

HEWLETT-PACKARD

HP Vectra RS Personal Computers

Data Sheet

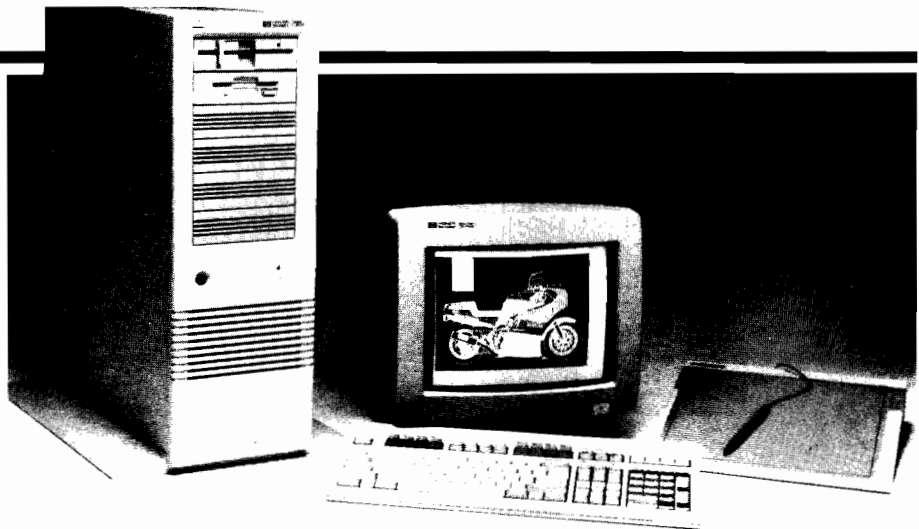
Top-of-the-line power and expandability

The Hewlett-Packard Vectra RS personal computers are the most powerful and expandable members of the HP Vectra PC family. Using the power of the Intel 80386 microprocessor in a floor-mounted package, these systems have the performance and growth potential to match the most demanding personal computer applications.

Both the HP Vectra RS/20 PC (20-MHz, 80386) and Vectra RS/16 PC (16-MHz, 80386) systems rely on a combination of advanced microprocessor, memory, and hard disc designs that result in performance several times that of 80286 systems.

The HP Vectra RS PCs are designed to be fully compatible with existing industry standards (IBM PC/AT), as well as with new software that will more fully use the power of the 80386—such as Microsoft's OS/2 operating system. The HP Vectra RS PCs also support Microsoft® Windows/386 Presentation Manager, providing multi-tasking of your existing MS® -DOS 3.X applications. The HP Vectra RS PCs can meet today's most demanding needs, as well as tomorrow's.

The HP Vectra RS personal computers are members of HP's new product line of high-quality, industry-standard workstations. The new family includes a broad range of terminal and personal computer solutions.



Premium performance— a systems approach

The HP Vectra RS PCs use finely-tuned subsystems to achieve superior performance. At the center of the system is the most powerful microprocessor in the PC industry, the 32-bit Intel 80386, which provides processing power three to four times that of the 16-bit 80286.

The HP Vectra RS PCs bolster system performance with an advanced memory architecture. In addition, high-speed coprocessors can enhance the computational power of the system.

Similarly, mass storage subsystems have been developed with performance in mind. The HP Vectra RS PCs support high performance (17-ms seek time), high capacity (up to 310 Mbytes) hard discs, using the Enhanced Small Device Interface (ESDI). These discs, which are designed and manufactured by Hewlett-Packard, provide the performance, compatibility, and reliability for solutions that require up to 620 Mbytes of storage.

Future expansion and growth

The HP Vectra RS PC systems have the power and functionality to benefit users of tomorrow's applications as well as today's.

Not only do the HP Vectra RS PCs have plenty of processing power, they have large power supplies, six mass-storage shelves, eight industry-standard accessory slots and support for up to 16 Mbytes of 32-bit memory. These systems can accommodate growing needs.

The HP Vectra RS PC systems support Microsoft's next-generation operating system, Microsoft OS/2, and the new generation of applications that will run under OS/2.

Basis for powerful solutions

The HP Vectra RS/20 and RS/16 PCs form the core of several powerful Hewlett-Packard computing solutions.

For CAD/CAM applications, combining an HP plotter and HP graphics tablet with an HP Vectra RS PC will result in a high-performance engineering system.

As LAN servers, the HP Vectra RS PCs deliver superb throughput when using the high-capacity, high-performance 103, 155 and 310-Mbyte discs.

And, with the HP ScanJet Scanner and HP LaserJet II family of printers, an HP Vectra RS PC provides the engine for a powerful and complete desktop publishing solution.

Like other HP Vectra personal computers, the HP Vectra RS/20 and RS/16 PCs include terminal emulation capabilities so that users of high-performance, stand-alone solutions can conveniently communicate with HP minicomputers and other hosts.

HP Vectra RS/20 PC base configurations

All HP Vectra RS/20 PCs use a 20-MHz, 80386 microprocessor and come with a 1.2-Mbyte flexible disc drive, hard disc and flexible disc controller, one serial port, and one parallel port.

Model	Memory (Mbytes)	Hard disc (Mbytes)	Video adapter
Model 40, HP D1600A	1	40	none
Model 100, HP D1602A	2	103	none
Model 106, HP D1601A	2	103	VGA
Model 150, HP D1603A	2	155	none
Model 300, D1604A	2	310	none

HP Vectra RS/20 PC system configuration

Also available is the HP Vectra RS/20 Power User PC (HP D1606B), a fully-assembled PC solution including display. The HP Vectra RS/20 Power User PC includes 4 Mbytes of system memory, 103-Mbytes hard disc, 80387 coprocessor, a 5.25-in., 1.2-Mbyte flexible disc drive, a 3.5-in., 1.44-Mbyte flexible disc drive, three serial ports, one parallel port, Video Graphics Adapter with 512-Kbytes video RAM, video graphics color display with tilt/swivel, HP Mouse, current version of HP Vectra DOS 3.X, and Microsoft Windows/386 Presentation Manager.

HP Vectra RS/16 PC base configurations

The HP Vectra RS/16 PC uses a 16-MHz, 80386 microprocessor and comes with a 1.2-Mbyte flexible disc drive, hard disc and flexible disc controller, one serial port, and one parallel port.

Model	Memory (Mbytes)	Hard disc (Mbytes)	Video adapter
Model 40, HP D1500A	1	40	none
Model 100, HP D1502A	2	103	none
Model 106, HP D1501A	2	103	VGA

HP Computer Museum
www.hpmuseum.net

For research and education purposes only.

Quality for lasting value

The name Hewlett-Packard is synonymous with excellence. HP's extensive testing and quality controls provide superior reliability, outstanding quality, and exceptional lasting value. A world-wide service organization is dedicated to keeping your equipment in first-rate condition, and HP's skilled support professionals provide valuable technical assistance and advice. With all of these advantages, it is understandable that in survey after survey, Hewlett-Packard has been consistently ranked first in customer satisfaction.

Features

System processing units

- Intel 80386 32-bit microprocessor running at 20 MHz or 16 MHz clock rate, switchable to 8 MHz from the keyboard
- Eight PC/AT-compatible accessory slots:
 - two 8-bit slots
 - six 16-bit slots
- Four-function controller card: includes hard disc and flexible disc controller, one serial port and one parallel port (occupies one 16-bit slot)
- Socket for Intel 80387 numeric coprocessor or Weitek 1167 floating point accelerator board
- System clock/calendar/system configuration with CMOS Random Access Memory (RAM) and battery backup
- Six half-height data storage shelves, all with front access

- One HP-Human Interface Link (HP-HIL) port allows up to seven HP-HIL devices such as a mouse, graphics tablet, barcode reader and touchscreen to be connected simultaneously
- Dual locks secure cover and prevent input from keyboard and HP-HIL input devices.

Internal memory

- Interleaved, page-mode memory subsystem architecture supports zero wait state memory reads on open pages. Average number of wait states depend on the application being run.
- Fast memory chips (80 ns for 20-MHz systems, 100 ns for 16-MHz systems)
- 1, 2 or 4 Mbytes of 32-bit memory standard, expandable to 16 Mbytes on processor board
- 64 Kbytes of Read Only Memory (ROM)
- Sockets for two additional Read Only Memory (ROM) chips

Keyboard

- Detachable, typewriter-style, 101-key IBM PC/AT enhanced keyboard format with adjustable tilt
- Industry standard DIN cable connector
- Full-travel, step-sculptured keys with tactile feedback and color-coded legends
- Separate numeric and cursor keypads

Data storage

Internal

- Five internal data storage devices are supported: up to two hard discs and up to four flexible disc devices.
- 3.5-inch 1.44-Mbyte flexible disc drive (HP 45813A)
 - 5.25-inch 1.2-Mbyte flexible disc drive (HP 45812A)
 - 5.25-inch 360-Kbyte flexible disc drive (HP 45811A)

- 40-Mbyte ST-506 hard disc mechanism (HP D1297A)
- 103-Mbyte ESDI hard disc mechanism (HP D1674A)
- 155-Mbyte ESDI hard disc mechanism (HP D1675A)
- 310-Mbyte ESDI hard disc mechanism (HP D1676A)
- Four-function ESDI disc controller card (HP D1677A). Includes hard disc and flexible disc controller, one serial port, and one parallel port
- Flexible disc expander (HP D1678A) required for support of third and fourth flexible disc interface devices.
- 40-Mbyte Internal tape backup mechanism (HP D1671A)

External

- 67-Mbyte 1/4-inch cartridge tape drive (HP 9144A), requires HP-IB Disc/tape interface (HP 88500A)

Memory Expansion

HP Vectra RS/20 PC

- 1-Mbyte memory expansion (HP D1640A)
 - 8-Mbyte memory expansion (HP D1641A)
- HP Vectra RS/16 PC
- 1-Mbyte memory expansion (HP D1540A)
 - 8-Mbyte memory expansion (HP D1541A)

80387 Numeric coprocessor

- For HP Vectra RS/20 (HP D1670A) and HP Vectra RS/16 (HP D1570A)
- Intel 80387 numeric coprocessor
- Operates at processor speed

Video

HP Vectra PCs now support a high-performance, medium-resolution Video Graphics Subsystem that is fully compatible with IBM's PS/2[®] VGA video offerings including all IBM VGA modes: 640 × 480 with 16 colors and 320 × 200 with 256 colors. The HP Video Graphics Subsystem also supports software written for IBM MDA, CGA, EGA, and Hercules Graphics (HP Monochrome Plus) video standards. Additional video RAM supports up to 256 colors in 640 × 480 VGA mode. The HP Video Graphics Adapter is a single video card that supports both color and monochrome monitors.

- 14-inch HP Video Graphics Color Display (HP D1182A; HP D1180A HP Video Graphics Adapter required)
- 14-inch HP Monochrome Video Graphics Display (HP D1181A, Amber Phosphor & HP D1181G, Green Phosphor & HP D1181W, Soft-White Phosphor; HP D1180A Video Graphics Adapter required)
- HP Video Graphics Adapter (HP D1180A)
- HP Video Graphics Adapter, 512-Kbytes Video RAM version (HP D1180A option #1A7)
- 12-inch Monochrome monitor (HP 35731A; HP 45981A Multi-mode video adapter required)
- 13-inch HP Enhanced graphics display (HP 35743A; HP 45983A HP Enhanced Graphics Adapter required)

System software

- Microsoft[®] MS[®]-DOS 3.2 for the HP Vectra Personal Computer. Includes Personal Applications Manager, File Manager, and Multiple Character Set Utilities (HP 45951B, 5.25-in. discs; HP 45951C, 3.5-in. discs)
- Microsoft MS-DOS 3.3 for the HP Vectra Personal Computer. Includes Personal Applications Manager, File Manager, and Multiple Character Set Utilities (HP 45951D, 5.25-in. discs; HP 45951E, 3.5-in. discs) (available Summer 1988)
- Microsoft Windows/386 Presentation Manager (HP D1651A includes both 5.25-in. and 3.5-in. discs)
- Microsoft Windows for the HP Vectra PC Version 2.0 (HP 45954B, 5.25-in. discs; HP 45954C, 3.5-in. discs)
- Microsoft Operating System/2 1.0 Version A for HP Vectra ES and RS PCs. (HP D1302A Opt AA9, 5.25-in. discs; Opt AAD 3.5-in. discs) (available Summer 1988)

Terminal Emulation

- HP Terminal program software included with each HP Vectra RS PC

Documentation

- HP Vectra RS PC Technical Reference Manuals (HP 5995-2654)
- Microsoft MS-DOS 3.2 Programmer's Reference (HP 5061-8971)

HP-HIL input devices

- HP Mouse (HP 46060A)
- HP Touchscreen Plus (HP D1183A) **Note:** For HP Video Graphics Color Display (HP D1182A) only
- HP Touch accessory (HP 35723A) **Note:** For Monochrome monitor HP 35731A only

- HP-HIL extension module (HP 46080A)
- Bar code reader (HP 92916A)
- A-Size digitizer (HP 46087A)
- B-Size digitizer (HP 46088A)
- HP Graphics tablet, 11-inch × 11-inch tablet (HP 45911A)

Other input devices

- HP SketchPro digitizing tablet (HP 7060A). Requires RS-232C port.

Physical characteristics

System dimensions: (upright) 8.3 in. wide × 20 in. deep × 24.0 in. high (21 cm × 50 cm × 60 cm)

System base dimensions:

14 in. wide × 20 in. deep (36 cm × 50 cm)

System footprint: (upright)

1.9 sq. ft. (.18 sq. m)

System weight: (Not including keyboard or monitor) 60 lbs. (27 kg) typical

Keyboard dimensions: 18.4 in. wide × 7.8 in. deep × 1.4 in. (2.2 in.) flat (standing) position (46.8 cm × 19.8 cm × 3.4 cm (5.5 cm)

Keyboard weight: 4.2 lbs. (1.9 kg)

Input voltage

- Autoranging worldwide power supply
- 90 to 132 Volts, 47 to 63 Hz; lower range
- 198 to 264 Volts, 47 to 63 Hz; upper range

Power consumption

- 460W (440W) maximum peak with 110V (220V) supply, convenience outlet unused
- 610W (590W) maximum peak with 110V (220V) supply, convenience outlet used at 150W

Heat

- 910 BTUs/hour

Power availability

- 330W available peak, 200W continuous
- Accessory cards: 10.6A at 5V; 0.3A at -5V; 0.5A at 12V; 0.3A at -12V

Regulatory compliance

Radio frequency interference

- FCC Class B
- FTZ 1046/84 Level B Radio Protection mark
- SABS approval
- VCCI approval

Safety approvals

- UL listed
- CSA, TUV certified
FEI approved
- NEMKO exempt
- IEC 380/435 compliance

Datacomm

- Germany and Finland approved
- Belgium, UK and Nordic network—pending
- Australian telecom category A license

Ergonomics

- Complies with German standard ZH1/68

Environmental conditions

- Operating temperature: 32° to 131°F (0° to 55°C)
- Non-operating temperature: -40° to 158°F (-40° to 70°C)
- Operating humidity: 15% to 95% (non-condensing)
- Non-operating humidity: 5% to 80% (non-condensing)
- Operating altitude: 15,000 ft. (4.6 km)
- Non-operating altitude: 50,000 ft. (15.2 km)

The table below lists the environmental limits for data storage devices installed in an HP Vectra RS.

Device	Non-Operating*		Operating	
	Temperature	Humidity**	Temperature	Humidity**
5.25-in. Flexible disc drives	-40° to 167°F -40° to 75°C	5% to 90%	50° to 104°F 10° to 40°C	8% to 80%
3.5-in. Flexible disc drives	-40° to 149°F -40° to 65°C	5% to 95%	50° to 104°F 10° to 40°C	20% to 80%
40-Mbyte ST-506 hard disc	-40° to 158°F -40° to 70°C	5% to 95%	50° to 104°F 10° to 40°C	8% to 80%
103, 155, 310-Mbyte ESDI hard discs	-40° to 149°F -40° to 65°C	5% to 80%	32° to 122°F 0° to 50°C	8% to 80%
40-Mbyte tape backup	-49° to 140°F -45° to 60°C	5% to 90%	41° to 104°F 5° to 40°C	20% to 80%

*Without removable media

**Non-condensing





*Microsoft® and MS®-DOS are U.S. registered
trademarks of Microsoft Corporation.*

*Technical information in this document
is subject to change without notice.*

Copyright © 1988 Hewlett-Packard Company

Printed in U.S.A. M0588
5952-64261C