Introducing:

Represented By
Wm. C. BENISON CO.
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San Francisco, CA 94104
(415) 398-2211

SYKESdisk™

flexible disk system

IBM compatible and interchangeable

Sykes Series 7000 Flexible Disk System incorporates the IBM standard, a smart controller and off-the-shelf interfaces. This combination makes it easy to use and easy to build into systems.

The secret, of course, is in our controller that provides hardware for what you ordinarily do in software. It saves time and money in developing, documenting and maintaining your system.

IBM standard

- Compatible and interchangeable at all levels with IBM 3740 system.
  Media—IBM 3740 diskette.
  Recording—IBM soft sector format (IBM spec GA 21-9190).
  Format—Sykes' bookkeeping routines handle IBM file labels and maintenance.

Smart controller

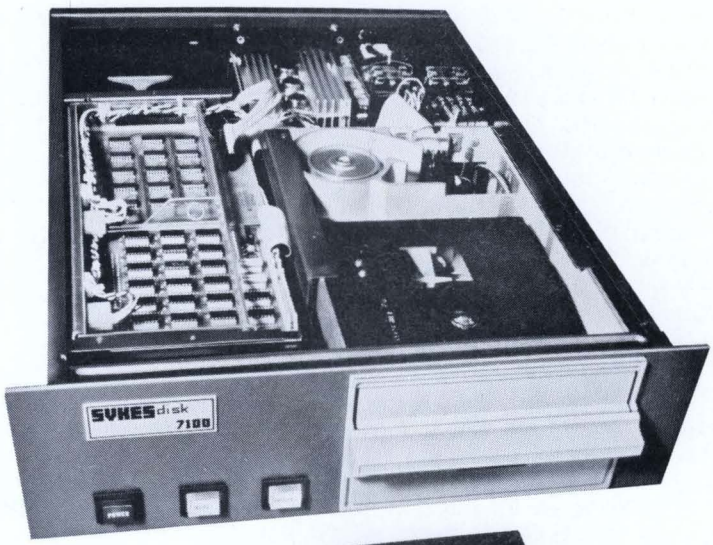
- Auto Sector Search—disk searches completely performed by controller, not by software.
- Auto Record Blocking—blocks data strings of any length into 128 byte sectors. Sector and track sequencing handled by hardware.
- Auto generation and check of IBM sync and CRC characters.
- Auto address verification prior to reading or writing every sector.
- Auto head unload when not transferring data.
- Auto bootstrap command.

Off-the-shelf interfaces and . . . Software drivers

- PDP-11 family RT-11
- PDP-8, 8/L, 8/I, PDP-12 ..... OS/8 and
- PDP-8/E, 8/M, 8/A ..... Disk Monitor
- Nova family (and DCC equivalent) ..... FMS
- HP 2100 family ..... DOS
- Varian 620 family ..... MOS
- Micro 810 CIP 2100
- Universal Interface kit
- Others in design

OEM application aids

- Dual Sector Buffer Option—Two 128 byte buffers permit asynchronous data transfers from disk speed down to "DC." Unique to Sykes!
- Smart controller blocks data strings of any length and handles sector sequencing.
- Easy to interface to non-mini-based systems such as: terminals, CRTs, hard copy equipment, communication systems, etc.
- Bootstrap commands for easy automatic system startup.



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quantity 10

- Universal interface kit allows quick breadboarding.
- Controller accommodates popular disk drives, providing multiple sources for OEM requirements.
- Requires only 5½" of rack space.

Sykes capability

- Proven supplier of magnetic recording devices. Over 5,000 cassette units installed.
- Recognized leader in the development of low cost data storage systems.

SYKES®
SYKES DATATRONICS INC.
375 ORCHARD STREET
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SYKESdisk 7000 flexible disk system

ADVANTAGES OF SYKES 7000 FLEXIBLE DISK SYSTEM

The Sykes Flexible Disk Controller (FDC) is designed to minimize both the complexity and amount of software required to integrate the 7000 System into application programs. Thus, the cost to program, debug and maintain the disk is substantially reduced. New programmers will quickly learn existing systems and users not familiar with the detailed programs can easily understand the system concepts.

Some of the features of the FDC that minimize programming requirements are as follows:

1. Automatic Record Searching

The FDC will automatically search out the track/sector address. The programmer is only required to output a track number (0 to 75) and sector address (1 to 26) of the first sector of data at which data is to be read or written. The programmer is not required to step in or step out track by track or do sector counting. When the desired address is found, the FDC sets a flag indicating it is ready to transfer data. Illegal addresses (ex. sector 27) or addresses that because of hardware problems cannot be found result in a FAULT status condition.

2. Automatic Generation of Sync Bytes and CRC Handling

The Sykes FDC automatically performs the following operations when reading and writing data:

a. Senses the IBM address "sync byte" preceding each sector,
b. reads the sector address, calculates the CRC value and verifies it with the recorded IBM CRC bytes,
c. if writing, then writes either a standard data sync byte or a "delete record" data sync byte (programmer's option),
d. calculates the CRC value while reading or writing the data,
e. writes the data CRC bytes or reads and verifies the data CRC bytes.

3. Automatic Record Blocking

The Sykes FDC will automatically block the data that is output by the CPU into sectors of 128 bytes. This eliminates sector length bookkeeping on the part of the programmer. Partial sectors are automatically filled with zeros. Therefore, to write 1000 bytes, the programmer merely outputs the track/sector address, transfers 1000 bytes of data and then outputs a TERMINATE command. The FDC will block the data into 8 sectors and write them beginning at the selected address.

When transferring data from the disk to the CPU, the next sequential sector is automatically accessed and read as long as the CPU continues to transfer data.

4. Automatic Head Unload

The programmer need not be concerned with head loading as the FDC will automatically unload the head if data is not transferred within a reasonable time span. This assures minimum disk/head wear. The head will automatically be loaded when data is ready to be written or read.

ADVANTAGES OF THE POWERFUL DUAL BUFFER OPTION

The Sykes 7000 series Flexible Disk System has available a *powerful Dual Buffer Option*. A single unit system with the Dual Buffer Option is model 7150, a double unit system (two spindles) is a model 7250. The Dual Buffer Option offers the following advantages:

A. Minimize Memory Requirements

Data may be transferred asynchronously (at a varying rate) between the FDC and CPU. Consequently, as data becomes available to the application program it may be immediately transferred to (or from) the controller rather than buffering it in memory. For example, a simple program could be written that would perform a key to disk operation by simply reading characters input from the TTY and immediately outputting them to disk. As soon as one of the dual buffers is full (128 characters) it is automatically written on the disk. This operation will continue until the CPU outputs a TERMINATE command which will cause the FDC to fill the remainder of a partially filled sector with zeros and write it.

NOTE: The Dual Buffer Option has a considerable advantage over Direct Memory Access (DMA) type data transfers in this respect: Transfer under DMA requires that a portion of memory be devoted to hold the data being transferred. Thus, a data transfer of 1000 words would require a dedicated buffer of 1000 words. The same 1000 words could be transferred to a Sykes 7150 or 7250 as quickly as each word of data becomes available and only require 1 word of memory buffer.

B. Allows Complete Asynchronous Operation

Unlike other popular disks that must have dedicated control, the Dual Buffer Option allows the Sykes 7150 or 7250 to operate at any interrupt priority level. The programmer need not be concerned with losing data synchronization and restarting operations. It is impossible to have an overrun, timing error or data service error with this powerful feature.

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SPECIFICATIONS:

- **Format:** IBM compatible, 77 tracks x 26 Sectors. Each sector has 128 bytes of 8 bits each
- **Capacity per disk:** 2,050,048 bits
- **Transfer rate:** 250,000 bits per second
- **Rotational Speed:** 360 RPM
- **Recording Technique:** Double Frequency
- **Head:** Read/Write with tunnel erase
- **Size:** 5½" H x 17" W x 26" D—Single unit
  10" H x 17" W x 26" D—Dual unit
- **Weight:** 55 lbs.
- **Temperature Operating Range:** 40°-90° F.

FOR ADDITIONAL INFORMATION

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