

Technical Datasheet

HP VECTRA CORPORATE PCs — WHAT A CORPORATE PC SHOULD BE

Setting up a new distribution center in Chicago? Need to add 400 users in Amsterdam, tomorrow? Rolling out a new application in Sydney? Hewlett-Packard has crafted its HP Vectra PC line to help you get your urgent IT projects done on time and on budget. HP Vectra PCs, PC deployment, management, and support is cheaper and faster than ever before. In fact, HP Vectra PCs are the only corporate PCs with an industry-leading software image program that allows you to keep your software image consistent for the life of the product.

... Reliability for Peace of Mind

Reliability is the corner stone of HP Vectra PCs' success since their launch nearly ten years ago. HP's stringent quality standards throughout the design process, manufacturing and delivery, mean that you get a reliable experience out-of-the-box and throughout the life of the product.

... Software Image Management

With HP Vectra PCs, we do justice to the importance of the applications and software image you have selected to keep your different user groups doing their jobs. And we've developed an absolutely unbeatable offering to allow you to maintain that image longer, *and* to deploy it easily on new generations of HP Vectra PCs.

... Serviceable and Supportable

HP Vectra PCs are repeatedly singled out by top industry publications around the world for their unbeatable supportability.

- The easy-open, tool-free chassis needs only one free hand to access.
- And HP TopTools remote monitoring, diagnostics and software update features allow your help desk team to work without leaving their desks.

... Remote Management to End Deskside Visits

With HP TopTools, you can inventory, manage and troubleshoot almost every aspect of the PC from a central console. With HP Vectra PCs and HP TopTools you can:

- Automatically access, search and report PC inventory and asset information.
- Centrally perform routine and repetitive tasks such as upgrading BIOS and drivers.
- Proactively gather information about the performance and health status of your HP Vectra PCs and their components.

THE NEW HP VECTRA VL400

Flexible and cost-effective.

If you are looking for a corporate PC guaranteed to fit your budget, look no further than the new HP Vectra VL400. With the image stability, serviceability and remote management that made HP Vectra famous, the new VL400 series has a broad range of configurations from Celeron™ to Pentium® III. And the HP Vectra VL400 is the only corporate PC platform to come in *three* different form factors—Desktop, Minitower, and Small Form Factor—allowing you to qualify only one PC, but deploy the form factor that best suits user needs.



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AT A GLANCE

New Technology Highlights

- Choice of processing power in the same socket:
 - Intel® *Pentium® III* 667 MHz, 733 MHz, 800MHz, or 866 MHz processor with 256 KB Level-2 integrated cache and 133 MHz front side bus.
 - Intel Celeron™ 566 MHz, or 633 MHz processor with Level-2 integrated cache and 66 MHz front side bus.
- 64, 128 or 256 MB SDRAM memory at 133 MHz, expandable to 512 MB maximum.
- Choice of 10 GB (5400 rpm), 15 GB or 30GB (7200rpm) Ultra ATA/66 SMART II hard disk storage, or Ultra Wide SCSI SMART II 9.1 GB (7200rpm) hard disk drive.
- Choice of two graphics solutions for outstanding 2D and 3D performance and visual quality:
 - *NEW* Matrox Millennium G450 AGP 4X graphics card with 16 MB video memory and Dual Head Display, or
 - Intel 815 integrated graphics Direct AGP with 8 MB reserved from main memory.
- Wide range of optical storage devices:
 - Choice of 48X Max-speed CD-ROM drive or 8X Max-speed DVD-ROM or 4X Max-speed CD-Writer Plus drive in Desktop and Minitower models.
 - Choice of 24X Max-speed slim CD-ROM or 8X Max-speed slim DVD-ROM in Small Form Factor models.
- 16-bit stereo full duplex integrated sound with internal speaker option.
- Choice of operating systems:
 - Windows® 95.
 - Windows® 98 Second Edition.
 - Windows NT® 4.0 Workstation.
 - Windows® 2000 Professional.
- Linux Enabled
 - Certified by Linuxcare (TurboLinux, Redhat, Suse, Caldera).
- Choice of three different packages:
 - Desktop (DT).
 - Minitower (MT).
 - Small Form Factor (SFF).

Advanced Manageability

- Ease of management with the *new* HP TopTools 5.0 and the *new* HP eDiagTools 3.0 diagnostics software.
- 3Com Fast EtherLink 10/100 Base TX integrated LAN solution (equivalent to 3C905C-TX).
- Ease of Deployment with HP PC Image Engineer which includes Image Creation and Recovery CD, Image Library & Diagnostics CD, Image Transition CD.

PC SYSTEM FEATURES

Package	<ul style="list-style-type: none"> Choice of three packages using the same system board, same BIOS, same software image and same main components: <ul style="list-style-type: none"> — Small Form Factor (3 Shelves, 3 slots). — Desktop (5 Shelves, 4 Slots). — Minitower (6 Shelves, 4 Slots). Easy access for quick upgrade or service: Instant opening, screw-less I/O release, easy extract of drive trays.
Processor and Chipset	<ul style="list-style-type: none"> Choice of processors: <ul style="list-style-type: none"> — Intel® Pentium® III 667 MHz, 733 MHz, 800EB MHz, or 866 MHz processor with 133 MHz bus speed. — Intel Celeron™ 566, 633 MHz processor with 66 MHz bus speed. Intel 815 chipset with 66, 100 or 133 MHz system bus, includes Advanced Configuration and Power Management (ACPI).
Cache	<ul style="list-style-type: none"> Intel Pentium III processor models: <ul style="list-style-type: none"> — 32 KB Level-1 internal to processor. — 256 KB Level-2 internal to processor. Intel Celeron processor models: <ul style="list-style-type: none"> — 32 KB Level-1 internal to processor. — 256 KB Level-2 internal to processor.
Memory	<ul style="list-style-type: none"> 64, 128 or 256 MB 133 MHz Synchronous DRAM (non-ECC) standard (PC 133 specification) <ul style="list-style-type: none"> — Expandable to 512 MB through two DIMM sockets. — Auto-detection of memory modules via serial presence detect (SPD).
Hard disk drive	<p>Choice of hard disk drive technologies:</p> <ul style="list-style-type: none"> 10.0 GB (5400 rpm), 15.0 GB (7200 rpm) or 30.0 GB (7200 rpm) Ultra ATA/66 hard disk drive: <ul style="list-style-type: none"> — SMART II (self-monitoring analysis and reporting technology). — 66MB/s transfer rate. 9.1 GB (7200rpm) Ultra Wide SCSI SMART II hard disk drive (SCSI interface card required).
Hard disk controller	<ul style="list-style-type: none"> PCI Bus Master Ultra ATA controller: <ul style="list-style-type: none"> — Support for Ultra ATA/66, PIO (up to Mode 4), DMA Mode 2, and Ultra DMA Mode 2. — Up to four Fast-IDE devices supported on Desktop and Minitower models, including two hard disk drives and two ATAPI devices (CD-ROM drive, DVD-ROM drive or CD-RW drive or any ATAPI device). For Small Form Factor package support of one hard disk drive and one slim ATAPI device.
Floppy disk drive	<ul style="list-style-type: none"> Third-height, 3.5-inch, 1.44MB floppy disk drive preinstalled.
Optical storage	<ul style="list-style-type: none"> Choice of CD-ROM, DVD-ROM and CD-RW solutions: <ul style="list-style-type: none"> — HP 48X Max-speed IDE CD-ROM drive for Desktop and Minitower models, or HP 24X Max-speed Slim IDE CD-ROM drive for Small Form Factor models. — HP 8X Max-speed IDE DVD-ROM drive or HP 8X Max-speed Slim IDE DVD-ROM for Small Form Factor models (MPEG2 decoding software from Mediamatics included). — HP 4X Max-speed IDE CD-Writer Plus drive for Desktop and Minitower models (Adaptec Easy CD Creator and Direct CD software included).

PC SYSTEM FEATURES

Mass storage shelves	<ul style="list-style-type: none"> • Small Form Factor—Three shelves, Desktop—Five shelves, Minitower—Six shelves: <ul style="list-style-type: none"> — One front-accessible shelf for standard, third-height, 3.5-inch floppy disk drive preinstalled. — Front-accessible shelves for standard, half-height, 5.25-inch devices (CD-ROM drive preinstalled in one shelf on selected models): two on Desktop models or three on Minitower models. — One front-accessible shelf for slim height device on Small Form Factor (CD-ROM drive preinstalled). — Two internal for standard, third-height, 3.5-inch hard disk drive (one preinstalled) on Desktop and Minitower models. Only one for Small Form Factor models.
Total expansion slots	<ul style="list-style-type: none"> • Four slots on Desktop and Minitower models: <ul style="list-style-type: none"> — Three free PCI slots. — One AGP, can be used when a graphics card is installed. • Three free PCI slots on Small Form Factor models. <p><i>NOTE:</i> an optional two-ISA slot extension board can be added on Desktop and Minitower models giving a total of six slots. The three PCI slots on Small Form Factor models can be replaced by a “one PCI, one combo” (ISA or PCI) solution.</p>
Audio subsystem	<ul style="list-style-type: none"> • 20-bit stereo audio recording and playback. • Full-duplex audio. • AC '97 architecture. • Headset included with optical drive models. • Audio drivers, including Windows® 2000 Professional, Windows NT® 4.0 Workstation, Windows® 98 Second Edition, Windows® 95, are available from the HP Desktop PC Support Web site at: http://www.hp.com/go/vec-trasupport
Built-in I/O	<ul style="list-style-type: none"> • One 25-pin parallel port (ECP/EPP bi-directional Centronics supporting IEEE 1284). • Two 9-pin serial port (16550 UART). • Two PS/2 connectors for keyboard and mouse (Mini-DIN). • Two stacked Universal Serial Bus (USB) ports for easy reconfiguration, attachment, and hot swapping of external peripherals. • One 15-pin VGA connector on system board. Other connectors available when a graphics card is installed • Audio ports (stereo-in, stereo-out, microphone-in). • One RJ-45 Ethernet port (10/100Base-T).
Upgradability	<ul style="list-style-type: none"> • BIOS in flash EEPROM for convenient BIOS upgrades. • Memory upgradable using SDRAM-133 MHz non-ECC DIMMs. • Hard disk storage upgradable to 2x30.0 GB on Desktop or Minitower models.
eDiag Tools (available by pressing F10 when prompted after system boot)	<ul style="list-style-type: none"> • Preboot Diagnostics. • Full system diagnostics. • Pro-active BIOS upgrades.

GRAPHICS SUBSYSTEM—GRAPHICS CARD MODELS

Video graphics	<p>Matrox Millennium G450 AGP 4X graphics card with video accelerator on AGP bus:</p> <ul style="list-style-type: none"> • Outstanding 2D and 3D performance, speed and visual quality. • True DirectX6 Hardware Bump Mapping and 3D Rendering Array Process. • 256-bit dual Bus architecture. • Single driver across the entire Matrox graphics family for easy qualification and management (available from HP Desktop PC Support Web site: http://www.hp.com/go/vectrasupport) • Dual Head Display capability with two analog (VGA) outputs to drive two independent monitors. • 360 MHz Ultra sharp RAMDAC for flicker-free displays, 200 MHz on secondary one. <p><i>Note:</i> an equivalent Matrox Millennium G450 card with PCI interface will exist for Small Form Factor models where AGP slot is not available. It will use the same driver as the AGP card.</p>																																								
Memory	<ul style="list-style-type: none"> • 16 MB Double Data Rate SDRAM (not upgradeable). 																																								
Available graphics drivers	<ul style="list-style-type: none"> • Windows® 2000 Professional, Windows NT® 4.0 Workstation, Windows® 98 Second Edition, Windows® 95. • Drivers may be preloaded or available from HP Desktop PC Support Web site: http://www.hp.com/go/vectrasupport 																																								
Resolutions on Primary Head	<ul style="list-style-type: none"> • HP Ergonomic Modes support these non-interlaced resolutions for Windows® 2000 Professional, Windows NT® 4.0 Workstation, Windows® 98 Second Edition, and Windows® 95: <table border="1" data-bbox="515 961 1487 1276"> <thead> <tr> <th>Resolution</th> <th>256 colors (8-bit)</th> <th>64K colors (16-bit)</th> <th>16.7M colors (24-bit)</th> <th>16.7M colors (32-bit)</th> </tr> </thead> <tbody> <tr> <td>640 x 480</td> <td>60–85Hz</td> <td>60–85Hz</td> <td>60–85Hz</td> <td>60–85Hz</td> </tr> <tr> <td>800 x 600</td> <td>60–85Hz</td> <td>60–85Hz</td> <td>60–85Hz</td> <td>60–85Hz</td> </tr> <tr> <td>1024 x 768</td> <td>60–85Hz</td> <td>60–85Hz</td> <td>60–85Hz</td> <td>60–85Hz</td> </tr> <tr> <td>1152 x 864*</td> <td>60–85Hz</td> <td>60–85Hz</td> <td>60–85Hz</td> <td>60–85Hz</td> </tr> <tr> <td>1280 x 1024</td> <td>60–85Hz</td> <td>60–85Hz</td> <td>60–85Hz</td> <td>60–85Hz</td> </tr> <tr> <td>1600 x 1200</td> <td>60–85Hz</td> <td>60–85Hz</td> <td>60–85Hz</td> <td>60–85Hz</td> </tr> <tr> <td>2048 x 1536</td> <td>60–85Hz</td> <td>60–85Hz</td> <td>60–85Hz</td> <td>60–70Hz</td> </tr> </tbody> </table> <p>*Windows® NT only</p>	Resolution	256 colors (8-bit)	64K colors (16-bit)	16.7M colors (24-bit)	16.7M colors (32-bit)	640 x 480	60–85Hz	60–85Hz	60–85Hz	60–85Hz	800 x 600	60–85Hz	60–85Hz	60–85Hz	60–85Hz	1024 x 768	60–85Hz	60–85Hz	60–85Hz	60–85Hz	1152 x 864*	60–85Hz	60–85Hz	60–85Hz	60–85Hz	1280 x 1024	60–85Hz	60–85Hz	60–85Hz	60–85Hz	1600 x 1200	60–85Hz	60–85Hz	60–85Hz	60–85Hz	2048 x 1536	60–85Hz	60–85Hz	60–85Hz	60–70Hz
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GRAPHICS SUBSYSTEM—OTHER MODELS

Video graphics	Intel 815 integrated graphics chipset: <ul style="list-style-type: none"> • Optimized 2D and 3D performance and visual quality. • Direct AGP. • Dynamic Video Memory technology. • 230 MHz RAMDAC. <i>Note:</i> this integrated graphics solution is automatically deselected when an AGP graphics card is installed in the system			
Memory	<ul style="list-style-type: none"> • 10 MB to 11 MB reserved out of main memory. • Enhanced performance module will be available (fits in the AGP slot, 4 MB in size). 			
Available graphics drivers	<ul style="list-style-type: none"> • Windows® 2000 Professional, Windows NT® 4.0 Workstation, Windows® 98 Second Edition, Windows® 95. • Drivers may be preloaded or available from HP Desktop PC Support Web site: http://www.hp.com/go/vectrasupport 			
Resolutions	<ul style="list-style-type: none"> • HP Ergonomic Modes support these non-interlaced resolutions for Windows® 2000 Professional, Windows NT® 4.0 Workstation, Windows® 98 Second Edition, and Windows® 95: 			
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	800 x 600	60–85Hz	60–85Hz	60–85Hz
	1024 x 768	60–85Hz	60–85Hz	60–85Hz
	1152 x 864	60–85Hz	60–85Hz	60–85Hz
	1280 x 1024	60–85Hz	60–85Hz	60–85Hz
1600 x 1200	60–75Hz	–	–	

SOFTWARE

Operating System	<ul style="list-style-type: none">• HP-supported operating systems: Windows® 2000 Professional, Windows NT® 4.0 Workstation, Windows® 98 Second Edition, Windows® 95.• HP-certified operating systems: Novell Client for Windows NT® 4.0 Workstation, Red Hat Linux 6.2, TurboLinux® Workstation 6.0, Suse 6.3, Caldera 2.3.• More information about the Linux operating system is available on the HP Desktop PC Web site http://www.hp.com/desktops/linux
Provided software	<ul style="list-style-type: none">• Operating system Windows® 2000 Professional, Windows NT® 4.0 Workstation, Windows® 98 Second Edition, or Windows® 95, depending on model.• Online documentation: support, performance benefits, product features, and use of PC.• Microsoft Internet Explorer.• HP TopTools device management software.• HP eDiagTools hardware diagnostic software.• HP Safe Off (not available with Windows® 2000).• 3Com LAN driver.• HP Soft Power Down, HP Lock, HP Energy Saver for Windows NT® 4.0 Workstation.• HP LAN Card Ready drivers available from HP Desktop PC Support Web site http://www.hp.com/go/vectrasupport• Every unit includes in the box:<ul style="list-style-type: none">— Image Creation and Recovery CD (OS installation and Hard Disk Preparation).— Image Library and Diagnostics CD (Drivers and utilities installation and diagnostics).

COMMUNICATION FEATURES

Ethernet LAN interface	<ul style="list-style-type: none"> • Integrated 3Com Fast EtherLink XL 10/100TX LAN. • Wake on LAN support. • Low CPU usage releases resources for local user tasks (DMA).
Preconfigured networking	<ul style="list-style-type: none"> • Ultra-fast installation. • Remote Boot protocols in system BIOS (3Com): RPL, NetWare, BootP, PXE/DHCP.
Remote booting	<ul style="list-style-type: none"> • 3Com Managed PC Boot Agent (this is optional software from 3Com)—multiprotocol firmware to enable pre-boot capabilities in a networked environment: <ul style="list-style-type: none"> — Enables remote automated installation and pre-OS desktop management. — Supports multiple protocols (DHCP, BootP, PXE, NCP/IPX, and RPL). — Compliant with today's industry standards: Wired for Management (WfM) 2.0, PC 99.
Network administration guide	<ul style="list-style-type: none"> • Information on remote booting and network setup in all supported environments available on the Web http://www.hp.com/go/vectrasupport
Network client ready	<ul style="list-style-type: none"> • Can run as a client PC in Microsoft, Novell network operating system environments.
Internet ready	<ul style="list-style-type: none"> • Microsoft Internet Explorer.
Available LAN drivers	<ul style="list-style-type: none"> • Novell NetWare 3.x/4.x clients; Windows® 2000 Professional, Windows NT® 4.0 Workstation, Windows® 98 Second Edition, Windows® 95. • Latest LAN information and drivers available from HP Desktop PC Support Web site http://www.hp.com/go/vectrasupport
LAN Card Ready program	<ul style="list-style-type: none"> • Tested with leading Ethernet and Token Ring adapters. • Wake on LAN for selected third-party LAN cards in some operating system environments. • Detailed setup instructions and HP-tested drivers for a wide range of LAN cards from 3Com, IBM, Madge, D-Link, and Olicom available on Web at http://www.hp.com/go/vectrasupport

MANAGEABILITY

Inventory management	Remote and central inventory <ul style="list-style-type: none"> • Auto-discovery of devices. • Automated collection of inventory. • PC search and selection. • Standard reports (including asset location, configuration). • Report of Microsoft Windows® 2000 Professional-ready PCs (this report includes PCs matching the minimum hardware requirements and that are certified). • Access to detailed configuration information. • Customizable asset string.
Configuration management	Remote boot control <ul style="list-style-type: none"> • Scheduled system reboot. • Scheduled system power-off. • Scheduled System power-on. Remote and central system software updates <ul style="list-style-type: none"> • HP TopTools Agents deployment and update (Agent Deployment is only available with Windows NT® 4.0 Workstation or Windows® 2000 Professional, within the same Windows NT® domain). • BIOS update. • Drivers update (video, hard disk drive, and LAN card). • Selected HP LaserJet printers installation. • Hardware diagnostics deployment and update (HP eDiagTools).
Fault management	Local fault diagnostics <ul style="list-style-type: none"> • Hardware diagnostics (HP eDiagTools). • Smart card and smart card reader diagnostics. • LAN card diagnostics (with 3Com card only). Remote and local alert reporting <ul style="list-style-type: none"> • Power-On-Self-Test (POST). • Chassis intrusion detection. • IDE hard disk drive SMART failure warning. Remote access to status information <ul style="list-style-type: none"> • Memory error. • Network interface status and activity.¹ • Network interface statistics.¹ • Services.² • Current processes.² • Device drivers.² • Memory utilization. • Logical drives utilization. • CPU utilization. <p>¹ Requires SNMP services to be installed. ² Requires WBEM/WMI services to be installed (Windows NT® 4.0 Workstation or Windows® 2000 Professional).</p>

To get an overview of HP remote management solution, check the following web sites:

- <http://www.hp.com/go/manageability>
- <http://www.hp.com/toptools>
- <http://www.hp.com/desktops/diagtools>

MANAGEABILITY

Security Management	<p>Remote and central system boot configuration</p> <ul style="list-style-type: none"> • Enable/Disable start from hard disk. • Enable/Disable start from floppy disk. • Enable/Disable start from CD-ROM drive. • Enable/Disable start from network drive. • Enable/Disable Remote Power On and Wake on LAN. <p>Remote and central security configuration</p> <ul style="list-style-type: none"> • Enable/Disable floppy disk drive. • Enable/Disable writing on floppy disk drive. • Enable/Disable CD-ROM, DVD-ROM, CD-RW drives (requires Windows® 2000 Professional or Windows NT® 4.0 Workstation). • Enable/Disable serial and parallel ports. • Enable/Disable USB ports. <p>Remote and central security control</p> <ul style="list-style-type: none"> • Complete system lock. • System protection (power-on and reset buttons). <p>Remote and central security management</p> <ul style="list-style-type: none"> • Enable/Disable start with keyboard locked. • System administrator and user password change. • Enable/Disable user password on power-on. • System SNMP community password change. • Report of PCs not password protected. <p>Security management</p> <ul style="list-style-type: none"> • Inventory of smart card readers, Power Protection device and IP-Sec LAN card. • Local diagnostic of smart card and reader.
Performance Management	<p>Resource monitoring and alerting</p> <ul style="list-style-type: none"> • CPU. • Memory. • Hard disk drives. • Networking card (requires SNMP services to be installed). • Resources bottleneck analysis (requires HP TopTools Value Pack D7160A).
HP TopTools Value Pack	<ul style="list-style-type: none"> • The HP TopTools Value Pack expands the functionality of the free version of HP TopTools by including: <ul style="list-style-type: none"> — System Performance Advisor—CPU, memory, and disk I/O performance monitoring and trend analysis for Windows NT® 4.0 Workstation, Windows® 95, and Windows® 98 Second Edition systems. — PC remote control (Symantec pcANYWHERE). — Custom reports and tables. — Enhanced notification actions and action triggers. — Most frequent alerts report. — Third-party trap import/configuration. — IP/MAC address file importing. — Enhanced HP TopTools user password administration. — Enhanced action-on-alerts (e-mail and paging). — Support for larger environments (up to 5,000 nodes per device manager server).

MANAGEABILITY

HP TopTools Bridges	<ul style="list-style-type: none"> • The HP TopTools bridges enable full integration with complementary applications. Bridges are available with the following applications: <ul style="list-style-type: none"> — HP OpenView NNM (Windows NT®4.0). — HP OpenView NNM (HP-UX). — HP OpenView NNM (Solaris). — Microsoft SMS 2.0/2.01. — IBM Tivoli NetView (Windows NT®4.0). — Computer Associates Unicenter TNG (Windows NT®4.0).
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STABILITY

Image Creation and Recovery CD-ROM	<ul style="list-style-type: none"> • HP Vectra PCs come with an Image Creation and Recovery CD-ROM in the box. This CD-ROM allows you to: <ul style="list-style-type: none"> — Reload the Operating System. — Configure the hard disk drive (FAT 16, FAT 32, or NTFS). — Create HP utility partition for HP eDiagTools.
Image Library and Diagnostics CD-ROM	<p>The Image Library and Diagnostics CD-ROM contains HP drivers and system software pre-packaged for unattended install. These packages can be used locally or distributed with Microsoft scripting tools. An administrator version of Image Library CD-ROM is available from the HP web with pre-packed drivers for distribution with Microsoft SMS and HP TopTools.</p>
Image Transition CD-ROM	<ul style="list-style-type: none"> • The Image Transition CD-ROM helps migrate customer existing SW image to HP Vectra VL400. Available from the HP web site.
Image Stability	<ul style="list-style-type: none"> • Program tightly controls PC revisions, enabling you to create a single software image for easy deployment across all your new HP Vectra PCs. Visit our Web site: http://www.hp.com/desktops/vectra/stability/index.html
Proactive Notification	<ul style="list-style-type: none"> • Informs you of the changes by e-mail, letting you decide whether to upgrade your PCs.

More details on HP software Deployment solutions can be obtained at: <http://www.hp.com/go/pcdeployment>

SECURITY

Physical Security	<ul style="list-style-type: none"> • Boot Block BIOS Flash Hardware protected • HP Physical security to protect PC from theft: <ul style="list-style-type: none"> — Optional HP Master Pass Key Lock (lock must be purchased separately). — Kensington lock provision. — Two BIOS level passwords. — Chassis Intrusion detection.
Reliability	<p>To safeguard user files, protect against data losses, shut down the PC cleanly and securely, and to back up the power supply during short power failure, taking advantage of the hibernate mode of Windows® 2000 Professional:</p> <ul style="list-style-type: none"> • HP Power Protection device • Compact device, fits into a 5.25" PC free expansion shelf
Smart Cards	<p>To secure desktop access, ensure secure storage and allow mobility, the HP ProtectTools 2000 smart card provides:</p> <ul style="list-style-type: none"> • Secure Logon by replacing Microsoft Operating system logon with a PIN entry. • Folder encryption. • Digital certificate storage onto Smart Card (CAPI, PKCS#11).
Secure Network Communication	<p>To secure your links without losing performance and maintaining throughput:</p> <ul style="list-style-type: none"> • Optional Intel Pro/100S Management Adapter, 10BaseT, 100 Base TX LAN interface. • With Network encryption co-processor to off-load security encryption from the PC to the adapter, reducing processor utilization and maximizing network performance.

ERGONOMICS

Ergonomic and environmental design	<ul style="list-style-type: none"> • Video modes supporting non-interlaced resolutions up to 1600 × 1200 at ergonomic refresh rates up to 75-85Hz • EPA ENERGY STAR® and Blue Angel certified.* • Energy-saving variable-speed fan for temperature control. • Large selection of MPRII—and EPA ENERGY STAR—certified displays. • CFC-free manufacturing process; single plastic for easy recycling. • HP Energy Saver, HP Safe Off, HP Soft Power Down. • Optimized desk-space-saving desktop package. • Control panel keeps user aware of PC status: <ul style="list-style-type: none"> — On/Off switch integrated in the surface to avoid accidental power-off. — On/Off green LED (blinks in sleep mode). — HDD activity LED. — Lock LED. <p><small>* As an ENERGY STAR partner, HP has determined that this product meets the ENERGY STAR guidelines for energy efficiency (on appropriate models).</small></p>
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SERVICE AND SUPPORT

Warranty	<ul style="list-style-type: none"> • Three-year on-site international limited hardware warranty and a full range of flexible warranty options
Support	<p>24 hours a day, 7 days a week, there's always a way to reach HP Support:</p> <ul style="list-style-type: none"> • Web technical support including BIOS and driver updates, white papers and additional product information. • HP three-year hardware support, and free coverage for questions on Desktop PC setup, configuration and usage for one year. • For more information, go to http://www.hp.com/go/support and click on Assistance to find the telephone number of the HP Customer Care Center near you.

SERVICEABILITY

Ease of setup and servicing	<p>Highly serviceable packages—easy to open, repair, and expand, with built-in intuitiveness</p> <ul style="list-style-type: none"> • Features include: <ul style="list-style-type: none"> — Cover—tool-free, intuitive removal. — System board—direct access to upgradeable parts (memory, microprocessor, I/O cards). — Hard disk drive—easy removal, direct access, tool-free removal of hard disk drive cage. — Front-accessible drives—direct access, easy removal of tray. — Embedded repair instruction labels. — Easy upgrade of I/O cards—tool-free single I/O locker. — No mounting accessories needed when installing accessory devices. — Color-coded connectors for simplified PC assembly. • Hassle-free security with Master Pass Key system—chassis lock with configurable master setting (optional). • BIOS stored in flash EEPROM for fast and easy upgrades. • Setup program in flash ROM. • Automatic detection of major components at power-on. • Power-On-Self-Test (POST) displays start up errors, suggests solutions. • All models are local area network (LAN) ready for easy integration into the network. • HP eDiagTools: fast, easy-to-use hardware diagnostics for quick system troubleshooting. • LAN hardware diagnostics.
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SPECIFICATIONS

Physical Characteristics

- System dimensions (without keyboard):-
 - Desktop 17.1 inches wide x 16.9 inches deep x 5.3 inches high (43.5 cm x 43 cm x 13.5 cm).
 - Small Form Factor 14.4 inches wide x 16.1 inches deep x 3.9 inches high (36.6 cm x 40.7 cm x 10.1 cm).
 - Minitower 8.1 inches wide x 17.9 inches deep x 18.5 inches high (20.6 cm x 45.5 cm x 46.9 cm).
- System weight (without keyboard):-
 - Desktop 22 lb (10 kg).
 - Minitower 29.5 lb (13.4kg).
 - Small Form Factor 17.6 lb (8 kg).
- Keyboard dimensions:-
 - Standard 18.3 inches wide x 7.0 inches deep x 1.3 inches high (2.0 inches standing) (46.4 cm x 17.8 cm x 3.3 cm [5.1 cm]).
 - Multimedia 19.0 inches wide x 7.4 inches deep x 2.0 inches high (2.9 inches standing) (47.5 cm x 18.5 cm x 5.0 cm [7.3 cm]).

Acoustic Emission

- Sound Level (LwA):-
 - ≤3.5BA (35 dB A) (typical).

Environmental Conditions

- Operating temperature:- 50 to 95° F (10° to 35° C).
- Non-operating temperature:- -40° to 158° F (-40° to 70° C).
- Operating humidity:- 15% to 80% RH.
- Storage humidity:- 5% to 85% RH (noncondensing) at 104° F (40° C).

Electrical Characteristics

Input Voltage

- Power supply (manually switch-selectable worldwide):- 100-127 VAC.
- Input voltage:- 200-240 VAC.
- Frequency:- 50Hz/60 Hz.

Power Supply

- Small Form Factor:- 100 W continuous.
- Desktop:- 125 W continuous.
- Minitower:- 200 W continuous.
- Frequency: 50Hz/60Hz.

Power Consumption

- 40 W (typical).
- 4.8 W (suspend) in suspend-to-ram mode (S3).

Regulatory Compliance and Approvals

Electromagnetic Compatibility

- FCC Part 15 Class B (USA).
- ICES-003 Class B (Canada).
- EMC Directive 89/336/EEC amended by Directive 93/68/EEC (European Economic Area).
- GB 9254-1988 (China).
- VCCI Class B (Japan).
- RRL Class B (Korea).
- AS/NZS3548 class B (Australia-New Zealand).
- BSMI CNS 13438 Class B (Taiwan).
- EASTERN countries compliance.
- CISPR 22: 1993 (International).

Safety Approvals

- cUL 1950 listed (USA).
- NOM-019-SCFI-1994 (Mexico).
- TUV-GS Mark (Germany).
- IEC 60950: 1991 +A1 +A2 +A3 +A4 (International).
- EN 60950: 1992 +A1 +A2 +A3+A11 (European Countries).
- Low Voltage Directive 73/23/EEC amended by Directive 93/68/EEC.
- PSB (Singapore).
- GB 4943-1995 (China).
- EASTERN Countries compliance.

Ergonomics

- TUV-GS Mark (Germany).
- ENERGY STAR® Certification (USA).
- Blue Angel Certification (European Countries).



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All certifications may not be completed at product introduction. Please check with your HP reseller for certification status.

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