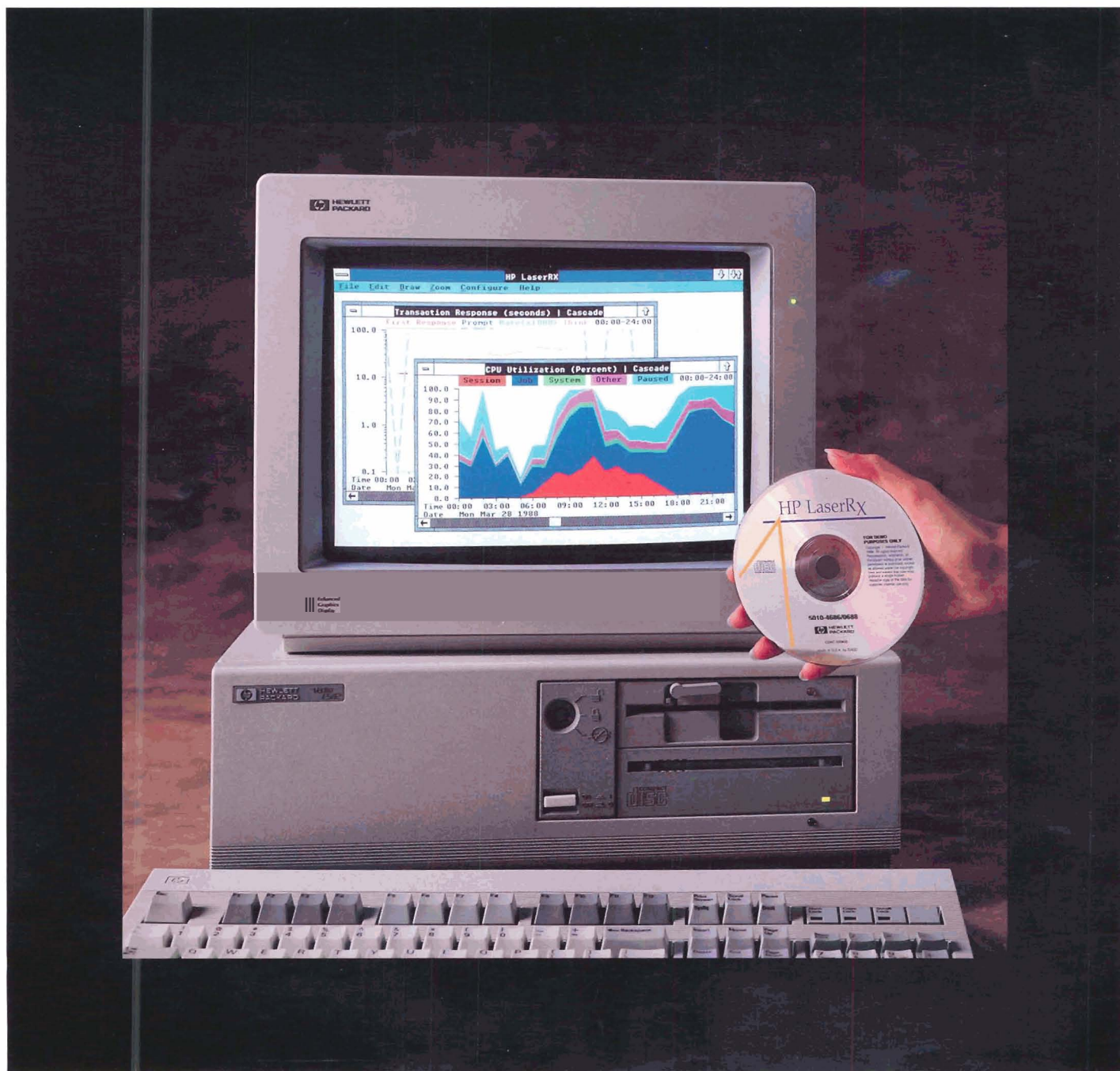


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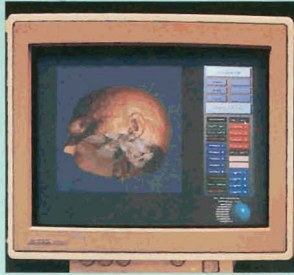
UPDATE

COMPUTER SYSTEMS FROM HP

SEPTEMBER/OCTOBER 1988



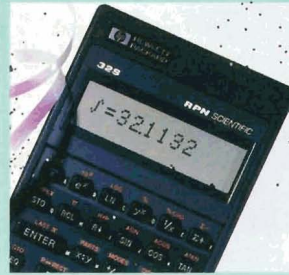
A new approach to



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Line of world's best calculators expands

HP LaserRX, a state-of-the-art performance management tool that operates on a CD ROM-based personal computer workstation, lets you monitor and evaluate information critical to maintaining peak computer-system performance.

Powerful CD-ROM technology and flexible user interface

Designed to monitor HP 3000 business computers, including the RISC-based HP Precision Architecture systems, HP LaserRX runs on an HP Vectra PC or IBM PC/AT. The PC workstation incorporates a 5¼-inch compact-disc read-only memory (CD ROM) drive and a user interface based on MS®-Windows.

This departure in the design of performance tools ensures that information is presented clearly and that the system is relieved of the task of presenting the data.

Easily accessible and manageable information

HP LaserRX provides continuous and extensive system information on CPU utilization, memory and disk activity, response time and transaction throughput. You can conduct varied performance-management activities such as identifying and isolating performance bottlenecks, evaluating corrective actions, and balancing system components for maximum efficiency.

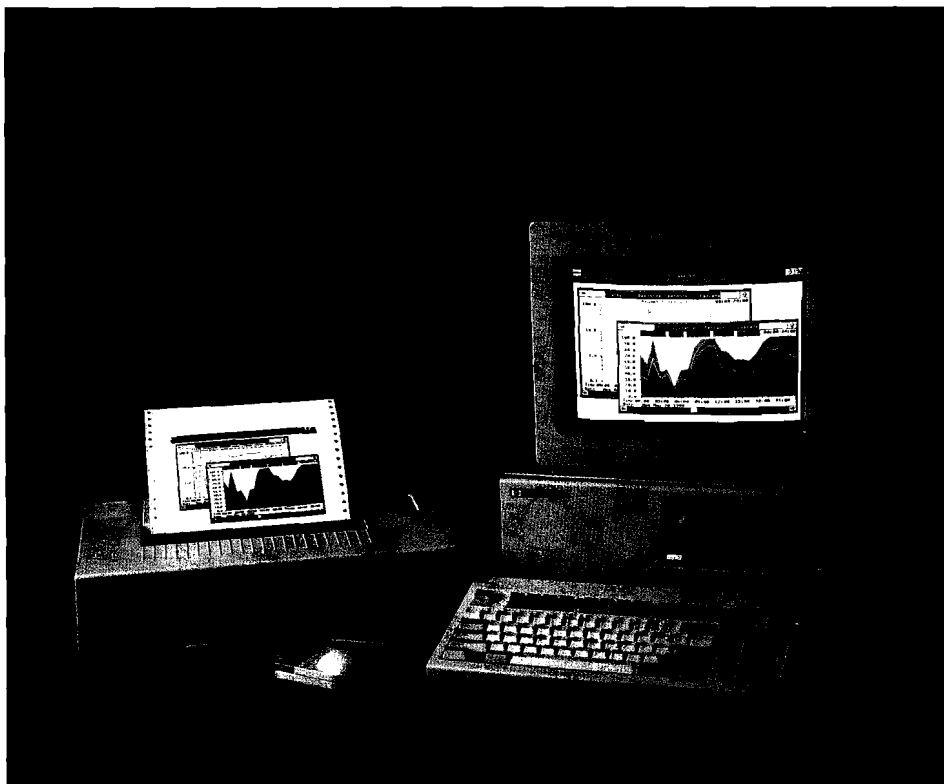
Since HP LaserRX is PC-based, many of the complexities of performance management are user transparent. Actual data collection takes place on the HP 3000 without any user intervention.

When you're ready to evaluate the information, simply select from a menu and the specified information is automatically transferred from the host system to the PC. You

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computer performance management



With MS-Windows, HP LaserRX provides a graphics interface that significantly enhances presentation clarity.

can also easily export the information to other software packages such as Lotus® 1-2-3® for analysis.

Multiple HP 3000 systems can be analyzed from a single PC workstation via a local-area network or an RS-232-C data-communications link.

Support services

When you purchase the Software Materials Subscription (SMS) service, you will receive software and manual updates when revisions are made to HP LaserRX.

There are also additional services available if you are using HP OfficeShare, AdvanceLink, or data-communications software to operate HP LaserRX.

HP LaserRX is currently available for MPE V systems, with MPE XL functionality available later as an update.

For more information, check A on the HP Reply Card.

Reduce data-communications costs and save time with AdvanceMail II

A new version of AdvanceMail, HP's information distribution and messaging system for the HP Vectra and IBM families of personal computers, now offers the following features:

- Integration of HP word processors
- Word processing browsers
- Acknowledgments
- Wastebasket
- Improved data-communication configuration
- Connect without using AdvanceLink
- Programmatic access to AdvanceMail transport mechanism

AdvanceMail II allows desktop PC users to send and receive messages and documents without leaving the PC environment. And, with its new features, time to carry out tasks is reduced by 30 to 50 percent. Using HP DeskManager's transport mechanism, AdvanceMail II can connect PC users to the HP 3000 network and beyond. It is also a flexible and cost-effective way for a mobile professional to communicate.

Since AdvanceMail II enables PC users to be independent from the HP 3000, you can have double the number of PC users on the HP 3000, and your data-communications costs are reduced.

AdvanceMail II requires HP DeskManager on the HP 3000. A 3½-inch floppy-disk format is available by ordering Option 003.

For more information, check B on the HP Reply Card.

68030-based workstation delivers 8 MIPS performance

The HP 9000 workstation family has been extended with the addition of the Model 370, an 8-MIPS workstation based on the new Motorola MC68030 microprocessor operating at a 33-MHz clock rate.

New low-cost 2D graphics bundles and FPA

The line also expands with new low-end 2D color graphics for the Models 360 and 370. The C+ graphics subsystem offers 1,024 x 768 pixel resolution and very competitive pricing.

Also available is an enhanced optional floating-point accelerator (FPA) that doubles Model 370 floating-point performance over the standard MC68882 provided.

If you own an HP Model 350, you can take advantage of a single-board upgrade kit that will allow you to convert the Model 350 to a Model 370.

Large base of software available

The Motorola-based Model 370 has access to a large base of software. You can transfer existing software to the Model 370 by verifying compiled software code with HP-UX 6.2. There is no need to port or recompile.

Several configurations available

Several configurations of the Model 370 are available, including a high-resolution monochrome workstation, three 2D high-resolution color workstations, and two high-performance 3D solids-rendering color workstations.

Standard with all Model 370 workstations are a 32-bit system bus, IEEE 488 peripheral interface, direct memory access (DMA), and Ethernet/IEEE 802.3 ThinLan or Attachment Unit Interface (AUI) for network access. With 8 Mbytes of parity RAM as standard, the systems can be expanded to 32 Mbytes (48 Mbytes for ECC RAM). Other options such as VME bus expansion, SCSI disk interface, DOS coprocessing, and the FPA may be added to further enhance workstation functionality.

For more information, check C on the HP Reply Card.

Network-compatible windowing environment with X Window System Version 11

X Window System™ Version 11 (X11) is available now for the HP 9000 Series 300 and HP Precision Architecture Series 800 technical computers, and the HP Vectra personal-computer family.

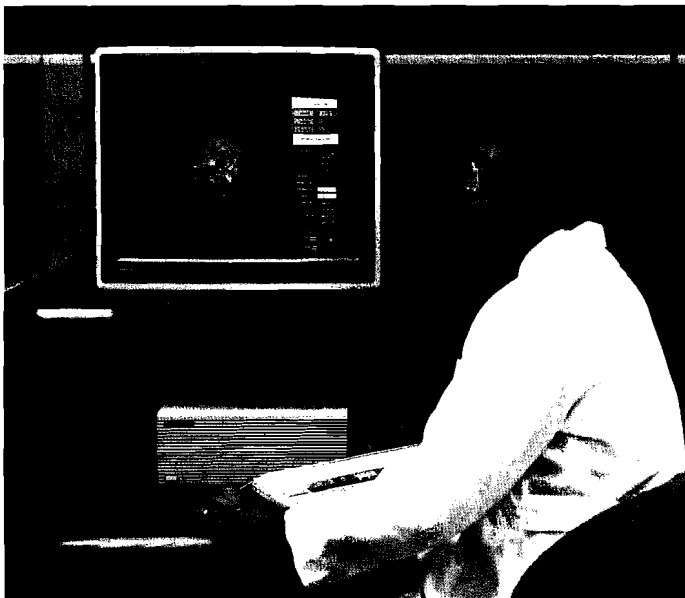
Also available are the HP X Widgets, which are based on the industry standard Xt intrinsics. HP X Widgets provide the software tools needed to make the development of X-based applications easier and faster.

The combination of the X Window System and HP's industry-standard network offering allows HP's MS-DOS® and UNIX® system workstations to access X-based applications in a multivendor, networked environment.

Client/server architecture

The X Window System is based on a client/server architecture. In this architecture, clients, or X-based applications, make requests for resources (display, keyboard, mouse or other input devices) from the server. X11 for the Series 300 and 800 provides these workstations with a network-compatible windowing environment based on the newest version of the X Window System, including both X-client and X-server capabilities.

The X Window System/PC (X/PC) for the HP Vectra PC family provides X-server capabilities and brings the power of the X Window System to the HP Vectra ES and RS PCs. XIPC allows an HP Vectra PC to use the computing power of other X hosts on the network by providing a graphically oriented "window" to access networked, X-based applications.



To protect your investment in applications, the Motorola-based Model 370 leverages a large base of software developed for this stable architecture.

Wide range of graphics supported

Most currently available bit-mapped displays for the Series 300 and Series 800 workstations are supported, and X11 can be used with any of the Series 300 CPUs.

Also supported are most of the current graphics cards, from the 512 x 400 medium-resolution board to the 1,280 x 1,024 high-resolution color-graphics cards. The X Window System/PC for the HP Vectra PC family supports medium- to high-resolution graphics, including EGA, VGA and HP's high-resolution, 1,024 x 768 intelligent-graphics controller.

Application developers working with HP X Widgets can increase productivity, reduce code-maintenance requirements and produce

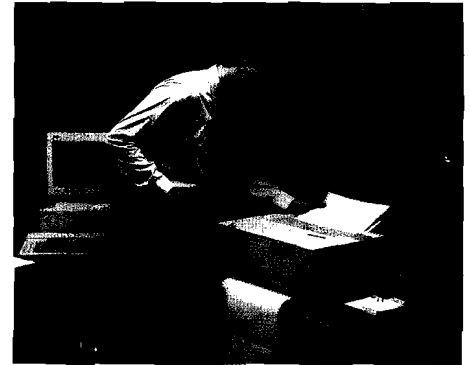
consistent user interfaces that do not need to be relearned from one application to another.

Software developers have the choice of building a user interface for applications based on the HP X Widgets, designing their own widgets, or using a combination of the two.

For more information, check D on the HP Reply Card.

X Window System™ is a trademark of the Massachusetts Institute of Technology. MS®-DOS is a U.S. registered trademark of Microsoft Corporation. UNIX® is a registered trademark of AT&T in the U.S.A. and other countries.

HP RuggedWriter printer now handles six-part forms



The HP RuggedWriter 480 printer handles documents including multipart forms, spreadsheets, letters and reports.

Form-intensive environments will benefit from two new features added to the HP RuggedWriter 480 printer. It now handles six-part forms (.018 inches) and has a recommended maximum usage of 5,000 pages per month.

Fast and reliable

At print speeds of up to 480 characters per second (cps), and with a 20,000 hour mean-time-between-failure (MTBF) rate, the HP RuggedWriter 480 printer is one of the fastest and most reliable 24-wire dot-matrix printers available. Its MTBF rate is up to four times that of other dot-matrix printers. It works with HP, IBM, and IBM-compatible personal computers.

The expanded form capacity allows for printing on pages up to .018 inches thick—up from .012 inches for four-part forms.

The HP RuggedWriter 480 printer still offers the same easy-to-use front panel. You can select from three independent paper paths: hand-fed sheets, z-fold paper and automatic cut sheets. Other features include a wide carriage, automatic paper loading, last-form tear off and an automatic cut-sheet feeder option.

(continued)



The X Window System includes support of an extensive line of display hardware and graphics capabilities—from EGA-equipped PCs to high-performance graphics workstations.

There are three typeface settings and speeds: letter-quality mode at 240 cps, draft mode at 480 cps and compressed mode at 330 cps. You can create high-quality graphics with up to 180 × 360 dots-per-inch resolution.

For more information, check **E** on the HP Reply Card.

800-cpi density added to 1/2-inch tape drives

Now you can order 800 characters per inch (cpi) as an option on the HP 7979A and 7980A autoloading 1/2-inch tape drives.

This makes the HP 7979A tape drive a dual-density streaming drive with both 1600 and 800 cpi. The HP 7980A with Option 800 is a tri-density drive offering 6250, 1600 and 800 cpi. Both products offer low cost-of-ownership, and are smaller, faster and more reliable than their predecessors.

System support

Option 800 is supported on HP 9000 Series 300 systems HP-UX Release 6.2, and HP 1000 A-Series RTE-A Release 5.0. Support is also planned for HP 9000 Series 800 HP-UX systems.

With 800 cpi now available on these newer tape drives, HP has discontinued the HP 7978B and HP 7974A drives. However, they can still be purchased as remarketed products. Option 800 is not available on the HP 7980XC.

For more information, check **F** on the HP Reply Card.

New software helps you manage IBM networks

The new HP 18371A SNA/Bisync network performance analyzer (NPA) consists of two software programs designed to help you manage IBM and IBM-compatible networks. The SNA NPA is specifically designed for use on an HP 4954A protocol analyzer dedicated to monitoring an SNA network and capturing user-selected information either to define current problems or to store data for analyzing network performance.

The new software has the ability to collect information for the entire network and a total of 16 individual units representing any combination of physical units (PU) and logical units (LU). Activity or statistical displays present the collected information on one of three display levels—network, PU, or LU.

The activity displays show current status for the network. This type of display is constantly updated with information for each of the three display levels while the run is in progress.

The SNA stats package keeps four types of measurements for each device:

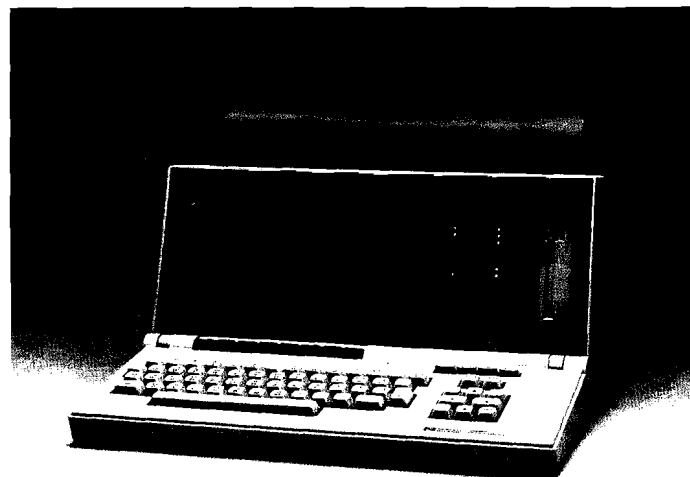
- Utilization measurements show the frame and BIU utilization, and graph the PU and LU overhead and total user data.
- Timing measurements tell system response time, confirmation response time, and transaction duration time.

- Total error incidents that occur on the link are kept. These events include bad FCS values, abort sequences, reject frames, frame reject frames, and negative responses.
- Running totals are kept for several types of incidents, total number of link setups, link disconnects, BINDs, UNBINDs and specific UNBIND codes, and sense data codes.

Each measurement is made for the entire link, each PU, and each LU that is active. A matrix of addresses shows the most active PUs, or those defined by the user, on one display. By positioning the cursor on a PU, the user can view each active LU attached to that PU on another matrix.

The Bisync stats included in the package are similar to the SNA stats, but have a more limited set of measurements. The matrix operates the same way as the SNA NPA except that device types are CUs and devices. The measurements made with Bisync performance-analysis software include utilization for each device and number of bad CRCs. Poll measurements display the number of unacknowledged polls, number of nonproductive polls, and poll response time.

For more information, check **G** on the HP Reply Card.



The HP 4954A running the HP 18371A SNA/Bisync software provides network measurement capability for IBM computing environments.



Powerful new desktop 80386 PC

Now the power and performance of the HP Vectra RS/16 PC is available in a small desktop package. Using a full 32-bit 80386 microprocessor, the HP Vectra QS/16 PC has the power to speed through today's and tomorrow's sophisticated personal computer applications.

As the most powerful member of the HP Vectra desktop family, the HP Vectra QS/16 PC is an excellent workstation for intensive users of business software. It enhances office productivity by making short work of complex spreadsheets, large databases, and presentation graphics.

The HP Vectra QS/16 PC is compatible with existing industry standards (IBM PC AT), as well as with new software that uses the power of the 80386, such as Microsoft's OS/2 operating system and Xenix 386. The HP Vectra QS/16 PC also supports Microsoft Windows 386 Presentation Manager, providing multitasking of current MS-DOS 3.2/3.3 applications.

Advanced technology

Both its hardware and system software reflect the HP Vectra QS/16 PC's use of state-of-the-art technology. Like the other members of the HP Vectra PC family, it makes extensive use of surface-mount and VLSI devices to save space and promote reliability. For high performance without sacrificing compatibility with add-in cards designed for lower-speed machines, the HP Vectra QS/16 PC has a dual-bus architecture: a 32-bit, 16-MHz path for rapid access to system memory, and a 16-bit, 8-MHz industry-standard I/O bus. The HP Vectra QS/16 PC also uses the latest in memory technology, so it can be expanded to 16 Mbytes of high-speed memory without taking up an I/O slot.



Together with the HP 7550A plotter, the HP Vectra QS/16 PC is an ideal business graphic solution.

Powerful software utilities

Each HP Vectra QS/16 system includes disk caching for superior performance in disk-intensive applications, terminal emulation for easy connection to HP 3000 and other computer systems, and support for the latest version of the Lotus/Intel/Microsoft Expanded Memory Specification (LIM EMS 4.0) for access to more than the standard 640 Kbytes of memory imposed by DOS.

Basis for powerful solutions

The HP Vectra QS/16 PC forms the core of several powerful HP computing solutions.

- With its large memory capacity and built-in support for LIM EMS 4.0 expanded memory, the HP Vectra QS/16 PC is an excellent platform for the easy-to-use HP NewWave windowing environment.
- For CAD/CAE applications, combining an HP plotter and HP graphics tablet with an HP Vectra QS/16 PC results in an outstanding desktop engineering system.
- With the HP ScanJet scanner and HP LaserJet Series II printer, an HP Vectra QS/16 PC provides the engine for a high-throughput desktop publishing solution.

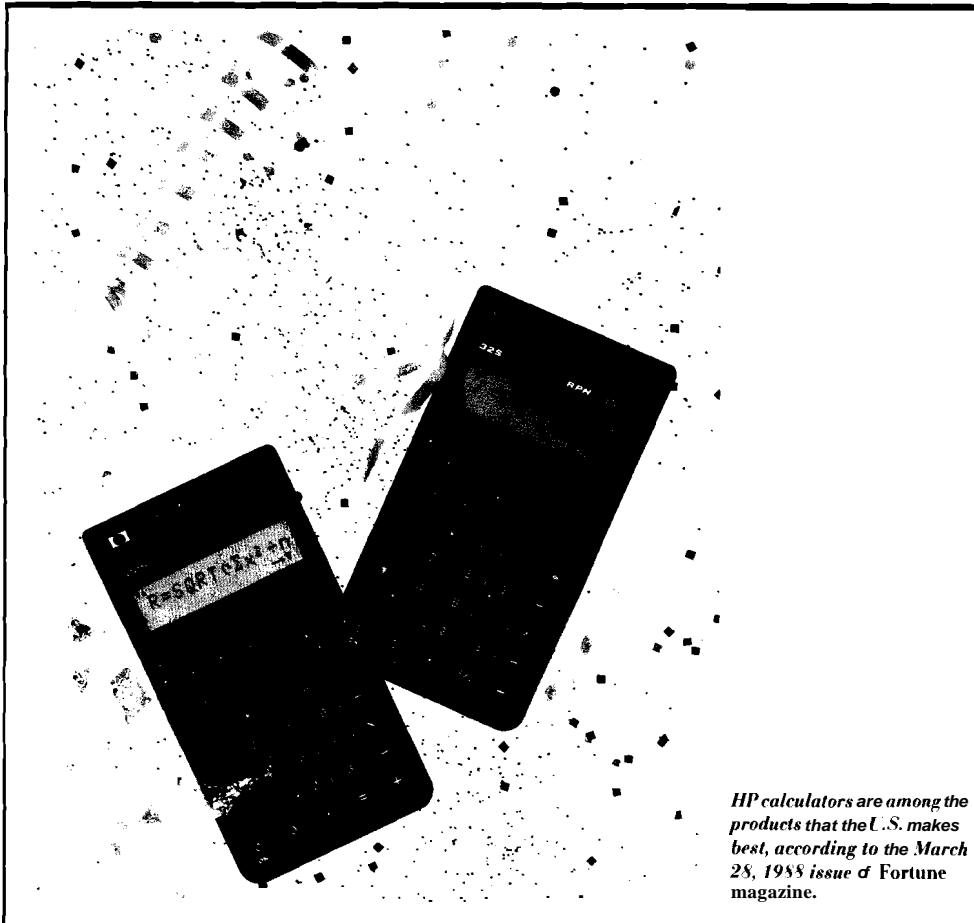
Part of a great line

With the HP Vectra QS/16 PC, you have a comprehensive range of PCs to meet your price, performance, storage capacity and expansion requirements. Other PCs in the family are the entry-level, 8086-based HP Vectra CS, two midrange desktop 80286-based HP Vectra ES PCs, and two high-performance, floor-mounted 80386-based HP Vectra RS PCs.

Choose from four models

The HP Vectra QS/16 is available in four models ranging from 1 Mbyte of user memory and a 1.2-Mbyte 5¼-inch flexible disk drive to a 40-Mbyte hard disk drive and an HP video graphics adapter.

For more information, check H on the HP Reply Card.



HP calculators are among the products that the U.S. makes best, according to the March 28, 1988 issue of Fortune magazine.

Line of world's best calculators expands

Now, HP offers two more top-quality scientific calculators. The **HP-32S** for technical professionals and students expands HP's offering of Reverse Polish Notation (RPN) machines. The **HP-22S** for science students is designed for those who prefer algebraic-entry calculators. An optional solutions book is available for each calculator.

Both calculators have alphanumeric displays with easy-to-understand prompts, labels and messages. Prompts and labels make using the functions easy and the results more clear.

HP-32S RPN scientific calculator

The **HP-32S** has a comprehensive set of math and science functions, and a function that solves for any variable once an equation is set equal to zero.

In addition to the equation-solving function the **HP-32S** has:

- Numerical integration and complex number functions
- Keystroke programming capabilities with looping, tests, and flags
- Alpha program listings

The **HP-32S** has a one-line, 12-character alphanumeric liquid crystal display; 16K bytes of ROM; and 512 bytes of RAM (390 bytes of user RAM; 27 storage registers).

HP-22S scientific calculator

The easy-to-use **HP-22S** has an equation-solving function that allows formulas to be entered without programming. Once they've been entered, equations can be solved for any variable without being reentered or rearranged. Another time and effort saver is a built-in library of commonly used equations for math and science.

The **HP-22S** also has an essential set of math and science functions, two-variable statistics with linear regression, base conversions and arithmetic, and English/metric conversions.

The **HP-22S** has a one-line, 12-character alphanumeric liquid crystal display; 16K bytes of ROM; and 512 bytes of RAM (371 bytes of user RAM; 26 storage registers).

Other new HP calculators

Other members of this new family of calculators are the recently introduced **HP-17B** and **HP-27S**.

The **HP-17B** business calculator features a powerful set of built-in functions as well as **HP Solve**, a feature that's used to create a library of personalized equations easily without programming.

The **HP-27S**, the two-in-one calculator designed for technical professionals, combines technical functions with time value of money, amortization, and time and appointments.

Both calculators provide powerful functions with alpha menus, prompts and labels for an easy-to-use approach to problem solving.

For more information, check 1 on the HP Reply Card.