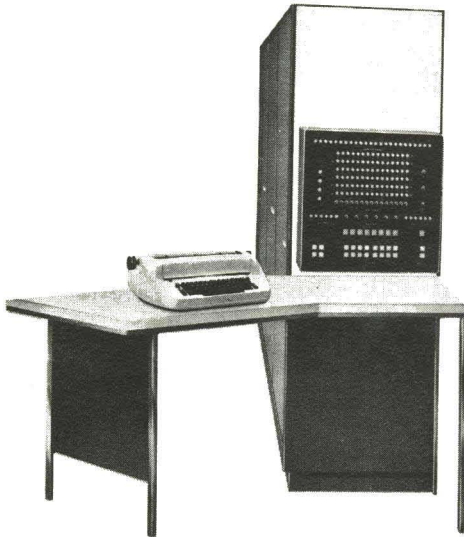# PHILCO 1000 COMPUTER SERIES

Featuring:

- Decimal Arithmetic
- Stored-Program Control
- Character-Oriented, Variable-Length Data
- Large Variety of Input-Output Devices
- Repertoire of over 90 Instructions
- High-Speed Operation - 3 microsecond effective memory cycle time
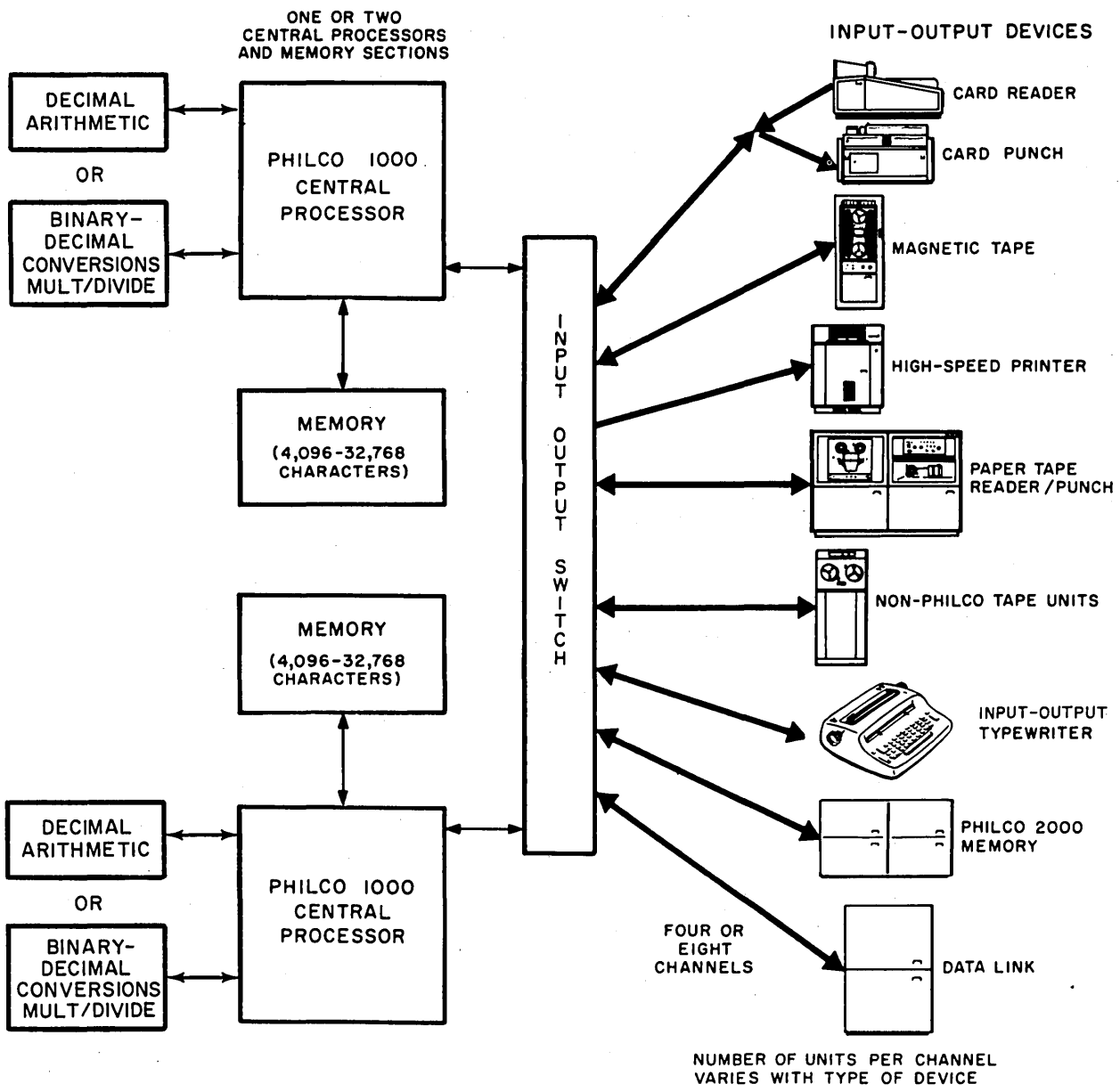- Satellite Computer for the Philco 2000 Series

DESCRIPTION

The Philco 1000 Computer Series includes high-speed, solid-state data processing systems which relieve the Philco 210, 211, or 212 Computer Systems of routine data handling functions. These functions include input formatting and verification, file searching, conversion of punched card information to tape, and editing of program output for the printer.

A Philco 1000 System consists of one or two Central Processors, Magnetic Core Storage Units, an Input-Output Switch and selected input-output devices, as shown on the diagram on the next page. The Central Processors are general-purpose digital computers which process data on a character-at-a-time basis by stored programs. Each Central Processor operates independently with its own Magnetic Core Storage. Magnetic Core Storage Units may be specified as either 4096, 8192, 16,384, or 32,768 characters (7 bits including parity bit) per Central Processor. Effective memory cycle time is 3 microseconds for the 8192 to 32,768 character memories; for the 4096 character memory it is less than 5 microseconds.

A wide variety of input-output devices may be shared by the Central Processors through the Input-Output Switch. These devices include Card Readers, Card Punches, High-Speed Printers, Paper

ONE OR TWO
CENTRAL PROCESSORS
AND MEMORY SECTIONS

INPUT-OUTPUT DEVICES

DECIMAL
ARITHMETIC

OR

BINARY-
DECIMAL
CONVERSIONS
MULT/DIVIDE

PHILCO 1000
CENTRAL
PROCESSOR

MEMORY

(4,096-32,768
CHARACTERS)

MEMORY

(4,096-32,768
CHARACTERS)

DECIMAL
ARITHMETIC

OR

BINARY-
DECIMAL
CONVERSIONS
MULT/DIVIDE

PHILCO 1000
CENTRAL
PROCESSOR

INPUT OUTPUT SWITCH

CARD READER

CARD PUNCH

MAGNETIC TAPE

HIGH-SPEED PRINTER

PAPER TAPE
READER/PUNCH

NON-PHILCO TAPE UNITS

INPUT-OUTPUT
TYPEWRITER

PHILCO 2000
MEMORY

FOUR OR
EIGHT
CHANNELS

DATA LINK

NUMBER OF UNITS PER CHANNEL
VARIES WITH TYPE OF DEVICE

Philco 1000 System Configuration

Tape Reader/Punches, 90,000 and 240,000 characters per second Magnetic Tape Units, Input-Output Typewriters, and Data Link Systems.

The Philco 1000 performs a wide variety of instructions which includes Arithmetic and Logical operations, Translations between Philco and Hollerith codes, Data Movement operations on variable or fixed-length data, Program Control instructions, Data Testing, and Input-Output operations. On a Philco 1000, two values, the binary equivalent of up to six decimal places each, may be added in less than 64 microseconds. This time includes all accesses for the instruction, operands, and storing the result.

Available with each Central Processor is a Decimal Arithmetic Unit which permits Decimal Addition, Subtraction, Multiplication, and Division, or a Binary-Decimal Conversion Unit which permits Binary to BCD conversions and Binary Multiplication and Division.

SYSTEM CONFIGURATION

The Philco 1000 Series Computer Systems consist of one or two Central Processors with a variety of input-output devices connected through an Input-Output Switch. Magnetic core storage may be 4096, 8192, 16,384, or 32,768 characters per Central Processor. Input-Output switches are available with either four or eight input-output channels – each containing controls for a specific type of device, and one channel connecting each Central Processor to an input-output device.

Card Reader and Card Punch

The Philco 1000 High-Speed Card Reader and Philco 1000 Card Punch may both be connected to one channel of the Philco 1000. The Card Reader reads 2000 cards per minute in Hollerith or Binary mode. A full comparison of all 80 columns of data is made between data read from the first read station and its second read station, to assure reading accuracy.

The Card Punch operates at 100 or 200 cards per minute, punching cards in either Hollerith or Binary mode. A read after punch comparison ensures accuracy of punched data.

High-Speed Printer

The Philco 1000 High-Speed Printer may be connected to a channel of the Philco 1000. The Printer operates at 900 lines per minute, 120 characters per line. All Philco characters (63 plus space) may be printed. Up to six copies may be printed on continuous multi-part forms from 4 to 19 inches in width.

Paper-Tape Reader/Punch

The Philco 1000 High-Speed Paper Tape Units may be connected to a channel of the Philco 1000 and may be used to read paper tape punched in five-, six-, seven-, or eight-level mode. Punching may be performed in either five or seven-level mode at 60 characters per second. Reading is performed photoelectrically at 1000 characters per second (100 inches per second). The reader reels hold up to 700 feet of tape and the punch reels can accommodate up to 1000 feet.

Philco 1000 (90 KC) Magnetic Tape Units

One to four Philco 90 KC Magnetic Tape Units may be connected to a channel of the Philco 1000. These units operate at 120 inches per second to provide a transfer rate of 90,000 characters per second, using one-inch magnetic tape. Data is read in groups (blocks) of 1024 characters in length either forward or backward. To ensure data accuracy data

is checked for longitudinal as well as character parity. Reels containing up to 3600 feet of tape may be used.

Philco High-Performance (240 KC) Magnetic Tape Units

One or more High-Performance Magnetic Tape Units may be connected to a channel of the Philco 1000. The transfer rate is 240,000 characters per second, using one-inch tape. Records of up to 4095 characters in length can be read or written. Reels containing up to 3600 feet of tape (containing up to 44 million alphanumeric characters) may be used.

Non-Philco Tape

Tapes prepared on non-Philco tape units in various formats may be read by special Philco Magnetic Tape Units connected to a channel of the Philco 1000.

Input-Output Typewriter

The Philco 1000 Input-Output Typewriter may be connected to any channel of the Philco 1000. This unit types up to 15 characters per second. The Input-Output Typewriter provides communication between operating personnel and the Program Control Section of the Philco 1000.

Data Link System

A Philco Data Link System may be connected to a channel of the Philco 1000 to provide high-speed transmission of digital information between two data processing centers, via any of several electronic communications media (telephone lines, microwave, etc.). Data is transmitted and received 6-bits (plus parity) per character at a time at standard data transmission speed.

Other Devices

A variety of additional devices may be connected to the Philco 1000, including devices linking the Philco 1000 to the Memory or the Input-Output Processor of the Philco 2000. These permit true satellite operation of the Philco 1000 under control of the Philco 2000.