



FEATURES

- Hand-held interactive input device for computer graphics
- Graphical Kernel System (GKS) software support under AOS, AOS/VS, AOS/RT32, DG/UX™, and MV/UX™ operating systems
- RS-232-C interface
- 10 to 140 samples per second
- 100 lines/inch resolution
- 3 large action keys, no other moving parts
- Option for Data General graphics products
 - Graphics Workstations: GW/4000™, GW/8000™, and GW/10000™
 - GDC/1000™ Graphics Display Controller and GD/1000 Graphics Display Subsystem
 - Distributed Systems Workstations: Data General DS/4000 and Data General DS/4200
 - DESKTOP GENERATION™ Systems: Model 10 and Model 10SP

Data General's mouse combines an advanced solid-state optical system with the latest in microprocessor technology.

All electronics, interfaces, and optics are located on a single printed circuit board housed in an injection-molded, two-piece case with three action keys. A flexible cable connects the case to the host.

The mouse interfaces with Data General graphics workstations, distributed systems workstations, and desktop processors, and it can be used for a variety of technical and commercial applications.

HARDWARE COMPONENTS

The mouse consists of the following physical components:

- 4-inch × 2½-inch × 1-inch case (approximately) weighing 6 ounces and having 3 keys on top
- 6 foot long RS-232-C interface cable
- Optional power supply
- 9-inch × 11-inch × 1/16-inch aluminum pad with grid and protective coating

As the mouse moves across a flat surface, the mouse pad, its optics read the stripes in the pad to determine the direction and distance of movement. Movements are translated into digital information in the form of relative X, Y Cartesian coordinates and sent to the system. Information is also sent about which keys have been depressed. A program translates the information into a cursor movement, a line drawing command, or any other graphics function easily associated with spatial change.

RELIABILITY

The mouse was designed for long-term reliability and durability. The only moving parts are the three large action keys which are rated for 10 million cycles. There are no adjustable components, DIP switches, or mechanical parts to sense mouse movement.

This attention to reliable design has been carried through all aspects of the product including circuitry, optics, and mouse enclosure.

The mouse's microprocessor calculates optimum operating conditions to accommodate any changes in its optical system; an exclusive digital filtering technique eliminates teasing or jitter on output. Further, the mouse reports status and diagnostic data when requested by host.

ERGONOMICS

The mouse is a natural interface between operator and processor. It allows the operator to select and activate, directly and instantly, symbols in menu- and pointer-driven software, thereby eliminating many keyboard strokes and functions. Three large action keys are provided for software-defined functions.

The mouse pad can be used in the horizontal (11" × 9") or vertical (9" × 11") format. The three action keys are located on the downward sloping fingertip end of the mouse case top; the fingers of either hand can comfortably align themselves with the keys to position the mouse. This flexibility allows the operator to choose a position for optimum speed and comfort.

DATA REPORTING

The mouse communicates with the host via an asynchronous, full-duplex, serial interface. Remote commands are sent from the host to the mouse to control its operation, while movement in X and Y direction is sent to the host to update the screen cursor. Information returned by the mouse contains the following data:

- A bit for each key indicating whether it was depressed
- X movement
- Y movement

The mouse has two data reporting modes:

—**Streaming Mode:** The mouse reports changes in position from 10 to 140 times a second if the mouse has moved across 1 line of the grid, or if a key has been depressed.

—**Prompt Mode:** The mouse reports once when polled by the system.

The mouse can be programmed to report distance linearly or exponentially. This gives the user fine cursor control when the mouse is moved slowly and the ability to cover a large distance when the mouse is moved quickly. The mouse can track hand movements as fast as 30 inches/second.

The sampling rate, under software control, is 10, 20, 35, 70, and 140 times a second. The resolution of the mouse pad grid is 100 lines/inch.

HARDWARE SUPPORT

The mouse interfaces with a variety of Data General graphics products to meet the needs of technical and scientific professionals. All of the product families are compatible to protect users' investments in time and money.

Graphics Workstations

The GW series—GW/4000, GW/8000, and GW/10000—provides the highest performance in interactive color graphics and resolution of 1280 × 1024 with 8 bits/pixel. Each workstation incorporates a powerful 32-bit ECLIPSE® MV/Family processor, a graphics processor, peripherals, workstation desk, software, and up to four GD/1000 graphics display subsystems featuring the latest in raster scan technology.

Users who do not want a packaged system can choose the same performance in the easily configurable GDC/1000 Graphics Display Controller and GD/1000 Graphics Display Subsystem. The GDC/1000 consists of two functional modules, a graphics processor and memory, both in a 15-inch form factor. The GD/1000 consists of the GDC/1000, a DASHER® D/460 keyboard, and an attractive, earthtone housing containing a 19-inch graphics monitor and a D/460 monitor.

Data General Distributed Systems Family

The Data General Distributed Systems Family offers the single user an integrated workstation with 32-bit MV/4000 performance and high-resolution monochrome or color graphics. The under-the-desk workstation integrates an ECLIPSE MV/4000® processor, memory, graphics, all peripherals, an optional floating-point processor, and three async ports for a mouse, plotter, and printer. Professionals can share information via an integrated Ethernet™ IEEE 802.3 interface. In addition, TCP/IP, X.25, BLAST™, GATE, and XAP communications protocols are available.

ECLIPSE MV/Family systems, GW graphics workstations, and Distributed Systems workstations are supported by AOS/VS, a virtual storage operating system; DG/UX™, a native UNIX operating system; and MV/UX™, a hosted UNIX environment integrated with AOS/VS. AOS/RT32, a real-time subset of AOS/VS, also supports the MV and GW families.

DESKTOP GENERATION Systems

The DESKTOP GENERATION Model 10 and Model 10SP offer moderate (640 × 240) resolution for presentation graphics on a 12-inch monochrome or a 13-inch color monitor. Because they are dual-processor systems with microECLIPSE™ and Intel™ 8086 chips, they support the popular CPM-86® and MS™-DOS operating systems as well as the proprietary RDOS, MP/AOS-SU, and AOS operating systems.

SOFTWARE SUPPORT

When the mouse is attached to the computer or workstation, the user must program the computer to communicate with it. The user can choose the Graphical Kernel System (GKS) software or directly program the mouse.

GKS Levels 0b and 2b allow either a coordinate or a set of coordinates to be returned to the user program on request. Because GKS is a standard, it is compatible across graphics devices and product lines.

On any system where the mouse is connected directly to an RS-232-C port accessible by the CPU, the mouse can be programmed like any other RS-232-C device. Commands are sent to it, and information is returned from it.

SPECIFICATIONS

Physical

Size: 3.9 inches (99 mm) × 2.6 inches (66 mm) × 1.0 inches (25 mm)

Weight: 6 ounces (168 grams)

Action Keys: 3; size 1.5 inches (38 mm) × .45 inches (11.4 mm)

Cable/Connector: 6 feet long, terminated with a 25-pin male (RS-232-C) or a 9-pin male (TTL) D connector

Color: black body, camel action keys

Pad: 9 inches (228 mm) × 11 inches (279 mm) × 0.062 inch (1.6) aluminum pad with UV cured protective covering

Reliability: no moving parts to sense mouse movement; action keys are rated at 10 million cycles

Environment: 45°F – 110°F (70°C – 43°C) operating
8% – 80% humidity (non-condensing)

Operational

Resolution: 100 lines/inch (40 lines/cm)

Baud Rate: 96 factory-preset

Sample Rates: 10, 20, 35, 50, 70, 100, or 140 reports per second, software selectable

Modes: incremental stream or prompted data output

Tracking Velocity: 0 inches – 30 inches (0 mm to 762 mm) per second in any direction

Interface: RS-232-C

Power: With integral power supply: uses power from standard outlet

Without power supply: +12.5 mA, –12.200 mA

RELATED PUBLICATIONS

- Data Tablet product brief (012-2016-1)
- GW/4000 Graphics Workstation product brief (012-1870-1)
- GDC/1000 Graphics Display Controller product brief (012-1872)
- Data General Distributed System DS/4000 Workstation product brief (012-2329)
- Data General Distributed System DS/4200 Workstation product brief (012-2330)
- DESKTOP GENERATION Systems, Model 10 product brief (012-2037)
- Graphical Kernel System product brief (012-1865-2)

NORTH AMERICAN OFFICES: Westboro, Massachusetts, 01580 (617) 366-8911, headquarters. And AL: Birmingham, Montgomery; AR: Little Rock; AZ: Phoenix, Tucson; CA: El Segundo, Fresno, Los Angeles, Oakland, Palo Alto, Pasadena, Riverside, Sacramento, San Diego, San Francisco, Santa Ana, Santa Barbara, Van Nuys; CO: Denver, Colorado Springs, Ft. Collins; CT: Bloomfield, Milford, North Branford; FL: Ft. Lauderdale, Jacksonville, Orlando, Tampa; GA: Norcross; HI: Honolulu; IA: Bettendorf, W. Des Moines; ID: Boise; IL: Arlington Heights, Chicago, Rockford, Peoria; IN: Indianapolis; KY: Louisville; LA: Baton Rouge, Metairie; MA: Wellesley, West Springfield, Worcester; MD: Baltimore; ME: Portland; MI: Birmingham, Grand Rapids; MN: Minnetonka; MO: Kansas City, St. Louis; MS: Jackson; MT: Billings; NC: Charlotte, Greensboro, Greenville, Raleigh; NE: Omaha; NH: Bedford; NJ: Somerset, Wayne; NM: Albuquerque; NV: Reno; NY: Amherst, Endwell, Lake Success, Latham, Liverpool, Melville, New York City, Rochester, White Plains; OH: Cincinnati, Columbus, Dayton, Independence, OK: Oklahoma City, Tulsa; OR: Lake Oswego; PA: Blue Bell, Camp Hill, Philadelphia, Pittsburgh; RI: Providence; SC: Charleston, Columbia, Greenville; TN: Knoxville, Memphis, Nashville; TX: Austin, Dallas, Ft. Worth, Houston, San Antonio; UT: Salt Lake City; VA: McLean, Norfolk, Richmond, Roanoke; WA: Bellevue, Richland; WI: Appleton, Brookfield, Madison; WV: St. Albans; **CANADA:** ALBERTA: Calgary, Edmonton; BRITISH COLUMBIA: Vancouver; MANITOBA: Winnipeg; NOVA SCOTIA: Halifax; ONTARIO: Mississauga, Ottawa, Toronto; QUEBEC: Montreal.

INTERNATIONAL OFFICES: AUSTRALIA: Adelaide, Brisbane, Canberra, Darwin, Hobart, Melbourne, Newcastle, Perth, Sydney, AUSTRALIA: Vienna; BELGIUM: Brussels; BRAZIL: Sao Paulo; CHILE: Santiago; DENMARK: Glostrup; FINLAND: Espoo; FRANCE: **PARIS, EUROPEAN HEAD-QUARTERS:** Le Plessis-Robinson, Lille, Lyon, Nantes, Orsay, Saint-Denis, Strasbourg; HONG KONG; IRELAND: Dublin, Belfast; ITALY: Milan, Rome, Padua, Turin, Florence, Bologna; JAPAN: Gyoda, Tokyo, Sapporo, Sendai, Tsukuba, Nagoya, Osaka, Seibo, Hiroshima, Fukuoka; NETHERLANDS: Amstelveen, Rijswijk, Zwolle; NETHERLANDS ANTILLES: Curacao; NEW ZEALAND: Wellington, Auckland, Christchurch; PAPUA NEW GUINEA: Port Moresby; PERU: Lima; PUERTO RICO: Guaynabo; SCOTLAND: Glasgow; SINGAPORE; SPAIN: Madrid, Barcelona; SWEDEN: Stockholm, Malmo, Gothenburg; SWITZERLAND: Zurich, Lausanne, Basle, Bern; THAILAND: Bangkok; TRINIDAD: Port of Spain; UNITED KINGDOM: Birmingham, Bristol, Hammersmith, Hounslow, Leeds, London, Manchester, Northolt, South Harrow, Warrington; VENEZUELA: Caracas; FEDERAL REPUBLIC OF GERMANY: Berlin, Frankfurt, Hamburg, Hannover, Dusseldorf, Stuttgart, Nuremberg, Munich.

REPRESENTATIVES/DISTRIBUTORS: ARGENTINA: Buenos Aires; BOLIVIA: Santa Cruz De La Sierra; COLOMBIA: Bogota; COSTA RICA: San Jose; ECUADOR: Quito; EGYPT: Cairo; GUATEMALA: Guatemala City; INDIA: Bombay; INDONESIA: Jakarta; ISRAEL: Givat Shmuel; IVORY COAST: Abidjan; JORDAN: Amman; KOREA: Seoul; KUWAIT: Safat; LEBANON: Mkalles; MALAYSIA: Kuala Lumpur; MEXICO: Mexico City, Garza Garcia; NETHERLANDS ANTILLES: Curacao; NIGERIA: Lagos, Ibadan, Kaduna; NORWAY: Oslo; PARAGUAY: Asuncion; PHILIPPINES: Manila; PORTUGUAL: Lisbon; SAUDI ARABIA: Riyadh, Jeddah; SOUTH AFRICA: Durban, Pretoria, Johannesburg, Cape Town; TAIWAN: Taipei; TUNISIA: Tunis; TURKEY: Ankara; UNITED ARAB EMIRATES: Abu Dhabi; ZIMBABWE: Harare.

UNIX is a trademarks of Bell Laboratories.

BLAST is a trademark of Communications Research Group, Inc.

Ethernet is a trademark of Xerox Corporation.

MS is a trademark of Microsoft Corporation.

CP/M-86 is a registered trademark of Digital Research, Inc.

Intel is a trademark of Intel Corporation.

DASHER, ECLIPSE and ECLIPSE MV/4000 are U.S. registered trademarks of Data General Corporation.

DESKTOP GENERATION, GDC/1000, GW/4000, GW/8000, GW/10000, MV/UX and DG/UX are U.S. trademarks of Data General Corporation.

The materials contained herein are summary in nature, subject to change, and intended for general information only. Details and specifications concerning the use and operation of Data General equipment and software are available in the applicable technical manuals, available through local sales representatives.

All rights reserved. Printed in U.S.A.

HOW TO ORDER LITERATURE. To order specific titles, contact your local DGC sales office. Or write to the Technical Information and Publication Service (TIPS) at Corporate Headquarters:

Educational Services
TIPS Administrator, MS F019
Data General Corporation
4400 Computer Drive
Westboro, MA 01580

To call TIPS, dial (617) 366-8911, ext. 4032

 **Data General**
A Generation Ahead.

012-2015-1 Copyright © Data General Corporation, 1984.