



I.C.T 1900 SERIES

MAGNETIC CARD FILE 1958



DESCRIPTION

The 1958 Magnetic Card File is a direct access bulk store capable of holding over 340 million characters on-line in a basic unit. Data are recorded on magnetic cards housed in magazines which can be quickly interchanged by the operator, so that off-line capacity is unlimited. If required, it is possible to replace individual cards.

In operation a card is addressed, identified, extracted from its magazine, passed round a read/write drum, and returned to the magazine. Each 1958 consists of one Read/Write Station together with one or two Retrieval Units, each with a maximum of eight magazines.

A single Retrieval Unit of eight magazines has a capacity of 340.8 million characters. A system comprising one Control and four Magnetic Card Files each with two Retrieval Units will therefore provide an on-line capacity of over 2,700 million characters. A number of Controls and Files may be specified.

- Direct access storage up to 2,700 million characters on-line per control
- Magnetic card magazines interchangeable by operator
- Maximum productivity through overlapped functions.
- Transfer rate 80,000 characters a second

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Recording

There are 128 recording tracks on each card. Data are recorded two characters in parallel on 64 logical bands. A band holds four blocks each of which is individually addressable. A block consists of 650 characters, each of which is recorded as six serial bits plus a parity bit.

Read/Write Station

As cards are circulated round the drum, they pass under a read/write head assembly of eight heads, which is moved as a single unit to any one of sixteen positions, according to the address selected. The combination of eight heads by sixteen positions corresponds to the 128 recording tracks on a card. The head assembly moves to its addressed location while the card is being positioned. Maximum productivity is achieved by overlapping operations. One card is returned to its magazine while the next is being processed, and at the same time a third card can be pre-selected and held waiting. The average time of access to a selected card is 325 milli-seconds but by using the preselect facility productivity can be increased. A card circulates on the drum until it is instructed by program to be removed. A drum rotation takes 60 milli-seconds, during 40 of which the card passes the heads.

Data Transfers

Data are transferred, between a Magnetic Card File and the Central Processor, via a Control Unit. The transfer rate is 80,000 characters per second. A Control Unit serves up to four files, interprets program instructions relating to them and provides parity checking and buffering of transfers.

SPECIFICATION

General

Read/Write Stations 4 per Control
Retrieval Units 2 maximum per
Read/Write Station
Magazines 8 per Retrieval Unit
Cards 256 per Magazine
2,048 per Retrieval Unit

Card Size

Length 16 inches
Width 4.5 inches

Timing

Average select time for a card
325 milli-seconds
Transfer rate 80,000 characters a
second

Capacity (in seven-bit characters)

Control 2,726,297,600 in 4 Read/
Write Stations
Read/Write Station (2 Retrieval Units)
681,574,000
Retrieval Unit 340,787,000
Magazine 42,598,400
Card 166,400
Band 2,600
Block 650

Recording Characteristics

Bands per card 64
Blocks per track 4
Blocks per card 256
Density 700 bits per inch
Number of characters in parallel-2

PHYSICAL CHARACTERISTICS

Read/Write Station
Height 58 inches
Depth 30 inches
Length 68 inches

This specification is subject to modification

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