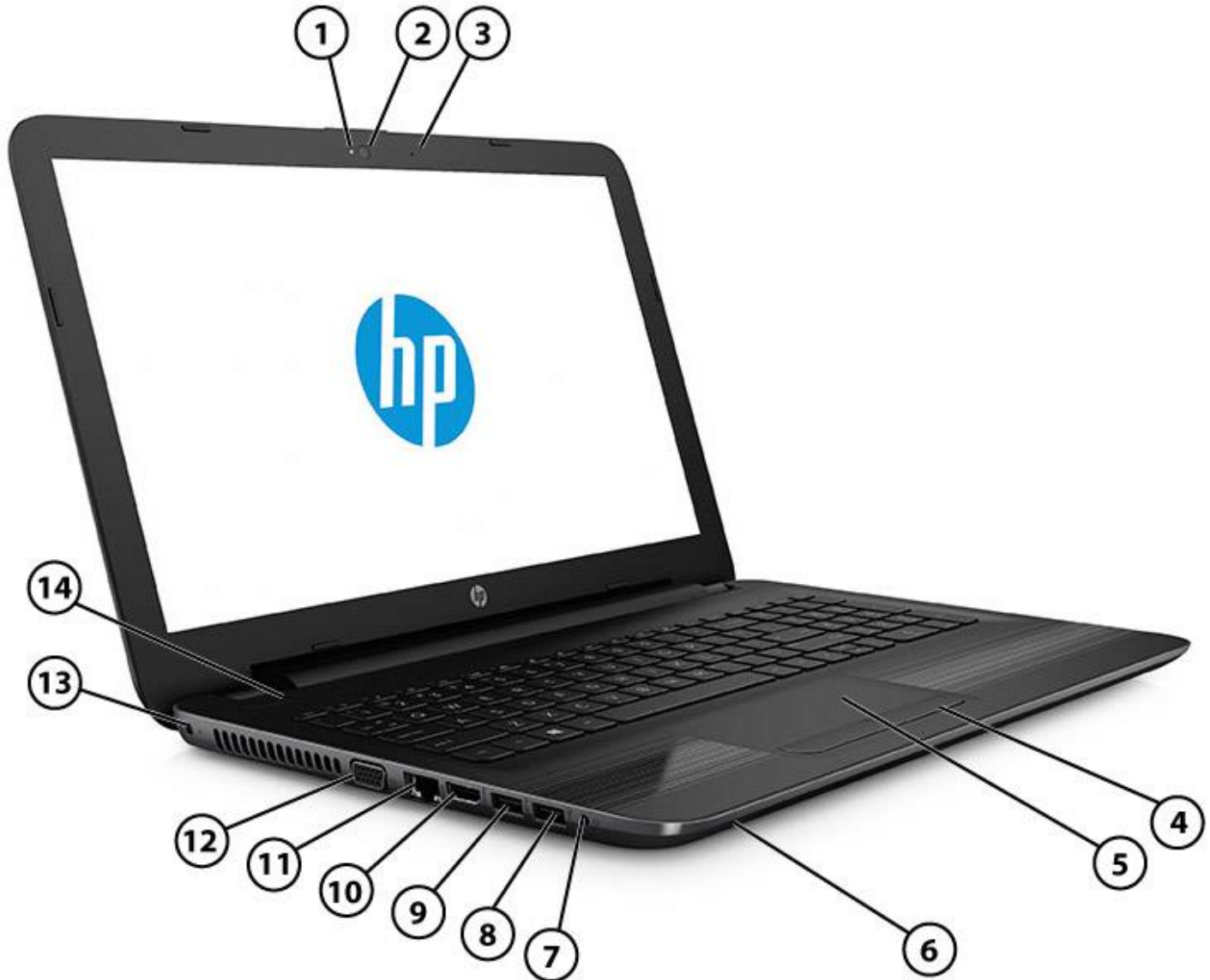


## Overview

### HP 245 G5 Notebook PC



#### Front/ Left

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



## Overview



1. Power indicator LED
2. Hard drive indicator LED
3. USB 2.0 port

### Rear/ Right

4. Optical drive (optional)
5. Security lock slot



### Overview

#### HP 255 G5 Notebook PC



#### Front/ Left

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



## 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

- Windows 10 versions, Windows 7 Professional (Available through downgrade rights from Windows 10 Pro 64), or FreeDOS 2.0
- Accelerated Processing Unit and graphics from AMD choose from
  - AMD A8-7410 APU with Radeon™ R5 Graphics
  - AMD A6-7310 APU with Radeon™ R4 Graphics
  - AMD E2-7110 APU with Radeon™ R2 Graphics
- Display choices include:
  - HP 245 G5: 14.0" diagonal HD
  - HP 255 G5: 15.0" diagonal HD
- Choice of hard drives up to 1 TB, hybrid drives up to 1 TB SSHD with 8 GB NAND (HP 255 G5 only) or solid state drives up to 128 GB (HP 255 G5 only)
- Weight starting at:
  - HP 245 G5: 4.00 lbs (1.82 kg)
  - HP 255 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 245 G5
  - Full size textured island-style keyboard with numeric pad on the HP 255 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.



### Technical Specifications

#### PRODUCT NAMES

HP 245 G5 Notebook PC

HP 255 G5 Notebook PC

#### OPERATING SYSTEM

##### Preinstalled

Windows 10 Pro 64<sup>1</sup>

Windows 10 Home 64<sup>1</sup>

Windows 7 Professional 64 (Available through downgrade rights from Windows 10 Pro 64)<sup>2</sup>

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://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.

#### ACCELERATED PROCESSING UNIT

##### HP 245 G5

AMD A6-7310 APU with Radeon™ R4 Graphics (2.2 GHz, up to 2.4 GHz), 2 MB cache, 4 cores<sup>1</sup>

AMD E2-7110 APU with Radeon™ R2 Graphics (1.8 GHz), 2 MB cache, 4 cores<sup>1</sup>

##### HP 255 G5

AMD A8-7410 APU with Radeon™ R5 Graphics (2.2 GHz, up to 2.5 GHz), 2 MB cache, 4 cores<sup>1</sup>

AMD A6-7310 APU with Radeon™ R4 Graphics (2.0 GHz, up to 2.4 GHz), 2 MB cache, 4 cores<sup>1</sup>

AMD E2-7110 APU with Radeon™ R2 Graphics (1.8GHz), 2 MB cache, 4 cores<sup>1</sup>

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 is not a measurement of clock speed.

#### CHIPSET

Integrated with processor

#### GRAPHICS

##### HP 245 G5

##### Integrated

AMD Radeon™ R4 Graphics

AMD Radeon™ R2 Graphics



## Technical Specifications

### HP 255 G5

#### Integrated

AMD Radeon™ R5 Graphics

AMD Radeon™ R4 Graphics

AMD Radeon™ R2 Graphics

## DISPLAY

### HP 245 G5

#### Internal

14.0" diagonal WLED HD Anti-glare Slim (1366 x 768), SVA<sup>1</sup>

#### 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

### HP 255 G5

#### Internal

15.6" diagonal WLED HD Anti-glare Slim (1366 x 768) SVA<sup>1</sup>

#### 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 245 G5

#### Hard Drives<sup>1</sup>

500 GB 5400 rpm SATA (7 mm/9.5mm)

500 GB 7200 rpm SATA (7 mm)

1 TB 5400 rpm SATA (9.5 mm)

### HP 255 G5

#### Hard Drives<sup>1</sup>

500 GB 5400 rpm SATA (7 mm)

500 GB 7200 rpm SATA (7 mm)

1 TB 5400 rpm SATA (9.5 mm)

1 TB Hybrid

**Solid State Drives<sup>1</sup>** (HP 255 G5 only)



### Technical Specifications

M.2 SATA-3  
128 GB SATA-3  
1TB 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 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<sup>1,2</sup>

DVD Writer Drive<sup>1,3</sup>

1. Unit shipped with either “DVD+/-RW SuperMulti DL” or “DVD Writer Drive.” Units undergoing repairs may be returned with a “DVD+/-RW SuperMulti DL.”
2. 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.
3. HD-DVD disks cannot be played on this drive. No support for DVDRAM. 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

#### DDR3L

DDR3L – 1600 (Transfer rates up to 1600 MT/s)  
Single channel support  
Non customer accessible / upgradeable

#### Maximum

Up to 16 GB

**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)<sup>1</sup>

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



Not all configuration components are available in all regions/countries.  
Americas – HP 245 & 255 G5 Notebook PC – July 27, 2017 - c04997023



## Technical Specifications

Windows 10

Compatible with Miracast-certified devices (all 4 WLAN cards)

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

### **Communications<sup>1</sup>**

Integrated 10/100/1000 Ethernet

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<sup>1</sup>

- 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<sup>1</sup>

- 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



## Technical Specifications

### Keyboard

#### HP 245 G5

Full Size Textured island-style keyboard without numeric keypad  
Black

#### HP 255 G5

Full Size Textured island-style keyboard with numeric keypad  
Black

### Touchpad

Multi-touch gestures enabled  
Support Modern Trackpad Gestures  
Taps enabled as default

## SOFTWARE AND SECURITY

### Preinstalled Software with Windows Operating System

Buy Office  
Intel® Wireless Display<sup>1</sup>  
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<sup>2</sup>  
HP e-Service  
HP CoolSense  
HP System Event Utility

1. 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.

2. 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](http://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  
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



### Technical Specifications

#### Primary Battery

HP 3-cell 31 WHr (UMA only)

HP 4-cell 41Whr

#### Battery Life

##### 245 G5

4 cell battery/MM14

3 cell battery/MM14

A6-7310/ E2-7110 UMA

7 hours 30 minutes

5 hours 36 minutes

##### 255 G5

4 cell battery/MM14

3 cell battery/MM14

AMD A8-7410/ A6-7310/ E2-7110 UMA

7 hours 45 minutes

5 hours 45 minutes

#### System Standby Time

TBD

### WEIGHTS & DIMENSIONS

#### HP 245 G5

##### Weight

Starting at 4.00 lbs (1.82 kg)

(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 255 G5

##### Weight

Starting at 4.32 lbs (1.96 kg)<sup>1</sup>

(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



## Technical Specifications

AC Smart adapter port – One

**HP Multi-Format Digital Media Card Reader**

Supports SD, SDHC, SDXC

## SERVICE AND SUPPORT

HP Services offers 3-year and 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<sup>1,2</sup> 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\*

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

<b>15.6" diagonal WLED HD Anti-glare Slim (1366 x 768) SVA</b>	<b>Outline Dimensions (W x H x D)</b>	360.0 x 224.3 x 3.2mm	
	<b>Active Area</b>	344.2 x 193.5	
	<b>Weight</b>	370g	
	<b>Diagonal Size</b>	15.6"	
	<b>Surface Treatment</b>	AG	
	<b>Contrast Ratio</b>	300:1	
	<b>Refresh Rate</b>	60Hz	
	<b>Brightness</b>	220 nit	
	<b>Pixel Resolution</b>	<b>Format</b>	<b>Pixel Resolution</b>
		<b>Configuration</b>	
	<b>Interface</b>	eDP 1.2	
	<b>LCD Mode</b>	TN	
	<b>PPI</b>	101	
<b>Viewing Angle</b>	40/40/15/30		



## Technical Specifications

\* 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

<b>Drive Weight</b>	95g
<b>Capacity</b>	500GB
<b>Height</b>	7mm
<b>Width</b>	69.85mm
<b>Interface</b>	ATA-8, SATA 3.0
<b>Transfer Rate</b>	<b>Synchronous</b> 600MB/s
<b>Seek Time</b> (typical reads, including settling)	<b>Single Track</b> 2ms <b>Average</b> 12ms <b>Maximum</b> 22ms
<b>Rotational Speed</b>	5400rpm
<b>Logical Blocks</b>	976,733,168
<b>Operating Temperature</b>	32° to 140° F (0° to 60° C) [top cover temp]
<b>Features</b>	S.M.A.R.T., NCQ, Ultra DMA

#### 500 GB 7200 rpm SATA Hard Drive

<b>Drive Weight</b>	95g
<b>Capacity</b>	500GB
<b>Height</b>	7mm
<b>Width</b>	69.85mm
<b>Interface</b>	ATA-8, SATA 3.0
<b>Transfer Rate</b>	<b>Synchronous</b> 600MB/s
<b>Seek Time</b> (typical reads, including settling)	<b>Single Track</b> 2ms <b>Average</b> 12ms <b>Maximum</b> 22ms
<b>Rotational Speed</b>	7200rpm
<b>Logical Blocks</b>	976,733,168
<b>Operating Temperature</b>	32° to 140° F (0° to 60° C) [top cover temp]
<b>Features</b>	S.M.A.R.T., NCQ, Ultra DMA

#### 1 TB 5400 rpm SATA Hard Drive

<b>Drive Weight</b>	115g
<b>Capacity</b>	1TB
<b>Height</b>	9.5mm
<b>Width</b>	69.85mm
<b>Interface</b>	ATA-8, SATA 3.0
<b>Transfer Rate</b>	<b>Synchronous</b> 600MB/s
<b>Seek Time</b> (typical reads, including settling)	<b>Single Track</b> 2ms <b>Average</b> 12ms <b>Maximum</b> 22ms



## Technical Specifications

<b>Rotational Speed</b>	5400rpm
<b>Logical Blocks</b>	1,953,525,168
<b>Operating Temperature</b>	32° to 140° F (0° to 60° C) [top cover temp]
<b>Features</b>	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 Frequency Band

Wi-Fi certified  
 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<sup>1</sup>

- 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



## Technical Specifications

	<ul style="list-style-type: none"> <li>• Cisco Certified Extensions, all versions through CCX4 and CCX Lite</li> <li>• WAPI</li> </ul>
<b>Network Architecture</b>	Ad-hoc (Peer to Peer)
<b>Models</b>	Infrastructure (Access Point Required)
<b>Roaming</b>	IEEE 802.11 compliant roaming between access points
<b>Output Power<sup>2</sup></b>	<ul style="list-style-type: none"> <li>• 802.11b : +16dBm minimum</li> <li>• 802.11g : +14dBm minimum</li> <li>• 802.11a : +14dBm minimum</li> <li>• 802.11n HT20(2.4GHz) : +14dBm minimum</li> <li>• 802.11n HT40(2.4GHz) : +12dBm minimum</li> <li>• 802.11n HT20(5GHz) : +14dBm minimum</li> <li>• 802.11n HT40(5GHz) : +12dBm minimum</li> <li>• 802.11ac 80MHz(5GHz) : +11dBm minimum</li> </ul>
<b>Power Consumption</b>	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
<b>Power Management</b>	ACPI and PCI Express compliant power management
<b>Receiver Sensitivity<sup>3</sup></b>	802.11 compliant power saving mode 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
<b>Antenna type</b>	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
<b>Form Factor</b>	PCI-Express M.2 MiniCard
<b>Dimensions</b>	Type 2230 : 2.3 x 22.0 x 30.0 mm Or Type 1630 : 2.3 x 16.0 x 30.0 mm
<b>Weight</b>	Type 2230 : 2.8g Or Type 1630 : 2g
<b>Operating Voltage</b>	3.3v +/- 9%





### Technical Specifications

<b>Temperature</b>	Operating	14° to 158° F (–10° to 70° C)
	Non-operating	–40° to 176° F (–40° to 80° C)
<b>Humidity</b>	Operating	10% to 90% (non-condensing)
	Non-operating	5% to 95% (non-condensing)
<b>Altitude</b>	Operating	0 to 10,000 ft (3,048 m)
	Non-operating	0 to 50,000 ft (15,240 m)
<b>LED Activity</b>	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

<b>Bluetooth Specification</b>	4.0/4.1/4.2 Compliant
<b>Frequency Band</b>	2402 to 2480 MHz
<b>Number of Available Channels</b>	Legacy : 0~79 (1 MHz/CH) BLE : 0~39 (2 MHz/CH)
<b>Data Rates and Throughput</b>	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)
<b>Transmit Power</b>	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
$\pi/4$ -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

Full support of Bluetooth Security Provisions

#### Security

#### 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:



## Technical Specifications

<b>Certifications</b>	FCC (47 CFR) Part 15C, Section 15.247 & 15.249
<b>Bluetooth Profiles Supported</b>	
<b>Power Management</b>	ETS 300 328, ETS 300 826
<b>Certifications</b>	Low Voltage Directive IEC950 UL, CSA, and CE Mark Serial Port Profile (SPP) <sup>1</sup> Service Discovery Application Profile (SDAP) Dial-Up Networking (DUN) <sup>1,2</sup> Generic Object Exchange Profile (GOEP) <sup>1,2</sup> Object Push Profile (OPP) <sup>1,2</sup> Hard Copy Cable Replacement (HCRP) <sup>1,2</sup> Personal Area Networking Profile (PAN) <sup>1,2</sup> Human Interface Device Profile (HID) <sup>1,2</sup> Hands Free Profile (HFP) Advanced Audio Distribution Profile (A2DP) Audio Video Remote Control Profile (AVRCP)
<b>Certifications</b>	
<b>Bluetooth Profiles Supported</b>	
<b>Bluetooth V4.1/V4.2 support feature</b>	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

<b>Wireless LAN Standards</b>	IEEE 802.11b IEEE 802.11g IEEE 802.11n
<b>Interoperability</b>	Wi-Fi certified
<b>Frequency Band</b>	802.11b/g/n <ul style="list-style-type: none"> <li>2.402 – 2.482 GHz</li> </ul> <p>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.</p>
<b>Data Rates</b>	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)
<b>Modulation</b>	Direct Sequence Spread Spectrum BPSK, QPSK, CCK, 16-QAM, 64-QAM,
<b>Security<sup>1</sup></b>	<ul style="list-style-type: none"> <li>IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/g mode only</li> <li>AES-CCMP: 128 bit in hardware</li> <li>802.1x authentication</li> </ul>



### Technical Specifications

	<ul style="list-style-type: none"> <li>• WPA, WPA2: 802.1x, WPA-PSK, WPA2-PSK, TKIP, and AES.</li> <li>• WPA2 certification</li> <li>• IEEE 802.11i</li> <li>• Cisco Certified Extensions, all versions through CCX4 and CCX Lite</li> <li>• WAPI</li> </ul>
<b>Network Architecture</b>	Ad-hoc (Peer to Peer)
<b>Models</b>	Infrastructure (Access Point Required)
<b>Roaming</b>	IEEE 802.11 compliant roaming between access points
<b>Output Power<sup>2</sup></b>	<ul style="list-style-type: none"> <li>• 802.11b : +16dBm minimum</li> <li>• 802.11g : +14dBm minimum</li> <li>• 802.11n HT20(2.4GHz) : +13dBm minimum</li> <li>• 802.11n HT40(2.4GHz) : +13dBm minimum</li> <li>• 802.11n HT20(5GHz) : +12dBm minimum</li> <li>• 802.11n HT40(5GHz) : +12dBm minimum</li> </ul>
<b>Power Consumption</b>	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
<b>Power Management</b>	ACPI and PCI Express compliant power management
<b>Receiver Sensitivity<sup>3</sup></b>	802.11 compliant power saving mode 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
<b>Antenna type</b>	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)
<b>Form Factor</b>	PCI-Express M.2 MiniCard
<b>Dimensions</b>	Type 2230 : 2.3 x 22.0 x 30.0 mm Or Type 1630 : 2.3 x 16.0 x 30.0 mm
<b>Weight</b>	Type 2230 : 2.8g Or Type 1630 : 2g
<b>Operating Voltage</b>	3.3v +/- 9%
<b>Temperature</b>	Operating 14° to 158° F (-10° to 70° C) Non-operating -40° to 176° F (-40° to 80° C)



## Technical Specifications

<b>Humidity</b>	Operating	10% to 90% (non-condensing)
	Non-operating	5% to 95% (non-condensing)
<b>Altitude</b>	Operating	0 to 10,000 ft (3,048 m)
	Non-operating	0 to 50,000 ft (15,240 m)
<b>LED Activity</b>	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

<b>Bluetooth Specification</b>	4.0/4.1 Compliant
<b>Frequency Band</b>	2402 to 2480 MHz
<b>Number of Available Channels</b>	Legacy : 0~79 (1 MHz/CH) BLE : 0~39 (2 MHz/CH)
<b>Data Rates and Throughput</b>	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)
<b>Transmit Power</b>	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
$\pi/4$ -DQPSK	-80 dBm	-70 dBm
8DPSK	-80 dBm	-70 dBm

<b>Legacy</b>	
<b>Power Consumption</b>	Peak (Tx) 330 mW Peak (Rx) 230 mW Selective Suspend 17 mW
<b>Range</b>	Legacy Up to 33 ft (10 m) BLE Up to 99 ft (30 m)
<b>Electrical Interface</b>	USB 2.0 compliant
<b>Bluetooth Software Supported</b>	Microsoft Windows Bluetooth Software
<b>Link Topology</b>	
<b>Electrical Interface</b>	Point to Point, Multipoint Pico Nets up to 7 slaves
<b>Bluetooth Software Supported</b>	Full support of Bluetooth Security Provisions
<b>Security</b>	
<b>Power Management</b>	Microsoft Windows ACPI, and USB Bus Support
<b>Certifications</b>	Self-configurable to optimize power conservation in all operating modes, including Standby, Hold, Park, and Sniff
<b>Security</b>	All necessary regulatory approvals for supported countries, including:



## Technical Specifications

<b>Certifications</b>	FCC (47 CFR) Part 15C, Section 15.247 & 15.249
<b>Bluetooth Profiles Supported</b>	
<b>Power Management</b>	ETS 300 328, ETS 300 826
<b>Certifications</b>	Low Voltage Directive IEC950 UL, CSA, and CE Mark
	Serial Port Profile (SPP) <sup>1</sup> Service Discovery Application Profile (SDAP) Dial-Up Networking (DUN) <sup>1,2</sup> Generic Object Exchange Profile (GOEP) <sup>1,2</sup> Object Push Profile (OPP) <sup>1,2</sup> Hard Copy Cable Replacement (HCRP) <sup>1,2</sup> Personal Area Networking Profile (PAN) <sup>1,2</sup> Human Interface Device Profile (HID) <sup>1,2</sup> Hands Free Profile (HFP) Advanced Audio Distribution Profile (A2DP) Audio Video Remote Control Profile (AVRCP)
<b>Certifications</b>	
<b>Bluetooth Profiles Supported</b>	
<b>Bluetooth V4.1 support feature</b>	Slave Connectionless Broadcast

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

<b>Wireless LAN Standards</b>	IEEE 802.11b IEEE 802.11g IEEE 802.11n
<b>Interoperability</b>	Wi-Fi certified
<b>Frequency Band</b>	802.11b/g/n <ul style="list-style-type: none"> <li>2.402 – 2.482 GHz</li> </ul> <p>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.</p>
<b>Data Rates</b>	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)
<b>Modulation</b>	Direct Sequence Spread Spectrum BPSK, QPSK, CCK, 16-QAM, 64-QAM,



## Technical Specifications

<b>Security<sup>1</sup></b>	<ul style="list-style-type: none"><li>• IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/g mode only</li><li>• AES-CCMP: 128 bit in hardware</li><li>• 802.1x authentication</li><li>• WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES.</li><li>• WPA2 certification</li><li>• IEEE 802.11i</li><li>• Cisco Certified Extensions, all versions through CCX4 and CCX Lite</li><li>• WAPI</li></ul>
<b>Network Architecture Models</b>	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
<b>Roaming</b>	IEEE 802.11 compliant roaming between access points
<b>Output Power<sup>2</sup></b>	<ul style="list-style-type: none"><li>• 802.11b : +16dBm minimum</li><li>• 802.11g : +14dBm minimum</li><li>• 802.11n HT20(2.4GHz) : +13dBm minimum</li><li>• 802.11n HT40(2.4GHz) : +13dBm minimum</li><li>• 802.11n HT20(5GHz) : +12dBm minimum</li><li>• 802.11n HT40(5GHz) : +12dBm minimum</li></ul>
<b>Power Consumption</b>	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
<b>Power Management</b>	ACPI and PCI Express compliant power management 802.11 compliant power saving mode
<b>Receiver Sensitivity<sup>3</sup></b>	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
<b>Antenna type</b>	High efficiency antenna with spatial diversity, mounted in the display enclosure



## Technical Specifications

	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)	
<b>Form Factor</b>	PCI-Express M.2 MiniCard	
<b>Dimensions</b>	Type 2230 : 2.3 x 22.0 x 30.0 mm  Or Type 1630 : 2.3 x 16.0 x 30.0 mm	
<b>Weight</b>	Type 2230 : 2.8g  Or  Type 1630 : 2g	
<b>Operating Voltage</b>	3.3v +/- 9%	
<b>Temperature</b>	Operating	14° to 158° F (–10° to 70° C)
	Non-operating	–40° to 176° F (–40° to 80° C)
<b>Humidity</b>	Operating	10% to 90% (non-condensing)
	Non-operating	5% to 95% (non-condensing)
<b>Altitude</b>	Operating	0 to 10,000 ft (3,048 m)
	Non-operating	0 to 50,000 ft (15,240 m)
<b>LED Activity</b>	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

<b>Bluetooth Specification</b>	4.0+EDR Compliant
<b>Frequency Band</b>	2402 to 2480 MHz
<b>Number of Available Channels</b>	79 (1 MHz) available channels
<b>Data Rates and Throughput</b>	3 Mbps data rate; throughput up to 2.17 Mbps  Synchronous Connection Oriented links up to 3, 64 kbps, voice channels



### Technical Specifications

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
$\pi/4$ -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)

**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

**Certifications**

UL, CSA, and CE Mark





## Technical Specifications

### Bluetooth Profiles Supported

Serial Port Profile (SPP)<sup>1</sup>  
 Service Discovery Application Profile (SDAP)  
 Dial-Up Networking (DUN)<sup>1,2</sup>  
 Generic Object Exchange Profile (GOEP)<sup>1,2</sup>  
 Object Push Profile (OPP)<sup>1,2</sup>  
 File Transfer Profile (FTP)  
 Synchronization Profile (SYNC)  
 Hard Copy Cable Replacement (HCRP)<sup>1,2</sup>  
 Personal Area Networking Profile (PAN)<sup>1,2</sup>  
 Human Interface Device Profile (HID)<sup>1,2</sup>  
 FAX Profile (FAX)  
 Basic Imaging Profile (BIP)<sup>2</sup>  
 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<sup>1</sup>**
- 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



## Technical Specifications

<b>Output Power<sup>2</sup></b>	<ul style="list-style-type: none"><li>• 802.11b : +16dBm minimum</li><li>• 802.11g : +14dBm minimum</li><li>• 802.11a : +14dBm minimum</li><li>• 802.11n HT20(2.4GHz) : +13dBm minimum</li><li>• 802.11n HT40(2.4GHz) : +13dBm minimum</li><li>• 802.11n HT20(5GHz) : +12dBm minimum</li><li>• 802.11n HT40(5GHz) : +12dBm minimum</li></ul>
<b>Power Consumption</b>	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
<b>Power Management</b>	ACPI and PCI Express compliant power management 802.11 compliant power saving mode
<b>Receiver Sensitivity<sup>3</sup></b>	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
<b>Antenna type</b>	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)
<b>Form Factor</b>	PCI-Express M.2 MiniCard
<b>Dimensions</b>	Type 2230 : 2.3 x 22.0 x 30.0 mm Or Type 1630 : 2.3 x 16.0 x 30.0 mm
<b>Weight</b>	Type 2230 : 2.8g Or Type 1630 : 2g
<b>Operating Voltage</b>	3.3v +/- 9%
<b>Temperature</b>	Operating Non-operating
<b>Humidity</b>	Operating Non-operating
<b>Altitude</b>	Operating Non-operating

LED Amber – Radio OFF; LED White – Radio ON



### Technical Specifications

\*\* 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

<b>HP 3-cell 31 WHr</b>	<b>Dimensions (H x W x L)</b>	20.8mm*38.82mm*274mm
	<b>Weight</b>	177g
	<b>Cells/Type</b>	<b>Cylindrical cell 2.8Ah with SDI, LGC , SAN</b>
	<b>Energy</b>	<b>Voltage SDI, SAN:</b> 11.1V; LGC :10.95V
		<b>Amp-hour capacity SDI,SAN:</b> 2620mAh, LGC :2670mAh
		<b>Watt-hour capacity SDI,SAN:</b> 29.08WH,LGC:29.23WH
	<b>Temperature</b>	<b>Operating (Charging)</b> 0~45°C
		<b>Operating (Discharging)</b> -10~60°C
		<b>Non-operating</b> 0~45°C
	<b>Battery Re-Charge Time</b>	<b>System in OFF or Standby Mode</b>
	<b>Fuel Gauge LED</b>	No
	<b>Warranty</b>	
	<b>Optional Travel Battery Available</b>	No
<b>HP 4-cell 41Whr</b>	<b>Dimensions (H x W x L)</b>	20.8mm*38.82mm*274mm
	<b>Weight</b>	225g
	<b>Cells/Type</b>	<b>Cylindrical cell 2.8Ah with SDI, LGC , SAN</b>
	<b>Energy</b>	<b>Voltage SDI, SAN:</b> 14.8V; LGC :14.6V
		<b>Amp-hour capacity SDI,SAN:</b> 2620mAh, LGC :2670mAh
		<b>Watt-hour capacity SDI,SAN:</b> 38.8WH LGC:38.9WH
	<b>Temperature</b>	<b>Operating (Charging)</b> 0~45°C
		<b>Operating (Discharging)</b> -10~60°C
		<b>Non-operating</b> 0~45°C
	<b>Battery Re-Charge Time</b>	<b>System in OFF or Standby Mode</b>
	<b>Fuel Gauge LED</b>	No



## Technical Specifications

**Warranty**

**Optional Travel Battery Available**      No

**ENVIRONMENTAL**  
**HP 255 G5 Notebook PC**

<p><b>Eco-Label Certifications &amp; declarations</b></p>	<p>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:</p> <ul style="list-style-type: none"> <li>• IT ECO declaration</li> <li>• US ENERGY STAR®</li> <li>• EPEAT &lt;Silver&gt; registered in the United States. See <a href="http://www.epeat.net">http://www.epeat.net</a> for registration status in your country.</li> </ul>		
<p><b>System Configuration</b></p>	<p>The configuration used for the Energy Consumption and Declared Noise Emissions data for the Notebook model is based on a “Typically Configured Notebook”.</p>		
<p><b>Energy Consumption (in accordance with US ENERGY STAR® test method)</b></p>	<p><b>115VAC, 60Hz</b></p>	<p><b>230VAC, 50Hz</b></p>	<p><b>100VAC, 60Hz</b></p>
<p>Normal Operation (Short idle)</p>	<p>8.08 W</p>	<p>8.08 W</p>	<p>8.52 W</p>
<p>Normal Operation (Long idle)</p>	<p>5.62 W</p>	<p>5.70 W</p>	<p>5.65 W</p>
<p>Sleep</p>	<p>0.78 W</p>	<p>0.79 W</p>	<p>0.79 W</p>
<p>Off</p>	<p>0.28 W</p>	<p>0.29 W</p>	<p>0.28 W</p>
	<p>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.</p>		



### Technical Specifications

Heat Dissipation*	115VAC, 60Hz	230VAC, 50Hz	100VAC, 60Hz
Normal Operation (Short idle)	28 BTU/hr	27 BTU/hr	29 BTU/hr
Normal Operation (Long idle)	19 BTU/hr	19 BTU/hr	19 BTU/hr
Sleep	3 BTU/hr	3 BTU/hr	3 BTU/hr
Off	1 BTU/hr	1 BTU/hr	1 BTU/hr
<p>*NOTE: Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.</p>			
Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296)	Sound Power (L <sub>WA</sub> d, bels)	Sound Pressure (L <sub>pAm</sub> , decibels)	
Typically Configured – Idle	3.2	25	
Fixed Disk – Random writes	3.3	27	
Longevity and Upgrading	<p>This product can be upgraded, possibly extending its useful life by several years. Upgradeable features and/or components contained in the product may include:</p> <ul style="list-style-type: none"> <li>• 3 USB ports</li> <li>• 1 PC card slot (type I/II)</li> <li>• 1 ExpressCard/54 slot</li> <li>• 1 IEEE 1394 Port</li> <li>• Optional expansion base docking station</li> <li>• 1 multi-bay II storage port</li> <li>• Interchangeable HDD??</li> </ul> <p>Spare parts are available throughout the warranty period and or for up to “5” years after the end of production.</p>		
Batteries	This battery(s) in this product comply with EU Directive 2006/66/EC		



## Technical Specifications

	<p>Batteries used in the product do not contain:          Mercury greater than 1ppm by weight          Cadmium greater than 20ppm by weight</p> <p>Battery size: CR2032 (coin cell)          Battery type: Lithium</p>		
<p><b>Additional Information</b></p>	<ul style="list-style-type: none"> <li>• This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive - 2011/65/EC.</li> <li>• This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive – 2002/96/EC.</li> <li>• This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986).</li> <li>• This product is in compliance with the IEEE 1680 (EPEAT) standard at the &lt;Silver&gt; level, see <a href="http://www.epeat.net">www.epeat.net</a></li> <li>• Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1043.</li> <li>• This product contains 0% post-consumer recycled plastic (by wt.)</li> <li>• This product is 95.6% recycle-able when properly disposed of at end of life.</li> </ul>		
<p><b>Packaging Materials</b></p>	<p><b>External:</b></p>	<p>PAPER/Corrugated</p>	<p>360.8 g</p>
	<p><b>Internal:</b></p>	<p>PLASTIC/Polyethylene low density</p>	<p>10.6 g</p>
		<p>PLASTIC/EPE-Expanded Polyethylene</p>	<p>45 g</p>
	<p>The plastic packaging material contains 80.9% recycled content.</p>		
	<p>The corrugated paper packaging materials contains at least 75.8% recycled content.</p>		
<p><b>Material Usage</b></p>	<p>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 <a href="http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/gse.pdf">http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/gse.pdf</a>):</p> <ul style="list-style-type: none"> <li>• Asbestos</li> <li>• Certain Azo Colorants</li> <li>• Certain Brominated Flame Retardants – may not be used as flame retardants in plastics</li> <li>• Cadmium</li> <li>• Chlorinated Hydrocarbons</li> <li>• Chlorinated Paraffins</li> <li>• Formaldehyde</li> <li>• Halogenated Diphenyl Methanes</li> <li>• Lead carbonates and sulfates</li> <li>• Lead and Lead compounds</li> <li>• Mercuric Oxide Batteries</li> <li>• Nickel – finishes must not be used on the external surface designed to be frequently handled or carried by the user.</li> <li>• Ozone Depleting Substances</li> <li>• Polybrominated Biphenyls (PBBs)</li> <li>• Polybrominated Biphenyl Ethers (PBBEs)</li> </ul>		



## Technical Specifications

	<ul style="list-style-type: none"> <li>• Polybrominated Biphenyl Oxides (PBBOs)</li> <li>• Polychlorinated Biphenyl (PCB)</li> <li>• Polychlorinated Terphenyls (PCT)</li> <li>• Polyvinyl Chloride (PVC) – except for wires and cables, and certain retail packaging has been voluntarily removed from most applications.</li> <li>• Radioactive Substances</li> <li>• Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO)</li> </ul>
<p><b>Packaging Usage</b></p>	<p>HP follows these guidelines to decrease the environmental impact of product packaging:</p> <ul style="list-style-type: none"> <li>• Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging materials.</li> <li>• Eliminate the use of ozone-depleting substances (ODS) in packaging materials.</li> <li>• Design packaging materials for ease of disassembly.</li> <li>• Maximize the use of post-consumer recycled content materials in packaging materials.</li> <li>• Use readily recyclable packaging materials such as paper and corrugated materials.</li> <li>• Reduce size and weight of packages to improve transportation fuel efficiency.</li> <li>• Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards.</li> </ul>
<p><b>End-of-life Management and Recycling</b></p>	<p>Hewlett-Packard offers end-of-life HP product return and recycling programs in many geographic areas. To recycle your product, please go to: <a href="http://www.hp.com/go/reuse-recycle">http://www.hp.com/go/reuse-recycle</a> or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.</p> <p>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: <a href="http://www.hp.com/go/recyclers">http://www.hp.com/go/recyclers</a>. 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.</p>
<p><b>Hewlett-Packard Corporate Environmental Information</b></p>	<p>For more information about HP's commitment to the environment:</p> <p>Global Citizenship Report  <a href="http://www.hp.com/hpinfo/globalcitizenship/qcreport/index.html">http://www.hp.com/hpinfo/globalcitizenship/qcreport/index.html</a></p> <p>Eco-label certifications  <a href="http://www8.hp.com/us/en/hp-information/environment/ecolabels.html">http://www8.hp.com/us/en/hp-information/environment/ecolabels.html</a></p> <p>ISO 14001 certificates:  <a href="http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/PC_GBU_Product_Design_ISO_14K_Certificate.pdf">http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/PC_GBU_Product_Design_ISO_14K_Certificate.pdf</a></p> <p>and  <a href="http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/cert.pdf">http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/cert.pdf</a></p>



## Technical Specifications

### **COUNTRY OF ORIGIN**

China





## Technical Specifications

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

Type	Description	PartNumber
<b>Cases</b>	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
<b>Docking Accessories</b>	HP Universal Port Replicator	E6D70AA#xxx
	HP 3001pr USB 3 Port Replicator	F3S42AA
<b>Input/Output</b>	HP Comfort Grip Wireless Mouse	H2L63AA
	HP USB Essential Keyboard/Mouse	H6L29AA
	HP Slim USB Keyboard and Mouse	T6T83AA
<b>Input-Audio</b>	HP Stereo USB Headset	T1A67AA
<b>UCC</b>	HP Conferencing Keyboard	K8P74AA#xxx
	HP Speaker Phone	K7V16AA
	HP Wired Headset	K7V17AA
<b>Adapters</b>	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
<b>Power Bank</b>	HP Notebook Power Bank	N9F71AA#xxx
<b>Security</b>	HP Essential Combination Lock	T0Y16AA
<b>Display</b>	HP ProDisplay P240va	N3H14A
	HP V272	M4B78A



## Summary of Changes

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