Comm-Stor/5100

Random Access Floppy Disk System for the IBM 5100

by Sykes

- Microprocessor based floppy disk storage system which plugs directly into the Serial I/O Adapter of the IBM 5100 with no hardware or software changes.
- Operates under both APL and BASIC with full interchangeability between languages: Files created under APL can be read under BASIC and vice versa.
- Directory based file management system entirely resident in Comm-Stor with no overhead in the 5100. Files are accessed by names and extensions through high level commands.
- Records data on IBM compatible diskettes. An optional 3740 Format Program allows preparation of diskettes that are fully file compatible with the 3740 family of equipment.

The System

Even if you have no experience with disk systems, you will find Comm-Stor/5100 extremely easy to use. The system comes supplied with a tape cartridge containing 10 BASIC 'KEYS' and 15 APL functions. These standard routines can be directly integrated into your application programs. All operations are carried out using the standard procedures described in the IBM Serial I/O Adapter User's Manual.

All files are directly interchangeable between APL and BASIC programs. In addition, data files prepared on standard Comm-Stor systems can be read by the Comm-Stor/5100. Now you can have low cost data entry stations producing floppy disks for central processing.

Command Summary

Comm-Stor/5100 recognizes 20 basic types of commands:

- . S Send the specified file(s)
- . SD Send the directory of filenames
- . SS Send system status
- . R Receive a file (name specified)
- . RA Receive Automatic (automatically incrementing names assigned by disk system)
- . LI Load initial filename (used prior to RA commands)
- . LE Load extension (all subsequent files stored will have this extension)
- . A APL Mode
- . B BASIC Mode
- . IM Included Mode (file name included in file)
- . IX Included Mode Exit
- . AM Alphabetic Mode (files sent alphabetically by name)
- . SM Sequential Mode (files sent sequentially as they reside on the disk)
- . WP Write Protect diskette
- . WE Write Enable diskette
- . BC Change baud rate of computer port
- . BP Change baud rate of printer port
- . BT Change baud rate of terminal port
- . BD Build Disks (build a directory onto a blank diskette)
- . C Copy (dual drive only)

Directory Features

The Comm-Stor/5100 Directory provides powerful searching capability with no overhead carried in the 5100. A few typical commands are illustrated below:

. SD *	Send directory; all entries
. SD */FILE 1	Send directory; all entries from the beginning to "FILE 1"
. S JOHN/FRANK	Send files from JOHN through FRANK in the order they reside on the disk
. AM . S FRANK/JOHN	Send files in alphabetic order from FRANK through JOHN no matter where they reside on the disk.
. S C/N1 + DATAFILE	Send all files from C through N1 with the extension "DATAFILE" (+ = "with the extension")
. S */C120 + 12-??-76	Send all files from the beginning of the directory to "C120" with the specified extension (? = accept any character) i.e. all files created in December, 1976.

Options & Accessories

- Terminal Package
  —Allows Comm-Stor/5100 to be used with an ASCII Terminal
- 3740 Format Program
- Printer Port
- Extended Users Table
- 20 Ma Current Loop
- Rack Mount Cabinet
- 220 VAC, 50 Hz Operation
- Configuration Diskette & Manual
- User Diagnostic Kit
- Maintenance Manual
- EIA I/O Cables

Environmental, Physical and Power Specifications

	Single Drive	*Dual Drive*
Dimensions:	13.75w x 5.25h x 20d in. 34.93w x 13.34h x 50.80d cm	13.75w x 9.6h x 20d in. 34.93w x 24.38h x 50.80d cm
Weight:	35 lbs 16 kg	55 lbs 25 kg
Power Requirements:	115 volts at 2.5 Amps. Max. (50/60 Hz) 230 volts at 1.8 Amps. Max. (50/60 Hz)	
Operating Temperature Range:	40°-95° F 4°-35° C	
Operating Humidity Range:	20%-80% RH without condensation	

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COMM-STOR 3740 FORMAT OPTION

The Sykes Comm-Stor System with the 3740 Format Program provides compatibility between Comm-Stor diskettes and IBM 3740 type equipment. The 3740 Format Program converts messages stored on Comm-Stor diskettes to IBM 3740 "Basic Data Exchange" form and vice versa.

Comm-Stor accepts data in ASCII Code. This data can be converted to EBCDIC Code and the appropriate IBM data set labels will be created. Conversely, diskettes from IBM 3740 equipment recorded in IBM "Basic Data Exchange" format can be converted to ASCII and then handled as standard Comm-Stor diskettes for use with ASCII terminals.

MAIN FEATURES

- Automatic conversion of Comm-Stor diskettes to IBM format.
- Automatic conversion of IBM 3740 diskettes to Comm-Stor format.
- ASCII to EBCDIC and EBCDIC to ASCII code translation.
- Translation table modification for custom code translation.
- Automatic handling of IBM data set labels.
- Selectable block length.

The 3740 Format Option combines the unique file handling and storage features of Comm-Stor with the number crunching capability of an IBM computer. Data which is collected and stored on Comm-Stor diskettes can be taken out of the Comm-Stor System and processed directly by IBM 3740 type equipment.

Some of the popular 3740 type devices are:

IBM System/3
IBM System/32
IBM 3741 and 3742 Data Stations
IBM 3747 Data Converter
IBM 3540 Diskette 370 I/O Unit

COMM-STOR TO IBM 3740 CONVERSION

IBM Label Handling

An IBM 3740 type diskette can accomodate a maximum of 19 data sets (files). Each data set has a corresponding "data set label" that contains information such as:

- data set name
- data set location (Track/sector)
- length of data set
- record length (characters used per sector)
- bypass bit
- expiration date, write protect, etc.

IBM data set labels reside in Sectors 8 through 26 on Track 0 (the Index Track). Each label occupies one sector resulting in a maximum of 19 labels. Since Comm-Stor does not use Track 0 during normal operations, the data set labels that come prerecorded on IBM compatible diskettes are intact. Before a data set can be processed by an IBM machine, the label for that data set is read to determine where the data set resides, how long it is, has it expired, should it be bypassed, etc.

The 3740 Format Program provides the operator with the ability to easily prepare, display and delete IBM data set labels using comprehensive commands.

For example:

The operator may specify that a Comm-Stor diskette be translated to EBCDIC code and the appropriate data set labels written for it on Track 0. Label information such as location of data sets, length of data sets and record length are automatically computed by Comm-Stor. The operator has the option of specifying parameters such as expiration date and bypass bit, or allowing Comm-Stor to use default values.

Other operator commands allow such functions as displaying the contents of data set labels, deletion of labels and custom modification of the translation table.

Data Blocking

Data is stored on a Comm-Stor diskette in blocks containing 128 data characters. If the IBM machine used to process the Comm-Stor diskette is capable of inputting data in this block length, it is only necessary to translate the Comm-Stor messages to EBCDIC and create appropriate labels on Track 0. This can be done with a single drive Comm-Stor unit.

Some IBM equipment, however, requires data blocks that are less than 128 characters. For this case the data blocking feature of the 3740 Format Program must be used. The data blocking operation requires a dual drive Comm-Stor unit. A Comm-Stor diskette is loaded in Drive 1 and a blank IBM 3740 type diskette is loaded in Drive 2. The data blocked for Comm-Stor operation (128 characters) may be copied to Drive 2 in shorter blocks, e.g., 80 character blocks. Appropriate data set labels are written and data automatically translated to EBCDIC or any other unique code during the copy process.

The operator has the choice of blocking data by a fixed character count as in the example above or by specifying a unique character delimiter. To block variable length lines, the operator can use the delimiter method by specifying the "End of Line" character as the delimiter character. This causes one line of data to be written per block. In addition, the delimiter character can be eliminated or translated to any other character.

IBM TO COMM-STOR CONVERSION

The 3740 Format Option also allows the user to take diskettes created on an IBM compatible system and convert them to Comm-Stor compatible format. This includes converting to ASCII data, if desired, and establishing a Comm-Stor directory. This operation requires a dual Comm-Stor.

3740 FORMAT OPTION COMMANDS

.WL	Write Label	.BI*	Block for IBM
.CL	Cancel Label	.BC	Block for Comm-Stor
.CI	Convert to IBM (Block length of 128 characters only)**	.BN	Block for Comm-Stor but do not translate
.CC	Convert to Comm-Stor (Block length of 128 characters only)**	.DL	Display Label

*This operation will normally convert the data from ASCII to EBCDIC. However, this conversion may be bypassed by the addition of the letter N to the command.

**For block lengths other than 128 characters, the BLOCK commands (.BI, .BC or .BN) must be used.