Data General Desktop Generation

MANAGEMENT SUMMARY

UPDATE: *Data General has dropped the top-of-the-line Model 45 from the Desktop Generation series. Four new Dasher workstations have been introduced, replacing older models. Finally, hardware price cuts are reflected in lower configuration pricing.*

With its Desktop Generation systems, Data General's intention is to supply its minicomputer installed base with scaled-down versions of its Eclipse MV/Family systems. The Desktop Generation systems are driven by microEclipse technology, executing the same instructions as the older 16-bit Eclipse product line.

The Data General Desktop Generation series includes four desktop professional supermicrocomputers. Purchasing a member of the Desktop Generation family guarantees a user an upward growth path to the Data General 32-bit Eclipse MV/Family product line. In addition, these two product lines share certain hardware and software compatibility, including support for the Dasher workstations.

The Desktop Generation Models 10 and 10/SP function as either single- or multiuser systems, allowing users to access both DG software products and programs developed for ▷

Data General Corporation's Desktop Generation systems offer individual computing, integrated office automation and data processing, and networking capabilities. The Desktop systems are capable of running a wide range of existing DG applications while operating as standalone systems or as nodes in larger networks.

The Data General Desktop Generation series includes four desktop supermicrocomputers that are compatible with DG's Eclipse MV/ Family. All four models are based on the microEclipse processor chip. In addition, Model 10 and Model 10/SP support the Intel 8086 processor, allowing users to run operating systems that include CP/M-86 and MS-DOS.

MODELS: 10, 10/SP, 20, and 30.
MEMORY: 128KB to 2MB.
DISK CAPACITY: 15MB to 142MB.
WORKSTATIONS: Up to 16.
PRICE: $2,985 to $12,195 for basic systems.

CHARACTERISTICS

MANUFACTURER: Data General Corporation, 4400 Computer Drive, Westboro, MA 01580. Telephone (617) 366-8911.

CANADIAN ADDRESS: Data General (Canada) Inc., 2155 Leanne Boulevard, Mississauga, Ontario, Canada L5K 2K8. Telephone (416) 823-7830.

DATA FORMATS

BASIC UNIT: 16-bit word.

INTERNAL CODE: ASCII.

MAIN STORAGE

Memory boards for the Desktop Generation systems consist of dynamic random-access memory (RAM) chips and include parity checking, providing data reliability by protecting memory data without assistance from the central processor.

In addition to parity checking, the memory allocation and protection (MAP) unit is designed to allot and secure the programming address space for each user. The MAP is designed to allow multiple users and programs to coexist.

Memory capacity for the Desktop Generation systems ranges from 128KB to 2MB. Please refer to Chart A for specific memory capacities.

PROCESSING COMPONENTS

Each Desktop system includes a CPU card module which accommodates the system processing unit and memory cards. The Desktop Generation Series incorporates two different microprocessors into its architecture: the micro-Eclipse and the Intel 8086.

Models 10 and 10/SP include the microEclipse and the Intel 8086 processing units. (The combination of the processors permits the Model 10 and Model 10/SP to support the CP/M-86 and MS-DOS operating systems, as well as Data General's operating systems.) Models 20 and 30 use the microEclipse processor. ▶

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CHART A. SYSTEM COMPARISON

MODEL	10	10/SP	20	30
SYSTEM CHARACTERISTICS				
Date of introduction	July 1983	July 1983	July 1983	July 1983
Date of first delivery	October 1983	October 1983	October 1983	October 1983
Microprocessor type	microEclipse, Intel 8086	microEclipse, Intel 8086	microEclipse	microEclipse
Microprocessor cycle time	500 ns	500 ns	500 ns	500 ns
Operating system	RDOS, CP/M-86, MS-DOS	AOS, RDOS, CP/M-86, MS-DOS	AOS, RDOS, MP/AOS-SU	AOS, RDOS, MP/AOS-SU
Upgradable from	Not applicable	Not applicable	Not applicable	Not applicable
Upgradable to	10/SP	Not applicable	Not applicable	Not applicable
Number of serial/parallel I/O ports	17	17	17	17
Number of expansion slots	3	3	2	2
MEMORY				
Minimum capacity (bytes)	128K	256K	256K	256K
Maximum capacity (bytes)	1.75M	1.75M	2M	1.5M
DISK STORAGE				
Minimum capacity (bytes)	15M	15M	15M	15M
Maximum capacity (bytes)	142M	142M	142M	142M
NUMBER OF WORKSTATIONS	16	16	16	16
COMMUNICATIONS PROTOCOLS	Async, Bisync, RS-232-C	Async, Bisync, RS-232-C	Async, Bisync, RS-232-C	Async, Bisync, RS-232-C

▷ CP/M-86 and MS-DOS. Models 20 and 30 can also function as either standalone units or as nodes in a distributed data processing network.

Models 10 and 10/SP, while operating under MS-DOS or CP/M-86, can also run the hundreds of off-the-shelf applications software packages available for those two industry-standard microcomputer operating systems.

COMPETITIVE POSITION

With its Desktop Generation series, Data General has positioned itself to compete with other vendors who offer supermicrocomputer lines that are compatible with their larger minicomputer product offerings. Like Data General, most are established minicomputer manufacturers who are determined to keep their installed user base happy by providing microcomputer-like versions of their more powerful systems. This compatibility also serves to open up a new market for the vendors. Potential customers of these supermicrocomputer systems are provided with an extensive upward growth path, and protection for their initial hardware and software investments.

Within this niche of the market, the Desktop Generation is well positioned against AT&T's 3B2/300. Like the Desktop Generation systems, the 3B2/300, AT&T's low-end system in its 3B computer family, is also designed for use in office, laboratory, and manufacturing plant environments. Because of its data processing and office automation capabilities, other competition for the Desktop Generation can be found from IBM's System/36, in particular the Models 5362 and 5360.

ADVANTAGES AND RESTRICTIONS

One of the biggest advantages of the Desktop Generation series is that it provides users with a wide range of processing options; users have access to a variety of minicomputer applications software, as well as industry-standard MS-DOS and CP/M-86 microcomputer software. ▷

▶ The 16-bit *microEclipse* implements the same 16-bit Eclipse character instruction set used in older 16-bit Data General systems, in particular, the older Eclipse S/20. The micro-Eclipse CPU provides a 500-nanosecond cycle time. It executes floating-point instruction sets (optional on Model 10), and supports the I/O, data channel, and burst multiplexor facilities of the micro I/O bus.

The *Intel 8086* is a 16-bit processor designed with HMOS chip technology. The Intel 8086 chip is equipped with 40 pins and uses standard Intel RAM and ROM memory. Each cycle consists of one phase. The number of instructions included is 134, with a direct addressing capability of up to one million instruction words. The interrupt system is vectored with 256 different interrupts. In addition, the Intel 8086 provides 8- and 16-bit signed/unsigned arithmetic (including multiply and divide) operation, multiprocesssor/dual-processor extensions, on-chip memory segmentation, and multibus compatibility. Hardware BCD arithmetic is standard.

The Eclipse floating-point instruction set for processing scientific instructions is standard on Models 10/SP, 20, and 30. It is optionally available on the Model 10.

In addition, a hardware floating-point accelerator card is available. This card is necessary when implementing the 16-bit Eclipse Commercial Instruction Set used to run Cobol. Both the floating-point card and the Commercial Instruction Set are standard features of Model 30.

INPUT/OUTPUT CONTROL

Sensor Input/Output (I/O) boards allow the Desktop Generation systems to interface directly with a variety of data acquisition and control equipment. Using either a single interface or a combination of interfaces, a system can be configured for a particular application. Sensor I/O boards are available for:

• Interfacing directly with data acquisition and control instruments. The digital I/O board is the one that permits this interface.

• Converting analog input signals to digital signals. The analog-to-digital board is a realtime interface that allows users to connect analog input signals to systems in applications such as process control, laboratory experimentation, medical instrumentation, test equipment, and machine control. ▶

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CHART B. DISK/DISKETTE DEVICES

MODEL	—	6271	6301	6336
Type	Diskette drive	Winchester disk	Winchester disk	Winchester disk
Size (inches)	5.25	5.25	5.25	5.25
Number of surfaces	2	6	8	10
Formatted capacity per drive (bytes)	368K	15M	38.6M	71M
Interface/controller	Integral	Integral	Integral	Integral
Number of drives per interface/controller	—	—	—	—
Average access time	—	68 ms	55 ms	31 ms
Data transfer rate	250KB/sec.	5M bits/sec.	5M bits/sec.	5M bits/sec.
Sectors/tracks per surface	8, 9, 10 sect./track	17 sect./305 tracks	17 sect./634 tracks	17 sect./1,023 tracks
Bytes per sector/track	512	512	512	512
Comments	Diskette module can contain a maximum of two diskettes			

Note: A dash (—) in the column indicates that the information was unavailable from the vendor.

▷ Another significant advantage of the Desktop Generation computers is their compatibility, both within the product line and with the Eclipse MV/Family computers. Software written under the 16-bit Advanced Operating System (AOS) is compatible with AOS/VS software supported on the larger 32-bit systems, giving users of the smaller systems a direct growth path to the MV/2000 DC (Departmental Cluster). However, the Data General systems are only field upgradable in the sense that one system can be changed to another at the user's site; an upgrade requires a processor swap. Another point worth mentioning is that both product lines support some of the same peripherals, namely, the Dasher workstations, thereby allowing users to save some of their initial hardware investment.

The Desktop Generation systems support a variety of communications, including Xodiac local area networking software, DG/SNA, RCX70, the XAP file transfer program, X.25 software, and TCP/IP, among other communications software. Hence, a Desktop Generation system is designed to run a wide range of existing DG applications while operating as a standalone system and to serve as a node in a larger network as well.

Customers are also offered a variety of hardware and software services for supporting their Desktop Generation systems. This allows a user to choose the type of service agreement which best suits the site's needs.

Nevertheless, the handwriting is on the wall. Since the Desktop Generation's upper parameters were somewhat limited prior to the elimination of the top-of-the-line Model 45, the future of the product family now that it is gone is uncertain. If users foresee the need for greater computing power, they might be better off investing an additional $5,000 to purchase the entry-level Eclipse MV/2000 DC and expanding within the 32-bit product line when the need arises.

The Desktop Generation systems are more or less being made obsolete by the increasingly inexpensive and powerful low-end Eclipse MV systems which provide more compatibility with the company's line of superminis—its bread-and-butter products. □

▶ • Converting digital signals to analog signals. The digital-to-analog board allows the system to control external analog devices using two analog output channels in applications such as process control, laboratory experimentation, test equipment, and machine control. Scope control is standard on the digital-to-analog interface board.

CONFIGURATION RULES

GENERAL: Each basic Desktop Generation supermicrocomputer unit includes a CPU module containing the system boards and slots for additional memory and I/O boards; a diskette module containing one diskette drive and a slot for an additional diskette drive; and a power supply module containing the power supply, a slot for an additional power supply, and a fan.

The CPU's slots contain the system processing unit and memory boards. The memory for the Desktop Generation computers is contained either on the CPU board and on a separate board, or completely on separate boards. Two or more slots in the CPU board module are reserved for the CPU and memory; the remaining slots are available for optional plug-in boards, including the graphics controller board, the floating-point accelerator board, and I/O boards. Additional slots are available in an expansion board module.

The standard display monitor for Models 10 and 10/SP is a monochrome monitor; a color monitor is optionally available. Both display monitors provide alphanumeric and compatible graphics capabilities, and use the same lightweight detachable keyboard. The 12-inch monochrome monitor screen displays green characters on a black phosphor background and reverse video with black characters on a green background. The 13-inch color monitor screen requires a graphics interface board for control. The color monitor is capable of producing 16 colors simultaneously from a palette of 4,096 possible colors.

Models 20 and 30 support a variety of Dasher workstations, including Models D214, D215, D411, D461, and D470C.

The Desktop Generation's diskette module contains one diskette drive, which accepts industry-standard, 5¼-inch, double-density, single- or double-sided diskettes. The diskette drives for the Desktop systems support both Data General diskettes and non-Data General diskettes that comply with MS-DOS and CP/M-86 standards.

Both the standard and optional Model 10 and 10/SP diskette drives are driven by a diskette controller located on the CPU board. The diskette module for Models 20 and 30 contains a diskette controller board that manages both the ▶

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CHART C. WORKSTATIONS

MODEL	Monochrome Graphics Display	Color Graphics Display	Dasher D214/D215	Dasher D411/D461	Dasher D470C
DISPLAY PARAMETERS					
Max. chars./screen	1,920	1,920	1,920	2,000	2000
Buffer capacity	—	—	—	—	—
Screen size (lines x chars.)	24 x 80	24 x 80	24 x 80	24 x 81, 24 x 135	24 x 81
Tilt/swivel screen	Yes	Yes	Tilt only	Tilt only	Tilt only
Symbol formation	640 x 240 pixels	620 x 240 pixels	7 x 9 dot matrix	7 x 9 dot matrix	8 x 19, 8.3 x 5.9 dot matrix
Character phosphor	Green on black	Color monitor	Yellow green or amber	Yellow green or amber	Varies
Total colors/no. simult. displayed	Monochrome	16 solid colors from a color palette of 4,096	Monochrome	Monochrome	16
KEYBOARD PARAMETERS					
Style	Typewriter	Typewriter	Typewriter	Typewriter	Typewriter
Character/code set	112 keys	112 keys	96 ASCII	512 fixed characters	96 ASCII
Detachable	Yes	Yes	Yes	Yes	Yes
Program function keys	—	—	Yes	19	15
TERMINAL INTERFACE	—	—	RS-232-C, X-on/X-off; RS-422-A, 20 ma (D215 only)	RS-232-C, RS-422-A, 20 ma, async, serial	RS-232-C, 20 ma, RS-422-A
COMMENTS	For Models 10 and 10/SP	For Models 10 and 10/SP	D215 has std. auxiliary printer serial interface for local printing or pass-through operation; can also simultaneously display more than one language	Up to 24 user-definable windows are permitted; D461 has graphics cursor for graphics input devices and supports all CEO business graphics	

Note: A dash (—) in the column indicates that the information was unavailable from the vendor.

standard diskette drive and the optional, second diskette drive.

The diskettes can be formatted in either Data General standard or IBM PC format. In Data General standard format, each diskette's capacity is 368.6KB.

Winchester disk drives available for the Desktop Generation include devices with 15MB, 38MB, or 71MB capacities. The Desktop Generation systems can accommodate up to two 5¼-inch Winchester disk drives for a total of 142MB of storage.

The Desktop Generation systems support either a cartridge tape subsystem or a streaming tape subsystem for optional backup support. Details on these tape subsystems are provided in "Other Peripherals," below.

The Desktop Generation systems support a variety of printers, including graphics, multifunction dot matrix, data processing dot matrix, and letter-quality printers.

INPUT/OUTPUT UNITS

See Chart B for disk and diskette devices, Chart C for workstations, and Chart D for printers.

OTHER PERIPHERALS: Magnetic tape backup is provided by either a cartridge tape or a streaming tape subsystem. The ¼-inch cartridge tape module contains a magnetic tape cartridge drive, a controller, and a power supply. Data capacity is up to 15MB. The ½-inch streaming magnetic tape subsystem has a recording density of 1600 bits per inch and a streaming speed of 30 inches per second.

A desktop color plotter produces designs on paper or transparent film in a spectrum of colors. The plotter holds two pens and moves the paper or film under one pen at a time to complete plots with resolution of up to 1,000 dots per inch. The desktop color plotter, which weighs 13.5 pounds, is 5 inches high, 17 inches wide, and 13.5 inches deep.

A 12-inch by 12-inch graphics data tablet digitizer can be used to create or locate graphical data on a monitor screen for interactive graphics applications. Overlays, such as menus, charts, and maps, are placed on the surface of the data tablet for digitizing. The tablet provides a maximum of 6,096 by 6,096 points of resolution. Users can select resolution quality of up to 500 lines per inch or up to 20 lines per millimeter, or the tablet can automatically scale output to match any monitor resolution. The data tablet connects to an RS-232-C line interface and is fully supported by the Graphics Kernel Software (GKS) packages.

A three-button mouse can be used for digitizing graphic information by allowing the user to direct the cursor on the screen. A crosshair in the transparent center of the cursor is designed to allow for easily viewing tablet overlay.

COMMUNICATIONS

GENERAL: Communications on the Desktop Generation systems are provided by standard line interfaces and communications multiplexors.

The following industry-standard *line interfaces* are supported for communications lines to and from Desktop Generation systems: EIA RS-232-C for modem connections of up to 50 feet; 20 ma current loop for distances of up to 300 feet; and EIA RS-422-A for distances of up to 4,900 feet.

Other communications options available for the Desktop Generation systems include:

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CHART D. PRINTERS

MODEL	4518	4434
Type	Letter-quality	Draft, graphics, near-letter-quality
Speed	35 cps	40/80/160 cps
Bidirectional printing	Yes	Yes
Paper size	Up to 14 inches	Up to 10 inches
Character formation	Daisywheel	—
Horizontal character spacing (char./inch)	10 or 12	—
Vertical line spacing (char./inch)	6 or 8	—
Character set	96 ASCII	96 ASCII
Controller/Interface	RS-232-C	Included
No. of printers per controller/interface	One	One
Printer dimensions, in. (h x w x d)	8.2 x 24 x 15.6	6.2 x 13.7 x 9.6
Graphics capability	No	Yes

Note: A dash (—) in the column indicates that the information was unavailable from the vendor.

▶ • *USAM-1*—a single-line universal synchronous/asynchronous multiplexor.

• *USAM-4*—a 4-line universal synchronous/asynchronous multiplexor. Two lines provide asynchronous/synchronous serial transmissions and the other two lines are dedicated to asynchronous transmissions.

• The *IEEE 802 Local Area Network interface board*, supported by the X.25 protocol and DG's Xodiac communications software.

• An *Intelligent Synchronous microController (ISmC/2)* designed for bit and byte synchronous communications. The ISmC/2 is designed to enhance system throughput by off-loading synchronous communications functions from the central processing unit.

• *IEEE-488 Bus Interface*—a hardware/software interface system which allows bidirectional asynchronous communications among a variety of systems and peripherals. The IEEE-488 bus interface provides an interface between the micro I/O bus and the general-purpose interface bus (GPIB).

SOFTWARE

OPERATING SYSTEM: The Desktop Generation systems support several 16-bit operating systems, including the Real-time Disk Operating System (RDOS) and the Advanced Operating System (AOS). In addition, Models 10 and 10/SP support the MS-DOS and CP/M-86 microcomputer operating systems; Models 10 and 10/SP are able to run MS-DOS or CP/M-86 concurrently with AOS or RDOS.

RDOS is a memory-resident operating system capable of executing two programs simultaneously for foreground and background processing. RDOS supports realtime process control, program development, and many standard user applications.

The primary interface with RDOS is the Command Line Interpreter (CLI) utility, whose command syntax is a communications path to the system. The CLI also provides access to other system utilities for communications, system administration, software development, data backup, graphics creation, and general business applications.

AOS is a general-purpose, disk-based operating system designed to control and monitor user program processing. AOS manages many program control, I/O, and file access functions; system and user resources to optimize the performance of all system functions; and simultaneous timesharing or multiple batch streams.

AOS also supports a number of utilities which can be accessed by using the AOS CLI utility, the primary system interface. Additional AOS utilities include software development aids, an interactive debugger for program development, a logon system, an accounting facility, a general-purpose help facility, system administration facilities, and data management and backup aids.

The AOS operating system is not supported on the Model 10.

MS-DOS, Microsoft Corporation's operating system for the Intel 8086 and 8088 microprocessors is designed for single-user, single-tasking, interactive applications such as program development and debugging, small business computing, and graphics applications. The MS-DOS operating system runs on any Model 10 or Model 10/SP. Under MS-DOS, the Models 10 and 10/SP execute application software and programming languages written for MS-DOS. According to Data General, nondevice-dependent applications written for MS-DOS, including applications written for the IBM PC (running the DOS operating system) run unmodified on Model 10 and 10/SP systems.

Digital Research's CP/M-86 (Control Program for Microcomputers) is a general-purpose operating system for 16-bit microprocessors, specifically the Intel 8086 and 8088 microprocessors. The CP/M-86 operating system is also designed for single-user, single-tasking, interactive applications. Digital Research's languages and programming tools are designed for programmers writing commercial software packages. CP/M-86 runs on Models 10 and 10/SP, allowing the systems to execute applications software and programming languages written for CP/M-86.

DATA BASE MANAGEMENT: The Desktop Generation systems support *Infos II*, a file management system, as well as Present (described in the "Applications" section of this report). Infos II is designed for file organization and management. Running under AOS, Infos II organizes complex data structures and retrieves patterns of this data from its working files. In addition to conventional sequential and random access methods, Infos II supports indexed sequential access.

LANGUAGES: The Desktop Generation systems support the following programming languages: Basic, Cobol, Fortran, Pascal, PL/1, and C.

COMMUNICATIONS: Data General offers networking aids for the Desktop Generation computers that support local and global interprocessor communications between the Desktop Generation and other Data General and IBM ▶ computers.

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▶ The *Xodiac Network Management System* provides network management for systems operating under AOS. It enables users to transparently access remote terminals as virtual consoles; access remote systems devices and AOS files; transfer files between AOS systems; and communicate with and control processes on remote systems.

Xodiac software transmits either directly through communications links or intercomputer links, or indirectly through public packet-switched networks on the X.25 packet switching protocol. Components of the Xodiac system include AOS X.25, the connection protocol; AOS RMA, the resource management agent; AOS VTA, the virtual terminal agent; AOS NETGEN, the network generation program; AOS FTA, the file transfer agent; AOS RIA, the remote Infos agent; and AOS RDA, the remote data base agent.

Data General describes Xodiac as consisting of four layers: physical link, link control, connection, and functional. Xodiac users can interact through either the functional or connection layers. The functional layer allows an authorized operator to manipulate system-controller resources on another system. The connection layer allows for less structured communications between two processes. For more information on Xodiac, please refer to the *Data General Eclipse MV/Family* report in DATAPRO REPORTS ON MINI-COMPUTERS.

Data General's *Remote Job Entry Control Program (RJE80)* supports IBM 2780/3780 emulation, can send or receive files, provides communications with any DG system, and supports point-to-point or multidrop communications. This program uses synchronous lines only and requires a USAM-4, plus an additional 128KB of memory for systems that support RDOS.

The *IBM HASP-II Workstation Emulator* works in conjunction with a host and provides communications with other HASP-equipped DG systems. Efficiency of data transmission is reportedly achieved by interleaving and data compression. Multileaving capability can include up to seven input and seven output datastreams. The emulator supports both disk and tape storage.

The *X.25 Software Package* allows host computers to interface to packet-switching networks, supporting point-to-point communications between the Desktop Generation computers and other Data General computers.

DG/SNA acts as an interface to IBM's System Network Architecture. It allows a Desktop Generation computer to appear as an SNA physical unit type 2 and provides a user with an interface for both Data General-supplied terminal emulators and user programs. DG/SNA operates concurrently with other Data General communications products.

RCX70, the IBM 3271 Remote Cluster Executive, allows a 16- or 32-bit Eclipse computer to act like an IBM 3271 cluster controller and to communicate with an IBM host computer.

The *DG/XAP* file transfer program is a software package that transfers files between a Desktop Generation system and either a Data General host minicomputer or another Desktop system. XAP creates a distributed data processing environment for transferring files to and from the Eclipse MV/Family.

The *General Asynchronous Terminal Emulator (DG/GATE)* provides access for public information networks, such as Dow Jones reports, Dun & Bradstreet listings, and The Source for travel information, reservations, and business information programs. A Desktop Generation system appears as an IBM terminal on the network.

DG/Blast is a file transfer utility that allows Desktop Generation users to communicate with a variety of micro-computers. DG/Blast is designed to automatically convert files into the appropriate format.

UTILITIES: A number of standard system utilities are available for program development, including:

* Proxi, a Cobol program generator.
* TCS, a file tracking system.
* CSSORT, a general-purpose sort/merge utility.
* MAC and MASM, macroassemblers.
* SED, a screen-oriented text editor.
* Sort/Merge, a general-purpose utility.
* SPEED, a line-oriented text editor.
* GPIB, a general-purpose interface bus for controlling the IEEE-488 bus interface.
* Dataprep, a tool for data entry and retrieval for operation on an AOS-based Model 30.
* TPMS, a transaction processing management system for an AOS-based Model 30.
* SAM (sensor access manager), a set of device handlers and subroutines that manages process I/O in laboratory and industrial applications.
* Cross-development utilities that allow users to develop software applications on Desktop Generation systems for use on Data General's entire product line.

APPLICATIONS: Data General provides the Trendview and Present business graphics packages, as well as the Comprehensive Electronic Office (CEO) office automation software.

Trendview is designed for use with the AOS operating system and allows users to create pie, bar, line, and more complex graphs. It also permits automatic smooth curve fitting and linear-regression trend line plotting.

Present is closely associated with Trendview graphics displays. Its information presentation facility integrates an intelligent data selection capability. Users can build reports by collecting and manipulating data. Working in conjunction with Trendview, Present also includes graphic displays (that is, pie charts, bar graphs, and line plots). Present can also extract data from INFOS II and AOS files. Present runs either as a standalone product or as an integrated element of Data General's CEO systems.

The *Comprehensive Electronic Office System (CEO)* integrates word processing, data processing, and data communications. CEO software operates on all DG 16- and 32-bit Eclipse computers, Advanced Operating Systems, and Dasher alphanumeric/graphics workstations. CEO also provides local or remote network capabilities.

For more detailed information on the Comprehensive Electronic Office System, please refer to the *Data General Eclipse MV/Family* report found in this service and to *Datapro Reports on Office Automation*.

In addition, a variety of applications software designed for the electronic office, information management and presentation, data entry and retrieval, and transaction processing is available for the Desktop Generation systems through both Data General and third-party software vendors. According to Data General, thousands of third-party software programs are available for personal productivity, as well as for commercial and technical applications.

OPERATING ENVIRONMENT

In their most basic configurations, the Desktop Generation systems consist of a system console and three modules which measure 4.5 inches wide, 9 inches high, and 12 inches ▶

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deep. (The three modules include the power supply module, the CPU logic module, and the diskette module.) Each hardware module is enclosed in its own plastic case.

Recommended operating temperatures for the Desktop Generation systems range between 10 and 38 degrees Celsius, and suggested operating humidities are between 20 percent and 80 percent. Required voltage is 120 VAC (+10 percent, −15 percent) and the line current is 1.06 amp maximum at 100 VAC, 50 Hz.

SUPPORT SERVICES

DOCUMENTATION: A variety of Data General publications is available for use with the Desktop Generation systems; some of the publications are free and others are available at a charge.

TRAINING/EDUCATION: Data General provides over 50 courses which offer lectures and lab training on Desktop Generation equipment at 6 Data General U.S. Education Centers. In addition, a variety of self-study courses is available.

MAINTENANCE: The *standard warranty* for Desktop Generation systems is 90 days; replacement parts come with a 30-day warranty. In addition, a renewable 12-month *extended warranty*, for which there is a flat fee for each 12-month period is available. Also available is a *modular mail option*. The modular mail option is similar to an extended warranty, but with the following exceptions: 1) a user pays only for the service that is required and does not pay an annual flat fee; 2) Data General sends the replacement parts within 72 hours.

Users can choose either a customer self-maintenance program which is backed up by free telephone assistance, or a maintenance program provided by a field engineer.

With the *on-call service* option, a DG field service engineer attends to maintenance needs at the site. For a fixed amount, payable monthly, customers receive service covering all parts, labor, and materials. Periodic checkups and preventive maintenance are also included. If a solution cannot be found by using a toll-free service hot line, a service engineer will visit the site within four hours.

The *on-call 24-hour service* option provides the same coverage as on-call service, except that a service representative will arrive at the site within 24 hours instead of 4.

Other service options available include the *on-call multidevice service* option, in which the user delays a service call until three or more workstations require attention; the *per-call service* option, in which the service representative arrives within eight working hours and the user pays only for labor and materials used; and a *fixed-rate service* option which provides the same coverage as per-call service, as well as providing use of the toll-free hot line.

In addition to the maintenance options available for the Desktop Generation, a variety of software support services is available, including *on-line information service*, an electronic newsletter; *software subscription service*, a comprehensive mail service which includes updates of software and documentation; *full service*, providing customers with telephone assistance from software systems engineers; and *full service plus*, providing the options of full service plus the services of a systems engineer at the site, if needed.

PRICING

POLICY: The Desktop Generation systems are available through Data General's direct sales force and through DG/Direct, a telephone order service.

EQUIPMENT PRICES

		Purchase Price ($)	4-hour Service Contract/ Mo. ($)	24-hour Service Contract/ Mo. ($)
MODEL 10 and MODEL 10/SP SYSTEMS				
91289	Model 10/SP with CPU module with 256KB memory, single 368KB diskette module, 38MB Winchester module with controller, color graphics controller card, 13-inch color graphics monitor and keyboard, power supply module with dual power supplies	9,410	126	101
91290	Model 10 with CPU module with 128KB memory, single 368KB diskette module, 12-inch monochrome graphics monitor and keyboard, power supply module with one supply	2,985	43	33
91291	Same as 91290 but with dual 368KB diskettes and 256KB memory	3,885	56	41
91292	Same as 91291 but with color graphics controller card and 13-inch color graphics monitor instead of 12-inch monochrome monitor	6,360	80	62
91293	Model 10 with CPU module with 256KB memory, single 368KB diskette module, 15MB Winchester module with controller, 12-inch monochrome graphics monitor and keyboard, power supply module with dual power supplies	4,735	79	59
91294	Same as 91293 but with color graphics controller card and 13-inch color graphics monitor instead of 12-inch monochrome monitor	7,210	103	80
91295	Model 10/SP with CPU module with 256KB memory, dual 368KB diskette module, 12-inch monochrome graphics monitor and keyboard, power supply module with one power supply	4,285	56	41
91296	Same as 91295 but with color graphics controller card and 13-inch color graphics monitor instead of 12-inch monochrome monitor	6,760	80	62
91297	Model 10/SP with CPU module with 256KB memory, single 368KB diskette module, 15MB Winchester module with controller, 12-inch monochrome graphics monitor and keyboard, power supply module with dual power supplies	5,135	79	59

Data General Desktop Generation

		Purchase Price ($)	4-hour Service Contract/ Mo. ($)	24-hour Service Contract/ Mo. ($)
► 91298	Same as 91297 but with color graphics controller card and 13-inch color graphics monitor instead of 12-inch monochrome monitor	7,610	103	80
91300	Model 10 with CPU module with 256KB memory, single 368KB diskette module, 38MB Winchester disk module with controller, 12-inch monochrome monitor and keyboard, power supply module with dual supplies	6,535	106	82
91301	Model 10/SP with CPU module with 256KB memory, single 368KB diskette module, 38MB Winchester disk module with controller, 12-inch monochrome monitor and keyboard, power supply module with dual supplies	6,935	106	82
91321	Model 10 with CPU module with 256KB memory, single 368KB diskette module, 71MB Winchester disk module with controller, 12-inch monochrome monitor and keyboard, power supply module with dual supplies	8,535	113	87
91350	Model 10 with CPU module with 256KB memory, single 368KB diskette module, 71MB Winchester disk module with controller, 13-color monitor with controller and keyboard, power supply module with dual supplies	11,010	133	106
91322	Model 10/SP with CPU module with 256KB memory, single 368KB diskette module, 71MB Winchester disk module with controller, 12-inch monochrome monitor and keyboard, power supply module with dual supplies	8,935	113	87
91323	Model 10/SP with CPU module with 256KB memory, single 368KB diskette module, 71MB Winchester disk module with controller, 13-inch color monitor and keyboard, power supply with dual supplies	11,410	137	108

MODEL 20 SYSTEMS

91339	CPU module, single 368KB diskette module with controller, 15MB Winchester module with controller, four-line Universal Synchronous/Asynchronous Multi plexer (USAM-4), power supply module with dual power supplies	6,080	74	55
91341	CPU module, single 368KB diskette module with controller, 38MB Winchester disk module with controller, USAM-4, power supply module with dual supplies	7,880	97	76
91342	CPU module, single 368KB diskette module with controller, 71MB Winchester disk module with controller, USAM-4, power supply module with dual supplies	9,980	104	81

MODEL 30 SYSTEMS

91336	CPU module, single 368KB diskette module with controller, 15MB Winchester module with controller, four-line Universal Synchronous/Asynchronous Multiplexer (USAM-4), power supply module with dual power supplies	8,395	93	69
91337	CPU module, single 368KB diskette module with controller, 38MB Winchester disk module with controller, USAM-4, power supply module with dual supplies	10,195	116	90
91338	CPU module, single 368KB diskette module with controller, 71MB Winchester disk module with controller, USAM-4, power supply module with dual supplies	12,195	123	95

MEMORY EXPANSION

8713-N	256KB add-on memory board with parity for Models 10 and 10/SP	795	14	12
8713-R	512KB add-on memory board with parity for Models 10 and 10/SP	1,125	18	15
8736-NT	256KB add-on memory for Models 20 and 30	795	20	16
8736-RT	512KB add-on memory for Models 20 and 30	1,125	30	24
8923-A	1MB add-on for Models 20 and 30 (may be combined with 8736-NT or 8736-RT add-on memory with total system memory not to exceed 2MB)	2,250	35	28
8923-B	2MB add-on memory for Models 20 and 30 (maximum of one 2MB memory board per system)	4,250	40	32

MASS STORAGE

6271	15MB Winchester Disk Module for DG10, 10/SP, and 20; includes controller PCB and internal cables	1,110	25	19
6271-B	Add-on freestanding 15MB disk/power supply module for all models; includes internal and external cables and housing	950	28	22
6301	38MB Winchester Disk Module for DG10, 10/SP, and 20; includes controller PCB and internal cables	2,900	48	40
6301-B	Add-on freestanding 38MB disk/power supply module for all models; includes internal and external cables and disk housing	2,150	50	41
6336	71MB Winchester Disk Module for DG10, 10/SP, and 20; includes controller PCB and internal cables	4,900	55	45
6336-B	Add-on freestanding 71MB disk/power supply module for all models; includes internal and external cables and disk housing	5,150	60	49 ►

Data General Desktop Generation

		Purchase Price ($)	4-hour Service Contract/ Mo. ($)	24-hour Service Contract/ Mo. ($)

➤ **MAGNETIC TAPE EQUIPMENT**

6026	Magnetic tape subsystem for all models; includes transport, 9-track, 75 ips 800/1600 bpi	16,500	146	—
6026-S	Magnetic tape subsystem for all models; includes transport, 9-track, 75 ips 800/1600 bpi	16,775	146	—
6270-B	Cartridge tape module for DG10, DG20, or DG30; includes tape unit, controller power supply, and a power cable	1,500	48	40
6123	Streaming magnetic tape subsystem for all models; 1600 bpi, industry compatible, 30 ips; 8.5-inch reels hold either 1,200 or 1,600 feet of 1.5 mil or 1 mil ½-inch tape	6,600	60/mo.	—

PRINTERS

4434	Multifunction matrix printer; 160 cps draft print speed, 80 cps graphics print speed, 40 cps near-letter-quality print speed, 80 columns; includes RS-232-C interface and I/O cable	960	36	30
4531	Multifunction matrix printer; 160 cps draft print speed, 80 cps graphics print speed, 40 cps near-letter-quality print speed, 132 columns; includes RS-232-C and RS-422-A intefaces and I/O cable	1,660	38	30
4518	DG/Letter quality printer; 35 cps	2,800	39	—
6215	Dasher General Purpose System (G.P.S.) printer with serial interface; 180 cps, logic-seeking, bidirectional, 7-by-9 dot matrix, tabletop printer, four graphics densities, 7- and 8-bit code compatible, multiple programmable functions; includes cable	2,995	48	42

		Purchase Price ($)	Monthly Maint. ($)

WORKSTATIONS

6344	Dasher D214; 12-inch monitor; standard EIA RS-232-C interface; without keyboard or cable	620	6
6344A	Same as 6344 except with amber screen	665	6
6345	Dasher D215; 12-inch monitor; standard EIA RS-232-C, RS-422-A, and 20 ma interfaces; without keyboard or cable	720	7
6345A	Same as 6345 except with amber screen	765	7
6346	Dasher D411; 12-inch monitor; standard EIA RS-232-C, RS-422-A, and 20 ma interfaces; without keyboard or cable	1,020	7
6346A	Same as 6346 except with amber screen	1,065	7
6347	Dasher D461; 12-inch monitor; without keyboard or cable	1,320	8
6347A	Same as 6347 except with amber screen	1,365	8
6391	Dasher D214; 12-inch monitor; includes keyboard and cable	860	8
6391A	Same as 6391 except with amber screen	905	8
6392	Dasher D215; 12-inch monitor; includes keyboard and cable	960	9
6392A	Same as 6392 except with amber screen	1,005	9
6393	Dasher D411; 12-inch monitor; includes keyboard and cable	1,260	9
6393A	Same as 6393 except with amber screen	1,305	9
6394	Dasher D461; 12-inch monitor; includes keyboard and cable	1,560	10
6394A	Same as 6394 except with amber screen	1,605	10
6294	Dasher D55 Integrated Voice Data Terminal; includes integrated telephone, speakerphone, keyboard, 8 user-definable function keys	1,660	28
6283	Dasher D220; 12-inch, 8-color RGB monitor; RS-232-C, RS-422-A, or 20 ma interfaces	2,025	26
6284	Dasher D220; 12-inch, 8-color RGB monitor; includes keyboard and cable	2,350	28
6291	Dasher D470C; 12-inch color monitor	2,925	28
6308	Dasher D470C; 12-inch color monitor, cable, and keyboard	3,250	30
2202	Data General/One with 256KB memory, one 3.5-inch diskette drive, gray-toned LCD screen, integral keyboard, AC adapter and power cord, MS-DOS, system tutorial, user documentation, internal 300 baud modem, and blank diskette	2,495	—
2207	Data General/One with 512KB memory, two 3.5-inch diskette drives, gray-toned LCD screen, integral keyboard, AC adapter and power cord, MS-DOS, system tutorial, user documentation, internal 300 baud modem, and blank diskette	3,495	—

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Data General Desktop Generation

		Purchase Price ($)	4-hour Service Contract/ Mo. ($)	24-hour Service Contract/ Mo. ($)
COLOR MONITOR ELEMENTS				
6262	13-inch color graphics monitor (640 x 240 pixel) and interface cable to color graphics control board for Models 10 and 10/SP; includes power cable to power module	1,750	29	24
6265	Color graphics controller board and interface cable to CPU for Models 10 and 10/SP	1,000	6	5
GRAPHICS POINTING DEVICES				
4437-AAR	Graphics data tablet for all models	2,050	23	19
4437-ABR	Tablet with puck for Desktop family; includes 10-foot extension cable	2,000	23	19
4436-AR	Optical mouse equipped with 3 buttons and a 9-by-11 inch grid pad for all models; includes 10-foot extension cable	405	6	—
COMMUNICATIONS/TERMINAL CONTROLLERS				
4463-ZT	Four-line Universal Synchronous/Asynchronous Multiplexor (USAM-4) with Desktop chassis cable; two lines async/sync selectable and two lines async only; includes hardware CRC logic and full modem control; programmable line characteristics and speed from 50 to 19.2K baud; EIA RS-232-C, 20 ma current loop, and RS-422 electrical interface compatibility	1,050	5	4
4463-WT	One-line USAM-1 with Desktop chassis cable; includes one line async/sync selectable without hardware CRC logic; full modem control; programmable line characteristics and speed from 50 to 19.2K baud; EIA RS-232-C, 20 ma current loop, and RS-422 electrical interface compatibility	300	4	3
4207-S	Asynchronous Interface Board for DG20 or DG30 only; single line interface for asynchronous terminals	285	9	6
4530-TA	ISMC/2 2-channel intelligent synchronous controller for DG 10/SP, DG20, or DG30; includes two RS-232-C interfaces	1,650	12	10
4530-TB	ISMC/2 2-channel intelligent synchronous controller for DG 10/SP, DG20, or DG30 with one RS-232-C and one 449/423 interface	1,650	12	10
4530-TC	ISMC/2 2-channel intelligent synchronous controller for DG 10/SP, DG20, or DG30 with two 449/423 interfaces	1,650	12	10
4529-TA	802.3 LAN microcontroller; Ethernet/IEEE 802.3 network controller for 10/SP, DG20, and DG30	1,650	12	10
4540	Transceiver connecting a DG processor equipped with an Ethernet/IEEE 802 controller to an Ethernet cable network	480	6	6
4544	802.3 LAN package system including microcontroller 4529-TA, Transceiver 4540, drop cable 1326, and AOS/VS Xodiac RTU; for DG 10/SP, DG20 or DG30	2,800	18	NA
I/O EXPANSION, POWER SUPPLIES, MISCELLANEOUS				
8697	Logic expansion module (LEM); provides 5 slots for I/O cards only	400	NA	NA
8695	Expansion power supply to add a second power supply to a system containing a single power supply	250	7	4
6269	Add-on diskette drive to expand a single diskette module into a dual diskette module	500	8	6
8862	Realtime clock option to provide system realtime clock synchronized to AC line frequency	50	1	1
8683	Internal cable to provide access to micro I/O bus for use with user-built devices	50	NA	NA
1634	Adapter cable, DG 10, 10/SP CPU printer port	50	NA	NA

NA—Not applicable.

SOFTWARE PRICES

		Purchase Price ($)
—	RDOS	250
—	AOS	720
30500	MP/AOS-SU	440
30228	AOS/WS GKS Graphical Kernel System	330
30505	AOS/WS (Sysgen)	1,100
30506	AOS/WS (Pregen)	770
30507	AOS/WS General Language Development Package	440
30508	AOS/WS Cobol	830
30511	AOS/WS Text Control System (reproduction of software and documentation)	110
30512	AOS/WS CEO Independent Word Processing	610
30513	AOS/WS CEO Integrated Word Processing	660
30516	AOS/WS (Pregen) CEO Environment (English)	1,375

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		Purchase Price ($)
► 30517	AOS/WS (Sysgen) CEO Environment (English)	1,650
30518	AOS/WS CEO Spelling	110
30520	AOS/WS Present	385
30521	AOS/WS Trendview	220
30522	AOS/WS Present and Trendview	495
30523	AOS/WS X.25	330
30524	AOS/WS Xodiac (Pregen) (reproduction of software and documentation)	165
30525	AOS/WS Xodiac (Sysgen) (reproduction of software and documentation)	165
30526	AOS/WS Remote Infos II Agent for Xodiac	275
30527	AOS/WS Remote Database Agent for Xodiac	275
30528	AOS/WS RJE80	770
30529	AOS/WS HASP II	440
30535	AOS/WS SP/Pascal	770
30536/7/8	CP/M-86	110
30539/40/41	MS-DOS	110
30542/3	DG Interactive Cobol (RDOS or AOS/WS)	830
30544/5	DG Business Basic (RDOS or AOS/WS)	830
30546/7	DG Business Basic Data Dictionary	440
30548/9	DG/RDOS Business Basic Report Writer	830
30556/7	DG/Blast	220
30558/9	DG/XAP Asynchronous File Transfer	330
30560/1	DG/Gate Asynchronous Terminal Emulator	220
30562/3	DG Wordperfect	770
30564/5	DG Compucalc	220
30566	DG/RDOS Pregen	275
30567	DG/RDOS Development Kit	275
30568	DG RDOS Sysgen	830
30569	DG/RDOS Extended Basic	220
30570	DG/RDOS Fortran IV Hardware Floating Point	385
30571	DG/RDOS Fortran IV Software Floating Point	385
30572	DG/RDOS Fortran IV	550
30573	DG/RDOS RJE80	720
30574	DG/RDOS CS Sort	165
30575	DG/RDOS Sensor Access Method	275
30577	MP/AOS-SU MP/Basic HFP	220
30578	MP/AOS-SU MP/Basic SFP	220
30579	MP/AOS-SU Fortran IV Software Floating Point	330
30580	MP/AOS-SU Fortran IV Hardware Floating Point	330
30581	MP/AOS-SU MP/Pascal	330
30582	MP/AOS-SU SP/Pascal	770
30583	MP/AOS-SU MP/3270 EMULATOR	660
30584	MP/AOS-SU MP HASP	440
30585	MP/AOS-SU MP RJE80	770
30586	MP/AOS-SU MP/MSCP	220
30587	MP/AOS-SU MP/File Management	330
30589	MP/AOS-SU Text Control System	830
30591	AOS/WS Fortran 77	770
30592/3	AOS/WS Fortran IV/V	550
30594	AOS/WS Extended Basic	330
30595	DG10/10SP Customer Mode Diag.	55
30596	DG20/30 Customer Mode Diag.	55
30727	DG/RDOS IBS (IEEE-488)	275
30728	AOS/WS IBS (IEEE-488)	275
30735	MP/AOS-SU File Format DG10/10SP Microcode	330
30736	MP/RDOS File Format DG10/10SP Microcode	330
30737	AOS/WS File Format DG10SP Microcode	330
30748	AOS/WS RCX70	1,175
30749	AOS/WS DG/SDLC	440
30750	AOS/WS DG/SNA	1,175
30751	AOS/WS SNA/3270	550
30752	AOS/WS SNA/RJE	550
30753	AOS/WS SNA/3278/APL	550
30769	MS-DOS Interactive Cobol Runtime	500
30791	MP/AOS-SU Fortran 77	770
30886	AOS/WS X.25 and Xodiac for LAN Package	NC
30890	AOS/WS SMBasic	1,155
30899	AOS/WS CEO Decision Base	500
30965	Fortran 77 for MS-DOS	325

NC—No charge. ■