USER'S MANUAL

CP/M Plus (CP/M Version 3.0)
for
STD-Z80 Bus Systems

Publication Number 4420644A

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SECTION 1

INTRODUCTION TO THIS MANUAL

CP/Mtm 3.0 is a product of Digital Researchtm which has been modified by MOSTEK Corporation to operate in STD-Z80tm bus-compatible systems built using MOSTEK MDX Series circuit cards.

This manual is designed to be used as an addendum to the CP/M Plustm (CP/M Version 3) Operating System User's Guide, published by Digital Research. It contains supplemental technical information needed to configure the STD-Z80 bus system for operation under CP/M 3.0 and to install CP/M 3.0 on the system. Information on MOSTEK-provided utilities for CP/M 3.0 is included. This manual is written for the systems maintenance technician and systems operator experienced in state-of-the-art electronics with specific expertise in the operation of STD-Z80 bus systems.

1.1 MANUAL ORGANIZATION

The manual is divided into five sections. A brief description of each section is as follows:

SECTION 1 INTRODUCTION - describes the purpose, scope, and organization of the manual, explains conventions, lists abbreviations, acronyms, and mnemonics used, identifies trademarks, and provides a list of related publications.

SECTION 2 DESCRIPTION - describes the CP/M 3.0 product and presents a list of the hardware required for optimum operation of the system. A list of optional hardware supported by CP/M 3.0 is included.

SECTION 3 HARDWARE STRAPPING - presents general information concerning the strapping of STD-Z80 bus-compatible cards for use with the CP/M Operating System.

SECTION 4 MOSTEK-PROVIDED UTILITIES - provides information and procedures for using the utilities provided by MOSTEK to enhance the utility of the CP/M 3.0 system.

SECTION 5 CP/M 3.0 ERRATA - provides information on errors to data in or omissions from the CP/M Plus (CP/M Version 3) Operating System User's Guide.

1.2 CONVENTIONS

The following conventions are used in the manual:

< >   -   indicates a non-printable American Standard Code for Information Interchange (ASCII) character or characters, i.e.,

        <cr> = carriage return
        <CTRL C> = control key and C key pressed simultaneously

'H   -   indicates a hexadecimal number

1.3 ABBREVIATIONS, ACRONYMS, AND MNEMONICS

o   Ack - acknowledge
o   ASCII   - American Standard Code for Information Interchange
o   AUXIN - Auxiliary Input Driver
o   AUXOUT - Auxiliary Output Driver
o   CP/M - Control Program/Microcomputer
o   CPU - Central Processing Unit
o   cr - Carriage Return
o   CTRL - Control
o   CTS - Clear To Send signal
o   DTR - Data Terminal Ready signal
o   EPROM - Erasable Programmable Read Only Memory device
o   EXT RDY - EXTernal ReaDY signal
o   FM - Frequency Modulation
o   I/O - Input/Output
o   IBM - International Business Machines
o   MEMEX - MEMory EXpansion signal
o   MFM - Modified Frequency Modulation
o   PIO - Parallel Input/Output
o   Precomp - precompensation
o   PROM - Programmable Read Only Memory device
o   RAM - Random Access Memory
o   RTS - Ready To Send signal
o   SASI - Shugart Associates Serial Interface
o   SIO - Serial Input/Output
o   SS/SD - Single-sided/Single Density
o   STI - Serial Timer Interrupt
o   VCO - Voltage Controlled Oscillator

1.4 TRADEMARKS

The following trademarks are used in the manual:

- o Diablo is a trademark of Xerox Corporation
- o Digital Research is a trademark of Digital Research
- o CP/M is a trademark of Digital Research
- o CP/M Plus is a trademark of Digital Research
- o IBM is a trademark of International Business Machines
- o M/OS-80 is a trademark of MOSTEK Corporation
- o SASI is a trademark of Shugart Associates
- o Z80 is a trademark of Zilog, Inc.

1.5 RELATED PUBLICATIONS

The following publications are related to the CP/M 3.0 product:

- o CP/M Plus (CP/M Version 3) Operating System User's Guide, Publication No. 4420644

- o MDX-SIO2 Technical Manual, Publication No. 4420129

- o MDX-CPU3 Technical Manual, Publication No. 4420261

- o MDX-RAM Technical Manual, Publication No. 4420291

- o MDX-SAS1-1 Technical Manual, Publication No. 4420263

- o MDX-FLP2 Technical Manual, Publication No. 4420262

- o MDX-SASI-2 Technical Manual, Publication No. 4420346

- o MDX-CPU4 Technical Manual, Publication No. 4420285

- o Diablo 630 Operator's Guide

SECTION 2

DESCRIPTION

This section contains a description of the CP/M 3.0 Operating System, MOSTEK product MK71013. It describes the type of hardware with which CP/M 3.0 can be used, including the minimum hardware requirements for the system. It also contains a description of the optional hardware that is supported by CP/M 3.0.

2.1 CP/M 3.0 DISTRIBUTION MEDIA

CP/M 3.0 is distributed on three SS/SD floppy diskettes. It is currently available on standard 8-inch diskettes (MK71013-88) and on ultra-high density 5 1/4-inch diskettes (MK71013-58). Ultra-high density 5 1/4-inch diskette drives are electrically and functionally equivalent to 8-inch disk drives. A Phantom Boot program is provided on EPROM as MOSTEK product MK6381 for system boot-up. The diskettes provided are titled as follows:

Diskette	Title
1	CP/M 3.0 System and Utilities
2	CP/M 3.0 Utilities
3	CP/M 3.0 System Generator

2.2 HARDWARE REQUIRED

CP/M 3.0 is designed to run properly only on STD-Z80 bus systems utilizing MOSTEK's MDX-CPU3 or MDX-CPU4 Z80-based Central Processing Unit card.

For operation of CP/M 3.0, the following minimal hardware is required:

Function	Provided by
Console Input/Output (I/O)	MDX-CPU3 (MK77857) or MDX-CPU4 (MK77858) with STI
Printer I/O	MDX-CPU3 or MDX-CPU4 with STI
Phantom Boot	Erasable Programmable Read-Only Memory MK6381, containing code for automatic boot
Floppy Diskette Drive I/O	MDX-FLP2 (MK77677) configured for Shugart-compatible diskette drives

2.3 OPTIONAL HARDWARE SUPPORTED

CP/M 3.0 supports the following optional hardware:

Function	Provided by
Random Access Memory	MDX-RAM128 (MK77765) for CP/M banked systems
Fixed Disk Drive I/O	MDX-SASI1 (MK77678) or MDX-SASI2 (MK77679) configured for XEBEC 1410A SASItm Controller, a Shugart-compatible fixed disk drive
Serial I/O	MDX-SIO2 (MK77670)
Parallel I/O	MDX-PIO (MK77650)

When auxiliary device drivers AUXIN or AUXOUT are used, a serial or parallel input/output card is required. Any READ or WRITE to the drivers without proper hardware causes the system to "freeze", requiring a reboot to resume system operation.

2.4 DISKETTE FORMAT COMPATIBILITY WITH M/OS-80

Single density diskette formats for CP/M 3.0 and M/OS-80 are completely compatible. READs and WRITEs between the two formats can be accomplished. Double density diskette formats for CP/M 3.0 and M/OS-80 are not compatible. Any attempt to READ or WRITE between the two will not succeed. Such data transfers may cause loss of data.

SECTION 3

HARDWARE STRAPPING

For operation of the STD-Z80 bus system using CP/M 3.0, the computer hardware must be properly configured. This configuration process involves the insertion or removal of mini-jumpers from headers on the individual circuit cards used in the system. This section provides general information concerning the strapping of STD-Z80 bus-compatible cards for use with the CP/M Operating System.

3.1 MOSTEK STD-Z80 BUS COMPATIBLE CARDS

Table 3-1 lists the strapping for the MOSTEK-manufactured cards that must be used in an STD-Z80 bus system using the CP/M 3.0 Operating System. The table also lists several MOSTEK-manufactured cards that can be optionally used with the system operating under CP/M 3.0. Jumpers should be installed to short-circuit each pin-pair listed in the table. All other straps or headers not specifically mentioned in the table must be removed.

This configuration has been tested and is known to function properly. Other strapping options are available, but because of the large variety of cards available and the large variety of applications of the STD-Z80 bus, it is beyond the scope of this manual to describe them. For additional information on other strapping options, refer to the technical manual of the card to be strapped.

Table 3-1 Hardware Strapping Chart (Sheet 1 of 2)

CARD	HEADER	FUNCTION	STRAPPING
MDX-CPU3 [1,2]	J4	PROM Type 2716	3 to 4, 5 to 7
MDX-RAM128	J2	Common on card MEMEX = 0	5 to 6, 7 to 8
	J6	Common Start Address	1 to 2, 3 to 4, 5 to 6, 7 to 8, 9 to 10
MDX-FLP2 (8" Diskette)	J4	Auto Precomp	1 to 2
	J6	VCO Clock	1 to 2
	J7	8-inch Ready	1 to 2
	J8	8" Clock	3 to 4
	J10	Port Address	1 to 2, 3 to 4
	J11	I/O Expand	2 to 3
	J12	EXT RDY Level	2 to 3
(5 1/4" Diskette)	J6	VCO Clock	3 to 4
	J8	5-1/4" Clock	1 to 2
	J9	5-1/4" Drive	1 to 2
	J10	Port Address	1 to 2
	J11	I/O Expand	2 to 3
	J12	EXT RDY Level	2 to 3
MDX-SASI1 or MDX-SASI2	J4	Auto Ack Enable	1 to 2
	J6	I/O Expand	2 to 3
	J5	Port Select (Port A0'H)	3 to 4, 7 to 8, 9 to 10, 11 to 12
MDX-SIO2 [3,4,5]	J9	Address Select	5 to 6
	J4	Port B Select	1 to 2, 11 to 18, 12 to 21, 13 to 20, 15 to 22, 16 to 19
	J8	Baud Rate	15 to 16 (9600bps) or 9 to 10 (1200bps)
	J7	Clock Sources	5 to 6, 7 to 8

Table 3-1   Hardware Strapping Chart (Sheet 2 of 2)

NOTES:

[1]   The MDX-CPU3 is configured with the console interface at port
      address BO'H thru BF'H.

[2]   The MDX-CPU3 is configured with the printer interface at port
      address DO'H.

[3]   The strapping listed for MDX-SIO2 Channel B is for a Diablotm
      630 printer. If a different printer is used, adapt strapping
      as required. Refer to the MDX-SIO2 Technical Manual and to
      the technical manual for the printer to be used.

[4]   To enable the RTS/CTS serial protocol, the Diablo 630 printer
      must be configured with the block A60 headers strapped from 1
      to 2 and 5 to 6. Refer to the Diablo 630 Operator's Guide.

[5]   DTR and RTS modem control lines must be in active operation
      for all serial input/output printer installations.

SECTION 4

MOSTEK-PROVIDED UTILITIES

This section provides information and procedures for using the MOSTEK-provided utility programs supplied as part of the CP/M 3.0 Operating System.

4.1 SYSTEM START-UP PROCEDURES

To start CP/M 3.0 operation, perform the following steps:

1. Ensure that Phantom Boot EPROM (MK6381) is installed in the appropriate socket on the MDX-CPU3 card (in the lower 24 pins of the ByteWyde socket).

2. Prepare all hardware in the system for operation (refer to the corresponding hardware operations manuals for details). See section 3 of this manual for information on hardware strapping.

3. If the console is to be used as the system list device, ensure that the console baud rate matches the MDX-SIO card baud rate.

4. Power up system.

5. Insert the CP/M 3.0 System diskette into diskette drive A (diskette drive strapped as drive 0). For documentation compatibility when a two-drive system is used, drive A must be the rightmost drive.

6. On the console connected to the STI serial port, enter a <cr>.

7. CP/M 3.0 System boot runs for approximately 5 seconds and then a sign-on message appears on the screen. If the message is garbled, check the baud rate, parity settings, and bit counts. Correct as necessary and reboot.

8. CP/M 3.0 System is now booted. Consult the CP/M Plus (CP/M Version 3) Operating System User's Guide for system operating information.

4.2 DOUBLE-DENSITY DISKETTE BACKUP PROCEDURES

Before you attempt to use CP/M 3.0, it is important that you create a working System diskette by copying the programs supplied on the System and Utility diskettes to another diskette. This allows you to do two things; 1) put your original diskettes away in a safe place in the event they are needed in the future, and 2) format the working diskette in a format that best utilizes the capabilities of your hardware, and 3) store the System and all the CP/M 3.0 utility programs on a single diskette.

You should **NOT** use the original diskettes supplied with CP/M 3.0 for everyday use. If they should become damaged, you would need to obtain replacement copies, possibly delaying important work. Right now, before proceeding any further, you must produce a "backup copy" of the CP/M 3.0 System and Utility programs.

You will need three diskettes for this procedure:

    o   Your CP/M 3.0 System and Utilities diskette
    o   Your CP/M 3.0 Utilities diskette
    o   The "destination" diskette -- either a blank diskette or a used diskette with obsolete data on it

To create a double-density backup diskette of CP/M 3.0 System and Utilities, perform the following steps:

1. Ensure that the system start-up procedures in paragraph 4.1 have been performed.

2. Insert the CP/M 3.0 Utilities diskette into drive A.

3. Start the formatting utility program by entering **CPMFMT<cr>**.

4. Insert the blank diskette into drive B.

5. Using the procedure provided for the CPMFMT utility program in paragraph 4.3.2, format the blank diskette for double density, 5-sector interleave, and whole diskette formatting.

6. When formatting is complete, exit the CPMFMT program by entering **<CNTL C>**.

7. Start the boot creation program by entering **COPYSYS<cr>**.

8. Insert the CP/M 3.0 System diskette into drive A.

9. Using the procedures provided for the boot diskette creation program COPYSYS (see CP/M Plus (CP/M Version 3) Operating System User's Guide), create a diskette from which the system can be booted by using the following information when requested by the program.

Source drive is drive A (contains the CP/M 3.0 System diskette).

Destination drive is drive B (the new System/Utilities diskette).

When asked if you want to copy **CPM3.SYS**, enter **N<cr>** for NO.

10. Enter **PIP<cr>** to start the file transfer utility.

11. When the file transfer utility is ready to begin as indicated by a ***** prompt, enter **B:=A:*.*<cr>** to copy all the files from the CP/M 3.0 System diskette in drive A to the formatted blank diskette in drive B.

12. When all of the system files have been copied, remove the CP/M 3.0 System diskette from drive A and store it in a safe place with your other master program diskettes. Insert the CP/M 3.0 Utilities diskette into drive A and enter **B:=A:*.*<cr>** to copy all the files from the CP/M 3.0 Utilities diskette to the diskette in drive B.

13. Exit the file transfer utility by entering **<CNTL C>**.

14. Remove the CP/M 3.0 Utilities diskette from drive A and store it in a safe place with your other master program diskettes. Remove the new diskette from drive B, label it "CP/M 3.0 System and Utilities Working Backup", and store it with your working copies of program diskettes.

4.3 UTILITY PROGRAMS

Four MOSTEK utility programs are contained in the CP/M 3.0 System. The names and functions of these programs are as follows:

Name	Function
CLOCK	turns clock service on or off
CPMFMT	formats floppy diskettes
ERADSK	initializes a diskette and erases all files from the directory
FORMATW	formats fixed (Winchester) disks

Information and use procedures for these programs are provided in the following paragraphs.

4.3.1 CLOCK

The CLOCK utility program turns the clock services on or off.

SYNTAX:

   CLOCK ON<cr>

   CLOCK OFF<cr>

   where:

CLOCK ON	turns clock service on
CLOCK OFF	turns clock service off

4.3.2   CPMFMT

The   CPMFMT   utility program is used to format   floppy   diskettes.
The   program writes sector marks and clears all existing data from
the   diskette.   It should be used on all new diskettes to   ensure
that   all   directory areas are cleared and that all areas   can   be
read later. To format a diskette, perform the following procedure:

NOTE

> The   diskette   write-protect function must   be
> disabled   prior   to   formatting.   For   8-inch
> diskettes,   you   must install a tab   over   the
> WRITE   notch.   For 5 1/4-inch   diskettes,   you
> must   remove   the tab from the   WRITE   PROTECT
> notch.

1.   Start the program by entering the following:

CPMFMT<cr>

2.   When the program starts, the following message is displayed:

**MOSTEK   Floppy Disk Formatter (Version XX.YY) for   CP/M   Plus
Drive to be formatted (A...x) [^C to exit]?**

where:

   XX.YY   is the current version number

Enter   the   drive   specifier   of the   drive   into   which   the
diskette   to   be formatted will   be   installed.

3.   The system responds with the following query:

Format disk for (S)ingle or (D)ouble density?

Enter S for single-density (IBMtm 3740 or Frequency Modulated
[FM])   or D for double-density (Modified Frequency   Modulated
[MFM])   format.   Insert   diskette to be formatted   into   the
previously selected drive and enter F to begin the formatting
process.

4. If the controller is strapped for 5 1/4-inch diskette drives, the following prompt message is displayed:

    Enter tracks/side (in decimal) >

    Enter the number of tracks that are on one side of the diskette to be formatted, followed by a **<cr>**. Some typical values for number of tracks are 35, 40, and 80. The number of tracks is a characteristic of the diskette drive, so if you don't know what the number of tracks is for your system, refer to the drive manufacturer's documentation.

5. The system responds with the following prompt message:

    Enter sector interleave (in decimal) >

    If the diskette being formatted (8-inch or true 5 1/4-inch) is to be used on non-MOSTEK equipment, enter a **<cr>**. If the diskette to be formatted (8-inch or true 5 1/4-inch) is to be used on MOSTEK equipment, enter the desired sector interleave followed by a **<cr>**. The recommended sector interleave entry is as follows:

Diskette Type	Sector Interleave
8-inch single-density	3
8-inch double-density	5

6. The system responds with the following message:

    Formatting Single-sided Single-density
    8" disk in drive n, port xx, unit y.

    where:

    n   is the drive name

    xx   is the address of the floppy controller card

    y   is the unit address on the controller for the drive

When the system has identified the drive as to density and number of tracks and sides, the following prompt is displayed:

Whole (W) or Partial (P)?

To format the entire diskette, enter **W<cr>**. To partially format the diskette, enter **P<cr>**.

7.   If **W<cr>** is entered, the system formats the entire diskette. If **P<cr>** is entered, the system responds with the following prompt:

Enter Starting track (in decimal) >

Enter the number of the track at which you wish formatting to begin, followed by a **<cr>**.

8.   The system responds with the following message:

[tracks left = nn], press return for all
Enter Numbers of tracks to format (in decimal) >

where:

    nn   is the number of remaining tracks

Enter the number of tracks to be formatted from the starting point previously specified as the starting track, followed by a **<cr>**. To format all the remaining tracks on the diskette, enter a **<cr>**. For example, if tracks 0 and 1 are to be formatted, the starting track number is 0 and the number of tracks to format is 2.

During the formatting process, the track being formatted is displayed as follows:

(000) 123456789 (010) 123456789 (020) 123456789 ......

9. When the formatting process is complete, the following message is displayed:

    -- Diskette complete --

    Drive to be formatted (A...x) [^C to exit]?

    If desired, the formatting process can be repeated on the same or another diskette. To repeat, enter drive specifier. To end the program and return to the operating system, enter <CNTL C>.

4.3.3 ERADSK

The ERADSK utility program is used to initialize a diskette and
erase all files from the directory.   This program must be run
to initialize the directory space on a fixed disk drive after
it has been formatted using the FORMATW program. To use the ERADSK
utility, perform the following steps:

CAUTION

Use caution in specifying logical unit, as this
program erases all files on any logical unit
specified.

1.   Start the ERADSK utility by entering the following:

ERADSK<cr>

2.   When the program starts, the following message is displayed:

ERADSK For CP/M Plus - Version 1.0
Enter drive to be erased (A-P):

Enter the drive specifier assigned the drive to be erased.

3.   The system responds with the following message:

Drive to be erased = X, Correct? (Y/N)

where:

        X   is the selected disk drive

If the correct drive was selected, enter **Y<cr>** to continue.
Otherwise, enter **N<cr>** to exit the program. If you exit the
program, an "Aborted." message is displayed.

4.   If the program is continued, the following message is displayed:

     This   will   erase   the   entire   directory   on   drive   X,
     including the disk label, all files, all time/date stamps
     for all user groups.   ARE YOU SURE YOU WANT TO DO THIS?
     (Y/N)

     where:

          X   is the selected disk drive

     If you still desire to erase the selected drive, enter Y<cr>
     to continue.   Otherwise, enter N<cr> to exit the program. If
     you exit the program, an "Aborted." message is displayed.

5.   If the program is continued, the selected drive is erased and
     the following message is displayed:

     Drive has been erased.

4.3.4 FORMATW

The FORMATW utility program is used to format fixed (Winchester) disks. Seven separate operations are available to the user through menu selection. These operations are as follows:

Format Winchester Disk - formats the entire disk. Four data patterns are written to and read from the disk. The last pattern ($e5) is CP/M compatible. If a bad track is detected, an alternate track is automatically assigned. If the disk has not been previously formatted by the FORMATW program, prompts are displayed asking for the necessary disk parameters.

Perform Data Verification - reads the disk and reports any data errors found. No data is destroyed during this operation.

Perform Disk Surface Analysis - tests the disk using four data patterns. Each track on the disk is tested one at a time. First, the current data on the disk is read and saved. Next, the track is tested by writing to and reading from the disk one pattern at a time. After all four of the patterns have been successfully tested, the saved original data is restored to the track. If a bad track is detected, an error message is displayed and an alternate track is automatically assigned. The saved original data from the bad track is then placed on the assigned alternate track.

Fix Track (Specified by Hex Sector) - reformats and tests the specified track. First the current data on the track is read and saved. Then the track is reformatted in an attempt to correct data errors. If reformatting corrects the track data errors, the saved original data is restored to the track. If the track still reports data errors after reformatting, an error message is displayed and an alternate track is automatically assigned. The saved original data from the bad track is then placed on the assigned alternate track.

Assign Alternate Track (by Hex Sector) - assigns an alternate track for the track specified by sector.

Assign Alternate Track (by Head & Cylinder) - assigns an alternate track for the track specified by head and cylinder.

View/Modify Disk Parameters - used to display or modify disk parameters. If the disk has been previously processed by FORMATW, the current disk parameters are displayed and the program prompts whether modification is desired. A list of the available disk parameters is displayed to allow selection of the desired parameters. If none of the selections satisfy the disk in use, entering a <cr> causes the program to prompt for each parameter. Note that each response defaults to its current value.

SYNTAX:

    FORMATW\<cr\>

When the program starts, the following message is displayed:

  MOSTEK - Winchester/Xebec S1410A Format program - 840913

      1.   **FORMAT WINCHESTER DISK**
      2.   **PERFORM DATA VERIFICATION**
      3.   **PERFORM DISK SURFACE ANALYSIS**
      4.   **FIX TRACK (SPECIFIED BY HEX SECTOR)**
      5.   **ASSIGN ALTERNATE TRACK (BY HEX SECTOR)**
      6.   **ASSIGN ALTERNATE TRACK (BY HEAD & CYLINDER)**
      7.   **VIEW/MODIFY DISK PARAMETERS**

    ENTER SELECTION ___

Enter the number for the operation desired, followed by a \<cr\>. Refer to the appropriate procedure for the operation selected from one of the following steps:

1. Format Winchester Disk Operation Procedure

When this option is selected, the following message is displayed:

  *** WARNING, FORMATTING WILL DESTROY ALL DATA ON THE DISK! ***

      DO YOU WISH TO CONTINUE? ___

Enter **YES\<cr\>** or **NO\<cr\>**. If **NO\<cr\>** was entered, control returns to the start of the program and the initial MOSTEK and operation messages are displayed. If **YES** is entered, the following message is displayed:

    WINCHESTER DISK CONFIGURATION

      1. **SHUGART 712**

    ENTER SELECTION __

Enter **1\<cr\>**. If no selection is made and only a \<cr\> is entered, the following queries are displayed one at a time. After each query, the system waits for a response. If the parameter is to be

changed, enter the new paramter value followed by a <cr>. If the
parameter is to remain the same, enter a <cr>.

                    NUMBER OF CYLINDERS? ____
                    NUMBER OF HEADS? ____
                    REDUCE WRITE CYLINDER? ____
                    WRITE PRECOMP CYLINDER? ____
                    STEP OPTION? ____
                    SECTOR INTERLEAVE? ____

After you have responded to the last query, formatting is
performed and the following messages are displayed:

                    FORMAT PATTERN 6C
                    CHECK TRACK DATA

                    FORMAT PATTERN 41
                    CHECK TRACK DATA

                    FORMAT PATTERN 1C
                    CHECK TRACK DATA

                    FORMAT PATTERN E5
                    CHECK TRACK DATA

When the formatting pattern is complete, control returns to the
start of the program, and the initial MOSTEK and operation
selection prompts are displayed.

2. Perform Data Verification Operation Procedure

When this option is selected, the following message is displayed:

VERIFY DISK DATA

Data verification process is then performed. By default, the disk is checked from track 0 thru the last available track. You can change the process by entering the following commands during the verification process:

C - enters continuous mode. The disk is checked from track 0 thru the last available track, and when complete, returns to track 0 to begin the verification again. This process continues until switched to another mode.

R - enters repeat mode. Repeatedly checks the current track until switched to another mode.

T - stops the current operation and enters track mode. Prompts for a track number, and upon receipt, repeatedly checks the specified track until switched to another mode.

X - enters random mode. Randomly selects tracks and checks them one at a time. Process repeats until switched to another mode.

NOTE

Entry of any key other than C, R, T, or X causes the verification process to return to the default mode.

When the process is complete, the following message is displayed:

DATA VERIFICATION COMPLETE

Control returns to the start of the program, and the initial MOSTEK and operation selection prompts are displayed.

3. Perform Disk Surface Analysis Operation Procedure

When this option is selected, the following message is displayed:

DISK SURFACE ANALYSIS

This message indicates that the surface analysis process is being performed. By default, the disk is checked from track 0 thru the last available track. You can change the process by entering the following commands during the surface analysis process:

C - enters continuous mode. The disk is checked from track 0 thru the last available track, and when complete, returns to track 0 to begin the surface analysis again. This process continues until switched to another mode.

R - enters repeat mode. Repeatedly checks the current track until switched to another mode.

T - stops the current operation and enters track mode. Prompts for a track number, and upon receipt, repeatedly checks the specified track until switched to another mode.

X - enters random mode. Randomly selects tracks and checks them one at a time. Process repeats until switched to another mode.

NOTE

Entry of any key other than C, R, T, or X causes the surface analysis process to return to the default mode.

When the process is complete, the following message is displayed:

SURFACE ANALYSIS COMPLETE

Control returns to the start of the program, and the initial MOSTEK and operation selection prompts are displayed.

4. Fix Track (Specified by Hex Sector) Operation Procedure

When this option is selected, the following prompt is displayed:

FIX TRACK, ENTER BAD SECTOR ADDRESS _____

Enter the bad sector address followed by a <cr>. The fix track process is then performed. When the fix track process is complete, control returns to the start of the program, and the initial MOSTEK and operation selection prompts are displayed.

5. Assign Alternate Track (by Hex Sector) Operation Procedure

When this option is selected, the following prompt is displayed:

ENTER BAD SECTOR ADDRESS _____

Enter the bad sector address followed by a <cr>. The assign alternate track process starts and the following message is displayed:

ALTERNATE ASSIGNED FOR TRACK N

where:

   N   is the track number

When the assign alternate track number process is complete, control returns to the start of the program, and the initial MOSTEK and operation selection prompts are displayed.

6. Assign Alternate Track (by Head & Cylinder) Operation Procedure

When this option is selected, the following prompt is displayed:

ENTER BAD HEAD _____

Enter the bad head number followed by a <cr>. The following prompt is displayed:

CYLINDER _____

Enter the cylinder number followed by a <cr>. The assign alternate track process starts and the following message is displayed:

ALTERNATE ASSIGNED FOR TRACK **N**

where:

N   is the track number

When the assign alternate track number process is complete, control returns to the start of the program, and the initial MOSTEK and operation selection prompts are displayed.

7. View/Modify Disk Parameters Operation

When this option is selected, the following prompt is displayed:

VIEW/MODIFY DISK PARAMETERS

NUMBER OF CYLINDERS = n
NUMBER OF HEADS = n
REDUCE WRITE CYLINDER = n
WRITE PRECOMP CYLINDER = n
MAX ECC BURST LENGTH = n
STEP OPTION = n
SECTOR INTERLEAVE = n
MAX AVAILABLE TRACKS = n
RESERVED FOR ALTERNATE = n
RE-ASSIGNED BAD TRACKS = n

DO YOU WISH TO MODIFY? _____

where:
n   is the current parameter value

After viewing all of the disk parameters, enter **YES<cr>** or **NO<cr>**. If **NO<cr>** is entered, control returns to the start of the program, and the MOSTEK and operation prompts are displayed. If **YES<cr>** is entered, the following prompt is displayed:

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ENTER SELECTION ___

Enter 1<cr>. The following query is displayed:

SECTOR INTERLEAVE? ___

Enter the number of desired sector interleave followed by a <cr>.
The sector interleave modification process is then performed.
When the sector interleave modification process is complete,
control returns to the start of the program, and the initial
MOSTEK and operation selection prompts are displayed.

To   initialize the directory space on a fixed disk drive after it
has been formatted, the ERADSK utility program must be run. See
paragraph 4.3.3.

SECTION 5

CP/M ERRATA DATA

This section provides information on errors to data in or omissions from the CP/M Plus (CP/M Version 3) Operating System User's Guide.

5.1 COPYSYS UTILITY PROGRAM

The COPYSYS utility program will accept a filename as an input parameter so that entries other than another diskette's system tracks may be written into the diskette's system tracks.

To copy a file, enter the command as follows:

COPYSYS src-filespec<cr>