

Overview

HP 250R 15.6 inch G9 Notebook PC



Front

- | | |
|-------------------------------------|---|
| 1. Internal Dual Digital Microphone | 4. Touchpad |
| 2. Webcam LED | 5. Touchpad Buttons |
| 3. Webcam | 6. Fingerprint Reader (Selected models) |

Overview



Sides

1. RJ-45 / Ethernet Port
2. HDMI Port (Cable Sold Separately)
3. SuperSpeed USB Type-C® 10 Gbps signaling rate (USB Power Delivery, DisplayPort 1.4)
4. Storage Indicator LED
5. Power Indicator LED
6. Audio Combo Jack
7. SD Card Slot
8. SuperSpeed USB Type-A 5Gbps signaling rate1 port (USB 3.2 Gen 1)
9. SuperSpeed USB Type-A 5Gbps signaling rate1 port (USB 3.2 Gen 1)
10. Power Connector

Technical Specifications

PRODUCT NAME

HP 250R 15.6 inch G9 Notebook PC

OPERATING SYSTEMS

Preinstalled

Windows 11 Pro – HP recommends Windows 11 Pro for business
 Windows 11 Home 64 ¹
 Windows 11 Home 64 Plus ¹
 Windows 11 Home 64 Plus Single Language ^{1,2}
 Windows 11 Pro Education ¹
 FreeDOS

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>.

2. This computer is preinstalled with Windows 11 Home Single Language.

PROCESSORS

Processor <small>3,4,5,6,7,8</small>	Cores	Number of P-cores	Number of E-cores	Threads	L3 Cache	Max Turbo Frequency ⁵		Base Frequency		Intel SIPP/vPro® Enterprise
						P-cores	E-cores	P-cores	E-cores	
Intel Core i5-1345U	10 cores	2	8	12	12MB	4.7 GHz	3.5 GHz	1.6 GHz	1.2 GHz	X
Intel Core i5-1335U	10 cores	2	8	12	12MB	4.6 GHz	3.4 GHz	1.3 GHz	0.9 GHz	
Intel Core i3-1315U	6 cores	2	4	8	10MB	4.5 GHz	3.3 GHz	1.2 GHz	0.9 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. Intel® Turbo Boost performance varies depending on hardware, software and overall system configuration. See <http://www.intel.com/technology/turboboost> for more information.

6. Max Boost clock frequency performance varies depending on hardware, software and overall system configuration.

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>.

8. 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. Performance varies by use, configuration, and other factors.

Technical Specifications

CHIPSET

Chipset is integrated with processor.

GRAPHICS

Integrated

Intel® Iris® X^e Graphics ⁹

Intel® UHD Graphics

Supports

Support HD decode, DX12, HDMI 1.4b ¹⁰

9. Intel® Iris® X^e Graphics capabilities require system to be configured with Intel® Core™ i5 or i7 processors and dual channel memory. Intel® Iris® X^e Graphics with Intel® Core™ i5 or 7 processors and single channel memory will only function as UHD graphics.

10. HD content required to view HD images.

DISPLAY

Non-Touch

39.6 cm (15.6") diagonal, FHD (1920 x 1080), anti-glare, UWVA, micro-edge, 300 nits, 45% NTSC eDP 1.2 ^{11,12,13,14}

39.6 cm (15.6") diagonal, FHD (1920 x 1080), anti-glare, SVA, micro-edge, 250 nits, 45% NTSC eDP 1.2 ^{11,12,13,14}

39.6 cm (15.6") diagonal, HD (1366x768), anti-glare, SVA, micro-edge, 250 nits, 45% NTSC eDP 1.2 ^{11,12,13,14}

HDMI

Supports resolutions up to 1920 x 1080 external resolution @60 Hz

Display Size

15.6" diagonal

39.6 cm (15.6") diagonal

11. HD content required to view HD images.

12. Sold separately or as an optional feature.

13. Resolutions are dependent upon monitor capability, and resolution and color depth settings.

14. CODEC H.265/HEVC (High Efficiency Video Coding) is disabled on this platform.

Technical Specifications

DOCKING (SOLD SEPARATELY)

Docking station model #1	HP USB-C Dock G5
Docking station model #2	HP USB-C/A G2 Universal Dock

For additional aftermarket options and docking specs please see page 27.

STORAGE AND DRIVES

Primary Storage

- 1 TB PCIe® NVMe™ M.2 TLC Solid State Drive ¹⁵
- 512 GB PCIe® NVMe™ M.2 TLC Solid State Drive ¹⁵
- 256 GB PCIe® NVMe™ M.2 TLC Solid State Drive ¹⁵
- 128 GB PCIe® NVMe™ M.2 TLC Solid State Drive ¹⁵

15. For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 30 GB (for Windows 11) is reserved for system recovery software.

MEMORY

Maximum Memory

32 GB DDR4-3200 MHz SDRAM (2 x 16 GB) ^{16,17}

Memory

- 32 GB DDR4-3200 MHz SDRAM (2 x 16 GB) ^{16,17}
- 16 GB DDR4-3200 MHz SDRAM (1 x 16 GB) ^{16,17}
- 16 GB DDR4-3200 MHz SDRAM (2 x 8 GB) ^{16,17}
- 8 GB DDR4-3200 MHz SDRAM (1 x 8 GB) ^{16,17}
- 8 GB DDR4-3200 MHz SDRAM (2 x 4 GB) ^{16,17}
- 4 GB DDR4-3200 MHz SDRAM (1 x 4 GB) ^{16,17}

Memory Slots

2 SODIMM (select models) ^{16,17}

All slots are customer non-accessible / non-upgradeable
Supports Dual Channel Memory¹⁷

16. All slots are non-accessible / non-upgradeable.

17. Due to the non-industry standard nature of some third-party memory modules, we recommend HP branded memory to ensure compatibility. If you mix memory speeds, the system will perform at the lower memory speed.

Technical Specifications

NETWORKING/COMMUNICATIONS

WLAN

Realtek 8852BE-VS (1X1) Wi-Fi® 6 Bluetooth® 5.3 Wireless Card WLAN ¹⁸

Intel® Dual Band Wi-Fi 6 AX201 802.11a/b/g/n/ac/ax (2x2) WLAN and Bluetooth® 5.2 Wireless Card, non-vPro® ¹⁸

Miracast

Compatible with Miracast-certified devices (For Windows 11) ¹⁹

Ethernet

Realtek RTL8111HSH-CG Integrated 10/100/1000 NIC²⁰

18. Wireless access point and internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 6 is backwards compatible with prior 802.11 specs.

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

20. 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.

AUDIO/MULTIMEDIA

Audio

2 Integrated stereo speakers

Integrated dual array microphone

Speaker Power

2W/4ohm

Camera

720p HD camera with Temporal Noise Reduction ¹⁰

10. HD content required to view HD images.

KEYBOARDS/POINTING DEVICES/BUTTONS & FUNCTION KEYS

Keyboard

Full size textured island-style keyboard

Pointing Device

Touchpad with multi-touch gesture support (PTP certified)

Function Keys

F1 - Open " How to get help in Windows 11" webpage

F2 - Brightness Down

F3 - Brightness Up

F4 - Display Switching

F5 - Blank

F6 - Mute

F7 - Volume Down

F8 -Volume Up

F9 - Previous

F10 - Play/Pause

Technical Specifications

F11 - Next
F12 - Airplane mode
Microsoft Copilot Key ²¹

21. Requires Windows 11 and an NPU. Timing of feature delivery and availability varies by market and device. Requires Microsoft account to log in. Where Copilot in Windows is not available, the Copilot key will lead to the Bing search engine. See <http://aka.ms/WindowsAIFeatures>

SOFTWARE AND SECURITY

Software

HP Connection Optimizer
HP Privacy Settings
HP Smart Support ²²
MyHP
Buy Microsoft Office (Sold separately)

Manageability Features

Touchpoint Customizer for Consumer

Security Management

McAfee Security (30 days free trial as default)²³
Express VPN (30 days free trial)
LastPass password manager
Discrete TPM 2.0
Fingerprint Reader

22. HP Smart Support requires the HP agent to be installed. For more information about how to enable or to download HP Smart Support, please visit <http://www.hp.com/smart-support>. HP Services Scan is provided thru Windows Update and will check entitlement on each hardware device to determine if an HP agent-enabled service has been purchased, and will download applicable software automatically. The HP agent is a telemetry and analytics platform that provides critical data around devices and applications and is not sold as a standalone service. HP follows stringent GDPR privacy regulations and is ISO27001, ISO27701, ISO27017 and SOC2 Type2 certified for Information Security. Internet access is required. For full system requirements or to disable this feature, please visit <http://www.hpdaas.com/requirements>.

23. 30-day McAfee® LiveSafe™ trial included. Internet access required and not included. Subscription required after expiration. See <http://www.McAfee.com> for more details

Technical Specifications

POWER

Power Supply

HP Smart 65 W EM External AC power adapter ²⁴

HP Smart 45 W External AC power adapter ²⁴

HP Smart 65 W USB Type-C® adapter²⁴

Battery

HP Long Life 3 cell 41Whr Polymer ^{25,26}

Power Cord

1M (3.28 feet) length power cord

Battery Life

Up to 7hours 15 minutes with 41Whr battery²⁷

Battery Weight

0.42 lb

0.19 kg

24. Availability may vary by country.

25. Battery is internal and not replaceable by customer. Serviceable by warranty.

26. Actual battery Watt-hours (Wh) will vary from design capacity. Battery capacity will naturally decrease with shelf life, time, usage, environment, temperature, system configuration, loaded apps, features, power management settings and other factors.

27. 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.

Technical Specifications

WEIGHTS & DIMENSIONS

Product Weight

Starting at 3.84 lb ²⁸

Starting at 1.74 kg ²⁸

Product Dimensions (W x D x H) ²⁹

358 mm (W) x 242 mm (D) x 9.2mm (front)/ 14.8mm (rear)

Maximum height 19.9 (mm)

14.09 in (W) x 9.53 in (D) x 0.36 in (front)/ 0.58 in (rear)

Maximum height 0.78 (in)

Package Dimensions (W x D x H)³⁰

12-15" boxes (305mm height): 1200mm x 1000mm x 1080mm

28. Weight will vary by configuration.

29. Front height measurement is near the front edge where the chassis bottom cover taper begins. Back height measurement is near the back edge where the chassis bottom cover taper ends.

30. Learn more about HP business notebooks, tablets, and desktops at hp.com or contact your local HP sales representative.

PORTS/SLOTS

2 SuperSpeed USB Type-A 5Gbps signaling rate

1 SuperSpeed USB Type-C[®] 10Gbps signaling rate (USB Power Delivery, DisplayPort™ 1.4)

1 HDMI v1.4b ³¹

1 RJ-45

1 AC Power

1 Headphone/mic combo jack

Expansion Slots

Support SD/SDHC/SDXC

1 multi-format digital media reader

31. HDMI cable sold separately.

Technical Specifications

SERVICE AND SUPPORT

1-year warranty and 90 day software limited warranty options depending on country. Batteries have a default one year limited warranty. Refer to <http://www.hp.com/support/batterywarranty/> for additional battery information. On-site service and extended coverage is also available. HP Care Pack Services are optional extended service contracts that go beyond the standard limited warranties. To choose the right level of service for your HP product, use the HP Care Pack Services Lookup Tool at: <http://www.hp.com/go/cpc>.³²

32. 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 <http://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

SYSTEM UNIT

Stand-Alone Power Requirements (AC Power)

Nominal Operating Voltage	19.5V
Average Operating Power	6.3W

Integrated graphics Yes

Max Operating Power UMA<45W

Temperature

Operating 0° to 35° C (32° to 95° F)

Non-operating 5° to 35° C (41° to 95° F)

Relative Humidity

Operating 10% to 90 % (non-condensing)

Non-operating 5% to 95 %, 38.7° C (101.6° F) maximum wet bulb temperature

Shock

Operating 40 G, 2 ms, half-sine

Non-operating 200 G, 2 ms, half-sine

Random Vibration

Operating 0.75 grams

Non-operating 1.50 grams

Altitude (unpressurized)

Operating -15.24 to 3,048 m (-50 to 10,000 ft)

Non-operating -15.24 to 12,192 m (-50 to 40,000 ft)

Planned Industry Standard

Certifications Yes

Regulatory Model Number TPN-C139

CSA/UL 62368-1 Yes

ENERGY STAR® Yes

EPEAT® EPEAT® Gold in the United States ³³

FCC/ICES/CISPR/VCCI Yes

CE MARKING Yes

33. Based on US EPEAT® registration according to IEEE 1680.1-2018 EPEAT®. EPEAT® status varies by country. Visit <http://www.epeat.net> for more information.

Technical Specifications

DISPLAYS

1. Actual brightness will be lower with touchscreen or HP Sure View. CODEC H.265/HEVC (High Efficiency Video Coding) is disabled on this platform.

NOTE: All specifications represent the typical specifications provided by HP's component manufacturers; actual performance may vary either higher or lower.

15.6 in FHD (1920 x 1080) Anti-Glare UWVA LED NTSC 45 NWBZ 300 eDP 1.2 w/o PSR flat LCD Panel	Outline Dimensions (W x H)	350.96 x 216.75 (max)
	Active Area	344.16 x 193.59 (typ)
	Weight	370 (max)
	Diagonal Size	15.6 (inch)
	Surface Treatment	Anti-Glare
	Touch Enabled	No
	Contrast Ratio	1000:1 (typ)
	Refresh Rate	60Hz
	Brightness	300 nits (typ.)
	Pixel Resolution - Format	1920 x 1080 (FHD)
	Backlight	WLED
	Pixel Resolution	RGB
	Color Gamut Coverage	NTSC 45%
	Color Depth	6+2 FRC
	Viewing Angle	UWVA 89/89/89/89
Low Blue Light	No	
Power Consumption (W, EBL@ 150nits max/ 200nits max))	2.71 (max) / 3.4 (max)	

Panel LCD 15.6-in FHD (1920x1080) Anti-Glare WLED SVA 45percent cg 250nits eDP 1.2 w/o PSR NWBZ ultraslim	Outline Dimensions (W x H)	350.96 x 216.75 (max)
	Active Area	344.16 x 193.59 (typ)
	Weight	360 (max)
	Diagonal Size	15.6 (inch)
	Surface Treatment	Anti-Glare
	Touch Enabled	No
	Contrast Ratio	300: 1 (typ)
	Refresh Rate	60Hz
	Brightness	250 nits (typ.)
	Pixel Resolution - Format	1920 x 1080 (FHD)
	Backlight	WLED
	Pixel Resolution	RGB
	Color Gamut Coverage	NTSC 45%
	Color Depth	6
	Viewing Angle	SVA 45/45/15/30
Low Blue Light	No	

Technical Specifications

Power Consumption (W, EBL@ 150nits max/ 200nits max))	2.67 (max) / 3.33 (max)
--	-------------------------

Panel LCD 15.6-in HD (1366x768) Anti-Glare WLED SVA 45percent cg 250nits eDP 1.2 w/o PSR NWBZ ultraslim	Outline Dimensions (W x H)	351.03 x 216.75 (max)
	Active Area	344.23 x 193.54 (typ)
	Weight	370 (max)
	Diagonal Size	15.6 (inch)
	Surface Treatment	Anti-Glare
	Touch Enabled	No
	Contrast Ratio	300: 1 (typ)
	Refresh Rate	60Hz
	Brightness	250 nits (typ.)
	Pixel Resolution - Format	1366 x 768 (HD)
	Backlight	WLED
	Pixel Resolution	RGB
	Color Gamut Coverage	NTSC 45%
	Color Depth	6
	Viewing Angle	SVA 45/45/15/30
	Low Blue Light	No
Power Consumption (W, EBL@ 150nits max/ 200nits max))	2.49 (max) / 2.78 (max)	

Technical Specifications

STORAGE AND DRIVES

For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 30 GB (for Windows 10 and 11) is reserved for system recovery software.

SSD 256GB 2280 PCIe NVMe Value	Form Factor	M.2 2280
	Capacity	256 GB
	NAND Type	TLC
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)
	Weight	0.02 lb (10 g)
	Interface	PCIe NVMe Gen4X4
	Maximum Sequential Read	2000 MB/s ±20%
	Maximum Sequential Write	900 MB/s ±20%
	Logical Blocks	500,118,192
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Features	Pyrite 2.0; TRIM; L1.2

SSD 512GB 2280 PCIe NVMe Value	Form Factor	M.2 2280
	Capacity	512 GB
	NAND Type	TLC
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)
	Interface	PCIe NVMe Gen4X4
	Maximum Sequential Read	2200 MB/s ±20%
	Maximum Sequential Write	1000 MB/s ±20%
	Logical Blocks	1,000,215,215
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Features	Pyrite 2.0; TRIM; L1.2

SSD 1TB 2280 PCIe NVMe Value	Form Factor	M.2 2280
	Capacity	1TB
	NAND Type	TLC
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)
	Interface	PCIe NVMe Gen4X4
	Maximum Sequential Read	2200 MB/s ±20%
	Maximum Sequential Write	1600 MB/s ±20%
	Logical Blocks	2,000,409,264
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Features	Pyrite 2.0; TRIM; L1.2

Technical Specifications

SSD 128GB 2230 PCIe NVMe Value	Form Factor	M.2 2230
	Capacity	128GB
	NAND Type	TLC
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)
	Interface	PCIe NVMe Gen4X4
	Maximum Sequential Read	1800 MB/s \pm 20%
	Maximum Sequential Write	800 MB/s \pm 20%
	Logical Blocks	250,069,680
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Features	Pyrite 2.0; TRIM; L1.2

Technical Specifications

NETWORKING/COMMUNICATIONS

Realtek RTL8852BE-VS 802.11ax 1x1 Wi-Fi 6+ Bluetooth5.3 Wireless Card (802.11ax 1x1) ¹	Wireless LAN Standards	<ul style="list-style-type: none"> IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n IEEE 802.11ac IEEE 802.11ax IEEE 802.11d IEEE 802.11e IEEE 802.11h IEEE 802.11i IEEE 802.11k
	Interoperability	Wi-Fi certified modules
	Frequency Band	<ul style="list-style-type: none"> • 802.11b/g/n/ax 2.402 – 2.482 GHz • 802.11a/n/ac/ax 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
	Data Rates	<ul style="list-style-type: none"> • 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 150Mbps • 802.11ac : max 433Mbps • 802.11ax : max 600Mbps
	Modulation	Direct Sequence Spread Spectrum BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM, 1024QAM
	Security²	<ul style="list-style-type: none"> • IEEE and WiFi certified 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 • EAP
	Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
	Roaming	IEEE 802.11 compliant roaming between access points
	Output Power³	<ul style="list-style-type: none"> • 802.11b : +17dBm minimum • 802.11g : +16dBm minimum • 802.11a : +17dBm minimum • 802.11n HT20(2.4GHz) : +14dBm minimum • 802.11n HT40(2.4GHz) : +13dBm minimum • 802.11n HT20(5GHz) : +14dBm minimum

Technical Specifications

	<ul style="list-style-type: none"> • 802.11n HT40(5GHz) : +13dBm minimum • 802.11ac VHT80(5GHz) : +10dBm minimum • 802.11ax HE40(2.4GHz) : +12dBm minimum • 802.11ax HE80(5GHz) : +10dBm minimum
Power Consumption	<ul style="list-style-type: none"> • Transmit mode :2.5 W • Receive mode :2 W • Idle mode (PSP) 180 mW (WLAN Associated) • Idle mode :50 mW (WLAN unassociated) • Connected Standby/Modern Standby: 10mW • Radio disabled: 8 mW
Power Management	ACPI and PCI Express compliant power management 802.11 compliant power saving mode
Receiver Sensitivity⁴	<ul style="list-style-type: none"> • 802.11b, 1Mbps : -93.5dBm maximum • 802.11b, 11Mbps : -84dBm maximum • 802.11a/g, 6Mbps : -86dBm maximum • 802.11a/g, 54Mbps : -72dBm maximum • 802.11n, MCS07 : -67dBm maximum • 802.11n, MCS15 : -64dBm maximum • 802.11ac, MCS0 : -84dBm maximum • 802.11ac, MCS9 : -59dBm maximum • 802.11ax, MCS11(HE40): -57dBm maximum • 802.11ax, MCS11(HE80): -54dBm maximum
Antenna type	High efficiency antenna. One embedded dual band 2.4/5 GHz antenna is provided to the card to support WLAN MIMO communications and Bluetooth communications
Form Factor	PCI-Express M.2 MiniCard
Dimensions	Type 2230: 2.3 x 22.0 x 30.0 mm
Weight	Type 2230: 2.8g
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 Wireless Card Technology	
Bluetooth Specification	4.0/4.1/4.2/5.0/5.1/5.2/5.3 Compliant
Frequency Band	2402 to 2480 MHz
Number of Available Channels	Legacy: 0~79 (1 MHz/CH) BLE: 0~39 (2 MHz/CH)
Signaling Data Rate	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

Technical Specifications

Transmit Power

Legacy: Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric (3-DH5) or 864 kbps symmetric (3-EV5)

The Bluetooth component shall operate as a Class II Bluetooth device with a maximum transmit power of + 4 dBm for BR and EDR.

1. 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. Wireless access point and Internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 6 (802.11ax) is backwards compatible with prior 802.11 specs.
2. 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.
3. Check latest software/driver release for updates on supported security features.
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).

Intel Wi-Fi 6 AX201 + Bluetooth5.2 Wireless Card (802.11ax 2x2, non-vPro, supporting gigabit file transfer speeds) non-vPro

Wireless LAN Standards

IEEE 802.11a
IEEE 802.11b
IEEE 802.11g
IEEE 802.11n
IEEE 802.11ac
IEEE 802.11ax
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
2.402 – 2.482 GHz
- 802.11a/n/ac/ax
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

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

Modulation

Direct Sequence Spread Spectrum

Security²

OFDM, BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM, 1024QAM

- IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/g mode only
- AES-CCMP: 128 bit in hardware

Technical Specifications

	<ul style="list-style-type: none"> • 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	IEEE 802.11 compliant roaming between access points
Output Power³	<ul style="list-style-type: none"> • 802.11b : +17dBm minimum • 802.11g : +16dBm minimum • 802.11a : +17dBm minimum • 802.11n HT20(2.4GHz) : +14dBm minimum • 802.11n HT40(2.4GHz) : +13dBm minimum • 802.11n HT20(5GHz) : +14dBm minimum • 802.11n HT40(5GHz) : +13dBm minimum • 802.11ac VHT80(5GHz) : +10dBm minimum • 802.11ac VHT160(5GHz) : +10dBm minimum • 802.11ax HE40(2.4GHz) : +12dBm minimum • 802.11ax HE80(5GHz) : +10dBm minimum • 802.11ax HE160(5GHz) : +10dBm minimum
Power Consumption	<ul style="list-style-type: none"> • Transmit mode 2.0 W • Receive mode 1.6 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 Sensitivity⁴	<ul style="list-style-type: none"> • 802.11b, 1Mbps : -93.5dBm maximum • 802.11b, 11Mbps : -84dBm maximum • 802.11a/g, 6Mbps : -86dBm maximum • 802.11a/g, 54Mbps : -72dBm maximum • 802.11n, MCS07 : -67dBm maximum • 802.11n, MCS15 : -64dBm maximum • 802.11ac, MCS0(VHT80) : -84dBm maximum • 802.11ac, MCS9(VHT80) : -59dBm maximum • 802.11ac, MCS9(VHT160) : -58.5dBm maximum • 802.11ax, MCS11(HE40): -57dBm maximum • 802.11ax, MCS11(HE80): -54dBm maximum • 802.11ax, MCS11(HE160): -53.5dBm 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 with CNVi Interface
Dimensions	1. Type 2230 : 2.3 x 22.0 x 30.0 mm

Technical Specifications

Weight	2. Type 1216: 1.67 x 12.0 x 16.0 mm 1. Type 2230 : 2.8g 2. Type 1216: 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 Wireless Card Technology

Bluetooth Specification	4.0/4.1/4.2/5.0/5.1/5.2 Compliant
Frequency Band	2402 to 2480 MHz
Number of Available Channels	Legacy: 0~79 (1 MHz/CH) BLE: 0~39 (2 MHz/CH)
Signaling Data Rate	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 II Bluetooth device with a maximum transmit power of + 9.5 dBm for BR and EDR.

Technical Specifications

Realtek RTL8111HSH 10/100/1000 Integrated NIC	Data rates supported	10 Mbit/s operation (10BASE-T; IEEE 802.3i; IEEE 802.3 clauses 13-14) 100 Mbit/s operation (100BASE-TX; IEEE 802.3u; IEEE 802.3 clauses 21-30) 1000 Mbit/s operation (1000BASE-T; IEEE 802.3ab; IEEE 802.3 clauses 40) Auto-Negotiation (Automatic Speed Selection) Full Duplex Operation at all Speeds, Half Duplex operation at 10 and 100 Mbit/s
	Power Management	ACPI compliant – multiple power modes Situation-sensitive features reduce power consumption Advanced link down power saving for reducing link down power consumption TCP/IP/UDP Checksum Offload (configurable) Protocol Offload (ARP & NS)
	Performance Features	Large send offload and Giant send offload Receiving Side Scaling Jumbo Frame 9K Wake-on-LAN from standby and hibernation (Magic Packet and Microsoft Wake-Up Frame); Wake-on-LAN from off (Magic Packet only)
	Manageability	PXE 2.1 Remote Boot Statistics Gathering (SNMP MIB II, Ethernet-like MIB, Ethernet MIB (802.3x, clause 30)) Comprehensive diagnostic and configuration software suite Virtual Cable Doctor for Ethernet cable status
	Management Interface	Auto MDI/MDIX Crossover cable detection

Technical Specifications

POWER

1. Actual battery Watt-hours (Wh) will vary from design capacity. Battery capacity will naturally decrease with shelf life, time, usage, environment, temperature, system configuration, loaded apps, features, power management settings and other factors

HP 45W 4.5 mm nPFC Right Angle Smart (3-pin) AC Power Adapter Cupid II	Dimensions	3.74 x 1.772 x 1.043 in (9.5x4.5x2.65cm)	
	Weight	170g(+/-10g)	
	Input	100 to 240 VAC	
	Output	Input Efficiency	87.74 % at 115 Vac and 88.4 % at 230Vac
		Input frequency range	47 ~ 63Hz
		Input AC current	Max. 1.4 A at 90 Vac
		Output power	45W
		DC output	5V/9V/12V/15V
	Connector	Hold-up time	100% load 5ms at 115 Vac input/80% load 10ms at 115 Vac input
		Output current limit	< 8.0A
Environmental Design		4.5mm Barrel Type	
EMI and Safety Certifications		Operating temperature	32° F to 95° F (0° to 35° C)
	Non-operating (storage) temperature	-4° F to 185° F (-20° to 85° C)	
	Altitude	0 to 16,400 ft (0 to 5000m)	
	Humidity	20% to 95%	
	Storage Humidity	10% to 95%	

Technical Specifications

HP 65W 4.5 mm nPFC Right Angle Smart (3-pin) AC Power Adapter EM II	Dimensions	4.016 x 2.165 x 1.181 in (10.2x5.5x3cm)	
	Weight	250g(+/-10g)	
	Input	100 to 240 VAC	
	Output	Input Efficiency	88 % at 115 Vac and 89 % at 230Vac
		Input frequency range	47-63Hz
		Input AC current	Max. 1.7 A at 90 Vac
		Output power	65W
		DC output	19.5V
		Hold-up time	100% load 5ms at 115 Vac input/80% load 10ms at 115 Vac input
		Output current limit	<11.0A
	Connector	4.5mm Barrel Type	
	Environmental Design	Operating temperature	32° F to 95° F (0° to 35° C)
		Non-operating (storage) temperature	-4° F to 185° F (-20° to 85° C)
Altitude		0 to 16,400 ft (0 to 5000m)	
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 and IEC62368-1 : 2018, EN62368-1:2014+A11, UL62368-1 Agency approvals - C-UL-US, TUV/GS, EN55032 Class B, FCC Class B, CISPR32 Class B, CCC and CECP, BIS, UKCA DoC		

AC Adapter 65 Watt nPFC Standard USB type C Straight 1.8m	Weight	220g(+/-10g) (Not including power cord. Power cord varies by country.)	
	Input	100-240Vac	
	Output	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
		Input frequency range	47-63Hz
		Input AC current	Max. 1.6 A at 90 Vac
		Output power	5V/15W 9V/27W 12V/60W 15V/65W 20V/65W
		DC output	5V/9V/12V/15V/20V
		Hold-up time	100% load 5ms at 115 Vac input
		Output current limit	< 8.0A
		AC Inlet Type	C6
		DC Cable Connector	USB type C

Technical Specifications

Connector	DC Cable Material	PVC
Environmental Design	DC Cable Material	C6
	Operating temperature	32° F to 95° F (0° to 35° C)
	Non-operating (storage) temperature	-4° F to 185° F (-20° to 85° C)
	Altitude	0 to 16,400 ft (0 to 5000m)
	Humidity	20% to 95%
	Storage Humidity	10% to 95%
EMI and Safety Certifications	<p>CE Mark - full compliance with LVD and EMC directives</p> <p>Worldwide safety standards - IEC60950-1 and IEC62368-1 : 2018, EN62368-1:2014+A11, UL 62368-1</p> <p>Agency approvals - C-UL-US, TUV/GS, TUV/PSE, EN55032 Class B, FCC Class B, CISPR32 Class B, CCC and CECP, CU(EAC), EAEU, KCC(Safety+EMC) and K-MEPS, NOM-001 and 029 NYCE, NRcan, NRCS, ISC, SEC, PSB, Argentina S-mark, Australia RCM, BIS, BSMI, UAE, UKCA DoC</p>	

HP 65W Standard USB-C Halogen Free Straight AC Power Adapter Ceto+	Weight	220g(+/-10g) (Not including power cord. Power cord varies by country.)
	Input	100-240Vac
Output	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
	Input frequency range	47-63Hz
	Input AC current	Max. 1.6 A at 90 Vac
	Output power	5V/15W 9V/27W 12V/60W 15V/65W 20V/65W
	DC output	5V/9V/12V/15V/20V
	Hold-up time	100% load 5ms at 115 Vac input
	Output current limit	< 8.0A
	AC Inlet Type	C6
	DC Cable Connector	USB type C
	DC Cable Material	Halogen Free
Connector	C6	
Environmental Design	Operating temperature	32° F to 95° F (0° to 35° C)
	Non-operating (storage) temperature	-4° F to 185° F (-20° to 85° C)
	Altitude	0 to 16,400 ft (0 to 5000m)
	Humidity	20% to 95%

Technical Specifications

EMI and Safety Certifications	Storage Humidity 10% to 95% CE Mark - full compliance with LVD and EMC directives Worldwide safety standards - IEC60950-1 and IEC62368-1 : 2018, EN62368-1:2014+A11, UL 62368-1 Agency approvals - C-UL-US, TUV/GS, TUV/PSE, EN55032 Class B, FCC Class B, CISPR32 Class B, CCC and CECP, CU(EAC), EAEU, KCC(Safety+EMC) and K-MEPS, NOM-001 and 029 NYCE, NRcan, NRCS, ISC, SEC, PSB, Argentina S-mark, Australia RCM, BIS, BSMI, UAE, UKCA DoC
--------------------------------------	--

Battery HW 3 Cell WHr 41 Long Life -PR+PL Fast Charge	Weight	175g	
	Cells/Type	3S1P / Polymer cell	
	Energy	Voltage	11.34V / 11.28V
		Amp-hour capacity	3620mAh / 4635mAh
		Watt-hour capacity¹	41Whr
	Temperature	Operating (Charging)	32° to 113° F (0° to 45° C) (Charge Initial Temperature) 32° to 122° F (0° to 50° C) (Continuous Charging)
		Operating (Discharging)	14° to 140° F (-10° to 60° C)
Optional Travel Battery Available		No	

Technical Specifications

AUDIO

HD Stereo Codec	Realtek ALC3247
Audio I/O Ports	One Headset Combo-Jack connector support CTIA spec
Internal Speaker Amplifier	2W class D stereo amplifier for the internal speaker only
Multi-streaming Capable	Playback multi-streaming can be enabled in the audio control panel to allow independent audio streams to be sent to/from the Combo jack or integrated speaker.
Sampling	Independent sampling rates for DAC's and ADC's; supports resolutions from 16 to 24-bit; 44.1 kHz to 48 kHz for DAC and ADC.
Wavetable Syntheses	Yes - Uses OS soft wavetable
Analog Audio	Yes
# of Channels on Line-Out	0
Internal Speaker	Yes

FINGERPRINT READER

Sensor vendor	Elan CP1515B-HP015U
Sensor type	Capacitive
DPI resolution	508 DPI
Scan area	80 x 80 pixels
False Rejection Rate	RR= \leq 2% @ 1:50K FAR
Mobile Voltage Operation	2.7V to 3.6V
Operating Temperature	-4° – 176°F (-20°C~ 80°C)
Current Consumption	50mA peak
Image	
Low Latency Wait For Finger	900 uA
Capture Rate	Capture Rate: 20 cm/sec
ESD Resistance	IEC 61000-4-2 4B (+15KV)
Detection Matrix	508 dpi / 4 x 4 mm sensor area

Options and Accessories (Sold separately and availability may vary by country)

DOCKING (Sold Separately)

Docking station model #1	HP USB-C Dock G5
Total number of supported displays (incl. the notebook display)	3
Max. resolutions supported	Multi-Function Mode: (2) 5k @ 30Hz and (1) 4k UHD @ 30Hz on any port High-Resolution Mode: (2) 5k @ 60Hz on DisplayPort ports and (1) 4k UHD @ 60Hz on HDMI port
Dock Connectors	1x HDMI 2.0, 2x DisplayPort 1.4
Technical limitations	Maximum resolution and display support is dependent on the maximum capability of the notebook. Highest resolution with dual displays is two 8K@ 60Hz host in High Resolution mode. Three maximum displays supported are two 5K@ 30 Hz on DP ports plus one 4K UHD@ 30 Hz on HDMI in Multi-function mode The highest resolution for a non-Thunderbolt host in Multi-function mode is a single 5K dual cable (using both DP ports) + (1) 4K on HDMI port
Docking station model #2	HP USB-C/A G2 Universal Dock
Total number of supported displays (incl. the notebook display)	3
Max. resolutions supported	Multi-Function Mode: (3) 4K DCI @ 30Hz on any port High-Resolution Mode: (3) 4K DCI @ 30Hz on any port
Dock Connectors	1x HDMI 2.0, 2x DisplayPort 1.2
Technical limitations	Maximum resolution and display support is dependent on the maximum capability of the notebook. The best resolution for dual or triple displays is 4K UHD@ 60Hz. For use with the USB-A adapter that comes in the box the maximum number of displays supported is (2) 4k x 60 Hz on the Type-A Gen 1 connection from the host.

Options and Accessories (Sold separately and availability may vary by country)

Type	Description	Part Number
Cases	HP Prelude 15.6 Backpack (Bulk 15) (Edo) - New AMO	1E7D6A6
	HP Prelude Pro Recycled 15.6 Backpack (Montrose) - New AMO	1X644AA,1X644ET, 1X644UT
	HP Prelude Pro Recycled 15.6 Top Load (Midtown) - New AMO	1X645AA,1X645ET, 1X645UT
	HP Prelude G2 15.6 Top Load (Gulfton) - New AMO	1E7D7AA,2Z8P4AA, 50P31AA
	HP Prelude G2 15.6 Backpack (Edo) - New AMO	1E7D6AA,2Z8P3AA, 50P32AA
	HP Renew Business 17.3 Laptop Backpack (Negotium 17" BP) - New AMO	3E2U5AA,3E2U5ET, 3E2U5UT
	HP Renew Business 17.3 Laptop Bag (Negotium 17" TL) - New AMO	3E2U6AA,3E2U6UT
	HP Renew Business 15.6 Laptop Bag (Negotium 15" TL) - New AMO	3E5F8AA,3E5F8ET, 3E5F8UT
	HP Renew Executive 16 Laptop Backpack (Exsequi - Bezo) - New AMO	6B8Y1AA
	HP Renew Executive 16 Laptop Bag (Exsequi-Musk) - New AMO	6B8Y2AA
	HP Travel 25L 15.6 Iron Gray Laptop Backpack (Patty) - New AMO	6B8U4AA,6H2D8AA
	HP Travel 18L 15.6 Iron Gray Laptop Backpack (Lucile) - New AMO	6B8U6AA,6H2D9AA
	HP 215 15.6 Laptop Backpack (Tyranno) - New AMO	35L98AA#ACJ
	HP 315 15.6 Laptop Backpack (Brachio) - New AMO	35L97AA#ACJ
	HP 235 15.6 Laptop Backpack (Diloph) - New AMO	35M00AA#ACJ
	HP 225 15.6 Laptop Backpack (Spino) - New AMO	2P7U6AA#ACJ
	HP 115 15.6 Laptop Backpack (Stego) - New AMO	8DV45AA#ACJ
	HP Campus Green Backpack (Patrick) - New AMO	7J595AA,7K0E4AA
	HP Campus Blue Backpack (Patrick) - New AMO	7J596AA,7K0E5AA
	Docking	HP USB-C G5 Dock
HP USB-C/A G2 Universal Dock		5TW13AA

Change Log

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

© Copyright 2024 HP Development Company, L.P. The information contained herein is subject to change without notice. The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

Intel, Core and Intel vPro are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. DisplayPort™ and the DisplayPort™ logo are trademarks owned by the Video Electronics Standards Association (VESA®) in the United States and other countries. USB Type-C® and USB-C® are trademarks of USB Implementers Forum. ENERGY STAR is a registered trademark of the U.S. Environmental Protection Agency. Microsoft and Windows are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.