
HP Vectra QS/20 PC

Technical Data



The HP Vectra QS/20 PC is a powerful desktop member of the HP Vectra PC family. Using the 386™ microprocessor in a compact desktop package, this system has the power to speed through today's and tomorrow's sophisticated personal computer applications.

The HP Vectra QS/20 PC is a superb workstation for intensive

users of business software. It will enhance your office productivity by making short work of complex spreadsheets, large databases, and presentation graphics.

The HP Vectra QS/20 PC is a member of HP's product line of high-quality, industry-standard workstations. The family includes a broad range of terminal and personal computer solutions.

Features

System Processing Unit

- 386 32-bit microprocessor, running at 20-MHz clock rate, switchable to 8 MHz from the keyboard
- 1-Mbyte memory (RAM) standard
- Seven IBM PC/AT-compatible accessory slots:
 - One 8-bit slot
 - Six 16-bit slots
- AT Multifunction Controller Card or Four-Function Controller Card (takes one 16-bit slot). Both cards include a flexible disk drive controller, one serial port, and one parallel port. The Four-Function Controller Card includes an ESDI hard disk drive controller. On models with a video adapter already installed, the adapter also occupies one 16-bit slot (Slot 1).
- Three half-height data storage shelves, two with front access. Maximum number of flexible disk drives is two. Maximum number of internal hard disk drives is two.
- Socket for 387™ numeric coprocessor
- HP Human Interface Loop (HP-HIL) port allows up to seven HP-HIL devices (such as mouse, graphics tablet, and bar code reader) to be connected simultaneously without using an accessory slot.



- Clock/calendar and system configuration in CMOS Random Access Memory (RAM) with battery backup
- Optional keylock provides system security
- Shadow RAM area to accelerate BIOS-coded operations
- 64 Kbytes of Read Only Memory (ROM)
- Sockets for two additional ROM chips

Internal Memory

- Interleaved, page-mode memory architecture supports zero wait state memory reads on open pages. Average number of wait states depends on the application being run.
- Fast memory chips (80 ns)
- 1 Mbyte of 32-bit memory standard, expandable to 16 Mbytes without using an accessory slot
- Expanded Memory Manager software provides LIM* 4.0 support for expanded memory applications

Memory Expansion

- 1-Mbyte, 80 ns memory upgrade kit (HP D1640A); includes four 256-Kbyte modules (SIMMs)
- 4-Mbyte, 80 ns memory upgrade kit (HP D1642A); includes four 1-Mbyte modules (SIMMs)
- HP Vectra QS/20 PC Memory Expansion Adapter for 10- and 16-Mbyte configurations. Also required for 4-Mbyte configurations when 1-Mbyte upgrade kits are used. (HP D1440A)

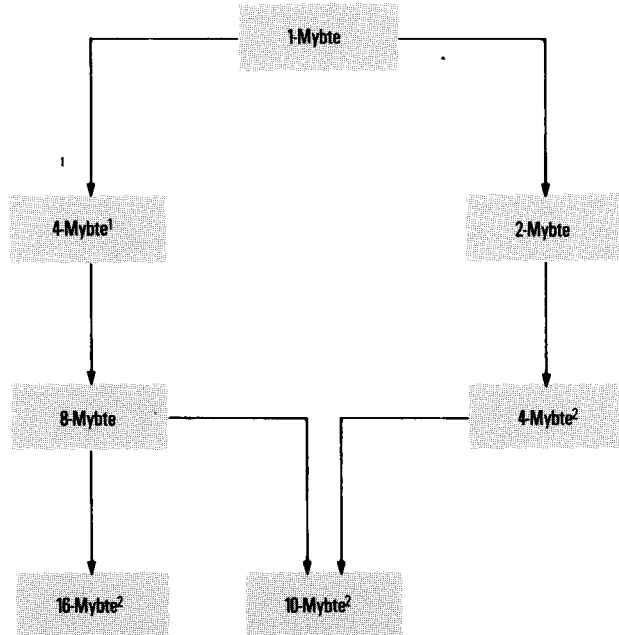
Keyboard

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

Internal Data Storage

- Any mix of two flexible disk or tape drives and one hard disk is supported. Two hard disk drives of the same type and one flexible drive is also a supported configuration.
- 5¼-inch, 360-Kbyte flexible disk drive (HP 45811A); for use in "B" shelf only
 - 5¼-inch, 1.2-Mbyte flexible disk drive (HP 45812A)
 - 3½-inch, 1.44-Mbyte flexible disk drive (HP D1667A)
 - 42-Mbyte Embedded-AT controller hard disk drive with 19 ms average seek time (HP D1665A); half-height drive for systems which include AT Multifunction Controller Card
 - 84-Mbyte Embedded-AT controller hard disk drive with 19 ms average seek time (HP D1666A); half-height drive for systems which include AT Multifunction Controller Card
 - 108-Mbyte ESDI hard disk drive with 16 ms average seek time (HP D1445A); half-height drive for systems which include Four-Function ESDI Controller Card
 - 152-Mbyte ESDI hard disk drive with 16 ms average seek time (HP D1446A); half-height drive for systems which include Four-Function ESDI Controller Card

Figure 2. Memory Upgrade Path



¹Need to replace standard RAM modules with a 4-Mbyte kit PN

²The purchase of one Memory Expansion Card (D1440A) is required to install 4-Mbyte, 10-Mbyte, or 16-Mbyte memory configurations.

- 40-Mbyte internal tape backup mechanism (HP D1671A); for use in "B" shelf only
- Four-function ESDI disk controller card (HP D1677A); includes hard disk and flexible disk controller, one serial port, one parallel port (standard); required to upgrade models with AT multi-function controller when installing an ESDI drive

Video

- HP Video Graphics Adapter. Supports 640 × 480 resolution with 16 colors in IBM VGA mode. Also supports IBM MDA, CGA, EGA, and Hercules graphics video standards (HP D1180A).
- HP Video Graphics Adapter, 512-Kbyte video RAM version. Supports 256 colors in IBM VGA mode (HP D1180A Option 1A7).
- 14-inch HP Video Graphics Color Display (HP D1182A for 110 Volts and HP D1182B for 220 Volts). HP D1180A Video Graphics Adapter required.
- 14-inch HP Monochrome Video Graphics Display
 - HP D1181A—Amber
 - HP D1181G—Green
 - HP D1181W—White
 HP D1180A Video Graphics Adapter is required.

High Resolution

- HP Intelligent Graphics Controller 10 (HP A1086A). Supports resolutions up to 1024 × 768 with 16 or 256 colors. Requires one accessory slot and supports VGA pass-through. Includes software drivers for TIGA, DGIS, AutoCAD™ display list, AutoCAD™,

AutoShade, AutoSketch non-display list, GEM 3.1, Windows 286/386 2.0, and CGI.

– 0.5-Mbyte VRAM Upgrade Kit for HP Intelligent Graphics Controller 10 (HP A1084A); maximum 1.0-Mbyte VRAM; 0.5-Mbyte VRAM is standard with HP A1086A Card.

– 0.5-Mbyte DRAM Upgrade Kit for HP Intelligent Graphics Controller 10 (HP A1085A); maximum 3.5 Mbytes DRAM; 0.5-Mbyte DRAM may be added to base card. Additional memory must be added to extension module (HP A1087A).

- 20-inch High Resolution Color Display (HP D1187A); multi-sync capability provides resolutions ranging from 640 × 480 pixels (VGA mode) to 1280 × 1024 pixels resolution; can be used with HP A1086A Intelligent Graphics Controller
- 16-inch High Resolution Color Display (HP D1188A); same as HP D1187A above, except 16-inch

PC Multiuser

- SCO™ UNIX® System V/386 (D2046A/ABA for U.S. 5¼-inch disks; D2046B/ABA for U.S. 3½-inch disks)
- SCO VP/ix™ Integrated DOS Environment (D2052A/ABA**). Includes software on 5¼-inch disks and documentation.
- Terminal Multiplexor Kit (D2040A) includes ISA interface card, one 8-port terminal concentrator, one host cable, and one terminal cable.
- Terminal Concentrator Kit (D2041A) includes one 8-port terminal concentrator, one host cable, and one terminal cable.

Terminals for

Multiuser Applications

- HP 700/41 Entry Level ASCII Terminal (HP C1003A*); amber phosphor
- HP 700/41 Entry Level ASCII Terminal (HP C1003G*); green phosphor
- HP 700/44 PC-Terminal with AT3 keyboard (HP C1007A*); sends either ASCII codes or PC key scan-codes to host; amber phosphor
- HP 700/44 PC-Terminal with AT3 Keyboard (HP C1007G*); same as C1007A above, except green phosphor
- HP 700/44 PC-Terminal with AT3 Keyboard (HP C1007W*); same as C1007A above, except soft-white phosphor

Terminal Multiplexor Kit

Terminal Multiplexor Kit (D2040A). For use with SCO UNIX. Provides connectivity initially for up to 8 serial devices. Each additional 8-port add-on requires a Terminal Concentrator Kit (D2041A). 32 ports maximum. First serial cable provided in Terminal Multiplexor kit. Additional cables include Terminal/Printer cable (D2042G), External Modem cable (D2043M), and HP Vectra cable (D2044V).

System Software

Microsoft MS-DOS® 4.01. Includes DOS Shell, Personal Applications Manager (PAM), and HP Vectra Disk Cache. D1151A Opt. ABA for U.S. English 5¼-inch disks; D1151B Opt. ABA for U.S. English 3½-inch disks. Localized options also available.

*Language option must be specified; for example, option ABA for U.S. English

** Available 2/1/90

MS-DOS 3.3. Includes Personal Applications Manager (PAM), Volume Expansion utilities, and disk caching utility. 45951D for U.S. English 5¼-inch disks; 45951E for U.S. English 3½-inch disks.

Microsoft Operating System/2 (OS/2) 1.1. D1302B Opt. ABA for U.S. English 5¼-inch disks; D1302C Opt. ABA for U.S. English 3½-inch disks. Needs at least 2.5 Mbytes RAM; 4 Mbytes recommended.

SCO UNIX System V/386 release 3.2 multiuser run time operating system. D2046A Opt. ABA for U.S. English 5¼-inch disks; D2046B Opt. ABA for U.S. English 3½-inch disks. Includes SCO manuals and HP Vectra Installation Guide.

Utility Disk (standard software included with all models) includes Setup program, HP Expanded Memory Manager Program to provide Lotus-Intel-Microsoft (LIM) EMS 4.0 functionality, and speed-switching utility.

SCO VP/ix Integrated DOS Environment (D2052A Opt. ABA). Requires SCO UNIX.

Technical Documentation

- HP Vectra QS PC Hardware Technical Reference Manual (HP D1410-90002).
- HP Vectra QS PC System BIOS Technical Reference Manual (HP 45945-60031).
- HP Vectra QS PC Service Manual (D1410-90001).

HP Vectra QS/20 PC Configurations

All HP Vectra QS/20 PCs come with 1 Mbyte of user memory, a flexible disk drive, a serial port, and a parallel port.

HP Vectra QS/20 PC Models

Model	Flexible Disk	Hard Disk	Controller	Video Adapter
1, D1491B*	5¼ inch, 1.2 Mbyte	None	None	None
46, D1422B*	5¼ inch, 1.2 Mbyte	42 Mbytes	Embedded-AT	VGA
47, D1424B*	3½ inch, 1.44 Mbyte	42 Mbytes	Embedded-AT	VGA
86, D1498B*	5¼ inch, 1.44 Mbyte	84 Mbytes	Embedded-AT	VGA
87, D1499B*	3½ inch, 1.44 Mbyte	84 Mbytes	Embedded-AT	VGA

*Language option must be specified; for example, option ABA for U.S. English.

Accessories

Numeric Coprocessor

- 387 numeric coprocessors running at 20 MHz (D1670A)

HP-HIL Input Devices

- HP Mouse (HP 46060A).
- HP Touchscreen Plus bezel (HP D1183A)

Note:

For HP Color Video Graphics Display (HP D1182B) only

- HP-HIL Extension Module (HP 46080A)
- Bar Code Reader (HP 92916A)
- A-Size Digitizer (HP 46087B)
- B-Size Digitizer (HP 46088B)
- HP Graphics Tablet, 11-inch × 11-inch tablet (HP 45911A)
- HP SketchPro serial digitizing tablet (HP 7060A); uses RS-232C serial port



Physical Characteristics

System Dimensions

(without keyboard) 16.7-inch wide x 15.4-inch deep x 6.3-inch high (42.5 cm x 39.0 cm x 16.0 cm).

System Footprint

1.8 sq. ft. (0.17 m²), without keyboard.

System Weight

(not including keyboard or monitor) 33 lbs. (15 kg).

Keyboard Dimensions

18.4-inch wide x 7.8-inch deep x 1.4-inch (2.2-inch) flat (standing) position (46.8 cm x 19.8 cm x 3.4 cm [5.5 cm]).

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% (non-condensing).
- Operating altitude: 15,000 ft (4.6 km)
- Non-operating altitude: 50,000 ft (15.2 m)
- Note: Operating temperature and humidity range may vary with data storage media.

Input Voltage

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

Power Consumption

- 456 W (487 W) maximum with 110 V (220 V) convenience outlet used at 150 W

Heat

- 710 BTUs/hour maximum

Power Availability

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

Regulatory Compliance

Radio Frequency Interference

- FCC Class B
- FTZ 1046/84 Level B (VDE Radio Protection Mark) pending
- SABS approval pending
- VCCI approval

Safety Approvals

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

Datacomm

- Germany, Belgium, UK, and Nordic network-pending

Ergonomics

- Complies with German standard ZH1/618

AutoCAD is a U.S. trademark
of Autodesk, Inc.

SCO is a trademark of the Santa Cruz
Operation, Inc.

UNIX is a registered trademark of AT&T in
the U.S.A. and other countries.

VP/ix is a trademark of Phoenix
Technologies Ltd. and Interactive Systems
Corporation.

386 and 387 are trademarks of Intel
Corporation.

Lotus is a U.S. registered trademark of
Lotus Development Corporation.

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

**For the HP authorized dealer or
HP sales office nearest you, call:
(800) 752-0900**

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

**© Copyright
Hewlett-Packard Company 1990
All Rights Reserved. Reproduction,
adaptation, or translation without prior
written permission is prohibited except
as allowed under the copyright laws.**

**Printed in USA M0390
5952-1724**