HP Vectra ES and ES/12 Personal Computers

Data Sheet

Computing Power for Your Current and Future Needs

The Hewlett-Packard Vectra ES and the HP Vectra ES/12 Personal Computers provide the power, compatibility and growth capability to meet your current and future personal computing needs.

The HP Vectra ES/12 Personal Computer delivers superior power and performance in an 80286-based desktop. Its 12-MHz microprocessor has been designed to speed through your challenging office and technical applications by running faster than many IBM® PC/AT® compatible systems.

In addition, the HP Vectra ES/12 PC features a proprietary design allowing the HP Vectra ES Expanded Memory Card to run at 12 MHz with one wait state. This is significantly faster than the 8 MHz that most expanded memory cards run at today! Hence, the HP Vectra ES/12 often outperforms the competition with software applications written to take advantage of the Lotus®/Intel/Microsoft® Expanded Memory Specification (LIM EMS 4.0).

The HP Vectra ES PC, HP's 8-MHz, 80286-based personal computer, delivers economical IBM PC/AT compatibility and performance. It can easily handle many spreadsheet, database, and sophisticated word processing applications.

In addition to the superior performance of the HP Vectra ES/12 PC and the economical performance of the HP Vectra ES PC, both run software written for

current and future standards including Microsoft's new OS/2 and Santa Cruz Operation's (SCO) Xenix. HP's Vectra ES and ES/12 models include 3.5-inch or 5.25-inch flexible disc drives. Preconfigured models also include a VGA graphics adapter and hard disc drives.

Fast and Faster— Performance for Enhanced Productivity

The HP Vectra ES and ES/12 Personal Computers team up to meet your high productivity needs.

If your PC needs include computation-intensive applications, the increased power of the HP Vectra ES/12 is just what you are

looking for. The performance of the HP Vectra ES/12 easily handles the most challenging tasks such as complex graphics, large databases, sophisticated spreadsheets, and desktop publishing applications. In addition, both the HP Vectra ES and ES/12 PCs provide a valuable link to HP and other minicomputers.

The HP Vectra ES/12 PC is among the fastest 80286-based PCs available. It delivers the performance needed for improving individual productivity.

The HP Vectra ES and ES/12 PCs offer an array of add-on accessories including the HP Vectra ES Expanded Memory Card and numeric coprocessor. The HP Vectra ES Expanded Memory Card overcomes

the 640-Kbyte barrier for software written to take advantage of the Lotus/Intel/Microsoft (LIM) specification. Running at 12 MHz, this card is among the fastest on the market today.

HP Video Graphics Adapter (VGA) and Display

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, CDA, 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.

Growth and Compatibility

In addition to power and performance, the HP Vectra ES and ES/12 PCs provide an adaptable tool to grow as your needs change and grow.

All models include 640 Kbytes of memory with the ability to add up to 8 Mbytes (on the HP Vectra ES Expanded Memory Card), a serial and parallel interface, one standard 5.25-in., 1.2 Mbyte or 3.5-in., 1.44 Mbyte flexible disc drive, and a hard disc controller. HP's new 3.5-in., 1.44-Mbyte drive provides for data interchange with HP Touchscreen PC or IBM's 3.5-in. drives. 20-Mbyte and 40-Mbyte hard disc models are also available.

Seven industry-compatible accessory slots are available to configure a wide range of system accessories and enhancements.

The HP Vectra ES and ES/12 PCs' adherence to established industry

HP Vectra ES PC Configurations

All HP Vectra ES PCs come with 640-Kbytes of user memory, a flexible disc controller, a hard disc controller, one serial port, one parallel port, and one HP-HIL port.

Model	Flexible Disc (Mbytes)	Hard Disc (Mbytes)	Video Adapter
Model 10, D1210A	5.25-inch (1.2 Mbytes)	none	none
Model 15, D1215A*	3.5-inch (1.44 Mbytes)	none	none
Model 20, D1220A	5.25-inch (1.2 Mbytes)	20	none
Model 26, D1226A	5.25-inch (1.2 Mbytes)	20	VGA
Model 27, D1227A*	3.5-inch (1.44 Mbytes)	20	VGA

*Orderable after July 1, 1988

HP Vectra ES/12 PC Configurations

All HP Vectra ES/12 PCs come with 640-Kbytes of user memory, a flexible disc controller, a hard disc controller, one serial port, one parallel port, and one HP-HIL port.

Model	Flexible Disc (Mbytes)	Hard Disc (Mbytes)	Video Adapter
Model 10, D1310A	5.25-inch (1.2 Mbytes)	none	none
Model 15, D1315A*	3.5-inch (1.44 Mbytes)	none	none
Model 20, D1320A	5.25-inch (1.2 Mbytes)	20	none
Model 26, D1326A	5.25-inch (1.2 Mbytes)	20	VGA
Model 27, D1327A*	3.5-inch (1.44 Mbytes)	20	VGA
Model 40, D1340A	5.25-inch (1.2 Mbytes)	40	none
Model 46, D1346A	5.25-inch (1.2 Mbytes)	40	VGA
Model 47, D1347A*	3.5-inch (1.44 Mbyte)	40	VGA

*Orderable after July 1, 1988

standards maintains the value of your investment. In particular, they will run Microsoft's "next generation" operating system, OS/2, and the new applications written to take advantage of special OS/2 features.

Connectivity to HP Minicomputer Systems

The HP Vectra ES and ES/12 PCs are exceptional stand-alone performers. In addition, these PCs are excellent choices as connected PCs in a distributed-computing environment.

The HP Vectra ES and ES/12 PC models both include terminal emulation software. Once linked to HP minicomputers, you can easily access host-based resources such as high-speed printers and large databases. Communications link your HP Vectra PC to retrieve required information even if it resides on another vendor's host computer.

Quality for Lasting Value

The name Hewlett-Packard is synonymous with excellence. HP's engineering, extensive testing, and quality controls provide products of superior reliability, outstanding quality, and exceptional value. A worldwide service organization is dedicated to maintaining your equipment in first-rate condition. Skilled support professionals provide valuable technical assistance and advice.

With all these benefits, it is understandable that in survey after survey, Hewlett-Packard has been consistently ranked number one in customer satisfaction!

Features

System Processing Unit
- HP Vectra ES/12—Intel 80286 16-bit microprocessor running at 12-MHz clock rate
- HP Vectra ES—Intel 80286 16-bit microprocessor running at 8-MHz clock rate
- 640 Kbytes RAM standard
- Seven IBM PC/AT-compatible accessory slots:
  —Two 8-bit slots
  —Five 16-bit slots (one occupied by Four-function Controller Card)
- HP Expanded Memory slot for use with HP Vectra ES Expanded Memory Card
- Four-function Controller Card: Includes ST-506 hard disc and flexible disc controller, one serial port and one parallel port
- Three half-height data storage shelves. Two shelves suitable for flexible disc drives, the third shelf for a hard disc drive
- Socket for Intel 80287 numeric coprocessor
- Sockets for two additional ROM chips
- System clock/calendar/system configuration with CMOS Random Access Memory (RAM) and battery backup
- One HP-Human Interface Link (HP-HIL) port allows up to seven HP-HIL devices (such as a mouse, graphics tablet, barcode reader) to be connected simultaneously without using an accessory slot
- Optional keylock provides system security

Internal Memory
- 640 Kbytes of RAM on system board
- Memory expandable to 8 Mbytes on accessory card

Note: MS®-DOS 3.2 can directly address a maximum of 640 Kbytes of RAM. Many applications support the Lotus/Intel/Microsoft Expanded Memory Specification and can access more than 640 Kbytes with an HP Vectra ES Expanded Memory Card.
- 64 Kbytes of ROM

Keyboard
- Detachable, typewriter-style, 101-key IBM PC/AT enhanced keyboard layout 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
- 5.25-inch, 360-Kbyte inch flexible disc drive (HP 45811A)
- 5.25-inch, 1.2-Mbyte flexible disc drive (HP 45812A)
- 3.5-inch, 1.44 Mbyte flexible disc drive (HP 45813A)
- 20 Mbyte hard disc drive (HP D1296A)
- 40 Mbyte hard disc drive (HP D1297A)
External
- 67-Mbyte, ¼-inch Cartridge Tape Drive (HP 9144A)

Video
- 14-inch Video Graphics Color Display (HP D1182A; HP Video Graphics Adapter, HP D1180A, is required)
- 14-inch HP Monochrome Video Graphics Display (HP D1181A-Amber Phosphor and HP D1181G-Green Phosphor and HP D1181W-White Phosphor; HP Video Graphics Adapter, HP D1180A, is required)
- HP Video Graphics Adapter (HP D1180A)

System Software
- Microsoft MS-DOS 3.2 for the HP Vectra Personal Computer. Includes Personal Applications Manager, File Manager, Multiple Character Set Utilities, and Multi-Voluming Utility (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, Multiple Character Set Utilities, and Multi-Voluming Utility (HP 45951D, 5.25-in. discs; HP 45951E, 3.5-in. discs) (available Summer 1988)
- Microsoft® Windows/386 Presentation Manager (HP D1651A Opt ABA US 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 ABA, US; Opt AA9, 5.25-in., 1.2-Mbyte discs; Opt AAD 3.5-in., 1.44-Mbyte discs) (available Summer 1988)

Terminal Emulation
- HP Terminal Program included with each HP Vectra ES and ES/12 PC
- HP Terminal ROM Card (HP 24531A)

Documentation
- HP Vectra ES PC Technical Reference Manuals
  —Hardware Manual (Available in late summer 1988)
  —Firmware Manual 45945-60011
- Microsoft MS-DOS 3.2 Programmer's Reference Manual (HP 5061-8971)

Accessories

HP Vectra ES Expanded Memory Card (HP 45944A)

80287 Numeric Coprocessor (HP D1387A)
- Intel 80287 numeric coprocessor
- 8-MHz operation in HP Vectra ES PC or Vectra ES/12 PC
- Fits into socket on CPU board

HP-HIL Input Devices
- HP Mouse (HP 46060A)
- HP Touch Accessory (HP 35723A) **Note:** For use with 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 in. × 11 in. tablet (HP 45911A)

Physical Characteristics
System Dimensions
(Without keyboard) 16.7 in. wide × 15.4 in. deep × 6.3 in. high (42.5 cm × 39.0 cm × 16.0 cm)
System Footprint
1.8 sq. ft. (0.17 m²), without keyboard
System Weight
(Not including keyboard or monitor) 30.5 lbs. (13.9 kg)
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: 41° to 104°F (5° to 40°C)
- Non-operating temperature: −40° to 158°F (−40° to 70°C)
- Humidity: 15% to 80% (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 media.

Input Voltage
- Auto-ranging power supply
- 90 to 132V lower range over 47 to 63 Hz
- 198 to 264V upper range over 47 to 63 Hz

Power Consumption
- 465W (487W) maximum with 110V (220V) convenience outlet used at 150W

Heat
- 710 BTUs/hour maximum

Power Availability
- 176W peak for 10 sec. duration, 134W continuous
- Accessory cards: 9.0A at 5V; 0.39A at 12V; 0.25A at −5V; 0.25A at −12V

Regulatory Compliance
Radio Frequency Interference
- FCC Class B
- FTZ1046/84 LEVEL B (VDE Radio Protection Mark)
- SABS approval
- VCCI approval

Safety Approvals
- UL Listed
- CSA, TUV, Certified
- Nemko, FEI
- IEC 380/435 Compliance
Datacomm
- Germany, Belgium, UK and Nordic Network
- Australian Telecom Category A License
Ergonomics
- Complies with German Standard ZH1/618

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