

# DEC Datasystem 700 Series

## MANAGEMENT SUMMARY

With the announcement of the VAX-11/750 in October 1980, DEC also announced the largest member of its commercial systems family—the Datasystem 700 series. Based on the VAX-11/750 and VAX/11/780 computers, the Datasystem 750 and 780 systems are upward extensions of the current Datasystem 300 and 500 systems, and offer up to four times the performance of the Datasystem 500. The design aim of the DEC Datasystem family is complete compatibility of interactive components, languages, and utilities across the range of D300, D500, and D700 systems. With the D700 announcement, Digital is now integrating VAX family computers into its DEC Datasystem series for electronic data processing applications.

The DEC Datasystem 300 series provides data processing capabilities for a small department or office. The Datasystem 500 series of large and midrange multiuser, multiprogram systems can support a large number of terminals simultaneously for order entry, text editing, inventory control, accounting, timesharing, transaction processing, statistical analysis, and other business applications. The D700 series extends the distributed processing capabilities of the DEC Datasystem family into applications that—because of their size—traditionally require mainframe implementation.

The D750 and D780 Datasystems are 32-bit systems that feature up to 4.3 billion bytes of virtual address space and up to 2 billion bytes of user program space, as well as information management capabilities compatible with other DEC Datasystems, including the VAX RMS file ➤

The DEC Datasystems 750 and 780, based on the VAX-11/750 and 11/780 computers, are commercial systems designed for electronic data processing applications. The D700 series contains 4.3 billion bytes of virtual address space and up to 2 billion bytes of user program space. It is capable of up to four times the performance of the DEC Datasystem 500 series.

**MAIN MEMORY:** 512K bytes to 12M bytes  
**DISK CAPACITY:** 28M bytes to 256M bytes  
**WORKSTATIONS:** Up to 96  
**PRINTERS:** 180 cps to 900 lpm  
**OTHER I/O:** Magnetic tape subsystems

## CHARACTERISTICS

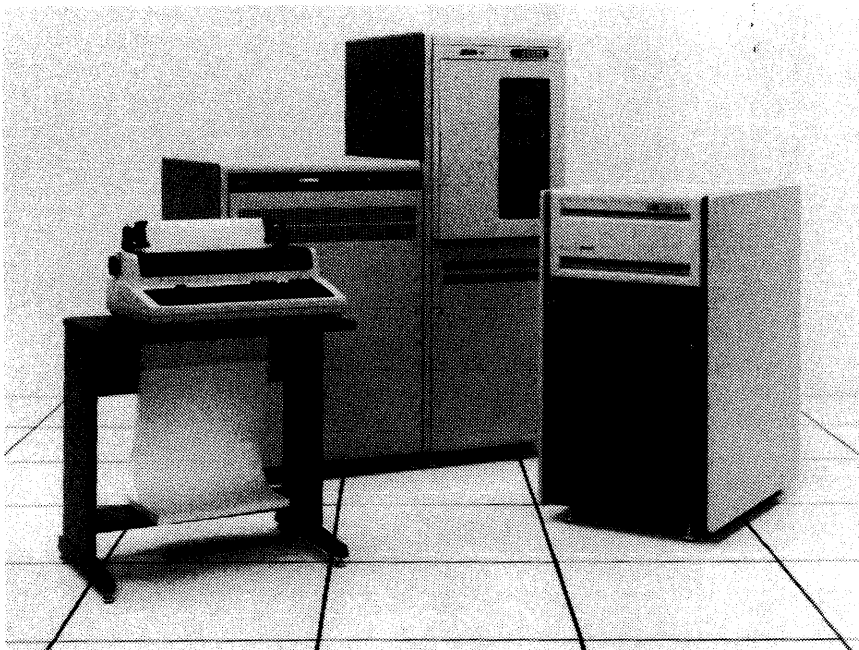
**MANUFACTURER:** Digital Equipment Corporation, Commercial Products Group, Continental Boulevard, Merrimack, New Hampshire 03054. Telephone (603) 884-5111.

**VENDORS:** Manufacturers and OEM suppliers. Contact DEC's Commercial Products Group to find the OEM supplier in your locale.

**MODELS:** DEC Datasystem 750 (VAX-11/750-based), and DEC Datasystem 780 (VAX-11/780-based).

**DATA ANNOUNCED:** October 1980.

**DATE OF FIRST DELIVERY:** D780, January 1981; D750, April 1981. ➤



The DEC Datasystem 700 small business computer is based on Digital's VAX-11/750. The DEC Datasystem 700 series, which features high-performance VAX-11 COBOL, DATATRIEVE, VAX FMS forms management software and VAX/VMS operating system, is intended to meet standalone and distributed data processing requirements in both large and small businesses. The DEC Datasystem 750 is shown with the RM80 disk unit and the 1600-bit-per-inch TS11 tape drive.

## DEC Datasystem 700 Series

### DATASYSTEM 700 COMPARISON CHART

	Datasytem 750 (VAX-11/750 based)	Datasytem 780 (VAX-11/780 based)
Data Transfer	32-bit	32 and 64-bit
Effective Memory Access Time	400 nanoseconds	280 nanoseconds
Total Physical Memory Supported	2 megabytes	8 megabytes (12MB with multiport memory)
Maximum I/O Ports	1 UNIBUS, 3 MASSBUS	4 UNIBUS, 4 MASSBUS
Maximum UNIBUS I/O Throughput	1.5 MB	1.35MB
Maximum MASSBUS I/O Throughput	2MB	2MB
Maximum System I/O Rate	5MB	13MB (with interleaved memory)
Cache Memory	4KB	8KB
User Writable Control Store	1K x 80 bits	1K x 99 bits
32-bit High-Speed Interface	N/A	1 DR780
Multiport Memory	N/A	2 MA 780s

➤ management system, the VAX-11 FMS forms utility, the DATATRIEVE query and report writer, and a selection of high-level languages including VAX-11 COBOL, VAX-11 BASIC, and PL/I. For data exchange between DEC Datasystems, DECnet facilities are available and data exchanges between DEC and non-DEC computers can be handled by various currently available communication protocol emulators.

VAX-11 FMS allows automatic formatting for data entry and editing, as well as rapid and easy creation of forms. The VAX RMS record management input/output system provides device-independent access to disks, tapes, unit record equipment, terminals and mailboxes. DATATRIEVE is a high-level facility for rapid access to information and for producing reports. With DATATRIEVE commands, reports can be produced without the need to write programs.

The D750 Datasystem includes from 512K to 2 million bytes of ECC MOS memory, memory management, 4K bytes of bipolar cache memory, self-test diagnostic routines, and bootstrap loader. On-line, direct or random access file storage control for up to 1.4 gigabytes is also provided. System devices are connected via the UNIBUS and/or MASSBUS data path devices. Available disk storage includes removable disk pack drives with 28 or 67 megabytes per drive and non-removable units with 128 megabytes per drive. Magnetic tape subsystems available feature read/write speeds of 30, 45, 75 or 125 ips and data transfer rates of up to 200,000 cps. Also available are the VT100 video display terminal and the LA38 and LA120 hardcopy terminals, and printers ranging from 180 cps to 900 lpm.

The DEC Datasystem 750 is a smaller version of the Datasystem 780, but provides exactly the same user program space as the D780, offers identical software packages, and provides 60 percent of the performance of the larger unit. The D750 will support up to 24 disk drives providing over 4,000 megabytes of online storage. The maximum I/O transfer rate is 5 megabytes per second.

The D780 Datasystem features main memory ranging from 512K bytes to 8 million bytes, memory manage-

### ➤ DATA FORMATS

**BASIC UNIT:** 32-bit word.

**FIXED-POINT OPERANDS:** Integers can be 8 bit bytes, 16-bit words, 32-bit longwords, and 64-bit quadwords. All have the same general format with the high-order bit used as the sign. Negative numbers are represented in two's complement form.

**FLOATING-POINT OPERANDS:** Two floating-point formats are available: single-precision (called floating) that uses a 4-byte format, and double-precision (called double floating) that uses an 8-byte format. In both formats, the high-order bit is used as a sign and the next seven bits for the exponent. Single-precision fractions are 24 bits long, while double-precision fractions are 56 bits long. The 4-byte format provides approximately 7 decimal digits of precision, while the 8-byte format provides approximately 16 decimal digits of precision. A loadable microcode package is available on the D750 for extended precision floating-point arithmetic operations (G- and H- floating-point data types).

**INSTRUCTIONS:** The native instruction set is an extension of the PDP-11 instruction set that consists of 244 basic instructions, most of which can be applied to any one of several types of data, which can in turn be addressed in any one of nine ways. The native instruction set provides 32-bit addressing, 32-bit I/O operations, and 32-bit arithmetic.

**INTERNAL CODE:** ASCII for text-oriented data; binary for calculations.

### MAIN STORAGE

**TYPE:** ECC MOS RAM.

**CYCLE TIME:** The D780 has a 600 nanosecond cycle time and features an 8K byte write through cache memory that results in an effective 290 nanosecond memory access time. The D750 features a 4KB bipolar cache memory, and an effective memory access time of 400 nanoseconds.

**CAPACITY:** The minimum memory requirement on Datasystem 700 systems is 512K bytes. Memory can be added in increments of 256K bytes. Maximum memory capacity is 2M bytes on the D750, and 8M bytes on the D780. By adding the MA780 shared-memory option, memory on the D780 can be expanded to 12M bytes.

**CONTROL STORAGE:** A 10K byte (1K word—80 bit words) user writable control store plus extended G & H floating point data type supported in DU750-loadable microcode is available on the D750. A 12K byte user writable control store is available on the D780.

DEC Datasystem 700 Series

PERIPHERALS/TERMINALS	
DEVICE	DESCRIPTION
<b>MAGNETIC TAPE</b>	
TS11-BA(BB)	1600 bpi, 45 ips, 9-track magnetic tape transport and controller in a dedicated 60 inch high H9602 cabinet
TS11-CA(CB)	Same as TS11-BA(BD) except mounted in a 60 inch high H9646 cabinet
TEE16-AE(AJ)	Program-selectable 800 or 1600 bpi, 9-track, 45 ips magnetic tape transport and VAX-11/780 MASSBUS adapter
TEU45-KA(KB)	Program-selectable 800 or 1600 bpi, 9-track, 75 ips magnetic tape transport and VAX-11/780 MASSBUS adapter
TGU77-AB(AD)	Program-selectable 800 or 1600 bpi, 9-track, 125 ips magnetic transport and VAX-11/750 MASSBUS adapter
TEU77-AB(AD)	Program-selectable 800 or 1600 bpi, 9-track, 125 ips magnetic tape transport and VAX-11/780 MASSBUS adapter
<b>PRINTERS</b>	
LA11-PA9PD)	96 character set, 180 cps printer (LA180) and control unit
LP11-AA	64 character set, 132 column, 285 lpm band printer and control unit plus cable
LP11-BA	64 and 96 character set, 132 column band printer and control unit plus cable; 285 lpm when using the 64 character set and 204 lpm when using the 96 character set
LP11-CA(CD)	644 character set, 132 column, 900 lpm high speed printer and control unit
LP11-DA(DD)	96 character set, 132 column, 660 lpm high speed printer and control unit
LP11-VA(VD)	64 character set, 132 column, 300 lpm printer and control unit
LP11-WA(WD)	96 character set, 132 column, 240 lpm printer and control unit
LP11-YA(YD)	64 character set, 132 column, 600 lpm printer and control unit
LP11-ZA(ZD)	96 character set, 132 column, 436 lpm printer and control unit
LPR11-VA(VD)	64 character set, 132 column, 250 lpm remote printer subsystem
LPR11-WA(WD)	96 character set, 132 column, 240 lpm remote printer subsystem
LPR11-YA(YD)	64 character set, 132 column, 525 lpm remote printer subsystem
LPR11-ZA(ZD)	96 character set, 132 column, 420 lpm remote printer subsystem
<b>TERMINALS</b>	
LA34-DA	Table-top DECwriter printing terminal, 9 x 7 dot matrix, 30 cps, 300 bps; can accommodate single sheets and roll paper
LA38-GA	DECwriter IV, 18-button numeric keypad, 30 cps, 300 bps
LA 38-HA	LA38-GA (DECwriter IV) with stand
LA120-DA	DECwriter III hardcopy terminal; 180 cps, 1K character buffer, and 7 x 7 dot matrix
LA120-RA	Free-standing EIA high speed (180 cps) receive-only version of the LA120-DA hardcopy terminal; for D780 only
VT100-AA(AB)	Video display terminal; includes double-width/double-size characters, 80 columns x 24 lines or 132 columns x 14 lines, 83-character detachable keyboard
VT100-NA(NB)	Same as VT100-AA(AB) except that it includes DECform keycaps

▷ ment, 8K bytes of cache memory, self-test diagnostics, and bootstrap loader. Online, direct or random access file storage control for up to 2 gigabytes is also provided. The D780 features removable disk pack storage drives with either 67 megabytes or 256 megabytes of storage per drive.

The D780 will support as many as 63 disk drives with a total storage capacity of close to 9,000 megabytes. The maximum I/O transfer rate is 13.3 megabytes per second.

Another feature of the Datasystem 700 series is the Customer Support package designed specifically for the systems. DEC's Software Product Service combines with professional consulting services to provide full support for the VAX/VMS operating system and other Datasystem 700 software products. The Software Product Service is provided for one year. Consulting services are included for 15 days on the D780 and 10 days on the D750.

▶ **STORAGE PROTECTION:** The Datasystem 700 series memory management logic divides memory into 512-byte pages. Each page is assigned a protection code specifying which, if any, access modes are to be permitted read or write access to the page.

**CENTRAL PROCESSOR**

Please refer to the **CENTRAL PROCESSOR** section of Report M11-384-401 for a discussion of the VAX-11 based Datasystem 700 processors.

**INPUT/OUTPUT CONTROL**

Refer to the **INPUT/OUTPUT CONTROL** section of Report M11-384-401 for an overview of UNIBUS and MASSBUS I/O facilities on the Datasystem 700 series processors.

**CONFIGURATION RULES**

The D780 systems feature main memory sizes ranging from 512KB to 8 megabytes of ECC MOS memory, 32-bit virtual memory architecture, memory management, 8KB bipolar ▶

## DEC Datasystem 700 Series

➤ VAX/VMS is the general purpose operating system for Datasystem 700 series business computers. VAX's virtual memory operating system can handle a mix of interactive timesharing and data processing operations, real-time and batch applications, along with simultaneous on-line program development and data management.

There are 32 levels of job priority on VAX. In a timesharing environment, the schedule constantly adjusts job priorities to achieve the best mix of compute-heavy and I/O-heavy jobs. In a real-time environment, the system manager grants privileges to users to control job scheduling. Programs are set to execute at specified time intervals, in response to external events, or at fixed priorities. In addition, the system manager (or the user granted the appropriate privilege) can lock a program, or parts of the program, in memory to guarantee the fastest possible response. These features ensure maximum system efficiency.

➤ cache memory, self-test diagnostic routines, and bootstrap loading. On-line, direct or random access file storage control for up to 2 gigabytes (10<sup>9</sup>) is also provided. System devices are connected via the UNIBUS and/or MASSBUS data path devices.

The D750 systems feature main memory sizes ranging from 512KB to 2 megabytes of ECC MOS memory, 32-bit virtual memory architecture, memory management, 4KB bipolar cache memory, self-test diagnostic routines, and a bootstrap loader. On-line, direct or random access file storage control for up to 1.4 gigabytes (10<sup>9</sup>) is also provided. System devices are connected via the UNIBUS and/or MASSBUS data path devices.

**WORKSTATIONS:** The D700 Datasystems support full-duplex handling for both hardcopy and video terminals. Workstations supported include the VT100 high-reliability keyboard video display terminal, the LA38 DECwriter hardcopy terminal, and the LA120 high-speed interactive hardcopy terminal that operates at 180 characters-per-second. D700 systems can support up to 96 terminals.

**DISK STORAGE:** Removable disk pack file storage drives on the D750 include 28 or 67 megabytes of data storage per drive (RK07 or RM03) expandable to 8 drives per controller, and the RM80 non-removable disk pack drive with 128 megabytes of data storage per drive expandable to 8 drives per controller. The DEC Datasystem 750 will support up to 24 disk drives providing over 4,000 megabytes of on-line storage. The Datasystem 780 supports the RM03 or RM05 removable disk pack file storage drives featuring 67 or 256 megabytes of data storage per drive expandable to 8 drives per controller. As many as 63 disk drives with a total storage capacity of close to 9,000 megabytes can be supported.

**MAGNETIC TAPE:** Optional magtape transport systems provide industry-standard recording formats with user selectable densities of 200 to 1600 bits-per-inch.

**PRINTERS:** Several 132-column printers are available including the LA120-RA 180 character-per-second dot matrix DECprinter, a range of 240 to 900 lines-per-minute drum printers (LP11), and 204 and 285 lines-per-minute band printers. All printers offer multi-part, pin feed forms handling.

### MASS STORAGE

**RM05 DISK DRIVES:** A single- or dual-access, 256MB removable disk pack drive. Packaged in one free standing disk drive cabinet plus one utility cabinet which houses the RM05 drive adapter and contains space for one additional RM05 drive adapter. One RM05-P disk pack is included. Peak transfer rate is 1.2MB/second, average access time is 38.3 milliseconds. For VAX-11/780 only.

**RM03 DISK DRIVES:** A single- or dual-access, free-standing 67MB removable disk pack drive. One RM03-P disk pack is included. Peak transfer rate is 1.2MB/second, average access time is 38.3 milliseconds.

**RK07 CARTRIDGE DISK DRIVES:** A single- or dual-access, free-standing 28MB disk drive. One RK07K-DC data cartridge is included. Average access time is 49.0 milliseconds, peak transfer rate is 538KB/second. The RL02 disk drive is used only as a data disk, not a system disk.

### INPUT/OUTPUT UNITS

Refer to the PERIPHERAL/TERMINALS table on page M11-385-503.

### DATA COMMUNICATIONS

On the DEC Datasystem 700 series, single and multiple line interfaces provide links to local and remote interactive terminals. Remote data communications with other Digital and non-Digital computer systems is made possible through implementation of the 2780/3780 or 3271 Protocol Emulator options. DECnet is a set of communications products that provides networking capabilities for all Digital computer families. It offers task-to-task communications, a host of transfer capabilities, and a host of utility programs.

Refer to the DATA COMMUNICATIONS and COMMUNICATIONS CONTROL sections of Report M11-384-401 for a complete overview of Datasystem 700 series communications capabilities.

### SOFTWARE

**OPERATING SYSTEM:** The Datasystem 750 and 780 use the VAX/VMS operating system, a general-purpose operating system that provides the environment for the concurrent execution of multi-user timesharing, batch, and time-critical applications. For more detailed information on the VAX/VMS operating system, refer to the OPERATING SYSTEM section of Report M11-384-401.

**LANGUAGES:** Languages supported on DEC Datasystem 700 series processors include VAX-11 COBOL, BASIC, PL/1, FORTRAN, PASCAL, BLISS, and CORAL. For a specific discussion of each of these languages, refer to Report M11-384-401.

**DATA MANAGEMENT:** The Datasystem 700 series features information management capabilities compatible with other DEC Datasystems, including the VAX RMS file management system, VAX-11 FMS forms utility, and DATATRIEVE query and report writer. For a discussion of these systems, see the DATA MANAGEMENT section of Report M11-384-401.

**UTILITIES:** For a discussion of DEC Datasystem 700 series utilities, refer to Report M11-384-401.

**APPLICATION SOFTWARE:** DEC does not sell or support applications software directly. DEC's Datasystem Application Software is developed and marketed by its large base of commercial OEMs and distributors. The DEC Datasystems are covered in the AIP (Applications

## DEC Datasystem 700 Series

### STANDARD DATASYSTEM 700 PACKAGES

DATASYSTEM 750				
Processor	Memory	Disk Storage	Software	Support
VAX-11/750	512K bytes or 1M byte	Dual RK07 cartridge disks (28M bytes each) or RM03 disk pack (67M bytes) and TS11 mag tape or RM80 disk (124M bytes) and TS11 mag tape	VAX/VMS Operating System RMS, DATATRIEVE FMS COBOL or BASIC	Customer Service Software Warranty Customer Support
DATASYSTEM 780				
VAX-11/780	1M byte or 1.5M bytes	RM03 disk pack (67M bytes) and TU77 mag tape or RM80 disk (124M bytes) and TU77 mag tape or RM05 disk pack (256M bytes) and TU77 mag tape	VAX/VMS Operating System RMS, DATATRIEVE FMS COBOL or BASIC	Customer Service Software Warranty Customer Support Plan

► Interchange Program) catalog distributed by the Commercial Products Group. The applications are grouped by industry and application. DEC acts as a clearinghouse only and has no role in any contractual agreements with the supplier.

#### PRICING

**POLICY:** DEC generally provides the Datasystems on a purchase basis, with separately priced maintenance agreements. Leasing arrangements are available through DEC's joint venture with U.S. Leasing Corp., or through TEC Leasing Corp. of New York. Lease rates vary with the prime interest rate, the customer's volume of business with DEC, and the value of the equipment being leased.

Software maintenance is offered through several levels of optional service, ranging from a periodic software newsletter to automatic updates of software and manuals (software subscription service). In addition, software components, including documents and updates, can be purchased separately from Digital's Software Distribution Center.

A special service, the Customer Support Package, was designed specially for DEC Datasystem 700 systems. This package consists of one year of basic service for the VAX/VMS operating system and its associated software products, beginning from the end of the 90-day warranty

period. Fifteen days of consulting services for D780 systems are also provided in the package; ten days for the D750 systems. The package also includes:

- Application design review in terms of VAX/VMS capabilities and strengths.
- Consultation on conversion planning.
- Examination of program design approaches.
- Providing information on techniques for efficient program implementation in a virtual memory environment.
- Assistance in planning for initial set-up of operational procedures.

**EQUIPMENT:** The DEC Datasystem 750 including 512K bytes of memory, two 28-megabyte disk drives, VAX-11 BASIC, VAX-11 FMS, DATATRIEVE and the Customer Support Package is priced at approximately \$110,000.

A standard DEC Datasystem 780 includes 1M bytes of memory, a 124M byte disk drive, a high-speed tape drive, VAX-11 BASIC, VAX-11 FMS, DATATRIEVE and the Customer Support Package. It is priced at approximately \$250,000.

For standard Datasystem 700 packages, see the chart on page M11-385-505.

## DEC Datasystem 700 Series

### EQUIPMENT PRICES

		<u>Purchase Price</u>	<u>Monthly Maint.</u>
<b>VAX-11/750 DATASYSTEMS RUNNING UNDER VAX/VMS</b>			
SV-BXHA-AA (AD)	Dual RK07 disk-based DEC Datasystem with LA38 console terminal includes VAX/VMS software license, VAX-11/750 central processor with virtual memory management, 512K bytes of ECC MOS memory, 4K bytes of bipolar cache memory with parity, bootstrap loader, commercial instruction set with floating point and fixed-point instructions, high precision programmable real-time clock, and a time-of-year clock with battery backup, an integral TU58 tape cartridge unit and an LA38 console terminal with stand; an RK711 controller with two top-loading RK07 cartridge disk drives for a total of 56M bytes of on-line storage, and one DZ11-A asynchronous multiplexer for connection to eight EIA communication lines.	\$ 89,900	\$ 568
SV-BXTAA-AA (AD)	RM03 disk-based DEC Datasystem with TS11 magtape and LA38 console terminal includes VAX/VMS software license, VAX-11/750 central processor with virtual memory management, 1M byte of ECC MOS memory, 4K bytes of bipolar cache memory with parity, bootstrap loader, commercial instruction set with floating point and fixed-point instructions, high precision programmable real-time clock, a time-of-year clock, an integral TU58 tape cartridge unit, and an LA38 console terminal with stand; also included is an RGM03 single-access 67M byte disk drive with MASSBUS adapter, a TS11 magnetic tape subsystem with UNIBUS controller, and one DZ11-A asynchronous multiplexer for connection to eight EIA communication lines.	125,000	651
VS-BXWAA-AA (AD)	Same as SV-BXTAA-AA (AD) except includes an RGM80 single-access 124M byte fixed-media disk drive with MASSBUS adapter instead of RGM03 drive.	120,000	606
<b>VAX-11/780 DATASYSTEMS RUNNING UNDER VAX/VMS</b>			
SV-AXHHV-CA (CD)	Dual RK07 disk-based DEC Datasystem with LA120 console terminal includes VAX/VMS software license, VAX-11/780 central processor with virtual memory management, 512K bytes of ECC MOS memory, 8K bytes of bipolar cache memory with parity, bootstrap loader, commercial instruction set, high precision programmable real-time, time-of-year clock, 12K bytes of writable diagnostic control store, and an integral diagnostic console subsystem comprised of an LSI-11 microcomputer, RX01 floppy disk and LA120 console terminal; the system also includes an RK711 UNIBUS controller with two top-loading RK07 cartridge disk drives for a total of 56M bytes of on-line storage, and one DZ11-A asynchronous multiplexer for connection to eight EIA communication lines.	143,000	779
SV-AXCBB-CA (CD)	RP06 disk-based DEC Datasystem with TU77 magtape and LA120 console terminal includes VAX/VMS software license, VAX-11/780 central processor with virtual memory management, 1.5M bytes of ECC MOS memory, 8K bytes of bipolar cache memory with parity, bootstrap loader, commercial instruction set, high precision programmable real-time, time-of-year clock with battery backup, 12K bytes of writable diagnostic control store, and an integral diagnostic console subsystem; the system also includes an REPO6 controller with a single-access 176M byte disk drive and MASSBUS adapter, a TEU77 magtape transport unit with MASSBUS adapter, and one DZ11-A asynchronous multiplexer for connection to eight EIA communication lines.	257,600	1,233
SV-AXDBB-CA (CD)	Same as SV-AXCBB-CA (CD) except includes an REM05 controller with a single-access 256M disk drive and MASSBUS adapter instead of REPO6 controller.	257,600	1,312
SV-AXTBB-CA (CD)	RM03 disk-based DEC Datasystem with TU77 magtape and LA120 console terminal includes VAX/VMS software license, VAX-11/780 central processor with virtual memory management, 1M byte of ECC MOS memory, 8K bytes of bipolar cache memory with parity, bootstrap loader, commercial instruction set, high precision programmable real-time clock, time-of-year clock with battery backup, 12K bytes of writable diagnostic control store, and an integral diagnostic console subsystem; also included is an REM03 controller with a single-access 67M byte disk drive and MASSBUS adapter, a TEU77 magtape transport unit with MASSBUS adapter, and one DZ11-A asynchronous multiplexer for connection to eight EIA communication lines.	230,000	1,065
SV-AXTVB-CA (CD)	Same as SV-AXTBB-CA (CD) except includes 512K bytes of ECC MOS memory and a TEE16 magnetic transport unit instead of the TEU77.	196,000	857
SV-AXWBA-CA (CD)	RM80 disk-based DEC Datasystem with TU77 magtape and LA120 console terminal includes VAX/VMS software license, VAX-11/780 central processor with virtual memory management, 1M byte of ECC MOS memory, 8K bytes of bipolar cache memory with parity, bootstrap loader, commercial instruction set, high precision programmable real-time clock, time-of-year clock with battery backup, 12K bytes of writable diagnostic control store, and an integral diagnostic console subsystem; also included is an REM80 controller with a single-access 124M byte fixed-media disk drive and MASSBUS adapter, a TEU77 magtape transport unit with MASSBUS adapter, and one DZ11-A asynchronous multiplexer for connection to eight EIA communication lines.	225,000	969
<b>VAX-11/750 BASED DATASYSTEM TO DEC DATASYSTEM 750 ENHANCEMENT</b>			
D750A-AA (AD)	Converts a VAX-11/750 based Datasystem to a DEC Datasystem 750; includes VAX-11 COBOL, PDP-11 DATATRIEVE/VAX, VAX-11 FMS, Customer Support Package, and DEC Datasystem logo	27,500	—
D750B-AA (AD)	Same as D750A-AA (AD) except includes VAX-11 BASIC instead of VAX-11 COBOL	23,900	—
<b>VAX-11/780 BASED DATASYSTEM TO DEC DATASYSTEM 780 ENHANCEMENT</b>			
D780A-AA (AD)	Converts VAX-11/780 based Datasystem to a DEC Datasystem 780; includes VAX-11 COBOL, PDP-11 DATATRIEVE/VAX, VAX-11 FMS, Customer Support Package, and DEC Datasystem logo	29,700	—
D780B-AA (AD)	Same as D780A-AA (AD) except includes VAX-11 BASIC instead of VAX-11 COBOL	26,100	—

## DEC Datasystem 700 Series

## EQUIPMENT PRICES

		<u>Purchase Price</u>	<u>Maint. Maint.</u>
<b>SYSTEM OPTIONS</b>			
FP780-AA (AB)	Floating-point accelerator for single- and double-precision floating-point instructions	10,600	48
DR780-AA (AB)	General-purpose interface used to connect customer-designed devices to a VAX-11/780 based Datasystem	18,700	84
DW780-AA (AB)	VAX-11/780 UNIBUS adapter	12,300	37
KU750-YG	10K byte (1K word-80 bit words) User Writable Control Store; for Datasystem 750	NA	NA
KU780-YY	12K byte User Writable Control Store; for Datasystem 780	10,700	53
<b>MEMORY OPTIONS</b>			
MS750-AA	256K bytes ECC MOS expansion memory; for Datasystem 750	9,100	58
MS750-AB	512K bytes ECC MOS expansion memory; for Datasystem 750	13,900	116
MS750-AC	1M byte ECC MOS expansion memory; for Datasystem 750	19,800	231
MS780-CC (CD)	521K byte ECC MOS, 16K chip memory with controller; for Datasystem 780	26,600	158
MS780-DA	256K byte ECC MOS expansion memory for MS780-CC (CD); for Datasystem 780	9,100	58
MS780-DB	512K byte ECC MOS expansion memory for MS780-CC (CD); for Datasystem 780	13,900	116
MS780-DC	1M byte ECC MOS expansion memory for MS780-CC (CD); for Datasystem 780	19,800	231
MS780-DD	2M byte ECC MOS expansion memory for MS780-CC (CD); for Datasystem 780	31,900	462
H7112-A (B)	MOS memory battery backup	1,250	11
MA780-AA (AB)	256K byte ECC MOS Multiport Memory subsystem; can be shared by up to four VAX-11/780 systems; provides up to 11MB per second total throughput; includes controller, two MA780-C port interfaces, cabinet, power supply, plus expansion space for up to 2MB of ECC MOS memory, an MA780-BA (BB) subsystem, and two additional port interfaces	37,300	179
MS780-BA (BB)	Additional MA780 Multiport Memory subsystem; includes controller, 256KB ECC MOS memory which can be shared by up to four VAX-11/780 systems, two MA780-C port interfaces, power supply and expansion space for up to 2MB of ECC MOS memory and two additional port interfaces	32,700	179
MA780-C	MA780 Multiport Memory port interface	7,000	21
MA780-D	VAX-11/780 Multiport Memory Selective Cache Invalidate Option	9,000	58
<b>MASS STORAGE</b>			
RL211-AK	Single-access 10.4MB RL02 cartridge disk subsystem; expandable to four single-access RL02 or RL01 drives; for Datasystem 750	6,900	68
RK711-EA (ED)	Single-access 28.0MB disk drive and controller; expandable to eight single-access RK06 or RK07 drives; one RK07K-DC disk cartridge is included; for Datasystem 780	17,000	153
RK7111-FA (FD)	Dual-access 28.0MB disk drive and two control units; expandable to eight dual-access RK06 or RK07 drives; for Datasystem 780	23,500	200
RK07-PA (PD)	Single-access, free-standing 28.0MB disk drive with one RK07K-DC disk cartridge; for Datasystem 750	12,000	121
RK07-EA (ED)	Single-access, free-standing 28.0MB removable disk drive; for Datasystem 780	12,000	121
RK07-FA (FD)	Dual-access, free-standing 28.0MB removable disk drive; for Datasystem 780	15,800	137
RGM03-AA (AD)	Single-access 67.0MB removable disk pack drive and VAX-11/750 MASSBUS adapter; expandable to eight MASSBUS disk drives	30,300	179
RGM03-BA (BD)	Dual-access 67.0MB removable disk pack drive and two VAX-11/750 MASSBUS adapters; expandable to 8 MASSBUS disk drives	39,900	226
REM03-AA (AD)	Single-access 67.0MB removable disk pack drive and VAX-11/780 MASSBUS adapter; expandable to 8 MASSBUS disk drives	30,300	179
REM03-BA (BD)	Dual-access 67.0MB removable disk pack drive and two VAX-11/780 MASSBUS adapters; expandable to 8 MASSBUS disk drives	39,900	226
RGM80-AA (AD)	Single-access 124.0MB fixed-media disk drive and VAX-11/750 MASSBUS adapter; expandable to 8 MASSBUS disk drives	29,900	132
RGM80-BA (BD)	Dual-access 124.0MB fixed-media disk drive and two VAX-11/750 MASSBUS adapters; expandable to 8 MASSBUS disk drives	39,500	179
REM80-AA (AD)	Single-access 124.0MB fixed-media disk drive and VAX-11/780 MASSBUS adapter; expandable to 8 MASSBUS disk drives	29,900	132
REM80-BA (BD)	Dual-access 124.0MB fixed-media disk drive and two VAX-11/780 MASSBUS disk drives	39,500	179
RGPO6-AA (AB)	Single-access 176.0MB removable disk pack drive and VAX-11/750 MASSBUS adapter; expandable to 8 MASSBUS disk drives	44,000	231
RGPO6-BA (BB)	Single-access 176.0MB removable disk pack drive and two VAX-11/750 MASSBUS adapters; expandable to 8 MASSBUS disk drives	56,600	284
REM05-AA (AB)	Single-access 256.0MB removable disk pack drive and VAX-11/780 MASSBUS adapter; expandable to 8 MASSBUS disk drives	44,000	310
REM05-BA (BB)	Dual-access 256.0MB removable disk pack drive and two VAX-11/780 MASSBUS adapters; expandable to 8 MASSBUS disk drives	56,600	395
RM03-AA (AD)	Single-access, free-standing 67MB removable disk pack drive	20,300	147
RM03-BA (BD)	Same as MRO3-AA (AD) except dual-access	22,500	163
RM80-AA (AD)	Single-access, free-standing 124MB fixed-media disk drive	19,900	100
RM80-BA (BD)	Same as RM80-AA (AD) except dual-access	22,000	116
RP06-AA (AB)	Single-access, free-standing 176MB removable disk pack drive	34,000	200
RP06-BA (BB)	Same as RP06-AA (AB) except dual-access	39,140	221
RM05-AA (AB)	Single-access 256MB removable disk pack packages in one free-standing disk drive cabinet and one utility cabinet	34,000	240
RM05-AC (AD)	Same as RM05-AA (AB) except packaged in free-standing disk drive cabinet only	34,000	240
RM05-BA (BB)	Dual-access 256MB removable disk pack drive packaged in one free-standing disk drive cabinet and one utility cabinet	39,140	255
RM05-BC (BD)	Same as RM05-BA (BB) except packaged in free-standing disk drive cabinet only	39,140	255

## DEC Datasystem 700 Series

### EQUIPMENT PRICES

		<u>Purchase Price</u>	<u>Monthly Maint.</u>
<b>MAGNETIC TAPE</b>			
TS11-BA (BB)	1600 bps, 45 ips, 9-track magnetic tape transport and controller in H96oz cabinet; for D780 systems	15,400	75
TS11-CA (CB)	Same as TS11-BA (BD) except in H9646 cabinet; for D750 systems	15,400	75
TEE16-AE (AJ)	Program-selectable 800 or 1600 bpi, 9-track, 45 ips magnetic tape transport and VAX-11/780 MASSBUS adapter	25,000	155
TEU45-KA (KB)	Program-selectable 800 or 1600 bpi, 9-track, 75 ips magnetic tape transport and VAX-11/780 MASSBUS adapter	29,000	279
TGU77-AB (AD)	Program-selectable 800 or 1600 bpi, 9-track, 125 ips magnetic tape transport and VAX-11/750 MASSBUS adapter	34,800	247
TEU77-AB (AD)	Program-selectable 800 or 1600 bpi, 9-track, 125 ips magnetic tape transport and VAX-11/780 MASSBUS adapter	34,800	247
TE16-AE (AJ)	Program-selectable 800 or 1600 bpi, 9-track, 45 ips magnetic tape transport unit in H9602 cabinet	15,000	92
TU77-AF (AJ)	Program-selectable 800 or 1600 bpi, 9-track, 125 ips automatic loading magnetic tape transport unit in dedicated cabinet	23,100	184
TU45-KE (KF)	Program-selectable 800 or 1600 bpi, 9-track, 75 ips magnetic tape transport unit in dedicated cabinet	18,000	216
<b>PRINTERS</b>			
LP11-AA	64 character set, 132 column, 285 lpm band printer and control unit	8,350	95
LP11-BA	64- and 96-character set, 132 column band printer and control unit; 285 lpm when using the 64 character set, and 204 lpm when using the 96-character set	8,950	95
LP11-CA (CD)	64 character set, 132 column high speed printer and control unit; 900 lpm	27,800	195
LP11-DA (DD)	96 character set, 132 column high speed printer and control unit; 660 lpm	29,700	195
LP11-VA (VD)	64 character set, 132 column printer and control unit; 300 lpm	16,400	163
LP11-WA (WD)	96 character, 132 column printer and control unit; 240 lpm	19,500	163
LP11-YA (YD)	64 character, 132 column printer and control unit; 600 lpm	20,200	158
LP11-ZA (ZD)	96 character, 132 column printer and control unit; 436 lpm	21,900	158
LPR11-YA (YD)	64 character, 132 column remote printer subsystem; 525 lpm	27,200	242
LPR11-ZA (ZD)	96 character, 132 column remote printer subsystem; 420 lpm	28,900	242
<b>TERMINALS</b>			
LA34-DA	DECwriter IV terminal includes power supply, standard EIA interface and EIA null modem cable; can accommodate single sheets and roll paper; 30 cps print speed, 300 bps baud rate	1,450	18
LA38-GA	DECwriter IV terminal includes 18-button numeric keypad, 30 cps print speed and 300 bps baud rate	1,750	18
LA38-HA	LA38-GA (DECwriter IV printing terminal with stand)	1,850	18
LA120-DA	DECwriter III interactive hardcopy terminal; 180 cps bidirectional printing with baud rates up to 9600; includes power supply, standard EIA interface, 1K character buffer, and 7 x 7 dot matrix	2,800	32
LA120-RA	Free-standing EIA high-speed (180 cps) receive-only version of the LA120-DA hardcopy terminal	2,700	37
VT100-AA (AB)	Video display terminal includes double-width/double-size characters, 80 column x 24 lines or 132 columns x 14 lines, and 83-character detachable keyboard	2,150	18
VT1XX-AB	Advanced video option for VT100	320	4
VT1XX-AA	20mA current loop adapter	140	4
VT1XX-AC	VT100 Printer Port Option	385	7
<b>MULTIPLEXERS AND INTERFACES</b>			
DZ11-A	Asynchronous 8-line multiplexer for EIA/CCITT terminals or lines; includes data set control for use with Bell 103 or 113 modems or equivalent	2,570	31
DZ11-B	Eight-line EIA/CCITT expansion multiplexers for the DZ11-A	2,050	27
DZ11-E	Asynchronous 16-line multiplexers for EIA/CCITT terminals or lines; includes data set control for use with Bell 103 and 113 modems or equivalent	4,300	53
DZ11-C	Asynchronous 8-line multiplexer for connection of 20mA current loop terminals	2,805	31
DZ11-D	Eight-line 20mA current loop expansion multiplexer	2,200	27
DZ11-F	Asynchronous 16-line multiplexer for connection of 20mA current loop terminals	4,675	53
DUP11-DA	Full- or half-duplex synchronous interface	1,500	11



## DEC Datasystem 700 Series

## SOFTWARE PRICES

		<u>Purchase Price</u>
QD095-AG	VAX-11 BASIC on TU58 DECtape II cartridge; for D750	\$ 9,200
QE095-AY	VAX-11 BASIC on RX01 floppy diskette; for D780	9,200
QD102-AG	PDP-11 BASIC-PLUS-2/VAX on TU58 DECtape II cartridge; for D750	5,100
QE102-AY	PDP-11 BASIC-PLUS-2/VAX on RX01 floppy diskette; for D780	5,870
QD106-AG	VAX-11 BLISS-32 Implementation Language on TU58 DECtape II cartridge; for D750	13,800
QE106-AY	VAX-11 BLISS-32 Implementation Language on RX01 floppy diskette; D780	13,800
QD099-AG	VAX-11 COBOL on TU58 DECtape II cartridge; for D750	13,800
QE099-AY	VAX-11 COBOL on RX01 floppy diskette; for D780	13,800
QD067-AG	VAX-11 COBOL 66 on TU58 DECtape II cartridge; for D750	10,000
QE067-AY	VAX-11 CORAL 66 on RX01 floppy disk; for D780	10,000
QD100-AG	VAX-11 FORTRAN on TU58 DECtape II cartridge; for D750	8,050
QE100-AY	VAX-11 FORTRAN on RX01 floppy diskette; for D780	8,050
QD110-AG	VAX-11 PASCAL on TU58 DECtape II cartridge; for D750	5,500
QE110-AY	VAX-11 PASCAL on RX01 floppy diskette; for D780	5,500
QD114-AG	VAX-11 PL/1 on TU58 DECtape II cartridge; for D750	13,800
QE114-AY	VAX-11 PL/1 on RX01 floppy diskette; for D780	13,800
QD105-AG	PDP-11 DATATRIEVE/VAX on TU58 DECtape II cartridge; for D750	5,180
QE105-AY	PDP-11 DATATRIEVE/VAX on RX01 floppy diskette; for D780	5,180
QD701-AG	VAX-11 FMS on TU58 DECtape II cartridge; for D750	5,180
QE701-AY	VAX-11 FMS on RX01 floppy diskette; for D780	5,180
QD107-AG	FORTRAN IV/VAX-TO-RSX Cross Compiler on TU58 DECtape II cartridge; for D750	1,150
QE107-AY	FORTRAN IV/VAX-TO-RSX Cross Compiler on RX01 floppy diskette; for D780	1,150
QD051-YG	VAX-11 Pen Plotter Utilities on TU58 DECtape II cartridge; for D750	5,000
QE051-YY	VAX-11 Pen Plotter Utilities on RX01 floppy diskette; for D780	5,000
QD055-YG	VAX-11 Digitizer Utilities on TU58 DECtape II cartridge; for D750	5,000
QE055-YY	VAX-11 Digitizer Utilities on RX01 floppy diskette; for D780	5,000
QD053-YG	VAX-11 Engineering Drawing Utilities on TU58 DECtape II cartridge; for D750	2,750
QE053-YY	VAX-11 Engineering Drawing Utilities on RX01 floppy diskette; for D780	2,750
QD070-AG	MUX200/VAX on TU58 DECtape II cartridge; for D750	8,100
QE070-AY	MUX200/VAX on RX01 floppy diskette; for D780	8,100
QDD01-AG	DECnet-VAX on TU58 DECtape II cartridge; for D750	3,100
QED01-AY	DECnet-VAX on RX01 floppy diskette; for D780	3,100
QD111-AG	VAX-11 2780/3780 Protocol Emulator on TU58 DECtape II cartridge; for D750	5,900
QE111-AY	VAX-11 2780/3780 Protocol Emulator on RX01 floppy diskette; for D780	5,900
QD707-YG	DX/VMS, WPS-8 to Host Software Utility on TU58 DECtape II cartridge; for D750	2,900
QE707-YY	DX/VMS, WPS-8 to Host Software Utility on RX01 floppy diskette; for D780	2,900