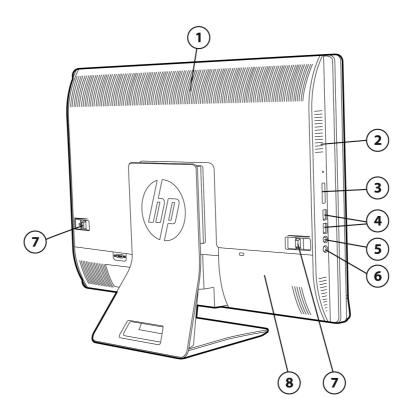


FRONT

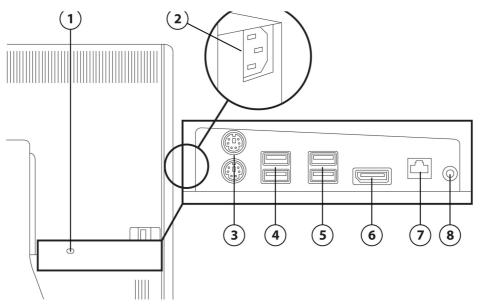
- 1. Dual microphone array
- 2. 2.0 MP Webcam (optional)
- 3. Webcam Activity LED (only on models with Webcam)
- 4. 23-inch Full HD capable screen (with or without optical touch panel option)
- 5. Optical drive opening
- 6. Power button
- 7. Capacitive Controls for Brightness, Volume, Mic Mute, Speaker Mute
- 8 Stand(Can be configured with no stand, basic stand, or height adjustable/reclining stand)





BACK

- 1. Vent slots
- 2. Side venting
- 3. 6-in-1 Media Card Reader (optional)
- 4. (2) USB 3.0 ports
- 5. Mic input jack
- 6. Headphone jack
- 7. Access panel latches
- 8. Rear port cover

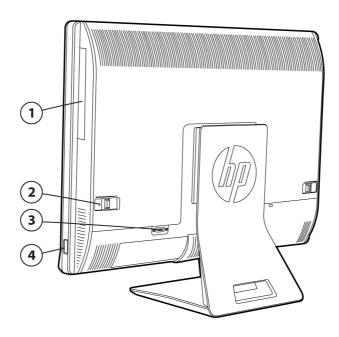


REAR PORTS (BEHIND COVER)

- 1. Security lock slot
- 2. Power connector
- 3. PS/2 mouse and keyboard connectors
- 4. (2) USB 2.0 ports
- 5. (2) USB 3.0 ports
- 6. DisplayPort connector
- 7. RJ-45 Gigabit Ethernet port
- 8. Stereo line out



Overview



SIDE

- 1. Slim tray-load optical drive
- 2. Security screw
- 3. Optional serial port
- 4. Power button

At A Glance

- Genuine Windows 7 Professional 32- and 64-bit
- UEFI BIOS developed and engineered by HP for better security, manageability and software image stability
- Integrated all-in-one form factor
- 23-inch (1920 x 1080) diagonal widescreen WLED backlit anti-glare LCD, with or without Optical Touch Panel option
- Landscape or portrait display orientation¹
- Optional height adjustable/reclining stand
- Intel® Q77 chipset
- Intel 2nd & 3rd generation Core™ processors
- Intel vPro™ Technology available with select processors
- Integrated Intel HD Graphics
- Optional MXM Discrete graphics
- Integrated Intel 82579LM Gigabit Network Connection
- Optional wireless connectivity:
 - O Intel Advanced-N 6205 WLAN (mini PCI Express) Intel 802.11 a/b/g/n
 - O WLAN (mini PCI Express) HP 802.11 b/g/n
 - O WLAN and Bluetooth Combo Card HP 802.11 a/b/g/n and Bluetooth® 4.0



- WiDi support (with Intel 6205 WLAN)
- Optional Integrated 2.0 MP webcam & Dual Microphone Array
- High performance integrated stereo speakers
- SRS Premium Sound PRO™
- Up to 16 GB of DDR3 SDRAM, dual channel memory support, two SODIMM slots
- Support for up to 3 storage drives (2 SATA, 1 mSATA) with RAID support
- Up to 1 TB SATA hard drive, up to 128GB Solid State Drive and 256GB Self-Encrypting Solid State Drive
- Optional Intel Smart Response Technology support with 24GB mSATA SSD Flash Cache Module
- Optional slim Tray-load SuperMulti Optical Disc Drive or DVD ROM Optical Disc Drive
- Optional 6-in-1 Media Card Reader
- Optional serial port
- DisplayPort out
- Integrated VESA 100min x 100max mounting holes
- Lockable rear access panel with intrusion sensor
- ENERGY STAR® qualified. EPEAT® registered where applicable/supported. See www.epeat.net for registration status by country.
- CCC, CECP & SEPA Certified
- Qualified for Microsoft Lync
- TCO AiO and Edge
- BFR/PVC Free
- Arsenic Free
- Protected by HP Services, including standard warranties up to 5-5-5 (terms and conditions vary by country; certain restrictions and exclusions apply)



¹ Portrait orientation not recommended for Touch

Standard Features

OPERATING SYSTEM

Preinstalled

Windows® 7 Ultimate (32-bit)
Windows® 7 Ultimate (64-bit)
Windows® 7 Professional (32-bit)
Windows® 7 Professional (64-bit)
Windows® 7 Home Premium (32-bit)
Windows® 7 Home Premium (64-bit)
Windows® 7 Home Basic (32-bit)*

*Not available with touch option. System may require upgraded and/or separately purchased hardware to take full advantage of Windows 7 functionality. Not all features are in all editions of Windows 7. See http://www.microsoft.com/windows/windows-7/ for details.

FreeD0S

Novell SUSE Linux Enterprise Desktop 11

PROCESSOR

Intel® 3rd Generation Core™ i7 Processors

Intel® Core™ i7-3770

Up to 3.9 GHz Max. Turbo Frequency (3.4 GHz base frequency), 8 MB cache, 4 cores, 8 threads

Intel HD Graphics 4000

Supports DDR3 memory up to 1600 MT/s data rate

Supports Intel vPro Technologies and Intel's Stable Image Platform Program (SIPP)

Intel® 3rd Generation Core™ i5 Processors

Intel® Core™ i5-3570

Up to 3.8 GHz Max. Turbo Frequency (3.4 GHz base frequency), 6 MB cache, 4 cores, 4 threads

Intel HD Graphics 2500

Supports DDR3 memory up to 1600 MT/s data rate

Supports Intel vPro Technologies and Intel's Stable Image Platform Program (SIPP)

Intel® Core™ i5-3470

Up to 3.6 GHz Max. Turbo Frequency (3.2 GHz base frequency), 6 MB cache, 4 cores, 4 threads

Intel HD Graphics 2500

Supports DDR3 memory up to 1600 MT/s data rate

Supports Intel vPro Technologies and Intel's Stable Image Platform Program (SIPP)

Intel® 3rd Generation Core™ i3 Processors

Intel® Core™ i3-3240

3.4 GHz base frequency, 3 MB cache, 2 cores, 4 threads

Intel HD Graphics 2500

Supports DDR3 memory up to 1600 MT/s data rate

Intel® Core™ i3-3225

3.3 GHz base frequency, 3 MB cache, 2 cores, 4 threads

Intel HD Graphics 4000

Supports DDR3 memory up to 1600 MT/s data rate



Standard Features

Intel® Core™ i3-3220

3.3 GHz base frequency, 3 MB cache, 2 cores, 4 threads Intel HD Graphics 2500 Supports DDR3 memory up to 1600 MT/s data rate

Intel® 2nd Generation Core™ i3 Processors

Intel® Core™ i3-2130

3.4 GHz base frequency, 3 MB cache, 2 cores, 4 threads Intel HD Graphics 2000 Supports DDR3 memory up to 1333 MT/s data rate Intel® Core™ i3-2120

3.3 GHz base frequency, 3 MB cache, 2 cores, 4 threads Intel HD Graphics 2000 Supports DDR3 memory up to 1333 MT/s data rate

Intel® Pentium® Processors

Intel® Pentium® G870

3.1 GHz base frequency, 3 MB cache, 2 cores, 2 threads Intel HD Graphics Supports DDR3 memory up to 1333 MT/s data rate

Intel® Pentium® G860

3.0 GHz base frequency, 3 MB cache, 2 cores, 2 threads Intel HD Graphics

Supports DDR3 memory up to 1333 MT/s data rate

Intel® Pentium® G640

2.8 GHz base frequency, 3 MB cache, 2 cores, 2 threads Intel HD Graphics

Supports DDR3 memory up to 1066 MT/s data rate

CHIPSET

Intel® Q77



Standard Features

INTEL VPRO TECHNOLOGY CAPABLE

Intel Core i5 with vPro and Core i7 with vPro technology is a selectable feature that is available on units configured with select processors, and a preinstalled Windows operating system. It provides advances in remote manageability, security, energy efficient performance, and wireless connectivity. Intel Active Management Technology 8.0 (iAMT) offers an advanced set of remote management features and functionality which provides network administrators the latest and most effective tools to remotely discover, heal, and protect networked client systems regardless of the system's health or power state. AMT 8.0 includes the following advanced management functions:

- Power Management (on, off, reset)
- Hardware Inventory (includes BIOS and firmware revisions
- Hardware Alerting
- Agent Presence
- System Defense Filters
- SOL/IDER
- Cisco NAC/SDN Support
- ME Wake-on-LAN
- DASH 1.1 compliance
- IPv6 Support
- Fast Call for Help a client inside or outside the firewall may initiate a call for help via BIOS screen, periodic connections, or alert triggered connection
- Remote Scheduled Maintenance pre-schedule when the PC connects to the IT or service provider console for maintenance.
 Remote PCs can get required patches, be inventoried, etc by connecting to their IT console or Service Provider when it's convenient
- Remote Alerts automatically alert IT or service provider if issues arise
- Access Monitor Provides oversight into Intel® AMT actions to support security requirements
- PC Alarm Clock
- Microsoft NAP Support
- Host Base set-up and configuration
- Management Engine (ME) firmware roll back
- Wireless AMT functionality on Desktop (WoDT)*
- Enhanced KVM resolution



^{*} Requires Intel Advanced-N 6205 WLAN 802.11a/b/g/n PCIe Minicard Wireless Module

Standard Features

INTEL® STANDARD MANAGEABILITY

Includes DASH 1.0/1.1 compliance plus:

- System Defense
- Agent Presence
- SOL/IDE Redirection
- CISCO NAC/SDN support
- ME Wake on LAN
- Host Based Configuration
- ME Firmware Rollback
- IPv6 Support

DASH 1.0/1.1 compliance:

- Boot Control
- HW Inventory
- SW Inventory
- Power State Management
- HW Alerting

SMBIOS

System Management BIOS, previously known as DMI BIOS, is used to store system management information

GRAPHICS

Integrated (depends on processor)

Intel HD Graphics: Basic, 2000, 2500, or 4000

Models with Intel Core i3/i5/i7 processors include HD 2000, 2500, or 4000 graphics. Models with Pentium or Celeron processors include HD graphics. Please see specific processors for graphics configuration.

Discrete (optional)

AMD Radeon HD 7650A 2GB DDR3 MXM Graphics

Graphics controller AMD Radeon HD 7650A

Core clock 600MHz max Memory clock 800MHz max

Memory frame buffer 2GB, DDR3, 128-bit wide

Memory 2GB DDR3

Supported Graphics APIs DX11, OpenGL, full 1080p BD (H264)

playback in hardware, Multi-Stream DisplayPort support (supports up to 4 displays total - 4 independent video and

audio streams)

NVIDIA GeForce GT 630M 2GB DDR3 MXM Graphics

Graphics controller NVIDIA GF108
Core clock 675MHz



Standard Features

Memory clock 900MHz

Memory frame buffer 2GB, DDR3, 128-bit wide

Memory 2GB DDR3

Supported Graphics APIs DX11, OpenGL, full 1080p BD (H264)

playback in hardware

WIRELESS DISPLAY

WiDi support with Intel Advanced-N 6205 WLAN (mini PCI Express)

Desktop system requirements for Intel Wireless Display

System Component	Requirement
Processor	3rd generation Intel® Core processor
Graphics	Intel® HD Graphics
Wireless	Intel Advanced-N 6205 WLAN (mini PCI Express)
Software	Intel® My WiFi Technology and Intel® Wireless Display must be pre-installed and enabled.
OS	Windows 7 64-bit, Home Premium, Ultimate or Professional

DISPLAY

Optical and non-touch

23"diagonal TN widescreen WLED backlit anti-glare² LCD; orientation designed to operate in portrait or landscape; with or without

Optical Touch Panel option		
Display Panel	Туре	TN (Twisted Nematic) LED Backlit LCD
	Viewable image area - 23" models (horizontal & vertical)	509.76(H) x 286.74(V)
	Screen opening 23" models (H x V)	513.8 (H) x 290.8 (V)
	Native Resolution	1920 x 1080
	Aspect ratio	16:9
	Contrast ratio (typical)	1000:1
	Brightness (typical)	250 nits (cd/m²)
	Viewing angle (typical)	85/85/80/80 (L/R/U/D)
	Pixel pitch	0.2655(H) x 0.2655(V)
	Backlight lamp life (to half brightness)	30,000 hours minimum
	Color support	Over 16 million colors (through FRC)
	Color gamut	72%



(typical) Anti-glare

Yes

Standard Features

Default color temperature Warm (6500K)

²8300 Non-touch is anti-glare

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

lower.

Basic Stand Tilt Angle -5° to +30°

Height Adjustable /Reclining Stand Tilt

Angle

Low position sliding height adjustment => -5° to +60° High position sliding height adjustment => -5° to +30°

Vertical adjustment=> up to 110 mm

WEBCAM & MIC

Optional integrated 2 MP webcam & dual microphone array; maximum resolution of 1920 x 1080

STORAGE

3.5" SATA Hard Drive

250 GB, 7200 rpm, SATA 6.0 Gb/s, SMART IV 500 GB, 7200 rpm, SATA 6.0 Gb/s, SMART IV 1 TB, 7200 rpm, SATA 6.0 Gb/s, SMART IV

2.5 " SATA Hard Drive

320 GB, 7200 rpm, SATA 6.0 Gb/s, SMART IV 500 GB, 7200 rpm, SATA 6.0 Gb/s, SMART IV

2.5" Solid State Drive

120 GB, SATA, Solid State Drive 128 GB, SATA, Solid State Drive

2.5" Self-Encrypting Solid State Drive

256 GB, SATA, Self-Encrypting Solid State Drive

Flash Cache Module

24GB mSATA SSD Flash Cache Module (Intel Smart Response Technology - Optional with Core Processors)

Optical Disc Drive

Slim Tray-load SATA DVD-ROM Slim Tray-load SATA SuperMulti DVD Writer No included Optical Disc Drive

Media Card Reader (optional)

6-in-1 PCIe Interface

Supports Secure Digital (SD, SDHC), MultiMedia Card (MMC), xD-Picture Card, Memory Stick, Memory Stick Pro



Standard Features

MEMORY

Type

Non-ECC, DDR3 SDRAM, 1600 MT/s, SODIMM

Maximum

16 GB

of Slots

2

204-pin supporting dual-channel memory

Maximized dual-channel performance requires SODIMMs of the same size and speed in both memory slots.

NOTE: Full availability of 4 GB or more of memory requires a 64-bit operating system. With Windows 32-bit operating systems, the amount of usable memory is dependent upon your configuration, so that above 3 GB all memory may not be available due to system resource requirements.

Memory modules support data transfer rates up to 1600 MT/s; actual data rate is determined by the system's configured processor. See processor specifications for supported memory data rate.

NETWORKING/COMMUNICATIONS

Ethernet (RJ-45)

Integrated Intel 82579LM Gigabit Network Connection

NOTE: The term "10/100/1000" or "Gigabit" Ethernet indicates compliance 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.

Wireless LAN (optional)

Intel 802.11a/b/g/n wireless 6205 PCIe minicard
Up to 300 mbps data rate
HP 802.11b/g/n wireless PCIe minicard
Up to 300 mbps data rate
HP 802.11a/b/g/n wireless minicard with Bluetooth Combo
Up to 300 mbps data rate
Bluetooth 4.0 compliant
Works with a wide range of Bluetooth devices



Standard Features

AUDIO/MULTIMEDIA

SRS Premium Sound PRO™
IDT 92HD91 Audio - 16 & 24-bit PCM
High performance integrated stereo speakers
Volume control and mute buttons
Stereo headphone jack
Microphone in
Stereo line out

Integrated 2.0 MP webcam (up to 30 frames/sec) & dual microphone array (optional)

KEYBOARDS AND POINTING DEVICES

Key	bo	ard
-----	----	-----

HP PS/2 104 keys plus special functions for Mute, Volume Up, Volume

Down, Sleep

Separate numeric keypad Cable length 51 in (130 cm)

HP USB Keyboard 104 keys plus special functions for Mute, Volume Up, Volume

Down, Sleep

Separate numeric keypad Cable length 51 in (130 cm)

HP Wireless Keyboard & Mouse 104 keys plus special functions for Mute, Volume Up, Volume

Down, Sleep

Separate numeric keypad; two buttons with scroll wheel acting

as third button

Operates at ~ 2.4 GHz and supports a working distance of up to

32 ft (10m)

Cable length 6ft (1.8m)

HP USB CCID SmartCard Keyboard 104, 105, 106, 107, 109 layout (depending upon country

Carbonite/Silver

All ISO 7816 smart cards

HP USB PS/2 Washable Keyboard SpillSeal® keyboard technology protection

USB & PS/2 support in one solution

Separate numeric keypad Cable length 7ft (2.2m)

Mice

HP PS/2 Mouse Two buttons with scroll wheel

72.8 in (185 cm)

HP USB Optical Mouse Two buttons with scroll wheel

72.8 in (185 cm)

HP USB 1000dpi Laser Mouse 1000 dpi support

Two buttons with scroll wheel Cable length 70.8 in (180 cm)

HP USB PS/2 Washable Scroll Mouse SpillSeal® mouse technology protection

Two buttons with scroll wheel 8.8 ft total 70 cm+ 2m extension



Standard Features

HP BIOS

Key features of the HP BIOS include:

- Deployment and manageability HP BIOS provides several technologies that help integrate the HP Compaq Elite 8300
 Business PC into the enterprise, such as PXE, remote configuration, remote control, and F10 Setup support for 12
 languages.
- Select models feature either Intel Standard Manageability or Intel Core vPro Processor Technology.
- Stability HP BIOS supports the HP stable product roadmap by releasing only critical BIOS changes to the factory and advanced change notification.
- Support UEFI specification 2.1
- Computrace agent For tracking and tracing services, available in select countries, separate software and purchase of a subscription is required.
- Thermal and power management The HP BIOS provides and enables thermal and power management technologies so
 component temperatures are managed for high reliability and to assist in operating the HP Business Desktop computer in
 any enterprise environment.
- Thermal Controlled Fans Automatic or manual controlled fan speeds for cooling and acoustic performance. Serviceability
 HP BIOS provides diagnostic and detailed service information.
- Upgrades and recovery HP BIOS provides numerous ways to upgrade HP Business Desktop computers, including BIOS updates from within DOS (DOSFlash), BIOS updates from within Windows (HPQFlash), HP Client Manager, and fail-safe recovery (Emergency Boot Block Recovery). In addition, the HP Business Desktop BIOS Utilities tool enables replicated BIOS setup throughout the Enterprise; it is available from within the BIOS software and from the support website.
- HP BIOS uses PKI signing of the BIOS for trusted BIOS upgrades and recovery.
- Serviceability HP BIOS provides diagnostic and detailed service information.

Additional HP BIOS Features:

- Power-On password Helps prevent an unauthorized user from powering on the system.
- Administrator password Also known as the setup password, this helps prevent unauthorized changes to the system
 configuration. If the administrator password is not known, the BIOS version cannot be changed and changes cannot be
 made to BIOS settings using F10 setup or under the OS.
- Advanced Configuration and Power Interface (ACPI) Represents a significant innovation in power and configuration
 management, allowing operating systems and applications to manage power based on activity and usage. HP Elite models
 use ACPI to provide power conservation features.
- S5 Max Power Savings setting supports EU Lot6 requirement and allows the computer to power down below 1W is S5 (when turned off). When S5 Max Power Savings feature is enabled power to slots is turned off along with WOL functionality.
- Master Boot Record Security Helps to prevent changes and/or infections to the Master Boot Record caused by viruses or malicious code.
- HP BIOS Protection prevents unauthorized updates or changes to the BIOS due to malware, viruses, or malicious BIOS updates. Based on NIST SP800-147 policy guidelines.



Standard Features

SECURITY

USB port disable Lockable Access Panels Security Screw HP Keyed Cable Lock (optional)

Common Criteria Certified, Infineon TPM SLB9635TT1.2 - 3.17 FW

Intrusion Detector

Wall Mountable via VESA bracket

Support for Nobel Locking Plate (3rd party option)

Support for 3M Privacy Screen (3rd party option), for non-touch models

POWER

Internal 230W, 90% efficient, active PFC 100-240V AC

HP Power Assistant software (optional)

Provides real-time reporting of how system settings impact the energy consumed by the PC and the potential savings over time.

SOFTWARE

Included

INCLUDED SOFTWARE COMPONENTS AND APPLICATIONS WITH WINDOWS OPERATING SYSTEM

- SRS Premium Sound PRO™
- Adobe Flash Player
- Ask Search (alternate search engine)
- HP Marketplace
- HP Wallpaper
- Microsoft Advantage Program, including the following:
 - O Bing Bar Toolbar
 - Bing Search
 - Microsoft Internet Explorer Home Page
 - Microsoft Office Starter 2010
- Microsoft Security Essentials
- PDF Complete Corporate Edition
- WinZip Basic
- Yahoo Search (alternate search engine)

INCLUDED HP ProtectTools Security Suite, with:

- HP ProtectTools Security Manager (w/webcam)
- Device Access Manager for HP ProtectTools
- Drive Encryption for HP ProtectTools
- File Sanitizer for HP ProtectTools
- Privacy Manager for HP ProtectTools
- HP Face Recognition for HP ProtectTools (w/webcam)

INCLUDED HP DOCUMENTATION (eDOCS)

HP eHelp Documentation



Standard Features

- HP Hardware Reference Guide
- HP Quick Setup & Getting Started Guide
- HP Regulatory and Safety Information
- HP Safety and Comfort Guide
- HP Warranty Documentation

INCLUDED HP SUPPORT APPLICATIONS

- HP EUDI Support Environment
- HP Help and Support
- HP Recovery Manager
- HP Setup v9.0
- HP Support Assistant

Optional

OPTIONAL SOFTWARE APPLICATIONS

Multi-media and Audio Software Applications

- Corel WinDVD 8 SD
- Roxio Creator Business 10 HD

Collaboration and Online Storage Solutions

- Box.net Online Storage (10GB) USA only
- HP Virtual Rooms (up to 3 people per meeting) Americas region only

Productivity Solutions

- Microsoft Office Professional 2010*
- Microsoft Office Home & Business Edition 2010*
- Microsoft Office Personal 2010 (Japan only)*
- Microsoft Windows Virtual PC XP mode
- HP Power Assistant**
- PDF Complete Office Edition

*Microsoft Office 2010 Preloaded includes reduced functionality versions of Word and Excel. Purchase of Product Key required to activate full Office 2010 suite available at participating resellers/retailers and http://www.office.com.

**Provides real-time reporting of how system settings impact the energy consumed by the PC and the potential savings over time.



Standard Features

ENVIRONMENTAL & INDUSTRY

Energy Star® qualified models available

EPEAT® registered where applicable/supported. See www.epeat.net for registration status by country.

Industry standard certifications:

UL

CSA

FCC compliance

ENERGY STAR®

EPEAT® Gold

EUP Lot6 Tier2

CCC

CECP

SEPA

TCO AiO and Edge

Qualified for Microsoft Lync

BFR/ PVC Free

Arsenic Free

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

WEIGHTS & DIMENSIONS

Weight Product Weight

Basic stand 21.7 - 25.5 lbs 9.85 - 11.55 kg

Height adjustable/reclining stand

33.4 - 37.1 lbs 15.15 - 16.85 kg

Without stand

16.9 - 20.6 lbs 7.65 - 9.35 kg

Shipping Weight

Box

Basic Stand 30.78 lbs 13.96 kg

Height adjustable/reclining stand

43.81 lbs 19.87 kg Without stand 28.38 lbs 12.87 kg

Weight without Touch

Panel

Product Weight

Basic stand 19.9 - 23.6lbs 9.02 - 10.72 kg Pallet

Basic Stand (18 units)

595.35 lbs 270 kg

Height adjustable/reclining stand (12 units)

567.66 lbs 257.44 kg

Without stand (18 units)

595.35 lbs 270 kg



Standard Features

Height adjustable/reclining stand

31.6 - 35.3 lbs 14.32 - 16.02 kg

Without stand

15 - 18.8 lbs

6.82 - 8.52 kg

Shipping Weight

Box Pallet

Basic Stand Basic Stand (18 units)

30.78 lbs 595.35 lbs 13.96 kg 270 kg

Height adjustable/reclining stand Height adjustable/reclining stand (12 units)

43.81 lbs 567.66 lbs 19.87 kg 257.44 kg

Without stand Without stand (18 units)

26.06 lbs 510.41 lbs 11.82 kg 231.48 kg

Dimensions (W x D x H) **Product Dimensions**

Basic stand

22.1 x 7.7 x 17.2 in

561.9 x 195.6 x 436.23 mm

Height adjustable/reclining stand

60 degrees 0 degrees

22.1 x 14.7 x 11 in 22.1 x 9.7 x 20.9 in

561.9 x 374.5 x 278.5 mm 561.9 x 247.5 x 529.7 mm

Without stand 22.1x2.6x15.2 in 561.9x65x387.1 mm

Shipping Dimensions

Box Pallet

 Basic stand
 Basic stand (18 units)

 25.98 x 10.67 x 21.61 in
 47.24 x 39.37 x 69.57 in

 660 x 271 x 549 mm
 1200 x 1000 x 1767 mm

Height adjustable/reclining stand Height adjustable/reclining stand (12 units)

 28.54 x 12.95 x 21.26 in
 47.24 x 39.37 x 6850 in

 725 x 329 x 540 mm
 1200 x 1000 x 1740mm

 Without stand
 Without stand (18 units)

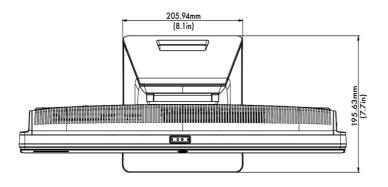
 25.98 x 10.67 x 21.61 in
 47.24 x 39.37 x 69.57 in

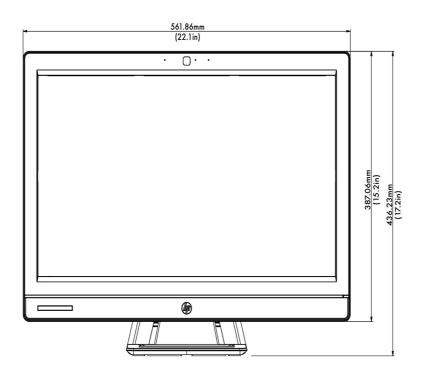
 660 x 271 x 549 mm
 1200 x 1000 x 1767 mm

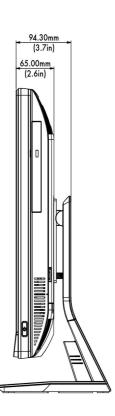


Standard Features

BASIC STAND DIMENSIONS

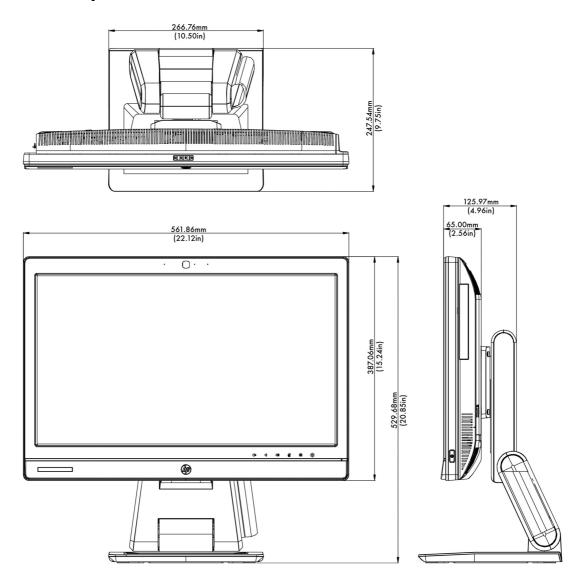






Standard Features

HEIGHT ADJUSTABLE/RECLINING STAND DIMENSIONS



TEMPERATURE, HUMIDITY, ALTITUDE

Temperature Operating 50° to 95° F (10° to 35° C)

Non-operating -22° to 140° F(-30° to 60° C)

Relative humidity Operating 10% to 90% (non-condensing at ambient)

Non-operating 5% to 95% (non-condensing at ambient)

Altitude Operating 10,000 ft (3048 m) (unpressurized) Non-operating 30,000 ft (9144 m)



Standard Features

PORTS

I/O Ports - Standard

- 4 USB 3.0 (2 side, 2 rear)
- 2 USB 2.0 (2 rear)
- 2 PS/2 (legacy) (one keyboard, one mouse)
- 1 Microphone in (side)
- 1 Headphone jack (side)
- 1 Serial RS-232 (rear) (optional)
- 1 Stereo audio line out (rear)
- 1 Power connector (rear)
- 1 RJ-45 (rear)
- 1 DisplayPort

DisplayPort connector supports multimode technology to support connection to DVI-D, HDMI and VGA monitors with optional adapters or to a DisplayPort monitor with a DisplayPort Cable.

DisplayPort Cable Provides a direct connection between the PC's DisplayPort interface to the display's

DisplayPort interface

DisplayPort To DVI-D Adapter Provides a connection from the PC's DisplayPort interface to the display's DVI-D interface;

adapts the DP output to the DVI-D input

DisplayPort To HDMI Adapter Provides a connection from the PC's DisplayPort interface to the display's HDMI interface;

adapts the DP output to the HDMI input

DisplayPort To VGA Adapter Provides a connection from the PC's DisplayPort interface to the display's analog VGA

interface; adapts the digital DP output to the analog VGA input

SLOTS

- 1 Mini PCIe half-length (used by wireless LAN module)
- 1 MXM 3.0 Type A 35W
- 1 mSATA

BAYS

- 1 3.5" internal; Supports One 3.5" hard drive or up to Two 2.5" hard drives (HDD/SSD/SED)
- 1 5.25" external; Slim Line Optical Drive



Standard Features

SERVICE AND SUPPORT

On-site Warranty ¹: Three-year (3-3-3) limited warranty delivers three years of on-site, next business day ² service for parts and labor and includes free telephone support ³ 24 x 7. Three-year onsite and labor are not available in all countries. Service offers terms up to 5 years by choosing a Care Pack. To choose the right level of service for your HP product, visit HP Care Pack Central: www.hp.com/go/cpc

NOTE 1: Terms and conditions may vary by country. Certain restrictions and exclusions apply. Other warranty variations may be offered in your region.

NOTE 2: On-site service may be provided pursuant to a service contract between HP and an authorized HP third-party provider, and is not available in certain countries. Global service response times are based on commercially reasonable best effort and may vary by country.

NOTE 3: Technical telephone support applies only to HP-configured Compaq and third-party HP qualified hardware and software. Toll-free calling and 24 x 7 support may not be available in some countries.



Technical Specifications – Graphics

Intel HD Graphics

VGA Controller Integrated

DisplayPort 1.1a; integrated, multimode capable; supports HDCP and audio over DisplayPort

Bus TypePCI Express x16RAMDACIntegrated, 350 MHz

Memory Intel graphics do not have dedicated memory but utilizes some of the computer's system memory

The amount of memory used for graphics depending on the amount of system memory installed, BIOS settings, operating system, and system load. 32 MB is pre-allocated for graphics use at system boot time. Additional memory can be allocated at boot time by the BIOS for PAVP (Protected Audio

Video Playback) support for playback of protected video content.

Additional memory is allocated for graphics as needed using Intel's Dynamic Video Memory Technology (DVMT), to provide an optimal balance between graphics and system memory use.

Maximum Graphics Memory Microsoft Windows 7

Up to 1.7GB

Note: the actual amount of maximum graphics memory can be less than the amounts listed above

depending upon your computer's configuration.

HW Video Decode AVC/VC1/MPEG2/JPEG/MJPEG/PAVP

Maximum Color Depth 32 bits/pixel

Graphics/Video API Support 3<u>rd</u> Generation Core processors:

- The Processor Graphics contains a refresh of the seventh generation graphics core enabling substantial gains in performance and lower power consumption. Up to 16 EU support.
- Next Generation Intel Clear Video Technology HD Support is a collection of video playback and enhancement features that improve the end user's viewing experience
 - Encode/transcode HD content
 - Playback of high definition content including Blu-ray Disc
 - O Superior image quality with sharper, more colorful images
 - Playback of Blu-ray disc S3D content using HDMI (V.1.4 with 3D)
- DirectX Video Acceleration (DXVA) support for accelerating video processing
 - Full AVC/VC1/MPEG2 HW Decode
- Advanced Scheduler 2.0, 1.0, XPDM support
- Windows 7, Windows XP, OSX, Linux OS Support
- DirectX 11, DirectX 10.1, DirectX 10, DirectX 9 support
- OpenGL 3.3 support

2nd Generation Core processors:

- The Processor Graphics contains a refresh of the sixth generation graphics core enabling substantial gains in performance and lower power consumption.
- Next Generation Intel Clear Video Technology HD support is a collection of video playback and enhancement features that improve the end user's viewing experience.
 - Encode/transcode HD content
 - O Playback of high definition content including Blu-ray Disc
 - O Superior image quality with sharper, more colorful images
 - Playback of Blu-ray disc S3D content using HDMI (V.1.4 with 3D)
- DirectX Video Acceleration (DXVA) support for accelerating video processing



Technical Specifications – Graphics

- O Full AVC/VC1/MPEG2 HW Decode
- Advanced Scheduler 2.0, 1.0, XPDM support
- Windows 7, XP, Windows Vista, OSX, Linux OS Support
- DirectX 10.1, DirectX 10, DirectX 9 support
- OpenGL 3.0 support

Supported Display Resolutions and Refresh Rates

NOTE: other resolutions may be available but are not recommended as they may not have been tested and qualified by HP

Resolution	Refresh Rate
800x600	60 Hz
1024x768	60 Hz
1152x864	60 Hz
1280x600	60 Hz
1280x720	60 Hz
1280x800	60 Hz
1280x960	60 Hz
1280x1024	60 Hz
1360x768	60 Hz
1366x768	60 Hz
1400x1050	60 Hz
1440x900	60 Hz
1600x900	60 Hz
1600x1200*	60 Hz
1680x1050	60 Hz
1920x1080	60 Hz
1920x1200*	60 Hz
1920x1440*	60 Hz
2560x1440*	60 Hz
2560x1600*	60 Hz

^{*} Only supported on displays connected to the external DisplayPort connector.



Technical Specifications – Graphics

AMD Radeon HD 7650A Graphics Card

Form Factor MXM 3.0

Graphics Controller AMD Radeon HD 7650A

Core Clock 600MHz
Memory Clock 800MHz

Memory 2GB, DDR3, 128-bit wide

Bus Type MXM **Max. Power** 35W

Power Source Support 12V and 19V 3D API Support DX11, SMS

HDCP Support Yes

Display Max. ResolutionDigital 2560 x 1600
Analog 2048 x 1536

Supported Graphics APIs DX11, OpenGL, full 1080p BD (H264) playback in hardware, Multi-Stream DisplayPort support

Supported Display Resolutions and Refresh Rates

NOTE: other resolutions may be available but are not recommended as they may not have been tested and qualified by HP

Resolution	Refresh Rates
800 x 600	60 Hz
1024 x 768	60 Hz
1280 x 720	60 Hz
1280 x 768	60 Hz
1280 x 1024	60 Hz
1360 x 768	60 Hz
1440 x 900	60 Hz
1600 x 900	60 Hz
1680 x 1050	60 Hz
1920 x 1080	60 Hz

NVIDIA GeForce GT 630M

Bus TypeMXM 3.0AGraphics ChipGT630MEngine Clock675MHzMemory Data Rate900MHz

Memory Size (width) 2GB (128 bit), DDR3

3D API Support Yes
HDCP support Yes
Max. Power 35-37W
Power Source Support 12V and 19V
Display Max. Resolution 1920 x 1080



Technical Specifications – Graphics

Supported Display Resolutions and Refresh Rates

NOTE: other resolutions may be available but are not recommended as they may not have been tested and qualified by HP

Resolution	Refresh Rates
800 x 600	60 Hz
1024 x 768	60 Hz
1280 x 720	60 Hz
1280 x 768	60 Hz
1280 x 1024	60 Hz
1360 x 768	60 Hz
1440 x 900	60 Hz
1600 x 900	60 Hz
1680 x 1050	60 Hz
1920 x 1080	60 Hz



Technical Specifications – Hard Disk and Solid State Storage

Introduction:

HP Serial Advanced Technology Attachment (SATA) Hard Drives maximize the performance of HP Business PCs by providing the technologies to meet your increasing storage demands with high-capacity drives offering superior reliability and performance.

SATA provides faster data transfer speeds, better system cooling airflow, more bandwidth, more headroom for speed increases in future generations and better data integrity. A next-generation technology, the SATA interface connects hard drives to the PC platform enabling easy aggregation of multiple hard drives into a single PC. This offers you the additional benefits of dedicated bandwidth, the ability to more easily identify device failures and scalability. The HP Compaq 6300 Pro Series supports the latest SATA 6.0Gb/s specification.

HP Drive Lock

HP Serial ATA Hard Drives offer enhanced security via a new Drive Lock. When enabled, this ATA security feature set prevents software access to user data on the drive until one or two user-defined passwords are provided.

SMART IV Technology

Self Monitoring Analysis and Reporting Technology (SMART) hard drive technology allows hard drives to monitor their own health and to raise flags if imminent failures are predicted. If the drive determines that a failure is imminent, the SMART hard drive technology enables the intelligent manageability or management software to generate a fault alert. While the current versions of SMART hard drives do a good job monitoring the data on the hard drive media, the ever increasing emphasis on reliability and quality has promoted HP to implement SMART IV technology which constantly checks that the data flow from host interface to media and media to host interface is not compromised. This is accomplished by inserting a 2 byte parity code into every 512 byte block in the data path of the hard drive's Cache RAM. This unique parity checking performed by HP's SMART IV technology hard drives, allows for more complete error detection coverage encompassing the entire data path between the host and the hard drive.

Smart IV is also known as IOEDC: I/O Error Detection Code.

Native Command Queuing

NCQ or Native Command Queuing is a SATA protocol extension that allows the hard drive to have several write or read commands outstanding at the same time. In contrast, normal non-queued operation requires each command to be completed before the next command is issued by the host system. Queuing allows the drive to complete the commands in the order that allows for best overall throughput. It also involves an advanced method of transferring data to or from the host, called First Party Direct Memory Access (FPDMA), which allows the hard drive and the host controller to manage the data transfers for multiple outstanding commands, without involving the host processor. NCQ can contribute to better performance but the results are dependent on many factors, including the access patterns of the various applications and operating system functions that are initiating drive accesses. Enabling NCQ features in the hard drive requires AHCI support from the host system BIOS, controller, and driver. AHCI support is typically implemented in RAID configurations.

Note: GB = 1 billion bytes. Actual available capacity is less.



Technical Specifications – Hard Disk and Solid State Storage

HP 250-GB 7.2K SATA 6.0Gb/s 3.5" Hard Disk Drive

Capacity 250,059,350,016 bytes

Rotational Speed 7,200 rpm

Interface Serial ATA 3.0 (6.0 Gb/s)

Buffer Size 8 MB

Logical Blocks 488,397,168

Seek Time (typical reads, includes controller overhead, including settling)

Single Track: 1.0 ms

Average: 8.5 ms

Full-Stroke: 18 ms

Height (nominal) 1 in (2.54 cm)

Width (nominal)

Media diameter: 3.5 in (8.89 cm)
Physical size: 4 in (10.2 cm)

Operating Temperature 41° to 131° F (5° to 55° C)

HP 500-GB 7.2K rpm SATA 6.0Gb/s 3.5" Hard Disk Drive

Capacity 500,107,862,016 bytes

Rotational Speed 7,200 rpm

Interface Serial ATA 3.0 (6.0 Gb/s)

Buffer Size 16 MB

Logical Blocks 976,773,168

Seek Time (typical reads, includes controller overhead, including settling)

Single Track: 2.0 ms

Average: 11 ms

Full-Stroke: 21 ms

Height (nominal) 1 in/2.54 cm

Width (nominal) Media diameter: 3.5 in/8.89 cm

Physical size: 4 in/10.2 cm

Operating Temperature 41° to 131° F (5° to 55° C)



Technical Specifications – Hard Disk and Solid State Storage

HP 1-TB 7.2K rpm SATA 6.0Gb/s 3.5" Hard Disk Drive

Capacity 1,000,204,886,016 bytes

Rotational Speed 7,200 rpm

Interface Serial ATA 3.0 (6.0 Gb/s)

Buffer Size 32 MB

Logical Blocks 1,953,525,168

Seek Time (typical reads, includes controller overhead, including settling)

Single Track: 2.0 ms

Average: 11 ms

Full-Stroke: 21 ms

Height (nominal) 1 in/2.54 cm

Width (nominal)

Media diameter: 3.5 in/8.89 cm
Physical size: 4 in/10.2 cm

Operating Temperature 41° to 131° F (5° to 55° C)

HP 320-GB 7.2K SATA 6.0Gb/s 2.5" Hard Disk Drive

Capacity 320,072,933,376 bytes

Rotational Speed 7,200 rpm

Interface Serial ATA 2.0 (3.0 Gb/s)

Buffer Size 16 MB

Logical Blocks 488,397,168

Seek Time (typical reads, includes controller overhead, including settling)

Single Track: 2.0 ms

Average: 12 ms

Full-Stroke: 22 ms

Height (nominal) 0.374 in/9.5 mm

Width (nominal) Media diameter: 2.5 in/63.5 mm

Physical size: 2.75 in/70 mm

Operating Temperature 41° to 131° F (5° to 55° C)



Technical Specifications – Hard Disk and Solid State Storage

HP 500-GB 7.2K SATA 6.0Gb/s 2.5" Hard Disk Drive

Capacity 500,107,862,016 bytes

Rotational Speed 7,200 rpm

Interface Serial ATA 2.0 (3.0 Gb/s)

Buffer Size 16 MB

Logical Blocks 976,773,168

Single Track: 2.0 ms **Seek Time** (typical reads.

Average: 12 ms includes controller overhead. including settling)

Full-Stroke: 25 ms

Height (nominal) 0.374 in/9.5 mm

Media diameter: 2.5 in/63.5 mm Width (nominal)

Physical size: 2.75 in/70 mm

Operating Temperature 41° to 131° F (5° to 55° C)

HP 120-GB Solid State Drive

Unformatted Capacity

Architecture Multi Level Cell (MLC) NAND Flash with wear leveling 10 channel controller

Interface Serial ATA 2.0 (3.0 Gb/s)

Dimensions (W x H x D) 2.74 x 0.37 x 4 in/6.98 x 0.95 x 10.2 cm

Weight 0.18 lb/80 g

Sustained Sequential Read: Up to 250 MB/s

Sustained Sequential Write: Up to 70 MB/s

Bandwidth Performance Random Read: Up to 35K IOPs

Random Write: Up to 6.6K IOPs

Read: 65-ms

Write: 85-ms

DC power requirement: 5 VDC 5%-100 mV ripple p-p Power

Total power consumption: 0.15W (active); 0.075W (idle)

Useful Drive Life 35TB written, up to 20GB/day for 5 years

Operating Temperature: 32° to 158° F (0° to 70° C)

Relative Humidity: 5% to 95%

Environmental

Maximum Wet Bulb (all conditions, non-condensing) **Temperature** (operating):

Shock: 1,500 G/0.5-ms



Latency

Technical Specifications – Hard Disk and Solid State Storage

HP 128 GB Solid State Drive

Unformatted Capacity

Multi Level Cell (MLC) NAND **Architecture**

Interface SATA 6 GB/sec

Dimensions (W x H x D) 2.75 x 0.276 x 3.96 in (6.985 x 0.7 x 10.05 cm)

Weight 0.16 lb (73 q)

Sustained Sequential Read: Up to 450 MB/s

Sustained Sequential Write: Up to 260 MB/s

Bandwidth Performance Random Read: up to 46K IOPs

Random Write: up to 56K IOPs

Read: 55µs (TYP) Latency Write: 55µs (TYP)

DC power requirement: Min 4.5 V; Max 5.5 V

Power Total power consumption: 160 mW (Active); <85 mW; (Idle)

Useful Drive Life 1.2 million device hours**

Operating Temperature: 32° to 158° F (0° to 70° C)

Relative Humidity: 5% to 95%

Environmental

Maximum Wet Bulb (all conditions, non-condensing) **Temperature** (operating):

Shock: 1,500 G/1.0 msec

UL, CSA, EN 60950-2000, CISPR Pub 22 Class B, CNS 13438, AS/NZS Regulations

CISPR 22:2002 Class B, Korea KCC, CE Mark

HP 128 GB Solid State Drive, documentation, 3.5-inch bay adapter bracket, **Option kit contents**

3.5-inch bay adapter bracket screws, SATA cable



^{*} For solid state disk drives, GB means 1 billion bytes. 128GB is the unformatted capacity of this drive before a portion of the drive is reserved for flash management features. Actual capacity will vary by content

^{**} The product achieves a mean time between failure (MTBF) based on population statistics not relevant to individual units.

Technical Specifications – Removable Storage

HP Slim SuperMulti DVD Writer Drive

Height 12.7mm height

Orientation Either horizontal or vertical

Interface type SATA/ATAPI

Disc recording capacity Up to 8.5 GB DL or 4.7 GB standard

Dimensions (W x H x D) 5.0 x 0.5 x 5.0 in (128 x 13.6 x 129 mm)

Weight (max) 0.42 lb (190 g)

DVD-RAM Up to 5X

DVD-R DL Up to 4X

DVD+R Up to 8X

DVD+RW Up to 4X

Write speeds DVD+R DL Up to 4X

DVD-R Up to 8X

DVD-RW Up to 6X

CD-R Up to 24X

CD-RW Up to 16X

DVD-RAM Up to 5X

DVD-RW, DVD+RW Up to 8X

DVD-R DL, DVD+R DL Up to 6X

Read speeds DVD+R, DVD-R Up to 8X

DVD-ROM DL, DVD-ROM Up to 8X

CD-ROM, CD-R Up to 24X

CD-RW Up to 24X

Random DVD: < 140 ms (typical), CD: < 125 ms (typical)

Full Stroke DVD: < 250 ms (seek), CD: < 210 ms (seek)

Access time

(typical reads, including Stop Time < 4 seconds

settling) Cache Buffer 2 MB (minimum)

Data Transfer Modes ATA PIO mode 4 (16.7 MB/s); ATA Multi-word DMA mode 2 (16.7

MB/s); ATA UltraDMA Mode 3 (44.4 MB/s - default)

Source Four-pin, DC power receptacle



Technical Specifications – Removable Storage

DC Power Requirement 5 VDC ± 5%-100 mV ripple p-p

12 VDC ± 5%-200 mV ripple p-p

Power **DC** Current 5 VDC (< 1000 mA typical, 1600 mA maximum)

12 VDC (< 600 mA typical, 1400 mA maximum)

Total Drive Power

(standby mode)

< 2.5 Watt

0.7 VRMS

Line-Out

Audio output Signal-to-Noise Ratio 74 dB

> **Channel Separation** 65 dB

Temperature 41° to 122° F (5° to 50° C)

Environmental conditions (operating - non-condensing) **Relative Humidity**

10% to 90%

Maximum Wet Bulb

Temperature

86° F (30° C)

HP Slim DVD-ROM Drive

Height 12.7mm

Orientation Either horizontal or vertical

Interface type SATA/ATAPI

Dimensions (W \times H \times D) 5.0 x 0.5 x 5.0 in (128 x 13.6 x 129 mm)

Weight (max) 0.42 lb (190 g)

> DVD+R/-R/+RW/ Up to 4X

-RW/+R DL /-R DL

DVD-ROM Up to 8X Read speeds

> CD-ROM, CD-R Up to 24X

> CD-RW Up to 24X

Random DVD DVD: < 140 ms (typical), CD: < 125 ms (typical)

Access time

Random CD (typical reads, including

settling)

DVD: < 250 ms (seek), CD: < 210 ms (seek)

Data Transfer Modes ATA PIO mode 4 (16.7 MB/s); ATA Multi-word DMA mode 2 (16.7

MB/s)

Source Four-pin, DC power receptacle

DC Power Requirement 5 VDC ± 5%-100 mV ripple p-p

Power **DC Current** 5 VDC - <1000 mA typical, < 1600 mA maximum

Technical Specifications – Removable Storage

Total Drive Power

< 2.5 Watt

(standby mode) Line-Out

0.7 VRMS

Audio output

Signal-to-Noise Ratio

74 dB

Channel Separation

65 dB

Temperature

41° to 122° F (5° to 50° C)

Environmental (all conditions

non-condensing)

Relative Humidity

5% to 85% 86° F (30° C)

Maximum Wet Bulb

Temperature (operating)



Technical Specifications – Memory

System Memory Support

The HP Compaq Elite 8300 Business PC supports the 2nd and 3rd generation Intel® Core™ processor families. Based on a new PC microarchitecture, the processor is designed for a two-chip platform consisting of a processor and Platform Controller Hub (PCH). Unlike previous generations, the processor includes an integrated memory controller (IMC). The IMC supports DDR3 protocols with two independent, 64-bit wide channels each accessing one or two DIMMs.

- Two channels of non-ECC DDR3 unbuffered dual in-line memory modules (UDIMM) or DDR3 unbuffered small outline dual in-line memory modules (SO-DIMM) with a maximum of two DIMMs per channel
- Single-channel and dual-channel memory organization modes
- Data burst length of eight for all memory organization modes
- DDR3 memory data transfer rates of up to 1600 MT/s; actual supported DDR3 data transfer rate determined by the configured processor.
- 64-bit wide channels
- DDR3 system memory I/O voltage of 1.5V
- Theoretical Maximum Memory Bandwidth:
 - 10.6 GB/s in single-channel mode of 21.3 GB/s in dual-channel mode assuming DDR3 1333 MT/s
 - 12.8 GB/s in single-channel mode or 25.6 GB/s in dual-channel mode assuming DDR3 1600 MT/s
 - 32 GB maximum memory support depending upon available number of DIMM sockets

CAUTION: You must shut down the computer and disconnect the power cord before adding or removing memory modules. Regardless of the power-on state, voltage is always supplied to the memory modules as long as the computer is plugged in to an active AC outlet. Adding or removing memory modules while voltage is present may cause irreparable damage to the memory modules or system board.

Memory Configurations:

Slot 1 is black and must always be populated. Not all memory configurations possible are represented below.

NOTE: For systems configured with more than 3 GB of memory and a 32-bit operating system, all memory may not be available due to system resource requirements. Addressing memory above 4 GB requires a 64-bit operating system.

Total Memory	Socket	
	Channel A (black)	Channel B (black)
2 GB	2 GB	Unpopulated
4 GB (dual channel)	2 GB	2 GB
8 GB (dual channel)	4 GB	4 GB
16 GB (dual channel)	8 GB	8 GB



Technical Specifications – Networking and Communications

Intel 82579LM GbE Network Connection (integrated)

Connector RJ-45

System Interface Integrated on PCA

Controller Intel 82579LM GbE platform LAN connect networking controller

Memory 24 KB FIFO packet buffer memory

Data rates supported 10/100/1000 Mbps

802.1P 802.1Q 802.2

IEEE Compliance 802.3

802.3ab 802.3az 802.3u

Bus architecture PCI Express and SMBus

Data transfer mode PCIe-based interface for active state operation (S0 state) and SMBus for host and management

traffic (Sx low power state)

Power requirement Requires 3.3V and 1.05V or just 3.3V with integrated regulators

Power consumption 0.697 Watts

Boot ROM support Yes

Network transfer mode Full-duplex

Half-duplex (not supported for the 1000BASE-T transceiver)

Network transfer rate 10BASE-T (half-duplex) 10 Mbps

10BASE-T (full-duplex) 20 Mbps 100BASE-TX (half-duplex) 100 Mbps 100BASE-TX (full-duplex) 200 Mbps 1000BASE-T (full-duplex) 2000 Mbps

Environmental Operating Temperature: 0° to 85° C

Operating Humidity: 60% RH

Management WOL, auto MDI crossover, PXE, Muti-port teaming, RSS, Advanced cable diagnostic.

Alerting ASF 2.0 support; AMT 7.0 support

Intel Centrino Advance-N 6205 Wireless Network Interface Connection

Wireless LAN Standards IEEE 802.11a/b/g/n

IEEE 802.11 e, 802.11i, 802.11d, 802.11h

Interoperability Wi-Fi certified (802.11 a/b/g/n WMM, WPA, WPA2 and WPS)

Tested with wireless access points from several major manufacturers

OS compatible with Microsoft Windows, Win7 and XP

Cisco Compatible Extensions Program compliant (802.11a/b/g only) with Microsoft Windows XP and

Windows 7

Frequency Band 2.4 GHz and 5 GHz

Antenna Structure 2 transmit; 2 receive (2x2)



Technical Specifications – Networking and Communications

Data Rates 802.11b: 1, 2, 5.5, 11 Mbps

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

802.11n: 66 possible data rates, ranging from 6 Mbps to 300 Mbps, depending on the combination of

Bandwidth, Modulation Coding Scheme, and Guard Interval used, as defined in IEEE 802.11n

specification

Modulation Direct Sequence Spread Spectrum

DBPSK, DQPSK, CCK, OFDM, BPSK, QPSK, 16-QAM, 64-QAM

Security Supports 64- and 128-bit WEP, WPA, WPA2, hardware-accelerated AES (support for key sizes of

128bits), TKIP, 802.1x authentication types EAP-TLS, EAP-TTLS, PEAP, MSCHAP, PEAP-MSCHAPv2,

LEAP, EAP-FAST, EAP-SIM, EAP-AKA PAP, CHAP, TLS, GTC

Support for Cisco Security Features (proven compatibility with Cisco Aironet infrastructure products through the Cisco Compatible Extensions Program Version 4) with Microsoft Windows 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)
Intel® My Wifi Technology (iPAN)

Roaming Provide seamless roaming between like access points (same frequency band)

Output Power (for CCK) 15 dBm
Output Power (for OFDM; power 15 dBm

varies by data rate)

Power Consumption Transmit: 2.3 Watts (average, with one spatial streams)

Receive: 1.9 Watts (average with two receive chains)

Idle mode: 30mW - 40mW (average)

Radio off: 20 mW (max)

802.11 b - Typical (@1 Mbps)

802.11 g - Typical (@1 Mbps)

Power Management ACPI compliant power management

802.11 compliant power saving mode

Antenna Connections 3 U.FL type connectors, 50 ohm nominal impedance

Range 802.11 a - Typical (@6 Mbps) 600 feet - Outdoor Open Area

150 feet - Indoor, Office environment

1200 feet - Outdoor Open Area

300 feet - Indoor, Office environment

1200 feet - Outdoor Open Area

300 feet - Indoor, Office environment

Form Factor MiniPCI-Express
Weight 0.013 lb (4.0 g)

 Dimensions
 1.1 x 1.2 in (26.8 x 30.0 mm)

 Operating Voltage
 3.3V +/- 9%, 1.5V +/- 5%

Temperature Operating: 32° to 176° F (0° to 80° C)

Non-operating: -40° to 176° F (-40° to 80° C)

Humidity Operating: 10% to 90% (non-condensing)

Non-operating: 5% to 90% (non-condensing)

Microsoft Windows XP Microsoft Windows Win 7

Technical Specifications – Networking and Communications

Configuration Utility

 Microsoft Windows XP Wireless Network Connection Manager

 Intel PROSet for Microsoft Windows XP (required for Cisco Compatible Extensions support) Intel IHV extensions for Win7 available to support Cisco Compatible Extensions

HP 802.11b/g/n Wireless PCIe Minicard

Dimensions (L x H) 1.18 x 1.06 in (30 x 26.8 mm)

ControllerRalink RT5392System interfacePCI Express x1Network standard802.11 b/g/nFrequency band2.400 - 2.4835 GHz

Operating temperature 14° to 140°F, operating (-10° to 60°C, operating)

Storage temperature -40° to 176°F, non-operating (-40° to 80°C, non-operating)

Operating voltage3.3V +/- .3V
1.2V +/- .06V

Platform/WLAN Mode Power Consumption

Not configured (PC on and NIC is powered.

Adaptor not configured.)

160 mW

Disabled (PC on and NIC is powered. Adaptor is

configured but disabled)

86 mW

Tx (Average power consumption measured while HT20 - 1670 mW

Power Consumption adaptor is transmitting a packet.) HT40 - 1560 mW

Rx (Average power consumption measured while HT20 - 820 mW adaptor is receiving a packet.) HT40 - 990 mW

Idle associated (power save)125 mWIdle non-associated40 mWRF kill (RF diable)29 mWPlatform in S3 or S439 mW

802.11 g/n modes high data rate (54Mbps, +14 dBm +/- 1.5 dB maximum

Output Power MCS7,MCS15)

(approximate) 802.11 g/n modes low data rate (MCSO) +17 dBm +/- 1.5 dB maximum

802.11 b modes +17 dBm +/- 1.5 dB maximum

IEEE 802.11i 64-/128-bit WEP encryption

WPA, WPA-PSK and TKIP, and WPA2 (with AES-CCM support)

802.1x authentication IEEE 802.11i WPA Security

64-/128-Bit WEP Key Privacy

IEEE 802.11i

Cisco CCX V1.0, V2.0, V3.0, V.4.0 and CCX5.0 certified

Antenna Nominal antenna port impedance specification is 50 ohm

Security

Technical Specifications – Networking and Communications

HP 802.11a/b/g/n Wireless Minicard with Bluetooth Combo

Dimensions (L x H) 1.18 x 1.06 in (30 x 26.8 mm)

Controller Broadcom BCM43228 + BCM20702

System interface PCI Express x1 **Network standard** 802.11 b/g/n

Bluetooth: 2.402 - 2.480 GHz Frequency band

Wi-Fi: 802.11a - 5.15-5.85 GHz; 802.11bg 2.412-2.4835 GHz

Operating temperature 32° to 131°F, operating (0° to 55°C, operating)

-40° to 176°F, non-operating (-40° to 80°C, non-operating) Storage temperature

5-90% operating Humidity 5-95% non-operating

Operating voltage 3.3 V ±9% I/O supply voltage

> Platform/WLAN Mode **Power Consumption**

Wi-Fi

515 mA Tx Mode Rx Mode 425 mA

Bluetooth

Power Consumption Tx Mode 40 mA

> Rx Mode 38 mA

> > Wi-Fi + Bluetooth - 165 mA

Standby Mode Wi-Fi only - 165 mA

Bluetooth only - 0.5 mA

Radio Off 77 mA

802.11 a 15.5 dBm@6Mbps; 15.5 dBm@54Mbps

802.11 b 18.5 dBm@11Mbps

802.11 g 16.5 dBm@6Mbps; 16.5 dBm@54Mbps **Output Power**

20MHz: 18 dBm@MCS0; 18 dBm@MCS15 (approximate) 802.11 n/2.4G 40MHz: 17 dBm@MCs0; 17 dBm@MCS15

20MHz: 16 dBm@MCS0; 16 dBm@MCS15

802.11 n/5G 40MHz: 16 dBm@MCs0; 16 dBm@MCS15

IEEE 802.11i 64-/128-bit WEP encryption Security

WPS, WPA, WPA2, WEP 64bit & 128bit, IEEE 802.11x, IEEE 802.11i

Antenna Dual antenna connectors



Technical Specifications - Audio

IDT 92HD91Audio

Type Integrated

HD Stereo Codec IDT92HD91 4-channel codec

Ports Line-In/Microphone input ports are 50K (nominal) at the pin

Line-Out intended to drive an external 10K load (nominal) and an on board shunt resistor of 20-47K

(nominal)

Headphone-Out designed to drive 32 ohm (nominal) headphones or a 10K (nominal) load

All ports are 3.5 mm

Internal Speaker Amplifier 2W/ch

2W/channel Class-D stereo BTL speaker amplifier@ 4 ohms and 4.75V

Sampling

The 92HD91 audio CODEC provides stereo 24- bit, full duplex resolution supporting sample rates up to 192kHz by the DAC and ADC. SPDIF outputs support sample rates of 192kHz, 96kHz, 88.2kHz,

48kHz, and 44.1kHz. Additional sample rates are supported by the driver software.

Wavetable Syntheses Yes – Uses OS soft wavetable

Analog Audio Yes

of Channels on Line-Out 4 Channels (2 stereo DACs and 2 stereo ADCs) with 24-bit resolution

Internal Speaker Yes
External Speaker Jack Yes

SRS Premium Sound Technology

Introduction

SRS Premium Sound™ is a state-of-the-art solution suite which optimizes the audio experience for all business applications including VoIP, computer based training, business presentations and digital content creation for any speaker configuration (notebook/desktop speakers or headphones). SRS Premium Sound delivers natural and immersive surround sound complete with deep, enveloping bass and crystal clear dialog which allows users to clearly hear audio and voice in communications or presentations and ensures that digital content can be experienced with uncompromised quality.

SRS Premium Sound Features

- Premium audio experience for all applications including VoIP, Video Conferencing, Webcasts, Multimedia Presentations and Digital Content Creation
- Natural and Immersive sound from two speakers or headphones
- Custom-tuned solutions to provide superior natural sound from desktop speakers and headphones
- Crystal clear dialog
- Deep, rich bass
- Intuitive user interface with presets for ease of use

SRS Premium Sound Benefits

- Turn your desktop into a multimedia powerhouse!
- Bring your business communication to life with natural sounding voice and clear dialog
- Increase productivity by making computer based training, webcasts and VoIP available anytime and anywhere with crystal clear audio
- Make presentations shine with rich, expansive sound without the need for external speakers
- Take digital content creation to a new level with deep bass, enhanced fidelity and immersive surround sound which ensures that your content is heard with uncompromised quality and detail



Technical Specifications – Keyboards and Pointing Devices

HP USB Keyboard

Keys 104, 105, 106, 107, 109 layout (depending upon country)

Physical characteristics Dimensions (L x W x H) 18.12 x 6.47 x 0.96 in (46.03 x 16.43 x 2.44 cm)

Weight 2 lb (0.9 kg)

Operating voltage + 5VDC ± 5%

Power consumption 50-mA maximum (with three LEDs ON)

System interface USB Type A plug connector Electrical

ESD CE level 4, 15-kV air discharge

EMI - RFI Conforms to FCC rules for a Class B computing device

Microsoft® PC 99 - 2001 Functionally compliant

Keycaps Low-profile design

Switch actuation 55-g nominal peak force with tactile feedback

Switch life 20 million keystrokes (using Hasco modified tester)

Mechanical Switch type Contamination-resistant switch membrane

Key-leveling mechanisms For all double-wide and greater-length keys

Cable length 6 ft (1.8 m)

Microsoft PC 99 - 2001 Mechanically compliant

Acoustics 43-dBA maximum sound pressure level

Operating temperature 50° to 122° F (10° to 50° C)

Non-operating temperature -22° to 140° F (-30° to 60° C)

Operating humidity 10% to 90% (non-condensing at ambient)

Non-operating humidity 20% to 80% (non-condensing at ambient)

Environmental Operating shock 40 g, six surfaces

Non-operating shock 80 g, six surfaces

Operating vibration 2-g peak acceleration
Non-operating vibration 4-g peak acceleration

Drop (out of box) 26 in (66 cm) on carpet, six-drop sequence

Drop (in box) 42 in (107 cm) on concrete, 16-drop sequence

Approvals UL, CSA, FCC, CE Mark, TUV, TUV GS, VCCI, BSMI, C-Tick, MIC

Ergonomic compliance ANSI HFS 100, ISO 9241-4, and TUVGS



Technical Specifications – Keyboards and Pointing Devices

Keyboard Installation Guide Kit contents

Warranty Card Safety and Comfort Guide

HP PS/2 Keyboard

Keys 104, 105, 106, 107, 109 layout (depending upon country)

Physical CharacteristicsDimensions

18.12 x 6.47 x 0.96 in (46.03 x 16.43 x 2.44 cm)

(L x W x H)

Weight 2 lb (0.9 kg) minimum

Operating voltage + 5VDC ± 5%

Power consumption 50-mA maximum (with three LEDs ON)

System interface PS/2 6-pin mini din connector **Electrical**

ESD CE level 4, 15-kV air discharge

EMI - RFI Conforms to FCC rules for a Class B computing device

Microsoft PC 99 - 2001 Functionally compliant

Keycaps Low-profile design

Switch actuation 55-g nominal peak force with tactile feedback

Switch life 20 million keystrokes (using Hasco modified tester)

Mechanical Switch type Contamination-resistant switch membrane

Key-leveling mechanisms For all double-wide and greater-length keys

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Operating temperature 50° to 122° F (10° to 50° C)

Non-operating temperature -22° to 140° F (-30° to 60° C)

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Non-operating humidity 20% to 80% (non-condensing at ambient)

Environmental Operating shock 40 g, six surfaces

Non-operating shock 80 g, six surfaces

Operating vibration 2-g peak acceleration
Non-operating vibration 4-g peak acceleration

Drop (out of box) 26 in (66 cm) on carpet, six-drop sequence

Technical Specifications – Keyboards and Pointing Devices

Drop (in box) 30 in (107 cm) on concrete, 16-drop sequence

Approvals UL, CSA, FCC, CE Mark, TUV, TUV GS, VCCI, BSMI, C-Tick, KC

Ergonomic compliance ANSI HFS 100, ISO 9241-4, and TUVGS

HP USB Smart Card (CCID) Keyboard Introduction

Boost your security, simplify access procedures and reduce the costs associated with managing networks by preventing unauthorized access to your computers and networks using smartcard technology with the HP Smart Card (CCID) Keyboard.

The USB Smart Card (CCID) Keyboard is a full-sized keyboard that takes advantage of digital signatures and certificates to secure the environment for transactions performed on both public and private networks. The USB Smart Card (CCID) Keyboard works with all smart cards that comply with ISO standard 7816.

Smart cards are easy-to-use credit card-sized devices which require multiple forms of information to be validated before you gain access to your accounts or resources. Used worldwide, smart cards strengthen access to a network or other resource using dual-factor authentication. Implementing a two-factor authentication (or multi-factor authentication) process reduces the risk of unauthorized access by verifying and validating your identity in one of the following ways:

- Something you know a combination of username and password or PIN
- Something you have a smart card or security token.

Something you have (smart card) plus something you know (PIN), improves user-access security within corporate network environments. Smart cards are used in government agencies, healthcare companies and the finance industry.

HP ProtectTools Smart Card Manager provides authentication software for the smart card. The Smart Card Reader module works with the HP ProtectTools Security Manager and enables the user to setup, use, and manage the smart card. This allows strengthened security with HP patented technology.

- Protects against unauthorized access with smart card technology
- Delivers even greater security when combined with a HP ProtectTools smart card and the HP ProtectTools Security Software
- Combination of username and password or pin with a smart card or security token
- Secures online transactions using digital signatures and certificates
- Conforms to industry standards for ease of setup and use
- Delivers long product life and quiet operation with high-impact materials and lubricated keys
- Spill drain feature

Keys 104, 105, 106, 107, 109 layout

(depending upon country

Form factor USB basic smart card keyboard

Physical Characteristics Colors Carbonite/Silver

Dimensions 18.2 x 6.3 x 1.3 in (46.3 x 16.1 x 3.3 cm)

 $(H \times W \times D)$

Weight 2 lb (0.9 kg) minimum

Operating voltage + 5VDC ± 5%

Power consumption 100-mA maximum (with four LEDs ON)



Key Benefits:

Technical Specifications – Keyboards and Pointing Devices

Electrical System interface USB Type A plug connector

ESD CE level 4, 15-kV air discharge

EMI - RFI Conforms to FCC rules for a Class B computing device

Microsoft PC 99 - 2001 Functionally compliant

Languages 30+ available
Keycaps Standard design

Switch actuation 55 g nominal peak force with tactile feedback

Switch life 20 million keystrokes

(using Hasco modified tester)

Mechanical Switch type Contamination-resistant membrane

Key-leveling mechanisms For all double-wide and greater-length keys

Cable length 6 ft (1.8 m)

Microsoft PC 99 - 2001 Mechanically compliant

Acoustics 43-dBA maximum sound pressure level

Operating temperature 50° to 122° F (10° to 50° C) Non-operating temperature -22° to 140° F (-30° to 60° C)

Operating humidity 10% to 90% (non-condensing at ambient) Non-operating humidity 20% to 80% (non-condensing at ambient)

Operating shock 40 g, six surfaces
Non-operating shock 80 g, six surfaces
Operating vibration 2-g peak acceleration

Non-operating vibration 4-g peak acceleration

Drop 26 in (66 cm) on carpet, six-drop sequence (out of box)

Drop 42 in (107 cm) on concrete, 16-drop sequence (in box)

Support All ISO 7816 smart cards

Interface Reads from and writes to all ISO7816-1, 2, 3, 4 memory and

microprocessor smart cards (T=0, T=1)

Chipset SCM STCIII

Standard APIs supported PC/SC, EMV2000, CT-API

Power USB Port

Short circuit detection (protects smart card and reader)
Power supply compliant with ISO7816 and EMV (5V, 60 mA)

Supports 3-V and 5-V cards

Power consumption 100-mA maximum draw

Communication From card 9600 bps to 330,000 bps

From computer 12 Mbps (USB transfer speed)

Landing mechanism Contact device Friction contact

Card insertions rating Up to 100,000 insertion cycles

Interface modes CCID protocol
Reader performance interface USB connection

Environmental

SmartCard Function

Technical Specifications – Keyboards and Pointing Devices

Electro-magnetic standards Europe 2004/108/EC

USA USAFCC part 15

Approvals CE-Mark, UL, CSA, FCC, CE Mark, TUV, TUV GS, VCCI, BSMI, C-Tick, MIC, EMV2000, USB-IF

Ergonomic Compliance ISO 9241-4, TUVGS

Kit Contents Keyboard, I/O Security and Documentation CD, warranty card

HP USB PS/2 Washable Keyboard

Keys 104 (US) Layout, 105 (EU) layout - depending upon country

Physical CharacteristicsDimensions 17.67x 6.62 x 1.38 in (449 x 168 x 35 mm)

 $(L \times W \times H)$

Weight 1.7 lb (0.77 kg) minimum

Operating voltage + 5VDC ±5%

Power consumption 50-mA maximum (with three LEDs ON)

System interface USB Type A plug connector **Electrical**

ESD CE level 4, 15-kV air discharge

EMI - RFI Conforms to FCC rules for a Class B computing device

Microsoft® PC 99 - 2001 Functionally compliant

Keycaps Stepped -profile design

Switch actuation 55-g nominal peak force with tactile feedback

Switch life 20 million keystrokes

Switch type Contamination-resistant switch membrane Mechanical

Key-leveling mechanisms For all double-wide and greater-length keys

Cable length 7 ft (2.2 m)

Microsoft PC 99 - 2001 Mechanically compliant

Acoustics 43-dBA maximum sound pressure level

Operating temperature 50° to 122° F (10° to 50° C)

Non-operating temperature -22° to 140° F (-30° to 60° C)

Operating humidity 10% to 95% (non-condensing at ambient)

Non-operating humidity 0% to 95% (non-condensing at ambient)

Operating shock 40 g, six surfaces

Non-operating shock 80 g, six surfaces

Operating vibration 2-g peak acceleration

Non-operating vibration 4-g peak acceleration

Environmental

Technical Specifications – Keyboards and Pointing Devices

Drop (out of box) 26 in (66 cm) on carpet, six-drop sequence

Drop (in box) 42 in (107 cm) on concrete, 16-drop sequence

Operating system support Windows® 7, Windows Vista, Windows XP Professional

Approvals

UL, cUL, FCC, CE, TUV GS, VCCI, BSMI, C-Tick, KCC, USB-IF, WHQL, EN/IEC 60601-1, IP66/NEMA4X

Ergonomic compliance ANSI HFS 100, ISO 9241-4, and TUVGS

HP Wireless Keyboard and Mouse

Dimensions (H x L x W) 1.09 x 18.1 x 6.47 in (27.87 x 460.3 x 164.3 mm

Keyboard Weight – Without Two AA 1.94 lb (880 g)

Alkaline Batteries

Dimensions (H x L x W) 1.46 x 4.53 x 2.47 in (37 x 115 x 62.9 mm)

Mouse Weight – Without Two AA 0.15 lb (67 g)

Alkaline Batteries

Dimensions (H x L x W) 0.33x 1.79 x 0.72 in (8.4 x 45.5 x 18.4 mm)

Weight 0.21 oz (5.9 g)
Receiver

Cable Length – Minimum 6 ft (1.8 m)

Range 32.8 ft (10 m)

Windows 7 Home Basic*, Windows 7 Home Premium*, Windows 7 Professional Edition 32*, Windows 7 Professional Edition 64*, Windows 7 Ultimate Edition 32*, Windows 7 Ultimate Edition

64* Windows Vista or Windows XP Available USB port for the receiver

CD-ROM Drive

*This system may require upgraded and/or separately purchased hardware and/or a DVD drive to install the Windows 7 software and take full advantage of Windows 7 functionality. See

http://www.microsoft.com/windows/windows-7/ for details.

Product Safety UL; CSA /TUV (Europe only); CE Mark; CB Report

Ergonomics ANSI; ISO (Europe only); GS Mark (Germany only)

EMC FCC; CE; ACA (-tick); BSMI; KC; VCCI

CE Mark EN 55022:2010; EN 55024; EN 301489-1; EN 61000

System Requirements Design Guidelines for PCs PC 99 - connector overmold colors; PC 2001 - full functionality

Telecom All local telecom requirements and approvals for intended

markets

USA FCC Title 47 CFR, Par 15, Subpart C; other local requirements

Country Support US, Belgium, Switzerland, Spain, Denmark, Netherlands, France,

Germany, Italy, Portugal, Sweden, Norway, Finland, UK, Poland,

Czech Republic, Turkey, Greece, Austria, Bulgaria, Cyprus,



Technical Specifications – Keyboards and Pointing Devices

Estonia, Hungary, Ireland, Latvia, Lithuania, Luxemburg, Malta, Romania, Slovakia, Slovenia, Vietnam, HK, Australia, NZ, Malaysia, Singapore, Indonesia, Philippines, Thailand, Canada, China, Japan, Korea, Taiwan, India, Venezuela, Ecuador, Russia, Ukraine, Israel, Croatia, United Arab Emirates, Peru, Brazil, Chile, Argentina, Mexico, South Africa, and up to 193 countries worldwide.

HP PS/2 Mouse

Dimensions 1.46 x 2.48 x 4.53 in (3.70 x 6.29 x 11.50 cm)

 $(H \times L \times W)$

Weight 3.53 oz (100g; +10g/- 5 g)

Operating temperature -32° to 104°F (0° to 40° C)

Non-operating temperature -4° to 140°F (-20° to 60° C)

Operating humidity 10% to 90%

(non condensing at ambient)

Non-operating humidity 10% to 90%

(non condensing at ambient)

Environmental Operating shock 40 g, 6 surfaces

Non-operating shock 80 g, 6 surfaces

Operating vibration 2 g peak acceleration

Non-operating vibration 4 g peak acceleration

Drop 80 cm height onto asphalt tile over concrete or equivalent, 5-drop

(out of box) in 5 direction except the cable face

Operating voltage 5 VDC ± 10%

Power consumption 100mA

System consumption PS/2 mini-din connector **Electrical**

ESD CE level 4, 15 kV air discharge

EMI-RFI Conforms to FCC rules for a Class B computing device

Microsoft PC99 - 2001 Functionally compliant

Resolution 800 DPI

Tracking speed 10 in/s (25.4 cm/s) maximum

Acceleration ±15%

Switch actuation 65±20 gf

Mechanical Switch life 3,000,000 operations (using Hasco modified tester)



Technical Specifications – Keyboards and Pointing Devices

Switch type Low force micro-switches

Tracking mechanism life 80 km

Cable length 6 ft (1.8 m)

Microsoft PC99 - 2001 Mechanically compliant

Width 6 mm

Diameter $22.5 \pm 0.2 \text{ mm}$

Maximum rotation force 50 gf-cm

Switch type Light force micro-switch

Switch life 1 million operations

Mechanical life Minimum 200,000 revolutions

Regulatory Approvals UL/cUL, FCC, CE Mark, TUV/GS, VCCI, KCC, BSMI, C-Tick

HP USB Mouse

Dimensions

Scroll wheel

(H x L x W) 1.5 x 4.5 x 2.5 in (3.8 x 11.6 x 6.3 cm)

Weight 0.22 lb (0.10 kg)

Cable length 70.9 in (180 cm)

System requirements Available USB port

HP USB 1000dpi Laser Mouse

Dimensions 1.47 x 4.53 x 2.47 in (37.3 x 114.97 x 62.86 mm)

 $(H \times L \times W)$

 Weight
 3.360 oz (102g)

 Cable length
 70.9 in (180 cm)

System requirements Available USB port

Environmental Operating Temperature 32° to 104° F (0° to 40° C)

Non-operating Temperature -4° to 140° F (-20° to 60° C)

Operating Humidity 10% to 90%

(non-condensing at ambient)



Technical Specifications – Keyboards and Pointing Devices

Mechanical Resolution 1000dpi

Tracking Speed 45 cm/sec

Cable Length 70.9 in (180 cm)

HP USB PS/2 Washable Mouse

Dimensions (H x L x W) 1.56 x 2.44 x 4.61 in (3.95 x 6.21 x 11.7 cm)

Weight 4.44 oz (126 g)

Environmental Operating temperature -32° to 104°F (0° to 40° C)

Non-operating

-4° to 140°F (-20° to 60° C)

temperature

Operating humidity 10% to 90% (non-condensing at ambient) Non-operating humidity 10% to 90% (non condensing at ambient)

Operating shock 40 g, 6 surfaces
Non-operating shock 80 g, 6 surfaces
Operating vibration 2 g peak acceleration
Non-operating vibration 4 g peak acceleration

Drop (out of box) 80 cm height onto asphalt tile over concrete or equivalent, 5-drop in 5

direction except the cable face

Electrical Operating voltage 5 VDC ± 10%

Power consumption 100mA

System consumption PS/2 mini-din connector ESD CE level 4, 15 kV air discharge

EMI-RFI Conforms to FCC rules for a Class B computing device

Microsoft® PC99 – 2001 Functionally compliant

Mechanical Resolution 400 ± 20% DPI

Tracking speed 10 in/s (25.4 cm/s) maximum

Acceleration 100 in/s/s (2.54 m/s/s)

Switch actuation 61 g nominal peak force

Switch life 3,000,000 operations (using Hasco modified tester)

Switch type Low force micro-switches

Tracking mechanism life 155 mi (250 km) at average speed of 10 in/s

Cable length 6 ft (1.8 m)

Microsoft PC99 – 2001 Mechanically compliant

Scroll wheel Width 8 mm

Diameter 1.01 in (25.6 mm)

Maximum rotation speed 48 rats/sec

Switch type Light force micro-switch
Switch life 1 million operations

Mechanical life Minimum 200,000 revolutions



Technical Specifications – Keyboards and Pointing Devices

Regulatory approvals Compatibility

Compliant

UL, CSA, FCC, CE Mark, TUV, TUV GS, VCCI, BSMI, C-Tick, MIC

Operating system support Windows 7, Windows Vista Business 64*, Windows Vista Business 32*, Windows Vista Home Basic 32*, Windows 2000, Windows XP Professional or Windows XP Home 32* (No driver is required for this device. Native support is provided by the operating system.), xpe, ce.net, Linux, XP-64

> * Certain Windows Vista product features require advanced or additional hardware. Windows Vista Upgrade Advisor can help you determine which features of Windows Vista will run on your computer. To download the tool, visit: http://www.windowsvista.com/upgradeadvisor. For Windows Vista system requirements, visit:

http://www.windowsvista.com/systemrequirements.



Environmental Data

Environmental Data

Eco-Label Certifications & 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: **Declarations**

- US ENERGY STAR®]
- IT ECO declaration
- EPEAT® Gold where HP registers commercial desktop products. 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 Ultra-slim Desktop model is based on a typically configured product

Energy Consumption	115 VAC	230 VAC	100 VAC
Normal Operation	37.76 W	32.71 W	37.11 W
Sleep (Energy Star low power mode)	2.43 W	2.36 W	2.48 W
Off	1.33 W	1.34 W	1.33 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 model.

Heat Dissipation*	115 VAC	230 VAC	100 VAC
Normal Operation	126 BTU/hr	127 BTU/hr	127 BTU/hr
Sleep	8 BTU/hr	8 BTU/hr	8 BTU/hr
Off	4 BTU/hr	4 BTU/hr	4 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 (LWAd, bels)	Sound Pressure (LpAm, decibels)
(Typically Configured)		
Idle	3.3	23
Fixed Disk (random writes)	3.3	23

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:

- Intel LGA775 processor socket
- 8 USB ports
- 1 empty PCI slot (w/ optional PCI riser card), or 1 empty PCIe x16 slot (w/optional PCIe riser card)
- 1 internal drive slot
- 1 Slimline optical drive slot
- 3 memory slots
- 1 Serial/Parallel Port (optional)



Environmental Data

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 the 5ppm by weight Cadmium greater than 10ppm 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 -2002/95/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 where HP
 registers commercial desktop products. See http://www.epeat.net for registration status in your
 country.
- Plastics parts weighing over 25 grams used in the product are marked per ISO 11469 and ISO1043.
- This product contains 36.9% post consumer recycled plastic (by wt.)
- This product is 95.2% recyclable when properly disposed of at end of life.

Packaging Materials

External:

o PAPER/Corrugated 1516g o PAPER/Paper 94g

Internal:

o PLASTIC/Polyethylene high density 39 g o PLASTIC/EPE-Expanded Polyethylene 533 g

- The PAPER/Corrugated packaging material is made from 25% recycled content.
- The PAPER/Paper packaging material is made from 25% recycled content.
- The PLASTIC/Polyethylene high density packaging material is made from 0% recycled content
- The PLASTIC/EPE-Expanded Polyethylene packaging material is made from 0% recycled content

RoHS Compliance

Hewlett-Packard is committed to compliance with all applicable environmental laws and regulations, including the European Union Restriction of Hazardous Substances (RoHS) Directive. HP's goal is to exceed compliance obligations by meeting the requirements of the RoHS Directive on a worldwide basis. By July 1, 2006, RoHS substances will be virtually eliminated (virtually = to levels below legal limits) for all HP electronic products subject to the RoHS Directive, except where it is widely recognized that there is no technically feasible alternative (as indicated by an exemption under the EU RoHS Directive).

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/supplychain/gen_specifications.html):

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



Environmental Data

- 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

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://www.hp.com/hpinfo/globalcitizenship/environment/productdesign/ecolabels.html

ISO 14001 certificates:

http://www.hp.com/hpinfo/globalcitizenship/environment/operations/envmanagement.html



Options and Accessories (sold separately)

AFTER MARKET OPTIONS:

MEMORY	Part Number
HP 2GB DDR3-1600 (PC3-12800) SODIMM	B4U38AA
HP 4GB DDR3-1600 (PC3-12800) SODIMM	B4U39AA
HP 8GB DDR3-1600 (PC3-12800) SODIMM	B4U40AA

DATA STORAGE DRIVES AND ACCESSORIES	Part Number
1 TB, 7200 rpm, SATA -6.0 Gb/s	QK555AA
500 GB, 7200 rpm, SATA -6.0 Gb/s	QK554AA
128 GB SATA Solid State Drive	QV063AA
HP Slim DVD-ROM Drive	VP033AA
HP Slim SuperMulti DVD Writer Drive	QS209AA

INPUT DEVICES	Part Number
HP PS/2 Mouse	QY775AA
HP USB 1000dpi Laser Mouse	QY778AA
HP USB Mouse	QY777AA
HP USB PS/2 Washable Scroll Mouse	BM866AA
HP Mouse Pad	AT485AA
HP USB Smart Card (CCID) Keyboard	BV813AA
HP Wireless Keyboard & Mouse	QY449AA
HP USB PS/2 Washable Keyboard	VF097AA
HP USB Keyboard	QY776AA
HP USB Grey Keyboard	B6B64AA

SECURITY	Part Number
HP Keyed Cable Lock	BV411AA

MISCELLANEOUS	Part Number
Belkin Promo 7-Outlet Surge Protector	AG290AA
Belkin USB to Serial Adapter	EM449AA
DisplayPort Cable	VN567AA
DisplayPort To DVI-D Adapter	FH973AA
DisplayPort To HDMI Adapter	BP937AA
DisplayPort To VGA Adapter	AS615AA

STANDS AND MONITOR ARMS	Part Number
AiO Height Adjustable Stand	C1N43AA
HP Single Monitor Arm	BT861AA



Options and Accessories (sold separately)

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