RECEIVED OCT 23 1959 L. Wheaton Smith

THE NEW GENERAL ELECTRIC GE 210 DATA PROCESSING SYSTEM



... employing magnetic ink character reading to bring automation to business data processing routines



The GE 210 Data Processing System answers the pressing requirement for the automation of business document processing.

Employing

High speed automatic document sequencing,

Magnetic character reading with direct entry to the computer system,

Printed wire circuit boards,

Transistorization, and

Other modern concepts of electronic data processing,

the GE 210 System can assist a business organization in the control of several of its greatest cost-spiraling areas:

The handling of the increasing volume of documents,

The necessary bookkeeping operations involved in their processing, and

The decreasing availability of trained clerical personnel.

The purpose of this fully integrated, general purpose digital computer system is to assume the burden of the majority of these standard, yet costly and time-consuming, sorting and bookkeeping tasks – leaving the relatively small number of unusual operations to off-line human intervention where economics so dictate.

A wide range of input and output peripheral equipment, an unusually broad instruction repertoire, and a complete buffering system permitting simultaneous operation of reading magnetic tape, writing magnetic tape, reading magnetically encoded documents, reading punched paper tape, printing with on-line listers, and computing, make the medium size GE 210 an extremely flexible system for data processing.

THE GE 210 DATA PROCESSING SYSTEM PROVIDES:

ACCURACY AND HIGH SPEED IN PROCESSING of increasing quantities of business documents.

COST AND TIME REDUCTIONS: one of the several types of inputs accepted by the system is magnetically imprinted source documents of varying thickness and size:

- the need to convert documents to another medium acceptable to the central processor is eliminated.

- verification, reconciliation and audit procedures are simplified.

- bookkeeping errors and costs are reduced.

FLEXIBILITY

- building block technique allows future expansion of system as data processing requirements increase.

- full complement of input/output media.

RELIABILITY resulting from built-in self-checking circuits to detect human and machine errors.

PROMPT, ACCURATE, ECONOMICAL SERVICE for customers of the GE 210 user.



WHY MAGNETIC INK PRINTING?

To utilize most effectively the automatic techniques inherent in computing systems, a language, common to both man and machine, is needed for the processing of business documents.

Many ideas and methods for achieving this common language have been tried. Among them were:

- punching the necessary information into the document, as in a punched card;
- coding the information on a document using a bar code;
- coding the document with invisible fluorescent ink spots;
- placing the document in an envelope and coding the envelope;
- attaching an adhesive tab to the document and coding the tab.

After lengthy investigations, magnetic ink imprinting has been adopted by General Electric. The reasons for making this decision were many:

- The characters can be printed on the source document.
- Time and money are saved by not having to translate the basic information from human language to a code which is acceptable to a data processing system.
- The possibility of errors during translation due to the human element is eliminated.
- Because both the machine and men read the same language, verification, reconciliation, and other accounting procedures are simplified.
- Magnetic ink characters are not obliterated, as far as the data processing system is concerned, by overprinting, by dirt, or even by tape placed over them to repair a torn document.
- Magnetic ink can be applied to many existing documents having varying physical properties.

Thus, with the introduction of magnetic ink printing and magnetic character recognition equipment, complete automation has become available for modern business data processing.



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CENTRAL PROCESSOR

THE BASIC GE 210 DATA PROCESSING SYSTEM INCLUDES:



- Accepts information directly from the magnetic character reader of the document handler, from magnetic tape, or from punched paper tape.
- Delivers output information to magnetic tape units, to high speed lister, or as a command to the document handler.

DOCUMENT HANDLER

- Mechanical document transport picks up magnetically imprinted documents of varying quality, size, and degree of mutilation, one at a time, from items placed in its feeder mechanism, moving the documents past a "read" head.
- Magnetic character reader, connected to the "read" head, reads the magnetic ink characters and transmits the information to the central processor.
- Sorts the documents and inserts each one into the proper pocket

all under control of stored program within central processor.



CONTROL CONSOLE

 Provides indicating lights and control station for operation of the system.

MAGNETIC TAPE SYSTEM

- Reads and writes at speeds of 30,000 numeric characters per second.
- Stores bulk information for long term use.
- Provides simultaneous data transfer to and from Central Processor during computation.

HIGH SPEED LISTERS

 Print out required lists, reports and statements from information received from the central processor.

CONSOLE PAPER TAPE READER

 Reads punched paper tape for entry of information into computer.

POWER SUPPLY

- Supplies required regulated voltages.





TWO-POCKET DOCUMENT HANDLER



CONTROL CONSOLE, INCLUDING CONSOLE PAPER TAPE READER



MAGNETIC TAPE UNITS



HIGH SPEED LISTERS (24 COLUMN OR 72 COLUMN)





EQUIPMENT SPEEDS

Document Input

Magnetic Tape

Computer

24-Column Lister

72-Column Lister

Console Paper Tape Reader

 $A+B \rightarrow C=360$ microseconds Double precision=720 microseconds

15,000 alphabetic characters per second

750 lines per minute (numeric)

750 lines per minute (numeric)375 lines per minute (alphabetic)

240 characters per second

750 documents per minute

30,000 numerics per second

POWER SUPPLY

FEATURES OF THE GE 210 DATA PROCESSING SYSTEM

Handles and reads information directly from various types of source documents – no costly, time-consuming translation.

High-speed automatic document sequencing.

On-line and off-line handling of magnetically encoded documents.

Extremely wide selection of input/output methods and equipment, including original documents, magnetic tapes, punched paper tape – specifically designed for financial data processing and related activities.

Building block equipment flexibility.

Latest manufacturing and circuit techniques – printed circuit boards, complete transistorization – resulting in smaller equipment size, lower power consumption, less heat dissipation, better accessibility, lower installation and maintenance costs, greater component life expectancy, and increased equipment re-liability.

Magnetic character reading – permits the handling and reading of information directly from source documents. Magnetic character printing – permits printing of documents which, with a minimum of variable information, can be automatically read by the magnetic character reader.

Complete built-in arithmetic, audit checking and self-checking facilities.

System flexible and expansible.

Powerful instruction repertoire.

Simultaneous computing, magnetic tape reading and writing, reading from document handler and paper tape reader, and printing on lister.

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SERVICES OF THE GENERAL ELECTRIC COMPUTER DEPARTMENT

PROGRAMMING CONSULTING SERVICES

A comprehensive package of utility, general purpose and automatic programming routines is being prepared for the GE 210 System user.

Upon firm order for a GE 210 System, your personnel will be trained in its operation by General Electric personnel skilled in the application of the System to your business operations. This training will be provided at either your site or at a General Electric location.

An experienced Applications Engineer will be made available to give full-time professional assistance to your data processing personnel until the system is operating.

Consultation service will be provided by General Electric Application Engineering throughout the use of the GE 210 System.

INSTALLATION SERVICES

Continuing liaison services to assist you, your architects and building contractors in planning modifications, if required, to adapt your site to accommodate your GE 210 General Electric Data Processing System.

Unpack and assemble all equipment at the prepared site.

Wire-up the system, starting from the primary source in the computer area, including all wiring associated with the equipment.

Make all the necessary on-site adjustments for operating the system.

MAINTENANCE SERVICES

After your GE 210 System has been installed, experienced General Electric Product Service representatives will maintain the System for optimum utilization by your operators. This service includes both maintenance and spare parts and will be furnished at all times that your System is in use.





Inquire today!

For more information or assistance regarding computers and data processing, contact the General Electric Computer Department, Deer Valley Park, Phoenix, Arizona.



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



COMPUTER DEPARTMENT · DEER VALLEY PARK · PHOENIX, ARIZONA

FOR FIGURES IN A HURRY-FIGURE ON A GE COMPUTER



