

The GE-205 Information Processing System

Proved Hardware and Software...Available Now!

GENERAL BELECTRIC

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Another giant Problem-Solver — the GE-205 — now joins the General Electric "Compatibles/200" family of scientific/ engineering AND business data processing computers.

Combining low initial cost with bigsystem features, the GE-205 assures you of an economical, flexible, and high-output computer operation. Reliable system and peripheral equipment significantly outperforms other hardware in the 205 class, at lower cost. Hundreds of customer-tested programs - including FORTRAN-II - are immediately available to solve scientific, business, and management problems. Upward and downward hardware and software compatibility within the 200 family (GE-205/215/225/235) usually permits easy and economical expansion of computational capabilities and the handling of additional types of applications. Competent application experts, trained in the solution of diversified customer problems, are ready to assist you.

As a low-cost first step into electronic computers, or as an easy conversion from overburdened small-to-medium systems lacking sufficient speed, effective memory, or adequate software, the GE-205 offers you an outstanding cost-performance advantage. "Compatibles/200" hardware and software are upward compatible – by design, not by chance. You can start with the GE-205 or any other 200line computer best suited to your current requirements. Then, as your needs dictate, increase your computational capacity up to eleven times by moving up to a larger system in the family. And when you upgrade, you have the assurance your conversion costs will be kept to a minimum.

What makes this assurance possible? Most programs written for the 205 will run without translation on any of the more powerful 200-line systems at the rated speed of the computer being used. And, conversely, the majority of programs proved on the larger 200-line systems will run on the 205, at 205 speeds. So you know your software will not require reprogramming. Any central processor in the family can handle standard 205 peripherals without modification. So when you move up to the next level of power your peripherals will not have to be replaced unless your input/output requirements change. And your personnel checked out on the 205 will not have to be retrained to operate a larger member of the "Compatibles/200" family.

This planned growth potential allows you to get on the air sooner, at lower cost, with a minimum of conversion effort, and thus take advantage of all the features of a faster, more powerful computer.

### Compatibility... How to Protect Your Investment





## GE-205 Hardware... Proved by Time... Available Now

A typical low-cost GE-205 configuration with big-system capability includes:

- Central processor with 8192 words of core memory and output console typewriter
- 400 card/minute card reader
- 100 card/minute card punch

A 300 line/minute printer can be added to the basic configuration to provide print-out capabilities. An optional auxiliary arithmetic unit (AAU) can provide scientific/engineering users with increased speed, flexibility, and utilization of the arithmetic capabilities of the central processor — for an overall four-to-five time increase in computational power. And for a fully integrated system, the memory of the 205 can be increased to 16,384 words.

#### System and Peripheral Specifications

CENTRAL PROCESSOR



Memory 4096, 8192, or 16,384 words of magnetic core memory; 36 microsecond instruction word time

Word Structure 20-bit word length, with double word length capability; optional floating point circuitry

Instruction Repertoire More than 300 commands

Simultaneous Operation Up to four input/output peripheral units can be operated simultaneously with computations Index Registers Up to 128; direct address modification

OUTPUT CONSOLE TYPEWRITER

INPUT/OUTPUT CONSOLE TYPEWRITER



CARD

READERS

Ten characters/second

400 and 1000 card/minute models; Hollerith or binary formats

Fifteen characters/second output



100 and 300 card/minute models;



300, 450, or 900 line/minute models with 120 columns; 450 or 900 line/minute models with 160 columns also available

Hollerith or binary formats



Two 40-bit registers for normalized/unnormalized floating point operations and 40-bit fixed point operations; nine decimal digits of accuracy and a characteristic range of  $10 \pm 76$ 

PAPER TAPE READER AND PUNCH

PRINTERS

AUXILIARY

UNIT

ARITHMETIC



Reads up to 1000 characters/second - 5, 6, 7, or 8-level; punches 110 characters/second - 5 only, or 6, 7, and 8-level

## GE-205 Software... Customer-Tested... Immediately Available

The GE-205 handles scientific/engineering or business data processing problems with equal ease — the flexible computer equipment and the full complement of programming packages have been designed specifically for both types of work.

A diversified library of software routines, upward and downward compatible with other 200-line systems, is running – NOW – on the 205. Write-ups and program decks for all basic systems (including the finest FORTRAN-II language in the 205 price category), all utility requirements, and many advanced techniques in compilation and execution are immediately available. Many customers are taking delivery of this software with their hardware and are going on the air with their problems *the same day*, and without simulation.



#### COMPILERS

- FORTRAN the one-pass FORTRAN-II compiler; compatible with competitive FORTRAN source language; available with or without an auxiliary arithmetic unit; FORTRAN-IV to be available in the near future
- WIZ the General Electric mathematical compiler WIZOR – a compiler compiler

### SCIENTIFIC/ENGINEERING

**Elementary Routines** 

Fixed and floating point transcendental functions Square roots Multiple precision arithmetic Complex arithmetic Standard floating point arithmetic Internal data sort Computation-oriented input/output routines

#### MATHPAC

Matrix algebra Roots of a polynomial Least squares polynomial curve fit Simultaneous equations Eigenvalues and eigenvectors Gamma function

**Application Packages** 

Multiple linear regression Analysis of variance Linear programming Civil engineering Electric utility Transportation Boolean algebra Data reduction techniques

Contributions from other 200-line Users Bessel functions of order zero and one Runge-Kutta integration Plotter programs Legendre functions

### MANUFACTURING AND MANAGEMENT CONTROL

- TRIM simulation model for improved single-phase inventory control systems
- Critical Path Program card program for project scheduling
- Assembly Line Balancing program for planning efficient man-work element relationship in assembly line operations

#### CONVERSION FROM OTHER COMPUTER EQUIPMENT

- IBM-650 Simulator for converting from IBM-650 programs to the GE-205
- LGP-30 Simulator for converting from LGP-30 programs to the GE-205

#### CONVERSION FROM TAB EQUIPMENT

Card Program Generator — a true generator which facilitates the cutover from punched card applications to the GE-205. From a few input parameter cards, the program will generate a highly-efficient object program in standard GE-205 format. The Card Program Generator assures you a swift, smooth, economical transition from tab equipment to the powerful information processing capabilities of the GE-205.

## Supplementary General Electric Services... How Can We Help With Your GE-205?

Before, during, and after the installation of your GE-205, General Electric offers skilled support to insure the continuing efficiency of your operation.

Our trained and competent applications staff, with many years of 200-line experience in a variety of customer applications, can give you assistance during the planning and initial operating stages of your 205. Plans for air conditioning, space, power, floor plans, and other physical requirements can be developed by our Product Service specialists who are also available for routine preventive maintenance and emergency service. The GET organization - users of General Electric computers - voluntarily exchanges new and helpful techniques, ideas, innovations, and programs not available from other sources. At strategically-located training centers courses are provided on GE-205 operation and programming, "Compatibles/200" computer usage in specialized fields, and the use of compilers and assemblers.

Rely on General Electric for a successful computer installation backed up by continuing support and services.



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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 (88) ELECTRIC COMPUTER DEPARTMENT

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in these cities offer complete computer services.