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Control Data Corporation



QDC

**SYSTEM 17
SERIES**

QDC

CDC® SYSTEM 17™ SERIES

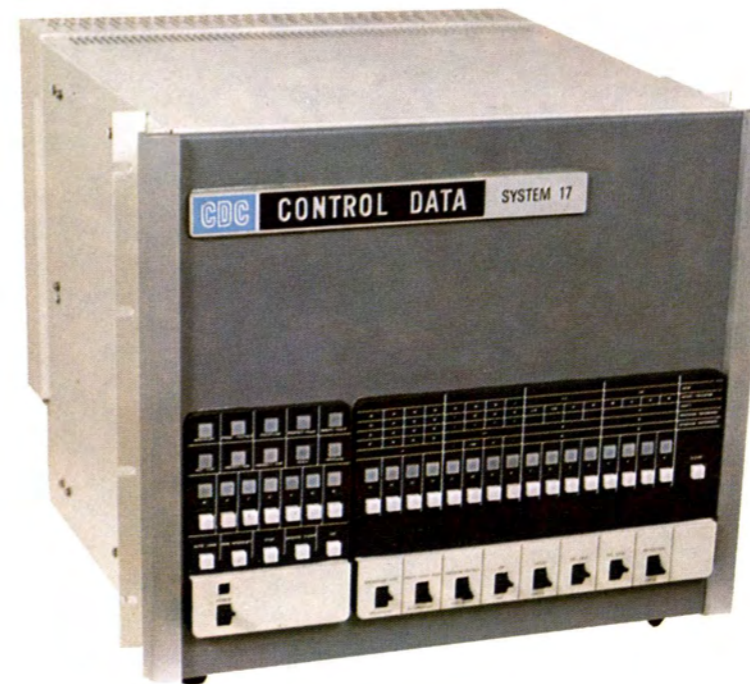
THE REAL-TIME POWER PACKAGE FROM CONTROL DATA CORPORATION

CDC SYSTEM 17 SERIES... packs tremendous computing power into a mini-sized package

CDC SYSTEM 17 SERIES... sets new performance standards for miniaturized computers

CDC SYSTEM 17 SERIES... combines mini computer size and economy with the kind of on-line, real-time capability usually found only in larger systems

CDC SYSTEM 17 SERIES... built to handle the most demanding requirements for industry, science, business and government — now and tomorrow!



A NEW COMPUTER SYSTEM

CDC SYSTEM 17 Series is a brand new family of computers—with a distinguished background. It incorporates design features proven in hundreds of on-line installations around the world. These tried-and-tested features have now been refined, improved upon and packaged using the latest miniaturization techniques. The result is a system unique in the computer industry: mini in size and price, with the capability of many small-to-medium-sized computers. CDC SYSTEM 17 Series—a true power package.

STATE OF THE ART

CDC SYSTEM 17 Series incorporates the industry's most advanced design concepts. Miniaturization is accomplished through MSI and LSI packaging, MOS semiconductor memory, and TTL logic. System components have been compacted with increased speed and flexibility of the central processor, memory and input/output system.

PRICE/PERFORMANCE

CDC SYSTEM 17 Series compares favorably in price with computers of much less capability. As an off-the-shelf product, the CDC SYSTEM 17 Series reduces initial purchase, installation, and startup expenses. It's a cost-effective solution to problems that call for one, two or many computers.

QUALITY WITHOUT COMPROMISE

CDC SYSTEM 17 Series makes it possible to minimize the price/performance tradeoffs that frequently cripple system effectiveness. Throughput, efficiency, power, flexibility, economy, and practicability co-exist in perfect harmony in the CDC SYSTEM 17 Computer Series.

SYSTEM FOR ALL USES

CDC SYSTEM 17 Series, like its predecessors, is designed to handle virtually any on-line application as either a dedicated or a general-purpose system. It offers a complete line of standard peripherals together with application-specific devices for a broad range of industries.

CDC SYSTEM 17 Series software is unsurpassed by any other computer of comparable size and price, in both quality and quantity.

1700 COMPATIBILITY

CDC SYSTEM 17 Series enables current users of 1700 Series systems to add on, upgrade, and interconnect without reprogramming or system redesign. Compatible software and plug-compatible channels eliminate the cost and delay normally associated with system modification.



COMPUTER POWER

CDC SYSTEM 17 Series computer systems are complete, self-contained systems, capable of being configured in many ways to handle a variety of applications. Configurations are built around a main computer consisting of a central processing unit, 32K memory, and input-output system. These elements are contained in a basic enclosure, which also accommodates controllers for a console (teletypewriter or CRT) cartridge disk drives, magnetic tapes, line printers and card reader, plus a control panel, connector panel, and power supply. An expansion enclosure, identical in size to the basic enclosure, houses an additional 32K memory, peripheral controllers, and I/O modules.

MEMORY

CDC SYSTEM 17 Series uses a high-speed, random-access, dynamic metallic oxide semiconductor (MOS) memory. The basic 32K memory is housed in the main enclosure. In keeping with the CDC SYSTEM 17 Series' commitment to modularity, memory is expandable in 4K increments to 64K. The two 32K banks operate separately. The programmer can specify either 32K or 64K mode through a console switch.

Because the memory is volatile, an optional backup dry cell battery is available which will retain memory data for up to eight hours in the event of power-off.

CENTRAL PROCESSING UNIT

CDC SYSTEM 17 Series is designed for high computations and I/O rates. The CPU consists of MSI-TTL technology in logic circuitry. The basic circuit module is a 50 PAK double-sided printed circuit board.

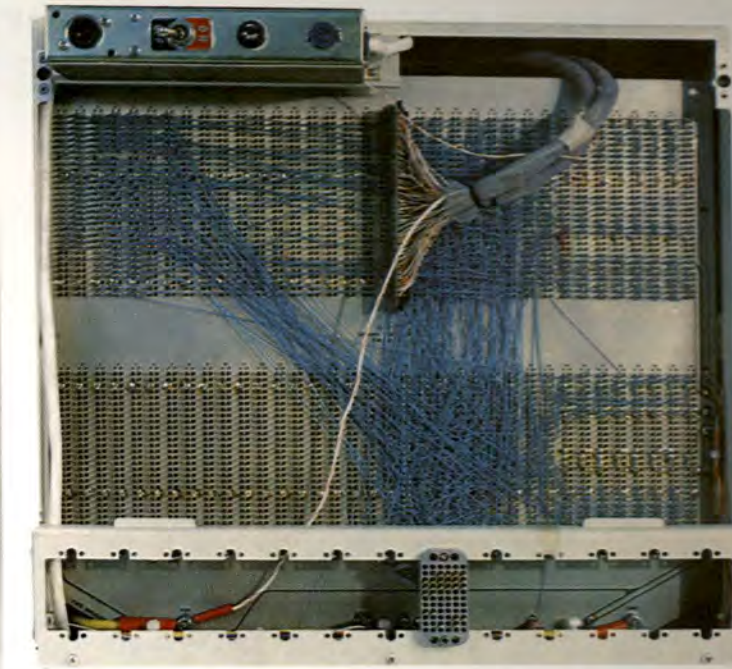
CDC SYSTEM 17 Series is available with memory cycle times of 900 and 600 nanoseconds, to match differing throughput and response requirements.

Other significant features include:

- 196 powerful instructions in several addressing modes: absolute, indirect, relative, relative indirect, constant, storage, storage indirect
- 18-bit storage word (16 data or instruction bits, Program Protect bit, Parity bit)
- Non-buffered I/O rate: up to 160,000 16-bit words/second
- Direct storage access I/O rate: up to 1,600,000 words/second



Front View



Back View

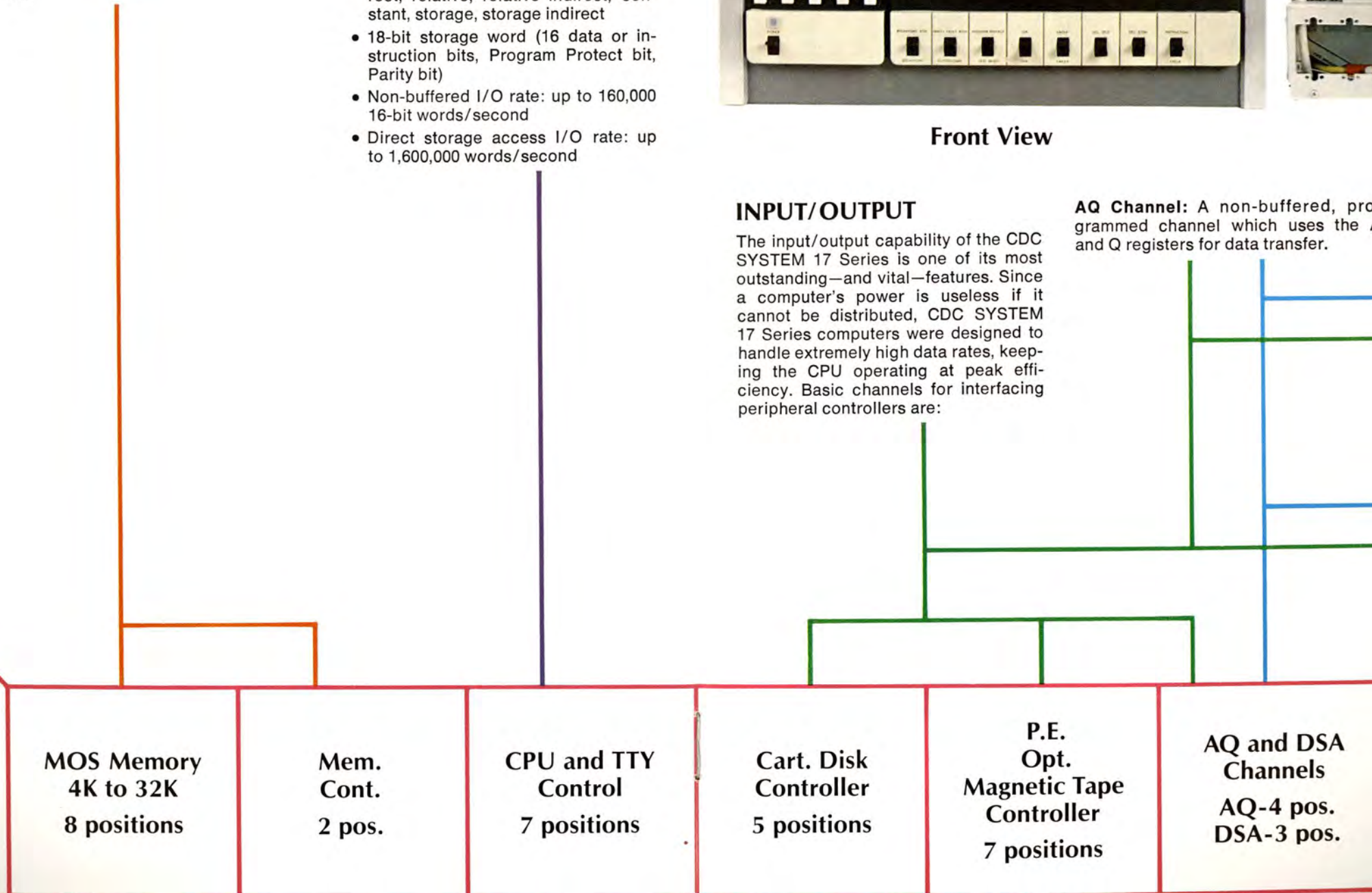
INPUT/OUTPUT

The input/output capability of the CDC SYSTEM 17 Series is one of its most outstanding—and vital—features. Since a computer's power is useless if it cannot be distributed, CDC SYSTEM 17 Series computers were designed to handle extremely high data rates, keeping the CPU operating at peak efficiency. Basic channels for interfacing peripheral controllers are:

AQ Channel: A non-buffered, programmed channel which uses the A and Q registers for data transfer.

DSA Channel: Direct Storage Access Channel, transfers data to and from memory independent of the internal operation of the computer.

1700 Plug-Compatible Channel: The CDC SYSTEM 17 Series provides optional AQ and DSA channels for peripheral controllers designed for 1700 Series.



Front View Encloser

PERIPHERAL POWER

With the announcement of CDC SYSTEM 17 Series, Control Data also introduces a line of low-to-medium speed peripheral devices whose low price contributes to overall system economy. Most of these devices are small enough to fit on a tabletop or in a rack. The peripheral lines are rounded out by Control Data's wide variety of devices for industrial control, data acquisition, and communications.

STANDARD PERIPHERALS

Teletypewriter: Teletype Corporation KSR/ASR Models 33 and 35, operating at a speed of 10 characters-per-second.



Line Printer: Two models, operating at 300 Lpm with 64 character set or 1200 Lpm with 48 character set and 136 columns.



Cartridge Disk Subsystem: Consists of a controller and two different drive units, providing random access storage of 2.2 or 4.4 million words, with average access time of 35 msec and a transfer rate of 2.5 million bits-per-second.



Magnetic Tape Subsystem: Consists of a controller and two different tape transports. One provides 37.5 ips, 556 and 800 bpi. The other provides 37.5 ips, 9 track, 800 and 1600 bpi.



Card-Reader: An 80-column reader, with controller, operating at 300 cards-per-minute.



CRT Console: An 8" x 10" screen with keyboard, providing 8 lines of 80 characters. 96 USASCII alphanumeric, 32 control codes. Non-impact printer optional.

In addition, the complete line of 1700 Series controllers and peripherals may be used with the CDC SYSTEM 17 by means of the 1700 channel adapter.



RELIABLE POWER

The CDC SYSTEM 17 Series is a power package — but, more important, a *reliable* power package. It is constructed of the highest quality components, shaped according to industry proven techniques. State-of-the-art packaging reduces the number of elements in the system, further decreasing the chances of interruption during the critical on-line operation.

Since all logic and memory are on printed circuit boards having numerous test points, fault detection and component replacement is a simple matter. The CDC SYSTEM 17 Series diagnostic software is also a valuable aid in keeping CDC SYSTEM 17 Series computers on-line, day after day, week after week, month after month.

SUPPORT POWER

System support has traditionally been a source of pride at Control Data, and immense effort has gone into developing a highly qualified field and home-office support organization. This tradition continues with the CDC SYSTEM 17 Series.

At every step of the way, the CDC SYSTEM 17 Series user has at his disposal a virtual "army" of highly qualified assistants. Account representatives open the channels of communication between the user and Control Data and keep them open for as long as the system is in service.

System analysts assist in developing the optimum configuration for solving the problem. Systems engineers and programmers assemble the standard modules and provide whatever fine-tuning or modification is necessary. The system is installed quickly and efficiently by specialists in computer installation. Experienced customer engineers are constantly available for maintenance and consultation. Control Data's large training and documentation section provide the know-how and material to aid in getting the last ounce of service out of the system. Control Data's users' group yields many valuable associations and suggestions from users with similar systems. It all adds up to Total Service — the Control Data way of doing business.

SOFTWARE POWER

Nowhere does the CDC SYSTEM 17 Series power package demonstrate its strength better than in its software. The product of years of experience in on-line real-time applications, CDC SYSTEM 17 Series software makes the computer even more powerful and versatile than its hardware design alone would indicate. Completely compatible with 1700 Series software, easy to use, thoroughly tested and proven, CDC SYSTEM 17 Series software sets this computer apart from all others. Such capabilities as multi-programming and on-line debugging are standard. CDC SYSTEM 17 Series software can be modified by the user and integrated with his own specially written programs.

CDC SYSTEM 17 Series software is composed of two types: standard programs which provide the necessary operating links between system power and user's unique processing problems, and a host of application packages which save time and expense in programming at the "business end" at a customer's installation.

APPLICATION POWER

All claims about the CDC SYSTEM 17 Series eventually come down to one question: Will it solve the problem? The answer is contained in the hundreds of installations where Control Data systems have demonstrated their on-line control capability year after year. The experience gained in the "real world" has been distilled into the CDC SYSTEM 17 Series. Typical applications include:

- Industrial Control
- Data acquisition
- Telemetry
- Automatic Testing
- Seismic
- Communications
- Optical Character Recognition
- Digigraphics
- Terminals
- Hybrid Computing
- Hospital Medical
- Amusement/Recreation



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CONTROL DATA
CORPORATION

CORPORATE HEADQUARTERS
P. O. BOX 0
MINNEAPOLIS, MINNESOTA 55440

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