

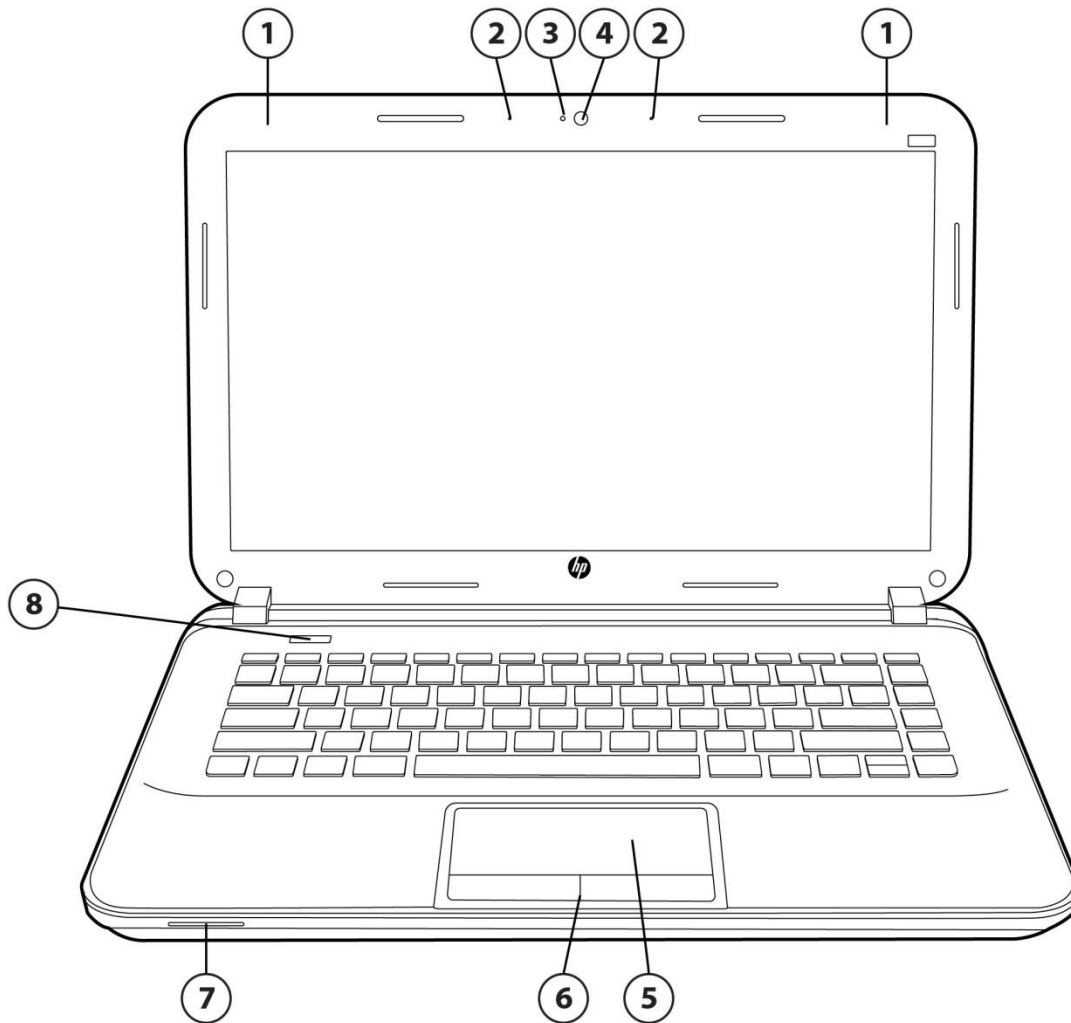


Notebook HP 240 G3

O HP 240 acompanha suas atribuições aonde quer que vá, com chassi durável protege o notebook para que ele tenha resistência e uma aparência tão profissional quanto a sua.

Overview

HP 240 G3 Notebook PC



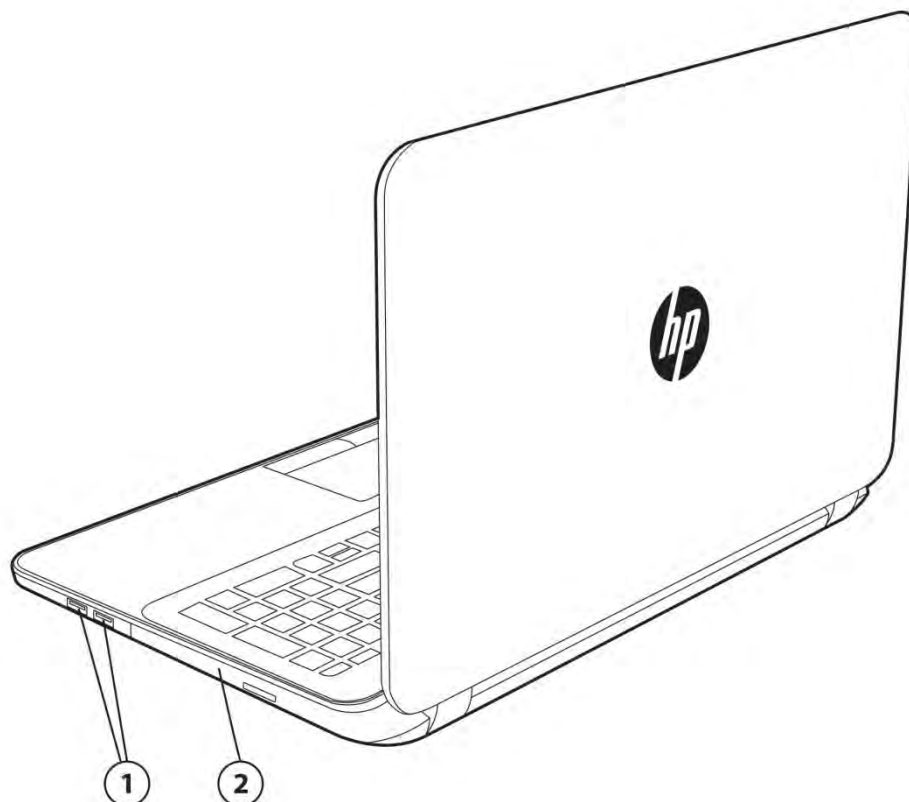
- 1. WLAN antennas (select models only)
- 2. Internal microphone
- 3. Webcam light
- 4. Webcam

Front View

- 5. Touchpad with scroll zone
- 6. TouchPad buttons
- 7. Speaker
- 8. Power button

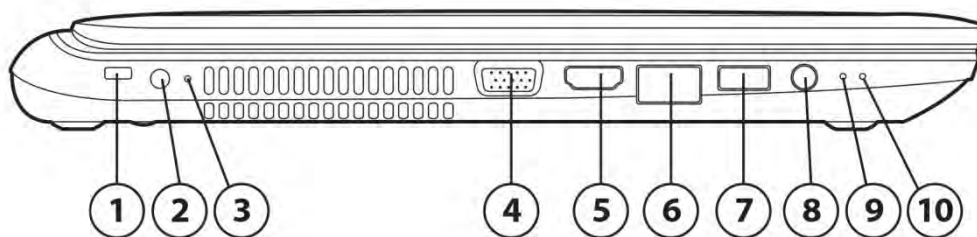


Overview



Right/Rear View

- 1. USB 2.0 ports (2)
- 2. Optical drive door



Left View

- 1. Security cable slot
- 2. Power connector
- 3. AC plug LED
- 4. VGA port
- 5. RJ-45 (Ethernet)
- 6. HDMI port
- 7. USB 3.0 port
- 8. Headphone / Microphone-in combo jack
- 9. Hard drive LED
- 10. Power LED



Overview

AT A GLANCE

- Windows 8.1 versions, Windows 7 Pro 64 bit (available through downgrade rights from Windows 8.1 Pro), Ubuntu, FreeDOS 2.0
- Intel® HD Graphics Family with shared memory
- Durable, sophisticated design with textured-surfaced black licorice color.
- Full-sized keyboard and action keys enabling functions directly
- VGA port and HDMI port (for connecting to high-resolution displays)
- Integrated webcam, integrated microphone
- Flexible wireless connectivity options
 - Optional 802.11 b/g/n wireless LAN module
 - Optional 802.11 b/g/n + Bluetooth® 4.0 Combo
- 14.0" diagonal LED-backlit HD anti-glare display, touchscreen models are available

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



Features

PRODUCT NAME

HP 240 G3 Notebook PC

OPERATING SYSTEM

Preinstalled

Windows 8.1 64*

Windows 8.1 Pro 64*

Windows 7 Professional 64 (available through downgrade rights from Windows 8 Pro 64) **

Ubuntu

FreeDOS 2.0

* Not all features are available in all editions of Windows 8.1. Systems may require upgraded and/or separately purchased hardware, drivers and/or software to take full advantage of Windows 8.1 functionality. See microsoft.com for details.

** This system is preinstalled with Windows® 7 Pro software and also comes with a license and media for Windows 8.1 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

4th Generation Intel® Core™ i5-4210U (1.7 GHz, 3 MB L3 cache, 2 cores)*

4th Generation Intel® Core™ i3-4005U (1.7 GHz, 3 MB L3 cache, 2 cores)*

3rd Generation Intel® Core™ i3-3217U (1.8 GHz, 3 MB L3 cache, 2 cores)*

Intel® Celeron® N2830 (2.42 GHz, 1 MB L2 cache, 2 cores)*

Intel® Celeron® N2815 (2.13 GHz, 1 MB L2 cache, 2 cores)*

* Multi-Core is designed to improve performance of certain software products. Not all customers or software applications will necessarily benefit from use of this technology. 64-bit computing on Intel® architecture requires a computer system with a processor, chipset, BIOS, operating system, device drivers, and applications enabled for Intel® 64 architecture. Processors will not operate (including 32-bit operation) without an Intel® 64 architecture-enabled BIOS. Performance will vary depending on your hardware and software configurations. Intel's numbering is not a measurement of higher performance.

CHIPSET

Intel chipset integrated with processor

GRAPHICS

Integrated:

Intel® HD Graphics (Intel® Celeron® processors)

Intel® HD Graphics 4000 (3rd Generation Intel® Core™ i3 processors)

Intel® HD Graphics 4400 (4th Generation Intel® Core™ i3 and i5 processors)

DISPLAY

Internal

14.0" diagonal HD* (1366 x 768) Anti-Glare LED-backlit SVA (Flat, 3.6 mm)

External

Up to 32-bit per pixel color depth



Features

VGA

Port supports resolutions up to 2048 x 1536 external resolution @75 Hz

HDMI*

1.4 port supports up to 1080p, 1920 x 1080 at 60Hz*HDMI cable sold separately.

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

STORAGE AND DRIVES

Primary Storage Bay

Hard Drives

320/500 GB/1 TB 5400 rpm SMART SATA II

NOTE: For hard drives, GB = 1 billion bytes. Actual formatted capacity is less. Up to 30 GB (for Windows 8.1) of system disk is reserved for the system recovery software.

OPTICAL DRIVES

Fixed Optical Drive

DVD+/-RW SuperMulti DL Drive*

Weight saver

* Double-layer discs can store more data than single layer discs. However, double-layer discs burned with this drive may not be compatible with many existing single-layer DVD drives and players. Note that DVD-RAM cannot read or write to 2.6 GB single-sided/5.2 GB double-sided – version 1.0 media. Don't copy copy-right protected materials.

MEMORY

Standard

DDR3L SDRAM (1600 MHz/1333 MHz)*

One SODIMM slot supporting single channel* SODIMMs

Standard memory up to 8192MB

Maximum

Upgradeable to 8192 MB with optional 8192 MB* SODIMM in slot 1

* Maximum memory speed supported is 1600 MHz, but it will be downgraded to 1066 MHz for systems running the Celeron N2815 processor.

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.

*Maximum memory capacities assume Windows 64-bit operating systems or Linux.

NETWORKING/COMMUNICATIONS

Wireless

Optional Qualcomm 802.11b/g/n (1x1) wireless LAN module^{1,2}

Optional Qualcomm 802.11 b/g/n (1x1) + Bluetooth® 4.0 Combo^{1,2}

Optional Ralink 802.11 b/g/n (1x1) + Bluetooth™ 4.0 Combo^{1,2}

Optional Realtek 802.11 b/g/n (1x1) wireless LAN module^{1,2}



Features

Communications

Realtek Ethernet (10/100 NIC)

1. Sold separately or as an optional feature.
2. Wireless access point and Internet service required and sold separately. Availability of public wireless access points limited.

AUDIO/MULTIMEDIA

Audio

High Definition Audio support
Integrated Stereo Speakers
Integrated microphone

Webcam

Integrated Webcam*

- Supports videoconferencing and still image capture
- Improved quality for video streaming and still image capture
- Up to 30 frames/sec
- Fixed focus lens

* Wireless access point and Internet service required and sold separately. Availability of public wireless access points limited.

KEYBOARDS/POINTING DEVICES/BUTTONS & FUNCTION KEYS

Keyboard

The 101/102-key compatible keyboard features a full-pitch key layout with desktop keyboard features, such as editing keys, both left and right control and alt keys, and function keys. US and International key layouts are available.

Pointing Devices

Touchpad with 2-piece pick button with left and right click functions

Buttons and Function Keys

Multi-touch gestures supported

SOFTWARE AND SECURITY

Preinstalled Software with Windows Operating System

UI Enhancements

HP Utility Center

Security and Protection

30-day McAfee LiveSafe Subscription*

Productivity

Buy Office

E-readers and Document Viewers

Kindle (not in EMEA)

ODD Playback and TV Tuners

CyberLink PowerDVD



Features

Windows Essentials

MovieMaker
SkyDrive
Photo Gallery

Photos and Videos

CyberLink
CyberLink Media Suite
CyberLink Power2Go
CyberLink LabelPrint
SnapFish URL
Adobe® Shockwave Player
HP Connected Photo

Music – HP

RaRa Music (not in EMEA)

Movies

Netflix (NA and LA only)

Home AV Integration/Home Networking

Intel WiDi

Games – Microsoft

Solitaire Collection (not in EMEA)
Mahjong (not in EMEA)

Games – HP

HP Games (internet access required, games sold separately).
WildTangent Games for HP

Communication (internet access required, games sold separately).

Skype

Security

Security Lock slot (lock must be purchased separately)

* Internet access required. First 30 days included. Subscription required for live updates afterwards.

POWER

Power Supply

External 45W Smart AC adapter (UMA)

Primary Battery

HP 3-cell (31 WHr) polymer battery
HP 4-cell (41 WHr) polymer battery

Battery Life

HP 240 G3 Notebook PC



Features

3-cell (31 WHr) battery	Up to TBD hours
4-cell (41 WHr) battery	Up to TBD hours

System Standby Time

Up to TBD weeks*

*Standby life will vary depending on various factors including battery, Memory, CPU, EC and LAN chip. The maximum capacity of the battery will naturally decrease with time and usage.

Power Conservation

Hibernation*

Standby*

ACPI compliance*

* Only Linux will feature power conservation.

WEIGHTS & DIMENSIONS

Weight

Starting at < 4.21 lbs (1910 g) (Weight will vary by configuration)

Dimensions (w x d x h)

Non-Touch

13.58 x 9.61 x 1.0 in

345 x 244 x 25.3 mm

Touch

13.58 x 9.61 x 1.01 in

345 x 244 x 25.6 mm

NOTE: Height varies depending upon where on the notebook the measurement is made. Weight varies by configuration and components. Weight includes 3-cell battery, hard drive, 2 GB memory, and optical drive.

PORTS/SLOTS

Ports

VGA – One

HDMI* – One

Headphone / Microphone-in combo jack – One

Power Connector – One

RJ-45 (Ethernet) - One

USB 3.0 – One

USB 2.0 – Two

Digital Media Slots

Supports SD/SDHC/SDXC

Supports mini versions with adapter

* HDMI cable sold separately.

SERVICE AND SUPPORT



Features

HP Services offers limited 1-year warranty options depending on country; 3-year options available With HP Care Pack Services**, depending on country, 1-year limited warranty on primary battery. On-site service and warranty upgrades are also available. Optional* HP Care Pack Services** are extended service contracts which go beyond your standard warranties. For more details visit: hp.com/go/lookuptool.

*Sold separately or as an optional feature.

** 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>

NOTE: Service levels and response times for HP Care Packs may vary depending on your geographic location. Service starts on date of hardware purchase. Restrictions and limitations apply. For details, visit hp.com/go/cpc



Technical Specifications

SYSTEM UNIT

Stand-Alone Power Requirements (AC Power)	Nominal Operating Voltage	18.5/19.5V
	Average Operating Power	Integrated graphics: TBD W**
	Max Operating Power	< 65 W
Temperature	Operating	32° to 95° F (0° to 35° C) (not writing optical) 41° to 95° F (5° to 35° C) (writing optical)
	Non-operating	-4° to 140° F (-20° to 60° C)
Relative Humidity	Operating	10% to 90%, non-condensing
	Non-operating	5% to 95%, 101.6° F (38.7° C) maximum wet bulb temperature
Shock	Operating	40 G, 2 ms, half-sine
	Non-operating	200 G, 2 ms, half-sine
Random Vibration	Operating	0.75 grms
	Non-operating	1.50 grms
Altitude (unpressurized)	Operating	-50 to 10,000 ft (-15.24 to 3,048 m)
	Non-operating	-50 to 40,000 ft (-15.24 to 12,192 m)
Planned Industry Standard Certifications	UL	Yes
	CSA	Yes
	FCC Compliance	Yes
	ENERGY STAR®	Select models*
	EPEAT®	Registered Silver in United States**
	ICES	Yes
	Australia / NZ A-Tick Compliance	Yes
	CCC	Yes
	Japan VCCI Compliance	Yes
	KC	Yes
	BSMI	Yes
	CE Marking Compliance	Yes
	BNCI or BELUS	Yes
	CIT	Yes
	GOST	Yes
	Saudi Arabian Compliance (ICCP)	Yes
	SABS	Yes
	UKRSERTCOMPUTER	Yes

* Configurations of the HP 240 G3 Notebook PC that are ENERGY STAR qualified are identified as HP 240 G3 ENERGY STAR on HP websites and on energystar.gov.

** EPEAT registration varies by country. See epeat.net for registration status by country. EPEAT status listed above applies to U.S.

For accessibility information on HP products, please visit: hp.com/accessibility.



Technical Specifications

DISPLAYS

14.0-inch LED HD anti-glare (1366 x 768)	Active Area (w x h)	12.16 x 6.85 in (30.9 x 17.4 cm)
	Diagonal Size	14.0 in (35.6cm)
	Surface Treatment	Anti-glare
	Contrast Ratio	300:1 (min)
	Refresh Rate	60 Hz
	Brightness	200 nit (typical)
	Pixel Resolution	Pitch 0.252 mm
		Format 1366 x 768
		Configuration RGB Stripe
	Backlight	LED
	PPI	101 ppi
	Viewing Angle	±40° Horizontal, ±10°/-30° Vertical (minimum) 40/40/30/10 (Left/Right/Down/Up)

STORAGE AND DRIVES

Internal Storage

**1 TB* 5400 rpm
SATA Hard Drive**

Drive Weight	0.254 lb (115 g)
Capacity	1 TB
Height	0.37 in (9.5 mm)
Width	2.75 in (70 mm)
Interface	ATA-8, SATA 2.6, 3.0 Gb/s, NCQ
Transfer Rate	Synchronous (maximum) 300 MB/s (Drive Capability)
Seek Time (typical reads, including settling)	Single Track 3 ms
	Average 13 ms
	Maximum 24 ms
Rotational Speed	5400 rpm
Logical Blocks	1,953,525,168
Operating Temperature	32° to 140° F (0° to 60° C) [case temp]
Features	ATA Security

**500 GB* 5400 rpm
SATA Hard Drive**

Drive Weight	0.22 lb (101 g)
Capacity	500 GB
Height	0.37 in (9.5 mm)
Width	2.75 in (70 mm)
Interface	ATA-8, SATA 2.6, 3.0 Gb/s, NCQ
Transfer Rate	Synchronous (maximum) 150 MB/s (Drive Capability)
Seek Time (typical reads, including settling)	Single Track 3 ms
	Average 13 ms
	Maximum 24 ms
Rotational Speed	5400 rpm



Technical Specifications

	Logical Blocks	976,773,168
	Operating Temperature	32° to 140° F (0° to 60° C) [case temp]
	Features	ATA Security
320 GB* 5400 rpm SATA Hard Drive	Drive Weight	0.22 lb (101 g)
	Capacity	320 GB
	Height	0.37 in (9.5 mm)
	Width	2.75 in (70 mm)
	Interface	ATA-8, SATA 2.6, 3.0 Gb/s, NCQ
	Transfer Rate	Synchronous (maximum) 150 MB/s (Drive Capability)
	Seek Time (typical reads, including settling)	Single Track 3 ms Average 13 ms Maximum 24 ms
	Rotational Speed	5400 rpm
	Logical Blocks	625,142,448
	Operating Temperature	32° to 140° F (0° to 60° C) [case temp]
	Features	ATA Security

* 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 8.1) of system disk is reserved for the system recovery software.

Optical Drives

DVD+/-RW SuperMulti DL Drive	Access Times	Random	<140ms CD (typical) < 160 ms DVD (typical)
	Max Data Transfer Rate	24X CD-ROM 8X DVD 24X CD-R 24X CD-RW 8X DVD+R 8X DVD+RW 8X DVD-R 6X DVD-RW 5X DVD-RAM	
	Transfer Mode	UDMA Mode 5	
	Interface	Gen 1 SATA	
	Supported Media (read)	CD-DA, CD-TEXT, CD-ROM, CD-ROM XA, MIXED MODE CD, CD-I, CD-I Bridge (Photo-CD, Video CD), Multisession CD (Photo-CD, CD-EXTRA, Portfolio, CD-R, CD-RW), CD-R, CD-RW, DVD-ROM (DVD-5, DVD-9, DVD-10, DVD-18), DVD-R, DVD-RW, DVD+R, DVD+RW, DVD-RAM	
	Supported Media (write)	CD-R, CD-RW, DVD+R, DVD+RW, DVD-R, DVD-RW, DVD-RAM, DVD+R DL, DVD-R DL	
	Max Media Capacity (read)	8.5 GB	
	Max Media Capacity (write)	8.5 GB	
	Transport	Tray Loading	

NETWORKING/COMMUNICATIONS



Technical Specifications

Networking

**Integrated Realtek
10/100 NIC**

Ethernet Features

10 Mbit/s operation (10BASE-T; IEEE 802.3i; IEEE 802.3 clauses 13-14)
100 Mbit/s operation (100BASE-TX; IEEE 802.3u; IEEE 802.3 clauses 21-30)
Auto-Negotiation (Automatic Speed Selection)
Full Duplex Operation at all Speeds, Half Duplex operation at 10 and 100 Mbit/s
IEEE 802.1p QoS (Quality of Service) Support
IEEE 802.1q VLAN support
IEEE 802.3x Flow Control (IEEE 802.3 clauses 31-32; configurable)
Power Management
ACPI compliant - multiple power modes
Situation-sensitive features reduce power consumption
Advanced link down power saving for reducing link down power consumption
Performance Features
TCP/IP/UDP Checksum Offload (configurable)
Large send offload and Giant send offload
Receiving Side Scaling
Manageability
Wake-on-LAN from standby and hibernation (Magic Packet and Microsoft Wake-Up Frame); Wake-on-LAN from off (Magic Packet only)
PXE 2.1 Remote Boot
Statistics Gathering (SNMP MIB II, Ethernet-like MIB, Ethernet MIB (802.3x, clause 30))
Comprehensive diagnostic and configuration software suite
Virtual Cable Doctor for Ethernet cable status
Interface
NIC Device Driver Name
PCI Express 1.1 x1 to fully support ASPM L0s/L1 and CLKREQ
Realtek PCIe FE Ethernet Family Controller

Communications

**Qualcomm 802.11b/g/n
WiFi Adapter*, ****

Wireless LAN Standards

IEEE 802.11b
IEEE 802.11g
IEEE 802.11n

Interoperability

Wi-Fi certified
Cisco Compatible Extensions Program compliant with Microsoft Windows 7, (details at: hp.com/go/notebooks/WLAN)

Frequency Band

2.402 - 2.482 GHz

Data Rates

802.11b: 1, 2, 5.5, 11 Mbps
802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
802.11n 150Mbps for MCS7

Frequency Support Modulation

20 MHz: 2.4 GHz bands
Direct Sequence Spread Spectrum
DBPSK, DQPSK, CCK, OFDM, BPSK, QPSK, 16-QAM, 64-QAM

Security¹

Supports 64- and 128-bit WEP, WPA, WPA2, hardware-accelerated AES, 802.1x authentication types EAP-TLS, EAP-TTLS, PEAP-GTC, PEAP-MSCHAPv2, LEAP, EAP-FAST.
Support for Cisco Security Features (proven compatibility with Cisco Aironet infrastructure products through the Cisco Compatible



Technical Specifications

Sub-channels	Extensions Program Version 5) with Microsoft Windows 7 only.
Media Access Protocol	Multinational support with frequency bands and channels compliant to local regulations.
Network Architecture Models	CSMA/CA (Collision Avoidance) with ACK
Roaming	Ad-hoc (Peer to Peer)
Output Power²	Infrastructure (Access Point Required)
Power Consumption	IEEE 802.11 compliant roaming between access points
	13.5 dBm, minimum
Power Management	Idle associated: 250 mW avg (CLKREQ enabled)
	Idle unassociated: 100 mW avg
	Transmit/Receive channel: 2.0 /1.6 W
Receiver Sensitivity³	ACPI compliant power management
	802.11 compliant power saving mode
Antenna type	11b:-88dBm@11Mbps, 11g:-74 dBm@54Mbps, 11n:-70dBm@72.Mbps.
Form Factor	High efficiency dual antenna with spatial diversity, usually mounted in the display enclosure
Weight	PCI-Express Half-MiniCard
Dimensions	4 g
Operating Voltage	3.3 x 26.65 x 29.85 mm
Temperature	3.3v +/- 9%
	Operating -10° to 70° C
	Non-operating -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	Amber LED on-Radio OFF; White LED on-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 (CCK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation).
NOTE: WLAN supplier's client utility is required for Cisco Compatible Extensions support with Microsoft Windows XP. WLAN may also be compatible with certain third-party software supplicants. WLAN supplier IHV extensions required for Cisco Compatible Extensions support for Microsoft Windows Vista and Windows 7.	
* Wireless access point and internet service required. Availability of public wireless access points limited.	
** Sold separately or as an optional add-on feature.	

**Qualcomm 802.11b/g/n
Bluetooth 4.0 Combo Card***

Wireless LAN Standards	IEEE 802.11b IEEE 802.11g IEEE 802.11n
Interoperability	Wi-Fi certified



Technical Specifications

Cisco Compatible Extensions Program compliant with Microsoft Windows7 (details at: hp.com/go/notebooks/WLAN)

Frequency Band	2.402 – 2.482 GHz
Data Rates	802.11b: 1, 2, 5.5, 11 Mbps 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11n: 150Mbps for MCS7
Modulation	Direct Sequence Spread Spectrum DBPSK, DQPSK, CCK, OFDM, BPSK, QPSK, 16-QAM, 64-QAM
Security¹	Supports 64- and 128-bit WEP, WPA, WPA2, hardware-accelerated AES, 802.1x authentication types EAP-TLS, EAP-TTLS, PEAP-GTC, PEAP-MSCHAPv2, LEAP, EAP-FAST. WAPI
Sub-channels	Support for Cisco Security Features (proven compatibility with Cisco Aironet infrastructure products through the Cisco Compatible Extensions Program Version 5) with Microsoft Windows Vista and XP only. Multinational support with frequency bands and channels compliant to local regulations.
Media Access Protocol	CSMA/CA (Collision Avoidance) with ACK
Network Architecture	Ad-hoc (Peer to Peer)
Models	Infrastructure (Access Point Required)
Roaming	IEEE 802.11 compliant roaming between access points
Output Power	13.5dBm , minimum
(for CCK)²	
Power Consumption	Idle associated: 250 mW Idle unassociated: 150 mW Transmit: 2.0 W (max) Receive: 2.0 W (max)
Power Management	ACPI compliant power management 802.11 compliant power saving mode
Receiver Sensitivity³	11b:-88dBm@11Mbps, 11g:-74 dBm@54Mbps, 11n:-70dBm@72.Mbps.
Antenna type	High efficiency dual antenna with spatial diversity, mounted in the display enclosure
Form Factor	PCI-Express Half-MiniCard v1.2
Weight	6 g
Dimensions	3.3 x 26.65 x 29.85 mm
Operating Voltage	3.3v +/- 10%
Temperature	Operating 14° to 149° F (-10° to 65° 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 Off – Radio OFF; Solid LED On – RadioON

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 (CCK modulation) and a packet error rate of 10%



Technical Specifications

for 802.11a/g (OFDM modulation).

NOTE: WLAN supplier's client utility is required for Cisco Compatible Extensions support with Microsoft Windows XP. WLAN may also be compatible with certain third-party software supplicants. WLAN supplier IHV extensions required for Cisco Compatible Extensions support for Microsoft Windows Vista and Windows 7.

Bluetooth Specification

V4.0 High Speed, V2.1+EDR, backwards compatible with V1.1, 1.2 and 2.0

Number of Available Channels 79 (1 MHz) available channels

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

-6 dBm to 4 dBm (Bluetooth Class II)

Receiver Sensitivity

Better than -80 dBm at 0.1 % raw bit error rate

Power Consumption

Peak (Tx) 330 mW

Peak (Rx) 230 mW

Sleep <17 mW

Antenna

Internally integrated within module

Range

Up to 33 ft (10 m)

Electrical Interface

USB 2.0 compliant

Bluetooth Software Supported

Microsoft Windows Plug and Play compliant

Broadcom Bluetooth for Windows

Microsoft Windows Bluetooth Software

Link Topology

Point to Point, Multipoint Pico Nets up to 7 slaves

Security

Full support of Bluetooth Security Provisions

Power Management

Microsoft Windows ACPI, and USB Bus Support

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

Certifications

All necessary regulatory approvals for supported countries, including:

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

ETS 300 328, ETS 300 826

Low Voltage Directive IEC950

UL, CSA, and CE Mark

Bluetooth Profiles Supported

Generic Access Profile (GAP)

Service Discovery Application Profile (SDAP)

Serial Port Profile (SPP)

Dial_Up Networking Profile (DUN)

Generic Object Exchange Profile (GOEP)

Object Push Profile (OPP)

File Transfer Profile (FTP)

Synchronization Profile (SYNC)

Hard Copy Cable Replacement (HCRP)

Personal Area Networking Profile (PAN)

Human Interface Device Profile (HID)

Generic Audio/Video Distribution Profile (GAVDP)

Advanced Audio/Video Distribution Profile (A2DP)

FAX Profile (FAX)

Basic Imaging Profile (BIP)



Technical Specifications

Headset Profile (HSP)
Hands Free Profile (HFP)
Basic Printing Profile (BPP)
VDP (Video Distribution Profile)
AVRCP (Audio Video Remote Control Profile)

* Wireless access point and internet service required. Availability of public wireless access points limited.

** Sold separately or as an optional add-on feature.

Ralink 802.11b/g/n Bluetooth 4.0 Combo Card*, **	Wireless LAN Standards	IEEE 802.11b IEEE 802.11g IEEE 802.11n
	Interoperability	Wi-Fi certified Cisco Compatible Extensions Program compliant with Microsoft Windows7 (details at: hp.com/go/notebooks/WLAN)
	Frequency Band	2.402 – 2.482 GHz
	Data Rates	802.11b: 1, 2, 5.5, 11 Mbps 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11n: card will support rates for NSS=1 for RX and TX for 20 MHz channels. Short and long guard intervals shall be supported
	Modulation	Direct Sequence Spread Spectrum DBPSK, DQPSK, CCK, OFDM, BPSK, QPSK, 16-QAM, 64-QAM
	Security¹	Supports 64- and 128-bit WEP, WPA, WPA2, hardware-accelerated AES, 802.1x authentication types EAP-TLS, EAP-TTLS, PEAP-GTC, PEAP-MSCHAPv2, LEAP, EAP-FAST. WAPI Support for Cisco Security Features (proven compatibility with Cisco Aironet infrastructure products through the Cisco Compatible Extensions Program Version 5) with Microsoft Windows Vista and XP only.
	Sub-channels	Multinational support with frequency bands and channels compliant to local regulations.
	Media Access Protocol	CSMA/CA (Collision Avoidance) with ACK
	Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
	Roaming	IEEE 802.11 compliant roaming between access points
	Output Power (for CCK)²	13.5dBm , minimum
	Power Consumption	Idle associated: 250 mW Idle unassociated: 150 mW Transmit: 2.0 W (max) Receive: 2.0 W (max)
	Power Management	ACPI compliant power management 802.11 compliant power saving mode
	Receiver Sensitivity³	72.2 Mbps: -70 dBm; 54 Mbps: -74 dBm; 11 Mbps: -88 dBm ; 1 Mbps: -95 dBm
	Antenna type	High efficiency dual antenna with spatial diversity, mounted in the display enclosure
	Form Factor	PCI-Express Half-MiniCard
	Weight	6 g



Technical Specifications

Dimensions	3.3 x 26.65 x 29.85 mm
Operating Voltage	3.3v +/- 10%
Temperature	Operating 14° to 149° F (-10° to 65° 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 Off – Radio OFF; Solid LED On – Radio ON
<ol style="list-style-type: none"> 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 (CCK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation). <p>NOTE: WLAN supplier's client utility is required for Cisco Compatible Extensions support with Microsoft Windows XP. WLAN may also be compatible with certain third-party software supplicants. WLAN supplier IHV extensions required for Cisco Compatible Extensions support for Microsoft Windows Vista and Win7.</p>	
Bluetooth Specification	V4.0 High Speed, V2.1+EDR, backwards compatible with V1.1, 1.2 and 2.0
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	-6 dBm to 4 dBm (Bluetooth Class II)
Receiver Sensitivity	Better than -80 dBm at 0.1 % raw bit error rate
Power Consumption	Peak (Tx) 330 mW Peak (Rx) 230 mW Sleep <17 mW
Antenna	Internally integrated within module
Range	Up to 33 ft (10 m)
Electrical Interface	USB 2.0 compliant Microsoft Windows Plug and Play compliant
Bluetooth Software Supported	Broadcom Bluetooth for Windows Microsoft Windows Bluetooth Software
Link Topology	Point to Point, Multipoint Pico Nets up to 7 slaves
Security	Full support of Bluetooth Security Provisions
Power Management	Microsoft Windows ACPI, and USB Bus Support Self configurable to optimize power conservation in all operating modes, including Standby, Hold, Park, and Sniff



Technical Specifications

Certifications

All necessary regulatory approvals for supported countries, including:

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

ETS 300 328, ETS 300 826

Low Voltage Directive IEC950

UL, CSA, and CE Mark

Bluetooth Profiles Supported

Generic Access Profile (GAP)

Service Discovery Application Profile (SDAP)

Serial Port Profile (SPP)

Dial_Up Networking Profile (DUN)

Generic Object Exchange Profile (GOEP)

Object Push Profile (OPP)

File Transfer Profile (FTP)

Synchronization Profile (SYNC)

Hard Copy Cable Replacement (HCRP)

Personal Area Networking Profile (PAN)

Human Interface Device Profile (HID)

Generic Audio/Video Distribution Profile (GAVDP)

Advanced Audio/Video Distribution Profile (A2DP)

FAX Profile (FAX)

Basic Imaging Profile (BIP)

Headset Profile (HSP)

Hands Free Profile (HFP)

Basic Printing Profile (BPP)

VDP (Video Distribution Profile)

AVRCP (Audio Video Remote Control Profile)

* Wireless access point and internet service required. Availability of public wireless access points limited.

** Sold separately or as an optional add-on feature.

Realtek 802.11 b/g/n (1x1) *, **

Wireless LAN Standards

IEEE 802.11b

IEEE 802.11g

IEEE 802.11n

Interoperability

Wi-Fi certified

Frequency Band

2.402 - 2.482 GHz

Data Rates

802.11b: 1, 2, 5.5, 11 Mbps

802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps

802.11n: card will support rates for NSS=1 for RX and TX for 20 MHz channels. Short and long guard interval will be supported.

Modulation

Direct Sequence Spread Spectrum

BPSK, QPSK, CCK, 16-QAM, 64-QAM

Security¹

IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/g mode only

AES-CCMP: 128 bit in hardware 802.1x authentication types WPA, WPA2:

802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES.

WPA2 certification

IEEE 802.11i

Cisco Certified Extensions, all versions through V5

WAPI

Network Architecture Models

Ad-hoc (Peer to Peer)

Infrastructure (Access Point Required)



Technical Specifications

Roaming	IEEE 802.11 compliant roaming between access points	
Output²	13.5 dBm, nominal	
Power Consumption	Transmit: 2.0 W (max)	
	Receive: 1.6 W (max)	
	Associated to Access Point, Idle: 250 mW nominal	
	Wireless Button Off: 100 mW nominal	
Power Management	Radio disabled: 75 mW nominal	
	ACPI compliant power management	
Receiver Sensitivity³	802.11 compliant power saving mode	
	802.11b: -95 dBm (1 Mbps), -93 dBm (2 Mbps), -91 dBm (5.5 Mbps), -88 dBm (11 Mbps)	
	802.11g: -90 dBm (6 Mbps), -89 dBm (9 Mbps), -87 dBm (12 Mbps), -85 dBm (18 Mbps), -82 dBm (24 Mbps), -79 dBm (36 Mbps), -76 dBm (48 Mbps), -74 dBm (54 Mbps)	
	802.11n: -70 dBm (72.2 Mbps)	
Antenna Connections	High efficiency antenna with spatial diversity, mounted in the display enclosure	
Form Factor	PCI-Express Half-MiniCard	
Dimensions	0.19 x 1.06 x 1.18 in (4.75 x 26.8 x 30 mm)	
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 Off - Radio OFF; Solid LED On - 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).

* Wireless access point and internet service required. Availability of public wireless access points limited.

** Sold separately or as an optional add-on feature.

AUDIO/MULTIMEDIA

Audio

Hardware

Implementation	Realtek ALC3201-GR High Definition audio
Volume Controls	Up, down, and mute function keys
Full Duplex	Yes
Microphone In	Stereo
Headphone/Line Out	Stereo
Integrated Microphone	Yes

Audio Output Quality

Frequency Response	10 Hz ~ 22 KHz
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Technical Specifications

Signal to Noise Ratio	Typical 95 dB FSA (DAC)
Total Harmonic Distortion	Typical -88 dB FS (DAC)
Noise Floor	-110 dB
Play/Record Sampling Rate(s)	Up to 192 KHz
DAC	24 bits
ADC	24 bits

Integrated Stereo Speakers	Power Rating	1.5 W
	Impedance	4 ohms

Multimedia

Integrated Webcam	Supports videoconferencing and still image capture Improved quality for video streaming and still image capture Up to 30 frames/sec Fixed focus lens
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POWER

HP 45W Smart AC Adapter	Dimensions	3.78 x 1.95 x 0.88 in (9.6 x 4.95 x 2.24 cm)
	Input	90 to 265 VAC
		Input Efficiency 87% min at 115 VAC
		Input frequency range 47 to 63 Hz
	Output	Input AC current 1.4 A at 90 VAC and maximum load
		Output power 45W
		DC output 19.5V
		Hold-up time 5 msec at 115 VAC input
		Output current limit <8A, Over voltage protection- 29V max automatic shutdown
	Connector	3 pin/grounded, mates with interchangeable cords
	Environmental Design	Operating temperature 32° to 95° F (0° to 35° C)
		Non-operating (storage) temperature -4° to 121° F (-20° to 85° C)
		Altitude 0 to 16,405 ft (0 to 5,000 m)
		Humidity 0% to 95%
		Storage Humidity 0% to 95%
	EMI and Safety Certifications	CE Mark - full compliance with LVD and EMC directives; Worldwide safety standards - IEC60950, EN60950, UL60950, Class1, SELV; Agency approvals - C-UL-US, NORDICS, DENAN, EN55022 Class B, FCC Class B, CISPR22 Class B, CCC, NOM-1 NYCE; Reliability - failure rate of less than 0.1% annually within the first three years of operation.



Technical Specifications

4-Cell (41 WHr) Lithium-Ion battery	Cells/Type	4-cell Lithium-Ion	
	Energy Temperature	Watt-hour capacity	41 WHr
		Operating (Charging)	32° to 113° F (0° to 45° C)
		Operating (Discharging)	14° to 140° F (-10° to 60° C)
		Non-operating	-4° to 140° F (-20° to 60° C)
		System in OFF or Standby Mode	2.5 hours
	Battery Re-Charge Time	System ON	3 to 5 hours (depending on system power consumption)

HP 3-cell (31 WHr) Lithium-Ion Primary battery	Dimensions (H x W x L)	0.8 x 1.2 x 8.1 in (2 x 3 x 20.5cm)	
	Weight (max)	0.37lb, (0.166kg)	
	Cells/Type	Lithium-Ion	
	Energy	Voltage	11.1V
		Amp-hour capacity	2.8Ah
		Watt-hour capacity	31Wh
	Temperature	Operating (Charging)	32° to 113° F (0° to 45° C)
		Operating (Discharging)	14° to 122° F (-10° to 50° C)
		Non-operating	-4° to 122° F (-20° to 50° C)
	Battery Re-Charge Time	System in OFF or Standby Mode	2.5 hours
System ON		3 to 5 hours	
Fuel Gauge LED	No		
Warranty	1 year		

COUNTRY OF ORIGIN

China



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

Type	Description	Part #
Carrying Cases	HP Business Nylon Backpack (up to 17.3")	BP849AA
	HP Business Nylon Case(up to 15.6")	BP848AA
	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	HP USB 3.0 Port Replicator	H1L08AA#xxx
	HP Universal Port Replicator	E6D70AA#xxx
	HP 3001pr USB 3 Port Replicator	F3S42AA
	HP Dual Hinge Notebook Stand	AW661AA#xxx
	HP Dual Hinge II Notebook Stand	E8F99AA#xxx
Input/Output	HP Touch To Pair Mouse	H6E52AA
	HP Stylish Wireless KB/Mouse	H4B79AA
	HP USB Optical Travel mouse	RH304AA
	HDMI to VGA Adapter	H4F02AA
	HP HDMI to DVI Adapter	F5A28AA
Memory	HP 2GB DDR3 1600 PC3-12800 SODIMM	H2P63AA#xxx
	HP 4GB DDR3 1600 PC3-12800 SODIMM	H2P64AA#xxx
	HP 2GB DDR3L-1600 1.35V SODIMM	H6Y73AA#XXX
	HP 4GB DDR3L-1600 1.35V SODIMM	H6Y75AA#XXX
	HP 8GB DDR3L-1600 1.35V SODIMM	H6Y77AA#XXX
Adapters	HP 45W Smart AC Adapter (4.5mm) (PL MP only)	H6Y88AA#xxx
	HP 65W Smart AC Adapter (4.5mm)	H6Y89AA#xxx
	HP 65W Slim AC Adapter	H6Y82AA#xxx
	HP 90W Slim AC Adapter	H6Y83AA#xxx
	HP 90W Slim Combo Adapter w/ USB	H6Y84AA#xxx
Battery Chargers	HP Notebook Battery Charger (Single Battery Charger)	QL816AA#xxx
Security	HP Notebook Combo Lock	AY475AA#XXX
	HP Keyed Cable Lock	BV411AA
	HP UltraSlim Keyed Cable Lock	H4D73AA
	HP USB Smart Card Reader	F6V67AA
Storage	HP External USB Optical Drive	F2B56AA
Monitors	HP EliteDisplay E271i 27-inch IPS LED Monitor	D7Z72AA/A8/AS/AT
	HP EliteDisplay E231 23-inch LED Monitor	C9V75AA/A8/AS/AT
	HP EliteDisplay E201 20-inch LED Monitor	C9V73AA/A8/AS/AT
	HP ProDisplay P221 21.5" LED Monitor	C9E49AA/A8/AS/AT
	HP ProDisplay P201 20" LED Monitor	C9F26AA/A8/AS/AT



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

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