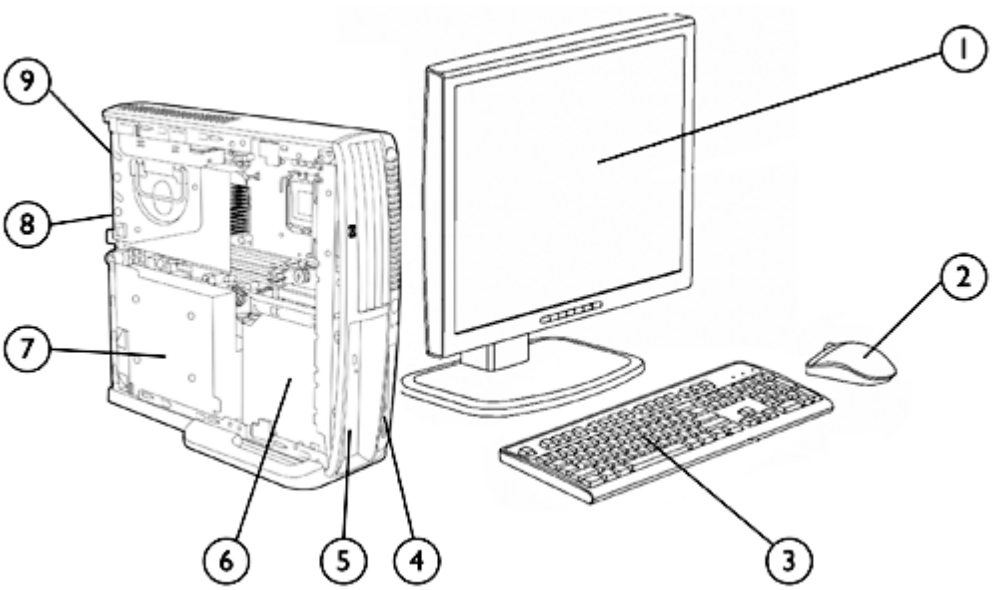
Ultra-slim Desktop

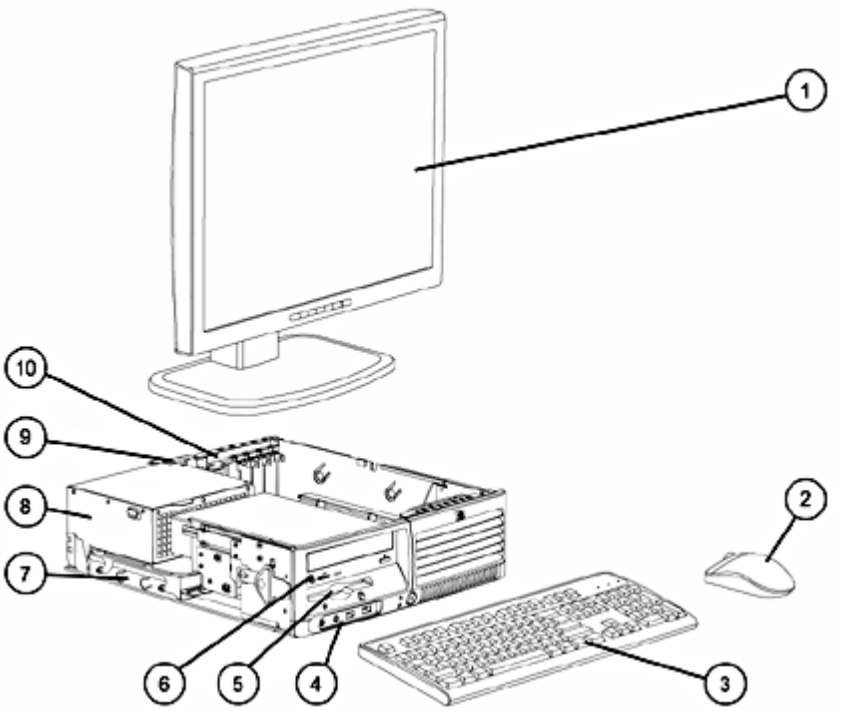



1. Monitor (sold separately)
2. 2-Button Scroll Mouse (PS/2) or Optical Scroll Mouse (PS/2 or USB)
3. HP Standard Keyboard (PS/2 or USB) or HP USB Smartcard Keyboard
4. Front I/O: (2) USB 2.0, headphone and microphone
5. (1) Slimline Drive Bay
6. (1) 3.5" internal bay
7. 200-watt Active Power Factor Correction (PFC) power supply
8. (1) full-height PCI slot (with optional riser) , (1) low profile PCI Express x16 slot (with optional riser)*
9. Rear I/O: (6) USB 2.0, (1) optional serial port (available via adapter), (1) optional parallel port (available via adapter), (1) optional DVI graphics port (available via DVI ADD2 adapter), (2) PS/2, (1) RJ-45, (1) VGA, audio in/out

*NOTE: Only one optional riser is allowed: either the PCI riser or the PCI Express x16 riser.

*Overview*

Small Form Factor

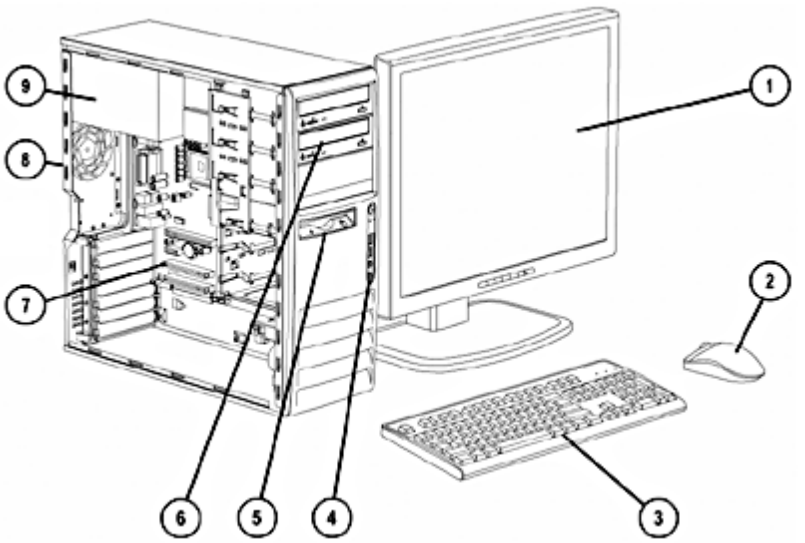



1. Monitor (sold separately)
2. 2-Button Scroll Mouse (PS/2) or Optical Scroll Mouse (PS/2 or USB)
3. HP Standard Keyboard (PS/2 or USB) or HP USB Smartcard Keyboard
4. Front I/O: (2) USB 2.0, headphone and microphone
5. (1) 3.5" external bay for optional HP 16-in-1 Media Card Reader, diskette drive, or other 3.5" device
6. (1) 5.25" external bay for optional optical drive, or other 5.25" device (bay tilts up for device removal and insertion)
7. (1) 3.5" internal bay
8. 240-watt Active Power Factor Correction (PFC) power supply
9. Rear I/O: (6) USB 2.0, (1) standard serial port, (1) optional serial port, (1) parallel port, (2) PS/2, (1) RJ-45, (1) VGA, (1) optional DVI graphics port (available via DVI ADD2 adapter), audio in/out
10. (2) low profile PCI slots, (1) low profile PCI Express x1 slot, (1) low profile PCI Express x16 slot standard*; (2) full-height PCI slots with optional riser card

*NOTE: With riser card option, PCI Express x1 and x16 slots are inaccessible.

*Overview*

Convertible Minitower




1. Monitor (sold separately)
2. 2-Button Scroll Mouse (PS/2) or Optical Scroll Mouse (PS/2 or USB)
3. HP Standard Keyboard (PS/2 or USB) or HP USB Smartcard Keyboard
4. Front I/O: (2) USB 2.0, headphone and microphone
5. (1) 3.5" external bay for optional HP 16-in-1 Media Card Reader, diskette drive, or other 3.5" device
6. (3) 5.25" external bays and (2) 3.5" internal bays
7. (2) full-height PCI slots, (1) full-height PCI Express x1 slot, (1) full-height PCI Express x16 slot, (2) additional full-height PCI slots optional
8. Rear I/O: 6 USB 2.0, 1 standard serial port, 1 optional serial port, 1 parallel port, 2 PS/2, 1 RJ-45, 1 VGA, audio in/out, mic in
9. 365-watt Active Power Factor Correction (PFC) power supply

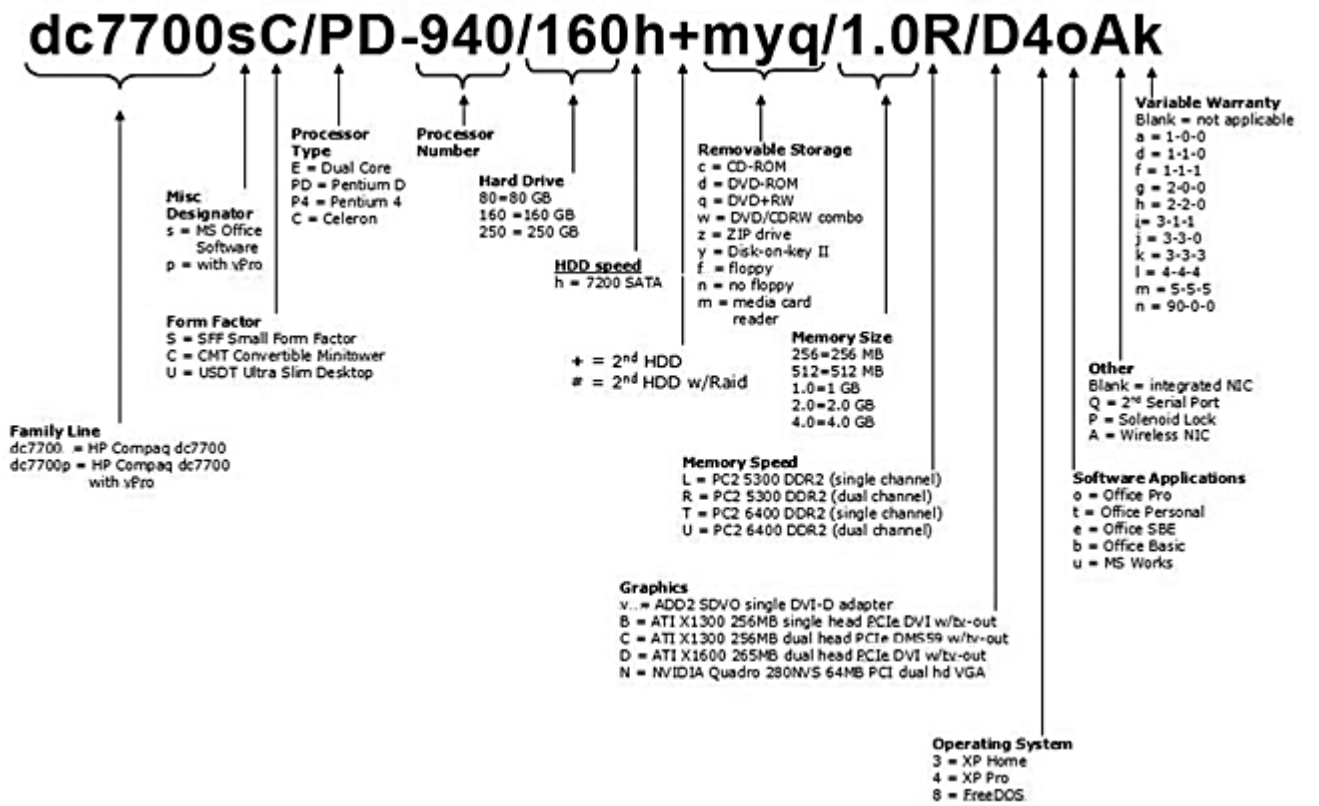
## At A Glance

- Designed for long-term, networked deployment within medium and large organizations in commercial business, finance and public sector industries
- Created using industry leading Design for Environment standards. Upgradeable, recyclable and energy efficient.
- Long purchase lifecycles and image stability for demanding enterprise environments
- Support for new Intel technologies introduced in 2006: Intel® Q965 Express chipset, Intel Core™ 2 Duo Processors, and Intel Graphics Media Accelerator 3000 integrated graphics
- Select models with new Intel vPro technology support the latest in manageability and security technology
- Value-added software
  - HP ProtectTools Security Software Suite, including embedded security, now preinstalled standard
  - HP Client Manager (http://h18000.www1.hp.com/im/index.html)
  - HP OpenView Configuration Management Solutions
  - Altiris Deployment Solution Agent
  - Symantec AntiVirus 10.0 with 60 day Live Update Subscription
  - HP Insight Diagnostics software
- Fully compatible software OS image across all three models (Ultra-slim Desktop, Small Form Factor, and Convertible Minitower)
- HP BIOS for better security, manageability and software image stability
- Selected configurations with global availability easily set up and ordered through HP.com Business to Business portals (http://h10019.www1.hp.com/business-site/index.html)
- Tailored HP Factory Express deployment and lifecycle services available (http://h71028.www7.hp.com/enterprise/cache/97688-0-0-225-121.aspx)
- Protected by HP Services, including standard warranties up to 5-5-5 (terms and conditions vary by country; certain restrictions and exclusions apply)
- Security
  - Embedded TPM1.2 compliant security module (requires HP ProtectTools Embedded Security software), providing compatibility with future security features expected in Microsoft Vista
  - Redundant Array of Independent Disks (RAID) 1 configurations to protect data against hardware failures
  - HP Backup and Recovery Manager to protect data against software corruption or incompatibilities due to patching or upgrades
- Tool-less serviceability features for easier upgrades and repairs
- Choice of professional chassis form factors to accommodate the desired mix between expandability and size

NOTE: All models and features may not be available in all countries.

Model Key and Example

NOTE: This diagram is an example that illustrates how to read the model number. It is not intended to give every available configuration choice specified in the body of this document and may include references to modules that are out of date and no longer available.



*Configurable Components*

**Operating System** – One of the following

Genuine Windows XP Professional SP2

Genuine Windows XP Home SP2

FreeDOS

Windows Vista Capable – Not all Windows Vista features are available for use on all Windows Vista Capable PCs. All Windows Vista Capable PCs will run the core experiences of Windows Vista, such as innovations in organizing and finding information, security, and reliability. Some features available in premium editions of Windows Vista -- like the new Windows Aero™ user interface -- require advanced or additional hardware.
Check http://www.windowsvista.com/getready for details.

NOTE: Microsoft Windows NT 4.0 and Microsoft Windows 2000 are not available on these systems. Some drivers for Windows 2000 are available for download from http://www.hp.com.

**Value-added Software** (not included with FreeDOS)

- HP ProtectTools Security Solutions
- Altiris Deployment Solution Agent
- HP OpenView Configuration Management Solutions Agent (visit http://www.hp.com/go/easydeploy)
- HP Insight Diagnostics (on documentation CD)
- Computer Setup Utility
- HP Backup and Recovery Manager
- Symantec AntiVirus 10.0 with 60 day Live Update Subscription
- Microsoft Office 2003 Basic
- Microsoft Office 2003 Personal
- Microsoft Office 2003 Professional
- Microsoft Office 2003 Small Business
- Microsoft Works 8.5
- Microsoft Internet Explorer with Google Toolbar
- Adobe Acrobat Reader
- PDF Complete

**Value-added Services and Features**

- HP Stable Platform Program
- Business-to-Business Portals
- HP Global Series Services
- Factory Express Deployment and Lifecycle Services
- TPM 1.2 Security
- Tool-less Serviceability

**Service and Support**

On-site Warranty and Service Note 1: This three-year (3-3-3), limited warranty and service offering delivers three years of parts, labor and on-site repair. Response time is next business-day Note 2 and includes free telephone support Note 3 24 x 7. Global coverage Note 2 ensures that any product purchased in one country and transferred to another non-restricted country will remain fully covered under the original warranty and service offering. Some countries/regions do not offer one year onsite and labor.

NOTE 1: Terms and conditions may vary by country. Certain restrictions and exclusions apply.

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, HP and HP-qualified, third-party hardware and software. Toll-free calling and 24 x 7 support may not be available in some countries.

| | Ultra-slim Desktop | Small Form Factor | Convertible Minitower |
|---|---|---|---|

*Configurable Components*

| Dimensions | | | |
|---|---|---|---|
| Chassis Dimensions (H x W x D) | 2.95 x 12.4 x 13.18 in (7.49 x 31.50 x 33.48 cm) | 3.95 x 13.3 x 14.9 in (10.03 x 33.78 x 37.85 cm) | 17.65 x 6.6 x 17.8 in (44.83 x 16.76 x 45.21 cm) |
| System weight* | 12.08 lb (5.48 kg) | 17.18 lb (7.79 kg) | 31.18 lb (14.14 kg) |
| System volume | 7.9 liters | 12.8 liters | 33.8 liters |
| Shipping weight* | 19.20 lb (8.71 kg) | 25.10 lb (11.39 kg) | 39.5 lb (17.92 kg) |
| Maximum supported weight (desktop orientation) | 77.1 lb (35 kg) | 77.1 lb (35 kg) | 77.1 lb (35 kg) |
| Shipping box dimensions (H x W x D) | 12.63 x 18.75 x 20 in (32.08 x 47.63 x 50.8 cm) | 12.63 x 18.75 x 20 in (32.08 x 47.63 x 50.8 cm) | 23.38 x 13.06 x 22.88 in (59.39 x 33.17 x 58.12 cm) |
| * Configured with 1 hard drive, 1 optical drive, no diskette drive, and no PCI card. | | | |
| Power Supply | 200W power supply – Active PFC | 240W power supply – Active PFC | 365W power supply – Active PFC |
| Ports | | | |
| USB 2.0 | 8 (2 front, 6 rear) | 8 (2 front, 6 rear) | 8 (2 front, 6 rear) |
| Serial | 1 optional via Serial & parallel I/O adapter | 1 standard with 2nd optional | 1 standard with 2nd optional |
| Parallel | 1 optional via Serial & parallel I/O adapter | 1 | 1 |
| PS/2 | 1 keyboard, 1 mouse | | |
| Video | analog for integrated graphics | | |
| DVI output | available via ADD2 card, PCI-E x16 card, or PCI card | | |
| Support for Multi-Monitor | available via ADD2 card, PCI-E x16 card, or PCI card | | |
| Audio | Front – mic and headphone<br>Rear – line in, line out | | Front – mic and headphone<br>Rear – line in, line out, mic in |
| NIC (RJ-45) | Integrated Intel 82566DM Gigabit Network Connection Ethernet | | |

| | | USDT | SFF | CMT |
|---|---|---|---|---|
| Chipset | Intel Q965 Express chipset | X | X | X |

| | | USDT | SFF | CMT |
|---|---|---|---|---|
| Processor and Speed*<br>One of the following | Intel Celeron D Processors: | | | |
| | Intel Celeron D 326 Processor (2.53-GHz, 256K L2 cache, 533-MHz FSB) | X | X | X |
| | Intel Celeron D 347 Processor (3.06-GHz, 512K L2 cache, 533-MHz FSB) | X | X | X |
| | Intel Celeron D 351 Processor (3.20-GHz, 256K L2 cache, 533-MHz FSB) | X | X | X |
| | Intel Celeron D 352 Processor (3.20-GHz, 512K L2 cache, 533-MHz FSB) | X | X | X |
| | Intel Celeron D 360 Processor (3.46-GHz, 512K L2 cache, 533-MHz FSB) | X | X | X |
| | Intel Pentium 4 Processors with Hyper Threading Technology: | | | |
| | Intel Pentium 4 524 Processor (3.06-GHz, 1-MB L2 cache, 533 -MHz FSB) | X | X | X |
| | Intel Pentium 4 531 Processor (3.0-GHz, 1-MB L2 cache, 800-MHz FSB) | X | X | X |
| | Intel Pentium 4 541 Processor (3.2-GHz, 1-MB L2 cache, 800-MHz FSB) | X | X | X |
| | Intel Pentium 4 631 Processor (3.0-GHz, 2-MB L2 cache, 800-MHz FSB) | X | X | X |
| | Intel Pentium 4 641 Processor (3.2-GHz, 2-MB L2 cache, 800-MHz FSB) | X | X | X |
| | Intel Pentium 4 651 Processor (3.4-GHz, 2-MB L2 cache, 800-MHz FSB) | X | X | X |
| | Intel Pentium 4 661 Processor (3.6-GHz, 2-MB L2 cache, 800-MHz FSB) | X | X | X |
| | Intel Pentium D Processors: | | | |

*Configurable Components*

| | | | |
|---|---|---|---|
| Intel Pentium D 820 Processor (2.8-GHz, 2x1MB L2 cache, 800-MHz FSB | X | X | X |
| Intel Pentium D 915 Processor (2.8-GHz, 2x2MB L2 cache, 800-MHz FSB | X | X | X |
| Intel Pentium D 925 Processor (3.0-GHz, 2x2MB L2 cache, 800-MHz FSB) | X | X | X |
| Intel Pentium D 945 Processor (3.4-GHz, 2x2MB L2 cache, 800-MHz FSB) | X | X | X |
| Intel Core 2 Duo Processors: | | | |
| Intel Core 2 Duo E6300 Processor (1.86-GHz, 2 MB L2 cache, 1066-MHz FSB) | X | X | X |
| Intel Core 2 Duo E6400 Processor (2.13-GHz, 2 MB L2 cache, 1066-MHz FSB) | X | X | X |
| Intel Core 2 Duo E6600 Processor (2.40-GHz, 4 MB L2 cache, 1066-MHz FSB) | X | X | X |
| Intel Core 2 Duo E6700 Processor (2.66-GHz, 4 MB L2 cache, 1066-MHz FSB) | X | X | X |

*NOTE: Intel processor numbers are not a measure of performance. Processor numbers differentiate features within each processor family, not across different processor families.

| | | USDT | SFF | CMT |
|---|---|---|---|---|
| Intel vPro Technology* | Uses AMT 2.0 (Active Management Technology) for network alerting and management of systems regardless of power state, as well as operating system-absent environments | X | X | X |

*NOTE: Units configured with this feature are referred to as HP Compaq dc7700p Business PCs.

Memory

DDR2 SYNCH DRAM NON-ECC MEMORY

Memory upgrades are accomplished by adding single or multiple DIMMs of the same or varied sizes. This chart does not represent all possible memory configurations. The Intel Q965 Express chipsets support non-ECC DDR2 PC2-5300 (667-MHz) and PC2-6400 (800-MHz) memory.

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.

HP recommends dual-channel symmetric configurations for maximum performance.

For best performance, add the same amount of total memory to each channel and do not mix speeds. For dual-channel symmetric performance, the total amount of memory in each channel must be equal. If speeds are mixed, speed will default to the slowest DIMM.

## *Ultra-slim Desktop*

Maximum Memory*

Supports up to 3-GB of DDR2 SYNCH DRAM. *Slot 1 is black and must always be populated. Not all memory configurations possible are represented below.*

*Configurable Components*

| DIMM Size | Slot | | |
|---|---|---|---|
| | Channel A | | Channel B |
| | 1 (black) | 2 (white) | 3 (white) |
| 512-MB | 512-MB | | |
| 512-MB (dual-channel symmetric) | 256-MB | | 256-MB |
| 1-GB | 1-GB | | |
| 1-GB (dual channel symmetric) | 512-MB | | 512-MB |
| 3-GB maximum | 1-GB | 1-GB | 1-GB |

*NOTE: The Intel Q965 Express chipset includes a built-in Management Engine (ME), which allocates memory for manageability functions. Management Engine memory is shared with system memory. If the PC contains a single DIMM, 8 MB of memory is pre-allocated for it at system startup. If the PC contains two DIMMs, 16 MB of memory is pre-allocated. This memory is not made available to the operating system, just as pre-allocated video memory is not available.

*Small Form Factor and Convertible Minitower*

Maximum Memory* — Supports up to 4-GB of DDR2 SYNCH DRAM. *Slot 1 is black and must always be populated. Not all memory configurations possible are represented below.*
NOTE: Above 3-GB, all memory may not be available due to system resource requirements.

| DIMM Size | Slot | | | |
|---|---|---|---|---|
| | Channel A | | Channel B | |
| | 1 (black) | 2 (white) | 3 (white) | 4 (white) |
| 512-MB | 512-MB | | | |
| 512-MB (dual-channel symmetric) | 256-MB | | 256-MB | |
| 1-GB | 1-GB | | | |
| 1-GB (dual-channel symmetric) | 512-MB | | 512-MB | |
| 1-GB (dual-channel symmetric) | 256-MB | 256-MB | 512-MB | |
| 2-GB (dual-channel symmetric) | 1-GB | | 512-MB | 512-MB |
| 2-GB (dual-channel symmetric) | 512-MB | 512-MB | 512-MB | 512-MB |
| 4-GB maximum (dual-channel symmetric) | 1-GB | 1-GB | 1-GB | 1-GB |

*NOTE: The Intel Q965 Express chipset includes a built-in Management Engine (ME), which allocates memory for manageability functions. Management Engine memory is shared with system memory. If the PC contains a single DIMM, 8 MB of memory is pre-allocated for it at system startup. If the PC contains two DIMMs, 16 MB of memory is pre-allocated. This memory is not made available to the operating system, just as pre-allocated video memory is not available.

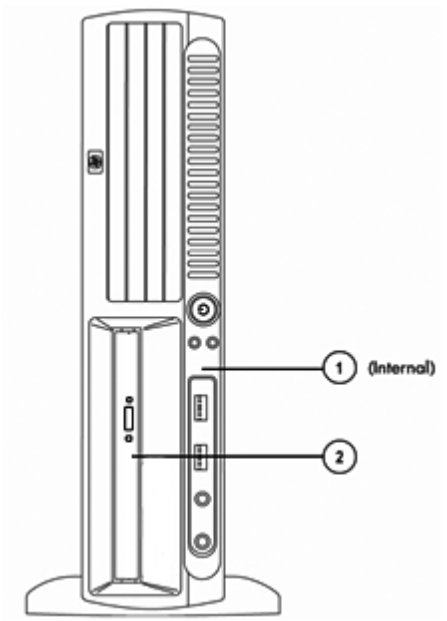
*Configurable Components*

| Memory Configurations – One of the following | | USDT | SFF | CMT |
|---|---|---|---|---|
| | 512-MB DDR2 Synch Dram PC2-6400 (800-MHz) Non ECC (1 x 512) | X | X | X |
| | 512-MB DDR2 Synch Dram PC2-6400 (800-MHz) Non ECC (2 x 256) | X | X | X |
| | 1-GB DDR2 Synch Dram PC2-6400 (800-MHz) Non ECC (1 x 1GB) | X | X | X |
| | 1-GB DDR2 Synch Dram PC2-6400 (800-MHz) Non ECC (2 x 512) | X | X | X |
| | 2-GB DDR2 Synch Dram PC2-6400 (800-MHz) Non ECC (2 x 1GB) | X | X | X |
| | 2-GB DDR2 Synch Dram PC2-6400 (800-MHz) Non ECC (4 x 512) | | X | X |
| | 3-GB DDR2 Synch Dram PC2-6400 (800-MHz) Non ECC (3 x 1GB) | X | X | X |
| | 4-GB DDR2 Synch Dram PC2-6400 (800-MHz) Non ECC (4 x 1GB) | | X | X |
| | 512-MB DDR2 Synch Dram PC2-5300 (667-MHz) Non ECC (1 x 512) | X | X | X |
| | 512-MB DDR2 Synch Dram PC2-5300 (667-MHz) Non ECC (2 x 256) | X | X | X |
| | 1-GB DDR2 Synch Dram PC2-5300 (667-MHz) Non ECC (1 x 1GB) | X | X | X |
| | 1-GB DDR2 Synch Dram PC2-5300 (667-MHz) Non ECC (2 x 512) | X | X | X |
| | 2-GB DDR2 Synch Dram PC2-5300 (667-MHz) Non ECC (2 x 1GB) | X | X | X |
| | 2-GB DDR2 Synch Dram PC2-5300 (667-MHz) Non ECC (4 x 512) | | X | X |
| | 3-GB DDR2 Synch Dram PC2-5300 (667-MHz) Non ECC (3 x 1GB) | X | X | X |
| | 4-GB DDR2 Synch Dram PC2-5300 (667-MHz) Non ECC (4 x 1GB) | | X | X |

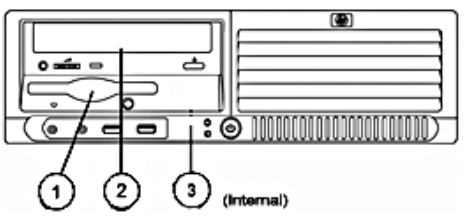
| Expandability | USDT | SFF | CMT |
|---|---|---|---|
| PCI slots | Optional with riser card: 1 full-height (4.2"), length (6.6") | 2 low-profile (2.5"), length (6.6") standard; 2 full-height (4.2"), length (6.875") via optional riser card. NOTE: With riser card option, express x1 and x16 slots are not accessible. | 2 full-height (4.2"), length (13.4") standard; (2 additional full-height slots available via optional extender card) |
| Max power per slot | 25W | 25W | 25W |
| PCI Express x16 slot | Optional with riser card: 1 low-profile (3.987"), length (6.60") | 1 low-profile (2.5"), length (6.6") | 1 full-height (4.2"), length (10.5") |
| Max power per slot | 25W | 25W | 75W |
| PCI Express x1 slot | -- | 1 low profile (2.5"), length (6.6") | 1 full-height (4.2"), length (13.4") |
| Max power per slot | N/A | 10W | 10W |
| External Bays | 1 Slimline (WxDxH): 128 x 127 x 12.7 mm | 2 | 4 |
| 3.5" | N/A | 1 | 1 |
| 5.25" | N/A | 1 (length 8.189") | 3 (2 – length 8.189", 1 – length 5.71") |
| Internal 3.5" HDD Bays | 1 | 1 | 2 |
| Hard Drive Controller (PCI) Supported | Serial ATA (support for SATA 1.5-Gb/s and 3.0-Gb/s hard drives) | | |
| Hard Drive Interfaces Supported | 1 Serial ATA interface | 3 Serial ATA interfaces | 4 Serial ATA interfaces |

*Configurable Components*

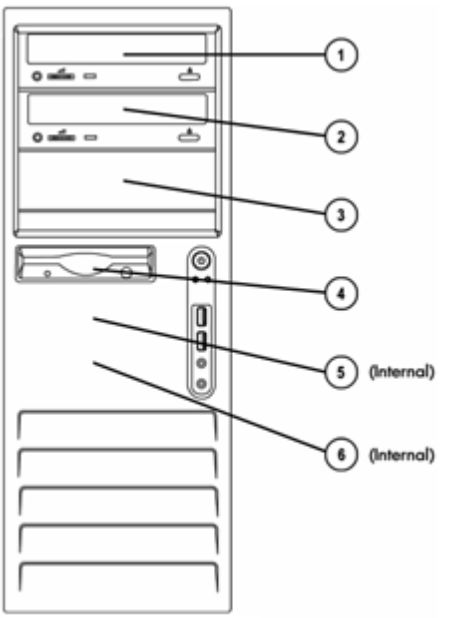
Ultra-slim Desktop




Small Form Factor




Convertible Minitower




Storage – Drive Support

| | USDT | | SFF | | | CMT | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Slimline Drive Bay | 3.5" Serial ATA Hard Drive | Diskette Drive or PCI Media Card Reader (optional) | Storage Drive Bay | 3.5" Serial ATA Hard Drives | Diskette Drive | PCI Media Card Reader (optional) | Storage Drive Bays for multiple Optical Drives | 3.5" Serial ATA Hard Drives |
| Quantity Supported | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 3 | 3 |
| Position Supported | (2) | (1) | (1) | (2) | (1), (3) | (4) | (4), (1), (2), (3) | (1), (2), (3) | (4), (5), (6) |
| Controller | SATA to IDE Bridge | SATA | Diskette Controller or USB header on PCI card | SATA | SATA | Diskette Controller | USB header on PCI card | SATA | SATA |

*Configurable Components*

| | | USDT | SFF | CMT |
|---|---|---|---|---|
| **Hard Drive –** One or two of the following | 80-GB SATA 3.0-Gb/s Hard Drive (8MB Cache, 7200 rpm) | X | X | X |
| | 160-GB SATA 3.0-Gb/s Hard Drive (8MB Cache, 7200 rpm) | X | X | X |
| | 250-GB SATA 3.0-Gb/s Hard Drive (8MB Cache, 7200 rpm) | X | X | X |
| | RAID 80-GB SATA 3.0-Gb/s Hard Drive (7200 rpm) | | X | X |
| | RAID 160-GB SATA 3.0-Gb/s Hard Drive (7200 rpm) | | X | X |
| | RAID 250-GB SATA 3.0-Gb/s Hard Drive (7200 rpm) | | X | X |
| | 2nd hard drive, 80-GB SATA 3.0-Gb/s Hard Drive (8MB Cache, 7200 rpm) | | X | X |
| | 2nd hard drive, 160-GB SATA 3.0-Gb/s Hard Drive (8MB Cache, 7200 rpm) | | X | X |
| | 2nd hard drive, 250-GB SATA 3.0-Gb/s Hard Drive (8MB Cache, 7200 rpm) | | X | X |
| **Removable Storage –** One or more of the following depending on form factor (see Storage section below) | **Diskette Drives** | | | |
| | 1.44-MB Diskette Drive | | X | X |
| | **Optical Drives** | | | |
| | SATA CD-ROM Drive | | X | X |
| | SATA CD-RW/DVD-ROM Combo Drive | | X | X |
| | SATA DVD-ROM Drive | | X | X |
| | SATA DVD+/-RW (DL/DF) LightScribe Drive | | X | X |
| | **Slimline Optical Drives** | | | |
| | PATA CD-ROM Slim Drive | X | | |
| | PATA CD-RW/DVD-ROM Combo Slim Drive | X | | |
| | PATA DVD+/-RW Slim Drive | X | | |
| | PATA DVD-ROM Slim Drive | X | | |
| **Media Card Reader –** One of the following | HP 16-in-1 3.5" Media Card Reader w/ PCI card | | X | |
| | HP 16-in-1 5.25" Media Card Reader w/ PCI card | | | X |
| **Security** | Integrated 1.2 TPM Embedded Security Chip | X | X | X |
| | Drive Lock | X | X | X |
| | HP ProtectTools Embedded Security Software | X | X | X |
| | Serial, Parallel, USB Enable/Disable (via BIOS) | X | X | X |
| | Removable Media Write/Boot Control | X | X | X |
| | Power-On Password (via BIOS) | X | X | X |
| | Setup Password (via BIOS) | X | X | X |
| | Solenoid Hood Lock / Sensor | | X | X |
| | Hood Removal Sensor | X | | |

*Configurable Components*

| | | | | |
|---|---|---|---|---|
| NIC | Intel 82566DM Gigabit Network Connection (integrated on system board) | X | X | X |
| | Intel PRO/1000 PT PCIe Gigabit NIC (full height bracket) | | | X |
| | Intel PRO/1000 PT PCIe Gigabit NIC (low profile bracket) | | X | |
| | Broadcom NetXtreme Gigabit PCIe NIC (full height bracket) | | | X |
| | Broadcom NetXtreme Gigabit PCIe NIC (low profile bracket) | X* | X | |
| | NOTE: * Requires optional PCIe riser card. | | | |
| Wireless | Wireless A+G PCI Card (full height bracket) | X* | X* | X |
| | Wireless A+G PCI Card (low profile bracket) | | X | |
| | NOTE: : *Requires optional PCI riser card. | | | |
| Modem | Agere 2006 PCI 56K International SoftModem (full height) | X* | X* | X |
| | Agere 2006 PCI 56K International SoftModem (low profile) | | X | |
| | NOTE: *Requires optional PCI riser card. | | | |
| Graphics | Integrated Intel Graphics Media Accelerator 3000 | X | X | X |
| | DVI ADD2 SDVO single head Graphics Adapter for USDT (PCIe x16) | X | | |
| | DVI ADD2 SDVO single head low profile Graphics Adapter (PCIe x16) | | X | |
| | DVI ADD2 SDVO single head full-height Graphics Adapter (PCIe x16) | | | X |
| | ATI Radeon X1300 (256MB SH) low profile PCIe Card, DVI w/TV | X* | X | |
| | ATI Radeon X1300 (256MB SH) full-height PCIe Card, DVI w/TV | | | X |
| | ATI Radeon X1300 Pro (256MB DH) low profile PCIe Graphics Card | X* | X | |
| | ATI Radeon X1300 Pro (256MB DH) full-height PCIe Graphics Card | | | X |
| | ATI Radeon X1600XT (256MB DH) full-height PCIe Card, DVI w/TV-out | | | X |
| | NVIDIA Quadro NVS 280 (64MB DH) PCI VGA Card | X** | X*** | X*** |
| | NVIDIA Quadro NVS 285 (128MB DH) PCIe x16 VGA Card | X* | X*** | X*** |
| | NOTES:<br>* USDT requires optional PCIe riser card.<br>** USDT requires optional PCI riser card.<br>*** NVIDIA Quadro NVS 285 and NVS 280 graphics cards can be combined to provide support for four monitors. | | | |

*Configurable Components*

| | | | | |
|---|---|---|---|---|
| **Audio** | Integrated High Definition audio with Realtek 4-channel ALC262 codec (all ports are stereo) | X | X | X |
| | Microphone and Headphone front ports | X | X | X |
| | Microphone rear port* | | | X |
| | Line-out and Line-In rear ports* | X | X | X |
| | Multistreaming capable* | X | X | X |
| | Internal Speaker | X | X | X |
| | NOTE: *Rear audio ports are re-taskable as Line-in, Line-out, or Microphone-in. External speakers must be powered externally. Multistreaming can be enabled in the Realtek control panel to allow independant audio streams to be sent to/from the front and rear jacks. This allows for different audio applications to use separate audio ports on the system. For example, the front jacks could be used with a headset for a communications application while the rear jacks are being used with external speakers and a multimedia application. | | | |
| **Keyboard** – One of the following | HP PS/2 Standard Keyboard | X | X | X |
| | HP USB BG1650 Keyboard | X | X | X |
| | HP USB Standard Keyboard | X | X | X |
| | HP USB Smartcard Keyboard | X | X | X |
| **Mouse** – One of the following | HP PS/2 2-Button Scroll Mouse | X | X | X |
| | HP PS/2 2-Button Optical Scroll Mouse | X | X | X |
| | HP USB 2-Button Optical Scroll Mouse | X | X | X |
| **Miscellaneous** | HP FireWire / IEEE 1394 PCI Card (full height) | X* | X* | X |
| | HP FireWire / IEEE 1394 PCI Card (low profile) | | X | |
| | PCI Express riser card – adds 1 low profile PCIe x16 slot | X | | |
| | PCI riser card – adds 1 full-height PCI slot | X | | |
| | PCI riser card – adds 2 full-height PCI slots<br>NOTE: Low profile slots are unusable with riser card installed. | | X | |
| | PCI extender card for CMT (adds 2 PCI slots) | | | X |
| | PCI Serial and parallel I/O adapter | X* | | |
| | 2nd serial port adapter (full height) | | | X |
| | 2nd serial port adapter (low profile) | | X | |
| | Tower stand | X | X | |
| | Configure dc7700 CMT in desktop orientation | | | X |
| | NOTE: *Requires optional PCI riser card. | | | |

*After-Market Options (availability may vary by region)*

| | | USDT | SFF | CMT | After-Market Options Part Number |
|---|---|---|---|---|---|
| Communications | **Wireless** | | | | |
| | HP Wireless A+G PCI Card (North America only) | X* | X | X | EA118AA |
| | HP Wireless A+G PCI Card (WW except North America) | X* | X | X | PZ928AA |
| | HP BT450 USB Bluetooth Wireless Printer and PC Adapter | X | X | X | IPQ639A |
| | **NICs** | | | | |
| | Broadcom NetXtreme Gigabit Ethernet PCIe NIC Card | X** | X | X | EA833AA |
| | Intel/PRO 1000 PT PCIe Gigabit NIC Card | X** | X | X | EH352AA |
| | **Modem** | | | | |
| | Agere 2006 PCI 56K International SoftModem | X* | X | X | EK694AA |
| | NOTES:<br>* USDT requires optional PCI riser card.<br>** USDT requires optional PCIe riser card. | | | | |
| Graphics | **Single head solutions** | | | | |
| | Intel DVI ADD2 Graphics Adapter (PCIe x16) | | X | X | DY674A |
| | ATI Radeon X1300 (256MB SH) PCIe Graphics Card | X** | X | X | AG392AA |
| | **Multi head solutions** | | | | |
| | ATI Radeon X1300 Pro (256MB DH) PCIe Graphics Card | X** | X | X | AH050AA |
| | NVIDIA Quadro NVS 280 PCI Graphics Card (DMS59 DVI Dual-head Connector Cable) | X* | X | X | DY599A |
| | NVIDIA Quadro NVS 285 (128MB DH) PCIe x16 VGA Card | X** | X | X | RD069AA |
| | HP DMS59 DVI Dual-head Connector Cable*** | | X | X | DL139A |
| | NOTE: *Requires optional PCI riser card.<br>** USDT requires optional PCIe riser card.<br>*** Requires NVIDIA Quadro NVS 280 PCI Graphics | | | | |
| Hard Drives | **Serial ATA Hard Drives** | | | | |
| | HP 80-GB SATA 3.0-Gb/s Hard Drive | X | X | X | PY276AA |
| | HP 160-GB SATA 3.0-Gb/s Hard Drive | X | X | X | PY277AA |
| | HP 250-GB SATA 3.0-Gb/s Hard Drive | X | X | X | PY278AA |

*After-Market Options (availability may vary by region)*

| | | | | | |
|---|---|---|---|---|---|
| Input/Output Devices | Keyboards | | | | |
| | HP PS/2 Standard Keyboard | X | X | X | DT527A |
| | HP USB Standard Keyboard | X | X | X | DT528A |
| | Pointing Devices | | | | |
| | HP PS/2 2-Button Scroll Mouse | X | X | X | DD440B |
| | HP PS/2 2-Button Optical Scroll Mouse | X | X | X | EY703AA |
| | HP USB 2-Button Optical Scroll Mouse | X | X | X | DC172B |
| Memory (DIMMs) | PC2-5300 (DDR2, 667 MHz) DIMMs Non-ECC | | | | |
| | HP 1 GB PC2-5300 (DDR2-667) DIMM | X | X | X | PX976AA |
| | HP 512 MB PC2-5300 (DDR2-667) DIMM | X | X | X | PX975AA |
| | HP 256 MB PC2-5300 (DDR2-667) DIMM | X | X | X | PX974AA |
| | PC2-6400 (DDR2 800) MHz) DIMMs | | | | |
| | HP 1-GB PC2-6400 (DDR2 800 MHz) DIMM | X | X | X | AH058AA |
| | HP 512-MB PC2-6400 (DDR2 800 MHz) DIMM | X | X | X | AH056AA |
| | HP 256-MB PC2-6400 (DDR2 800 MHz) DIMM | X | X | X | AH054AA |
| Monitors | TFTs | | | | |
| | HP L1506 15 TFT Flat Panel Monitor – Analog only | X | X | X | PX848AA#ABA |
| | HP L1706 17 TFT Flat Panel Monitor – Analog only | X | X | X | PX849AA#ABA |
| | HP L1740 17 TFT Flat Panel Display – Analog/Digital | X | X | X | PL766AA#ABA |
| | HP L1755 17 TFT Flat Panel Display – Analog/Digital | X | X | X | PL777AA#ABA |
| | HP L1906 19 TFT Flat Panel Display – Analog only | X | X | X | PX850AA#ABA |
| | HP L1940T 19 TFT Flat Panel Display – Analog/Digital | X | X | X | EM869AA#ABA |
| | HP L1955 19 TFT Flat Panel Display – Analog/Digital | X | X | X | PD974AA#ABA |
| | HP L2065 20 TFT Flat Panel Display – Analog/Digital | X | X | X | EF227A4#ABA |
| | HP LP2465 24 TFT Widescreen Flat Panel Display – Analog/Digital | X | X | X | EF224A4#ABA |
| | CRTs | | | | |
| | HP s7540 17 (16.0 vis) CRT Monitor | X | X | X | PF997AA#ABA |
| | HP v7650 17 (16.0 vis) Flat-face CRT Monitor | X | X | X | PF996AA#ABA |
| Multimedia | HP USB Powered Speakers | X | X | X | RD628AA |
| PATA Slim Optical Drives | DVD-ROM Drive | | | | |
| | HP PATA DVD-ROM Slim Drive | X | | | AH041AA |
| | Combo Drive | | | | |
| | HP PATA CD-RW/DVD-ROM Combo Slim Drive | X | | | AH042AA |
| | DVD+/-RW Drive | | | | |
| | HP PATA DVD+/-RW (DL/DF) LightScribe Slim Drive | X | | | AH043AA |

*After-Market Options (availability may vary by region)*

| | | | | | |
|---|---|---|---|---|---|
| SATA Half-Height Optical Drives | **DVD-ROM Drive** | | | | |
| | HP SATA DVD-ROM Drive | | X | X | AH047AA |
| | **Combo Drive** | | | | |
| | HP SATA CD-RW/DVD-ROM Combo Drive | | X | X | AH046AA |
| | **DVD+/-RW Drive** | | | | |
| | HP SATA DVD+/-RW (DL/DF) LightScribe Drive | | X | X | AH048AA |
| Removable Storage | **Drive Key Options** | | | | |
| | HP 512MB USB 2.0 Drive Key | X | X | X | ED516AA |
| | HP 1GB USB 2.0 Drive Key | X | X | X | AG382AA |
| | **Diskette and Digital Drives** | | | | |
| | HP 1.44-MB External USB Diskette Drive | X | X | X | DC141B |
| | HP 1.44-MB Internal Diskette Drive | | X | X | DS710G |
| | **Multimedia** | | | | |
| | HP 16-in-1 Media Card Reader with PCI Card | | X | X | EM718AA |
| Security | Kensington Lock | X | X | X | PC766A |
| | HP Business PC Security Lock | X | X | X | PV606AA |
| | HP USB Biometric Fingerprint Reader | X | X | X | EM717AA |
| | HP (USDT) Wall Mount Security Sleeve* | X | | | PA719A |
| | HP (SFF) Wall Mount Security Sleeve** | | X | | PA717A |
| | HP USB Smartcard Keyboard | X | X | X | ED707AA |
| | NOTES: | | | | |
| | * Dimensions (W x H x L): 12.7 x 3.5 x 12.0 inches; Weight: 3.8 lb | | | | |
| | ** Dimensions (W x H x L): 13.5 x 4.4 x 14.4 inches; Weight: 5.9 lb | | | | |
| Software | HP OpenView Client Configuration Manager | X | X | X | T3488AA (use T3489AA for 1000 licenses) |
| | HP Client Foundation Suite<br>Includes:<br>HP Client Manager<br>HP Systems Insight Manager Connector<br>Altiris Local Recovery Pro<br>Altiris Inventory Solution<br>Altiris Deployment Solution | X | X | X | EF117AA (use EF118AA for 1000+ licenses) |
| | HP Client Premium Suite<br>Includes:<br>HP Client Manager<br>HP Systems Insight Manager Connector<br>HP OpenView Connector<br>Altiris Connector Solution<br>Altiris Local Recovery Pro<br>Altiris Audit Express<br>Altiris Client Management Suite Level 1 | X | X | X | EF119AA (use EF120AA for 1000+ licenses) |

*After-Market Options (availability may vary by region)*

| | | | | | |
|---|---|---|---|---|---|
| **Brackets/Stands** | HP Integrated Work Center Stand | X | | | DL641B |
| | Tower Stand | | X | | PS797A |
| **Miscellaneous Accessories** | HP Serial & Parallel IO Adapter | X | | | PD825A |
| | HP 2nd Serial Port | | X | X | PA716A |
| | HP (50 Pk) 5.25" Blank Bezel Kit | | X | X | DC177B |
| | HP (USDT) PCI Riser Board | X | | | ED247AA |
| | HP (USDT) PCIe x16 Riser Board | X | | | EU054AA |
| | HP (SFF) PCI Riser Board | | X | | PD824A |
| | HP PCI Extender | | | X | DC179B |
| | HP FireWire / IEEE 1394 PCI Card | X* | X | X | PA997A |
| | Belkin USB to Serial Adapter | X | X | X | EM449AA |

NOTE: *Requires optional PCI riser card.

| Unit Environment and Operating Conditions | Ultra-slim Desktop | Small Form Factor | Convertible Minitower |
|---|---|---|---|
| General Unit Operating Guidelines<br>• Keep the computer away from excessive moisture, direct moisture and the extremes of heat and cold, to ensure that unit is operated within the specified operating range.<br>• Leave a 10.2 cm (4 in) clearance on all vented sides of the computer to permit the required airflow.<br>• Never restrict airflow into the computer by blocking any vents or air intakes.<br>• Do not stack computers on top of each other or place computers so near each other that they are subject to each other's re-circulated or preheated air.<br>• Occasionally clean the air vents on the front, back, and any other vented side of the computer. Lint, dust and other foreign matter can block the vents and limit the airflow.<br>• If the computer is to be operated within a separate enclosure, intake and exhaust ventilation must be provided on the enclosure, and the same operating guidelines listed above will still apply. | | | |
| Temperature Range | Operating: 50° to 95° F (10° to 35° C)*<br>Non-operating: -22° to 140° F(-30° to 60° C) | | |
| Relative Humidity | Operating: 10% to 90% (non-condensing at ambient)<br>Non-operating: 5% to 95% (non-condensing at ambient) | | |
| Maximum Altitude (unpressurized) | Operating: 10,000 ft (3048 m)<br>Non-operating: 30,000 ft (9144 m) | | |
| *NOTE: Operating temperature is de-rated 1.0 deg C per 300 m (1000 ft) to 3000 m (10,000 ft) above sea level, no direct sustained sunlight. Maximum rate of change is 10 deg C/Hr. The upper limit may be limited by the type and number of options installed. | | | |

| Power Supply | Ultra-slim Desktop | Small Form Factor | Convertible Minitower |
|---|---|---|---|
| Power Supply | 200 watt custom power supply – Active PFC) | 240 watt custom power supply – Active PFC | 365 watt custom power supply – Active PFC) |
| Operating Voltage Range | 90 – 264 VAC | 90 – 264 VAC | 90 – 264 VAC |
| Rated Voltage Range | 100 – 240 VAC | 100 – 240 VAC | 100 – 240 VAC |
| Rated Line Frequency | 50/60 Hz | 50/60 Hz | 50/60 Hz |
| Operating Line Frequency Range | 47 – 63 Hz | 47 – 63 Hz | 47 – 63 Hz |
| Rated Input Current | 4A | 5A | 6A |
| System Heat Dissipation | Typical 340 btu/hr (86 kg-cal/hr) Maximum 1050 btu/hr (265 kg-cal/hr) | Typical 340 btu/hr (86 kg-cal/hr) Maximum 1260 btu/hr (318 kg-cal/hr | Typical 375 btu/hr (95 kg-cal/hr) Maximum 1916 btu/hr (483 kg-cal/hr) |
| Power Supply Fan | 70mm variable speed | 80mm variable speed | 92mm variable speed |
| Energy Star 3.0 Compliant | X | X | X |
| FEMP Standby Power Compliant (<2W in S5 – Power Off)** | X | X | X |
| Power Consumption in ES Mode – Suspend to RAM (S3) (Instantly Available PC) | < 3W | < 3W | < 3W |
| Environmental and Mechanical Engineering Support Center (EMESC) – Intranet Web Site only | http://env-webserver.ccm.cpqcorp.net/EMESC/default.htm | | |
| **NOTE: Power consumption in the Off/Apparent Off mode is measured and reported with the network interface controller "Wake on LAN" feature disabled in F10 Setup (default is "enabled"). | | | |

| ROM BIOS Information |
|---|
| Key features of the HP BIOS in the dc7700 include:<br><br>• Deployment and manageability – HP BIOS provides several technologies that help integrate the HP Business desktop computer into the enterprise, such as PXE, remote configuration, remote control, and F10 Setup support for 12 languages. Select models offer Intel vPro technology including AMT (Active Management Technology).<br>• Stability – HP BIOS supports the HP stable product roadmap by releasing only critical BIOS changes to the factory and advanced change notification.<br>• Security – HP BIOS Configuration for ProtectTools offers a robust and flexible set of security features to help the system administrator secure their systems from removal of sensitive data, and help prevent access by unauthorized users.<br>• Thermal and power management – The HP BIOS provides and enables thermal and power management technologies to assist in operating the HP Business Desktop computer in any enterprise environment.<br>• Serviceability – HP BIOS provides diagnostic and detailed service information.<br>• Upgrades and recovery – HP BIOS provides numerous ways to upgrade HP Business Desktop computers, including BIOS updates from within DOS (Flashlite), BIOS updates from within Windows (HPQFlash, SSM), HP Client Manager, and fail-safe 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.<br><br>Additional HP BIOS Features<br><br>• Power-On password – Helps prevent an unauthorized user from powering on the system. After a TPM Basic User password is established in windows, the user or admin can require TPM hardware based authentication during the power-on process.<br>• 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.<br>• 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 Compaq dc7700 models use ACPI to provide power conservation features under Windows XP. |

| Other Features | Description |
|---|---|
| ACPI-Ready Hardware | Advanced Configuration and Power Management Interface (ACPI).<br><br>• Allows the system to wake from a low power mode.<br>• Controls system power consumption, making it possible to place individual cards and peripherals in a low-power or powered-off state without affecting other elements of the system. |
| SMBIOS Ver. 2.4 | System Management BIOS, previously known as DMI BIOS, for system management information |
| Wired for Management Support | Intel-driven, industry-wide initiative to make Intel architecture-based PCs, servers and mobile computers more inherently manageable right out of the box and over the network |
| Dual-State Power Button | Power button acts as both an on/off button and suspend-to-sleep button |

*Technical Specifications*

| Serviceability Features of System | | |
|---|---|---|
| Dual Color Power LED on Front of Computer (Indicates Normal Operations and Fault Conditions) | | |
| Diagnostic LED Explanation Table | Number of 1-second red LED blinks followed by 2-second pause, then repeats:<br>2-processor thermal protection activated<br>3-processor not installed<br>4-power supply failure<br>5-memory error<br>6-video error<br>7-PCA failure (ROM detected failure prior to video)<br>8-invalid ROM, bootblock recover mode | |
| • System/Emergency ROM | • Flash ROM | • CMOS Battery Holder for easy Replacement |
| • Flash Recovery with Video Configuration Record SW | • 5 Aux Power LED on System PCA | • Processor ZIF Socket for easy Upgrade |
| • Over-Temp Warning on Screen (Requires IM Agents) | • Clear Password Jumper | • DIMM Connectors for easy Upgrade |
| • HP Backup and Recovery Manager | • Clear CMOS Button | • NIC LEDs (integrated) (Green & Amber) |

| Serviceability Features of Chassis | | |
|---|---|---|
| • Dual Color Power and HD LED – To Indicate Normal Operations and Fault Conditions | • Color coordinated cables and connectors | • Tool-less Hood Removal |
| • Front power switch | • System memory can be upgraded without removing the system board or any internal components | • Tool-less Hard Drive, CD & Diskette Removal |
| • Green Pull Tabs, and Quick Release Latches for easy Identification | | • Tool-less System Board Removal |
| NOTE: Thumb screw release mechanism is used with the Ultra-slim Desktop chassis cover. | | |
| | | |
| Feature | Description | |
| AMT 2.0 support (Active Management Technology) | Select models offer new Intel vPro Technology utilizing AMT 2.0 for network alerting and management of systems regardless of power state, as well as operating system-absent environments. | |
| ASF 2.0 support (Alert Standard Format) | Industry-standard specification for network alerting in operating system-absent environments | |
| Tower | Product can be oriented as a tower (in addition to desktop orientation) | |
| Drive Lock* | Implementation of the industry standard ATA Security feature set. When enabled, it prevents software access to user data on the drive until one or two user-defined passwords are provided. | |
| Drive Self Tests (DPS)* | • Drive Protection System<br>• A diagnostic hard drive self test. It scans critical physical components and every sector of the hard drive for physical faults and then reports any faults to the user.<br>• Running independently of the operating system, it can be accessed through a Windows-based diagnostics utility or through the computer's setup procedure. It produces an evaluation on whether the hard drive is the source of the problem and needs to be replaced.<br>• The system expands on the Self-Monitoring, Analysis, and Reporting Technology (SMART), a continuously running systems diagnostic that alerts the user to certain types of failures. | |
| DPS Access through F10 Setup during Boot | | |

*Technical Specifications*

| | |
|---|---|
| SMART Technology* (Self-Monitoring, Analysis and Reporting Technology) | Allows hard drives to monitor their own health and to raise flags if imminent failures were predicted<br><br>• Predicts failures before they occur. Tracks fault prediction and failure indication parameters such as re-allocated sector count, spin retry count, calibration retry count<br>• By avoiding actual hard drive failures, SMART hard drives act as "insurance" against unplanned user downtime and potential data loss from hard drive failure |
| SMART I – Drive Failure Prediction | |
| SMART II – Off-Line Data Collection | |
| SMART III – Off-Line Read Scanning with Defect Reallocation | |
| * NOTE: This feature is inoperable when a RAID (Redundant Array of Independent Disks) configuration is enabled. | |

| | | |
|---|---|---|
| High Definition Audio | Type | Integrated |
| | High Definition Stereo Codec | Yes – Realtek ALC262, 4-channel |
| | Audio Jacks | Microphone-In (64-K ohm Input Impedance); front and rear stereo analog microphone ports available except for USDT and SFF, which has front stereo microphone only<br>Line-In (64-K ohm Input Impedance)<br>Line-Out * (200 ohms Output Impedance, expects at least a 10-K ohm load)<br>Headphone-Out (1 Ohm Output Impedance, expects at least a 32 ohm load) |
| | NOTE: *Internal Speaker Amplifier is for Internal Speaker only. External Speakers need to be powered externally. Rear audio ports are re-taskable as Line-in, Line-out, or Microphone-in. | |
| | Multistreaming Capable | Multistreaming can be enabled in the Realtek control panel to allow independent audio streams to be sent to/from the front and rear jacks. |
| | Sampling | 8 kHz – 192 kHz |
| | Wavetable Syntheses (software) | Yes – Uses OS soft wavetable |
| | Analog Audio | Yes |
| | Number of Channels on Line-Out (mono/stereo) | Stereo (Left & Right channels) |
| | Internal Audio Speaker Power Rating | 1.5 W |
| | Internal Speaker | Yes |
| | External Speaker Jack (Line-Out) | Yes |

| | | | |
|---|---|---|---|
| Integrated Intel 82566DM Gigabit Network Connection | Connector | | RJ-45 |
| | Controller | | Intel Nineveh Gigabit platform LAN Connect Networking Controller |
| | Memory | | Integrated 96KbB on chip buffer memory |
| | Data rates supported | | 10/100/1000 Mbps |
| | Compliance | | IEEE 802.1P, 802.1Q, 802.2, 802.3, 802.3 ab and 802.3u compliant, |
| | Bus architecture | | GLCI, LCI interface. Intel specific MAC to PHY interface |
| | Data transfer mode | | At gigabit GLCI (802.3 serdes) is for Data, LCI (parallel bus)for MDIO, at 10/100 LCI for both data and MDIO, GLCI is idle. |
| | Hardware certifications | | FCC, B, CE, TUV- cTUVus Mark Canada and United States, TUV- GS Mark for European Union |
| | Power requirement | | Require 3.3Vaux,1.8V and 1.0V or just 3.3V with integrated regulators Power consumption 1.16 Watts for 82566, whole LOM 2.53 Watts |
| | ACBS | | Intel Auto Connect Battery Saving feature |
| | Boot ROM support | | Yes |
| | Network transfer mode | | Full-duplex |
| | | | Half-duplex (not available 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 | 32° to 131°F (0° to 55° C)<br>To 70° C for external regulator |
| | | Operating humidity | 85% at 131° F (55° C) |
| | Operating system driver support | | Microsoft 2000, Microsoft XP |
| | Management capabilities | | WOL, auto MDI crossover, PXE, Muti-port teaming, RSS, Advanced cable diagnostic. |
| | Alerting | | ASF 2.0 support, AMT 2.0 support on dc7700p models with Intel vPro Technology |

*Technical Specifications - Communications*

| | | |
|---|---|---|
| **Intel PRO/1000 PT PCIe Gigabit NIC** | **Connector** | RJ-45 |
| | **Controller** | Intel 82572EI Gigabit Ethernet Controller |
| | **Memory** | Integrated Dual 48K configurable transmit receive FIFO Buffers |
| | **Data rates supported** | 10/100/1000 Mbps |
| | **Compliance** | IEEE 802.1P, 802,1Q, 802.2, 802.3, 802.3AB and 802.3u compliant, 802.3x flow control |
| | **Bus architecture** | PCI-E 1.0a |
| | **Data transfer mode** | Bus-master DMA |
| | **Hardware certifications** | FCC, B, CE, TUV- cTUVus Mark Canada and United States, TUV- GS Mark for European Union |
| | **Power requirement** | Aux 3.3V, 3.0 Watts in 1000base-T and 2.0 Watts in 100Base-T |
| | **Boot ROM support** | Yes |
| | **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 (actual rate limited by PCI Bus) |
| | **Environmental** | **Operating temperature** 32° to 131°F (0° to 55° C) |
| | | **Operating humidity** 85% at 131° F (55° C) |
| | **Dimensions** | 6.4 x 2.6 x 0.8 in (16.3 x 6.6 x 1.9 cm) |
| | **Operating system driver support** | Microsoft 2000, Microsoft XP |
| | **Management capabilities** | ASF, WOL, PXE, DMI, WFM 2.0. |

| | | |
|---|---|---|
| **HP Wireless A+G PCI** | **Dimensions** | 4.99 x 2.54 x 0.71 in (126.8 x 64.4 x 18.0 mm) |
| | **Weight** | 0.268 lb (65 g) |
| | **Controller system interface** | Atheros AR5414X chipset<br>PCI Spec 2.2 |
| | **Network standard** | IEEE 802.11a/b/g |
| | **Frequency band** | 5.1500 to 5.8500 GHz |
| | | 2.4000 to 2.4835 GHz |
| | | 2.4465 to 2.4835 GHz (Europe, Middle East, Asia and Asia Pacific - excluding Japan) |
| | | 2.4000 to 2.4697 GHz (Japan) |
| | **Operating temperature** | 32° to 140° F (0° to 60° C), operating |
| | **Storage temperature** | -4° to 176° F (-20° to 80° C), non-operating |
| | **Humidity** | 10% to 85% non-condensing |
| | **Operating voltage** | 5V ± 5% |
| | **Power consumption** | Tx/Rx peak 560/250mA @ 3.3V (max.) |
| | **Output power** (approximately) | 15 dBM ±2dB |
| | **Receive sensitivity** | -90dBm at 11 Mbps (typical) |
| | **Data transfer rate** | Standard rates of 1, 2, 5.5, 11, 6, 9, 12, 18, 24, 48, 54 and Super AG Mode108-Mbps |

| | | |
|---|---|---|
| Spreading | DSSS (Direct Sequence Spread Spectrum) | |
| Security | 64(40h) bit, 128(104h) bit, WPA, IEEE802.1X, AES-OCB, AES-CCM, Microsoft PEAP,TKIP, WEP. | |
| Antenna | External 5dBi antenna | |
| Throughput | 108 Mbps (only with Belkin 54G or above router that supports 108 Mbps speed) | 200 ft (60.96 m) – Indoor |
| | 54 Mbps | 200 ft (60.96 m) – Indoor |
| | 11 Mbps | 200 ft (60.96 m) – Indoor |
| Certifications | Wi-Fi certified | |
| Certifications for use by country | North America: United States, Canada | |
| | Europe: Austria, Belgium, Cyprus, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Liechtenstein, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom Australia | |
| | New Zealand | |
| OS support | Microsoft Windows 2000 (Service Pack 4 or greater), Windows XP Home, Windows XP Professional | |

**Agere 2006 PCI 56K International SoftModem**

| | |
|---|---|
| Data Transmission | Technology speeds: 56,000 Kbps maximum downstream data, controllerless |
| NOTE: 56 Kbps technology refers to download speeds only and requires compatible modems at server sites. Other conditions may limit modem speed. FCC limitations allow a maximum of 53 Kbps during download transmissions. | |
| Data Speeds | (Upload only) 33,600/31,200/28,800/26,400/21,600/19,200/16,800/14,400/12,000/9,600/7,200/4,800/2,400/1,200/300 |
| Data Standards | ITU-T V.90, ITU-T, ITU-T V.34, V.44, V.42, V.42bis21, V.32bis, Bell 212A, and Bell 103 |
| Fax Speeds | 14,400/12,000/9,600/7,200/4,800/2,400/1,200/300 b/s |
| Fax Mode Capabilities | ITU-T T.31 class 1 FAX, V. 17, V.29, V.27ter, and V.21 Channel 2 |
| Error Correction and Data Compression | V.44, 42bis, V.42 and MNP2-5 |
| Power Management | ACPI; PPMI 1.1 and wake support with PME and Vaux; meets PCI 2.3 requirements and PC 2001 requirements |
| Upgradeability | Driver upgradeable for future enhancements |
| Video | ITU-T V.80 video ready interface |
| Other | TIA/EIA 602 standard AT command set |
| | Integrated DTE interface with speeds of up to 115.2 Kbps, parallel 16550a UART-compatible interface |
| | Optional ring wakeup signal |
| Operating Temperature | 32° to 158° F (0° to 70° C) |
| Operating Humidity | 20% to 90%, non-condensing |
| Operating System Support | Microsoft Windows 2000 and Microsoft Windows XP |
| OS Driver Support | Microsoft Windows 2000 and Microsoft Windows XP |
| Power | Requires a 3.3-V auxiliary power rail on PCI bus |

| | |
|---|---|
| | Uses only one PCI load (i.e., one grant/request pair), one shared IRQ, one electrical load |
| Chipset | Agere Systems SV92PL – Integrated PCI interface with 5-V tolerant buffers and CardBus support |
| Dimensions (L X H) | Complies with PCI low profile specifications-6.7 x 2.3 in (17.0 x 5.8 cm) and supports high- and low-profile brackets |
| Connection | Single RJ-11 connector |
| Other Features | Digital line protection, call progress monitoring via on-board piezo device, support for high profile and low profile brackets, PnP ID support |
| Safety | UL recognized to UL 1950, 3rd edition (U.S. and Canada); IEC 950 (TUV, NEMKO, DEMKO, SEMKO); CE Mark, EC 950 (TUV, NEMKO, DEMKO, SEMKO, CE mark |
| EMC | FCC Part 15, IC ES003, EN 55022, 3rd edition, EN 55024, annex A, EN 61000-4-6, EN 61000-4-8 |
| Telecom | FCC Part 68, IC-CS-03 (Canada); Worldwide PTT approvals<br>Not available in Korea or the Republic of South Africa. |
| Health | Bare PCB material compliant to 94V-0 or better (marked as such) |
| Other | PC 2001 compliant, PCI version 2.3, WHQL approved; ACPI compliant |

| | | |
|---|---|---|
| Integrated Graphics Media Accelerator 3000 | 3D/2D Controller | Microsoft DirectX® 9 based with support for Pixel Shader 2.0, 4:1 anisotropic filtering, Gaussian texture filtering, shadow maps, volumetric textures, double-sided stencil buffers, and 4 pixel pipes. |
| | VGA Controller | Integrated |
| | Bus Type | PCI Express™ x16 (If an external graphics card is installed in a PCI slot, the internal graphics can be enabled or disabled using the system's BIOS setup utility. If an external graphics card is installed in the PCI Express™ slot, the internal graphics cannot be enabled). |
| | RAMDAC | Integrated, 400 MHz |
| | Memory | Graphics memory is shared with system memory. Graphics memory usage varies depending on the amount of system memory installed and system load. 8 MB is pre-allocated for graphics use at system boot time. 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.<br><br>System memory equal or greater than 512 MB<br>8 MB pre-allocated + 248 MB DVMT = max frame buffer of 256 MB |
| | Controller Clock Speed | 400 MHz |
| | Overlay Planes | Single overlay support with 5x3 filtering |
| | Maximum Color Depth | 32 bits/pixel |
| | Maximum Vertical Refresh Rate | 85 Hz at up to 1920x1440, 85 Hz at 2048x1536. Varies with mode and configuration. See table below. |
| | Multi-display Support | Support for one CRT via the motherboard's VGA connector. Support for an additional DVI-D display via the optional DVI ADD2 card. Dual independent displays and dual synchronous (Twin or Clone mode) displays are supported. |
| | Operating Systems | Microsoft Windows XP and Windows 2000 |
| | Graphics/Video API Support | Microsoft DirectX®9, DirectXVA®, VMR9, GDI/GDI+; OpenGL® 1.4. |

Resolutions Supported[1]

| Resolution | Maximum Refresh Rate (Hz) | |
|---|---|---|
| | Analog Monitor | Digital Monitor |
| 640 x 480 | 85 | 60 |
| 800 x 600 | 85 | 60 |
| 1024 x 768 | 85 | 60 |
| 1280 x 1024 | 85 | 60 |
| 1600 x 1200 | 85 | 60 |
| 1920 x 1080 | 85 | 60 |
| 1920 x 1200 | 85 | 60 |
| 1920 x 1440 | 85 | 60 |
| 2048 x 1536 | 85 | 60 |

1 Modes listed are supported with a single active display. The supported mode list for multiple active displays is a subset of this list. Not all modes will support video playback and some supported modes may use software MC (motion compensation) rather than hardware MC. Not all modes will support 3D acceleration depending on the system configuration (e.g., resolution selected, size of frame buffer, number of installed memory modules, etc.).

NOTE: Other resolutions and refresh rates may be selectable but are not recommended.

*Technical Specifications - Graphics*

**DVI ADD2 Graphics**

| | |
|---|---|
| **Models** | DY674A Intel DVI ADD2 adapter |
| **Form Factor** | Low-profile card |
| **DVI-D Connector** | Compliant with DDWG (Digital Display Working Group) and VESA specifications for a single-link digital DVI (DVI-D) connector. |
| **Dual Head Support** | Yes, when used with the integrated VGA connector |
| **Display Devices Supported** | HP L1530<br>HP L1740<br>HP L1755<br>HP L1940<br>HP L1955<br>HP L2035<br>HP L2335 |

NOTE: The DVI ADD2 card offers optimal performance with any display that meets applicable VESA standards.

| | |
|---|---|
| **Color Depth** | All modes support 8-bpp, 16-bpp, and 24-bpp color depths (up to 16.7 million colors) |
| **Host Interface Connector** | Mechanically compliant with PCI-E standard<br>Complies with the Intel ADD2 and Intel Serial Digital Video Output (SDVO) specifications |
| **Dot Clock** | 165 MHz maximum |
| **Display Modes** | Supports display modes that require up to 165-MHz bandwidth on the link, as shown in the following table. |

| Resolution | | 60-Hz LCD | 60-Hz | 75-Hz | 85-Hz |
|---|---|---|---|---|---|
| Blanking | | 5% reduced | GTF | GTF | GTF |
| 640 x 480 | VGA | Yes | Yes | Yes | Yes |
| 800 x 600 | SVGA | Yes | Yes | Yes | Yes |
| 1024 x 768 | XGA | Yes | Yes | Yes | Yes |
| 1280 x 1024 | SXGA | Yes | Yes | No | No |
| 1600 x 1200 | UXGA | Yes | Yes | No | No |

**ATI Radeon X1300 (256MB SH) PCIe Graphics Card**

| | |
|---|---|
| **Bus Type** | PCI Express (x16 lanes) |
| **Maximum Vertical Refresh Rate** | 85 Hz |
| **Display Support** | Integrated 400 MHz RAMDAC |
| **Display Max Resolution** | 2048 x 1536 |
| **Board Display Options** | DVI-I + TV<br>DVI-I supports analog CRT or flat panel or digital flat panel (using DVI-A, DVI-D or DVI-I connector)<br>DVI-I supports analog CRT or flat panel (with VGA connector and DVI-I to VGA dongle)<br>TV connector is a 4-pin mini-DIN S-video connector |

**Board Configuration**
128 MB Frame Buffer

| Specification | Description |
|---|---|
| Graphics Chip | RV515 |
| Core clock | 450 MHz |
| Memory clock | 250 MHz |
| Frame buffer | 256 MB DDR2 |

| | | |
|---|---|---|
| | Languages supported | 24 languages: English, Arabic, Chinese Simplified, Chinese Traditional, Czechoslovakian, Danish, Dutch, Finnish, French, German, Greek, Hebrew, Hungarian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Russian, Spanish, Swedish, Thai, Turkish |
| | Operating Systems Support | Windows 2000, Windows XP |
| | Core Power | 25 W (Max board power) |
| | Option kit contents | • ATI RADEON X1300 PCIe graphics card with full height bracket attached<br>• Low profile bracket<br>• DVI-to-VGA Adapter<br>• Software CD with graphics drivers<br>• Warranty documentation |
| | Compliance standards | EMC Emissions:<br>a) FCC Part 15, Subpart B – Unintentional Radiators, Class B Computing Devices for Home & Office Use<br>b) CISPR22: 1997/EN 55022:1998 – Class B – Limits and methods of measurement of radio disturbance characteristics of Information Technology Equipment<br>c) Canadian Standard ICES-003 is equivalent to CISPR22<br>d) Taiwanese Standard BSMI<br>e) Japanese VCCI<br>f) Australian C-Tick<br><br>EMC Immunity:<br>CISPR 24:1997/EN 55024:1998 – Information Technology Equipment - Immunity Characteristics – Limits and Methods of Measurement.<br><br>Safety:<br>UL 60950 (USA) & EN 60950 (EU): Safety of Information Technology Equipment, Including Electrical Business Equipment. All boards meet UL PCB flammability requirements. |

| | | |
|---|---|---|
| ATI Radeon X1300 Pro (256MB DH) PCIe Graphics Card | Bus Type | PCI Express (x16 lanes) |
| | Maximum Vertical Refresh Rate | 85 Hz |
| | Display Support | Integrated 400 MHz RAMDAC |
| | Display Max Resolution | 2048 x 1536 |
| | Board Display Options | Supports 2 displays via included DMS-59 to dual VGA cable or 2 DVI monitors via optional DMS-59 to dual DVI monitor kit #DL139A.<br>Support TV connection via 7 pin mini Din S-video connector |
| | Board Configuration<br>128 MB Frame Buffer | Specification / Description<br>Graphics Chip: RV516<br>Core clock: 600 MHz<br>Memory clock: 400 MHz<br>Frame buffer: 256 MB DDR2 (128 bits wide) |
| | Languages supported | 24 languages: English, Arabic, Chinese Simplified, Chinese Traditional, Czechoslovakian, Danish, Dutch, Finnish, French, German, Greek, Hebrew, Hungarian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Russian, Spanish, Swedish, Thai, Turkish |

| | | |
|---|---|---|
| | Operating Systems Support | Windows 2000, Windows XP |
| | Core Power | 25 W (Max board power) |
| | Option kit contents | • ATI Radeon X1300 Pro (256MB DH) PCIe Graphics Card with full height bracket attached<br>• DMS-59 Dual VGA<br>NOTE: The Optional DMS-59 DVI cable can be ordered with HP Option Kit #DL139A<br>• Software CD with graphics drivers<br>• Low profile bracket to convert the card for using in a low profile chassis<br>• Warranty documentation |
| | Compliance standards | EMC Emissions:<br>a) FCC Part 15, Subpart B – Unintentional Radiators, Class B Computing Devices for Home & Office Use<br>b) CISPR22: 1997/EN 55022:1998 – Class B – Limits and methods of measurement of radio disturbance characteristics of Information Technology Equipment<br>c) Canadian Standard ICES-003 is equivalent to CISPR22<br>d) Taiwanese Standard BSMI<br>e) Japanese VCCI<br>f) Australian C-Tick<br>g) Korean (MIC)<br><br>EMC Immunity:<br>CISPR 24:1997/EN 55024:1998 – Information Technology Equipment – Immunity Characteristics – Limits and Methods of Measurement.<br><br>Safety:<br>UL 60950 (USA) & EN 60950 (EU): Safety of Information Technology Equipment, Including Electrical Business Equipment. All boards meet UL PCB flammability requirements. |

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| | | | |
|---|---|---|---|
| ATI RADEON X1600XT (256 MB DH) FH PCIe Graphics Card | Bus Type | PCI Express (x16 lanes) | |
| | Maximum Vertical Refresh Rate | 85 Hz | |
| | Display Support | Integrated 400 MHz RAMDAC | |
| | Display Max Resolution | 2560 x 1600 digital, 2048 x 1536 analog | |
| | Board Display Options | 2 DVI-I ports (one port supports dual link DVI). DVI-I supports an analog CRT or flat panel with a VGA connector via the provided DVI-I to VGA adapter | |
| | | 4-pin mini-DIN S-video connector for TV output | |
| | Board Configuration | Specification | Description |
| | | Graphics chip | RV530 |
| | | Core clock | 590 MHz |
| | | Memory clock | 690 MHz |
| | | Frame buffer | 256 MB GDDR3, 128 bit wide |
| | Operating Systems Support | Windows 2000, Windows XP | |

| | | |
|---|---|---|
| | Core Power | 56 W (Max board power) |

**NVIDIA Quadro NVS 280 64MB PCI Dual Head**

| | |
|---|---|
| Form Factor | Low profile (both ATX and low profile brackets included) |
| Graphic Controller | Integrated Quadro 280 2-D graphics processor unit (GPU) |
| Bus type | PCI |
| RAMDAC | Dual 350 MHz integrated |
| Memory | 64 MB DDR with frame buffer and Texture storage |
| Connector | Single High-density DMS-59 Connector |
| Dimensions | Low-profile, 2.586 x 6.6 in (6.57 x 16.76 cm) |
| Controller clock speed | 250 MHz |
| Color depth | 32-bits/pixel max |
| Overlay planes | One 16-bit Video overlay plane |
| Maximum vertical refresh rate | 85 Hz |
| Multi-monitor support | Dual analog or digital monitors |
| Dual DVI Support | Yes (with kit DL139A) |
| High-definition Video Processor (HDVP) | Full-screen, full-frame video playback of HDTV and DVD content<br>DVD-ready motion compensation for MPEG-2<br>Independent hardware color controls for video overlay<br>Hardware color-space conversion (YUV 4:2:2 and 4:2:0)<br>IDCT motion compensation |
| Available graphics drivers | Microsoft Windows 2000 and Microsoft Windows XP (Provides full native Dual View mode, Span or Big Desktop mode, and Clone mode) |

NOTE: HP qualified drivers may be preloaded or available from the HP support Web site: http://welcome.hp.com/country/us/eng/software_drivers.html.

| Analog Resolution | Maximum Colors Supported | Maximum Refresh Rate |
|---|---|---|
| 640 x 480 | 16.7 M | 240 Hz |
| 800 x 600 | 16.7 M | 240 Hz |
| 1024 x 768 | 16.7 M | 200 Hz |
| 1600 x 1200 | 16.7 M | 170 Hz |
| 1600 x 1200 | 16.7 M | 150 Hz |
| 1600 x 1200 | 16.7 M | 100 Hz |
| 1920 x 1200 | 16.7 M | 85 Hz |
| 1920 x 1200 | 16.7 M | 85 Hz |
| 1920 x 1440 | 16.7 M | 75 Hz |
| 2048 x 1536 | 16.7 M | 60 Hz |

| Digital Resolution | Maximum Colors Supported | Maximum Refresh Rate |
|---|---|---|
| 640 x 480 | 16.7 M | 75 Hz |
| 800 x 600 | 16.7 M | 75 Hz |
| 1024 x 768 | 16.7 M | 75 Hz |
| 1152 x 864 | 16.7 M | 60 Hz |
| 1280 x 1024 | 16.7 M | 60 Hz |
| 1600 x 1200 | 16.7 M | 60 Hz (primary only) |

*Technical Specifications - Graphics*

**NVIDIA Quadro NVS 285 (128MB DH) PCIe x16 Graphics Card**

| | |
|---|---|
| **Form Factor** | Low profile, both ATX and low profile brackets included |
| **Graphic Controller** | Integrated Quadro 285 2D graphics processor unit (GPU) |
| **Bus Type** | PCI-Express |
| **Memory** | 128 MB DDR (64 MB local frame buffer plus 64 MB of system memory via TurboCache) |
| **Connector** | DMS-59 to dual-DVI Y-cable or dual-VGA Y-cable |
| **Dimensions** | Low-profile, 2.586 x 6.6 in (6.57 x 16.76 cm) |
| **Multi-monitor Support** | Dual analog or digital monitors |
| **RAMDAC** | Dual 350 MHz (integrated) |
| **Maximum Pixel Clock** | 350 MHz |
| **Overlay Planes** | One 16-bit Video overlay plane |
| **High-definition Video Processor** (HDVP) | Full screen, full frame video playback of HDTV and DVD content<br>DVD-ready motion compensation for MPEG-2<br>Independent hardware color controls for video overlay<br>Hardware color-space conversion (YUV 4:2:2 and 4:2:0)<br>IDCT motion compensation<br>5-tap horizontal by 3-tap vertical filtering<br>8:1 up/down scaling |
| **Available Graphics Drivers** | Microsoft Windows 2000 and Microsoft Windows XP (Provides full native Dual View mode, Span or Big Desktop mode, and Clone mode)<br>HP qualified drivers may be preloaded or available from the HP support Web site:<br>http://www.hp.com/country/us/en/support.html?pageDisplay=drivers |

| Analog Resolution | Maximum Colors Supported | Maximum Refresh Rate |
|---|---|---|
| 640 x 480 | 16.7 M | 240 Hz |
| 800 x 600 | 16.7 M | 240 Hz |
| 1024 x 768 | 16.7 M | 240 Hz |
| 1152 x 864 | 16.7 M | 170 Hz |
| 1280 x 1024 | 16.7 M | 150 Hz |
| 1600 x 1200 | 16.7 M | 100 Hz |
| 1920 x 1080 | 16.7 M | 85 Hz |
| 1920 x 1200 | 16.7 M | 85 Hz |
| 1920 x 1440 | 16.7 M | 75 Hz |
| 2048 x 1536 | 16.7 M | 60 Hz |

| Digital Resolution | Maximum Colors Supported | Maximum Refresh Rate |
|---|---|---|
| 640 x 480 | 16.7 M | 75 Hz |
| 800 x 600 | 16.7 M | 75 Hz |
| 1024 x 768 | 16.7 M | 75 Hz |
| 1152 x 864 | 16.7 M | 60 Hz |
| 1280 x 1024 | 16.7 M | 60 Hz |
| 1600 x 1200 | 16.7 M | 60 Hz |
| 1900 x 1200 | 16.7 M | 60 Hz |

| | | | | |
|---|---|---|---|---|
| 7200 rpm Serial ATA Hard Drives | 250-GB | Capacity | 250,059,350,016 bytes | |
| | | Height | 1 in (2.54 cm) | |
| | | Width | Media diameter: 3.5 in (8.89 cm)<br>Physical size: 4 in (10.2 cm) | |
| | | Interface | Serial ATA (3.0 Gb/s) | |
| | | Synchronous Transfer Rate (Maximum) | Up to 3 Gb/s | |
| | | Buffer | 8 MB | |
| | | Seek Time (typical reads, includes controller overhead, including settling) | Single Track | 1.0 ms |
| | | | Average | 8.5 ms |
| | | | Full-Stroke | 18 ms |
| | | Rotational Speed | 7,200 rpm | |
| | | Logical Blocks | 488,397,168 | |
| | | Operating Temperature | 41° to 131° F (5° to 55° C) | |
| | 160-GB | Capacity | 163,928,604,672 bytes | |
| | | Height | 1 in (2.54 cm) | |
| | | Width | Media diameter: 3.5 in (8.89 cm)<br>Physical size: 4 in (10.2 cm) | |
| | | Interface | Serial ATA (3.0 Gb/s) | |
| | | Synchronous Transfer Rate (Maximum) | Up to 3 Gb/s | |
| | | Buffer | 8 MB | |
| | | Seek Time (typical reads, includes controller overhead, including settling) | Single Track | 0.9 ms |
| | | | Average | 9.3 ms |
| | | | Full-Stroke | 18 ms |
| | | Rotational Speed | 7,200 rpm | |
| | | Logical Blocks | 320,173,056 | |
| | | Operating Temperature | 41° to 131° F (5° to 55° C) | |

*Technical Specifications - Hard Drives*

| | | | |
|---|---|---|---|
| 80-GB | Capacity | 80,026,361,856 bytes | |
| | Height | 1 in (2.54 cm) | |
| | Width | Media diameter: 3.5 in (8.89 cm)<br>Physical size: 4 in (10.2 cm) | |
| | Interface | Serial ATA (3.0 Gb/s) | |
| | Synchronous Transfer Rate (Maximum) | Up to 3 Gb/s | |
| | Buffer | 8 MB | |
| | Seek Time (typical reads, includes controller overhead, including settling) | Single Track | 2.0 ms |
| | | Average | 9.3 ms |
| | | Full-Stroke | 21 ms |
| | Rotational Speed | 7,200 rpm | |
| | Logical Blocks | 156,301,488 | |
| | Operating Temperature | 41° to 131° F (5° to 55° C) | |

| | | | |
|---|---|---|---|
| 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 | Languages | 38 available |
| | | 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 | |
| | Ergonomic compliance | ANSI HFS 100, ISO 9241-4, and TUVGS | |
| | Kit contents | Keyboard, installation guide, warranty card, safety and comfort guide | |

*Technical Specifications - Input/Output Devices*

| | | | |
|---|---|---|---|
| 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 | Languages | 38 available |
| | | 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 | Microsoft Windows 2000 and Windows XP | |
| | 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 | |

| | | | |
|---|---|---|---|
| HP USB Smartcard Keyboard | Physical characteristics | Keys | 104, 105, 106, 107, 109 layout (depending upon country) |
| | | Form factor | USB basic Smart Card keyboard |
| | | Colors | Carbonite/Silver |
| | | Dimensions (H x W x D) | 18.2 x 6.3 x 1.3 in (46.3 x 16.1 x 3.3 cm) |
| | | Weight | 2 lb (0.9 kg) minimum |

| | | |
|---|---|---|
| Electrical | Operating voltage | + 5VDC ± 5% |
| | Power consumption | 100-mA maximum (with four 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 | Languages | 30+ available |
| | 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 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 |
| SMARTCARD function | 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 STCII |
| | Standard APIs supported | PC/SC, EMV2000, SET |
| | Power | USB Port<br>Short circuit detection (protects smart card and reader)<br>Power supply compliant with ISO7816 and EMV (5V, 60 mA)<br>Supports 3-V and 5-V cards |
| | Power consumption | 250-mA maximum draw (50 mA for the keyboard with three LEDs ON and 200-mA maximum startup current using a high-current, 60-mA smart card) |

| | | | |
|---|---|---|---|
| | | Communication | From card: Programmable from 9,600 baud to 115,200 baud<br>From computer: Up to 38,400 baud |
| | | Landing mechanism | Contact device: Friction contact<br>Card insertions rating: Up to 100,000 insertion cycles |
| | | Interface modes | USB communications through USB port<br>SCM protocol<br>Automatic card insertion/removal detection |
| | | Reader performance interface | USB connection |
| | | Electro-magnetic standards | Europe: 89/336/CEE guideline<br>USA: USAFCC part 15 |
| USB Standard BG1650 Keyboard (gray) | 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 | Languages | 38 available |
| | | 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 | |
| HP PS/2 Scroll Mouse | Dimensions | 3.8 x 6.3 x 11.6 cm (1.5 x 2.5 x 4.6 in) | |
| | Weight | 4.44 oz (126 g) | |
| | 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, 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) | 26 in (66 cm) on carpet, 6-drop sequence |
| | | Drop (out of box) | 1 m on asphalt tile over concrete, 6-drop sequence |
| | Electrical | Operating voltage | 5 VDC ± 10% |
| | | Power consumption | 15 mA |
| | | 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 | 65 g nominal peak force |
| | | Switch life | 1,000,000 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 | 0.99 in (25.2 mm) |
| | | Maximum rotation speed | 30 mm/s |
| | | Switch type | Light force micro-switch |
| | | Switch life | 1 million operations |
| | | Mechanical life | Minimum 200,000 revolutions |
| | Regulatory approvals | Compliant | UL, CSA, FCC, CE Mark, TUV, TUV GS, VCCI, BSMI, C-Tick, MIC |
| | Compatibility | Operating system support | Windows 2000 and Windows XP |
| HP PS/2 Optical Scroll Mouse | Dimensions (H x L x W) | 3.95 x 6.21 x 11.7 cm (1.56 x 2.44 x 4.61 in) | |
| | Weight | 4.44 oz (126 g) | |
| | 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) |
| | | Non-operating humidity | 10% to 90% non condensing |
| | | 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 |
| | Regulatory approvals | Compliant | UL, CSA, FCC, CE Mark, TUV, TUV GS, VCCI, BSMI, C-Tick, MIC |
| | Compatibility | Operating system support | Windows 2000 and Windows XP |
| HP USB Optical Scroll Mouse | 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 | Microsoft Windows 95, 98, 2000, Me, and XP<br>Available USB port | |

*Technical Specifications - Optical Storage*

| | | | |
|---|---|---|---|
| SATA DVD+/-RW LightScribe Drive | Height | 5.25-inch, half-height, tray-load | |
| | Orientation | Either horizontal or vertical | |
| | Interface type | SATA/ATAPI | |
| | Disc capacity | 8.5 GB DL or 4.7 GB standard | |
| | Dimensions (W x H x D) | 5.9 x 1.7 x 8.0 in (15.0 x 4.4 x 20.3 cm) | |
| | Weight (max) | 2.6 lb (1.2 kg) | |
| | Write speeds | DVD+R | Up to 16X |
| | | DVD+RW | Up to 8X |
| | | DVD+R DL | Up to 8X |
| | | DVD-R DL | Up to 4X |
| | | DVD-R | Up to 16X |
| | | DVD-RW | Up to 6X |
| | | CD-R | Up to 48X |
| | | CD-RW | Up to 32X |
| | Read speeds | DVD-RAM | Up to 4X |
| | | DVD+RW, DVD-RW, DVD+R DL, DVD-R DL | Up to 8X |
| | | DVD-ROM, DVD+R, DVD-R | Up to 16X |
| | | CD-ROM, CD-R | Up to 48X |
| | | CD-RW | Up to 32X |
| | Access time (typical reads, including settling) | Random | DVD: < 130 ms (typical), CD: < 120 ms (typical) |
| | | Full Stroke | DVD: < 240 ms (seek), CD: < 200 ms (seek) |
| | Power | Source | SATA DC power receptacle |
| | | DC Power Requirement | 5 VDC ± 5%-100 mV ripple p-p |
| | | | 12 VDC ± 5%-200 mV ripple p-p |
| | | DC Current | 5 VDC (< 1000 mA typical, 1600 mA maximum) |
| | | | 12 VDC (< 600 mA typical, 1400 mA maximum) |
| | Environmental conditions (operating – non-condensing) | Temperature | 41° to 122° F (5° to 50° C) |
| | | Relative Humidity | 10% to 90% |
| | | Maximum Wet Bulb Temperature | 86° F (30° C) |
| | Operating systems support | Microsoft Windows 2000, Windows XP Professional, Windows XP Home | |

| | | |
|---|---|---|
| SATA DVD-ROM Drive | Height | 5.25-inch, half-height, tray-load |
| | Orientation | Either horizontal or vertical |
| | Interface type | SATA/ATAPI |
| | Disc capacity | Single layer: Up to 4.7 GB (6 times capacity of CD-ROM)<br>Double layer: Up to 8.5 GB (12 times capacity of CD-ROM) |
| | Dimensions (W x H x D) | 5.9 x 1.7 x 8.0 in (15.0 x 4.4 x 20.3 cm) |

*Technical Specifications - Optical Storage*

| | | | |
|---|---|---|---|
| **Weight** (max) | 2.6 lb (1.2 kg) | | |
| **Read speeds** | DVD+R/-R/+RW/ -RW/+R DL /-R DL | Up to 8X | |
| | DVD-ROM | Up to 16X | |
| | DVD-RAM | Up to 4X | |
| | CD-ROM, CD-R | Up to 48X | |
| | CD-RW | Up to 32X | |
| **Removable Storage – Media Compatibility – DVD-ROM** | **Media** | **Read** | **Write** |
| | CD-ROM | Yes | No |
| | CD-R | Yes | No |
| | CD-RW | Yes | No |
| | DVD-ROM | Yes | No |
| | DVD-ROM DL | Yes | No |
| | DVD-RAM | Yes | No |
| | DVD+R | Yes | No |
| | DVD+R DL | Yes | No |
| | DVD+RW | Yes | No |
| | DVD-R | Yes | No |
| | DVD-RW | Yes | No |
| | DVD-R DL | Yes | No |
| **Access times** (typical reads, including setting) | **Random** | DVD: < 140 ms (typical), CD: < 125 ms (typical) | |
| | **Full Stroke** | DVD: < 250 ms (seek), CD: < 210 ms (seek) | |
| | **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) | |
| **Power** | **Source** | SATA DC power receptacle | |
| | **DC Power Requirement** | 5 VDC ± 5%-100 mV ripple p-p<br>12 VDC ± 5%-200 mV ripple p-p | |
| | **DC Current** | 5 VDC – <1000 mA typical, < 1600 mA maximum<br>12 VDC –< 600 mA typical, < 1400 mA maximum | |
| **Environmental** (all conditions non-condensing) | **Temperature** | 41° to 122° F (5° to 50° C) | |
| | **Relative Humidity** | 10% to 90% | |
| | **Maximum Wet Bulb Temperature** | 86° F (30° C) | |
| **Operating systems support** | Microsoft Windows 2000, Windows XP Professional, Windows XP Home | | |

*Technical Specifications - Optical Storage*

| | | | |
|---|---|---|---|
| SATA CD-RW/DVD-ROM Combo Drive | Height | 5.25-inch, half-height, tray-load | |
| | Orientation | Either horizontal or vertical | |
| | Interface type | SATA/ATAPI | |
| | Disc capacity | Single layer: Up to 4.7 GB (6 times capacity of CD-ROM)<br>Double layer: Up to 8.5 GB (12 times capacity of CD-ROM) | |
| | Dimensions (W x H x D) | 5.9 x 1.7 x 8.0 in (15.0 x 4.4 x 20.3 cm) | |
| | Weight (max) | 2.6 lb (1.2 kg) | |
| | Write speeds | CD-R | Up to 48X |
| | | CD-RW | Up to 32X |
| | Read speeds | DVD+R/-R/+RW/ -RW/+R DL /-R DL | Up to 8X |
| | | DVD-ROM | Up to 16X |
| | | CD-ROM, CD-R | Up to 48X |
| | | CD-RW | Up to 32X |
| | Access time (typical reads, including settling) | Random | DVD: < 140 ms (typical), CD: < 125 ms (typical) |
| | | Full Stroke | DVD: < 250 ms (typical), CD: < 210 ms (typical) |
| | Power | Source | SATA DC power receptacle |
| | | DC Power Requirement | 5 VDC ± 5%-100 mV ripple p-p |
| | | | 12 VDC ± 5%-200 mV ripple p-p |
| | | DC Current | 5 VDC (< 1000 mA typical, < 1600 mA maximum) |
| | | | 12 VDC (< 600 mA typical, < 1400 mA maximum) |
| | Environmental (all conditions non-condensing) | Temperature | 41° to 122° F (5° to 50° C) |
| | | Relative Humidity | 10% to 90% |
| | | Maximum Wet Bulb Temperature | 86° F (30° C) |
| | Operating systems support | Microsoft Windows 2000, Windows XP Professional, Windows XP Home | |

*Technical Specifications - Optical Storage*

| | | | |
|---|---|---|---|
| CD-ROM Drive | Interface | SATA | |
| | Data Transfer Rate | Variable (Audio CD) – 1,800 to 3,600 KB/s (24X) Max | Variable (CD-ROM, CD-R)– 2,400 to 7,200 KB/s (48X) Max |
| | Access Time (ms) | Random: <125 ms | Full-stroke seek: <210 ms |
| | Data Buffer | 2MB | |
| | Disk Formats Read | CD-ROM Mode 1, CD-ROM XA (Mode 2, Form 1 and 2), CD Digital Audio, CD-EXTRA, CD-I (Mode 2, Form 1 and 2) and CD-I Ready, CD-Text, CD-Bridge, Photo CD (Single and Multi Session), Video CD, CD-R and CD-RW Multi-Session | |
| | Disk Formats Written | None | |
| | Disk Capacity (CD) | 180 MB, 54 0MB, 650 MB, and 700 MB | |
| | Block Size | Mode 1–2,048, 2,352 bytes<br>Mode 2–1, 2,048, 2,328, 2,336, 2,340, 2,353 bytes<br>Mode 2–2, 2,328, 2,336, 2,340, 2,352 bytes<br>CD-DA–2,352, 2,368 bytes | |
| | Diameter | 12 cm; 8 cm | |
| | Thickness | 1.2 mm | |
| | Track Pitch | 1.6 $\mu$m | |
| | Audio Output Level | Line-out-0.7 V @ 47 Kohm | |
| | Startup Time | <7 seconds (typical); < 30 seconds with multi-session | |
| | Operating Conditions | Temperature | 41° to 122° F (5° to 50° C) |
| | | Relative Humidity | 10% to 90% |
| | Dimensions (H x W x D, maximum) | 1.7 x 5.9 x 8.0 in (4.3 x 15.0 x 20.3 cm) | |
| | Weight | 2.6 lb (1200 g) | |
| | Operating Systems Supported | Microsoft Windows 2000, Windows XP Professional, Windows XP Home | |

| | | | |
|---|---|---|---|
| PATA DVD+/-RW LightScribe Slim Drive | Height | 5.25-inch, half-height, tray-load | |
| | Orientation | Either horizontal or vertical | |
| | Interface type | ATAPI/EIDE | |
| | 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) | |
| | Write speeds | DVD+R | Up to 8X |
| | | DVD+RW | Up to 8X |
| | | 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 |

*Technical Specifications - Optical Storage*

| | | |
|---|---|---|
| Read speeds | DVD+RW, DVD-RW, DVD-ROM, DVD+R, DVD-R | Up to 8X |
| | DVD-R DL | Up to 4X |
| | CD-ROM, CD-R | Up to 24X |
| | CD-RW | Up to 24X |
| Access time (typical reads, including settling) | Random | DVD: < 140 ms (typical), CD: < 125 ms (typical) |
| | Full Stroke | DVD: < 250 ms (seek), CD: < 210 ms (seek) |
| | Stop Time | < 4 seconds |
| | 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) |
| Power | Source | Four-pin, DC power receptacle |
| | DC Power Requirement | 5 VDC ± 5%-100 mV ripple p-p |
| | | 12 VDC ± 5%-200 mV ripple p-p |
| | 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 |
| Audio output | Line-Out | 0.7 VRMS |
| | Signal-to-Noise Ratio | 74 dB |
| | Channel Separation | 65 dB |
| Environmental conditions (operating – non-condensing) | Temperature | 41° to 122° F (5° to 50° C) |
| | Relative Humidity | 10% to 90% |
| | Maximum Wet Bulb Temperature | 86° F (30° C) |
| Operating systems support | Microsoft Windows 2000, Windows XP Professional, Windows XP Home | |

*Technical Specifications - Optical Storage*

| | | | |
|---|---|---|---|
| PATA CD-RW/DVD-ROM Combo Slim Drive | Height | 12.7mm height slim CD-RW | |
| | Orientation | Either horizontal or vertical | |
| | Interface type | PATA/ATAPI | |
| | Disc capacity | Single layer: Up to 4.7 GB (6 times capacity of CD-ROM) | |
| | 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) | |
| | Write speeds | CD-R | Up to 24X |
| | | CD-RW | Up to 24X |
| | Read speeds | DVD+R/-R/+RW/ -RW/+R DL /-R DL | Up to 4X |
| | | DVD-ROM | Up to 8X |
| | | CD-ROM, CD-R | Up to 24X |
| | | CD-RW | Up to 24X |
| | Access time (typical reads, including settling) | Random DVD | DVD: < 140 ms (typical), CD: < 125 ms (typical) |
| | | Random CD | DVD: < 250 ms (typical), CD: < 210 ms (typical) |
| | | Cache Buffer | 2 MB (minimum) |
| | | Data Transfer Modes | ATA PIO mode 4); ATA Multi-word DMA mode 2; ATA UltraDMA mode 0; ATA UltraDMA mode 1, mode 2; ATA UltraDMA Mode 3 (default) |
| | Power | Source | Four-pin, DC power receptacle |
| | | DC Power Requirement | 5 VDC ± 5%-100 mV ripple p-p |
| | | DC Current | 5 VDC (< 1000 mA typical, < 1600 mA maximum) |
| | | Total Drive Power (standby mode) | < 2.5 Watt |
| | Audio output level | 0.7 Vrms (typical) | |
| | Environmental (all conditions non-condensing) | Temperature | 41° to 122° F (5° to 50° C) |
| | | Relative Humidity | 5% to 85% |
| | | Maximum Wet Bulb Temperature (operating) | 86° F (30° C) |
| | Operating systems support | Microsoft Windows 2000, Windows XP Professional, Windows XP Home | |

*Technical Specifications - Optical Storage*

| | | | |
|---|---|---|---|
| PATA DVD-ROM Slim Drive | Height | 12.7mm | |
| | Orientation | Either horizontal or vertical | |
| | Interface type | PATA/ATAPI | |
| | 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) | |
| | Read speeds | DVD+R/-R/+RW/ -RW/+R DL /-R DL | Up to 4X |
| | | DVD-ROM | Up to 8X |
| | | CD-ROM, CD-R | Up to 24X |
| | | CD-RW | Up to 24X |
| | Access time (typical reads, including settling) | Random DVD | DVD: < 140 ms (typical), CD: < 125 ms (typical) |
| | | Random CD | 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) |
| | Power | Source | Four-pin, DC power receptacle |
| | | DC Power Requirement | 5 VDC ± 5%-100 mV ripple p-p |
| | | DC Current | 5 VDC - <1000 mA typical, < 1600 mA maximum |
| | | Total Drive Power (standby mode) | < 2.5 Watt |
| | Audio output | Line-Out | 0.7 VRMS |
| | | Signal-to-Noise Ratio | 74 dB |
| | | Channel Separation | 65 dB |
| | Environmental (all conditions non-condensing) | Temperature | 41° to 122° F (5° to 50° C) |
| | | Relative Humidity | 5% to 85% |
| | | Maximum Wet Bulb Temperature (operating) | 86° F (30° C) |
| | Operating systems support | Microsoft Windows 2000, Windows XP Professional, Windows XP Home | |

| | | | |
|---|---|---|---|
| HP 16-in-1 Media Card Reader | USB Interface | USB 2.0 High-speed device | |
| | Advance protocol support | Supports hardware ECC (Error Correction Code) function<br>• Supports hardware CRC (Cyclic Redundancy Check) function<br>• Supports MS 4-bit parallel transfer mode<br>• Supports MS-PRO 4-bit parallel transfer mode<br>• Supports SD 4-bit parallel transfer mode<br>• Supports high-speed 50-MHz SD 4-bit card (version 1.1)<br>• Support high-speed 52-MHz MMC 8-bit card | |
| | Supported media type with card adapter | • MicroSD (T-Flash)<br>• Memory Stick Micro | |
| | Mechanical | | |
| | Environmental | Operational Environmental Extremes | Test Parameters/Conditions – Power applied, unit operating on system ±5% nominal supply voltage.<br>10°C 10% R.H. = 24 hours<br>10°C 90% R.H. = 24 hours<br>20°C 90% R.H. = 24 hours<br>30°C 90% R.H. = 24 hours<br>40°C 90% R.H. = 24 hours<br>50°C 90% R.H. = 24 hours<br>50°C 10% R.H. = 24 hours |
| | | Storage Environmental Extremes | Test Parameters/Conditions<br>60°C @ 80% R.H. for 96 hours<br>-30°C @ 20% R.H. for 48 hours<br>No power applied<br>Delta °C < 1.0°C/min<br>Delta % R.H. < 1.5% R.H./min |
| | Operating system support | Microsoft Windows 2000 (Service Pack 3 or greater), Windows XP Home, Windows XP Professional | |
| | Approvals | USB-IF, WHQL, Compliant with USB Mass Storage Class Bulk only Transport Specification Rev. 1.0, Compliant Intel Front Panel I/O Connectivity Design Guide V. 1.2<br>FCC, CE, BSMI, C-Tick, VCCI, MIC, cUL, TUV-T | |

**Eco-Label Certifications and declarations**

This product has received or is in the process of being certified to the following approvals and may be labeled with one or more of these marks:

- US Energy Star
- US Federal Energy Management Program (FEMP)
- Taiwan Green Mark
- China Energy Conservation Program
- IT ECO declaration
- EPEAT Rated – SILVER
- Korea Eco-label
- EPEAT
- Japan PC Green label*

*NOTE: This product conforms to the examination standards (2003 version) under JEITA's 'PC Green Label System.'

## *Ultra-slim Desktop*

**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 | 105.3 W | 103.0 W | 106.8 W |
| Sleep (Energy Star low power mode) | 2.74 W | 3.00 W | 2.76 W |
| Off | 1.58 W | 1.85 W | 1.57 W |

| Heat Dissipation* | 115 VAC | 230 VAC | 100 VAC |
|---|---|---|---|
| Normal Operation | 359.3 BTU/hr | 351.4 BTU/hr | 364.4 BTU/hr |
| Sleep | 9.3 BTU/hr | 10.2 BTU/hr | 9.4 BTU/hr |
| Off | 5.4 BTU/hr | 6.3 BTU/hr | 5.4 BTU/hr |

*NOTE: Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.

This product is in compliance with US executive order 13221, WOL (wake on LAN) disabled.

**Declared Noise Emissions** (in accordance with ISO 7779 and ISO 9296)

| System Fan Off | Sound Power (LWAd, bels) | Sound Pressure (LpAm, decibels) |
|---|---|---|
| Idle | 3.9 | 29 |
| Fixed Disk (random writes) | 3.9 | 30 |
| Optical Drive (sequential reads) | 4.9 | 40 |

*Technical Specifications - Environmental Data*

**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 full-height slot (w/ optional PCI riser card), or
  1 empty PCIe low-profile x16 slot (w/optional PCIe riser card)
- 1 internal drive slot
- 1 Slimline optical drive slot
- 3 memory slots
- 1 Serial/Parallel adapter (optional)

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

**Batteries**

This product complies with ISO standards:

- EU Directive 91/ 157/ EEC
- EU Directive 93/ 86/ EEC
- EU Directive 98/ 101/ EEC

Batteries used in the product do not contain:

- Mercury greater the 5ppm by weight
- Cadmium greater than 10ppm by weight
- Lead greater than 4000ppm 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 product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986).
- 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 the IEEE 1680 (EPEAT) standard at the Silver level (see http://www.epeat.net)
- Plastics parts weighing over 25 grams used in the product are marked per ISO 11469 and ISO1043.
- This product contains 0% recycled materials (by wt.)
- This product is 92% recyclable when properly disposed of at end of life.

**Packaging Materials**

| | |
|---|---|
| Corrugated Paper | 1100 g |
| EPE Foam | 200 g |
| LDPE Bag | 23 g |

- The EPE foam packaging material is made from 30 to 60% recycled content.
- The corrugated paper packaging materials contains at least 80% recycled content.

*Small Form Factor*

*Technical Specifications - Environmental Data*

**System Configuration** The configuration used for the Energy Consumption and Declared Noise Emissions data for the Small Form Factor Desktop model is based on a typically configured product.

**Energy Consumption**

| | 115 VAC | 230 VAC | 100 VAC |
|---|---|---|---|
| Normal Operation | 99.0 W | 94.0 W | 99.5 W |
| Sleep (Energy Star low power mode) | 2.64 W | 2.87 W | 2.62 W |
| Off | 1.68 W | 1.87 W | 1.67 W |

| Heat Dissipation* | 115 VAC | 230 VAC | 100 VAC |
|---|---|---|---|
| Normal Operation | 337.8 BTU/hr | 320.7 BTU/hr | 339.5 BTU/hr |
| Sleep | 9.0 BTU/hr | 9.8 BTU/hr | 8.9 BTU/hr |
| Off | 5.7 BTU/hr | 6.4 BTU/hr | 5.7 BTU/hr |

*NOTE: Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.

This product is in compliance with US executive order 13221, WOL (wake on LAN) disabled.

**Declared Noise Emissions** (in accordance with ISO 7779 and ISO 9296)

| System Fan Off | Sound Power (LWAd, bels) | Sound Pressure (LpAm, decibels) |
|---|---|---|
| Idle | 4.0 | 29 |
| Fixed Disk (random writes) | 4.0 | 29 |
| Optical Drive (sequential reads) | 5.1 | 41 |

**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
- 2 empty PCI slots (2 low profile or 2 full-height with optional riser)
- 1 empty PCIe x1 slot
- 1 empty PCIe x16 slot
- 1 internal drive bay
- 1 SATA optical drive bay
- 1 3.5-inch external drive bay
- 4 memory slots
- 1 second Serial port (optional)

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

*Technical Specifications - Environmental Data*

**Batteries**

This product complies with ISO standards:

- EU Directive 91/ 157/ EEC
- EU Directive 93/ 86/ EEC
- EU Directive 98/ 101/ EEC

Batteries used in the product do not contain:

- Mercury greater the 5ppm by weight
- Cadmium greater than 10ppm by weight
- Lead greater than 4000ppm 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 product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986).
- 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 the IEEE 1680 (EPEAT) standard at the Silver level (see http://www.epeat.net)
- Plastics parts weighing over 25 grams used in the product are marked per ISO 11469 and ISO1043.
- This product contains 0% recycled materials (by wt.)
- This product is 91% recyclable when properly disposed of at end of life.

**Packaging Materials**

| | |
|---|---|
| Corrugated Paper | 1600 g |
| EPE Foam | 20 g |
| LDPE Bag | 52 g |

- The EPE foam packaging material is made from 30 to 60% recycled content.
- The corrugated paper packaging materials contains at least 80% recycled content.

## *Convertible Minitower*

**System Configuration**

| | |
|---|---|
| **Processor** | Intel Pentium D 945 Processor (3.4-GHz, 2x2MB L2 cache, 800-MHz FSB) |
| **Memory** | 1-GB DDR2 Synch Dram PC2-5300 (667-MHz) |
| **Hard Drive** | 80-GB SATA 3.0-Gb/s (7200 rpm) |
| **Optical Drive** | SATA DVD-ROM Drive |
| **Communications** | Integrated Intel 82566DM Gigabit Network Connection, Agere 2006 PCI 56K International SoftModem |

*Technical Specifications - Environmental Data*

**Energy Consumption**

| | 115 VAC | 230 VAC | 100 VAC |
|---|---|---|---|
| Normal Operation | 87.2 W | 87.2 W | 91.7 W |
| Sleep (Energy Star low power mode) | 2.38 W | 2.88 W | 2.34 W |
| Off | 1.01 W | 1.45 W | 0.98 W |

| Heat Dissipation* | 115 VAC | 230 VAC | 100 VAC |
|---|---|---|---|
| Normal Operation | 337.8 BTU/hr | 320.7 BTU/hr | 339.5 BTU/hr |
| Sleep | 9.0 BTU/hr | 9.8 BTU/hr | 8.9 BTU/hr |
| Off | 5.7 BTU/hr | 6.4 BTU/hr | 5.7 BTU/hr |

*NOTE: Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.

This product is in compliance with US executive order 13221, WOL (wake on LAN) disabled.

**Declared Noise Emissions** (in accordance with ISO 7779 and ISO 9296)

| System Fan Off | Sound Power (LWAd, bels) | Sound Pressure (LpAm, decibels) |
|---|---|---|
| Idle | 4.0 | 23 |
| Fixed Disk (random writes) | 4.1 | 24 |
| Optical Drive (sequential reads) | 4.9 | 32 |

**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
- 4 empty full-height PCI slots (2 standard, 2 optional)
- 1 empty full-height PCIe x1 slot
- 1 empty full-height PCIe x16 slot
- 2 internal 3.5-inch drive bays
- 3 external 5.25-inch SATA drive bays
- 1 external 3.5-inch drive bay
- 4 memory slots
- 1 second Serial port (optional)

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

*Technical Specifications - Environmental Data*

**Batteries**

This product complies with ISO standards:

- EU Directive 91/ 157/ EEC
- EU Directive 93/ 86/ EEC
- EU Directive 98/ 101/ EEC

Batteries used in the product do not contain:

- Mercury greater the 5ppm by weight
- Cadmium greater than 10ppm by weight
- Lead greater than 4000ppm 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 product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986).
- 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 the IEEE 1680 (EPEAT) standard at the Silver level (see http://www.epeat.net)
- Plastics parts weighing over 25 grams used in the product are marked per ISO 11469 and ISO1043.
- This product contains 0% recycled materials (by wt.)
- This product is 97% recyclable when properly disposed of at end of life.

**Packaging Materials**

| | |
|---|---|
| Corrugated Paper | 1642 g |
| EPE Foam | 399 g |
| LDPE Bag | 63 g |

- The EPE foam packaging material is made from 30 to 60% recycled content.
- The corrugated paper packaging materials contains at least 80% recycled content.

## *Ultra-slim Desktop, Small Form Factor, Convertible Minitower*

**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. From 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).

*Technical Specifications - Environmental Data*

**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
- 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/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.

*Technical Specifications - Environmental Data*

| | |
|---|---|
| Hewlett-Packard Corporate Environmental Information | For more information about HP's commitment to the environment:<br>[link to new HP white paper now in progress]<br>Global Citizenship Report<br>http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html<br>Eco-label certifications<br>http://www.hp.com/hpinfo/globalcitizenship/environment/productdesign/ecolabels.html<br>ISO 14001 certificates:<br>http://www.hp.com/hpinfo/globalcitizenship/environment/operations/envmanagement.html |