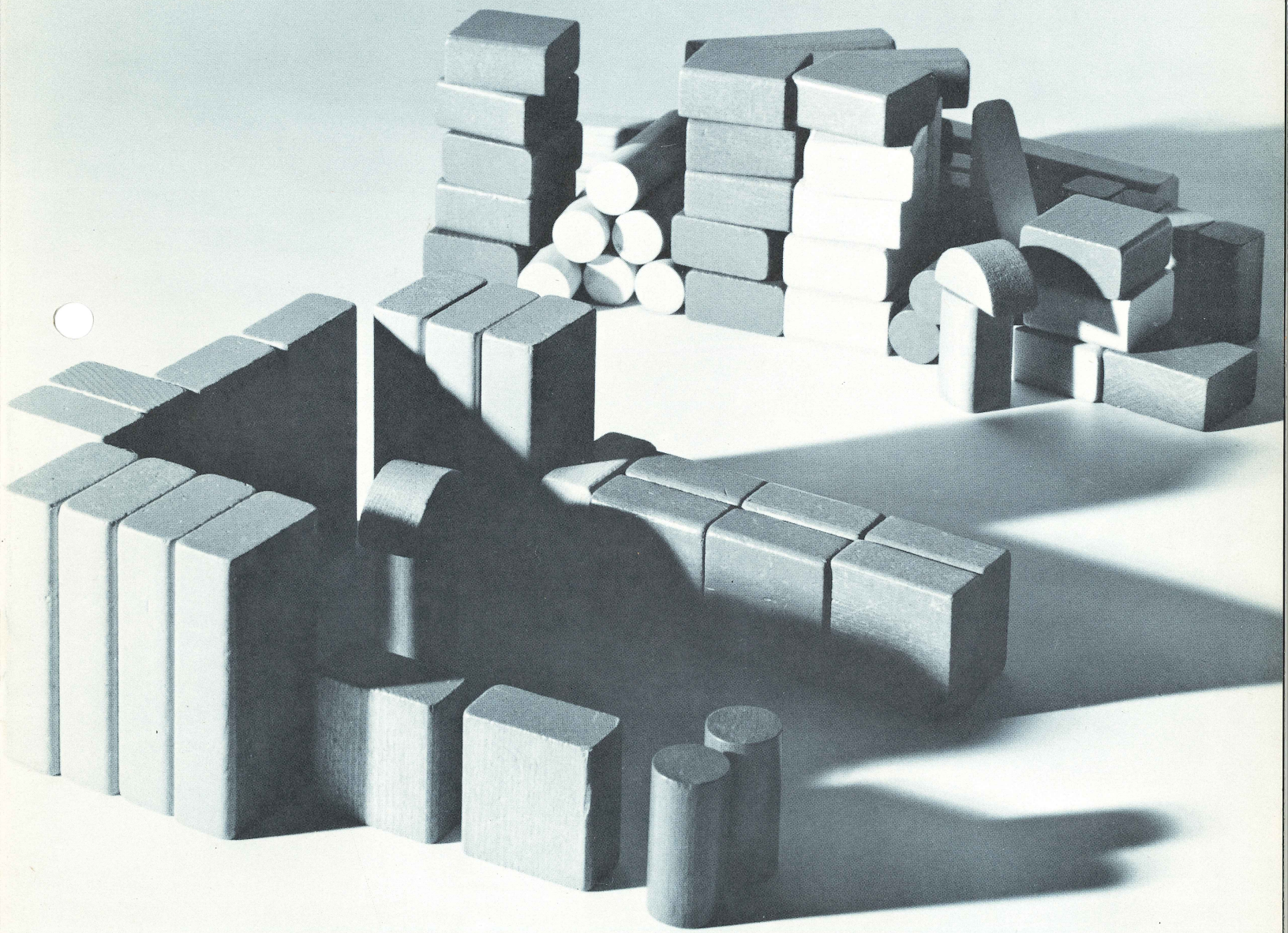
THIRD EDITION

decsystem10 CONFIGURATOR



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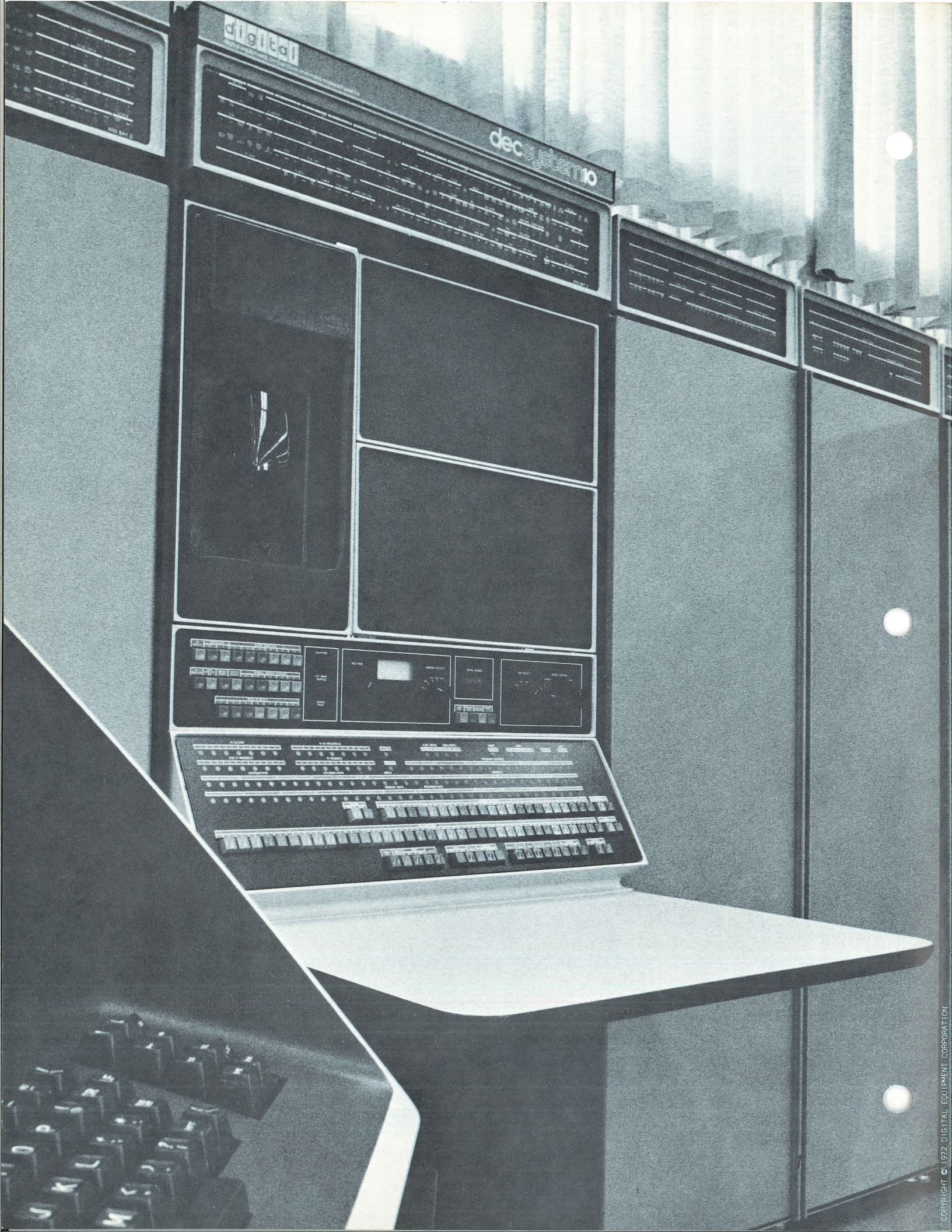


DECsystem-10

The DECsystem-10 family represents a unique concept—a wide range of computing power and computing capabilities under one operating system with one user and operating command language. DECsystem-10 excels in multiprogramming batch (both local and remote), in interactive timesharing, and in real-time processing. The fact that we offer these capabilities on all models, under one operating system, makes the DECsystem-10 family easy to learn, easy to use, and easy to expand.

This configurator is designed to show how easy it is to order and to expand a DECsystem-10. The following pages contain diagrams of our six systems and a brief description of all DECsystem-10 components and peripherals. Each diagram shows a system's basic configuration superimposed on a diagram of an expanded DECsystem-10 to emphasize the expandability of each system through the entire family.

Special upgrade policies make it easy for existing installations to purchase higher performance equipment at a price savings by exchanging the lower performance unit. These policies are available for PDP-6 and KA10 processors as well as magnetic tape systems, disk file controllers, card readers, synchronous communication interfaces and core memories.

Each of the six systems is distinguished from the others by its range of performance, a range of more than 10 to 1, although between systems there are no inflexible boundaries. To add performance to a system, it is necessary only to add hardware. No user software changes are required to expand from the smallest DECsystem-10 to the largest.

Pick the DECsystem-10 that best fits your present requirements and let it grow with you.

DECsystem-1040

- STARTER SYSTEM
- LOWEST COST
- ALL THE CAPABILITIES OF LARGER DECsystem-10 CONFIGURATIONS

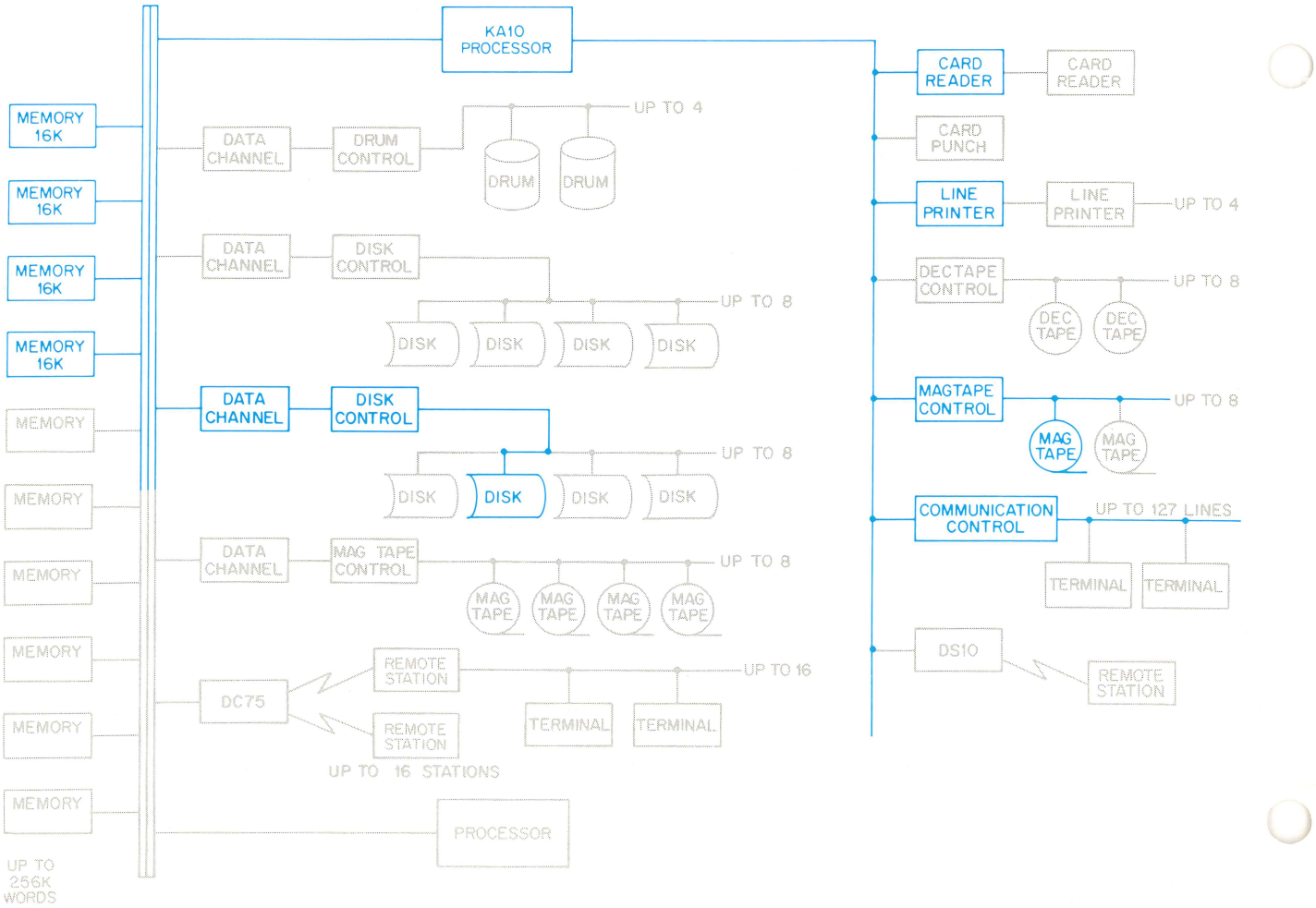
The 1040 is the smallest configuration in the DECsystem-10 family. It uses both the high-speed and low-speed memories, typically ranging in size from 64K words (320K bytes) to a maximum memory size of 256K words (1,280K bytes). Disk storage capacity starts with 30 to 60 million characters and is easily expanded. Economical peripheral equipment for the smaller installation includes the CR10F low-speed card reader and the TU10 magnetic tape drive.

Multiple simultaneous jobs may be processed under timesharing, real-time, and batch operations. All DECsystem-10 language processors run on the 1040, provided there is sufficient memory to accommodate them. The system uses disk drives for both job swapping and file storage.

MINIMUM 1040 CONFIGURATION

KA10 Processor
ME10 Memory 64K words, 0.61μs access, 1.0μs cycle
RP02 Disk system, 1 drive, 30 million characters
TU10A Magtape system, 1 drive, 36K characters/second transfer rate
CR10F Card reader, 300 cards/minute
LSP10 Line printer, 245 lines/minute
DK10 Real-time clock, 10μs resolution
DC10 Communication system, 16 lines

Expansion of the 1040 may include all devices on the DECsystem-10 equipment list.



DECsystem-1050

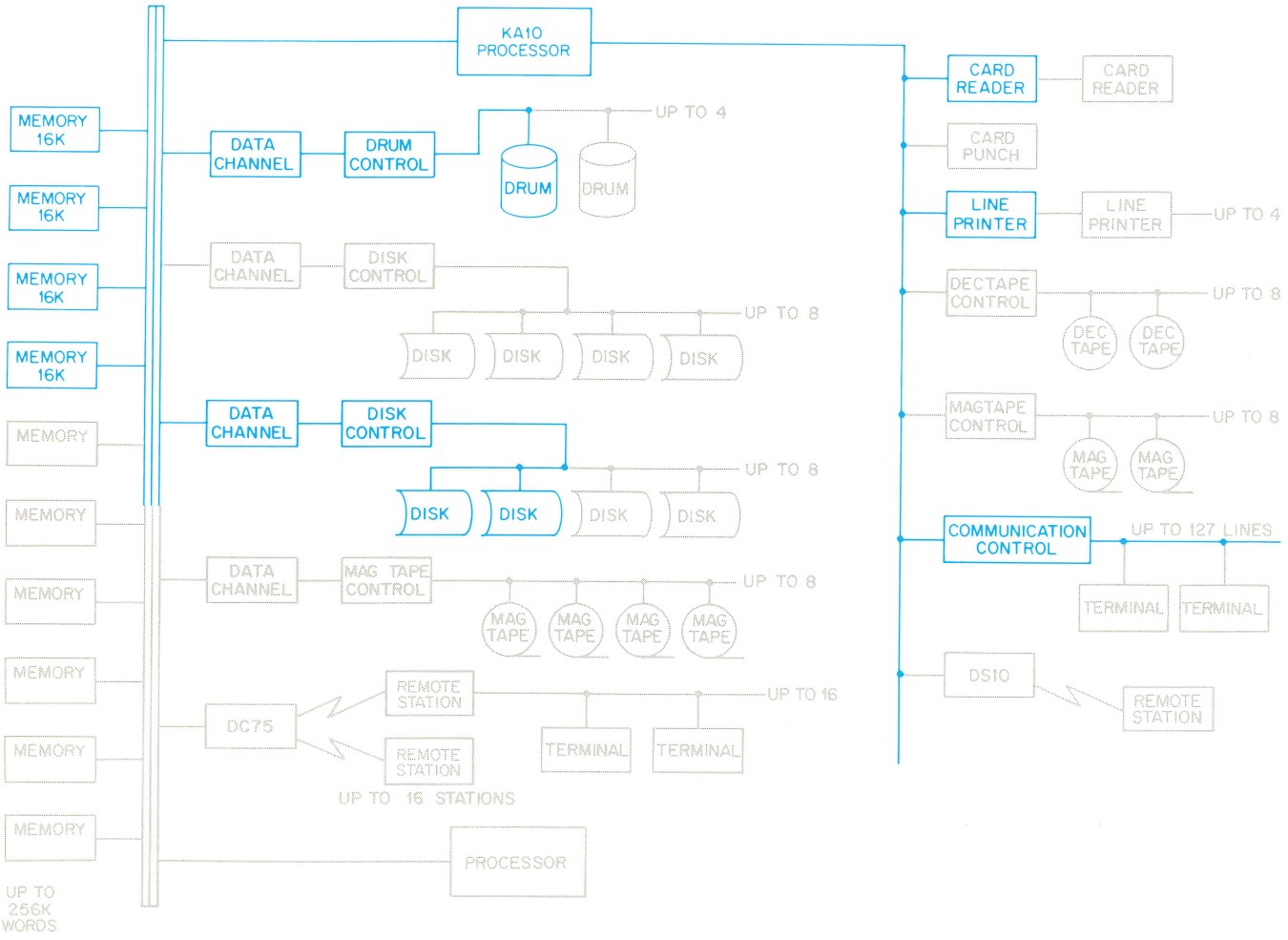
- MEDIUM SCALE SYSTEM
- SWAPPING DRUM FOR INCREASED THROUGHPUT
- INCREASED NUMBER OF USERS

The 1050 is a medium-power system with a typical memory range of 64K words (320K bytes) to 96K words (480K bytes). Maximum memory size is 256K words (1,280K bytes). A distinctive feature of the 1050 is the addition of the high-speed swapping drum which permits a substantial increase in the number of users making simultaneous access to the system. Disk storage typically ranges between 100 and 200 million characters and is easily expanded.

MINIMUM 1050 CONFIGURATION

KA10 Processor
ME10 Memory 64K words, 0.61μs access, 1.0μs cycle
RM10B Drum system, 1 drum
RP03 Disk system, 2 drives, 120 million characters
TU10A Magtape system, 2 drives, 36K characters/second transfer rate
CR10D Card reader, 1000 cards/minute
LP10F Line printer, 1250 lines/minute
DK10 Real-time clock, 10μs resolution
DC10 Communication system, 32 lines

Expansion of 1050 may include all devices on the DECsystem-10 equipment list.



DECsystem-1055

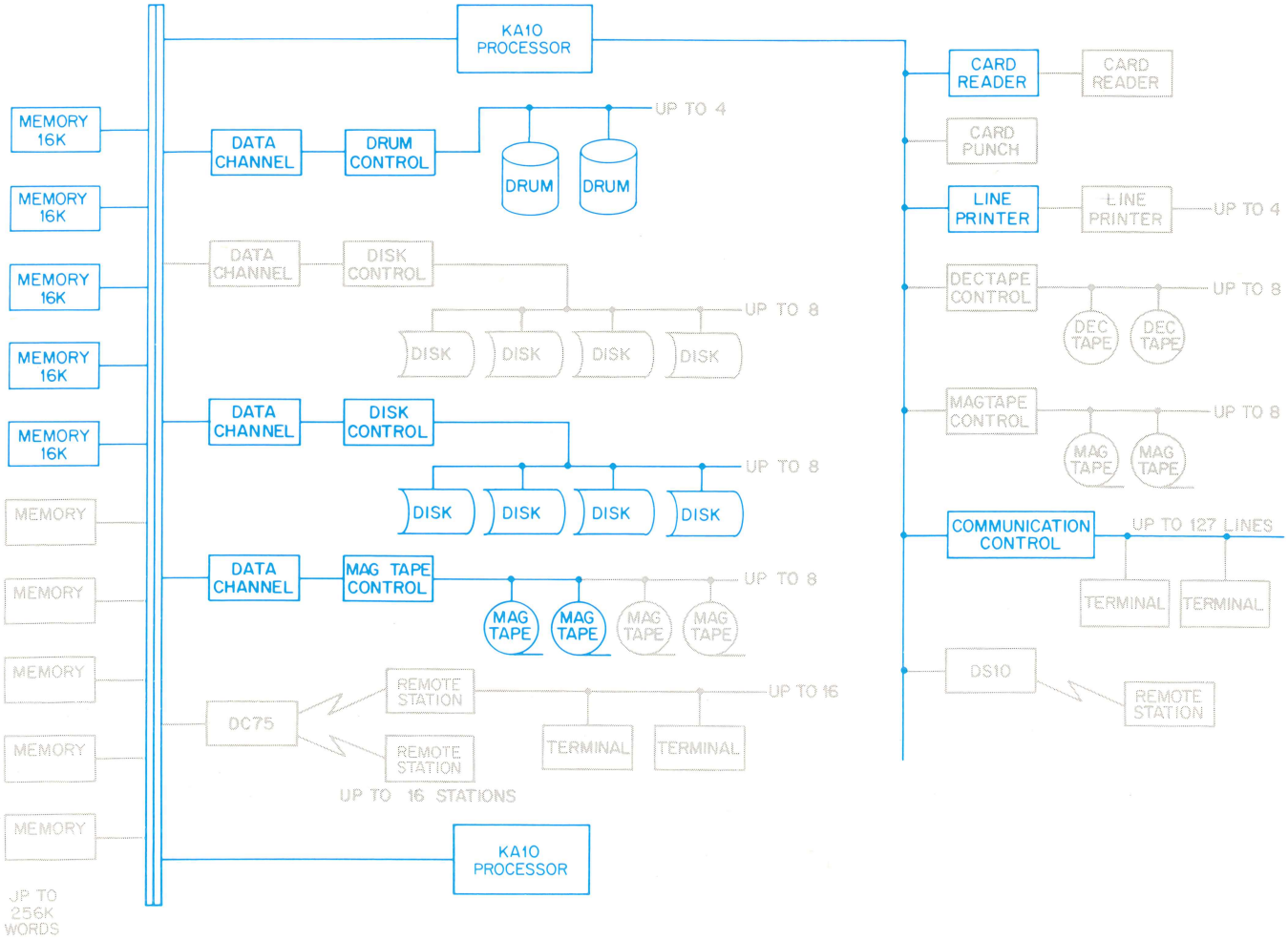
- DUAL PROCESSOR SYSTEM
- GREATER COMPUTER POWER
- MORE USERS THAN 1050

The 1055 is a dual processor 1050 system which provides increased computing capacity where processing power is in heavy demand under multi-task loads. To the user, from any terminal it looks as though there is one larger system with all resources shared among all users. Additional memory is required above the minimum 1050 system.

MINIMUM 1055 CONFIGURATION

KA10 2 Processors
ME10 Memory 80K words, 0.61μs access, 1.0μs cycle
RM10B Drum system, 1 drum
RP03 Disk System, 4 drives, 240 million words
TU40 Magtape system, 2 drives, 120K characters/second transfer rate
CR10D Card reader, 1000 cards/minute
LP10F Line printer, 1250 lines/minute
DK10 Real-time clock, 10μs resolution
DC10 Communication system, 32 lines

Expansion of the 1055 may include all devices on the DECsystem-10 equipment list.



DECsystem-1060

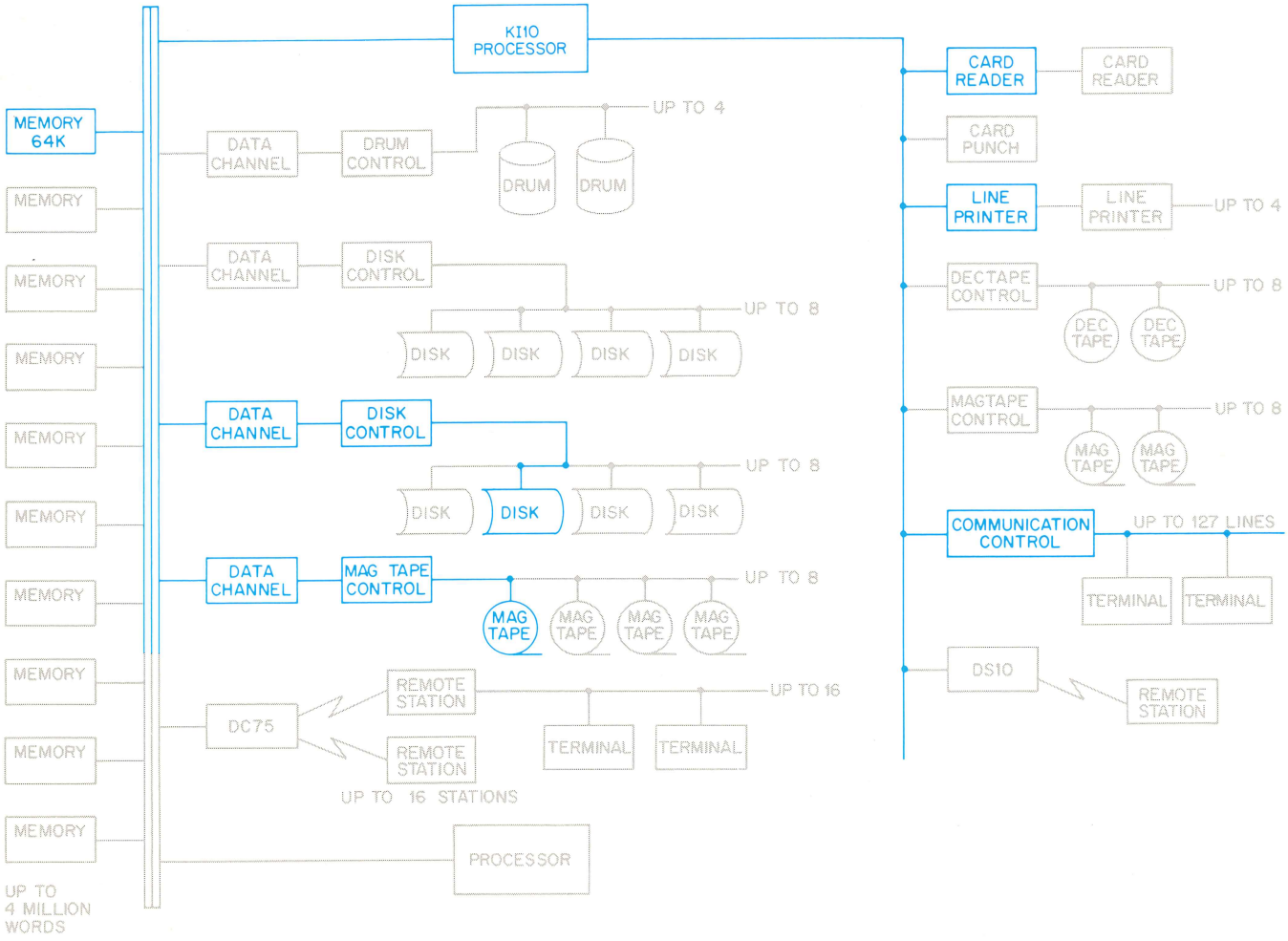
- VIRTUAL MEMORY CAPABILITY
- DOUBLE CPU POWER OF 1050
- HIGH SPEED PERIPHERALS
- DOUBLE PRECISION FLOATING POINT HARDWARE

The 1060 is a K110 processor based system for the smaller installation whose performance requirements are not met by the DECsystem-1040. The 1060 provides more than double the central processor speed of the 1040 in addition to such features as instruction look-ahead, increased memory size, higher speed I/O capabilities and double-precision floating point arithmetic. Memory for the 1060 begins at 64K (320K bytes) and may be expanded to a maximum of 4 million words (20 million bytes). Disk storage requirements of the 1060 typically range from 60 million characters upwards. The system uses disk drives for both job swapping and file storage.

MINIMUM 1060 CONFIGURATION

KI10 Processor
MF10 Memory, 64K words, 0.61μs access, 1.0μs cycle
RP03 Disk system, 1 drive, 60 million characters
TU40 Magtape system, 1 drive,
120K characters/second transfer rate
CR10E Card reader, 1200 cards/minute
LF10F Line printer, 1250 lines/minute
DK10 Real-time clock, 10μsec resolution
DC10 Communication system, 16 lines

Expansion of the 1060 may include all devices on the DECsystem-10 equipment list.



DECsystem-1070

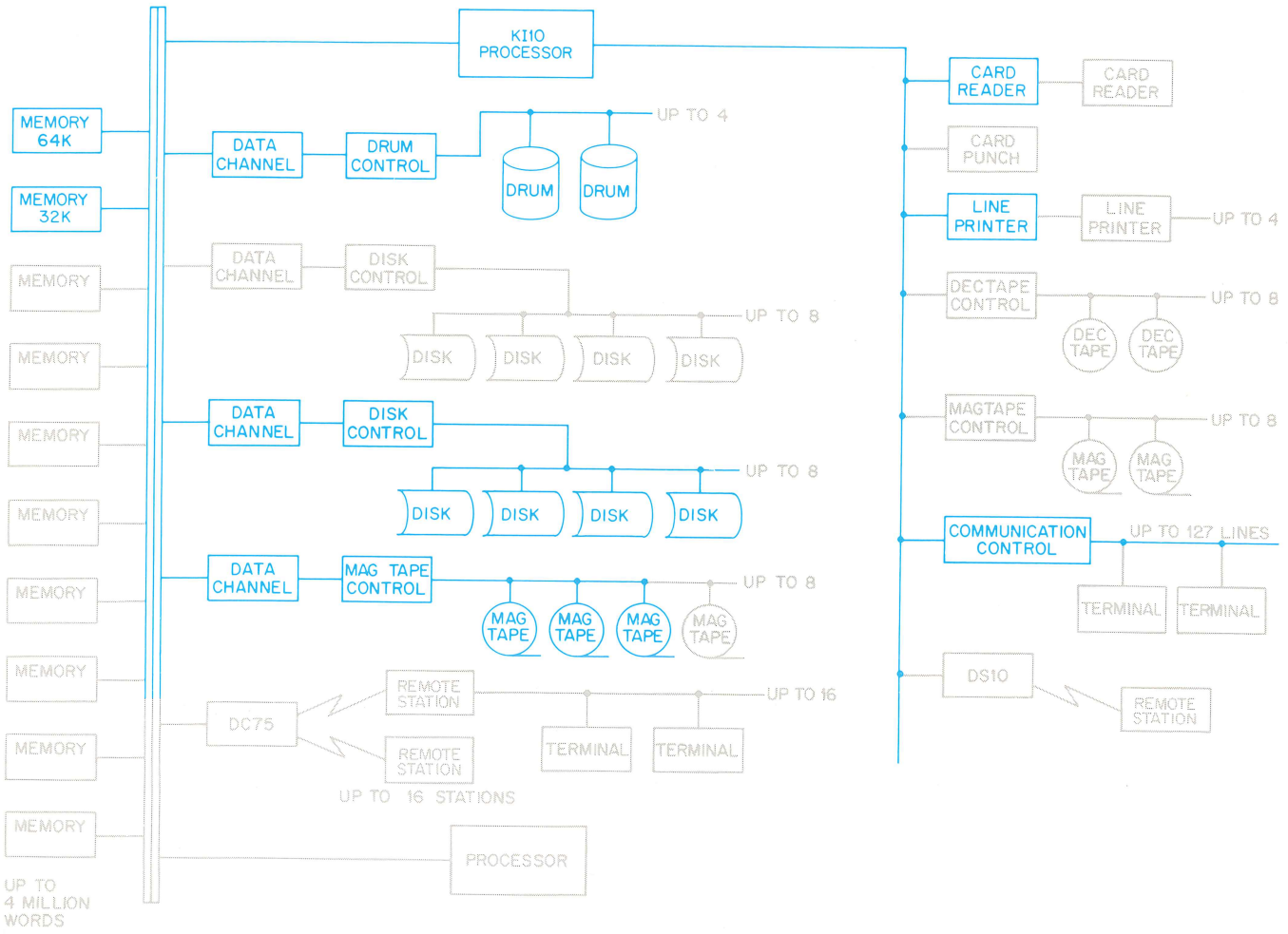
- VIRTUAL MEMORY CAPABILITY
- LARGE SCALE SYSTEM
- LARGE DATA BASE SYSTEM

DECsystem-1070 is a large-scale computing system with more than double the central processor speed of the 1050. Features include instruction look-ahead, increased memory size, hardware memory paging, higher-speed I/O capabilities, double-precision floating point arithmetic, and virtual memory capability. Memory for the 1070 begins at 96K words (490K bytes) and may be expanded to a maximum of 4 million words (20 million bytes). Disk storage requirements of the 1070 typically range from 240 million characters upwards. Up to 127 concurrent jobs may be run, and up to 127 interactive terminals may be connected to the 1070 from both local and remote sites. Multiple remote stations are multiplexed through the DC75 synchronous communications multiplexer.

MINIMUM 1070 CONFIGURATION

KI10 Processor
MF10 Memory, 96K words, 0.61μs access, 1.0μs cycle
RM10B Drum system, 2 drums
RP03 Disk system, 4 drives, 240 million characters
TU40 Magtape system, 3 drives,
120K characters/second transfer rate
CR10E Card reader, 1200 cards/minute
LF10F Line printer, 1250 lines/minute
DK10 Real-time clock, 10μsec resolution
DC10 Communication system, 32 lines

Expansion of the 1070 may include all devices on the DECsystem-10 equipment list.



DECsystem-1077

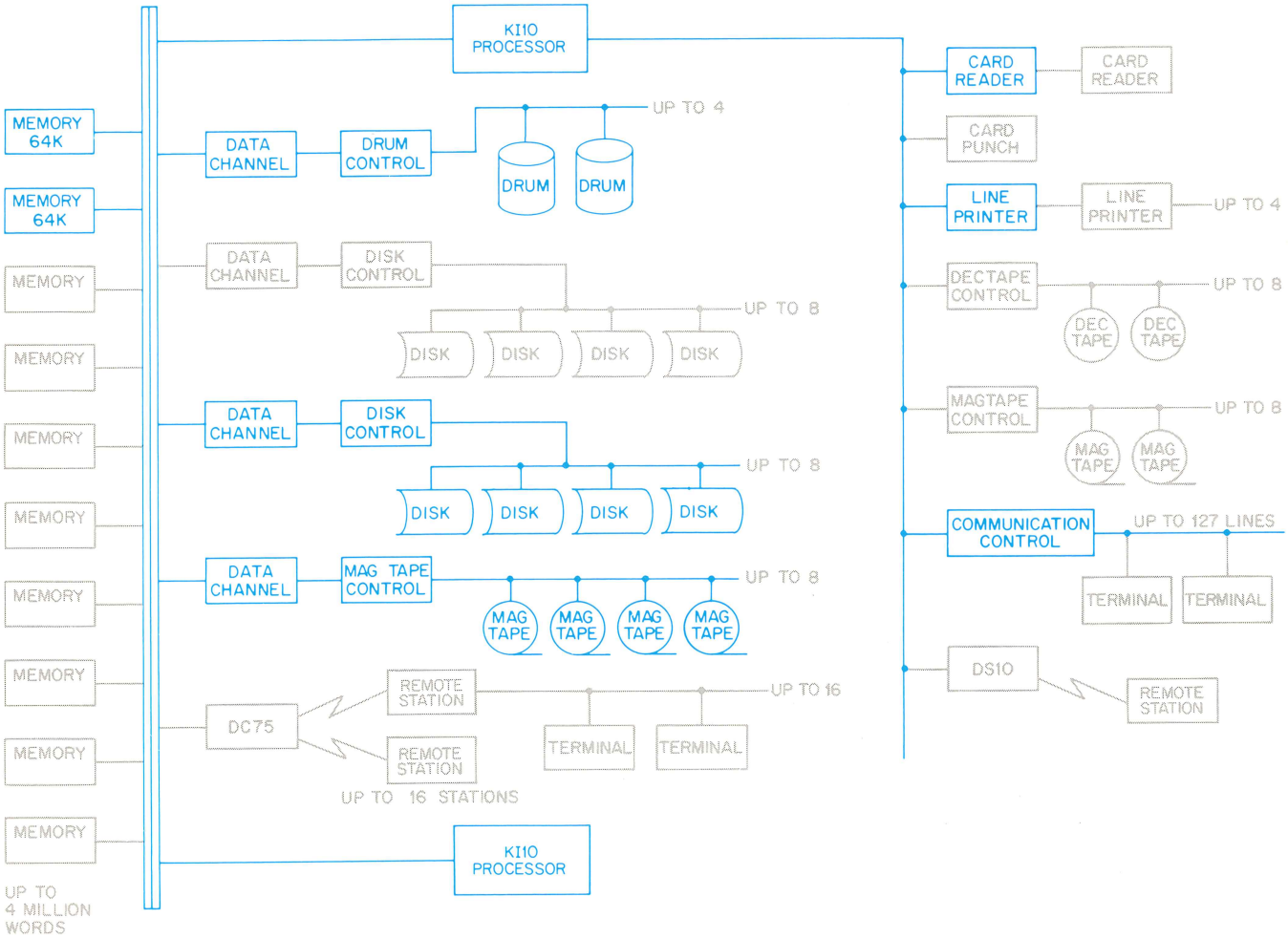
- VIRTUAL MEMORY CAPABILITY
- DUAL PROCESSOR SYSTEM
- HIGHEST PERFORMANCE SYSTEM

The 1077 is a dual processor 1070 system which provides increased computing capacity where processing power is in heavy demand under multi-task loads. To the user, from any terminal it looks as though there is one larger system with all resources shared among all users. Additional memory is required above the minimum 1070 system.

MINIMUM 1077 CONFIGURATION

KI10 2 Processors
MF10 Memory, 128K words, 0.61 μs access, 1.0 μs cycle
RM10B Drum system, 2 drums
RP03 Disk system, 4 drives, 240 million characters
TU40 Magtape system, 4 drives,
120K characters/second transfer rate
CR10E Card reader, 1200 cards/minute
LP10F Line printer, 1250 lines/minute
DK10 Real-time clock, 10 μs resolution
DC10 Communication system, 32 lines

Expansion of the 1077 may include all devices on the DECsystem-10 equipment list.



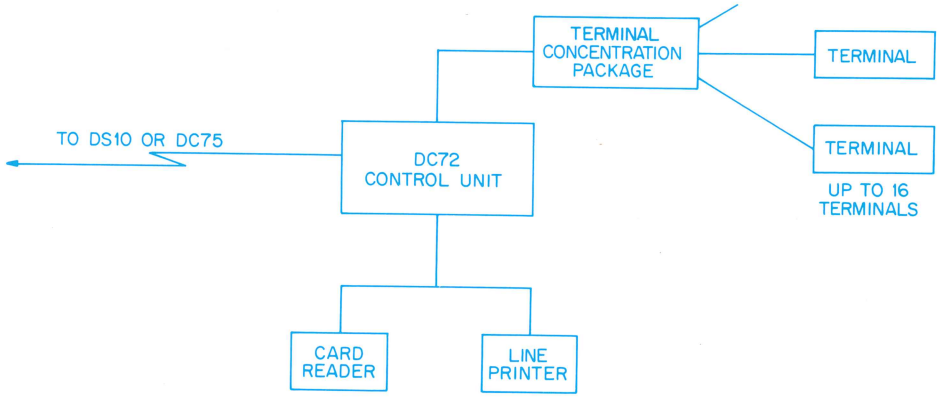
REMOTE STATION

The DC72 remote station consists of a remote programmable processor, a card reader, a line printer, and a teleprinter console. The operator at the remote site can initiate a stream of batch jobs in the same way that they are initiated at the DECsystem-10 computer center: he merely loads the cards into the card reader. Jobs entered from the remote station are multiprogrammed and may operate concurrently. To improve operating efficiency, output for the remote line printer is spooled.

The user can direct output to (or receive input from) other stations or the computer center. The operator merely indicates the desired station number.

In addition to performing batch operations, a remote station can serve as a terminal concentrator for up to 16 devices, including Teletypes and various keyboard CRT devices. Terminals on the concentrator, like other DECsystem-10 terminals, can be used for remote job entry or for timesharing operations such as interactive computation and/or program development.

With all its flexibility, the remote station is easy to use. Programs that operate on the DECsystem-10 need no modifications to operate through the remote station.



DECsystem-10 EQUIPMENT LIST

Information in the left-hand column of each page specifies the maximum number of units supported by software. Information in the column at the right specifies the prerequisite equipment if any. Unless indicated otherwise, all devices are fully supported by the DECsystem-10 monitor, user-mode programs (compilers, assemblers, utility programs and library routines) and diagnostics.

PROCESSORS

Number Supported			*Prerequisite*
2	KA10	Processor: Central processing unit with floating point and byte manipulation instructions and including: —10 character per second console tele-printer, LT35A —Functional operator console —Multiplexed input/output processor (IOP) with 7 levels of priority interrupts —366 instructions	
2	KI10	Processor: 378 instructions including 8 new double-precision floating point instructions: —Memory paging —Console teleprinter —Functional operator console with lockout switch —Priority interrupt structure with address generation capability —Instruction look-ahead —Double floating point format 8-bit exponent, 62-bit fraction	
24	DF10	Data Channel: Permits data transfers between high-speed devices and core memory. It will service up to 8 high-speed devices such as the RC10 drum control or RP10 disk control.	MC10

CORE MEMORIES

Number Supported			*Prerequisite*
Note 1	MC10	Memory Access Port: Provides the cables and logic to connect a processor/channel to an MA10, MB10, ME10 or MF10 memory port.	MA10, MB10, ME10 or MF10 Memories
Note 2	MD10	Core Memory: 65,536 words, 1.8μs cycle time. Supplied with 4 memory access ports and a memory cable set for 1 of these. Up to 3 additional memory cable sets may be added.	DECsystem-10
Note 2	MD10E	MD10 Core Memory Expansion Module: 32,768 words, 1.8μs cycle time. Two may be added to each MD10.	MD10
Note 2	ME10	Core Memory: 16,384 words, 0.61μs access time, 1.0μs cycle time. Up to 4 MC10 memory access ports may be added allowing access to a total of 4 channels. 2 or 4-way interleaving is available.	DECsystem-10
Note 2	MF10A	Core Memory: 32,768 words, 1.0μs cycle time, 0.61μs access time.	DECsystem-10
Note 2	MF10G	Core Memory: 65,536 words, 0.61μs access time, 1.0μs cycle time. Up to 4 MC10 memory access ports; overlapped memory operation to allow instruction look-ahead; 2 or 4-way interleaving; 22-bit address logic providing 4096K words of addressing capability; swing-down indicator panel; lamp test; quick latch cable connections.	DECsystem-10
Note 2	MF10E	MF10A Core Memory Expansion Module: 32,768 words, 1.0μs cycle time.	MF10A
3	MX10	Memory Port Multiplexer: Provides direct memory access for up to 8 additional DF10 data channels.	MC10

Note 1—For add-on orders, MC10 ports are not included with channels and memories.

Note 2—Maximum memory addressable: KA10—256K words, KI10—4 million words. Consult DECsystem-10 Marketing when configuring KI10's with more than 256K words of memory.

DRUM/DISK SYSTEMS

Number Supported			*Prerequisite*
2	RM10G	Swapping Drum System: Complete drum system consisting of DF10 data channel, RC10 Controller and 1 RM10B drum. Three additional drums may be added.	MC10
2	RC10	Swapping Drum Control: Provides control for up to 4 RM10B swapping drums. Connects to the DF10 data channel which provides a direct path to memory. Requires at least 1 RM10B.	DF10
8	RM10B	Swapping Drum: Provides 345,600 36-bit words of fast access storage and program libraries. Up to 4 RM10B's may be connected to 1 RC10 controller. Latency is 8.3msec with a 4.2μsec/word transfer rate at 60 Hz. Latency is 10msec with a 5.0μsec/word transfer rate at 50 Hz.	RC10
4	RP02C	Disk System: Complete disk system consisting of DF10 data channel, RP10C controller and 1 RP02 disk drive. Up to 7 additional disk drives may be added.	MC10
4	RP03C	Disk System: Complete disk system consisting of DF10 data channel, RP10C controller and 1 RP03 disk drive. Up to 7 additional disk drives may be added.	MC10
4	RP10C	Disk control: Provides control of up to 8 RP02 and/or RP03 disk drives. Requires the DF10 data channel which provides a a direct path to memory.	DF10
32 (Note 3)	RP02	Disk Drive: The RP02 provides storage for up to 5.12 million 36-bit words (30 million characters) on interchangeable disk packs. Average access time is 47.5ms, including 12.5ms average rotational latency. Transfer rate is 15μs/word. Requires RP10 control. Includes 1 RP02P disk pack.	RP10C
32 (Note 3)	RP03	Disk Drive: The RP03 provides storage for 16.24 million words (80 million characters) on 400 cylinders. Average access time is 41.5ms including 12.5ms of rotational latency. Transfer rate is 15μs/word. Includes 1 RP02P disk pack. Intermixing of RP02's is permitted with the RP10C.	RP10C
	RP02P	Disk Pack: Pack for RP02 and RP03 drives. 20 recording surfaces on 11 platters.	

Note 3—8 drives for each RP10C.

MAGNETIC TAPE SYSTEMS

Number Supported			*Prerequisite*
1	TU10C	Magnetic Tape System: Complete magnetic tape system consisting of TM10A controller and 1 TU10A 9- or 7-channel drive. Up to 7 additional drives may be added.	DECsystem-10
1	TM10A	Magnetic Tape Control: Controls up to 8 tape transports. Permits reading either 7- or 9-channel (or combination of both) ANSI/ISO* standard tape. Magnetic tape unit types may be intermixed on a single control.	DECsystem-10
2	TM10B	Magnetic Tape Control: Same as TM10A but provides for data channel operation. Requires a DF10 data channel.	DF10
8	TU10A-E	Magnetic Tape Unit: Reads and writes 9-channel ANSI/ISO* standard magnetic tape at 45 inches/second and a density of 200, 556 and 800 bits/inch. Transfer rate is 36K characters/second.	TM10A or B
8	TU10A-F	Magnetic Tape Unit: Reads and writes 7-channel ANSI/ISO* standard magnetic tape at 45 inches/sec and a density of 200, 556 and 800 bits/inch. Transfer rate is 36K characters/second.	TM10A or B

MAGNETIC TAPE SYSTEMS (continued)

Number Supported			*Prerequisite*
2	TU40C	Magnetic Tape System: Complete magnetic tape system for operation through data channel. Consists of DF10 data channel, TM10B controller and 1 TU40 9-channel drive. Up to 7 additional drives may be added.	DF10
2	TU41C	Magnetic Tape System: Complete magnetic tape system for operation through data channel. TM10B controller and 1 TU41 7-channel drive. Up to 7 additional drives may be added.	DF10
16	TU40	Magnetic Tape Unit: Reads and writes 9-channel ANSI/ISO* standard magnetic tape at 150 inches/second and a density of 200, 556 and 800 bits/inch. Transfer rate is 120K characters/second. Includes automatic threading and power window.	TM10B
16	TU41	Magnetic Tape Unit: Reads and writes 7-channel ANSI/ISO* standard magnetic tape at 150 inches/second and a density of 200, 556 and 800 bits/inch. Transfer rate is 120K characters/second. Includes automatic threading and power window.	TM10B
2	TD10G	DECtape System: Complete DECtape system consisting of TD10 controller and 1 TU56 DECtape unit. Up to 3 additional DECtape units may be added.	DECsystem-10
2	TD10	DECtape Control: Provides control for up to 4 TU56 DECtape transports.	DECsystem-10
8	TU56	DECtape Unit: Reads and writes magnetic tape at 15K characters/second. Tapes are 3.8 inches in diameter, 260 feet in length and .75 inches in width. Tape units are bi-directional allowing random access to user files. Tape capacity is 578 blocks of 128 words (300K characters). Each TU56 unit contains 2 tape handling units.	TD10
	TC10-C	Tape Control: Controls up to 8 phase encoded or dual density magnetic tape. Formatter Electronics Package required.	DF10
2	TC10-P	Formatter Electronics Package: Handles up to 4 phase encoded magnetic tape drives. Two Formatter packages may be included with each TC10-C Tape Control.	TC10-C
2	TC10-PN	Formatter Electronics Package: Handles up to 4 dual density magnetic tape drives. Two Formatter packages may be included with each TC10-C Tape Control.	TC10-C
8	TSU42	Phase encoded magnetic tape drive: 1600 bits/inch, 9 track magnetic tape drive. Up to 8 drives allowed for TC10-C tape controller. Speeds up to 200 inches/second.	TC10 & TC10-P
8	TSU43	Dual density magnetic tape drive: 800/1600 bits/inch, 9 track magnetic tape drive. Up to 8 drives allowed per TC10-C tape controller. Speeds up to 200 inches/second.	TC10-C & TC10-PN

*ANSI X3.22—1968 Recorded Magnetic Tape for Information Interchange ISO R1680, R1681, R1682.

PUNCHED CARD EQUIPMENT

Number Supported			*Prerequisite*
2	CR10D	Card Reader: Table-top model, reads 80 column punched cards at 1000 cards/minute. Card hopper and stacker capacities are 1000 cards each.	DECsystem-10
2	CR10E	Card Reader: Console model, reads 80 column punched cards at 1200 cards/minute. Card hopper and stacker capacities are 2250 cards each.	DECsystem-10

PUNCHED CARD EQUIPMENT (continued)

Number Supported			*Prerequisite*
2	CR10F	Card Reader: Table-top model, reads 80 column punched cards at 300 cards/minute. Card hopper and stacker capacities are 600 cards each.	DECsystem-10
1	CP10A	Card Punch: Punches cards at a rate of 200 cards/minute when punching in all 80 columns. A maximum rate of 365 cards/minute is possible when only the first 16 columns are punched. Card hopper and capacities are 1000 cards each.	DECsystem-10

LINE PRINTERS

Number Supported			*Prerequisites*
1	LSP10	Line Printer: 245 line/minute line printer with 64 character set print drum.	DECsystem-10
2	LP10F	Line Printer: 1250 line/minute line printer with 64 character set print drum, EDP or scientific drum.	DECsystem-10
2	LP10H	Line Printer: 925 line/minute line printer with 96 character set print drum, EDP or scientific drum.	DECsystem-10
	LP10FE	Print Drum: 64 character set (EDP) drum for LP10F line printer.	LP10F
	LP10FF	Print Drum: 64 character set (scientific) drum for LP10F line printer.	LP10F
	LP10HE	Print Drum: 96 character set (EDP) drum for LP10H line printer.	LP10H
	LP10HF	Print Drum: 96 character set (scientific) drum for LP10H line printer.	LP10H

PLOTTERS

Number Supported			*Prerequisite*
1	XY10	Plotter Control: For CALCOMP 500 and 600 series digital incremental plotters.	DECsystem-10

		CALCOMP Plotter Model	Step Size	Speed (Steps/-Minute)	Paper Width (Inches)
XY10A	Plotter & Control	565	0.01 in. 0.005 in. 0.1 mm.	18,000 18,000 18,000	12
XY10B	Plotter & Control	563	0.01 in. 0.005 in. 0.1 mm.	12,000 18,000 18,000	31

* Full software support is currently under development.

DATA COMMUNICATIONS EQUIPMENT

DATA LINE SCANNER:

The DC10 Data Line Scanner provides on-line servicing of up to 64 communication lines. It accommodates any device which uses 5- or 8-level serial Teletype code at speeds up to 2400 baud. Special devices may operate at higher speeds. Full duplex with local copy and half duplex data modes are available on each line serviced.

Number Supported			*Prerequisite*
1	DC10A	Control Unit: The scanner and control unit for the DC10 communications controller provides 4 units of cabinet space and power supplies for various combinations of line equipment.	DECsystem-10
8	DC10B	8-Line Group Unit: Provides Teletype interfaces for up to 8 local lines, full duplex. May be used with half duplex or full duplex with local copy data sets. When used with data sets, communications must be established, maintained and terminated manually, unless DC10E expander data set control units are provided. Requires 1 unit of cabinet space in a DC10A or DC10F.	DC10A
8	DC10C	8-Line Telegraph Relay Assembly: Provides conversion from local to long lines using full or half duplex facilities. Requires 2 units of cabinet space in a DC10A or DC10F.	DC10B & DC10D
2	DC10D	Telegraph Power Supply: The standard line voltage supply used with DC10C (120 volts at 2 amperes). No additional cabinet space required.	DC10C
8	DC10E	Expanded Data Set Control: Provides expanded control of 8 data sets in the DC10 system. Recommended for maximum system security. Requires 2 units of cabinet space in a DC10A or DC10F.	DC10A & DC10B
1	DC10F	Expander Cabinet: Provides 8 units of cabinet space and power supplies for expansion beyond capacity of DC10A.	DC10A

DC10 Summary Table

# Local Lines *	# Controlled Data Set Lines	# DC10B's	# DC10E's
64	0	8	0
48	8	7	1
32	16	6	2
16	24	5	3
0	32	4	4

*DATA SETS may be connected to local lines if no automatic status or control is required.

TERMINALS

LT33A	Teleprinter: 33 TS machine (KSR33, friction feed).	DC10
LT33B	Teleprinter: 33 TY machine (ASR33, sprocket feed, automatic reader control XON/XOFF feature).	DC10
LT33C	Teleprinter: 33 TS machine (KSR33, friction feed).	DC68, DC71 or DC72
LT33H	Teleprinter: 33 TY machine (ASR33, sprocket feed, automatic reader control XON/XOFF feature).	DC68, DC71 or DC72
LT35A	Teleprinter: USL312HF machine (KSR35, sprocket feed).	DC10
LT35C	Teleprinter: USL312HF machine (KSR35, sprocket feed).	DC68, DC71 or DC72
LA30E	DECwriter: 30 character/second serial teleprinter.	DC10
VT05B	Alphanumeric Terminal: 300 to 2400 baud CRT display terminal, 128 character keyboard, 1440 character capacity screen, direct cursor addressing, interchangeable with teletype.	DC10

REMOTE STATIONS

Number Supported			*Prerequisite*
8	DC72A	Remote Station: This equipment interfaces to a DECsystem-10 via full duplex modems and a DS10 or DC75 synchronous modem controller to provide remote processing. Includes teleprinter console, 300 card/minute card reader and 165 character/second, 132 column, 64 character line printer.	DS10 or DC75
	DC72B	Remote Station: This is identical to the DC72A except for a 245 line/minute, 64 character line printer.	DS10 or DC75
	DC72C	Remote Station: This is identical to the DC72A except for a 173 line/minute, 96 character line printer.	DS10 or DC75
2	DC72L	Terminal Concentration Package: Provides for concentration of up to 8 terminal lines through the DC72 to DECsystem-10. The DC72L includes 8 lines. Two DC72L's may be added to each DC72. Add-on equipment for older DC71 configurations.	DC72
	DC71D	Terminal Concentration Package: Provides concentration of up to 16 terminal lines through the DC71 to DECsystem-10. DC71D includes 8 lines.	DC71A/B
	DC71E	Expander Option: Provides for 8 lines on DC71D.	DC71D

SYNCHRONOUS COMMUNICATION SYSTEMS

Number Supported			*Prerequisite*
2	DS10	Single-Line Synchronous Interface: Between I/O bus and 1 full or half duplex serial synchronous modem. EIA standard RS-232B or C or CCITT V.24. Total rate for 1 or 2 DS10 units is 9600 baud half or full duplex. Programmable character width is 6 or 8 bits.	DECsystem-10
Note 4,5	DC75	Synchronous Communication System: Provides direct memory interface for full duplex synchronous lines. Total throughput capacity is 40KB, i.e., 4 lines at 9600 baud or 8 lines at 4800 baud, etc. DC75 provides 8 lines and connects to memory access port.	DECsystem-10
Note 4	DC75D	Expander Option for DC75: Provides an additional 40KB throughput capacity for DC75, i.e., 8 additional lines at 4800 baud. Up to 3 DC75D's can be added to 1 DC75.	DC75
Note 4	DC75E	Incremental 8-Line Group for DC75 or DC75D: Provides for up to 8 additional lines on a DC75 or DC75D for a total of up to 16 lines. DC75E does not increase throughput capacity of DC75; it still remains at 40KB, i.e., 16 lines at 2400 baud. Only 1 DC75E per basic DC75 or DC75D.	

Note 4—Please contact DECsystem-10 sales engineer or DECsystem-10 Marketing when configuring systems with multiple DC75 equipment.

Note 5—Full software support is currently under development.

GRAPHIC DISPLAY SYSTEMS

1	VB10C	Precision Incremental Display System: Provides the DECsystem-10 with alphanumeric and graphic display capabilities. Connects to the computer system through both the I/O and memory buses. Information may be displayed as straight lines, vectors, curved lines, character or single random-position points. 7 standard and 2 optional modes of operation are available.	MC10
Note 6	GT40	Graphic System: Computer-level graphics system consisting of a graphical display system and general purpose mini-computer. The mini-computer fetches and executes its own instructions and data from memory minimizing CPU overhead. Information may be displayed as straight lines, vectors, characters or single random-position points. 7 programming modes are available.	DC10

Note 6—Contact DECsystem-10 Marketing when configuring systems with GT40's.

MISCELLANEOUS

Number Supported			*Prerequisite*
1 Note 7	DA10	Interface Between DECsystem-10 and PDP-8.	DECsystem-10
2	DK10	Programmable Real-Time Clock: Unit is supplied with a crystal oscillator which provides a resolution of 10μsec. One is standard in all DECsystem-10 configurations.	DECsystem-10
	GP10	General Purpose Interface to DECsystem-10 I/O Bus: Includes cabinet, two 728 power supplies, one 844 power control, indicators, end panels, fan convenience outlet, and BS10A cable set (15 feet). Logic provides a status register, device decoding, read-in gating and line buffering.	DECsystem-10
	GP10L	GP10 Interface Logic Only: Does not include power supplies or indicators.	
	GP10M	GP10 Less Logic: Includes power supplies and indicators, but no cables.	
	DC44	Typeset Interface: Provides interface between memory ports (or memory port multiplexer) and typesetting interface.	Typeset-1044
	DT03-CS	Manual Bus Switch: I/O bus switch; provides Typeset-1044 with capability of switching I/O bus peripherals between processors.	Typeset-1044
	DT03-FS	Bus Switch: PDP-11 bus switch; provides Typeset-1044 with capability of switching typesetting interfaces between processors.	Typeset-1044
	CAB-9B	Cabinet: With full length single doors front and back, with indicator panel but without end panels.	
		End Panels: Available for all DECsystem-10 cabinets.	

Note 7—Diagnostic software support only. User must provide monitor and user-mode software.

DECsystem-10 SOFTWARE

- ONE SOFTWARE SYSTEM FOR TIMESHARING, BATCH, REMOTE BATCH AND REAL-TIME
- ONE COMMAND LANGUAGE FOR ALL MODES OF OPERATION
- SOFTWARE INDEPENDENT OF HARDWARE CONFIGURATION

The operating system for the DECsystem-10 family is unique in many ways. Designed specifically for timesharing, the monitor has undergone an extensive series of improvements to refine the algorithms and file structures to minimize system overhead without sacrificing system features. Real-time capabilities and local and remote batch operations have been added within the context of the timesharing structure to give a multimode operation which can be tuned for specific needs. The DECsystem-10 is capable of servicing an arbitrary mix of real-time, batch, and timesharing operations. The monitor is tailored to each hardware configuration and contains a number of tuneable parameters which can give user-defined priority to any desired mode of operating, i.e., local batch, real-time, etc. Default values adequate for most operations are available which tune the system to operate in a low overhead mode.

The extent of tuneable parameters insures that specific operating modes are never compromised. A full range of capabilities is always available; users on the system are never disadvantaged because of multimode flexibility.

This approach is unique in the computer industry. The system has arrived at its present state by design and refinement rather than by patchwork modifications. Consequently, the system is complete and efficient in core and CPU utilization. Users on the DECsystem-10 learn only one operating system, one command language, and one procedure, good for any desired mode of operation, rather than a series of operating systems pieced together to perform limited functions

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