

# 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 Megahertz 80386) and Vectra RS/16 PC (16 Megahertz 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 will also support 80386 control programs, 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 access time), high capacity (up to 310 Mbytes) hard discs. 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 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 are also designed to run 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 form the core of several powerful Hewlett-Packard computing solutions.

For CAD/CAM applications, combining an HP plotter and HP graphics tablet with a 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 and HP LaserJet II family of printers, an HP Vectra RS PC provides the engine for a powerful 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.

## 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.

## HP Vectra RS/20 PC 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)
Model 40 HP D1600A	1	40
Model 100 HP D1602A	2	103
Model 150 HP D1603A	2	155
Model 300 HP D1604A	2	310

## HP Vectra RS/16 PC 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)
Model 40 HP D1500A	1	40

## 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
- Two 32-bit memory 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, paged-mode memory subsystem architecture
- Fast memory chips (80 ns for 20 MHz systems, 100 ns for 16 MHz systems) support zero wait state memory accesses
- 1 or 2 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

**Note:** MS-DOS 3.2 can directly address a maximum of 640 Kbytes RAM. Additional RAM can be used by the 80386 control programs, for disc cache, RAM disc, or a print spooler.

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## 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

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## Data Storage

### Internal

- Five internal data storage devices are supported: up to two hard discs and up to four flexible disc devices.
- 5.25 inch 1.2 Mbyte flexible disc drive (HP 45812A)
- 5.25 inch 360 Kbyte flexible disc drive (HP 45811A)
- 3.5 inch 1.44 Mbyte flexible disc drive (HP 45813A)
- 40 Mbyte ST-506 hard disc mechanism (HP 45897M)
- 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)

### External

- 67 Mbyte 1/4 inch Cartridge Tape Drive (HP 9144A), includes HP-IB Disc/Tape Interface (HP 88500A)

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## Video

- 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)

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## System Software

- Vectra Disc Operating System with MS-DOS 3.2, Personal Applications Manager, File Manager, and Multiple Character Set Utilities (HP 45951B)
- 80386 Control Program (HP D1651A for 5.25 inch discs), compatible with Microsoft® Windows for the HP Vectra PC
- Microsoft® Windows for the HP Vectra PC (HP 45954B, 5.25 inch discs)

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## Terminal Emulation

- HP Terminal Program software included with each HP Vectra RS PC
- HP Terminal ROM Card (Available 1H 1988)

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## Documentation

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

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## New Accessories

### 1-Mbyte Memory Upgrade

### 8-Mbyte Memory Upgrade

### 80387 Numeric Coprocessor

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

### 40-Mbyte Hard Disc Mechanism (HP 45897M)

### ESDI Hard Disc Mechanisms

- 103-Mbyte (HP D1674A), 155-Mbyte (HP D1675A) and 310-Mbytes (HP D1676A) capacity
- Hewlett-Packard designed and manufactured
- 17 ms average access time
- Requires Four-Function ESDI Disc Controller (HP D1677A)

### Four-Function ESDI Disc Controller Card (HP D1677A)

Includes hard disc and flexible disc controller, one serial port, and one parallel port

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## HP-HIL Input Devices

- HP Mouse (HP 46060A)
- 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)

## 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)

## Environmental Conditions

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

**Note:** Operating temperature and humidity range may vary with data storage device.

## Input Voltage

- Autoranging worldwide power supply
- 90 to 132 Volts at 47 to 63 Hz
- 198 to 264 Volts at 47 to 63 Hz

## 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 pending
- SABS approval pending
- VCCI approval pending

### Safety Approvals

- UL listed
- CSA, TUV Certified (NEMKO, FEI pending)
- IEC 380/435 Compliance

### Datacomm

- Germany, Belgium, UK and Nordic Network - pending
- Australian Telecom Category A License

### Ergonomics

- Complies with German Standard ZH1/68.

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