

THE GE 225 INFORMATION PROCESSING SYSTEM



GENERAL  ELECTRIC

KEY FEATURES OF

● EQUIPMENT FLEXIBILITY

The equipment flexibility of the GE 225 offers a new degree of freedom in the planning of your system. In conjunction with the versatile central processor, the full complement of optional peripheral capabilities includes:

- **MAGNETIC TAPES** — for sequential storage of large files of information
- **PUNCHED CARDS** — for input-output of information
- **MASS RANDOM ACCESS FILE MEMORY** — for storing files for random selection
- **HIGH SPEED PRINTER** — for printing reports
- **PUNCHED PAPER TAPE** — for input-output of information

● **TYPEWRITER** — for print-out of small amounts of data and program monitoring

● **MAGNETIC CHARACTER DOCUMENT SORTER** — for sorting documents and entering data

● **SIMULTANEOUS OPERATION OF EQUIPMENT** — The central processor of the GE 225, while computing, time-shares, on an automatic basis, every major associated peripheral device.

● **CONTROLLER SELECTOR** — An outstanding feature of the GE 225 system is the data mating and priority assigning controller selector of the central processor. Through the use of convenient plug-in connectors on the back of this linking and matching device, the rapid additions and substitutions of peripheral equip-

ments used in conjunction with the system is made possible. The many peripheral devices exchange information with the computer's magnetic core memory through this universal coupling unit, thus allowing the time-sharing and simultaneous operation of the equipments in the integrated system.

● **AUTOMATIC MODIFICATION OF INSTRUCTIONS** — The advantages of the GE 225's standard-equipment registers for automatic address modification include *reduced storage requirements* for the program, *reduced coding costs*, and *increased speed of your operating program*.

● **BUILT-IN FLOATING POINT** — The GE 225's floating point circuitry simplifies coding by eliminating your need to keep track of number scaling during coding.



CENTRAL PROCESSOR



HIGH SPEED PRINTER



12-POCKET DOCUMENT SORTER

GECOM — THE GENERAL COMPILER

The General Compiler Provides —

A FAMILIAR LANGUAGE STRUCTURE — Problems need not be stated in machine code. The GENERAL COMPILER processes English language statements (COBOL), Algebraic expressions (ALGOL), and Structure Tables (TABSOL). It permits you to use all or any one of the computer languages . . . as your needs require. Still, you have available the capability to expand, use other languages and new techniques as your needs change.

A PROVED, ACCURATE CODER — Data Description and Problem Logic may be written in one, two, or a combination of the available language producing a machine program of efficient, effective coding. Since the machine coding is derived directly from the logic of the problem statement, it is only at the logic level that debugging may have to be done.

A STANDARDIZED, UNDERSTANDABLE DOCUMENTATION — Because GENERAL COMPILER problems are written in familiar languages, they can be easily read and understood. In addition, problem format provides a high degree of standardization. Programs written for today's machines in GECOM format can be used for future General Electric computers — eliminating the need for re-programming.

AN EFFICIENT, ECONOMICAL USE OF COMPUTERS — Personnel training time and expense are sharply reduced since the novice programmer may use the familiar terminology of his profession. Manual coding is eliminated and debugging cut to a minimum. Thus, a machine program may be produced much faster and more efficiently than by present manual methods.

SPECIFICATIONS

CENTRAL PROCESSOR

- magnetic core memory
- 4096, 8192 or 16384 binary words, each capable of storing a number, the magnitude of which is equivalent to 5½ numeric digits, or 3 binary-coded-decimal characters of information
- double-word capability
- single- and double-word arithmetic
- simultaneous read-write-compute of all peripheral units
- parity check of information transfers
- over 150 commands, including input-output
- solid state throughout
- accommodates alphabetic or numeric, binary or decimal information
- arithmetic and control registers
- 3 and 96 registers for automatic instruction modification (direct and indirect addressing)

EXECUTION TIMES (Fetch and Execute)
Add — 36 microseconds

THE GE 225

This optional circuitry maintains decimal point locations at all times, a feature *essential for most engineering and statistical computations.*

INSTRUCTION VERSATILITY — The exceedingly versatile, standard instruction repertoire of the GE 225, containing over 150 operational codes including those used for input and output functions, offers you *great flexibility in adapting the computer to your specific requirements.* This versatility enables a program to be written with a minimum number of instructions, thus *reducing running time.*

AUTOMATIC PROGRAM INTERRUPT — This feature allows convenient operation of two unrelated programs. Card to card,

tape to printer or other peripheral to peripheral operations can be performed with the main program, or the main program can be interrupted for operation of high priority programs.

SPECIAL PURPOSE ADAPTABILITY — Unusual or special purpose requirements often demand special purpose computers designed to do a specific processing job. The *standard peripheral equipment* available with the GE 225 is *designed to meet most requirements.* A unique feature of this normally-data-processing-oriented computer is its ability to communicate with many *special purpose* input-output devices. The GE 225 is *adaptable to your system requirements* regardless of their nature.

GAP—THE GENERAL ASSEMBLY PROGRAM

—The GE 225 General Assembly Program, which assumes all of the details of memory allocation, provides the programmer with an efficient and convenient method of writing his program in a completely symbolic language. All of the machine's operation codes are represented by mnemonic abbreviations, thus facilitating the programmer's learning and recollection of these codes. Thus, the programmer has the tremendous advantage of being able to write a program in a number of independent, complete, logical pieces which the General Assembly Program will automatically combine in an efficient manner.



MASS RANDOM ACCESS FILE



PAPER TAPE READER AND PUNCH



MAGNETIC TAPE SYSTEM



CARD PUNCH

Multiply — 225 microseconds (average)
Divide — 450 microseconds
Logic — 36 microseconds

CONTROL CONSOLE

- register display lights
- indicator lights
- power switches
- status lights
- 20 program control switches

CONSOLE TYPEWRITER

- types 10 characters per second under control of Central Processor

DOCUMENT SORTERS (2- and 12-pocket)

- 1200 documents per minute
- sorting pockets under control of Central Processor
- recognizes 14 magnetic characters
- data entered into Central Processor

CARD PUNCH

- 100 to 250 cards per minute
- punches Hollerith or binary (10 or 12 row) cards
- double punch and blank column checking
- accepts numeric or alphabetic information

CARD READER

- 400 and 1000 cards per minute
- reads Hollerith or binary (10 or 12 row) cards
- photoelectric
- synchronization check
- accepts numeric or alphabetic information

HIGH SPEED PRINTER

- 900 lines per minute
- 120 printing positions
- prints 10 numerics, 26 alphabets and 14 special characters
- flexible print format
- parity check

MAGNETIC TAPE SYSTEM

- 15,000, 41,600 and 62,500 characters per second transfer rate
- up to 64 tape units
- horizontal and vertical parity checking
- 200 and 556 characters per inch at 75 and 112.5 inches per second
- tape language is compatible with most existing tape installations

PAPER TAPE READER

- 250 and 1000 characters per second

- reads 5, 6, 7 or 8 channel tape
- parity check

PAPER TAPE PUNCH

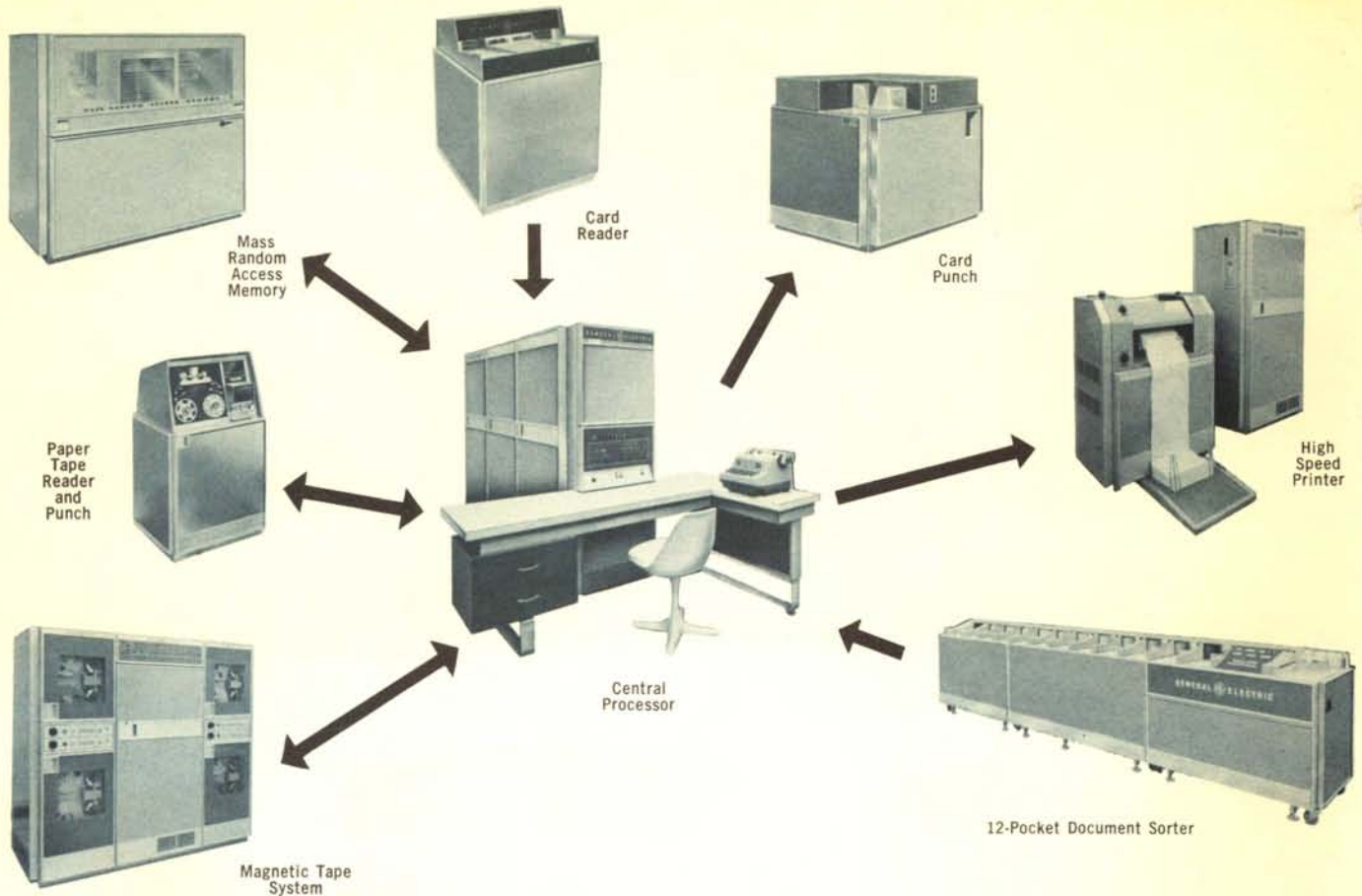
- 110 characters per second
- punches 5, 6, 7 or 8 channel tape

MASS RANDOM ACCESS FILE

- 18.8 million alpha-numeric characters, or the equivalent of 34.5 million decimal digits on each file; four files on each controller
- average access time: 158 milliseconds
- transfer rate: 75,000 characters per second outer zone; 37,500 characters per second inner zone

AUXILIARY ARITHMETIC UNIT

- built-in floating point
- double word commands
- add and subtract 400 microseconds
- multiply 650 microseconds average; divide 1000 microseconds average
- 8-bit exponent; 30-bit mantissa
- normalized and unnormalized operation



INQUIRE TODAY!

For further information and assistance regarding computers and data processing, contact the General Electric Computer Department, Deer Valley Park, Phoenix, Arizona, or your nearest district office listed below.



INFORMATION PROCESSING
AUTOMATED BY GENERAL ELECTRIC

DISTRICT OFFICES

ATLANTA, GEORGIA
270 Peachtree Street, N.W.
522-1611

BOSTON, MASSACHUSETTS
140 Federal Street
HUBbard 2-1800, Ext. 311

CHICAGO, ILLINOIS
120 South LaSalle Street
782-5061

CLEVELAND, OHIO
Williamson Bldg. • 215 Euclid Ave.
SUperior 1-6822

DALLAS, TEXAS
3200 Maple Ave. • RIVERSide 8-0589

DETROIT, MICHIGAN
680 Antoinette Street
TRinity 2-2600

HOUSTON, TEXAS
4219 Richmond Avenue
MO 7-3301

KANSAS CITY, MISSOURI
106 West 14th Street
GRand 1-2919 or 1-2920

LOS ANGELES, CALIFORNIA
1010 South Flower Street
DUnkirk 1-3641

LOUISVILLE, KENTUCKY
Building 6 • Appliance Park
GLEndale 4-7511

MINNEAPOLIS, MINNESOTA
Plymouth Building • 6th & Hennepin
FEderal 2-7569

NEW YORK, NEW YORK
122 E. 42nd Street
PLaza 1-1311, Ext. 3205

PHILADELPHIA, PENNSYLVANIA
3 Penn. Center Plaza
LOcust 8-1800

PHOENIX, ARIZONA
Guaranty Bank Building
3550 North Central Avenue
AMherst 4-3741 or 4-3742

PITTSBURGH, PENNSYLVANIA
1634 Oliver Building
Mellon Square
ATlantic 1-6400, Ext. 566

SAN FRANCISCO, CALIFORNIA
Russ Building • 235 Montgomery St.
DOuglas 2-3740

SCHENECTADY, NEW YORK
Building 2 • 1 River Road
FRanklin 4-2211, Ext. 5-4405

SEATTLE, WASHINGTON
Dexter Horton Building
710 Second Avenue • MAin 4-8300

ST. LOUIS, MISSOURI
Paul Brown Bldg. • 818 Olive St.
GENeva 6-4343

SYRACUSE, NEW YORK
1010 James Street
GRanite 6-4411, Ext. 6141 or 6142

WASHINGTON, D. C. AREA
7401 Wisconsin Avenue
Suite 514, Bethesda, Maryland
OLiver 2-8100

In Canada: Canadian General Electric Company, Ltd., Electronic Equipment and Tube Dept., 830 Lansdowne Ave., Toronto, Ontario, Canada. Outside U.S.A. and Canada: Producer Goods Export Dept., International General Electric Co. Div., 150 East 42nd Street, New York, New York, U.S.A.

IN THE CONSTRUCTION OF THE EQUIPMENT DESCRIBED, GENERAL ELECTRIC COMPANY RESERVES THE RIGHT TO MODIFY THE DESIGN FOR REASONS OF IMPROVED PERFORMANCE AND OPERATIONAL FLEXIBILITY.

Progress Is Our Most Important Product

GENERAL ELECTRIC

COMPUTER DEPARTMENT • PHOENIX, ARIZONA