

HP Vectra QS/16S PC

Technical Data

The HP Vectra QS/16S PC is the entry-level desktop PC of HP's 80386 family. Using the Intel 386SX™ microprocessor, it offers the performance and compatibility required for today's and tomorrow's sophisticated applications, at an affordable price.

Business software users will enjoy increased productivity with the HP Vectra QS/16S PC. This powerful workstation runs complex spreadsheets, large databases, and presentation

graphics several times faster than the 286 generation of PCs. It is also well suited to serve as an affordable workstation for 386™ Microprocessor CAD and multi-user systems. While designed in a compact desktop package, the HP Vectra QS/16S PC offers a high level of expandability to meet your future needs.

The HP Vectra QS/16S PC is a member of HP's complete product line of high quality, industry-standard PCs.

Features

System Processing Unit

- 386SX 32-bit microprocessor, running at 16-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 which includes a flexible disk drive controller, one serial port, and one parallel port (takes one 16-bit slot). 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 387SX™ numeric coprocessor
- HP Human Interface Loop (HP-HIL) port allows up to seven HP-HIL devices (such as mouse, graphics tablet, 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.

Internal Memory

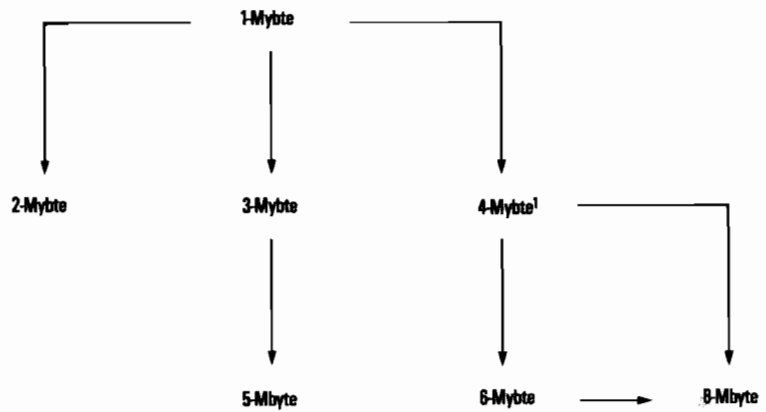
- Interleaved, page-mode memory architecture supports zero wait state memory reads on open pages. The average number of wait states depends on the application being run.
- Fast memory chips (100 ns)
- 1 Mbyte of 16-bit memory standard, expandable to 8 Mbytes without using an accessory slot
- Expanded Memory Manager software provides Lotus®/Intel/Microsoft® (LIM) 4.0 support for expanded memory applications
- Shadow RAM area to accelerate BIOS-coded operations
- 64 Kbytes of Read Only Memory (ROM)
- Socket for two additional ROM chips

Memory Expansion

1-, 2-, 3-, 4-, 5-, 6-, and 8-Mbyte configurations are supported on the HP Vectra QS/16S PC. Three types of memory modules are available to expand the system memory:

- 1-Mbyte memory expansion kit HP D1640A
- 2-Mbyte memory expansion kit HP D1354A
- 4-Mbyte memory expansion kit HP D1642A

Figure 2. Memory Upgrade Path



¹Replace standard RAM with a 4-Mbyte kit, P/N D1642A

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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

Data Storage

Any mix of two flexible disks or tape drives and one hard disk is supported. Two hard disks of the same type and one flexible disk drive is also a supported configuration.

- 5¼-inch, 360-Kbyte flexible disk drive (HP 45811A)
- 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 (HP D1445A); half-height. Requires ESDI four-function controller card (HP D1677A).
- 152-Mbyte ESDI hard disk drive (HP D1446A); half-height. Requires ESDI four-function card (HP D1677A).
- 40-Mbyte internal tape backup mechanism (D1671A)
- Four-function ESDI disk controller card (HP D1677A); includes hard disk and flexible disk controller, one serial port,

one parallel port; required to upgrade models with AT multifunction controller when installing an ESDI drive.

Numeric Coprocessor

- 387SX numeric coprocessor at processor speed (D1453A)

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 (D1180A).
- HP Video Graphics Adapter, 512-Kbyte video RAM version. Supports 256 colors in IBM VGA mode (D1180A Option #1A7).
- 14-inch HP Video Graphics Color Display (D1182A)
- 14-inch HP Monochrome Video Graphics Display
 - D1181W, soft-white phosphor
 - D1181G, green phosphor
 - D1181A, amber phosphor
- 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-Mbyte DRAM; 0.5-Mbyte DRAM may be added to base card. Additional memory must be added to extension module (HP A1087A).

- 20-inch and 16-inch HP high resolution color displays. Multi-sync capability provides resolutions ranging from 640×480 (VGA) to 1280×1024 (64KHz). D1187A (19-inch) and D1188A (15-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 C11003A**); 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

* Available 2/1/90.

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

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.

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.

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

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.

Technical Documentation

- HP Vectra QS PC Hardware Technical Reference Manual (D1410-90002).
- HP Vectra System BIOS Technical Reference Manual (HP 45945-60031).
- Microsoft MS-DOS 3.3 Programmer's Reference Manual

HP Vectra QS/16S PC Configurations

All HP Vectra QS/16S PCs come with 1 Mbyte of user memory, a flexible disk drive, a serial port, and a parallel port.

HP Vectra QS/16S PC Models

Model	Flexible Disk	Hard Disk	Controller	Video Adapter
1, D1481B*	5.25-inch, 1.2 Mbyte	None	None	None
46, D1462B*	5.25-inch, 1.2 Mbyte	42 Mbytes	Embedded-AT	VGA
47, D1464B*	3.5-inch, 1.44 Mbyte	42 Mbytes	Embedded-AT	VGA
86, D1488B*	5.25-inch, 1.2 Mbyte	84 Mbytes	Embedded-AT	VGA
87, D1489B*	3.5-inch, 1.44 Mbyte	84 Mbytes	Embedded-AT	VGA

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

Accessories**HP-HIL Input Devices**

- HP Mouse (HP 46060A)
- HP Touchscreen Plus bezel (HP D1183A). Note: For HP Color Video Graphics Display (HP D1182A) 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 by 11-inch tablet (HP 45911A)

Other Input Devices

- HP SketchPro serial digitizing tablet (HP 7060A)
- HP 700/44 terminal for multiuser systems (HPC1007A,G or W)
- HP 700/41 entry-level ASCII 7-bit terminal (HPC1003A or G)

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 km).

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 -5 V; 0.25 A at -12 V.

Regulatory Compliance

Radio Frequency Interference

- FCC Class B
- FTZ 1046/84 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

Ergonomics

- Complies with German standard ZH1/618



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