

## DEC VAX SYSTEMS

### Product Enhancement

- ▷ The software engineering packages include VAXset and VNXset. VAXset comprises VAX Language-Sensitive Editor, Performance and Coverage Analyzer, DEC/Test Manager, DEC/CMS, and DEC/MMS. These tools are designed for developing system and applications software under VAX/VMS. Included in VNXset are VAX DEC/CMS, DEC/MMS, DEC/Shell, and C. These software tools provide users with a Unix-like environment on the VAX/VMS operating system. VAXset licenses are priced from \$13,850 to \$34,620; those for VNXset range from \$9,115 to \$22,785.

For the VAX 8200, 8300, and 8800 systems, Digital Equipment has also announced the provision of a monthly license program for its software as an alternative to purchasing software from the company. The program allows users to rent the operating system, languages, data base systems, and all Digital software supported on the new systems. Although no price was quoted by Digital, there is a charge to begin the program and the software is licensed with a 90-day cancellation option.

#### New Service Agreement

In addition to the announcement of new systems and software, Digital's Field Service organization announced the availability of two-hour response time in the U.S. for service on the VAX 8800 system. According to Digital, this two-hour service agreement will provide customers using time-critical applications with high availability support. □

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After Digital Equipment Corporation announced its VAX 8200, 8300, and 8800 systems in January 1986, the only older VAX-11 it continued to mention as a full-fledged market competitor was the 11/785. That situation has changed with the introduction of the 11/785's effective replacement, the VAX 8500. The 8500 is a mid-range uniprocessor system that provides up to twice the performance of the VAX-11/785 at the same price. (Actually, the basic 8500 system costs only as much as an 11/785 with options added.) The VAX 8500 also delivers about three times the power of the VAX-11/780, the longtime anchor of the VAX product family.

In other announcements, Digital has rolled out new and differently priced VAX 8650 configurations, extended its accelerated response plan for high-end VAX systems, and introduced the LG Family of printers and Lisp software for the Ultrix operating environment.

#### VAX 8500 and Options

A general-purpose system designed for both technical and commercial markets, the VAX 8500 employs Emitter Coupled Logic (ECL). The CPU delivers a 45-nanosecond cycle time; standard features include a 64KB cache memory and a hot Floating-Point Accelerator. The computer is housed in a compact package occupying 5.6 square feet of floor space—the same footprint as the 11/750, and one-third that of the VAX-11/785, according to Digital.

The system is equipped with 20MB of ECC memory—the current maximum capacity of the system—composed of 256K-bit DRAM chips. The memory is arranged in 4MB arrays and is completely contained in the CPU cabinet. A three-way interleaved memory controller and private memory bus reportedly provide average read and write bandwidths in excess of 50MB per second; the memory access scheme is similar to that employed in the VAX 8800.

For I/O, the VAX 8500 uses the VAX Bus Interconnect (VAXBI); in fact, it is the first VAX system to use that bus exclusively. One VAXBI channel is standard; a second can be added. With two such channels configured, the system can deliver aggregate throughput of 16MB per second. (According to Digital, an optional VAXBI-to-Unibus adapter will be available in third quarter 1986 to allow connection of traditional Unibus devices.)

Up to three disk adapters can be locally configured on the VAX 8500, supporting up to twelve 456MB RA81 disk drives. Up to 218.8GB can be configured if a clustering scheme is employed. Digital claims that the maximum number of simultaneous users the system can support is workload-dependent; however, multiuser performance for a variety of typical workloads was said to be forthcoming. However, company officials did say that the system can support about 80 concurrent users of the ALL-IN-1 office automation system.

The VAX 8500 has a built-in Ethernet port for local connectivity. The system can also be configured in VAXclusters with other eligible Digital systems. Like other VAX systems, the 8500 features full software compatibility across the line under the VMS operating system. At present, the VAX 8500 does not support Ultrix-32, Digital's implementation of Unix. (In a side note, Digital has announced that Ultrix-32 is available for the VAX 8200.)

The VAX 8500 is available in three basic configurations: a System Building Block (SBB), a VAXcluster SBB, and a preconfigured system. Purchase prices for those configurations are provided in the accompanying price list. The VAX 8500 is scheduled for shipment in the second quarter of 1986.

Like the VAX 8200, 8300, and 8800, the VAX 8500 includes a one-year, on-site warranty. The VMS operating system and layered software are offered under either a Monthly License Program or a license purchase scheme.

Announced with the VAX 8500 were two VAXBI devices. The DMB32 communications controller allows configuration of a combination of modems and terminals. It features eight asynchronous terminal lines, a high-speed synchronous line, and a controller for high-speed line printers. The TU81-Plus, a magnetic tape subsystem, includes a VAXBI adapter and a 256KB cache buffer to enhance performance in streaming mode. The TU81-Plus features recording densities of 1600 and 6250 bpi; it has a 75-ips streaming speed. Prices for the two devices are given in the accompanying list. 

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▷ Positioned as an intermediate product between the VAX 8300 and the VAX 8600/8650, the 8500 is intended to compete in the mid-range systems area—the former bailiwick of the popular 11/780—which company spokesmen have called their “bread-and-butter VAX market.” According to Digital, the VAX 8500 can be used for a variety of applications, including factory automation, process control, computer-aided design, simulation, office automation, data base manipulation, and software development.

According to the company, the VAX 8500 will not compete within the line against the VAX 8300, the dual-processor system that delivers the same performance as a VAX-11/785 at half the price. Digital claims that the 8300 is targeted specifically toward compute-intensive applications, while the 8500 is intended for general-purpose use. The company has also stated that the 11/785 will continue to be available, although users interested in state-of-the-art equipment would have little incentive to purchase the older, more expensive Schottky-based system.

As it has done more and more in recent days, Digital is targeting the VAX 8500 against IBM systems. The company has identified IBM's 4381 Model Groups 12 and 13 as primary competitors among superminis, and even puts the VAX 8500 up against Model CX1 of the 3083 mainframe. The 4381 systems are formidable competitors, for both are highly powerful and extremely expandable. However, the Digital system has the advantage of far easier connectability to other systems through Ethernet—a connectivity that the 4300 Series and other IBM systems lack. Also, the VAX systems offer full software compatibility among all systems in the family, which cannot be said for the IBM systems, with their disparate operating environments.

Interestingly, Digital has also directly targeted Data General, whose existence the company generally refuses to acknowledge, as a competitor; according to Digital, the VAX 8500 is comparable in performance to DG's Eclipse MV/10000 SX. However, while the claim is justifiable from the standpoint of raw CPU power (both systems working at about 3 MIPS, as a crude measure), the MV/10000 SX is targeted more narrowly toward computation-intensive applications than the VAX 8500. Prime Computer's top-of-the-line 9955 II also competes against the VAX 8500.

#### VAX 8650 Configurations

Digital is also offering new configurations of the VAX 8650 with more memory and lower prices than were previously available. Main memory in the basic VAX 8650 SBB has been increased from 4MB to 16MB, with a price decrease of \$75,000. Main memory in the 8650 VAXcluster SBB has been expanded from 16MB to 32MB. The price for a VAX 8600-to-8650 upgrade has been reduced by \$30,000. Purchase prices for the configurations and the system upgrade are provided in the accompanying price list.

#### High-End System Service

Digital has extended its commitment to provide two-hour service response for high-end VAXes to the VAX 8600 and 8650; the service guarantee had previously applied only to the VAX 8800. The response time guarantee is available at no charge to customers located up to 50 road miles from any of Digital's 166 United States service locations.

#### LG Family Printers

The LG Family comprises two 600-lpm matrix printers. The LG01 text printer offers data processing and correspondence mode printing, as well as multiple-character-per-inch print selections; it is compatible with existing U.S. and European character sets. The LG02, providing all the text capabilities of the LG01, can also handle graphics, creating bar codes, custom forms, and logos. It can handle superscripts and subscripts, and is capable of printing in landscape mode. An upgrade kit is available to convert the LG01 to an LG02.

According to Digital, both LG printers are designed for applications where heavy print volume—up to 50,000 pages per month—is a requirement. The two printers, which are currently available, are compatible with the MicroVAX II through VAX 8600 systems. Digital claims that, because of increased dependability, the basic maintenance charge for the two printers is 17 percent lower than that for the LP26, the company's existing 600-lpm printer. Purchase prices for the LG Family is provided in the accompanying list.

#### VAX Lisp/Ultrix Software

VAX Lisp/Ultrix is a fully supported version of VAX Lisp for the Ultrix-32 and Ultrix-32m operating systems. Lisp/Ultrix is compatible with VAX Lisp/VMS; programs written on one operating system can run on the other. Like Lisp/VMS, Lisp/Ultrix includes a lexically scoped, interactive Common Lisp interpreter ▷

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▷ and compiler; a debugger; a pretty printer; an alien structures mechanism; a full array of data types; and a facility that allows routines written in other languages to be called. Available documentation includes Installation and User's Guides; language courses and advanced programming seminars are available from Digital's Educational Services. VAX Lisp/Ultrix is available now. The new product and VAX Lisp/VMS are priced from \$4,800 for the MicroVAX II to \$24,000 for the VAX 8800.

## EQUIPMENT PRICES

	<u>Purchase Price (\$)</u>
<b>VAX 8500 Configurations</b>	
System Building Block (SBB); includes 20MB main memory, KDB50 disk controller, Ethernet port, console, VAXBI I/O channel, and VMS and DECnet monthly software licenses	260,000
VAXcluster SBB; includes 20MB main memory, VAXcluster port, Ethernet port, console, VAXBI I/O channel, and VMS and DECnet monthly software licenses	286,000
Preconfigured system; includes 20MB main memory, KDB50 disk controller, RA81 456MB disk drive, TU81-Plus 1600-/6250-bpi tape drive, Ethernet port, DMB32 communications controller, console, VAXBI I/O channel, and VMS and DECnet monthly software licenses	299,000
<b>VAX 8500 Options</b>	
DMB32 VAXBI communications controller	4,350
TU81-Plus 1600-/6250-bpi VAXBI tape subsystem	27,500
<b>VAX 8650 Configurations &amp; Upgrade</b>	
VMS or Ultrix-32 SBB; includes 16MB main memory, RB86 integrated disk and tape controller, and VMS or Ultrix-32 purchased license	400,000
VAXcluster SBB; includes 32MB main memory, VAXcluster port, Ethernet port, and VMS and DECnet purchased licenses	445,000
VAX 8600-to-8650 CPU upgrade	95,000
<b>LG Family Printers</b>	
LG01 600-lpm matrix text printer	11,950
LG02 600-lpm text/graphics matrix printer	14,000 □