for registration status by country.
EPEAT® 2019 Gold
TCO 10 Certified
EPEAT Climate Badge Early Adopter - Worldwide - SRP
GS Mark - EMEA - SRP
Low Blue Light Certification - Worldwide – SRP

Sustainable Impact Specifications

[1] Based on US EPEAT® registration according to IEEE 1680.1–2018 EPEAT®. Status varies by country. Visit www.epeat.net for more information.
[2] External power supplies, power cords, cables and peripherals are not low halogen. Service parts obtained after purchase may not be low halogen.

Not all configuration components are available in all regions/countries.
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Technical Specifications – System Unit

SYSTEM UNIT

Stand-Alone Power Requirements (AC Power)	
Nominal Operating Voltage	28V
Average Operating Power	
Integrated graphics	RDNA3.5
Discrete Graphics	
Max Operating Power	UMA < 55W
Temperature	
Operating	32° to 95° F (0° to 35° C)
Non-operating	-4°F to 149°F (-20℃ to 65℃)
Relative Humidity	
Operating	
Non-operating	. 60℃ (140°F) and 95% humidity for 6 hours
	. 30℃ (86°F) and 95% humidity for 8 hours
Shock	
Operating	Operating: 40G, 2ms
Non-operating	Non-operating: 240G, 2ms
Random Vibration	
Operating	1.043 grms
Non-operating	3.5 grms
Altitude (unpressurized)	
Operating	
Non-operating	
Planned Industry Standard Certifications	
Regulatory Model Number	HSTNS-I001
UL	
CSA	
FCC Compliance	
ENERGY STAR®	Yes
EPEAT	Yes
ICES	
Australia /	
NZ A-Tick Compliance	We usually use RCM for naming, which corresponds to the C-Tick compliance.
CCC	
Japan VCCI Compliance	
KC	
BSMI	
CE Marking Compliance	
BNCI or BELUS	Currently, we do not apply for this country's certification separately; instead, we focus on applying for EAC certification.
CIT	These is not within our scope of confirmation; CIT appears to be related to the PCB board.
GOST	Currently, we do not apply for this country's certification separately; instead, we

Not all configuration components are available in all regions/countries.

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Technical Specifications – System Unit

focus on applying for EAC certification.

Saudi Arabian Compliance (ICCP)
SABS   We apply for NRCS not SABS
UKRSERTCOMPUTER

   - Configurations of the HP ProBook 430 G4 that are ENERGY STAR® qualified are identified as HP ProBook 430 G4 ENERGY STAR on HP websites and on http://www.energystar.gov. - System Lead - N - Please, don't change the number between the brackets
   - Based on US EPEAT® registration according to IEEE 1680.1-2018 EPEAT®. EPEAT® status varies by country. Visit www.epeat.net for more information. - System Lead - N - Please, don't change the number between the brackets

Technical Specifications – Displays

DISPLAYS

14.0 in 2.8K (2880 x 1800) BrightView UWVA OLED+LBL DCI-P3 100 400 eDP 1.4+PSR2+IOL 120Hz (VRR) bent OLED Touch Panel		
Outline Dimensions (W x H)	305.450x197.850(max)
Active Area	301.824x188.640 (typ)
Weight	139(max)
Diagonal Size	14"
Surface Treatment	Bright View
Touch Enabled	Yes
Contrast Ratio	100,000:1(typ)
Refresh Rate	48~120Hz
Brightness	400 (typ)
Pixel Resolution - Format	RGB
Backlight	OLED
Pixel Resolution	2880 x 1800 (UWVA)
Color Gamut Coverage	DCI P3 100%
Color Depth	8 bit + FRC 2 bit
Viewing Angle	UWVA 89/89/89/89
Low Blue Light	Yes
Power Consumption (W, EBL@ 150nits max/ 200nits max))	4.42(max)/4.09(max)

14.0 in WUXGA (1920 x 1200) Anti-Glare UWVA sRGB 100 3SB 400 eDP 1.4+PSR2 bent LCD Panel		
Outline Dimensions (W x H)	307.550x204.860(max)
Active Area	301.590 X 188.500 (typ)
Weight	200(max)
Diagonal Size	14
Surface Treatment	Anti-Glare
Touch Enabled	No
Contrast Ratio	1200 : 1 (typ)
Refresh Rate	60 (typ)
Brightness	400 (typ)
Pixel Resolution - Format	RGB
Backlight	WLED
Pixel Resolution	1920 x 1200 (WUXGA)
Color Gamut Coverage	sRGB 100%
Color Depth	8 bits
Viewing Angle	UWVA 89/89/89/89
Low Blue Light	No
Power Consumption (W, EBL@ 150nits max/ 200nits max))	1.64 (max)/1.97(max)

Not all configuration components are available in all regions/countries.
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Technical Specifications – Storage

STORAGE

SSD 512GB 2280 PCIe-4x4 NVMe Three Layer Cell	**Form Factor**	M.2 2280
	Capacity	512GB
	NAND Type	TLC
	Interface	PCIe NVMe Gen4X4
	Maximum Sequential Read	6400 MB/s ±20%
	Maximum Sequential Write	3500 MB/s ±20%
	Logical Blocks	1000215215
	Features	Pyrite 2.0; TRIM; L1.2
SSD 1TB 2280 PCIe-4x4 NVMe Three Layer Cell	**Form Factor**	M.2 2280
	Capacity	1TB
	NAND Type	TLC
	Interface	PCIe NVMe Gen4X4
	Maximum Sequential Read	6400 MB/s ±20%
	Maximum Sequential Write	5000 MB/s ±20%
	Logical Blocks	2000409264
	Features	Pyrite 2.0; TRIM; L1.2
SSD 2TB 2280 PCIe-4x4 NVMe Three Layer Cell	**Form Factor**	M.2 2280
	Capacity	2TB
	NAND Type	TLC
	Interface	PCIe NVMe Gen4X4
	Maximum Sequential Read	6400 MB/s ±20%
	Maximum Sequential Write	5000 MB/s ±20%
	Logical Blocks	4000797360
	Features	Pyrite 2.0; TRIM; L1.2
512GB PCIe-4x4 2280 NVME Self Encrypted OPAL2 Three Layer Cell Solid State Drive	**Form Factor**	M.2 2280
	Capacity	512GB
	NAND Type	TLC
	Interface	PCIe NVMe Gen4X4
	Maximum Sequential Read	6400 MB/s ±20%
	Maximum Sequential Write	3500 MB/s ±20%
	Logical Blocks	1000215215
	Features	TCG Opal 2.0; TRIM; L1.2
CZL (TBC)	**Form Factor**	M.2 2280

Not all configuration components are available in all regions/countries.
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Technical Specifications – Storage

	Capacity	
	NAND Type	TLC
	Interface	PCIe NVMe Gen
	Maximum Sequential Read	
	Maximum Sequential Write	
	Logical Blocks	
	Features	
4TB PCIe-4x4 2280 NVMe Three Layer Cell double-sided M.2 Solid State Drive	**Form Factor**	M.2 2280
	Capacity	4TB
	NAND Type	TLC
	Interface	PCIe NVMe Gen4X4
	Maximum Sequential Read	6400 MB/s ±20%
	Maximum Sequential Write	5000 MB/s ±20%
	Logical Blocks	8001573552
	Features	Pyrite 2.0; TRIM; L1.2

Not all configuration components are available in all regions/countries.
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Technical Specifications – Networking

NETWORKING / COMMUNICATION

MediaTek MT7925 1418 Wi-Fi7 + BT5.4 (802.11be 2x2, AMD AIM-T) [1]	**Wireless LAN Standards**	IEEE 802.11a
		IEEE 802.11b
		IEEE 802.11g
		IEEE 802.11n
		IEEE 802.11ac
		IEEE 802.11ax
		IEEE 802.11be
		IEEE 802.11d
		IEEE 802.11e
		IEEE 802.11h
		IEEE 802.11i
		IEEE 802.11k
		IEEE 802.11r
		IEEE 802.11v
	Interoperability	Wi-Fi certified
	Frequency Band	802.11b/g/n/ax/be
		• 2.402 – 2.482 GHz
		802.11a/n/ac/ax/be
		• 4.9 – 4.95 GHz (Japan)
		• 5.15 – 5.25 GHz
		• 5.25 – 5.35 GHz
		• 5.47 – 5.725 GHz
		• 5.825 – 5.850 GHz
		• 5.955 – 6.415 GHz
		• 6.435 – 6.515 GHz
		• 6.535 – 6.875 GHz
		• 6.895 – 7.115 GHz
	Data Rates	• 802.11b: 1, 2, 5.5, 11 Mbps
		• 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
		• 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
		• 802.11n: max 300Mbps
		• 802.11ac : 1733Mbps
		• 802.11ax : max 2.4Gbps
		• 802.11be : max 2.8Gbps (160MHz)
	Modulation	Direct Sequence Spread Spectrum
		OFDM, BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM, 1024QAM, 4096QAM

Technical Specifications – Networking

Security[3]	• IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/g mode only • AES-CCMP: 128 bit in hardware • 802.1x authentication • WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES. • WPA2 certification • WPA3 certification • IEEE 802.11i • WAPI
Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
Roaming **Output Power[2]**	IEEE 802.11 compliant roaming between access points • 802.11b, 1Mbps : +17dBm minimum • 802.11g, 6Mpbs : +16dBm minimum • 802.11a, 6Mbps : +17dBm minimum • 802.11n, MCS7(HT20) : +14dBm minimum • 802.11n, MCS7(HT40) : +13.5dBm minimu • 802.11ac MCS9(VHT20) : 13.5dBm minimum • 802.11ac MCS9(VHT40) : +13.5dBm minimum • 802.11ac MCS9(VHT80) : +12.5dBm minimum • 802.11ac MCS9(VHT160) : +10.5dBm minimum • 802.11ax MCS11(HE20)(6GHz) : +11.5dBm minimum • 802.11ax MCS11(HE40)(6GHz) : +7.5dBm minimum • 802.11ax MCS11(HE80)(6GHz) : +7.5dBm minimum • 802.11ax MCS11(HE160)(6GHz) : +7.5dBm minimum • 802.11be MCS13(EHT20)(6GHz) : +11.5dBm • 802.11be MCS13(EHT40)(6GHz) : +7.5dBm • 802.11be MCS13(EHT80)(6GHz) : +7.5dBm • 802.11be MCS13(EHT160)(6GHz) : +6.5dBm
Power Consumption	• Transmit mode 2.7 W • Receive mode 1.8 W • Idle mode (PSP) 180 mW (WLAN Associated) • Idle mode 50 mW (WLAN unassociated) • Connected Standby 10mW • Radio disabled 8 mW
Power Management	ACPI and PCI Express compliant power management 802.11 compliant power saving mode
Receiver Sensitivity[3]	•802.11b, 1Mbps : -93.5dBm maximum

Not all configuration components are available in all regions/countries.

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Technical Specifications – Networking

• 802.11b, 11Mbps : -85dBm maximum
• 802.11a/g, 6Mbps : -90.5dBm maximum
• 802.11a/g, 54Mbps : -72.5dBm maximum
• 802.11n, MCS0(HT20) : -90dBm maximum
• 802.11n, MCS7(HT20) : -71.5dBm maximum
• 802.11n, MCS0(HT40) : -88.5dBm maximum
• 802.11n, MCS7(HT40) : -68.5dBm maximum
• 802.11ac, MCS9(VHT20) : -88.5dBm maximum
• 802.11ac, MCS9(VHT40) : -65.5dBm maximum
• 802.11ac, MCS9(VHT80) : -60.5dBm maximum
• 802.11ac, MCS9(VHT160) : -58.5dBm maximum
• 802.11ax, MCS11(HE20)(6GHz) : -59.5dBm maximum
• 802.11ax, MCS11(HE40)(6GHz) : -56.5dBm maximum
• 802.11ax, MCS11(HE80)(6GHz) : -53.5dBm maximum
• 802.11ax, MCS11(HE160)(6GHz) : -51.5dBm maximum
• 802.11be, MCS13(EHT20)(6GHz) : -55.5dBm maximum
• 802.11be, MCS13(EHT40)(6GHz) : -53.5dBm maximum
• 802.11be, MCS13(EHT80)(6GHz) : -51.5dBm maximum
• 802.11be, MCS13(EHT160)(6GHz) : -48.5dBm maximum

Antenna type	High efficiency antenna with spatial diversity, mounted in the display enclosure
	Two embedded dual band 2.4/5 GHz antennas are provided to the card to support WLAN MIMO communications and Bluetooth communications
Form Factor	PCI-Express M.2 MiniCard
Dimensions	1. Type 1418: 1.67 x 14.0 x 18.0 mm
Weight	1. Type 1418: 1.3g
Operating Voltage	3.3v +/- 9%
Temperature	Operating: 14° to 158° F (−10° to 70° C) Non-operating: −40° to 176° F (−40° to 80° C)
Humidity	Operating: 10% to 90% (non-condensing) Non-operating: 5% to 95% (non-condensing)
Altitude	Operating: 0 to 10,000 ft (3,048 m) Non-operating: 0 to 50,000 ft (15,240 m)
LED Activity	LED Amber – Radio OFF; LED OFF – Radio ON

HP Integrated Module with Bluetooth 4.0/4.1/4.2/5.0/5.1/5.2/5.3/5.4 Wireless Technology

Not all configuration components are available in all regions/countries.
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Technical Specifications – Networking

Bluetooth Specification	4.0/4.1/4.2/5.0/5.1/5.2/5.3/5.4 Compliant
Frequency Band	2402 to 2480 MHz
Number of Available Channels	Legacy : 0~79 (1 MHz/CH)
	BLE : 0~39 (2 MHz/CH)
Data Rates and Throughput	Legacy : 3 Mbps data rate; throughput up to 2.17 Mbps
	BLE : 1 Mbps data rate; throughput up to 0.2 Mbps
	Legacy : Synchronous Connection Oriented links up to 3, 64 kbps, voice channels
	Legacy : Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric (3-DH5) or 864 kbps symmetric (3-EV5)
Transmit Power	The Bluetooth component shall operate as a Class I Bluetooth device with a maximum transmit power of +15.5 dBm for BR and +13dBm for EDR.
Power Consumption	Peak (Tx): 330 mW
	Peak (Rx): 230 mW
	Selective Suspend: 17 mW
Bluetooth Software Supported	1. Microsoft Windows Bluetooth Software
Link Topology	2. Linux/Chrome OS Bluetooth Software.
Power Management	ACPI and PCI Express compliant power management
	802.11 compliant power saving mode
Certifications	FCC (47 CFR) Part 15C, Section 15.247 & 15.249
Power Management Certifications	ETS 300 328, ETS 300 826
	Low Voltage Directive IEC950
	UL, CSA, and CE Mark
Bluetooth Profiles Supported	BT4.1-ESR 5/6/7 Compliance
	LE Link Layer Ping
	LE Dual Mode
	LE Link Layer
	LE Low Duty Cycle Directed Advertising
	LE L2CAP Connection Oriented Channels
	Train Nudging & Interlaced Scan
	BT4.2 ESR08 Compliance
	LE Secure Connection- Basic/Full
	LE Privacy 1.2 –Link Layer Privacy

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LE Privacy 1.2 –Extended Scanner Filter Policies
LE Data Packet Length Extension
FAX Profile (FAX)
Basic Imaging Profile (BIP)2
Headset Profile (HSP)
Hands Free Profile (HFP)
Advanced Audio Distribution Profile (A2DP)
BT5.2
ESR9/10 Compliance
LE Advertisement Extensions
Channel Selection Algo
Limited High Duty Cycle Non-Connectable Advertising
2Mbps LE
LE Long Range
BT5.3
Host to Controller Encryption Key Control Enahancements
Compliance to the latest Errata Sectipn 12.3 of BT 5.3 specification

[1]Wi-Fi 7 requires a Wi-Fi 7 router, sold separately, to function in the 6GHz band. Availability of public wireless access points limited. Wi-Fi 7 is backwards compatible with prior 802.11 specs. And available in countries where Wi-Fi 7 is supported. Wi-Fi 7 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] Check latest software/driver release for updates on supported security features.

[3] The FCC has declared as of September 1, 2014 products that utilize passive scanning on channel 12/13 and are capable of transmitting must fully comply with requirements of 15.247 or otherwise disable those channels.

[4] Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CKK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation).

NFC NXP NPC300	Dimensions (L x W x H)	17 x 10 x 2.0 mm
	Chipset	NPC300
	System interface	I2C
	NFC RF standards	ISO/IEC 14443 A
		ISO/IEC 14443 B
		ISO/IEC 15693
		ISO/IEC 18092
		ECMA-340 NFCIP-1 Target and Initiator
		ECMA-320 NFCIP-2
	NFC Forum Support	Tag Type 1, Type 2, Type3 and Type 4, NFCIP-1 and NFCIP-2
	Reader (PCD-VCD) Mode(1)	ISO/IEC 14443 A
		ISO/IEC 14443 B
		ISO/IEC 15693
		MIFARE 1K

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	MIFARE 4K
	MIFARE DESFire
	FeliCa
	Jewel and Topaz cards
Card Emulation (PICC-VICC) Mode(1)	ISO/IEC 14443 A
	ISO/IEC 14443 B and B'
	MIFARE
	FeliCa
Frequency	13.56 MHz
NFC Modes Supported	Reader/Writer, Peer-to-Peer
Raw RF Data Rates	106, 212, 424, 848 kbps
Operating temperature	Operating: 0 °C to 70 °C (32 °F to 158 °F)
Storage temperature	Storage: -20 °C to 125 °C (-4 °F to 257 °F)
Humidity	10-90% operating
	5-95% non-operating
Supply Operating voltage	4.35 to 5.25 Volts
I/O Voltage	1.8V or 3.3V
Power Consumption (Booster enable, VBAT= 3.3V, VCC_BOOST = 5V)	(Booster enable, VBAT= 3.3V, VCC_BOOST = 5V)
Mode	Power Consumption, Typical
Polling	7.3 mA
Detected Test Tag Type 1	Total 283.8 mA
	Net Module 236.8 mA
Detected Test Tag Type 2	Total 288.8 mA
	Net Module 241.8 mA
Detected Test Tag Type 3	Total 287.7 mA
	Net Module 240.7 mA
Detected Test Tag Type 4	Total 282.3 mA
	Net Module 235.3 mA
Antenna	Antenna connector, 0.5mm pitch, 7 connector FPC. Antenna matching is external to module.

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Technical Specifications – Audio

AUDIO

HD Stereo Codec	Realtek ALC3315
Audio I/O Ports	Front: Headset connector supports a CTIA and OMTP style headset and is re-taskable as a Line-in, Line-out, Microphone-in or Headphone-out port
Internal Speaker Amplifier	1W class D mono amplifier for internal speaker External speakers. External speakers must be powered
Multi-streaming Capable	Playback multi-streaming can be enabled in the audio control panel to allow independent audio
Sampling	streams to be sent to/from the jacks or integrated speaker.
Wavetable Syntheses	Independent sampling rates for DAC's and ADC's; supports resolutions from 16 to 24-bit; 44.1 k/48k/96k/192kHz
Analog Audio	to 192 kHz for DAC and 44.1 kHz to 96 kHz for ADC
# of Channels on Line-Out	Yes - Uses OS soft wavetable
Internal Speaker	Yes

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Technical Specifications – Power

POWER

HP 140W Slim USB-C Straight AC Power Adapter Daisy II	Weight	415g(+/-10g)
	Input	100-240Vac
	Input Efficiency	81.50% min at 115 Vac/ 230 Vac @5.00V
		86.70% min at 115 Vac/ 230 Vac @9.00V
		88.00% min at 115 Vac/ 230 Vac @12.00V
		89.00% min at 115 Vac/ 230 Vac @15.00V
		89.00% min at 115 Vac/ 230 Vac @20.00V
		89.00% min at 115 Vac/ 230 Vac @28.00V
	Input frequency range	47-63Hz
	Input AC current	Max. 2.5 A at 90 Vac
	Output	
	Output power	5V/15W
		9V/27W
		12V/60W
		15V/75W
		20V/100W
		28V/140W
	DC output	5V/9V/12V/15V/20V/28V
	Hold-up time	100% load 5ms at 115 Vac input/80% load 10ms at 115 Vac input
	Output current limit	5V/9V/12V/15V/20V<125% max current, 28V<135% max current
	AC Inlet Type	C6
	DC Cable Connector	USB type C
	DC Cable Material	PVC
	Connector	
	Connector	C6
	Environmental Design	
	Operating temperature	0° to 35° C (32° to 95° F)
	Non-operating (storage) temperature	-20° to 85° C (-4° to 185° F)
	Altitude	0 to 5,000 m(0 to 16,400 ft)
	Humidity	20% to 95%
	Storage Humidity	10% to 95%
	EMI and Safety Certifications	CE Mark - full compliance with LVD and EMC directives Worldwide safety standards - IEC60950-1, IEC 62368-1:2014 and IEC62368-1 : 2018, EN62368-1:2020+A11, UL 62368-1 Agency approvals - C-UL-US, TUV/GS, TUV/PSE, EN55032 Class B, FCC Class B, CISPR32 Class B, CCC, CU(EAC), KCC(Safety+EMC), NOM001 NYCE, NRcan, NRCS, ISC, SEC, PSB, Argentina S-mark, Australia RCM, BIS, BSMI, UAE, UKCA DoC, Ukraine(CoC+DoC+RoHS+ECO)

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Technical Specifications – Options

OPTIONS

Category	Description	Part Number
Audio/Video	TDB	TDB
Cases	TDB	TDB
Docking	TDB	TDB
Hub	TDB	TDB
Adapter	TDB	TDB
Keyboard/Combo	TDB	TDB
Mouse	TDB	TDB
Power	TDB	TDB
Commodity	TDB	TDB

Technical Specifications – Options

CHANGELOG

Date of change	Version History		Description of change
	From V1 to V2		

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