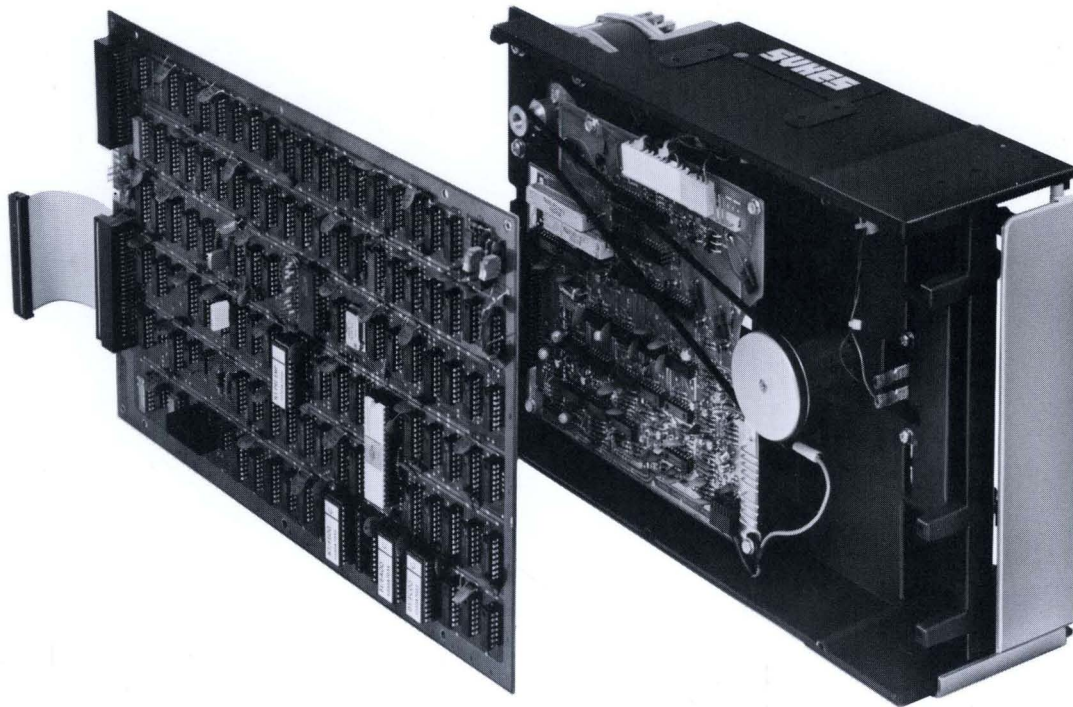


Announcing the Sykes OEM Floppy System Kit. An idea whose time has come.



With our \$1,398 kit and your imagination, nothing can stop you now.

Sooner or later someone was bound to offer all the pieces—a smart controller, disk drives, interface cables—everything you need to build the machine of your dreams. Everything you need to talk to your microprocessor.

And wouldn't you know Sykes would be the company to put all the pieces together for you in one kit?

THE KIT. The Sykes OEM Floppy System Kit gives you either an IBM compatible or Dual Density controller; one, two, three or four floppy disk drives per controller; interface cables from controller to disk drive; hardware interface for microprocessors.

PERFORMANCE. The heart of the kit, of course, is our controller. It provides hardware for what you ordinarily do in software. It saves time and money in developing, documenting and maintaining your system. You get the following hardware features with either the IBM

compatible (256K Bytes per diskette) or the Dual Density (630K Bytes/diskette) controller:

- Hardware address search
- Automatic sector and track sequencing
- FIFO buffer for asynchronous operation
- Automatic CRC generation and detection

PACKAGING. *The packaging is unique; the total controller is contained on a single PC board and pancakes directly to one disk drive giving you minimum volume requirements for your overall system.*

INTERFACES ONLY AN OEM COULD LOVE. When your microprocessor interfaces with our OEM Floppy Kit you'll use only 13 I/O lines. That's right, just 13: 1 Reset line, 3 Control lines, 1 Flag line and 8 Bi-directional data lines. Our unique 8-bit Bi-directional bus is

configured to transmit disk commands, status and data. Its simplicity drastically reduces the number of I/O lines, and connector requirements normally required in disk interfaces.

If you are using a standard mini, we've probably got a plug compatible interface and software for that too.

PRICE. Just \$1,398 buys you a single drive kit at quantity one. Obviously, attractive OEM quantity discounts are available.

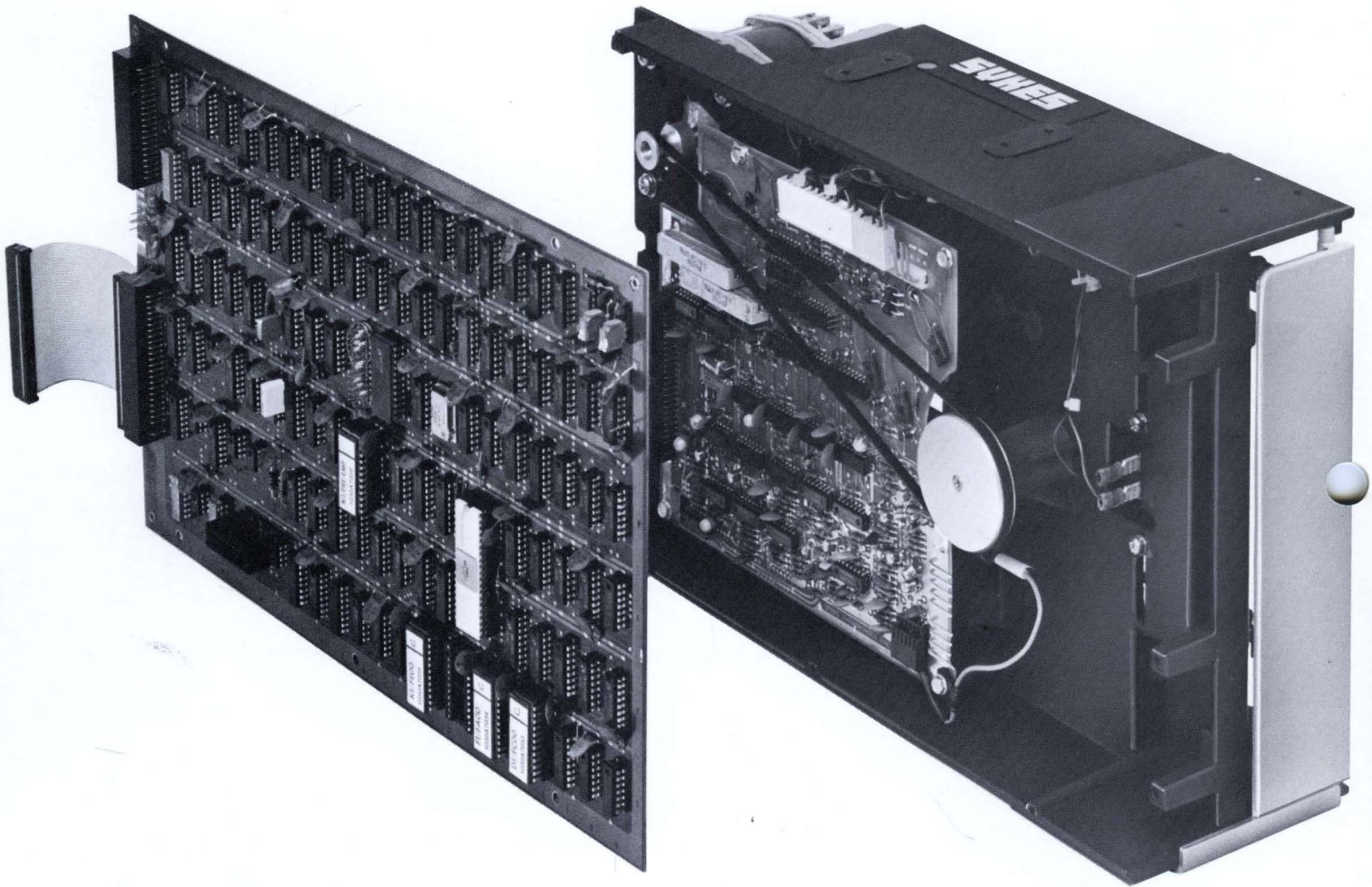
WE MANUFACTURE WHAT WE SELL. Sykes manufactures *all* the elements of our OEM Floppy Kit. Our disk drive has been extensively field tested, with several thousand of them in use right now throughout the world.

SEND US YOUR AUTOGRAPH. Drop us a brief note asking for more information on the OEM Floppy Kit. Or call our marketing department at (716) 458-8000. Telex 97-8326.

**Announcing the
Sykes OEM Floppy
System Kit**



**An idea
whose time
has come**



the system

General The Sykes OEM Floppy System Kit is a microprocessor based floppy disk system designed specifically for use with microprocessors and mini-computers. The microprocessor based controller gives the OEM the flexibility and cost effectiveness required to design this kit into his overall system.

The Kit is available with either an IBM compatible (Series 7000) or Dual Density (Series 9000) Controller; one, two, three or four floppy disk drives per controller; and interconnecting cables from controller to disk drives.

The Sykes Controller comes in the following standard configurations:

IBM Compatible With an 8-bit bi-directional parallel interface or with independent input and output signals.

Dual Density With an 8-bit bi-directional parallel interface or with independent input and output signals.

IBM Kit Performance The Series 7000 IBM compatible kit records and reads diskettes which are interchangeable at all levels with the IBM 3740 System. The diskette format is completely in accordance with the IBM standard; 77 tracks with 26 sectors per track and 128 bytes per sector.

Unique Features Include:

- Auto Record Blocking—blocks data strings of any length into 128 byte sectors. Sector and track sequencing is handled by hardware.
- Auto generation and check of IBM sync and CRC characters.
- Dual 128 byte FIFO buffer for asynchronous operation.
- Detects and writes deleted records.

Dual Density Kit Performance The Series 9000 Dual Density Kit uses either IBM type diskettes or a modified IBM type diskette which contains sector holes at the same radius as the index hole. The diskette format is 77 tracks with 32 sectors per track and 256 bytes per sector.

Unique Features Include:

- Auto Record Blocking—blocks data strings of any length into 256 byte sectors. Sector and track sequencing is handled by hardware.
- Auto generation and check of sync and CRC characters.
- 256 byte FIFO buffer for asynchronous operation.

Features Shared by Both Configurations

- Auto track and sector search—disk searches completely performed by controller, not by software.
- Auto address verification prior to reading or writing every sector.
- Auto head unload when not transferring data.
- During a write operation, partial sectors are automatically filled with zero characters by the hardware.

Packaging The packaging is unique; the total controller is contained on a single PC board and pancakes directly to one disk drive giving you minimum volume requirements for your overall system.

Disk Drives may be operated in any front or top loading attitude. In addition, front panel mounting is simplified because all that is required is a single rectangular cut-out.

advantages

Advantages of Sykes OEM Floppy System Kit The Controller is designed to minimize both the complexity and amount of software required to integrate the kit into application programs. Thus, the cost to program, debug and maintain the disk is substantially reduced.

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

1. Automatic Record Searching The Controller will automatically search out the track/sector address. The programmer is only required to output a track number (0 to 76) and sector address (1 to 26) or (1 to 32) of the first sector of data 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 Controller sets a flag indicating it is ready to transfer data. Illegal addresses (ex. sector 37) that cannot be found result in a FAULT status condition.

2. Automatic Generation of Sync Bytes and CRC Handling The Sykes Controllers automatically perform the following operations when reading and writing data:

- Senses the address "sync byte" preceding each sector.
- Reads the sector address, calculates the CRC value and verifies it with the recorded CRC bytes.
- If writing, then writes either a standard data sync byte of a "delete record" data sync byte (programmer's option 7000 only).
- Calculates the CRC value while reading or writing the data.
- Writes the data CRC bytes or reads and verifies the data CRC bytes.

3. Automatic Record Blocking The Sykes Controllers will automatically block the data that is output by the CPU into sectors of 128/256 bytes. 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 Controller will block the data into 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 until the CPU issues a TERMINATE command.

4. Automatic Head Unload The programmer need not be concerned with head loading as the Controller 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.

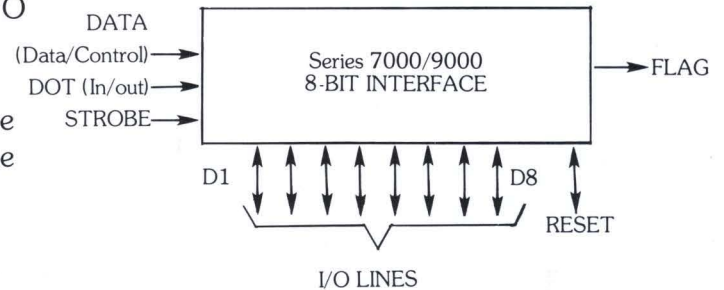
5. FIFO Buffer Both kits feature a one sector FIFO buffer. This approach allows asynchronous operation down to DC. The "fall through" feature of the FIFO buffer also makes it possible to transfer one track of data in one revolution of the disk if desired. The use of a buffer allows the unit to operate at any priority level. It is impossible to have an overrun, timing error or data service error with this powerful feature.

Options

Interface Options The following interfaces are available for both the IBM compatible and Dual Density Kits:

1. 8-Bit Bi-Directional Parallel Interface As previously mentioned, this interface is available as part of the basic controller board. It simplifies the interface requirements to the controller.

The electrical interface consists of eight bi-directional lines which contain either data, output command or status information. The interface also has three input lines which control the I/O bus. One of these lines specifies whether the bi-directional bus contains data or control information, where control information is either output commands from the computer or status information to the computer. Another line controls the direction of data flow on the I/O bus. The third line is a strobe pulse which tells the device when the computer has transferred data or control information. The only output signal is a flag which signals the processor when the unit needs to be serviced. A bi-directional reset line is also available. A block diagram appears below. All signals are TTL compatible and include line drivers.



2. Mini-Computer Interfaces and Software Hardware interfaces and software drivers are also available for use on the following minicomputers:

DEC	NOVA	VARIAN	H.P.	INTERDATA
RT-11	SDOS	E-BASIC	DOS III	OS/32 MT
OS-8		MOS	RTE II, III	DOS
4K Disk Monitor			MTS	
			BCS	

Other Options

- Power Supply: A multiple voltage power supply is available with the following specifications:
 - +5V \pm 1% @ 6.0 amps
 - +12V \pm 0.5% @ 0.4 amps
 - 12V \pm 0.5% @ 0.65 amps
 - +24V \pm 5% @ 2.5 amps
- Complete single or dual drive systems are available to aid the OEM in evaluating the floppy kit and also help in the initial software development.
- 40 conductor ribbon cables for external I/O connections.

Specifications

Equipment Configurations	Single Drive	Dual Drive	Triple Drive	Quad Drive
IBM Compatible	7158 Kit	7258 Kit	7358 Kit	7458 Kit
Dual Density	9158 Kit	9258 Kit	9358 Kit	9458 Kit
Performance Specifications	IBM Compatible Kit	Dual Density Kit		
Disk Format	77 tracks x 26 sectors	77 tracks x 32 sectors		
Sector Length	128 bytes/sector	256 bytes/sector		
Disk Capacity	256, 256 bytes	630,784 bytes		
Transfer Rate	31.25K bytes/sec/sector 20K bytes/sec/track	62.6K bytes/sec/sector 49K bytes/sec/track		
Average Access Time	300 milli-sec	300 milli-sec		
Latency Time	83 milli-sec average	83 milli-sec average		
Track to Track Stepping	6 milli-sec	6 milli-sec		
Head Settling Time	30 milli-sec max.	30 milli-sec max.		
Rotational Speed	360 RPM	360 RPM		
Recording Technique	Double Frequency	Miller Encoding		
Head	Ceramic	Ceramic		
Physical Specifications	Disk Drive	Controller Board		
Height	4.53" Max.	1/2"		
Width	9.01" Max.	9.0"		
Length	14.125" Max.	14.25"		
Weight	14 pounds Max.	1 1/2 pounds		
Environmental Specifications:	60° F. to 100° F.			
Temperature	20% to 80%—no condensation			
Relative Humidity				
Power Requirements	Disk Drive	Controller Board		
+24 VDC ± 10%	1.5A Stepping 0.75A Standby	—		
-12 VDC ± 10%	100 mA	100 mA		
+5 VDC ± 5%	750 mA	3.0 A		
117 VAC ± 10%	0.6 A	—		
60 Hz ± 0.5 Hz				



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