



MP/MII Operating System Manual

**ALTOS 580-10
and
Series 5**

November 15, 1982

SERIES 5 AND 580-10 COMPUTER SYSTEM
MP/M II OPERATING SYSTEM MANUAL
REVISION D

This revision replaces but does not obsolete previous versions of this document. The information contained herein is subject to change without notice. Changes will be incorporated in new editions of the document as they are published.

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SECTION 1.

MP/M II PROGRAM DESCRIPTION

GENERAL INFORMATION

This manual provides the necessary instructions for the installation of the MP/M II Operating System after the Altos Diagnostic Executive (ADX) Program has been successfully completed.

MP/M II Program Functions

MP/M II is a group of control programs that coordinate the activity of your Series 5 or 580-10 computer system. The programs control memory utilization, manage files, access hardware devices, and perform other housekeeping chores. Some of these capabilities can be executed from the console and some can be used by applications programs.

A backup copy of the MP/M II master should be made before proceeding to use the system. To protect the master diskette, at least two copies should be made. One copy, the MP/M II system diskette, is for daily use. The other, the backup master, is used for making additional copies for daily use. The MP/M II master diskette is not for daily use but should be stored, together with the backup masters, in a secure location away from the computer to prevent accidental use. Refer to Section 2. INSTALLATION OF MP/M II for detailed instructions to create backup copies of the master diskette.

Booting From Floppy or Hard Disk Drives

There are two methods of bootstrapping or loading the MP/M II operating system that are available with the Series 5 or 580-10 computer system. One is booting from a floppy diskette and the other from a hard disk. When booting from a floppy diskette, regardless of the type/model of Series 5 or 580-10 computer, it is necessary to use the right-hand (RH) floppy disk drive. This is also designated as floppy drive 1.

DIGITAL RESEARCH MANUALS

For convenience, here is a brief look at the Digital Research manuals for MP/M II. They are all furnished with your system, and are the basic reference for MP/M II.

MP/M II OPERATING SYSTEM--USER'S GUIDE

This is the basic manual for all users of MP/M II, and explains how to use the MP/M II operating system and run application programs on it. It provides general information about the structure and facilities of MP/M II.

The manual gives information on system messages, commands, file handling, and MP/M II utility programs. It also contains general reference material, including command summaries, control characters, options, errors, and trouble-shooting procedures.

MP/M II MULTI-PROCESS MONITOR--PROGRAMMER'S GUIDE

This manual contains information on programming in assembler language and, for the system programmer, explains how programs can interface with the MP/M II operating system. It has information useful to all assembly language programmers on the assembly language, the assembler, and RDT, the relocatable debugging tool.

The manual gives functional explanations of the modules of the operating system and how MP/M II monitors processes.

MP/M II MULTI-PROCESS MONITOR--SYSTEM GUIDE

This manual explains the system internal organization and how to customize MP/M II.

The manual is for system designers who wish to modify the user interface or the hardware interface to MP/M II. It assumes knowledge of the USER'S GUIDE and PROGRAMMER'S GUIDE. The manual includes information on the XIOS module which is used for basic input/output operations for your system.

The system overview at the beginning of the manual and the discussion of the GENSYS utility are useful to all users of the MP/M II system.

DOCUMENTATION CONVENTIONS

User input is in **bold face** when it is shown with system messages or in text. <CR> stands for Carriage Return, that is, for pressing the Return key. For example:

To execute the MPMSETUP program, enter:

ØA>MPMSETUP<CR>

In this example, the ØA> is generated by the operating system, and the bold-faced material is entered by the user.

Keys on the keyboard are referred to with leading capital letters when mentioned in text. For example:

Space Bar

Carriage Return Also shown as <CR>.

Control-P

Escape Appears as the **ESC** key.

Y or **N** Indicates a response from the user.

Control characters are used for certain functions. A control character, such as Control-P, is entered by holding down the control key (CTRL) while pressing the key, in this case, P. A control character may also be shown in <>s, such as <Control-P>. For example:

To print a directory, enter:

ØA>dir<Control-P><CR>

The brackets keys, [and], are actual keys used in entering certain options in MP/M II. For example, "When using the verification option with PIP enter [V]."

SCOPE OF THIS REVISION

Revision D of this manual pertains to MP/M II version 2.11SØ. It does not obsolete previous revisions of this document. In this version:

- 1) Installation is simplified,
- 2) Floppy format, full disk copy, and MPMSETUP are executed under MP/M II. Previously, they were executed under the Altos Diagnostic Executive (ADX).

- 3) Known bugs in XIOS and MP/M II have been corrected.
- 4) MPMSETUP has been improved by simplifying the user interface.
- 5) Disk performance improvements have been made.
- 6) X-ON (Control-Q) and X-OFF (Control-S) capabilities for serial printers is implemented.

SECTION 2.

INSTALLATION OF MP/M II

INTRODUCTION

The installation of MP/M II has been simplified in this release such that there are only three steps to execute if your system is configured with a hard disk and only two steps to execute if your system does not have a hard disk unit. To install MP/M II on your Series 5 or 580-10 system, execute the following steps:

1. Power-up your system and wait until prompted. The screen should display the following:

If your system has a hard disk.

```
Enter 1 to boot from hard disk
Enter 2 to boot from floppy disk
```

Insert the MP/M II master disk into floppy drive 1 (the right hand drive) and enter 2.

MP/M II will boot from the floppy drive and the following sign-on message will appear on the screen:

```
Altos MP/M II V2.11S0
Copyright (C), 1982, Digital Research
```

```
0A>
```

If your system does not have a hard disk.

The following prompt will appear:

```
Booting From Floppy...
```


If a floppy disk containing the boot program was not inserted into the right-hand drive the following prompt will appear:

Insert Floppy Disk for Autoload.

Insert the proper disk and the system will boot automatically.

2. Enter the following after the system prompt:

`0A>INSTMPM <CR>`

The following message will then appear on the screen:

```
Altos series-5 installation program V1.0
-----
```

NOTE

**Anytime an error message is encountered,
see the ERROR HANDLING section below.**

SYSTEMS WITH A HARD DISK UNIT

1. Initialization and Configuration (Time: 15 minutes)

If your system is configured with one or more hard disks, this step will read the entire hard disk. The cylinder numbers of the hard disk will be displayed on the screen as they are being read. During the installation procedure, any bad sectors that are found on the hard disk are assigned alternate sectors that reside on cylinder 0. After the initialization is complete, the number of alternate sectors assigned will be displayed.

The above procedure is repeated for an add-on hard disk if your system has one.

The bootfile for the hard disk is also copied from the diskette during this process.

Next the configuration information about your system is displayed as follows:

```
Number of floppy drives = (1 or 2)
Primary hard disk capacity = (5Mb or 10Mb)
Add on hard disk capacity = (5Mb or 10Mb)
Number of users = 3
```

2. Installing MP/M II to hard disk (Time 15 minutes)

If your system has a hard disk the MP/M II files from your master floppy disk will be copied to the hard disk. This step

will also set up the default settings for your system (for example the first logical drive on the hard disk will be designated as drive A). The files that are copied to the hard disk are displayed on the screen.

3. Making a backup copy of the master MP/M II disk (Time 30 minutes)

This is an optional step in the installation procedure. The first prompt will ask the following:

Do you want to make a backup copy of the MP/M II diskette ? (Y/N)

If the response is "N" for No, the following message will appear on the screen:

MP/M II installation complete:

At this point MP/M II has been installed to hard disk. Press the reset button on the front panel. MP/M II will automatically boot from hard disk.

If the response is "Y" for Yes, then you will be asked to remove the MP/M II master disk from the floppy drive and insert a blank disk in the floppy drive. The blank disk will be formatted and the MP/M II files on the hard disk will be copied to the new floppy disk. The files that are copied will be displayed on the screen. After all the files have been copied the following message will appear on the screen:

MP/M II installation complete:

At this point MP/M II has been installed to hard disk and a backup copy of the MP/M master disk has been made.

Keep the original master disk in a safe place.

Press the reset button on the front panel. MP/M II will automatically boot from hard disk.

NOTE

During the installation process SETUP.FIL is modified on the backup diskette to reflect the new configuration. DO NOT delete this file since it is used to configure the system when MP/M II is loaded. Also, to re-install MP/M II always use the original distribution diskette.

SYSTEMS WITHOUT A HARD DISK UNIT

1. Initialization and configuration (Time: 15 minutes)

If your system does not have a hard disk unit then the configuration information about your system is displayed when you enter the INSTMPM command:

Number of floppy drives = (1 or 2)
Number of users = 3

2. Making a backup copy of the master MP/M II disk (Time 10 minutes)

This is an optional step in the installation procedure. The first prompt will ask the following:

Do you want to make a backup copy of the MP/MII diskette ? (Y/N)

If the response is "N" for No, the following message will appear on the screen:

MP/M II installation complete:

Although the installation is now complete, it is advisable that a copy of the MP/M II diskette be made as soon as possible.

If the response is "Y" for Yes, insert a blank diskette into floppy drive 2 (the left-hand drive). The blank disk will be formatted and the MP/M II files on the diskette residing in floppy drive 1 (the right-hand drive) will be copied to the new floppy disk. After the full disk copy is complete the following message should appear on the screen:

MP/M II installation complete:

At this point, a backup copy of the MP/M II master disk has been made. Place the original master disk in a safe place. The newly created diskette will be the working master. Insert this diskette into drive 1 (the right-hand drive). Press the reset button on the front panel. MP/M II will automatically boot from the new diskette.

NOTE

**During the installation process
SETUP.FIL is modified on the backup
diskette to reflect the new**

configuration. DO NOT delete this file since it is used to configure the system when MP/M II is loaded. Also, to re-install MP/M II always use the original distribution diskette.

ERROR HANDLING

During the installation procedure, a number of error conditions may cause the installation process to abort. The errors listed below mean that the hard disk has not been properly initialized.

- 1) Drive not ready.
- 2) Cylinder 0 is bad, cannot install MP/M to hard disk.
- 3) Too many bad sectors (34 is the maximum), cannot install MP/M to hard disk.
- 4) I/O error during hard disk initialization.

Other errors that are encountered are less severe, it is adviseable to check the MP/M II distribution diskette to pinpoint the problem.

NOTE

If installation is aborted for any of the above hard disk error conditions, it will not be possible to use the hard disk unit. Contact your dealer for details concerning repair or replacement of the hard disk.

LOGICAL DISK DRIVE ASSIGNMENTS

MP/M II organizes physical disk space into "logical" disk space. The system treats each logical drive as if it were an actual disk drive. Each logical drive consists of 5 megabytes and has its own directory of files. It is considered to be independent of other logical disk drives, even though more than one logical drive may occupy space on the same physical drive.

Logical disk assignments for hard disks for the Series 5 or the 580-10 under MP/M II are presented below. There are four possible configurations.

Number of Hard Disks -----	Number of Logical Drives -----
1) One Hard Disk	
A) 5 Megabyte	1

- B) 10 Megabyte 2
- 2) Two Hard Disks
 - A) two 5 Megabyte 3
 - B) two 10 Megabyte 4

When logical disk assignments are made, hard disk drives are always assigned before floppy disks. As a result logical drive "A" is always assigned to a hard disk unit (if one is configured into the system). As an example, a 5-10D system configured with a single 10 Megabyte hard disk drive and a single floppy disk drive will assign logical drives "A" and "B" to the hard disk and logical drive "C" to the floppy disk.

NOTE

Logical drive assignments can be changed using MPMSSETUP.

SECTION 3.

USING ALTOS MP/M II UTILITY PROGRAMS

MUTIL - UTILITY PROGRAM

This program allows you to format and copy entire 5-1/4 inch diskettes.

This program runs under MP/M II but should be used with caution. When this program is running all other users are denied access to any disk in the system.

To execute the program, enter the following after the system prompt:

0A>MUTIL <CR>

The program will sign on as:

ALTOS MP/M II utility monitor v1.0

F. Format

C. Copy

Q. Quit

Type a letter to make your selection:

Format

When you choose the Format function the following is displayed:

Format will erase all files, do you wish to continue (Y/N).

Type "Y" to continue, "N" to abort.

Insert diskette to be formatted into available drive

Enter drive number (1/2) to continue

If you have two floppy drives, you can insert the diskette into drive 1 (right hand drive) or into drive 2 (left hand drive). If you have only one drive then you must insert the diskette into drive 1.

The cylinder numbers that are formatted will be displayed. After formatting is complete, the following message will appear:

Disk format complete.

After the disk has been formatted, the entire disk is verified. The verification operation can be aborted by pressing the escape key.

At the end of the verification control then returns to the main menu.

Copy

This is a full disk copy routine and requires at least two floppy drives. When you select the Copy function the following is displayed:

Insert diskette to be read from in drive 1

Insert diskette to be written to in drive 2

Press any key.

The track numbers will be displayed as they are copied. After copying is complete, the following message will appear:

Disk copy complete.

Control then returns to the main menu.

Quit

When you choose the Quit function control is returned to the operating system.

NOTE

The equivalent copy and format capabilities can also be accomplished by using the COPY and MFORMAT functions contained on the Altos Diagnostic Executive diskette.

MPMSETUP

Introduction

The MPMSETUP program is not part of the ordinary installation procedures. It allows some system changes to be made without running GENSYS, and also provides some procedures that GENSYS does not supply. For example, it allows the console and printer baud rates or default names for the logical drives to be changed. Drive A can be assigned to the hard disk instead of the floppy disk.

The following is a sample of the MPMSETUP display:

```
0A>MPMSETUP <CR>
```

```
ALTOS MP/M II Setup Utility (Series 5 or 580-10) -- Version 3.0  
-----
```

```
Copyright 1982 Altos Computer Systems  
Licensed by Altos for use on Altos systems only
```

```
Reading SETUP.FIL from disk A.
```

```
CURRENT SETUP
```

```
System has parallel printer as #0, serial printer is #1
```

```
Consoles:
```

```
  Console #1: 9600 BAUD  
  Console #2 and #3: 9600 BAUD
```

```
Disk Names:
```

```
  Physical floppy 1 is disk A  
  First Hard disk, first logical drive is disk E  
  Virtual disk is disk F  
-----
```

```
Functions:
```


P - Printer setup	C - Console baud rate setup
N - Change default logical names	Q - Quit
U - Update the setup file	

Please select a function: [P]

MPMSETUP Functions

Before you run MPMSETUP, read the following information.

NOTE

The changes made with MPMSETUP do not take effect until the update function (menu selection U) is used. Changes are in effect when the system is again booted. If you exit from MPMSETUP without executing the update function, the system will remain unchanged. This is convenient in case of a mistake.

The following menu functions are provided. Note that default input to functions are contained in []. If you wish to use default values, simply press RETURN.

P - Printer Setup

Series 5 and 580-10 MP/M II version supports two printers, one serial and one parallel (Centronics or Centronics-type). The printers are numbered 0 and 1, and this function allows the user to specify which printer has precedence (low number).

N - Change Default Logical Names

This function allows you to choose the names for the various logical hard disk devices, floppy drives and virtual disk. Only one name per device is allowed and one of the names must be 'A'.

U - Update the Setup File

This function updates the Setup disk file with the changes that have been specified during the MPMSETUP session. To cancel the changes made during the session specify 'N' for No to the prompt:

Enter Yes to write SETUP.FIL, No to go to menu [Yes].

C - Console Baud Rate Setup

This function is used to set up the baud rates for the consoles. The baud rate values that are acceptable in this menu item are: 110, 300, 600, 1200, 2400, and 9600. The current baud rate setting is contained within [] and will remain unchanged by simply typing a RETURN.

Q - Quit

This function causes an exit from the MPMSETUP program. The prompt:

Normal Exit . . .

will be displayed prior to return to the MP/M II command level.

MPMSETUP Command Line Options

The disk drive that contains SETUP.FIL and the MPMSETUP functions can be specified on the command line. This allows the operator to either enter options more quickly or to put the options in a SUBMIT file.

The first option must be the drive letter (followed by a colon) for the disk that contains the SETUP.FIL. The other functions can be specified in any order, but the responses to the specific questions (e.g. baud rates) for a function must be specified in the correct order.

For example:

0A> MPMSETUP A: C 1200 300 U Y Q

This will read the SETUP.FIL from drive A and invoke menu item C (Console baud rate setup). It will then set console #1 to 1200 baud and console #2 to 300 baud. Next the SETUP.FIL on drive A will be updated. Note that this file is the MPMSETUP file. When the update is complete, the quit (Q) function will cause an exit from MPMSETUP. Control then returns to the MP/M Operating System command level.

NOTE

Even though MPMSETUP can read SETUP.FIL from any disk, SETUP.FIL must reside on disk A when the system is booted.

DISKSTAT

DISKSTAT generates information about floppy and hard disk I/O errors. It should be used whenever I/O errors are suspected. This file also displays the device name and physical attributes.

A temporary error is an I/O error that is successfully completed during a retry. If, after nine retries, the error still exists, a permanent error is declared.

The error counts are cumulative from power-on until the system RESET button is pushed or power is turned off. Each time the system is turned on, the error counts are set to 0, and will increment any time an I/O error occurs.

The following is an example of DISKSTAT execution:

```
0A>DISKSTAT <CR>
```

```
ALTOS DISK STATUS v1.00
```

```
Drive(s) A Floppy 80 Cylinders, 2 Heads, 9 Sectors Per Track  
0 Temporary Errors, 0 Permanent Errors
```

```
Drive(s) B Hard Disk 153 Cylinders, 4 Heads, 17 Sectors Per Track  
0 Temporary Errors, 0 Permanent Errors
```

MODIFYING THE SYSTEM WITH GENSYS

The GENSYS program is described in the MP/M II SYSTEM GUIDE. The USER'S GUIDE gives some background information. To modify the system, read this information carefully.

Changing The System To One Or Two Users

Altos Series 5 and 580-10 systems are generally set up for three users. To configure your system for use by less than three users is fairly simple. However, the SYSTEM GUIDE should be read before attempting the change.

For convenience, a short explanation of how to change the system for one user or two users is outlined below. This is supplementary information and does not replace the information in the MP/M II SYSTEM GUIDE.

1. Bring up MP/M II and run GENSYS.
2. Only two items need to be changed. All other questions can be answered by pressing the RETURN key to confirm the default value shown.
3. The two entries that need to be changed are:

- a. "Number of TMPs (system consoles) (#3)?"
- b. "Number of User Memory Segments (#3)?"

If you wish to specify a two-user system, reply #2 to **BOTH** of these.

If you wish to specify a one-user system, reply #1 to **BOTH** of these.

Figure 3-1 shows a sample run of how GENSYS is used to change the system to a one-user system. It is a sample only, and some of the details and defaults may be different.

Virtual Disk

One reason to change the system to fewer users is that MP/M II can make available a virtual disk called disk E. This is a memory device of up to 96 kilobytes of storage capacity. If fewer than three banks of memory is used in the system, the remaining bank(s) are available for a virtual disk. The virtual disk has a capacity of 48 Kbytes for each bank not used by MP/M II. If three banks are in use, the virtual disk has zero bytes of storage.

This disk can be used as a real disk of the same capacity with one important exception. When the power is switched off, or when the power goes off unexpectedly, the contents of the disk are erased. A good use for the virtual disk is temporary storage for work files. These files would not normally be saved so the power off problem would not be noticed. When working with important information in virtual disk files, transfer a copy to an actual disk from time to time for security. The advantage of the virtual disk is that because all accesses to it are actually memory accesses, the disk is very fast.

NOTE

By using the MPMSETUP utility, the name of the disk can be changed. For example, it could be changed to disk M, for Memory.

GENSYS For A One Or Two Bank System

Figure 3-1 shows a sample run of GENSYS. <CR> stands for a carriage return entered by the user. The default options (shown inside parentheses) are entered by pressing the RETURN key. Only two items are changed, these are required to reconfigure from three system consoles to one and from three memory banks to one. These changes are flagged by ** at the right.

To change a two-console, two-bank system, enter #2 in place of #1

at the two places flagged.

NOTE
Resident System Processors

This note applies only for those users doing advanced system configuration. When including Resident System Processors, be careful that the base address of bank 0 does not go below 4000H.

```

0A>GENSYS <CR>
00:00:16 A:GENSYS .COM

MP/M II V2.1 System Generation
Copyright (C) 1981, Digital Research

Default entries are shown in (parens).
Default base is Hex, precede entry with # for decimal.

Use SYSTEM.DAT for defaults (Y) ? <CR>
Top page of operating system (FF) ? <CR>
Number of TMPs (system consoles) (#3) #1 <CR> **
Number of Printers (#2) ? <CR>
Breakpoint RST (07) ? <CR>
Enable compatibility attributes (Y) ? <CR>
Add system call to user stacks (Y) ? <CR>
Z80 CPU (Y) ? <CR>
Number of ticks/second (#60) ? <CR>
System drive (A:) ? <CR>
Temporary file drive (A:) ? <CR>
Maximum locked records/process (#16) ? <CR>
Total locked records/system (#32) ? <CR>
Maximum open files/process (#16) ? <CR>
Total open files/system (#32) ? <CR>
Bank switched memory (Y) ? <CR>
Number of user memory segments (#3) ? #1 <CR> **
Common logging at console (Y) ? <CR>

SYSTEM    DAT    FF00H    0100H
TMPD      DAT    FE00H    0100H
USERSYS   STK    FD00H    0100H
XIOSJMP   TBL    FC00H    0100H

Accept new system data page entries (Y) ? <CR>

RESBDOS   SPR    F000H    0C00H
XDOS      SPR    CE00H    2200H

Select Resident and Banked System Processes:

ABORT     RSP    (N)    ?    <CR>
MPMSTAT   RSP    (N)    ?    <CR>
SCHED     RSP    (N)    ?    <CR>
SPOOL     RSP    (N)    ?    <CR>

BNKXIOS   SPR    AE00H    1F00H
BNKBDOS   SPR    8B00H    2300H
BNKXDOS   SPR    8900H    0200H
TMP        SPR    8500H    0400H
LCKLSTS   DAT    7400H    0300H
CONSOLE   DAT    7300H    0100H

```

Figure 3-1. Sample GENSYS Run

```
Enter memory segment table:
Base, size attrib, bank (87,79,80,00) ? <CR>

MP/M II SYS   8700H   7900H   BANK   00
MEMSEG  USR   0000H   C000H   BANK   01

Accept new memory segment table entries (Y) ? <CR>

**GENSYS DONE**

0A>
```

Figure 3-1. Sample GENSYS Run (continued)

MP/M II DIRECTORY

To display the MP/M II directory, enter the SDIR command as outlined below:

```
0B>
0B>SDIR
00:31:59 B:SDIR .PRL
```

Directory For Drive B: User 0

Name	Bytes	Recs	Attributes	Name	Bytes	Recs	Attributes
ABORT	PRL	4K	5 Sys RO	ABORT	RSP	4K	5 Sys RW
ASM	PRL	12K	74 Sys RO	BACKUP	COM	24K	169 Sys RW
BNKBDOS	SPR	12K	81 Sys RW	BNKXDOS	SPR	4K	7 Sys RW
BNKXIOS	SPR	12K	82 Sys RW	CONSOLE	PRL	4K	4 Sys RO
DDT	COM	8K	42 Sys RW	DIR	PRL	4K	14 Sys RO
DISKSTAT	PRL	4K	14 Sys RO	DSKRESET	PRL	4K	5 Sys RO
DUMP	PRL	4K	6 Sys RO	ED	PRL	12K	68 Sys RO
ERA	PRL	4K	15 Sys RO	ERAQ	PRL	4K	29 Sys RO
FTP	COM	4K	20 Sys RW	FTP12	COM	4K	20 Sys RW
FTP24	COM	4K	20 Sys RW	FTP31K	COM	4K	20 Sys RW
FTP41K	COM	4K	20 Sys RW	FTP48	COM	4K	20 Sys RW
GENHEX	COM	4K	6 Sys RW	GENMOD	COM	4K	10 Sys RW
GENSYS	COM	12K	74 Sys RW	INSTMPM	COM	24K	166 Sys RW
LIB	COM	8K	56 Sys RW	LINK	COM	16K	122 Sys RW
LOAD	COM	4K	14 Sys RW	MPM	SYS	32K	254 Sys RW
MPMFLDR	COM	8K	62 Sys RW	MPMHDLDR	COM	12K	66 Sys RW
MPMLDR	COM	8K	45 Sys RW	MPMSETUP	COM	16K	121 Sys RW
MPMSTAT	BRS	8K	33 Sys RW	MPMSTAT	PRL	8K	33 Sys RO
MPMSTAT	RSP	4K	3 Sys RW	MUTIL	COM	16K	111 Sys RW
PIP	PRL	12K	77 Sys RO	PRINTER	PRL	4K	8 Sys RO
PRLCOM	PRL	4K	21 Sys RO	RDT	PRL	8K	50 Sys RO
REN	PRL	4K	19 Sys RO	RESBDOS	SPR	4K	29 Sys RW
RMAC	COM	16K	106 Sys RW	SCHED	BRS	4K	12 Sys RW
SCHED	PRL	4K	20 Sys RO	SCHED	RSP	4K	3 Sys RW
SDIR	PRL	20K	137 Sys RO	SET	PRL	8K	60 Sys RO
SETUP	FIL	4K	1 Sys RW	SHOW	PRL	8K	60 Sys RO
SPOOL	BRS	4K	20 Sys RW	SPOOL	PRL	4K	17 Sys RO
SPOOL	RSP	4K	5 Sys RW	STAT	PRL	12K	78 Sys RO
STOPSPLR	PRL	4K	5 Sys RO	SUBMIT	PRL	8K	42 Sys RO
SYSTEM	DAT	4K	2 Sys RW	TMP	SPR	4K	11 Sys RW
TOD	PRL	4K	20 Sys RO	TYPE	PRL	4K	11 Sys RO
USER	PRL	4K	8 Sys RO	XDOS	SPR	12K	79 Sys RW
XREF	COM	16K	121 Sys RW				

```
Total Bytes = 516k Total Records = 2938 Files Found = 65
Total 1k Blocks = 400 Used/Max Dir Entries For Drive B: 65/ 177
```

0B>

To print a file directory, enter the command outlined below:

0A>SDIR [CONTROL] P

and press the RETURN key. To enter a [CONTROL] P, hold down the CTRL key and press P, then release both. After the directory is printed, enter another [CONTROL] P and press the RETURN key. (Otherwise, whatever shows on the console prints.) For additional information on [CONTROL] P, see the MP/M II User's Guide.