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# Technical Reference Manual

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## Introduction & HP Vectra Product Line Overview

The **Technical Reference Manual** contains the following documents available on the *HP Information CD-ROM* or downloadable from the Web in PDF format:

**Introduction & HP Vectra Product Line Overview**

The document you are reading. Describes how to use the Technical Reference Manual and provides an overview of VEi, VLi and VL600 PCs.

**Product Description**

A separate document for VEi 7 models, VEi 8 models, VL600 models and VLi 8/VLi 8SF models, providing detailed BIOS information and summary information on the hardware components in the PC.

**HP Vectra Technology**

A detailed look at the hardware components in all the PCs in the product line. Includes information on processors, chip sets, graphics controllers, network cards, connectors and sockets.

## HP Vectra

- VEi 7
  - VEi 8
  - VLi 8
  - VLi 8SF
  - VL600
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## HP Vectra Product Line Overview

This document provides a brief overview of the technical features and components of the following HP PCs:

- VEi 7 Desktops
- VEi 8 Desktops
- VLi 8 Desktops and Minitowers
- VLi 8 SF Desktops
- VL600 Desktops and Minitowers

HP Vectra Product Line Overview  
Overview of the PCs in this Manual

## Overview of the PCs in this Manual

### HP Vectra VEi PCs

Component	VEi 7 (Desktop only)	VEi 8 (Desktop only)
<b>Package Description</b>	1 Or 2 Free Front-access shelves (one if a CD-ROM is fitted). Up to 4 Accessory board slots (3 PCI, 1 ISA).	1 Or 2 Free Front-access shelves (one if a CD-ROM is fitted) Up to 4 Accessory board slots (3 PCI, 1 ISA)
	Width: 41.8cm (16.5 in); Height: 14.0 cm (5.5 in); Depth: 37.5 cm (14.8 in).	
<b>Processor</b>	Intel® Celeron™ Socket 370 366/66, 400/66, 433/66, 466/66 when available (128 KB L2 cache).	Intel Pentium® II 350/100, 400/100 (512KB L2 cache). Intel Pentium III 450/100, 500/100 (512KB L2 cache).
<b>System Board:</b>		
<b>Chip set</b>	SiS 620/5595	Intel 440ZX/PIIX4E
<b>Integrated I/O</b>	On SiS 5595 chip. 2 USB connectors, 1 serial port and 1 parallel port	On PIIX4E chip. 2 USB connectors, 1 serial port and 1 parallel port.
<b>Integrated IDE</b>	On SiS 5595 chip. 2 IDE Ports (Ultra DMA/33)	On PIIX4E chip. 2 IDE Ports (Ultra DMA/33)
<b>Integrated Graphics</b>	SiS super AGP graphics controller (on SiS 620 Host chip) with 4 MB of video memory (upgradeable to 8MB)	Integrated Matrox® Millennium G200 2X AGP graphics controller with 8MB of video memory (not upgradeable)
<b>Integrated Audio</b>	CrystalClear™ CS4280 PCI audio controller/CrystalClear CS4297 Audio Codec '97	
<b>Mass storage</b>	<b>Hard disks:</b> 4.3 GB IDE, or 8.4 GB IDE. 6.4 GB IDE (accessory D8372A) <b>Floppy drive:</b> standard 1.44 MB 3.5" <b>CD-ROM drive:</b> 32X MAX IDE (selected models). Available as accessory (D4348A) <b>DVD drive:</b> accessory D6935A. <b>ZIP drive:</b> accessory D6650A.	
<b>Main memory</b>	Two DIMM sockets using: 32MB, 64MB, 128MB non-ECC 100MHz SDRAM or 256MB ECC 100MHz SDRAM to a maximum of 512MB. PC comes with a single 32MB or 64MB DIMM. Other DIMMs available as accessories.	
<b>Expansion cards (available as accessories)</b>	<b>HP Adaptec 2940 UW SCSI board:</b> accessory D6951A. <b>HP Serial interface card:</b> accessory D8388A. <b>HP 10/100 3Com 3C905B-TX network interface card</b> (on selected models). Also available as an accessory (single card: D7504A). <b>HP 10/100 Intel Pro/100+ management adapter.</b> Network card accessory D7506A (single card). <b>HP 56K V90 PCI fax modem:</b> accessory D7808A.	
<b>Input devices</b>	HP Standard Keyboard. HP Standard Mouse. HP Multimedia Keyboard: accessory C4742A. HP Scrolling Mouse: accessory C4736A.	
<b>Power supply</b>	Manually switched 115/230 VAC, 170 W input, 90 W output	
<b>BIOS</b>	<b>Type:</b> Phoenix BIOS <b>Version:</b> HX.07.xx <b>Setup program:</b> English only <b>BIOS error messages:</b> English only	<b>Type:</b> Award BIOS: <b>Version:</b> HW.27.xx <b>Setup program:</b> English only <b>BIOS error messages:</b> English only.

## HP Vectra VLi PCs

Component	VLi 8 Desktop	VLi 8 Minitower	VLi 8 SF (Small Form Factor Desktop)
<b>Package Description</b>	1 Or 2 free front-access shelves (1 if a CD-ROM is fitted). The second shelf can also be used for a second hard drive. Up to 4 expansion slots (2 PCI, 1 ISA, 1 PCI-ISA combination slot).	2 Or 3 free front-access shelves (2 if a CD-ROM is fitted). One free internal shelf for a second hard drive. Up to 6 expansion slots (3 PCI, 3 ISA).	One or no free front-access shelves (none if a Slim CD-ROM is fitted). Up to 2 expansion slots (1 PCI, 1 PCI-ISA combination slot).
	Width: 44.3 cm (17.4 in); Height: 13.8 cm (5.4 in); Depth: 43.5 cm (17.1 in); Weight: 10.4 kg (22.9 pounds)	Width: 20.7 cm (8.1 in); Height: 46.9 cm (18.5 in); Depth: 45.5 cm (17.9 in); Weight: 14.8 kg (32.6 pounds)	Width: 37 cm (14.6 in); Height: 9.5 cm (3.7 in); Depth: 39 cm (15.4 in); Weight: 7.54 kg (16.5 pounds).
<b>Processor</b>	Intel Pentium II 400/100 (512KB L2 cache). Intel Pentium III 450/100, 500/100 and when available 550/100 (512KB L2 cache).		Intel Celeron Socket 370 366/66, 400/66 (128 KB L2 cache). Intel Pentium II 400/100 (512KB L2 cache). Intel Pentium III 450/100, 500/100 (512KB L2 cache).
<b>System Board:</b>			
<b>Chip set</b>	Intel 440ZX/PIIX4E		
<b>Integrated I/O</b>	On PIIX4E chip. 2 USB connectors, 2 serial ports and 1 parallel port.		
<b>Integrated IDE</b>	On PIIX4E chip. 2 IDE Ports (Ultra DMA/33)		
<b>Integrated Graphics</b>	Integrated Matrox Millennium G200 2X AGP graphics controller with 8MB of video memory (not upgradeable)		
<b>Integrated Audio</b>	CrystalClear CS4280 PCI audio controller/CrystalClear CS4297 Audio Codec '97		
<b>Integrated Network</b>	not available	not available	HP 10/100 3Com 3C905B-TX integrated on riser card
<b>Mass storage</b>	<b>IDE Hard disks:</b> 6.4GB or 8.4 GB. <b>CD-ROM drive:</b> 32X MAX IDE (selected models). Also available as accessory (D4348A). <b>Floppy drive:</b> standard 1.44 MB 3.5". <b>DVD drive:</b> accessory D6935A. <b>ZIP drive:</b> accessory D6650A.	<b>IDE Hard disks:</b> 6.4GB, 8.4GB or 13.5GB. <b>CD-ROM drive:</b> 32X MAX IDE (selected models). Also available as accessory (D4348A). <b>Floppy drive:</b> standard 1.44 MB 3.5". <b>DVD drive:</b> accessory D6935A. <b>ZIP drive:</b> accessory D6650A.	<b>IDE Hard disks:</b> 4.3GB or 8.4GB. 6.4GB available as accessory (D8372A). <b>Slim CD-ROM drive:</b> 24X MAX IDE (selected models). Also available as accessory (D8381A). <b>Floppy drive:</b> standard 1.44 MB 3.5".
<b>Main memory</b>	Two DIMM sockets using: 32MB, 64MB, 128MB non-ECC 100MHz SDRAM or 256MB ECC 100MHz SDRAM		to a maximum of 512MB.
	Comes with a single 64MB DIMM. Other DIMMs available as accessories.		Comes with a single 32MB or 64MB DIMM. Other DIMMs available as accessories.
<b>Expansion cards (available as accessories)</b>	HP 10/100 3Com 3C905B-TX network interface card (on selected models). Also available as accessory (single card: D7504A). HP 10/100 Intel Pro/100+ management adapter. Network card, available as an accessory (single D7506A). HP 56K V90 PCI fax modem. Accessory D7808A.		HP 10/100 Intel Pro/100+ management adapter. Network card, available as an accessory (single card D7506A). HP 56K V90 PCI fax modem. Accessory D7808A.
<b>Input devices</b>	HP Standard Keyboard; HP Standard Mouse; HP Multimedia Keyboard: (accessory C4742A); HP Scrolling Mouse (accessory C4736A).		
<b>Power supply</b>	Manually switched 115/230 VAC, 170 W input, 120 W output (max)	Manually switched 115/230 VAC, 170 W input, 120 W output (max)	Manually switched 115/230 VAC, 170 W input, 90 W output (max)
<b>BIOS</b>	<b>Type:</b> HP/Phoenix; <b>Version:</b> HZ.01.xx; <b>Setup Program:</b> English only; <b>BIOS error messages:</b> Available in French, German, Spanish, Italian, Danish, Dutch, Finnish, Norwegian, Portuguese, Swedish, English.		

**HP Vectra Product Line Overview**  
Overview of the PCs in this Manual

**HP Vectra VL600 PCs**

<b>Component</b>	<b>VL600 Desktop</b>	<b>VL600 Minitower</b>
<b>Package Description</b>	1 Or 2 Free Front-access shelves (one if a CD-ROM, DVD-ROM or CD-RW is fitted). Up to 7 Accessory board slots (4 PCI, 2 ISA, 1 AGP).	2 Or 3 Free Front-access shelves (two if a CD-ROM, DVD-ROM or CD-RW is fitted) Up to 7 Accessory board slots (4 PCI, 2 ISA, 1 AGP).
	Width: 43.5 cm (17.13 in); Height: 13.5 cm (5.32 in); Depth: 43 cm (16.93 in).	Width: 20.6 cm (8.1 in); Height: 46.9 cm (18.5 in); Depth: 45.5 cm (17.9 in).
<b>Processor</b>	Intel Pentium III 533EB/133, 550/100, 600/100, 600EB/133, 667/133, 700/100, 733/133.	
<b>System Board:</b>		
<b>Chip set</b>	Intel® i820	
<b>Integrated I/O</b>	On ICH chip. 2 USB connectors, 2 serial ports and 1 parallel port.	
<b>Integrated IDE</b>	On ICH chip. 2 IDE Ports (Ultra DMA/66)	
<b>Integrated Graphics</b>	Matrox® G250 2X AGP graphics controller with 8MB of video memory (upgradeable to 16 MB). Matrox® Millennium G400 4X AGP graphics controller with 32MB of video memory (non-upgradeable).	
<b>Integrated Audio</b>	CrystalClear™ CS4280 PCI audio controller/CrystalClear CS4297 Audio Codec '97	
<b>Mass storage</b>	<b>Hard disks:</b> 10GB IDE, 15GB IDE, 30GB IDE, 9.1GB SCSI <b>Floppy drive:</b> standard 1.44 MB 3.5" <b>CD-ROM drive:</b> 48X max IDE (in selected models). Also available as accessory (D9444A) <b>DVD drive:</b> 8x, 40x (in selected models) Also available as accessory (D7521A) <b>CD-RW drive:</b> 4x, 2x, 20x (in selected models). Also available as accessory (D9524A) <b>ZIP drive:</b> accessory D9446A.	
<b>Main memory</b>	Two RDRAM sockets using: 128MB, 256MB or 512MB RDRAM (when available) to a maximum of 1024MB. PC comes with a single 128 MB module. Other modules available as accessories.	
<b>Expansion cards (available as accessories)</b>	<b>HP Ultra II SCSI adapter card:</b> accessory D9529A. <b>HP 10/100 3Com 3C905C-TX network interface card</b> (on selected models). Also available as an accessory (single card: D7522A). <b>HP 10/100 Intel Pro/100+ management adapter</b> (on selected models) . Also available as an accessory (single card: D7506A). <b>HP 10/100BT PCI Ethernet Card:</b> accessory D7508A <b>HP 56K V90 USB fax modem:</b> accessory D8384A.	
<b>Input devices</b>	HP Standard Keyboard HP Multimedia Keyboard: accessory C4742A. HP Standard Mouse HP Scrolling Mouse: accessory C4736A.	
<b>Power supply</b>	Manually switched 115/230 VAC, 170 W input, 120 W output (max)	Manually switched 115/230 VAC, 310 W input, 200 W output (max)
<b>BIOS</b>	<b>Type:</b> Phoenix BIOS <b>Version:</b> hy.01.xx <b>Setup program:</b> English only <b>BIOS error messages:</b> Available in French, German, Italian, Spanish, Danish, Dutch, Finnish, Portuguese, Norwegian, Swedish, English.	

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## The Technical Reference Manual

This *Technical Reference Manual* is a technical reference and BIOS document for personnel providing system level support. It is presented in modular form to provide quick and easy access to technical information on HP Vectra VEi 7, VEi 8, VL600 and VLi 8/VLi8 SF PCs. It is made up of the following components:

- *HP Vectra Product Line Overview*. This document provides a quick reference guide to the BIOS and hardware components in each PC. It also lists some of the available accessories.
- *Product Description*. Provides technical information specific to a particular PC. This includes summary information on product hardware and detailed information on the PC's BIOS. Read this manual to see which hardware components are in the PC.

Separate *Product Description* manuals exist for:

- VEi 7 models
- VEi 8 models
- VLi 8 and VLi 8SF models
- VL600 models
- *HP Vectra Technology*. An in-depth guide to the hardware in all of the featured Vectra PCs. Subjects covered include chip sets, processors, graphics controllers, hard disk drives and DVD drives.

Technical information that is readily available from other sources, such as manufacturer's proprietary publications has not been reproduced.

The *Technical Reference Manual* contains summary information only. For additional reference material, refer to the bibliography at the beginning of the *Product Description* and *HP Vectra Technology* manuals.

## Conventions

The following conventions are used throughout this manual to identify specific numeric elements:

- Hexadecimal numbers are identified by a lower case h.  
**For example,** 0FFFFFFFh or 32F5h
- Binary numbers and bit patterns are identified by a lower case b.  
**For example,** 1101b or 10011011b

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