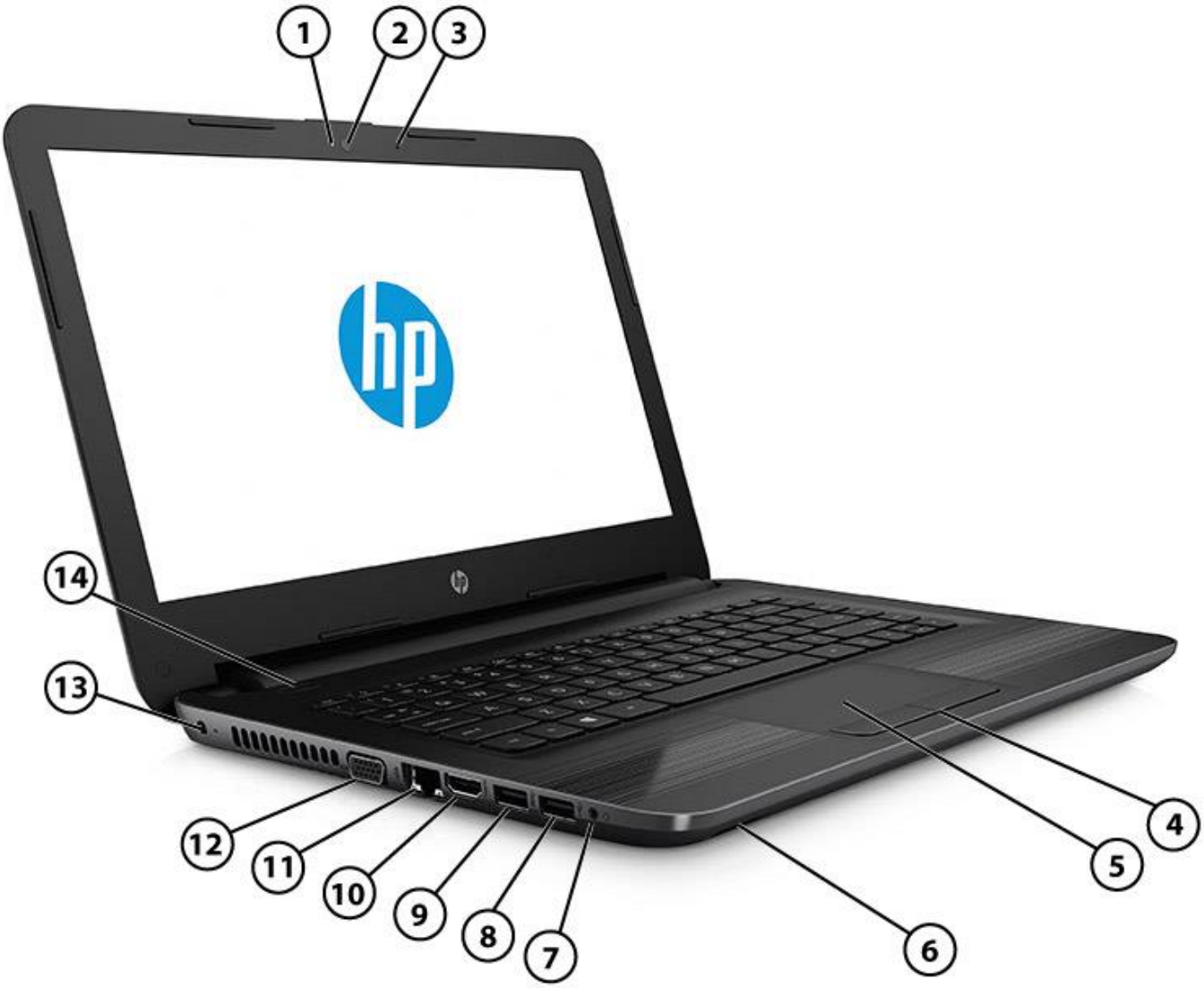
Overview

HP 240 G5 Notebook PC



Front/ Left

1. Webcam LED
2. Webcam
3. Microphone
4. Touchpad buttons
5. Touchpad
6. SD Card slot
7. Audio in/out combo jack
8. USB 2.0 port
9. USB 3.0 port
10. HDMI port
11. Ethernet port
12. VGA port
13. Power jack
14. Power button

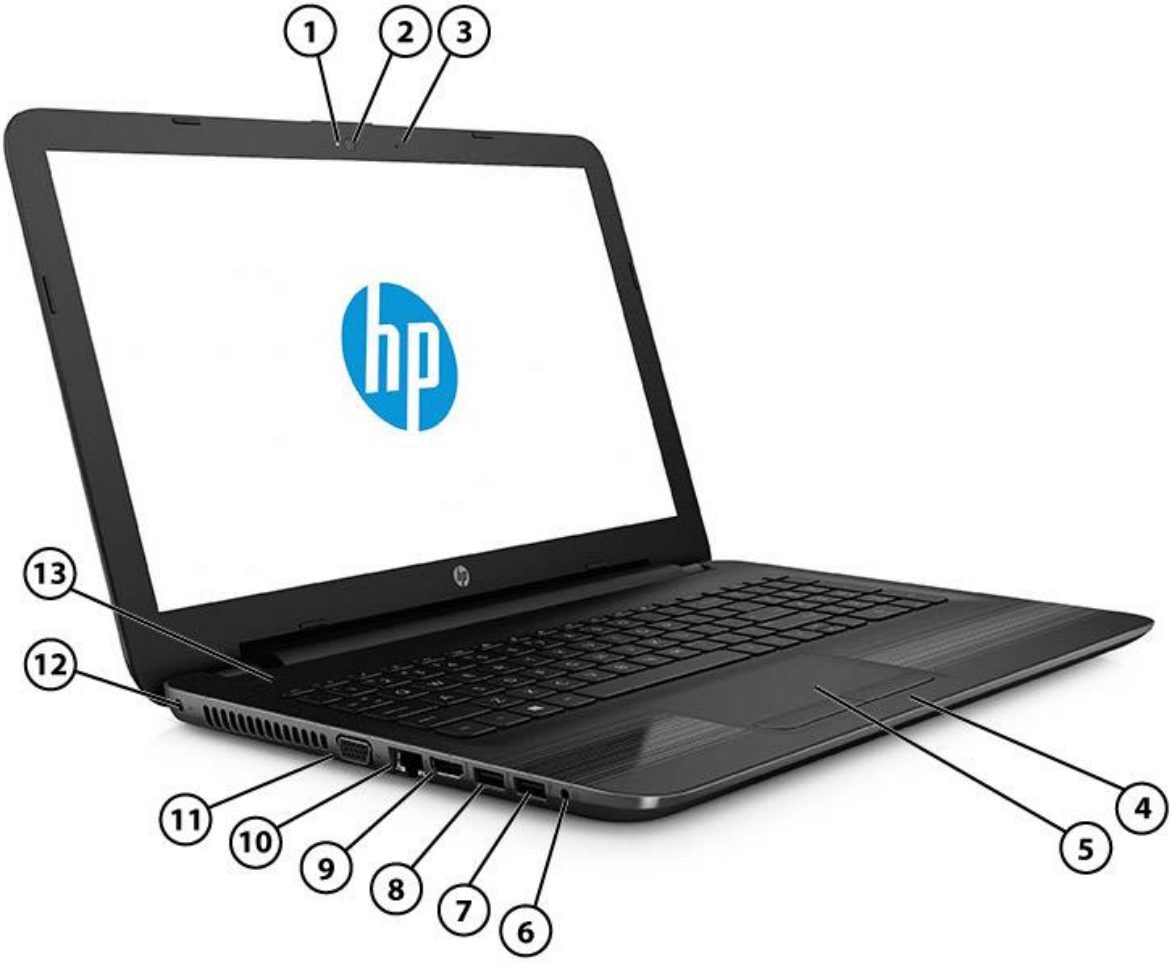
Overview

Rear/ Right

1. Power indicator LED
2. Hard drive indicator LED
3. USB 2.0 port
4. Optical drive (optional)
5. Security lock slot

Overview

HP 250 G5 Notebook PC



Front/ Left

1. Webcam LED
2. Webcam
3. Microphone
4. Touchpad buttons
5. Touchpad
6. Audio in/out combo jack
7. USB 2.0 port
8. USB 3.0 port
9. HDMI port
10. Ethernet port
11. VGA port
12. Power jack
13. Power button

Overview

Rear/ Right

1. Power indicator LED , Hard drive indicator LED
2. SD Card slot
3. USB 2.0 port
4. Optical drive (optional)
5. Security lock slot

Overview

AT A GLANCE

- Window 10 versions, Windows 7 Professional (Available through downgrade rights from Windows 10 Pro 64), or FreeDOS 2.0
- Choice of the latest Intel® Core™, Intel® Pentium®, or Intel® Celeron® processors
- Intel® HD Graphics or AMD Radeon™ R5 (Up to 2 GB of dedicated video memory) (HP 250 G5 only)
- Display choices include:
  - HP 240 G5: 14.0" diagonal HD
  - HP 250 G5: 15.0" diagonal HD or FHD
- Choice of hard drives up to 1 TB, hybrid drives up to 1 TB SSHD with 8 GB NAND (HP 250 G5 only) or solid state drives up to 256 GB (HP 250 G5 only)
- Weight starting at:
  - HP 240 G5: 3.95 lbs (1.79 kg)
  - HP 250 G5: 4.32 lbs (1.96 kg)
- Security features including FW TPM 2.0 and lock slot (cable not included)
- Keyboard
  - Full size textured island-style keyboard on the HP 240 G5
  - Full size textured island-style keyboard with numeric pad on the HP 250 G5
- Touchpad with gestures support
- HP webcam with single digital microphone and HD or VGA camera
- HD Audio with DTS Studio Sound™ optimized for high fidelity audio
- One USB 3.0 port and two USB 2.0 ports
- Wireless LAN (WLAN) up to 802.11ac to keep you connected

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

Features

PRODUCT NAMES

HP 240 G5 Notebook PC

HP 250 G5 Notebook PC

OPERATING SYSTEM

Preinstalled

Windows 10 Pro 64[1]
Windows 10 Home 64[1]
Windows 7 Professional 64 (Available through downgrade rights from Windows 10 Pro 64)[2]
FreeDOS 2.0

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 10 is automatically updated, which is always enabled. ISP fees may apply and additional requirements may apply over time for updates. See http://http://www.microsoft.com.
2. This system is preinstalled with Windows 7 Professional software and also comes with a license and media for Windows 10 Pro software. You may only use one version of the Windows software at a time. Switching between versions will require you to uninstall one version and install the other version. You must back up all data (files, photos, etc.) before uninstalling and installing operating systems to avoid loss of your data.

PROCESSORS

HP 240 G5

Intel® Core™ i5-6200U with Intel® HD Graphics 520
(2.3 GHz, up to 2.8 GHz with Intel® Turbo Boost Technology, 3 MB cache, 2 cores)[1]
Intel® Core™ i3-6100U with Intel® HD Graphics 520
(2.3 GHz, 3 MB cache, 2 cores)[1]
Intel® Core™ i3-5005U with Intel® HD Graphics 5500
(2.0 GHz, 3 MB cache, 2 cores)[1]
Intel® Celeron® N3060 with Intel® HD Graphics 400
(1.6 GHz, up to 2.48 GHz with Intel® Turbo Boost Technology, 2 MB cache, 2 cores)[1]
Intel® Pentium® A1020 with Intel® HD Graphics
(2.41GHZ, up to2.66GHz with Intel® Turbo Boost Technology) 2MB cache, 4 cores)[1]

HP 250 G5

Intel® Core™ i7-6500U with Intel® HD Graphics 520
(2.5 GHz, up to 3.1 GHz with Intel Turbo Boost Technology, 4 MB cache, 2 cores)[1]
Intel® Core™ i5-6200U with Intel® HD Graphics 520
(2.3 GHz, up to 2.8 GHz with Intel® Turbo Boost Technology, 3 MB cache, 2 cores)[1]
Intel® Core™ i3-5005U with Intel® HD Graphics 5500
(2.0 GHz, 3 MB cache, 2 cores)[1]
Intel® Pentium® N3710 with Intel® HD Graphics 405
(1.60 GHz, up to 2.56 GHz with Intel® Turbo Boost Technology, 2 MB cache, 4 cores)[1]
Intel® Celeron® N3060 with Intel® HD Graphics 400
(1.6 GHz, up to 2.48 GHz with Intel® Turbo Boost Technology, 2 MB cache, 2 cores)[1]

Features

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. Intel's numbering is not a measurement of higher performance.
NOTE: Processor speed denotes maximum performance mode; processors will run at lower speeds in battery optimization mode.

CHIPSET

Integrated with processor

GRAPHICS

HP 240 G5
Integrated
Intel® HD Graphics 520[1]
Intel® HD Graphics 5500[1]
Intel® HD Graphics 400[1]
Support HD Decode, DX12, and HDMI

HP 250 G5
Integrated
Intel® HD Graphics 520[1]
Intel® HD Graphics 5500[1]
Intel® HD Graphics 405[1]
Intel® HD Graphics 400[1]

Discrete (HP 250 G5 only)
AMD Radeon™ R5 (Up to 2 GB of dedicated video memory)[2]
Support HD Decode, DX12, and HDMI

1. HD content required to view HD images.
2. AMD Dynamic Switchable Graphics technology requires an Intel processor, plus an AMD Radeon™ discrete graphics configuration and is not available on FreeDOS. With AMD Dynamic Switchable Graphics technology, full enablement of all discrete graphics video and display features may not be supported on all systems (e.g. OpenGL applications will run on the integrated GPU or the APU as the case may be).

DISPLAY

HP 240 G5
Internal
14.0" diagonal WLED HD Anti-glare Slim (1366 x 768), SVA[1]

VGA
Port supports resolutions up to 1920 x 1200 external resolution @ 60 Hz

HDMI
Port supports resolutions up to 1920 x 1080 external resolution @ 60 Hz

HP 250 G5
Internal
15.6" diagonal WLED HD Anti-glare Slim (1366 x 768) SVA[1]
15.6" diagonal WLED FHD Anti-glare Slim (1920 x 1080) SVA[1]

Features

VGA
Port supports resolutions up to 2560 x 1200 external resolution @ 60 Hz

HDMI
Port supports resolutions up to 1920 x 1080 external resolution @ 60 Hz

1. HD content required to view HD images.

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

STORAGE AND DRIVES

Primary Storage Bay
Support all 7mm/9.5mm, SATA 2.5" Hard Drives

HP 240 G5
Hard Drives[1]
500 GB 5400 rpm SATA (7/9.5 mm)
500 GB 7200 rpm SATA (7 mm)
1 TB 5400 rpm SATA (9.5 mm)

HP 250 G5
Hard Drives[1]
500 GB 5400 rpm SATA (7/9.5 mm)
500 GB 7200 rpm SATA (7 mm)
1 TB 5400 rpm SATA (9.5 mm)
1 TB Hybrid

Solid State Drives[1] (HP 250 G5 only)
M.2 SATA-3
128 GB SATA-3
256 GB SATA-3
1 TB 5400RPM SSHD w/8GB NAND (9.5mm)

1. For hard drives and solid state drives, GB = 1 billion bytes, TB = 1 trillion bytes. Actual formatted capacity is less. Up to 16 GB (for Windows 7) and up to 30 GB (for Windows 10) of system disk is reserved for the system recovery software.

OPTICAL DRIVES

Fixed 9.5 mm SATA Fixed
DVD+/-RW SuperMulti DL[1]

1. HD-DVD disks cannot be played on this drive. Note that DVD-RAM cannot read or write to 2.6 GB Single Sided/5.2 GB Double Sided – Version 1.0 media. Actual speeds may vary. Don't copy copyright-protected materials. Double Layer discs can store more data than single layer discs; discs burned with this drive may not be compatible with many existing single-layer DVD drives and players.

MEMORY

DDR4 (Intel® Core™ i7-6500U. i5-6200U, i3-6100U processors only)
DDR4-2133 (Transfer rates up to 2133 MT/s)

Features

Dual channel support
Non customer accessible / upgradeable

Configuration
4096 MB Total System Memory (2048 MB x 2) (HP 250 G5 only)
4096 MB Total System Memory (4096 MB x 1)
6144 MB Total System Memory (2048 MB x 1 + 4096 MB x 1)
8192 MB Total System Memory (4096 MB x 2)
8192 MB Total System Memory (8192 MB x 1)
12288 MB Total System Memory (8192 MB x1 + 4096 MB x 1)
16384 MB Total System Memory (8192 MB x 2)

Maximum
Up to 16 GB

DDR3L(Intel® Core™ i3-5005U processor only**)**
DDR3L – 1600 (Transfer rates up to 1600 MT/s)
Dual channel support
Non customer accessible / upgradeable

Configuration
2048 MB Total System Memory (2048 MB x 1)
4096 MB Total System Memory (2048 MB x 2) (HP 250 G5 only)
4096 MB Total System Memory (4096 MB x 1)
6144 MB Total System Memory (2048 MB x 1 + 4096 MB x 1)
8192 MB Total System Memory (4096 MB x 2)
8192 MB Total System Memory (8192 MB x 1)
12288 MB Total System Memory (8192 MB x1 +4096 MB x1) (HP 250 G5 only)
16384 MB Total System Memory (8192 MB x 2)

Maximum
Up to 16 GB

DDR3L(Intel® Pentium® N3710, Celeron® N3010 only)
DDR3L – 1600 (Transfer rates up to 1600 MT/s)

Single channel support
Non customer accessible / upgradeable

Configuration
2048 MB Total System Memory (2048 MB x 1)
4096 MB Total System Memory (4096 MB x 1)
8192 MB Total System Memory (8192 MB x 1)
Maximum
Up to 8 GB

Features

NOTE: 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.

NETWORKING/COMMUNICATIONS

Wireless LAN (WLAN)[1]
Intel® Dual Band Wireless-AC 3165 802.11 ac (1x1) WiFi + Bluetooth® 4.2 Combo
Realtek 802.11b/g/n (1x1) Wi-Fi + Bluetooth® 4.0 Combo
Broadcom 802.11 b/g/n (1x1) Wi-Fi + Bluetooth® 4.0 Combo
Realtek 802.11b/g/n (1x1) Wi-Fi

Support for Miracast[2]
Windows 10
Compatible with Miracast-certified devices

1. Wireless access point and Internet service is required and is not included. Availability of public wireless access points limited.
2. Miracast is a wireless technology your PC can use to project your screen to TVs, projectors, and streaming media players that also support Miracast. You can use Miracast to share what you're doing on your PC and present a slide show. For more information: http://windows.microsoft.com/en-us/windows-8/project-wireless-screen-miracast

Communications[1]
Integrated 10/100/1000 Ethernet
Integrated 10/100 Ethernet (HP 240 G5 only)

1. 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
HD Audio with DTS Studio Sound™
(2) Integrated stereo speakers

Camera
HP TrueVision HD[1]

- Indicator LED
- USB 2.0
- BSI sensor
- f2.0
- 1280 x 720p by 30 frames per second
- Single digital microphone
- Enable HP Noise Cancellation

1. HD content required to view HD images.

Webcam
HP Webcam[1]

Features

- Indicator LED
- USB 2.0
- 640 x 480 by 24 frames per second
- Single digital microphone
- Enable HP Noise Cancellation

1. Wireless access point and Internet service is required and is not included. Availability of public wireless access points limited.

KEYBOARDS/POINTING DEVICES/BUTTONS & FUNCTION KEYS

Keyboard

HP 240 G5

Full size textured island-style keyboard without numeric keypad
Black

HP 250 G5

Full size textured island-style keyboard with numeric keypad
Black

Touchpad

Multitouch gestures enabled
Support Modern Trackpad Gestures
Taps enabled as default

SOFTWARE AND SECURITY

Preinstalled Software with Windows Operating System

Buy Office
Discover HP Touchpoint Manager[1]
Intel® Wireless Display[2]
Windows 10 Recovery Manager Installer - CPS
Windows 10 Push Button Reset Recovery – CPS
HP Support Assistant
HP PC Hardware Diagnostics UEFI
HP Communication Recovery Tool
HP ePrint[3]
HP e-Service
HP CoolSense
HP System Event Utility
CyberLink Power Media Player
CyberLink PowerDirector
Adobe® Shockwave® Player

1. HP Touchpoint Manager requires purchase of a subscription and supports Android™, iOS and Windows 7 or higher operating systems and PCs, notebooks, tablets and smartphones from various manufacturers. Not available in all countries see www.hp.com/touchpoint for availability information.
2. Integrated Intel Wi-Di feature is available on select configurations only and requires separately purchased projector, TV or computer monitor with an integrated or external Wi-Di receiver. External Wi-Di receivers connect to the projector, TV or computer monitor via a standard HDMI cable, also sold separately.

Features

3. Requires an Internet connection to HP web-enabled printer and HP ePrint account registration (for a list of eligible printers, supported documents and image types and other HP ePrint details, see www.hp.com/go/eprintcenter). Requires optional broadband module. Broadband use requires separately purchased service contract. Check with service provider for coverage and availability in your area. Separately purchased data plans or usage fees may apply. Print times and connection speeds may vary.

Security
FW TPM 2.0 (UMA only)
Security lock slot (Cable not included)

POWER

Power Supply
HP 45W Smart AC Adapter
HP 65W Smart AC Adapter
HP 65W Smart EM Adapter (China and India only)
Power cord included is 3.28 feet (1 m) in length

Primary Battery
HP 3-cell 31 WHr (UMA only)
HP 4-cell 41Whr

Battery Life
240 G5

	4 cell battery/MM14	3 cell battery/MM14
Intel i5-6200U/ i3-6100U – UMA	9 hours	6 hours 30 minutes
Intel i3-5005U - UMA	9 hours	6 hours 30 minutes
Intel Celeron N3060 – UMA	9 hours	6 hours 30 minutes

250 G5

	4 cell battery/MM14	3 cell battery/MM14
Intel i7-6500U/ i5-6200U – DSC	8 hours 30 minutes	N/A
Intel i7-6500U/ i5-6200U – UMA	8 hours 15 minutes	6 hours 15 minutes
Intel i3-5005U – DSC	8 hours 15 minutes	N/A
Intel i3-5005U - UMA	8 hours 15 minutes	6 hours
Intel Pentium N3710/ Celeron N3060 – UMA	9 hours 15 minutes	7 hours

System Standby Time
TBD

WEIGHTS & DIMENSIONS

Features

HP 240 G5
Weight
Starting at 3.95 lbs (1.79 kg)[1]
(3-cell battery, Solid State Drive)

Dimensions (w x d x h)
13.60 x 9.50 x .94 in
34.54 x 24.15 x 2.39 cm

HP 250 G5
Weight
Starting at 4.32 lbs (1.96 kg)[1]
(3-cell battery, Solid State Drive)

Dimensions (w x d x h)
15.13 x 10.02 x .96 in
38.43 x 25.46 x 2.43 cm

1. Weight varies by configuration and components.

PORTS/SLOTS

Ports
USB 2.0 ports – Two (One left and one right)
USB 3.0 port – One (Left)
VGA port – One
HDMI v1.4b – One
Headphone / microphone combo jack – One
RJ-45 / Ethernet - One
AC Smart adapter port – One

HP Multi-Format Digital Media Card Reader
Supports SD, SDHC, SDXC

SERVICE AND SUPPORT

HP Services offers 3-yearand 1-year limited warranty options and 90 days software support depending on country. Batteries have a default one year limited warranty except for Long Life batteries which will have same 1-year or 3-year limited warranty as the platform. On-site service and extended coverage is also available. HP Care Pack Services[1,2] 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

1. Sold separately or as an optional feature.
2. 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. Consult the HP Customer Support Center for details. http://h20000.www2.hp.com/bizsupport/TechSupport/ProductRoot.jsp

Technical Specifications

DISPLAYS*

14.0" diagonal WLED HD Anti-glare Slim (1366 x 768), SVA	**Outline Dimensions** (W x H x D)	320.9x205.6x3.0	
	Active Area	309.4 x 173.95	
	Weight	290g	
	Diagonal Size	14.0"	
	Surface Treatment	AG	
	Contrast Ratio	300:1	
	Refresh Rate	60Hz	
	Brightness	220 nit	
	Pixel Resolution	**Format**	1366 x 768
		Configuration	
	Interface	eDP 1.2	
	LCD Mode	TN	
	PPI	112	
	Viewing Angle	40/40/15/30	
15.6" diagonal WLED HD Anti-glare Slim (1366 x 768) SVA	**Outline Dimensions** (W x H x D)	360.0 x 224.3 x 3.2mm	
	Active Area	344.2 x 193.5	
	Weight	370g	
	Diagonal Size	15.6"	
	Surface Treatment	AG	
	Contrast Ratio	300:1	
	Refresh Rate	60Hz	
	Brightness	220 nit	
	Pixel Resolution	**Format**	**Pixel Resolution**
		Configuration	
	Interface	eDP 1.2	
	LCD Mode	TN	
	PPI	101	
	Viewing Angle	40/40/15/30	
15.6" diagonal WLED FHD Anti-glare Slim (1920 x	**Outline Dimensions** (W x H x D)	360.0 x 224.3 x 3.2mm	

Technical Specifications

1080) SVA	**Active Area**	344.16 x 193.59	
	Weight	370g	
	Diagonal Size	15.6"	
	Surface Treatment	AG	
	Contrast Ratio	300:1	
	Refresh Rate	60Hz	
	Brightness	220 nit	
	Pixel Resolution	**Format**	**Pixel Resolution**
		Configuration	
	Interface	eDP 1.2	
	Outline Dimensions (W x H x D)	360.0 x 224.3 x 3.2mm	
	Active Area	344.16 x 193.59	
	Weight	370g	

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

STORAGE AND DRIVES

500 GB 5400 rpm SATA Hard Drive	**Drive Weight**	95g	
	Capacity	500GB	
	Height	7mm	
	Width	69.65mm	
	Interface	ATA-8, SATA 3.0	
	Transfer Rate	**Synchronous** (maximum)	600MB/s
	Seek Time (typical reads, including settling)	**Single Track**	2ms
		Average	12ms
		Maximum	22ms
	Rotational Speed	5400rpm	
	Logical Blocks	976,773,168	
	Operating Temperature	32° to 140° F (0° to 60° C) [top cover temp]	
	Features	S.M.A.R.T., NCQ, Ultra DMA	

500 GB 7200 rpm SATA Hard Drive	**Drive Weight**	95g
	Capacity	500GB
	Height	7mm

	Width	69.85mm	
	Interface	ATA-8, SATA 3.0	
	Transfer Rate	**Synchronous** (maximum)	600MB/s
	Seek Time (typical reads, including settling)	**Single Track**	2ms
		Average	12ms
		Maximum	22ms
	Rotational Speed	7200rpm	
	Logical Blocks	976,773, 168	
	Operating Temperature	32° to 140° F (0° to 60° C) [top cover temp]	
	Features	S.M.A.R.T., NCQ, Ultra DMA	
1 TB 5400 rpm SATA Hard Drive	**Drive Weight**	115g	
	Capacity	1TB	
	Height	9.5mm	
	Width	69.85mm	
	Interface	ATA-8, SATA 3.0	
	Transfer Rate	**Synchronous** (maximum)	600MB/s
	Seek Time (typical reads, including settling)	**Single Track**	2ms
		Average	12ms
		Maximum	22ms
	Rotational Speed	5400rpm	
	Logical Blocks	1,953,525,168	
	Operating Temperature	32° to 140° F (0° to 60° C) [top cover temp]	
	Features	S.M.A.R.T., NCQ, Ultra DMA	

NETWORKING/COMMUNICATIONS**

Intel® Dual Band Wireless-AC 3165 802.11 ac (1x1) WiFi + Bluetooth® 4.2 Combo

Wireless LAN Standards	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n IEEE 802.11ac
Interoperability	Wi-Fi certified
Frequency Band	802.11b/g/n • 2.402 – 2.482 GHz Note: The FCC has declared as of January 1, 2015 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.

802.11a/n

- 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

Note:
Indonesia only supports 5.725 - 5.825 GHz (CH149 - CH161)

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: MCS 0 ~ MCS 15, (20MHz, and 40MHz)
- 802.11ac : MCS0 ~ MCS7, (1SS) (20MHz, 40MHz, and 80MHz)

Modulation

Direct Sequence Spread Spectrum
BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM

Security[1]

- 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
- IEEE 802.11i
- Cisco Certified Extensions, all versions through CCX4 and CCX Lite
- WAPI

Network Architecture

Ad-hoc (Peer to Peer)

Models

Infrastructure (Access Point Required)

Roaming

IEEE 802.11 compliant roaming between access points

Output Power[2]

- 802.11b : +16dBm minimum
- 802.11g : +14dBm minimum
- 802.11a : +14dBm minimum
- 802.11n HT20(2.4GHz) : +14dBm minimum
- 802.11n HT40(2.4GHz) : +12dBm minimum
- 802.11n HT20(5GHz) : +14dBm minimum
- 802.11n HT40(5GHz) : +12dBm minimum
- 802.11ac 80MHz(5GHz) : +11dBm minimum

Power Consumption

Transmit: 2.0 W (max)
Receive: 1.6 W (max)
Idle mode (PSP): 180 mW (WLAN Associated)
Idle mode: 50 mW (WLAN unassociated)
Connect Standby: 10 mW (WLAN+BT)
Radio disabled: 5 mW

Power Management

ACPI and PCI Express compliant power management

Technical Specifications

	802.11 compliant power saving mode	
Receiver Sensitivity[3]	802.11b, 1Mbps : -94dBm maximum	
	802.11b, 11Mbps : -86dBm maximum	
	802.11g, 6Mbps : -88dBm maximum	
	802.11g, 54Mbps : -74dBm maximum	
	802.11a, 6Mbps : -88dBm maximum	
	802.11a, 54Mbps : -74dBm maximum	
	802.11n, MCS07 : -69dBm maximum	
	802.11n, MCS15 : -66dBm maximum	
	802.11ac, 1SS, MCS-0 : -86dBm maximum	
	802.11ac, 1SS, MCS-9 : -61dBm maximum	
	802.11ac, 2SS, MCS-0 : -83dBm maximum	
	802.11ac, 2SS, MCS-9 : -58dBm 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	Type 2230 : 2.3 x 22.0 x 30.0 mm Or Type 1630 : 2.3 x 16.0 x 30.0 mm	
Weight	Type 2230 : 2.8g Or Type 1630 : 2g	
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 White – Radio ON	

1. Check latest software/driver release for updates on supported security features.
2. Maximum output power may vary by country according to local regulations.
3. 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).

HP Integrated Module with Bluetooth 4.0/4.1/4.2 Wireless Technology	
Bluetooth Specification	4.0/4.1/4.2 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 II Bluetooth device with a maximum transmit power of + 4 dBm for BR and EDR.

Receiver Sensitivity Legacy

Modulation	0.01% BER	0.001% BER
GFSK	-80 dBm	-70 dBm
π/4-DQPSK	-80 dBm	-70 dBm
8DPSK	-80 dBm	-70 dBm

Power Consumption	Peak (Tx) 330 mW Peak (Rx) 230 mW Selective Suspend 17 mW
Range	Legacy Up to 33 ft (10 m) BLE Up to 99 ft (30 m)
Electrical Interface	USB 2.0 compliant
Bluetooth Software Supported	Microsoft Windows Bluetooth Software
Link Topology	
Electrical Interface	Point to Point, Multipoint Pico Nets up to 7 slaves
Bluetooth Software Supported Security	Full support of Bluetooth Security Provisions
Power Management	Microsoft Windows ACPI, and USB Bus Support
Certifications	Self-configurable to optimize power conservation in all operating modes, including Standby, Hold, Park, and Sniff
Security	All necessary regulatory approvals for supported countries, including:
Certifications	FCC (47 CFR) Part 15C, Section 15.247 & 15.249
Bluetooth Profiles Supported	
Power Management	ETS 300 328, ETS 300 826
Certifications	Low Voltage Directive IEC950
	UL, CSA, and CE Mark
	Serial Port Profile (SPP)[1]
	Service Discovery Application Profile (SDAP)
	Dial-Up Networking (DUN)[1,2]
	Generic Object Exchange Profile (GOEP)[1,2]
	Object Push Profile (OPP)[1,2]
Certifications	Hard Copy Cable Replacement (HCRP)[1,2]
Bluetooth Profiles Supported	Personal Area Networking Profile (PAN)[1,2]
	Human Interface Device Profile (HID)[1,2]
	Hands Free Profile (HFP)
	Advanced Audio Distribution Profile (A2DP)
	Audio Video Remote Control Profile (AVRCP)
Bluetooth V4.1/V4.2 support feature	V4.1: ESR5/6/7 compliant

V4.2: ESR8 compliant, LE Secure Connection – Basic.

Realtek 802.11b/g/n (1x1) Wi-Fi + Bluetooth® 4.0 Combo

Wireless LAN Standards	IEEE 802.11b IEEE 802.11g IEEE 802.11n
Interoperability	Wi-Fi certified
Frequency Band	802.11b/g/n • 2.402 – 2.482 GHz Note: 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.
Data Rates	802.11b: 1, 2, 5.5, 11 Mbps 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11n: MCS 0 ~ MCS 07, (20MHz)
Modulation	Direct Sequence Spread Spectrum BPSK, QPSK, CCK, 16-QAM, 64-QAM,
Security[1]	• 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 • IEEE 802.11i • Cisco Certified Extensions, all versions through CCX4 and CCX Lite • WAPI
Network Architecture	Ad-hoc (Peer to Peer)
Models	Infrastructure (Access Point Required)
Roaming	IEEE 802.11 compliant roaming between access points
Output Power[2]	• 802.11b : +16dBm minimum • 802.11g : +14dBm minimum • 802.11n HT20(2.4GHz) : +13dBm minimum • 802.11n HT40(2.4GHz) : +13dBm minimum • 802.11n HT20(5GHz) : +12dBm minimum • 802.11n HT40(5GHz) : +12dBm minimum
Power Consumption	Transmit: 2.0 W (max) Receive: 1.6 W (max) Idle mode (PSP): 180 mW (WLAN Associated) Idle mode: 60 mW (WLAN unassociated) Radio disabled: 30 mW
Power Management	ACPI and PCI Express compliant power management 802.11 compliant power saving mode

Technical Specifications

Receiver Sensitivity[3]	802.11b, 1Mbps : -94dBm maximum 802.11b, 11Mbps : -86dBm maximum 802.11g, 6Mbps : -88dBm maximum 802.11g, 54Mbps : -74dBm maximum 802.11n, MCS07 : -69dBm maximum 802.11n, MCS15 : -66dBm maximum	
Antenna type	High efficiency antenna with spatial diversity, mounted in the display enclosure Two embedded antennas for 2.4GHz are provided to the card to support WLAN and Bluetooth communications. (Support Dual antenna or Single antenna, depend on platform requirement)	
Form Factor	PCI-Express M.2 MiniCard	
Dimensions	Type 2230 : 2.3 x 22.0 x 30.0 mm Or Type 1630 : 2.3 x 16.0 x 30.0 mm	
Weight	Type 2230 : 2.8g Or Type 1630 : 2g	
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 White – Radio ON	

4. Check latest software/driver release for updates on supported security features.
5. Maximum output power may vary by country according to local regulations.
6. 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).

HP Integrated Module with Bluetooth 4.0/4.1 Wireless Technology

Bluetooth Specification	4.0/4.1 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)

Technical Specifications

Transmit Power

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

Receiver Sensitivity Legacy

Modulation	0.01% BER	0.001% BER
GFSK	-80 dBm	-70 dBm
π/4-DQPSK	-80 dBm	-70 dBm
8DPSK	-80 dBm	-70 dBm

Power Consumption

Peak (Tx) 330 mW
Peak (Rx) 230 mW
Selective Suspend 17 mW

Range

Legacy Up to 33 ft (10 m)
BLE Up to 99 ft (30 m)

Electrical Interface

USB 2.0 compliant

Bluetooth Software Supported

Microsoft Windows Bluetooth Software

Link Topology

Electrical Interface

Point to Point, Multipoint Pico Nets up to 7 slaves

Bluetooth Software Supported Security

Full support of Bluetooth Security Provisions

Power Management

Microsoft Windows ACPI, and USB Bus Support

Certifications

Self-configurable to optimize power conservation in all operating modes, including Standby, Hold, Park, and Sniff

Security

All necessary regulatory approvals for supported countries, including:

Certifications

FCC (47 CFR) Part 15C, Section 15.247 & 15.249

Bluetooth Profiles Supported

Power Management

ETS 300 328, ETS 300 826

Certifications

Low Voltage Directive IEC950

UL, CSA, and CE Mark

Certifications

Bluetooth Profiles Supported

Serial Port Profile (SPP)[1]
Service Discovery Application Profile (SDAP)
Dial-Up Networking (DUN)[1,2]
Generic Object Exchange Profile (GOEP)[1,2]
Object Push Profile (OPP)[1,2]
Hard Copy Cable Replacement (HCRP)[1,2]
Personal Area Networking Profile (PAN)[1,2]
Human Interface Device Profile (HID)[1,2]
Hands Free Profile (HFP)
Advanced Audio Distribution Profile (A2DP)
Audio Video Remote Control Profile (AVRCP)

Bluetooth V4.1 support feature

Slave Connectionless Broadcast

Broadcom 802.11 b/g/n (1x1) Wi-Fi + Bluetooth® 4.0 Combo

Wireless LAN Standards	IEEE 802.11b IEEE 802.11g IEEE 802.11n
Interoperability	Wi-Fi certified
Frequency Band	802.11b/g/n • 2.402 – 2.482 GHz Note: 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.
Data Rates	802.11b: 1, 2, 5.5, 11 Mbps 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11n: MCS 0 ~ MCS 07, (20MHz)
Modulation	Direct Sequence Spread Spectrum BPSK, QPSK, CCK, 16-QAM, 64-QAM,
Security[1]	• 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 • IEEE 802.11i • Cisco Certified Extensions, all versions through CCX4 and CCX Lite • WAPI
Network Architecture	Ad-hoc (Peer to Peer)
Models	Infrastructure (Access Point Required)
Roaming	IEEE 802.11 compliant roaming between access points
Output Power[2]	• 802.11b : +16dBm minimum • 802.11g : +14dBm minimum • 802.11n HT20(2.4GHz) : +13dBm minimum • 802.11n HT40(2.4GHz) : +13dBm minimum • 802.11n HT20(5GHz) : +12dBm minimum

- 802.11n HT40(5GHz) : +12dBm minimum

Power Consumption

Transmit: 2.0 W (max)
Receive: 1.6 W (max)
Idle mode (PSP): 180 mW (WLAN Associated)
Idle mode: 60 mW (WLAN unassociated)

Radio disabled: 30 mW

Power Management

ACPI and PCI Express compliant power management
802.11 compliant power saving mode

Receiver Sensitivity[3]

802.11b, 1Mbps : -94dBm maximum

802.11b, 11Mbps : -86dBm maximum

802.11g, 6Mbps : -88dBm maximum

802.11g, 54Mbps : -74dBm maximum

802.11n, MCS07 : -69dBm maximum

802.11n, MCS15 : -66dBm maximum

Antenna type

High efficiency antenna with spatial diversity, mounted in the display enclosure

Two embedded antennas for 2.4GHz are provided to the card to support WLAN and Bluetooth communications.
(Support Dual antenna or Single antenna, depend on platform requirement)

Form Factor

PCI-Express M.2 MiniCard

Dimensions

Type 2230 : 2.3 x 22.0 x 30.0 mm

Or
Type 1630 : 2.3 x 16.0 x 30.0 mm

Weight

Type 2230 : 2.8g

Or

Type 1630 : 2g

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 White – Radio ON	

7. Check latest software/driver release for updates on supported security features.
8. Maximum output power may vary by country according to local regulations.
9. 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).

HP Integrated Module with Bluetooth 4.0+EDR Wireless Technology

Bluetooth Specification	4.0+EDR Compliant
Frequency Band	2402 to 2480 MHz
Number of Available Channels	79 (1 MHz) available channels
Data Rates and Throughput	3 Mbps data rate; throughput up to 2.17 Mbps Synchronous Connection Oriented links up to 3, 64 kbps, voice channels Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric or 1306.9 kbps symmetric
Transmit Power	The Bluetooth component shall operate as a Class II Bluetooth device with a maximum transmit power of +4 dBm for BR and EDR.

Receiver Sensitivity

Modulation	0.01% BER	0.001% BER
GFSK	-80 dBm	-70 dBm
π/4-DQPSK	-80 dBm	-70 dBm
8DPSK	-80 dBm	-70 dBm

Power Consumption	Peak (Tx) 330 mW Peak (Rx) 230 mW Selective Suspend 17 mW
Range	Up to 33 ft (10 m)

Technical Specifications

Electrical Interface	USB 2.0 compliant
Bluetooth Software Supported	Microsoft Windows Bluetooth Software
Link Topology	
Electrical Interface	Point to Point, Multipoint Pico Nets up to 7 slaves
Bluetooth Software Supported	Full support of Bluetooth Security Provisions
Security	
Power Management	Microsoft Windows ACPI, and USB Bus Support
Power Management	Self-configurable to optimize power conservation in all operating modes, including Standby, Hold, Park, and Sniff
Certifications	
Security	All necessary regulatory approvals for supported countries, including:
Certifications	FCC (47 CFR) Part 15C, Section 15.247 & 15.249
Bluetooth Profiles Supported	
Power Management	ETS 300 328, ETS 300 826
Certifications	Low Voltage Directive IEC950
	UL, CSA, and CE Mark
Certifications	Serial Port Profile (SPP)[1] Service Discovery Application Profile (SDAP) Dial-Up Networking (DUN)[1,2] Generic Object Exchange Profile (GOEP)[1,2] Object Push Profile (OPP)[1,2] File Transfer Profile (FTP)
Bluetooth Profiles Supported	Synchronization Profile (SYNC) Hard Copy Cable Replacement (HCRP)[1,2] Personal Area Networking Profile (PAN)[1,2] Human Interface Device Profile (HID)[1,2] FAX Profile (FAX) Basic Imaging Profile (BIP)[2] Headset Profile (HSP) Hands Free Profile (HFP) Advanced Audio Distribution Profile (A2DP)

Realtek 802.11b/g/n (1x1) Wi-Fi

Wireless LAN Standards	IEEE 802.11b

	IEEE 802.11g IEEE 802.11n
Interoperability	Wi-Fi certified
Frequency Band	802.11b/g/n • 2.402 – 2.482 GHz Note: 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.
Data Rates	802.11b: 1, 2, 5.5, 11 Mbps 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11n: MCS 0 ~ MCS 07, (20MHz)
Modulation	Direct Sequence Spread Spectrum BPSK, QPSK, CCK, 16-QAM, 64-QAM,
Security[1]	• 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 • IEEE 802.11i • Cisco Certified Extensions, all versions through CCX4 and CCX Lite • WAPI
Network Architecture	Ad-hoc (Peer to Peer)
Models	Infrastructure (Access Point Required)
Roaming	IEEE 802.11 compliant roaming between access points
Output Power[2]	• 802.11b : +16dBm minimum • 802.11g : +14dBm minimum • 802.11a : +14dBm minimum • 802.11n HT20(2.4GHz) : +13dBm minimum • 802.11n HT40(2.4GHz) : +13dBm minimum • 802.11n HT20(5GHz) : +12dBm minimum • 802.11n HT40(5GHz) : +12dBm minimum
Power Consumption	Transmit: 2.0 W (max) Receive: 1.6 W (max) Idle mode (PSP): 180 mW (WLAN Associated) Idle mode: 60 mW (WLAN unassociated) Radio disabled: 30 mW
Power Management	ACPI and PCI Express compliant power management 802.11 compliant power saving mode
Receiver Sensitivity[3]	802.11b, 1Mbps : -94dBm maximum 802.11b, 11Mbps : -86dBm maximum 802.11g, 6Mbps : -88dBm maximum 802.11g, 54Mbps : -74dBm maximum

	802.11a, 6Mbps : -86dBm maximum 802.11a, 54Mbps : -72dBm maximum 802.11n, MCS07 : -69dBm maximum 802.11n, MCS15 : -66dBm maximum
Antenna type	High efficiency antenna with spatial diversity, mounted in the display enclosure Two embedded 2.4 GHz antennas are provided to the card to support WLAN and Bluetooth communications (Support Dual antenna or Single antenna, depend on platform requirement)
Form Factor	PCI-Express M.2 MiniCard
Dimensions	Type 2230 : 2.3 x 22.0 x 30.0 mm Or Type 1630 : 2.3 x 16.0 x 30.0 mm
Weight	Type 2230 : 2.8g Or Type 1630 : 2g
Operating Voltage	3.3v +/- 9%
Temperature	Operating Non-operating
Humidity	Operating Non-operating
Altitude	Operating Non-operating
	LED Amber – Radio OFF; LED White – Radio ON

** Wireless access point and internet service required. Availability of public wireless access points limited. The specifications for the 802.11ac WLAN are draft specifications and are not final. If the final specifications differ from the draft specifications, it may affect the ability of the notebook to communicate with other 802.11ac WLAN devices.

POWER

HP 4-cell 41Whr	**Dimensions** (H x W x L)	20.8mm*38.82mm*274mm	
	Weight	225g	
	Cells/Type	Cylindrical cell 2.8Ah with SDI, LGC , SAN	
		Voltage	SDI, SAN: 14.8V; LGC :14.6V
		Amp-hour capacity	SDI,SAN: 2620mAh, LGC :2670mAh
		Watt-hour capacity	SDI,SAN:38.8WH LGC:38.9WH

Temperature	**Operating (Charging)**	0~45'C
	Operating (Discharging)	-10~60'C
	Non-operating	0~45'C
Battery Re-Charge Time	**System in OFF or Standby Mode**	
Fuel Gauge LED	No	
Warranty		
Optional Travel Battery Available	No	

ENVIRONMENTAL

HP 240 G5 Notebook PC

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®
- EPEAT < Gold> registered in the United States. See http://www.epeat.net for registration status in your country.

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".

Energy Consumption (in accordance with US ENERGY STAR® test method)	**115VAC, 60Hz**	**230VAC, 50Hz**	**100VAC, 60Hz**
Normal Operation (Short idle)	7.78 W	7.66 W	8.88 W
Normal Operation (Long idle)	5.63 W	6.38 W	5.72 W
Sleep	0.55 W	0.63 W	0.56 W
Off	0.32 W	0.37 W	0.29 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, 60Hz**

Technical Specifications

Normal Operation (Short idle)	27 BTU/hr	26 BTU/hr	30 BTU/hr
Normal Operation (Long idle)	19 BTU/hr	22 BTU/hr	20 BTU/hr
Sleep	2 BTU/hr	2 BTU/hr	2 BTU/hr
Off	1 BTU/hr	1 BTU/hr	1 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	2.6	19
Fixed Disk – Random writes	2.7	20

Longevity and Upgrading

This product can be upgraded, possibly extending its useful life by several years. Upgradeable features and/or components contained in the product may include:

- 3 USB ports
- 1 PC card slot (type I/II)
- 1 ExpressCard/54 slot
- 1 IEEE 1394 Port
- 2 SODIMM memory slots
- Optional expansion base docking station
- 1 multi-bay II storage port
- Interchangeable HDD

Spare parts are available throughout the warranty period and or for up to "5" years after the end of production.

Batteries

This battery(s) in this product comply with EU Directive 2006/66/EC

Batteries used in the product do not contain:
Mercury greater the1ppm by weight
Cadmium greater than 20ppm by weight

Battery size: CR2032 (coin cell)
Battery type: Lithium

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 contains 0% post-consumer recycled plastic (by wt.)
- This product is 95.5% recycle-able when properly disposed of at end of life.

Packaging Materials

External:	PAPER/Corrugated	325 g
Internal:	PLASTIC/Polyethylene low density	22 g
	PLASTIC/EPE-Expanded Polyethylene	100 g

The plastic packaging material contains at least 50% recycled content.
The corrugated paper packaging materials contains at least 70% recycled content.

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/pdf/gse.pdf):

- Asbestos
- Certain Azo Colorants
- Certain Brominated Flame Retardants – may not be used as flame retardants in plastics
- Cadmium
- Chlorinated Hydrocarbons
- Chlorinated Paraffins
- 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)

Technical Specifications

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

Hewlett-Packard 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.

Hewlett-Packard 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://www.hp.com/hpinfo/globalcitizenship/environment/pdf/PC_GBU_Product_Design_ISO_14K_Certificate.pdf
and
http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/cert.pdf

HP 250 G5 Notebook PC

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®
- EPEAT <Silver> registered in the United States. See http://www.epeat.net for registration status in your country.

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".

Energy Consumption (in accordance with US

115VAC, 60Hz	**230VAC, 50Hz**	**100VAC, 60Hz**

Technical Specifications

ENERGY STAR® test method)			
Normal Operation (Short idle)	9.36 W	9.36 W	8.02 W
Normal Operation (Long idle)	5.29 W	5.00 W	5.64 W
Sleep	1.08 W	1.19 W	1.07 W
Off	0.31 W	0.41 W	0.30 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, 60Hz**
Normal Operation (Short idle)	32 BTU/hr	32 BTU/hr	27 BTU/hr
Normal Operation (Long idle)	18 BTU/hr	17 BTU/hr	19 BTU/hr
Sleep	4 BTU/hr	4 BTU/hr	4 BTU/hr
Off	1 BTU/hr	1 BTU/hr	1 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	3.2	25
Fixed Disk – Random writes	3.3	27

Longevity and Upgrading

This product can be upgraded, possibly extending its useful life by several years. Upgradeable features and/or components contained in the product may include:

- 3 USB ports
- 1 PC card slot (type I/II)
- 1 ExpressCard/54 slot
- 1 IEEE 1394 Port
- 2 SODIMM memory slots
- Optional expansion base docking station

Technical Specifications

- 1 multi-bay II storage port
- Interchangeable HDD

Spare parts are available throughout the warranty period and or for up to "5" years after the end of production.

Batteries

This battery(s) in this product comply with EU Directive 2006/66/EC

Batteries used in the product do not contain:
Mercury greater the1ppm by weight
Cadmium greater than 20ppm by weight

Battery size: CR2032 (coin cell)
Battery type: Lithium

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 <Silver> level, see www.epeat.net
- Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1043.
- This product contains 0% post-consumer recycled plastic (by wt.)
- This product is 95.6% recycle-able when properly disposed of at end of life.

Packaging Materials

External:	PAPER/Corrugated	360.8 g
Internal:	PLASTIC/Polyethylene low density	10.6 g
	PLASTIC/EPE-Expanded Polyethylene	135 g

The plastic packaging material contains at least 80.9% recycled content.
The corrugated paper packaging materials contains at least 75.8% recycled content.

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/pdf/gse.pdf):

- Asbestos
- Certain Azo Colorants
- Certain Brominated Flame Retardants – may not be used as flame retardants in plastics
- Cadmium
- Chlorinated Hydrocarbons
- Chlorinated Paraffins
- 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

Hewlett-Packard 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.

Hewlett-Packard 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://www.hp.com/hpinfo/globalcitizenship/environment/pdf/PC_GBU_Product_Design_ISO_14K_Certificate.pdf
and
http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/cert.pdf

COUNTRY OF ORIGIN

China

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

Type	Description	PartNumber
Cases	HP Essential Top Load Case (up to 15.6")	H2W17AA#xxx
	HP Essential Backpack (up to 15.6")	H1D24AA
	HP Essential Messenger Case (up to 17.3")	H1D25AA
Docking Accessories	HP Universal Port Replicator	E6D70AA#xxx
	HP 3001pr USB 3 Port Replicator	F3S42AA
Input/Output	HP Comfort Grip Wireless Mouse	H2L63AA
	HP USB Essential Keyboard/Mouse	H6L29AA
	HP Slim USB Keyboard and Mouse	T6T83AA
Input-Audio	HP Stereo USB Headset	T1A67AA
UCC	HP Conferencing Keyboard	K8P74AA#xxx
	HP Speaker Phone	K7V16AA
	HP Wired Headset	K7V17AA
Adapters	HP 45W Smart AC Adapter (4.5mm)	H6Y88AA#xxx
	HP 65W Smart AC Adapter (4.5mm)	H6Y89AA#xxx
	HP 65W Slim AC Adapter	H6Y82AA#xxx
	HP 7.4mm to 4.5mm DC Dongle	K0Q39AA
Power Bank	HP Notebook Power Bank	N9F71AA#xxx
Security	HP Essential Combination Lock	T0Y16AA
Display	HP ProDisplay P240va	N3H14A
	HP V272	M4B78A

Summary of Changes

Date of change:	Version History:		Description of change:
February 22, 2016	Version 1 to 2	Changed	Several edits throughout the document
March 30, 2016	Version 2 to 3	Removed	Removed TLC from 256 GB SATA-3
April 25, 2016	Version 3 to 4	Added	Battery life for 250
July 25, 2016	Verstion 4 to 5	Added	Environmental info