I·C·T

I.C.T 1900
SERIES

MAGNETIC TAPE UNIT
1974

DESCRIPTION

The 1974 Tape Unit will read or write binary-coded characters on magnetic tape having a width of half an inch and carrying seven recorded tracks of data including a parity track. The unit will operate at a packing density of 200, 556 or 800 bits per inch, giving data transfer rates of 24,000, 66,000 or 96,000 characters per second. Fast rewind takes only two and a half minutes. The tape and reel are to international standards and compatible with many other systems.

- Choice of transfer rates—24, 66 or 96 k ch/s selectable by operator
- Tape and reel compatible with international systems
- Up to twenty-four tape units in system
- Read after write check
- Read reverse
- Fast tape skipping

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Recording Mode

Data may be recorded in blocks of up to the limit of the core store. Each 6-bit character is recorded across the tape, one bit per track, together with a parity bit in the seventh track. During reading an automatic parity check is carried out on each character. While a writing operation is in progress the dual gap read-write head enables newly-written characters to be read back from the tape and subjected to automatic parity check. Odd parity is used normally, but the program may indicate reels to be read or written in even parity mode. There is also a longitudinal even parity character which is written at the end of each block and is checked on reading.

Functions

The following tape functions are available to the programmer:

 Write
 Read
 Write tape mark
 Skip forward to tape mark
 Skip backward to tape mark
 Backspace one block
 Rewind

Unit and Channel Controls—Up to twenty-four tape units may be connected to a single Central Processor. Associated with each tape unit is a Tape Unit Control which is housed in the Central Processor and is fitted only when required. In addition at least one Tape Channel is required in the Central Processor since a tape unit requires exclusive use of a Tape Channel during all tape functions except rewind. The Tape Channel includes buffers to enable data to be transferred to and from the Central Processor in units of one word, i.e. four six-bit characters.

Up to three Tape Channels can be connected to and housed in a single Central Processor, enabling three simultaneous tape functions (exclusive of rewind) to take place. A maximum of twelve tape units may be connected to any one Channel. However, a tape unit may be connected to up to three Tape Channels, and when a tape function is initiated will automatically select a free Channel from among these to which it is connected. If none of these Channels is free the requested tape function is queued by Executive and is initiated when a Channel becomes available.

Reel Identification System—The first block of recorded information of any tape reel utilized in the system is normally a label block. A program uses a special instruction to request a tape reel. It calls for an input reel by the file name and reel number which appear in the label block. The Executive program will determine which deck contains the required reel and will then allocate that deck to the program. When a program calls for a reel to receive output, Executive finds an unallocated deck on which is mounted a reel with a write-permit ring. Provided that the validity date in the label does not indicate that the reel contains information which must be preserved, Executive writes on the reel the new label specified by the program, and allocates the deck to the program. Thus the operator can mount reels on any convenient deck in anticipation of their being required. The operator is notified if an input or output reel is not available when requested by a program.

Error Recovery—If a parity error occurs during a reading operation Executive automatically attempts to repeat the operation up to a predetermined number of times before requesting operator attention. If a check-read parity error occurs during a writing operation Executive arranges that the faulty block is erased and is rewritten correctly a few inches further along the tape.

SPECIFICATION

Transfer rate 24,000, 66,000 or 96,000 characters a second selected by operator

Packing density 200, 556 or 800 bits an inch

Tape speed 120 inches a second (read/write) 190 inches a second (average for rewinding)

Rewind time Less than two and a half minutes

Reel dimensions 2,400 feet length; $\frac{1}{2}$ inch width; 0.0015 inch thickness

Interblock gap 0.75 inches nominal

Distance between heads 0.3 inches

Up-to-speed time 4 milli-seconds

Stop time 2.8 milli-seconds

Command rate Up to 200 commands per second

PHYSICAL CHARACTERISTICS

The tape deck cabinet houses the tape transport mechanism, local circuits and power supply.

Height	63 inches
Width	31 inches
Depth	28 inches
Weight	575 pounds

This specification is subject to modification