QuickSpecs

Technical Specifications

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320 GB 7200 rpm SATA Hard Drive	Drive Weight	0.25 lbs (115 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)	300 MB/s (Drive Capability)
	Seek Time (typical reads, including settling)	Single Track	1.5 ms
		Average	11 ms
		Maximum	22 ms
	Rotational Speed	7200 rpm	
	Logical Blocks	625,142,448	
	Operating Temperature	32° to 140° F (0° to 60° C) [case temp]	
	Features	ATA Security	

250 GB 7200 rpm SATA Hard Drive	Drive Weight	0.25 lbs (115g)	
	Capacity	250 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)	300 MB/s (Drive Capability)
	Seek Time (typical reads, including settling)	Single Track	1.5 ms
		Average	11 ms
		Maximum	22 ms
	Rotational Speed	7200 rpm	
	Logical Blocks	488,397,168	
	Operating Temperature	32° to 140° F (0° to 60° C) [case temp]	
	Features	ATA Security	

128 GB 2.5-inch SATA Solid State Drive	Drive Weight	75 Grams	
	Capacity	128 GB	
	Height	0.276 in (7 mm)	
	Width	2.76 in (70 mm)	
	Interface	SATA Gen 2	
	Performance	Maximum Sequential Read 250 MB/s	Maximum Sequential Write 140 MB/s
	Logical Blocks	250,069,680	
	Operating Temperature	32° to 158°F (0° to 70°C) [case temp]	
	Features	ATA Security; ATA-7; SATA 2.6; DIPM; TRIM	

QuickSpecs

Technical Specifications

Optical Drives

DVD-ROM Drive	Access Times	Random	< 140 ms CD (typical) < 160 ms DVD (typical)
	Max Data Transfer Rate	24X CD-ROM 8X-DVD	
	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)	None	
	Max Media Capacity (read)	8.5GB	
	Transport	Tray Loading	
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 6X - DVD+R Dual Layer 6X - DVD-R Dual Layer 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	

Technical Specifications

	Transport	Tray Loading	
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Blu-ray ROM DVD+/-RW SuperMulti DL Drive	Access Times	Random	<190 ms CD-ROM (typical) < 180ms DVD-ROM (typical) <230 ms BD-ROM (typical)
	Max Data Transfer Rate	24X CD-ROM 8X DVD-ROM 24X CD-R 16X CD-RW 8X DVD+R 8X DVD+RW 8X DVD-R 6X DVD-RW 4X - DVD+R Dual Layer 4X - DVD-R Dual Layer 5X DVD-RAM 6X BD-ROM	
	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, BD-ROM, BD-R, BD-RE	
	Supported Media (write)	CD-R, CD-RW, DVD+R, DVD+R DL, DVD+RW, DVD-R, DVD-R DL, DVD-RW, DVD-RAM	
	Max Media Capacity (read)	50.0 GB	
	Max Media Capacity (write)	8.5GB	
	Transport	Tray Loading	

Security

QuickSpecs

Technical Specifications

HP Fingerprint Sensor (optional)	Mobile Voltage Operation	3.0V-3.6V Single Supply
	Operating Temperature	32° – 158°F (0° – 70°C)
	Current Consumption @ 3.3V	Less than 70 mA peak imaging and scrolling Less than 25 mA hardware finger detection Advanced Power Management
	High-Rate Image Capture	Up to 240 image frames /sec
	ESD Resistance	IEC 61000-4-2 Level 4 (±15KV)
	Detection Matrix	192 x 16 Pixels 9.7 mm x 0.81 mm 500 ppi High-Resolution Images

Communications

V.92 56K Data/Fax Modem	Form Factor	MDC 1.5 Daughtercard
	Power Management Support	APM Revision 1.2, ACPI
	Approvals/ Certifications	UL, CSA, NEMKO, CCIB, Industry Canada, FCC Part 68, CTR21, FCC Part 15 Class B, Canadian ICES-003 Class B, C.I.S.P.R.22, Australian ACA, CE Mark, Other Countries
	Data Mode Capabilities	V.92 data
		V.8bis
		V.80
		V44, V.42bis, MNP5 (Compression)
		V.42 (LAPM, MNP2-4) (Error Correction)
		Optional symbol rates: 2800, 3429 Asymmetric Symbol rates
		Synchronous primary channel data signaling rates: 3600; 31200 Automatic rate re-negotiation V.34 V.32bis V.32 V.23 V.22bis V.22 V.21 Bell 212A Bell 103J
	Fax Mode Capabilities	TIA/EIA-578-B (Class 1) T.30, T.4 (Group 3) V.17 V.29 V.27ter V.21 Channel 2

Technical Specifications

Command Set	V.250 (Partial) TIA-602 Identification: +GMI, +GMM, +GMR Port control: +IPR, +ICF, +IFC, +ILRR Modulation: +MS, +MR, +MA Error control: +ES, +ER, +EB, +ESR, +ETBM Data compression: +DS, +DR V.251	

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HP un2430 EV-DO/HSPA Mobile Broadband Module		
	Technology/Operating Bands	GSM/GPRS/EDGE: 850MHz(Cell), 900MHz(EGSM), 1800MHz(DCS), 1900MHz (PCS) UMTS/WCDMA with receive diversity: 2100MHz (UTRA FDD Band I), 1900MHz (UTRA FDD Band II), AWS (UTRA FDD Band IV), 900MHz(UTRA FDD Band VIII), 850MHz (UTRA FDD Band V) 1xEVDO/1xRTT with receive diversity: 850MHz (Band Class0-Cell), 1900MHz (Band Class1-PCS)
	Wireless Protocol Standards	GSM/GPRS/EDGE: Class A, Multi-slot class 10 operation, coding schemes CS1 - CS4 and MSC1 - MSC9. UMTS/WCDMA: Release 99 and Release 6 CDMA: 1xEVDO Release 0 and Release A, IS-95A, IS-95B, IS-856, IS-2000
	Wireless Parametric Standards	Meets or exceeds TIA/EIA IS-98-D
	Maximum Data Rates	UMTS (HSPA) - 14.4 Mbps (Download), 5.76Mbps (Upload) CDMA (EVDO Release A) - 3.1 Mbps (Download), 1.8Mbps (Upload)
	GPS	Standalone GPS enabled gpsOneXTRATM™
	GPS Bands	L1 - 1575.42 MHz
	Maximum Output Power	GSM/GPRS/EDGE: 32dBm (+/-1) WCDMA: 24dBm (+0.7/-2.3) CDMA: 24dBm (+0.7/-2)
	Maximum Power Consumption	2750mA (peak); 1100mA (average)
	Power Consumption, Idle Not Connected	20 mA
	Power Management	USB selective suspend Integrated notebook wireless button
	Antenna Type	Dual high efficiency 5 band antennae with spatial diversity, mounted in the display enclosure
	Form Factor	PCI-Express MiniCard, USB 2.0 interface
	Weight	11.5 g
	Dimensions (Length x Width x Thickness)	2.01 x 1.18 x 0.18 in (51 x 30 x 5 mm)
	Voltage, Operating	3.3v +/- 10%
	Temperature, Operating (from TIA/EIA/IS-98-D)	-22° to 158° F (-30° to 70° C) (full RF performance) -22° to 167° F (-30° to 75° C) (reduced RF performance)

Technical Specifications

	Temperature, Non-operating, 96 hours (from MIL-STD 202 Method 108)	-40° to 185° F (-40° to 85° C)
	Humidity, Non-operating	95% relative humidity for 48 hours @ 185° F (85° C) (non-condensing)
	Configuration Utilities	HP Connection Manager
	LED Activity	LED Off - Radio Off; Solid LED On - Radio On

HP hs2340 HSPA+ Mobile Broadband Module	Technology/Operating Bands	GSM/GPRS/EDGE: 850MHz(Cell), 900MHz(EGSM), 1800MHz(DCS), 1900MHz (PCS) UMTS/WCDMA with receive diversity: 2100MHz (UTRA FDD Band I), 1900Mhz (UTRA FDD Band II), 900Mhz(UTRA FDD Band VIII), 850 MHz (UTRA FDD Band V)
	Wireless Protocol Standards	GSM/GPRS/EDGE: Class B, Multi-slot class 10 operation, coding schemes CS1 - CS4 and MSC1 - MSC9. UMTS/WCDMA: Release 99 and Release 7 Advanced Receiver Type 3i
	Wireless Parametric Standards	Complies with 3GPP specifications
	Maximum Data Rates	UMTS (HSPA) - 21 Mbps (Download), 5.76Mbps (Upload)
	GPS	Standalone, A-GPS (Internet- and Network assisted)
	GPS Bands	1575.42 MHz (± 1.023 MHz)

	Maximum Output Power	GSM/EDGE
		    GSM850 & GSM900 bands
		    GPRS: +33 dBm ± 2 dBm (class 4)
		    EGPRS: +27 dBm ± 3 dBm (class E2)
		
		DCS1800 & PCS1900 bands
		    GPRS: +30 dBm ± 2 dBm (class 1)
		    EGPRS: +26 dBm +4 / -3 dBm (class E2)
		
		UMTS
		    UTRA FDD Bands
		    +24 dBm +4 / -3 dBm (class 3)

	Maximum Power Consumption	2000mA (peak); 600mA (average)
	Power Consumption, Sleep Mode	5 mA
	Power Management	USB selective suspend Integrated notebook wireless button
	Antenna Type	Dual high efficiency 5 band antennae with spatial diversity, mounted in the display enclosure
	Form Factor	PCI-Express MiniCard, USB 2.0 interface
	Weight	< 12 g

Technical Specifications

Dimensions (Length x Width x Thickness)	2.01 x 1.18 x 0.18 in (51 x 30 x 5 mm)	073
Voltage, Operating	3.3v +/- 9%	
Temperature, Operating	14° to 149° F (-10° to 65° C) (full RF performance) 14° to 167° F (-10° to 75° C) (reduced RF performance)	
Temperature, Non-operating, 96 hours (from MIL-STD 202 Method 108)	-22° to 185° F (-30° to 85° C)	
Humidity, Non-operating	85% relative humidity for 48 hours @ 185° F (85° C) (non-condensing)	
Configuration Utilities	HP Connection Manager	
LED Activity	LED Off - Radio Off; Solid LED On - Radio On	

Broadcom 43224AGN 802.11a/b/g/n WiFi Adapter	Wireless LAN Standards	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n*
	Interoperability	Wi-Fi certified (802.11abg only) Cisco Compatible Extensions Program compliant (802.11abg only) with Microsoft Windows Vista and XP (details at: http://www.hp.com/go/notebooks/WLAN)
	Frequency Band	2.4 GHz and 5 GHz
	Data Rates	802.11b: 1, 2, 5.5, 11 Mbps 802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11n: 6, 6.5, 9, 12, 13, 13.5, 18, 19.5, 24, 26, 27, 36, 39, 40.5, 48, 52, 54, 58.5, 65, 78, 81, 104, 108, 117, 121.5, 130, 135, 162, 216, 243, 270, 300 Mbps
	Frequency Support	20 MHz: 2.4 GHz and 5 GHz bands 40 MHz: 2.4 GHz and 5 GHz bands
	Modulation	Direct Sequence Spread Spectrum DBPSK, DQPSK, CCK, OFDM, BPSK, QPSK, 16-QAM, 64-QAM
	Security[1]	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 Extensions Program Version 4) 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]	17 dBm , nominal

Technical Specifications

LTO	Output Power (for OFDM; 15 dBm , nominal power varies by data rate)[2]	
	Power Consumption	Idle associated: 250 mW Idle unassociated: 150 mW Transmit/Receive 20 MHz channel: 2.0 W (max) Transmit/Receive 40 MHz channel: 2.0 W (max)
	Power Management	ACPI compliant power management 802.11 compliant power saving mode
	Receiver Sensitivity[3]	270 Mbps: -61dBm, , 54 Mbps: -72 dBm, 11 Mbps: -85 dBm , 1 Mbps: -92 dBm
	Antenna type	High efficiency dual band antenna with spatial diversity, mounted in the display enclosure
	Form Factor	PCI-Express Half-MiniCard
	Weight	0.013 lb (6 g)
	Dimensions	0.19 x 1.06 x 1.18 in (4.75 x 26.8 x 30 mm)
	Operating Voltage	3.3v +/- 10%

	Temperature	Operating Non-operating	14° to 149° F (-10° to 65° C) -40° to 176° F (-40° to 80° C)
	Humidity	Operating Non-operating	10% to 90% (non-condensing) 5% to 95% (non-condensing)
	Altitude	Operating Non-operating	0 to 10,000 ft (3,048 m) 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 (CCK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation).
4. 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.

Broadcom 4313GN 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 Win7, Vista and XP (details at: http://www.hp.com/go/notebooks/WLAN)
	Frequency Band	2.4 GHz
	Data Rates	802.11b: 1, 2, 5.5, 11 Mbps 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11n: 6.5, 7.2, 13, 14.4, 19.5, 21.7, 26, 28.9, 39, 43.3, 52, 57.8, 58.5, 65, 72.2Mbps
	Frequency Support	20 MHz: 2.4 GHz bands

Modulation	Direct Sequence Spread Spectrum DBPSK, DQPSK, CCK, OFDM, BPSK, QPSK, 16-QAM, 64-QAM
Security[1]	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 Extensions Program Version 4) 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]	17 dBm , nominal
Output Power (for OFDM; power varies by data rate)[2]	15 dBm , nominal
Power Consumption	Idle associated: 250 mW avg (CLKREQ enabled) Idle unassociated: 425 mW avg Transmit/Receive 20 MHz channel: 5.5 W (max)
Power Management	ACPI compliant power management 802.11 compliant power saving mode
Receiver Sensitivity[3]	72.2 Mbps: -71dBm
Antenna type	High efficiency dual band antenna with spatial diversity, usually mounted in the display enclosure
Form Factor	PCI-Express Half-MiniCard
Weight	0.013 lb (6 g)
Dimensions	0.19 x 1.06 x 1.18 in (4.75 x 26.8 x 30 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

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).
4. 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.

Technical Specifications

HP Integrated Module with Bluetooth 2.1+EDR Wireless Technology	Bluetooth Specification	2.1+EDR Compliant
	Dimensions	1.18 x 0.26 x 0.13 in (30 x 6.5 x 3.25 mm)
	Frequency Band	2402 to 2480 MHz
	Number of Available Channels	79 (1 MHz) available channels
	Data Rates and Throughput	3 Mbps data rate; throughput up to 2.17 Mbps
		Synchronous Connection Oriented links up to 3, 64 kbps, voice channels
		Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric or 1306.9 kbps symmetric
	Transmit Power	-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) 264 mW
		Peak (Rx) 231 mW
		Sleep <1 mW
	Antenna	Internally integrated within module
	Range	Up 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
	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
	Temperature	Operating -4° to 158° F (-20° to 70° C) Non-operating -40° to 176° F (-40° to 80° C)
	Humidity	Operating 10% to 90% Non-operating 5% to 95%
	Altitude	Operating 15,000 ft (4,572 m) Non-operating 40,000 ft (12,192 m)
	Bluetooth Profiles Supported	Serial Port Profile (SPP)[1]
		Service Discovery Applicaton Profile (SDAP)
		Dial-Up Networking (DUN)[1,2]
		Generic Object Exchange Profile (GOEP)[1,2]
		Object Push Profile (OPP)[1,2]

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File Transfer Profile (FTP)
Synchronization Profile (SYNC)
Hard Copy Cable Replacement (HCRP)[1,2]
Personal Area Networking Profile (PAN)[1,2]
Human Interface Device Profile (HID)[1,2,3]
FAX Profile (FAX)
Basic Imaging Profile (BIP)[2]
Headset Profile (HSP)
Hands Free Profile (HFP)
Advanced Audio Distribution Profile (A2DP)

1. indicates the profile is supported by Microsoft Windows XP SP2
2. indicates the profile is part of Windows Vista

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:

- US ENERGY STAR®
- IT ECO declaration
- EPEAT - Gold where HP registers commercial notebook 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 Convertible Mini tower Desktop model is based on a "Typically Configured Notebook"

HP ProBook 6465b Notebook PC

Energy Consumption	115 VAC	230 VAC	100 VAC
Normal Operation	11.16 W	11.04 W	11.09 W
Sleep (Energy Star low power mode)	0.73 W	0.82 W	0.73 W
Off	0.47 W	0.55 W	0.47 W

Heat Dissipation*	115 VAC	230 VAC	100 VAC
Normal Operation	38 BTU/hr	38 BTU/hr	38 BTU/hr
Sleep	2 BTU/hr	3 BTU/hr	2 BTU/hr
Off	2 BTU/hr	1 BTU/hr	2 BTU/hr

* 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)

System Fan Off	Sound Power (LWAd, bels)	Sound Pressure (LpAm, decibels)
Idle	3.4	26
Fixed Disk (random writes)	3.4	26

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System fan is usually off except when charging the battery

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

The battery type and chemistry used in the product is:
CR2032 (coin cell), Li-ion
6-cell high capacity Lithium-Ion battery (optional 8 cell available)

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, see www.epeat.net

Plastics parts weighing over 25 grams used in the product are marked per ISO 11469 and ISO1043.

This product contains 0% post consumer recycled plastic (by wt.)

This product is greater than 95.3% recycle-able when properly disposed of at end of life.

Packaging Materials

- External:
  o Corrugated – 500 g
  o CANON bags – several layers – 5 g
- Internal:
  o Polypropylene – 15 g
  o Molded Pulp – 180 g
- The Corrugated packaging material is made from 80% recycled content.
- The CANON bags – several layers packaging material is made from 80% recycled content.
- The Polypropylene packaging material is made from 60% recycled content.
- The Molded Pulp packaging material is made from 60% recycled content.

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.

HP ProBook 6565b Notebook PC

Energy Consumption	115 VAC	230 VAC	100 VAC
Normal Operation	14.29 W	14.69 W	14.28 W
Sleep (Energy Star low power mode)	0.81 W	0.90 W	0.80 W
Off	0.45 W	0.51 W	0.44 W

Heat Dissipation*	115 VAC	230 VAC	100 VAC
Normal Operation	49 BTU/hr	50 BTU/hr	49 BTU/hr
Sleep	3 BTU/hr	3 BTU/hr	3 BTU/hr
Off	1 BTU/hr	2 BTU/hr	1 BTU/hr

* 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)

System Fan Off	Sound Power (LWAd, bels)	Sound Pressure (LpAm, decibels)
Idle	2.9	23
Fixed Disk (random writes)	4.0	33

System fan is usually off except when charging the battery

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

The battery type and chemistry used in the product is:
CR2032 (coin cell), Li-ion
6-cell high capacity Lithium-Ion battery (optional 8 cell available)

Additional   This product is in compliance with the Restrictions of Hazardous Substances
information   (RoHS) directive - 2002/95/EC.

Technical Specifications

This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive - 2002/96/EC.

This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986).

This product is in compliance with the IEEE 1680 (EPEAT) standard at the Gold level, see www.epeat.net

Plastics parts weighing over 25 grams used in the product are marked per ISO 11469 and ISO1043.

This product contains 0% post consumer recycled plastic (by wt.)

This product is greater than 95.3% recycle-able when properly disposed of at end of life.

Packaging Materials

- External:
    o Paper / Cardboard – 310 g
    o Corrugated carton – 375 g
- Internal:
    o Polyethylene low density foam – 22 g
- The Paper / Cardboard packaging material is made from 80% recycled content.
- The Corrugated carton packaging material is made from 80% recycled content.
- The Polyethylene low density foam packaging material is made from 80% recycled content.

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.

Material Usage

This product does not contain any of the following substances in excess of regulatory limits (for reference of these limits please refer to the HP General Specification of the Environment:
(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
- Chlorinated Paraffins
- Formaldehyde
- Halogenated Diphenyl Methanes
- Lead carbonates and sulfates
- Lead and Lead compounds
- Mercuric Oxide Batteries
- 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)

Nickel finishes that release greater than 0.5 μgrams/cm2/week, measured according to EN 1811:1998, are not used on any product surface designed to be frequently handled or touched by users.

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 Environment website http://www.hp.com/environment 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 |

QuickSpecs

Technical Specifications

Introduction

HP provides a portfolio of professional-grade accessories that deliver an ideal mobile office designed to help you achieve your business goals, increase productivity and lower your costs. All HP accessories go through rigorous testing and are certified to work seamlessly with your HP Business Notebook. They are backed up by HP's world-class support.

HP docking solutions include a range of convenient expansion solutions that easily connect to your HP Business Notebook*. Create an ideal desktop computing environment using comfort-focused docking stations and stands that provide port replication and cable management, as well as enable future expandability.

HP Docking Stations and HP Advanced Docking Stations offer up to six USB ports, enabling you to instantly connect to the USB peripherals you use most. The docking stations also feature up to two video DisplayPort connectors, in addition to VGA and DVI ports, giving you multiple choices for high-end digital video output now and in the future. The new eSATA port (available on the HP Advanced Docking Station) offers throughput rates of up to 3Gbps.

These docking stations feature the proprietary HP Docking Station Cable Lock, in addition to an industry standard notebook lock slot. This new locking solution is dramatically simpler to use than previous locks and delivers enhanced security. In addition to its physical security features, the HP Docking Station Cable Lock (AU656AA) gives you three locking options: lock the docking station only (which also prevents access to the advanced docking station's drive bay); lock both the docking station and the notebook; or physically secure the docking station to a stationary object using the security cable tab.

HP is committed to delivering the optimal mobile computing experience by offering industry-leading accessories for every mobile user, whether you are a frequent traveler or rarely leave your desk. Enjoy return on investment from these easy-to-use, easy-to-deploy, and easy-to-manage expansion solutions.

NOTE: Check the compatibility sections below for a list of products supported by these docking stations. Due to technology changes, some notebook models may be supported by different docking station solutions. Please also refer to your notebook's QuickSpecs for individual compatible product information.

Models

HP 90W Docking Station	VB041AA#XXX
HP 230W Docking Station	VB043AA#XXX
HP 120W Advanced Docking Station	NZ222AA#XXX
HP 230W Advanced Docking Station	NZ223AA#XXX
HP Docking Station Cable Lock	AU656AA

HP 90W and 230W Docking Stations

HP 90W Docking Station
HP 230W Docking Station

1. Power button
2. Power light
3. Visual alignment indicator
4. Docking light
5. Notebook eject button
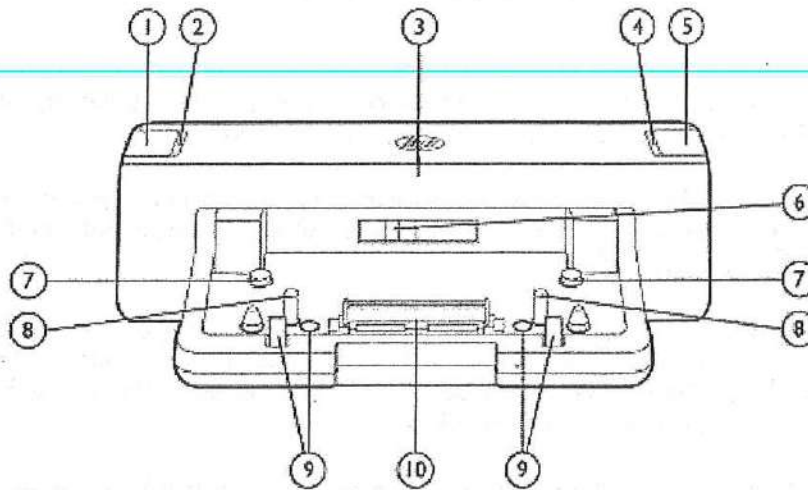
6. Battery size accommodator
7. Guide pads
8. Docking posts
9. Notebook eject mechanisms
10. Docking connector

HP 90W Docking Station Left-Side Components
HP 230W Docking Station Left-Side Components
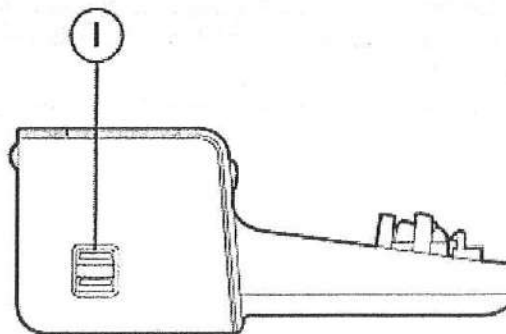
1. Always-On USB 2.0 ports

HP 90W Docking Station Right-Side Components
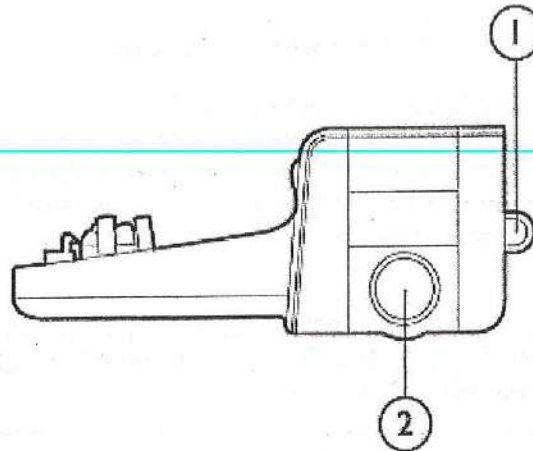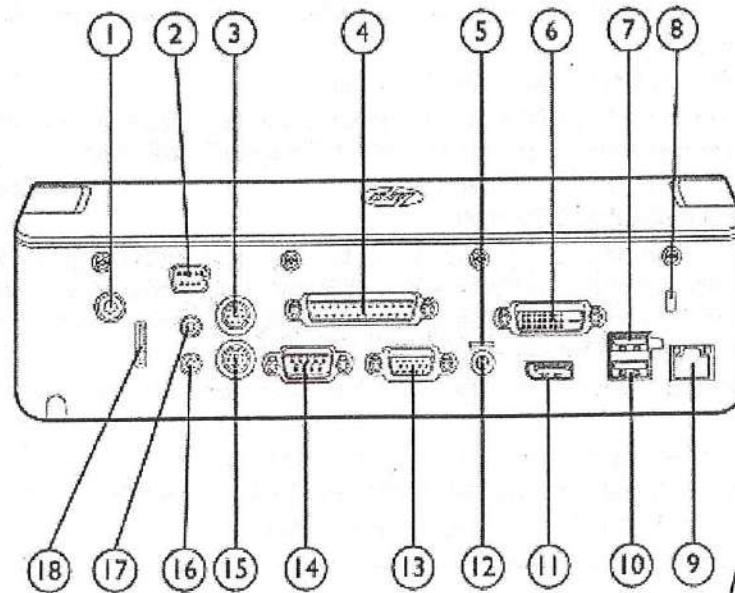HP 230W Docking Station Right-Side Components

1. Security cable tab

2. Integrated cable lock slot
   (to connect HP Docking Station Cable Lock or industry
   standard notebook lock)

HP 90W Docking Station Rear Components
HP 230W Docking Station Rear Components

1. HP Docking Station Cable Lock slot
2. Monitor stand port
3. Mouse connector
4. Parallel port
5. Power light
6. Digital video (DVI-D) port
7. Powered USB 2.0 port
8. Security cable slot
9. RJ-45 (network) jack

10. Always-On USB 2.0 ports
11. DisplayPort connector
12. Power connector
13. External monitor (VGA) port
14. Serial port
15. Keyboard connector
16. Line-In jack
17. Audio-out (headphone) jack
18. Security cable tab

HP 90W and 230W Docking Stations

Key Benefits

Desktop convenience with full port replication capability in a space-saving design.

- Conveniently charges your notebook while it is in the docking station.
- Easy docking system provides port replication and cable management in one product.
- Four USB ports allow you to connect more peripherals to make you more productive.
- Optional integrated HP Docking Station Cable Lock allows you to secure your docking station and notebook with one lock. Also supports an industry standard notebook lock.

AC adapter included
The HP 90W Docking Station gives you an energy-efficient 90W Smart AC adapter for your Notebook PC. The HP 230W Docking Station gives you an energy-efficient 230W Smart AC adapter for your Notebook PC or Mobile Workstation. These Smart adapters guard against power fluctuations with integrated surge protection.

Standard Features

2 docking posts	Align and secure the computer for proper connection to the docking station
Docking connector	Connects the computer to the docking station
Visual alignment indicator	Helps you align the computer with the docking station for fast and easy docking
Power button and power light	Power indicators
Eject button and docking light	Ejects computer from docking station. Docking light is turned on when the computer is properly connected.
USB ports	4 USB 2.0 ports (3 Always-On, 1 powered)
Always-On USB port	Allows you to charge USB powered devices while the computer is in standby mode, powered off or not in the docking station. Conforms to USB 1.1 Charging Specification.
Powered USB port	Allows you to connect to select USB powered devices, such as the HP External USB CD/DVD R/RW Drive, as well as regular USB devices.
Integrated cable lock slot	Supports the HP Docking Station Cable Lock with a drastically simplified locking mechanism. Gives you two security options: lock the docking station only (which also prevents access to the Advanced Docking Station drive bay); or lock both the docking station and your notebook for additional security. Also supports an industry standard notebook lock.
Audio and Network connectors	Audio and Ethernet ports, Line-in jack, headphone jack; does not support mic out
Legacy connectors	Mouse, keyboard, serial and parallel connectors
Other connectors	1 Monitor Stand, 1 DisplayPort, 1 VGA, and 1 DVI-D connectors. AC adapter connector with light
Smart Adapter	90W Smart AC Adapter or 230W Smart AC Adapter

Service and Support	One-year limited warranty. Additional support is available 24 hours a day, seven days a week by phone as well as online support forms.
	NOTE: Certain restrictions and exclusions apply. Consult the HP Customer Support Center for details.

HP 90W and 230W Docking Stations

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Compatibility	The HP 90W Docking Station and HP 230W Docking Station are compatible with HP ProBook b-Series Notebook PCs, HP EliteBook 8440p and 8460p Notebook PCs, and HP EliteBook 8440w and 8460w Mobile Workstations. The HP 230W Docking Station is also compatible with the HP EliteBook 8540p Notebook PC and 8540w and 8740w Mobile Workstations. The HP Docking Station Cable Lock (AU656AA#XXX) is compatible with the docking stations.

NOTE: Due to technology changes older notebook models may be supported by different docking stations. Please refer to the following models for additional information:

- HP 2008 120W Docking Station (KP080AA)
- HP 2008 150W Advanced Docking Station (KP081AA)
- HP 2008 150W Docking Station (KQ751AA)
- HP 2008 180W Advanced Docking Station (KQ752AA)

NOTE: Some notebook models do not support these docking features. Docking capability for these models is provided by the HP Essential USB 2.0 Port Replicator (AQ731AA) and HP USB 2.0 Docking Station (FQ834AA#xxx).

NOTE: Not all models are available in all regions.

Specifications

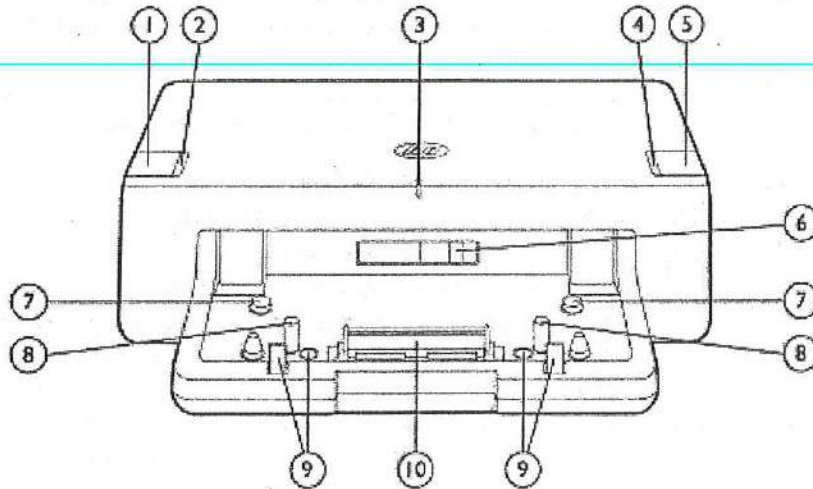|		
Dimensions (H x W x D)	2.6 x 10.24 x 6.44 in (6.60 x 26.00 x 16.36 cm)	
Weight	2.36 lbs (1.07 kg)	
Power Supply (input)	Rated Voltage	100 to 240 V
	Rated Current	2.5A rms
	Line Frequency	50 - 60 Hz
Temperature	Operating	50° to 95° F (10° to 35° C)
	Non-operating	14° to 140° F (-10° to 60° C)
Relative Humidity	Operating/Non-condensing	10% to 90% relative humidity
	Non-operating	5% to 90% relative humidity, 101.6° F (38.7° C) maximum wet bulb temperature
Maximum Altitude	Operating	0 to 10,000 ft (0 to 3,048 m)
	Non-operating	0 to 30,000 ft (0 to 9,144 m)
Shock	Operating	10 G, 11 ms, half-sine
	Non-operating	60 G, 11 ms, half-sine
Vibration	Operating	0.5 G zero-to-peak, 10 to 500 Hz, 0.25 oct/min sweep rate
	Non-operating	1 G, zero-to-peak, 10 to 500 Hz, 0.5 oct/min sweep rate
Option Kit Contents	HP 90W Docking Station, AC power adapter, documentation HP 230W Docking Station, AC power adapter, documentation	

HP 120W and 230W Advanced Docking Stations

HP 120W Advanced Docking Station
HP 230W Advanced Docking Station

1. Power button
2. Power light
3. Visual alignment indicator
4. Docking light
5. Notebook eject button

6. Battery size accomodator
7. Guide pads
8. Docking posts
9. Notebook eject mechanisms
10. Docking connector

HP 120W Advanced Docking Station Left-Side Components
HP 230W Advanced Docking Station Left-Side Components
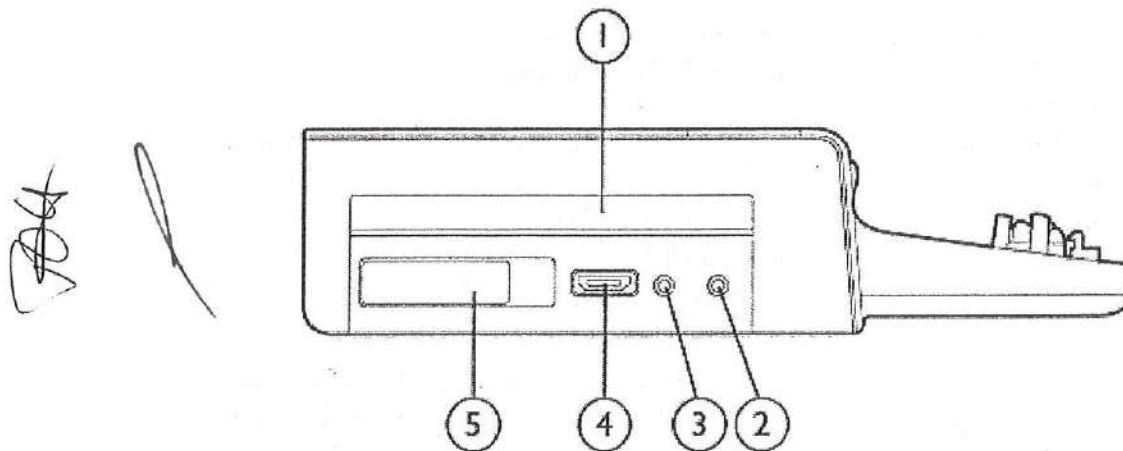
1. SATA upgrade bay
2. Audio-out (headphone) jack
3. Line-in jack

4. eSATA adapter
5. SATA upgrade bay release lever

HP 120W Advanced Docking Station Right-Side Components
HP 230W Advanced Docking Station Right-Side Components

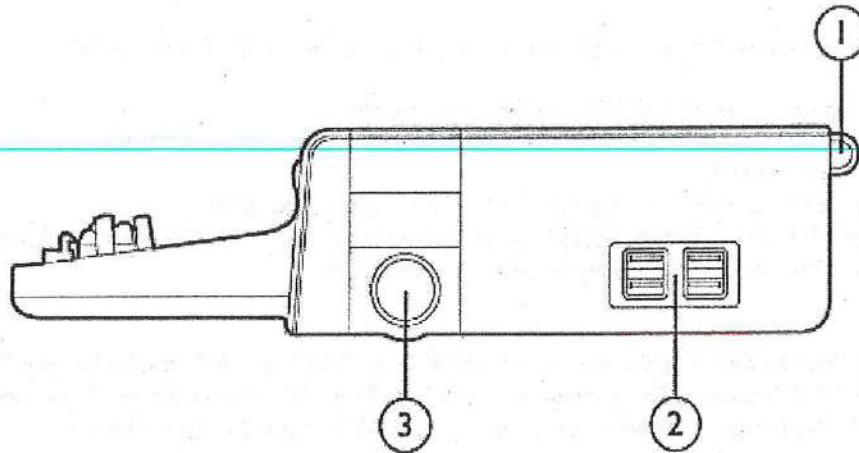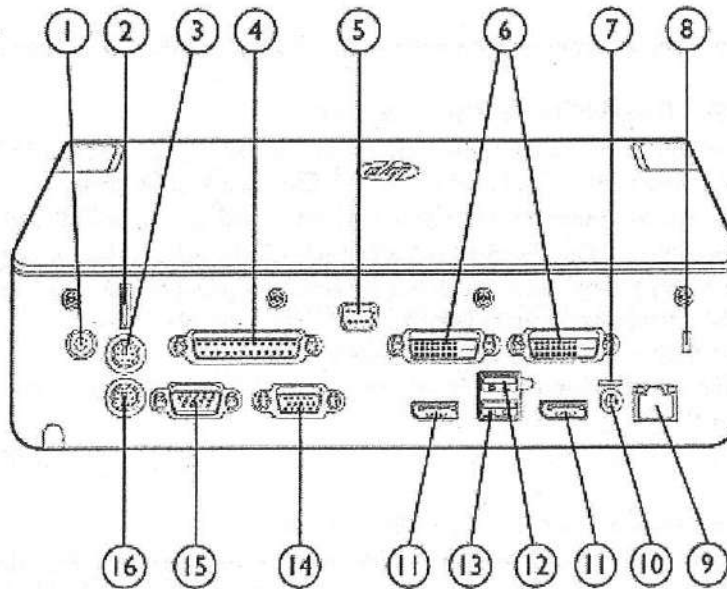*HP 120W and 230W Advanced Docking Stations*

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1. Notebook eject button
2. Always-On USB 2.0 ports

3. Integrated cable lock slot
   (to connect HP Docking Station Cable Lock or industry
   standard notebook lock)

HP 120W Advanced Docking Station Rear Components
HP 230W Advanced Docking Station Rear Components

1. HP Docking Station Cable Lock slot
2. Security cable tab
3. Mouse connector
4. Parallel port
5. Monitor stand port
6. Digital video (DVI-D) ports
7. Power light
8. Security cable slot

9. RJ-45 (network) jack
10. Power connector
11. DisplayPort connector
12. Powered USB 2.0 port
13. Always-On USB 2.0 port
14. External monitor (VGA) port
15. Serial port
16. Keyboard connector

HP 120W and 230W Advanced Docking Stations

Key Benefits

Robust desktop replacement solution for your mobile office with advanced features for future expansion.

- Conveniently charges your notebook while it is in the docking station.
- Easy docking system provides port replication and cable management, plus expandability through an integrated SATA upgrade bay- all in one product.
- Six USB ports allow you to connect more peripherals to make you more productive.
- Optional integrated HP Docking Station Cable Lock allows you to secure your docking station, notebook and integrated SATA drive with one lock. Also supports an industry standard notebook lock.

AC adapter included

The HP 120W Advanced Docking Station gives you an energy-efficient 120W Smart AC adapter for your Notebook PC. The HP 230W Advanced Docking Station gives you an energy-efficient 230W Smart AC adapter for your Notebook PC or Mobile Workstation. These Smart adapters guard against power fluctuations with integrated surge protection.

Standard Features

2 docking posts	Align and secure the computer for proper connection to the docking station
Docking connector	Connects the computer to the docking station
Visual alignment indicator	Helps you align the computer with the docking station for fast and easy docking
Power button and power light	Power indicators
Eject button and docking light	Ejects computer from docking station. Dock light is turned on when the computer is properly connected.
USB ports	6 USB 2.0 ports (5 Always-On, 1 powered)
Always-On USB port	Allows you to charge USB powered devices while the computer is in standby mode, powered off or not in the docking station. Conforms to USB 1.1 Charging Specification.
Powered USB port	Allows you to connect to select powered USB as well as regular USB devices
Integrated cable lock slot	Supports the HP Docking Station Cable Lock, which gives you two security options: lock the docking station only (which also prevents access to the Advanced Docking Station drive bay); or lock both the docking station and your notebook for additional security. Also supports an industry standard notebook lock.
eSATA port	Enable ultra-fast (up to 3Gb/s) external data connectivity with any customer supplied eSATA device such as an eSATA Hard Drive.
Audio and Network connectors	Audio and Ethernet ports, line-in jack, headphone jack; does not support mic out
Legacy connectors	Mouse, keyboard, serial and parallel connectors
Other connectors	1 Monitor Stand, 2 DisplayPort, 1 VGA and 2 DVI-D connectors. AC adapter connector with light NOTE: A maximum of three displays can be supported through the HP Advanced Docking Station (NZ223AA). The DisplayPort and DVI connectors are shared, so you may choose one DisplayPort or DVI plus a second DisplayPort, or DVI plus the VGA connector. Therefore, the choices are DP+DP+VGA, DP+DVI+VGA, DVI+DP+VGA or DVI+DVI+VGA.
Upgrade bay	Supports all HP upgrade bay hard drives and optical drives for additional local storage capabilities.
Smart Adapter	120W or 230W Smart AC Adapter

Service and Support	One-year limited warranty. Additional support is available 24 hours a day, seven days a week by phone as well as online support forms.
	NOTE: Certain restrictions and exclusions apply. Consult the HP Customer Support Center for details.

Compatibility	The HP 120W Advanced Docking Station and HP 230W Advanced Docking Station are compatible with HP ProBook b-Series Notebook PCs, HP EliteBook 8440p, 8460p, and 8540p Notebook PCs, and HP EliteBook 8440w and 8460w Mobile Workstations. The HP 230W Advanced Docking Station is also compatible with the HP EliteBook 8540w and 8740w Mobile Workstations. The HP Docking Station Cable Lock (AU656AA#XXX) is compatible with the docking stations.
	NOTE: Due to technology changes older notebook models may be supported by different docking stations. Please refer to the following models for additional information:
	• HP 2008 120W Docking Station (KP080AA)
	• HP 2008 150W Advanced Docking Station (KP081AA)
	• HP 2008 150W Docking Station (KQ751AA)
	• HP 2008 180W Advanced Docking Station (KQ752AA)
	NOTE: Some notebook models do not support these docking features. Docking capability for these models is provided by the HP Essential USB 2.0 Port Replicator (AQ731AA) and HP USB 2.0 Docking Station (FQ834AA#xxx).
	NOTE: Not all models are available in all regions.

Specifications

Dimensions (H x W x D)		2.60 x 10.65 x 10.24 in (6.6 x 27.05 x 26.0 cm)
Weight		3.61 lbs (1.637 kg)
Power Supply (input)	Rated Voltage	100 to 240 V
	Rated Current	2.5A rms
	Line Frequency	50 - 60 Hz
Temperature	Operating	50° to 95° F (10° to 35° C)
	Non-operating	14° to 140° F (-10° to 60° C)
Relative Humidity	Non-operating	5% to 90% relative humidity, 101.6° F (38.7° C) maximum wet bulb temperature
Maximum Altitude	Operating	0 to 10,000 ft (0 to 3,048 m)
	Non-operating	0 to 30,000 ft (0 to 9,144 m)
Shock	Operating	10 G, 11 ms, half-sine
	Non-operating	60 G, 11 ms, half-sine
Vibration	Operating	0.5 G zero-to-peak, 10 to 500 Hz, 0.25 oct/min sweep rate
	Non-operating	1 G, zero-to-peak, 10 to 500 Hz, 0.5 oct/min sweep rate
Option Kit Contents		HP 120W Advanced Docking Station, AC power adapter, documentation
		HP 230W Advanced Docking Station, AC power adapter, documentation

Related Options
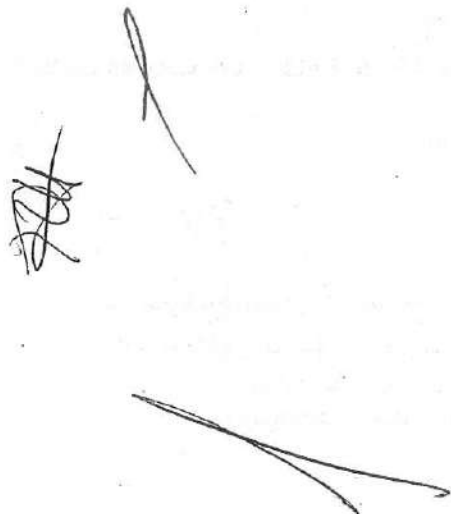
HP Docking Station Cable Lock	AU656AA#XXX
HP Upgrade Bay 500 GB 7200 rpm Hard Drive	AU097AA
HP Upgrade Bay SATA DVD+/-RW SuperMulti DL Drive	AK869AA
HP Extended Life Battery	AJ359AA
HP USB Keyboard/Mouse Bundle*	RC465AA
HP Adjustable Display Stand	AW663AA
HP LCD Monitor Stand	QM196AA

*Availability may vary by region.

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Models

HP Thin USB Powered Speakers	KK912AA

Introduction

With their sleek shape, and compact size, HP Thin USB Powered Speakers are designed for easy desktop placement and optimal stereo enjoyment of DVDs, CDs and digital audio.

The HP Thin USB Powered Speakers produce a rich high quality sound that provides an excellent stereo speaker solution for business users. When installed, SRS Premium Sound Software further enhances the sound quality of the HP Thin USB Powered Speakers. The power and volume knob is conveniently located on the side of the right speaker, so you can control the volume without fumbling through your PC software. A green LED on the right speaker tells you immediately if the speakers are powered on. There is even a stereo headset connection on the right speaker to listen to your audio privately (speaker is muted when headphones are plugged in).

A key component of the HP Thin USB Powered Speakers is that the speaker uses one USB port from the connected PC to power the speakers so that no external power adapter is needed. This allows for the same speaker model to be used in different countries or regions.

Key Benefits

- New slim sleek design
- USB powered
- SRS Premium Sound Software for enhanced sound quality
- Headset connection on the side of the right speaker
- Same speaker model can we used worldwide.

Compatibility

The HP Thin USB Powered Speakers are compatible with all HP Compaq Business Desktops (except dx6100 series Business Desktops) and HP xw series Workstations.
NOTE: Compatible with any PC with a USB port and audio analog connection.

NOTE: Not all models are available in all regions.

Service and Support

Your Option Limited Warranty is a one (1) year (HP Option Limited Warranty Period) parts replacement warranty on any HP-branded or Compaq-branded options (HP Options). If your HP Option is installed in an HP Hardware Product, HP may provide warranty service either for the HP Option Limited Warranty Period or the remaining Limited Warranty Period of the HP Hardware Product in which the HP Option is being installed, whichever period is the longer but not to exceed three (3) years from the date you purchased the HP Option.

Technical Specifications

On/Off/Volume Controls	Right side of right speaker
Power LED	Front of right speaker (green)
Frequency response	FO to 20kHz
Power	Rated output power: minimum 0.9W per channel MAX output power: 1.5W per channel with 10% THD RMS: 1W per channel; 8ohms with 1%THD
Dimensions (H x W x D)	Speakers: 5.72 x 3.74 x 0.96 in (14.52 x 9.50 x 2.45 cm) per speaker
Net weight	0.68 lbs (0.31kg)
Environmental (all conditions non-condensing)	**Temperature** (operating) 14° to 104° F (-10° to 40° C) **Relative Humidity** 40% to 90% (operating)
Speaker cable length	Input cord: 5.91 ft (1800mm±35mm) L-channel cord: 3.28 ft (1000mm±35mm) USB cord: 5.91 ft (1800mm±35mm)
Color	HP Carbonite
Option kit contents	• One pair of HP Thin USB Powered Speakers with attached audio signal and USB power cables for connecting to your PC • CD with SRS Premium Sound Software • HP Warranty documentation

Overview

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Models

HP USB Optical Scroll Mouse	DC172B
HP USB Optical Scroll Mouse - Bulk Pack (100)	EA177A6

Introduction

The HP USB Optical Scroll Mouse is provides the speed and accuracy of optical tracking in a simple, elegant design. It records motion precisely on a variety of surfaces using the latest optical sensing technology.

The HP USB Optical Scroll Mouse has no ball or moving parts, which improves its durability, makes it require less cleaning, and eliminates sticking. The mouse's comfortable, contoured shape fits either hand.
Optical tracking is the latest advance in computer mouse technology. Optical mice have a tracking system that works through light which means that there are less moving parts for greater durability than ball-based mice. The optical sensor within the HP US Optical Scroll Mouse employs a scan rate of 800dpi. This optical system guarantees crisp motion tracking on many types of surfaces without a mouse pad. There is no ball or roller to clog up so it works without cleaning.

Key Benefits

- Improves precision by using optical tracking
- Provides more durability and easier maintenance by eliminating moving parts
- Fits either hand
- Allows scroll wheel to function as a third button

Compatibility

The HP USB Optical Scroll Mouse is compatible with the HP dx9000 TouchSmart Business PC and all HP Business PCs (except the HP rp5700 Point of Sale system) and all xw series HP Workstations.

NOTE: Not all models are available in all regions.

Service and Support

Your Option Limited Warranty is a one (1) year (HP Option Limited Warranty Period) parts replacement warranty on any HP-branded or Compaq-branded options (HP Options). If your HP Option is installed in an HP Hardware Product, HP may provide warranty service either for the HP Option Limited Warranty Period or the remaining Limited Warranty Period of the HP Hardware Product in which the HP Option is being installed, whichever period is the longer but not to exceed three (3) years from the date you purchased the HP Option.

Technical Specifications

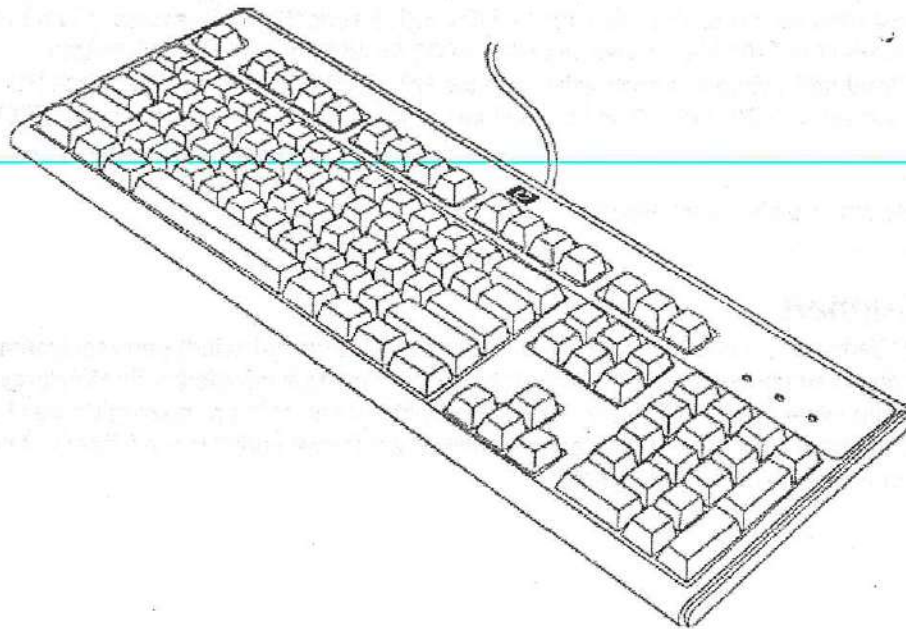|	
Dimensions (H x L x W)	1.5 x 4.5 x 2.5 in (3.8 x 11.6 x 6.3 cm)
Weight	0.27 lb (0.12 kg)
Cable length	72.8 in (185 cm)
System requirements	Windows Vista Business 64*, Windows Vista Business 32*, Windows Vista Home Basic 32*, Windows 2000, Windows XP Professional or Windows XP Home 32* (No driver is 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.

Overview

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Models

HP PS/2 Standard Keyboard	DT527A
HP USB Standard Keyboard	DT528A
HP USB Grey Standard Keyboard	DT529A

Introduction

Now you can sit your keyboard on your desk at either zero-degree (flat), 6-degree or 12-degree slopes with tilt legs on HP standard keyboards to maximize your comfort.

Both USB and PS/2 keyboards are available in 104, 105, 106, 107 and 109-key layouts to comply with 38 local language layout requirements. The HP USB Grey Standard Keyboard has 105 keys. The DT527A PS/2 and DT528A USB HP Standard Keyboards are also more ecologically friendly as the painted surface has been minimized to a removable silver accent strip around the top-row function keys.

Key Benefits

- Provides optimal tactile characteristics for heavy keyboard usage
- Selectable angles for potential wrist-posture improvement and associated usage comfort
- Key-mechanism lifecycle rated to 20 million keystrokes – suitable for long service life and heavy duty usage
- Incorporates a spill-drain feature to minimize damage from accidental fluid spill
- Recyclable product (painted strip is removable in a Recycling Center)
- Available as either a PS/2 or a USB device
- Simplified deployment and maintenance for internal IT support organizations

Compatibility

HP PS/2 Standard Keyboard is compatible with all HP Compaq Business Desktops.

The HP USB Standard Keyboard is compatible with the HP dx9000 TouchSmart Business PC and all HP Compaq Business Desktops (except dx2200 Microtower and HP rp5000 Small Form Factor POS System.

The HP USB Grey Standard Keyboard is compatible with the HP dx9000 TouchSmart Business PC and all HP Compaq Business Desktops (except dx2200, dx2250 and dx2300 Microtowers and the HP rp5000 and rp5700 Point of Sale systems).

NOTE: Not all models are available in all regions.

Service and Support

Your Option Limited Warranty is a one (1) year (HP Option Limited Warranty Period) parts replacement warranty on any HP-branded or Compaq-branded options (HP Options). If your HP Option is installed in an HP Hardware Product, HP may provide warranty service either for the HP Option Limited Warranty Period or the remaining Limited Warranty Period of the HP Hardware Product in which the HP Option is being installed, whichever period is the longer but not to exceed three (3) years from the date you purchased the HP Option.

Technical Specifications

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USB Standard Keyboard

Physical characteristics	Keys	104, 105, 106, 107, 109 layout (depending upon country)
	Dimensions (L x W x H)	18.0 x 6.4 x 0.98 in (45.8 x 16.3 x 2.5 cm)
	Weight	2 lb (0.9 kg) minimum
Electrical	Operating voltage	+ 5VDC ± 5%
	Power consumption	50-mA maximum (with three LEDs ON)
	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
Mechanical	Keycaps	Low-profile design
	Switch actuation	55-g nominal peak force with tactile feedback
	Switch life	20 million keystrokes (using Hasco modified tester)
	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
Environmental	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 (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 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.

* 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.

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

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

Kit contents   Keyboard, installation guide, warranty card, safety and comfort guide

QuickSpecs

HP USB and PS/2 Standard Keyboards

Technical Specifications

HP USB Grey Standard Keyboard

Physical characteristics	Keys	104, 105, 106, 107, 109 layout (depending upon country)
	Dimensions (L x W x H)	18.0 x 6.4 x 0.98 in (45.8 x 16.3 x 2. 5 cm)
	Weight	2 lb (0.9 kg) minimum
Electrical	Operating voltage	+ 5VDC ± 5%
	Power consumption	50-mA maximum (with three LEDs ON)
	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
Mechanical	Keycaps	Low-profile design
	Switch actuation	55-g nominal peak force with tactile feedback
	Switch life	20 million keystrokes (using Hasco modified tester)
	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
Environmental	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 (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 2000 and Windows XP	
Approvals	UL, CSA, FCC, CE Mark, TUV, TUV GS, VCCI, BSMI, C-Tick, MIC, BG Prufzert Mark	
Ergonomic compliance	ANSI HFS 100, ISO 9241-4, and TUVGS	
Kit contents	Keyboard, installation guide, warranty card, safety and comfort guide	

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QuickSpecs

HP USB and PS/2 Standard Keyboards

Technical Specifications

PS/2 Standard Keyboard

Physical characteristics	**Keys**	104, 105, 106, 107, 109 layout (depending upon country)
	Dimensions (L x W x H)	18.0 x 6.4 x 0.98 in (45.8 x 16.3 x 2.5 cm)
	Weight	2 lb (0.9 kg) minimum
Electrical	**Operating voltage**	+ 5VDC ± 5%
	Power consumption	50-mA maximum (with three LEDs ON)
	System interface	PS/2 6-pin mini din 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
Mechanical	**Keycaps**	Low-profile design
	Switch actuation	55-g nominal peak force with tactile feedback
	Switch life	20 million keystrokes (using Hasco modified tester)
	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
Environmental	**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 (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 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.)

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

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

Kit contents: Keyboard, keyboard software media, installation guide, warranty card, safety and comfort guide

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