

SuperPak™

**Installation Supplement
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This supplement introduces you to the menu-driven SuperPak™ INSTALL program. This program installs simple configurations of SuperPak programs. INSTALL also adds the drivers you need for using expanded memory on Rampage/2™ and other AST expanded memory boards.

INSTALL places simple, basic configurations of the following SuperPak programs on your boot disk. You may customize these programs to suit your needs:

- The AST Expanded Memory software allows expanded memory specification (EMS) and enhanced expanded memory specification (EEMS) application programs to use your board's expanded memory.

The expanded memory software consists of two programs: REMM.SYS, the Rampage Expanded Memory Manager, is required to use memory beyond the disk operating system (DOS) limit of 640 kilobytes (KB) on your AST expanded memory boards. REX.SYS, the Rampage Expanded Memory Emulator, allows expanded memory to emulate the extended memory of a PC AT®.

- fASTdisk™, a RAM disk that emulates a fixed disk drive.
- SuperDrive™, 360 KB a RAM disk that emulates a 5 1/4" floppy diskette drive. (This feature is not available for the Personal System/2 (PS/2) Model 30 or PC AT.)
- SuperSpool™, a print spooling buffer that allows you to continue using your computer while you print.
- ASTCLOCK™, a Clock/Calendar program that keeps track of the time and date, even when your computer is off.

This feature does not apply to AST products that do not have a Clock/Calendar.

The INSTALL program copies the needed SuperPak program files onto the boot diskette and adds statements to the AUTOEXEC.BAT and CONFIG.SYS files on your boot disk or creates them if they do not already exist. AUTOEXEC.BAT is a batch file that contains commands that are automatically executed when you boot up your computer. CONFIG.SYS contains the software drivers that allow devices that are external to your computer (such as REMM, REX and FASTdisk) to function.

1.1 About this Supplement

This supplement is divided into three sections:

- Section 1 provides you with information you need to know before running INSTALL.
- Section 2 gives a step-by-step procedure for creating a simple SuperPak configuration using INSTALL.
- Section 3 outlines detailed procedures for creating and modifying each SuperPak program.

For information on the format notation used in this supplement and suggested additional reading, refer to your *SuperPak User's Manual*.

1.2 System Requirements

The minimum hardware requirements for installing SuperPak are an IBM PC, PC XT, PS/2 Model 30 or compatible with two floppy diskette drives or a floppy diskette drive and a hard disk. SuperPak is compatible with DOS 2.0, or later, or an MS-DOS equivalent on the PC, PC XT, PC AT, or PS/2 Model 30.

1.3 What You Need to Know Before You Start

This section tells you need before you begin installing SuperPak. A checklist appears in Section 1.3.1. Fill out the checklist as you answer each question.

A. In what computer are you installing SuperPak?

SuperPak is designed to work with the IBM PC, PC XT, PC AT, PS/2 Model 30 and compatible computers.

SuperDrive is designed to emulate a 360-KB 5 1/4" disk drive and is therefore not compatible with the Personal System/2 (PS/2) Model 30. Instead, you may use fASTdisk as a random access memory (RAM) disk.

B. How much conventional memory is in the computer?

Conventional memory is the memory up to 640 KB that can be directly addressed by DOS. You should have 640 KB installed in your computer before using expanded memory.

C. How much expanded memory is in the computer?

Expanded memory is memory above DOS's 640-KB limit. The REMM and REX drivers included in the SuperPak software allow you to use this additional memory.

You can use expanded memory with programs that meet EMS or EEMS specifications. Expanded memory can also be used for RAM disks and print spoolers (such as SuperDrive, fASTdisk and SuperSpool).

If there is not enough expanded memory to support the SuperDrive, fASTdisk or SuperSpool configuration you want, you may use conventional memory. However, this will cut into the amount of memory available for applications.

The SuperPak expanded memory drivers are only compatible with AST expanded memory boards. They are not compatible with boards from other manufacturers.

D. Which board(s) do you have installed in your computer?

The type of boards you have in your computer will determine which SuperPak utilities you would like to use.

If you have an AST expanded memory board (such as Rampage/2 or Advantage/2), you must install the AST Expanded Memory software. You may also install the fASTdisk and SuperDrive (for PC and PC XT only) RAM disks and the SuperSpool print spooler.

If you have an AST board with a Clock/Calendar (like SixPakPremium™), you may install the ASTCLOCK utility. Do not use ASTCLOCK with other manufacturer's Clock/Calendars (including the PC AT's or PS/2's built-in Clock/Calendar).

In order to use SuperSpool, your computer must have a printer port (either serial or parallel). If you have a serial printer, you must direct the output from a parallel to a serial port. (See the *SuperPak User's Manual*.)

E. Which SuperPak utilities do you want to use?

If you have an AST expanded memory board, you must run the SuperPak installation program to install the AST Expanded Memory software that make expanded memory available. You may also install some of the other optional SuperPak accessories:

fASTdisk is a RAM disk that can run in expanded memory. The size of your RAM disk depends on how much memory you have installed.

SuperDrive is a program that emulates in RAM a 5 1/4" floppy disk drive. It is not available on the PC AT or PS/2 Model 30. On the PC and PC XT, you must set your system board switches to indicate the number of drives. (See the AST board's user's manual.)

SuperSpool is a print spooler that can run in expanded memory. You will be able to install SuperSpool if you have sufficient memory.

ASTCLOCK is a utility program that works with Clock/Calendars on AST boards. Do not use it with other manufacturer's Clock/Calendars.

F. Do you have RAM disks and print spoolers already installed on your boot disk?

If so, you must remove them before installing SuperPak.

G. Do you have AUTOEXEC.BAT and CONFIG.SYS files on your boot disk?

AUTOEXEC.BAT and CONFIG.SYS are files that set your system's configuration upon booting up. If AUTOEXEC.BAT and CONFIG.SYS files do not already exist on your boot disk, the SuperPak INSTALL will create them for you.

If those files do already exist on your boot disk, any existing statements not changed by the new installation will remain. INSTALL appends its statements to the end of existing AUTOEXEC.BAT and CONFIG.SYS files. For example, if you have an AUTOEXEC.BAT file set up to log you onto a local area network (LAN), INSTALL will add the necessary SuperPak statements while leaving your network commands alone.

If you run the INSTALL program more than once and specify the same configuration, the CONFIG.SYS and

AUTOEXEC.BAT files will contain duplicate entries. You should delete the unwanted duplications using a text editor such as EDLIN.

1.3.1 Configuration Checklist

- A. In what computer are you installing SuperPak?
 PC PC XT PC AT PS/2 Model 30
- B. How much conventional memory is in the computer?
_____ KB (640 KB maximum.)
- C. How much expanded memory is in the computer?
_____ KB
- D. Which board(s) do you have installed in your computer?

Expanded memory boards? Yes No

Name	Amount of Memory
------	------------------

AST Clock/Calendar installed? Yes No

Printer port installed? Yes No

Check which port(s) is used for the printer:

- | | |
|-------------------------------|-------------------------------|
| <input type="checkbox"/> LPT1 | <input type="checkbox"/> COM1 |
| <input type="checkbox"/> LPT2 | <input type="checkbox"/> COM2 |
| <input type="checkbox"/> LPT3 | |

- E. Which SuperPak utilities do you want to use?
- fASTdisk
 - SuperDrive (not available for PS/2 Model 30 or PC AT)
 - SuperSpool
 - ASTCLOCK

F. Do you have RAM disks and print spoolers already installed on your boot disk?

Yes No

G. Do you have AUTOEXEC.BAT and CONFIG.SYS files on your boot disk?

Yes No

1.3.2 Memory Requirements

An important consideration in installing SuperPak is the amount of memory in your computer. For example, if you wish to use the following SuperPak utilities:

- One 512-KB fASTdisk.
- One 360-KB SuperDrive.
- One 64-KB SuperSpool.

You would need a minimum of 936 KB of memory available, not counting memory needed for an application programs. You can skip over creating a fASTdisk, SuperDrive, or SuperSpool, if you wish. However, you must install REMM.SYS in order to let your programs use the expanded memory of Rampage/2 or other AST expanded memory card.

NOTE

Before you install fASTdisk, SuperDrive, or SuperSpool on your boot disk, be sure to remove any RAM disk or print spooler programs that you might already have on your boot disk.

NOTES

This section shows you how to run the SuperPak INSTALL program. The configuration shown here should apply for most users. If you need to modify your configuration or want more detailed information, see Section 3 of this supplement. For detailed information on each of the SuperPak programs, see the *SuperPak User's Manual*.

NOTE

All SuperPak files may not pertain to your particular AST product. Your SuperPak diskette contains a README file that describes which files are applicable to your product. To display this file, enter the following command at the DOS prompt for the drive containing your SuperPak diskette:

TYPE README <Enter>

For more information on SuperPak software, see your *SuperPak User's Manual*. For more information on AST expanded memory software, see Section 3 of this supplement.

2.1 Starting the INSTALL Program

To start the INSTALL program, follow these steps:

STEP 1

Back up the SuperPak diskette: Make a backup copy of the SuperPak diskette using the DOS COPY command. Store the master diskette in a safe place. You can then use the master diskette to back up your software if your working disk is lost or damaged.

If you are unsure about how to COPY a file, consult your *DOS Manual*.

STEP 2

Prepare a DOS system disk: You can either install SuperPak software on your existing DOS boot diskette or hard disk, or you can create a new boot disk. To create a new boot diskette, format a blank diskette by entering the following DOS command from a disk or diskette drive where DOS files are present:

FORMAT n: /s <Enter>

where *n*: represents the diskette drive where the blank diskette resides.

If you want to boot from your hard disk, make sure the file **COMMAND.COM** is in your root directory.

STEP 3

Insert DOS system disk in drive B: or change to root directory for hard disk: If you want to boot from a floppy diskette, insert the DOS system disk you made in STEP 2 into drive B:. If you want to boot from the hard disk, make sure the root directory is the default.

STEP 4

Start the program: With the backup copy of your SuperPak diskette in the default drive, enter this command after the DOS prompt:

INSTALL <Enter>

NOTE

To ensure proper operation, run **INSTALL** from DOS, not from another program.

The Initial INSTALL screen shown in Figure 2-1 appears:

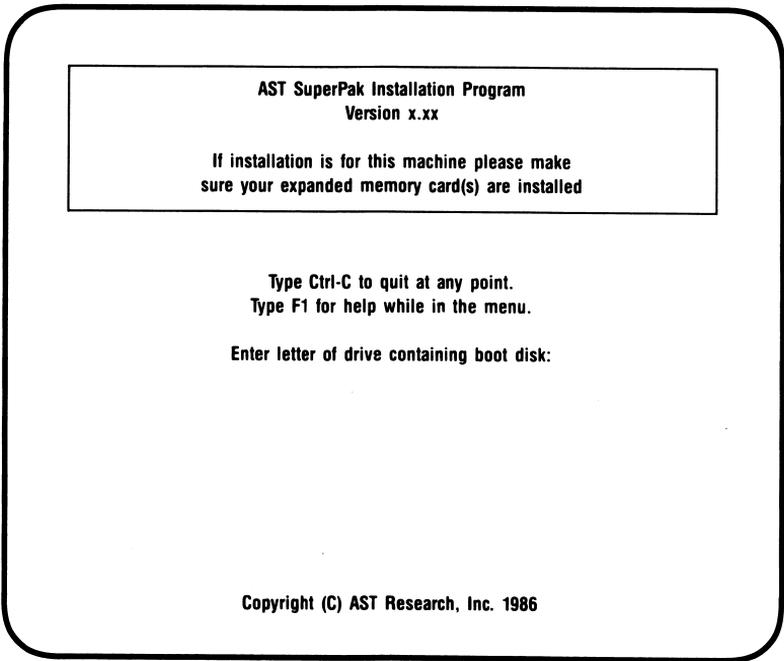


Figure 2-1. Initial INSTALL Screen.

STEP 5

Enter letter of drive containing the boot diskette: After the prompt, enter the letter of the drive containing the DOS system disk you created in STEP 2 (or the letter for your hard drive).

STEP 6

Identify the type of display adapter you are using: You will be asked which display adapter is installed in your computer. This question allows INSTALL to avoid conflicts with the memory area used by your video card.

If you are using INSTALL to configure a boot disk for a computer other than the one you are using now, identify the type of display adapter for that machine.

The following question will then appear on your screen:

Is your video card one of the following (Y/N)?

- IBM Monochrome Adapter or compatible
- Hercules Graphics Adapter or compatible

Press **Y** if you have one of these video adapters in your PC, PC XT, or PC AT, or if you have a PS/2 Model 30 with a monochrome monitor. Otherwise, press **N** and this line will appear:

- IBM Color Graphics Adapter or compatible

Press **Y** if you have this adapter in your PC, PC XT, or PC AT, or if you have a PS/2 Model 30 with a color monitor. Otherwise, press **N** and this line will appear:

- IBM Enhanced Graphics Adapter or compatible

Press **Y** if this card is installed in your PC, PC XT, or PC AT.

Your screen will then display this question:

Is installation for this machine (Y/N)?

The amounts of conventional and expanded memory configured for your system automatically appear at the bottom of the screen. For conventional memory, both the total amount and the remaining amount that has not been allocated are shown.

The amount of extended memory shown refers to expanded memory that emulates extended memory. As you progress, you will notice that as extended memory is allocated, it may be subtracted from expanded memory. This indicates that extended memory is "borrowing" from expanded memory (that is, expanded memory is emulating extended memory).

2.2 Installing Options

A step-by-step procedure follows for installing the sample configuration described above (one fASTdisk, one SuperDrive, one SuperSpool, and expanded memory manager software). If you do not wish to install a SuperPak utility, skip to the next step.

STEP 1

Install fASTdisk: (If you do not wish to install a 512-KB fASTdisk, go directly to STEP 2.) When the Main INSTALL menu appears, the fASTdisk option is highlighted. To install one 512-KB fASTdisk (the default memory size), press < **Enter** > once. The screen changes to indicate you have installed one fASTdisk in its default configuration.

NOTE

If you accidentally press < **Enter** > more than once, you will install a second fASTdisk. To delete the second fASTdisk, press the down-arrow to highlight the second fASTdisk listing and press < **Del** > .

STEP 2

Install SuperDrive: (If you do not wish to create a SuperDrive, go to STEP 3. SuperDrive is not available for the PC AT or

PS/2 Model 30.) To install a 360-KB SuperDrive, press the right-arrow to highlight the SuperDrive option. Press < **Enter** > once. A line will appear describing the SuperDrive you have created. It lists the memory size of the SuperDrive (which should be 360 KB) and the letter designation of the SuperDrive.

The letter designation for the SuperDrive you have created should be the next unused letter after your existing diskette and disk drives. For example, if you have two floppy drives, A: and B:, then your SuperDrive should be designated as C:. If you have two floppy drives (A: and B:) and a hard drive C:, then your SuperDrive should be designated as D:. If the letter provided by INSTALL is not appropriate for your configuration, then you will have to "edit" the SuperDrive you have created. To edit your SuperDrive, highlight the SuperDrive you have created, then press < **Enter** > to invoke the INSTALL edit box. Select the device letter parameter in the edit box by pressing the down arrow key. Then press the right- or left-arrow key to select the device letter you wish to use. Once the correct letter appears, press < **Esc** > to exit the edit box, leaving your SuperDrive with the new device letter you have selected.

STEP 3

Install SuperSpool: (If you do not wish to create a SuperSpool buffer for a parallel printer, go to STEP 4). To create a 64-KB SuperSpool buffer, press the right-arrow to highlight the SuperSpool option. Press < **Enter** > once.

STEP 4

Install Expanded Memory Manager: The AST Expanded Memory option lets you install the REMM.SYS and REX.SYS expanded memory software. If the message "REMM.SYS installed" appears below the AST Expanded Memory option, the REMM.SYS and REX.SYS software will be installed. If the message "REMM.SYS not installed" appears, you can change it to "REMM.SYS installed" by pressing the right-arrow key to highlight "AST Expanded Memory", then pressing < **Enter** > .

2.3 Save the Installation

To save the installation on your boot disk, follow the procedure below.

STEP 1

Save the configuration: Exit the Install program by pressing **< Esc >**. This question appears at the bottom of your screen:

Do you want to quit (y/n)?

Press **Y**. You will see this question:

Do you want to save configuration (y/n)?

Press **Y**. These messages appear at the bottom of the screen:

Writing CONFIG.SYS to x:...

Writing AUTOEXEC.BAT to x:...

where x: is the drive containing the boot disk.

STEP 2

Copy utility files to boot disk: The screen clears, then shows this message:

For the configuration process to be complete, the following SuperPak utility files need to be present on your boot disk:

The above message is followed by a list of files necessary to install your SuperPak software, and this question is displayed:

Do you want these files copied to your boot disk (Y/N)?:

Press **Y**. Place your SuperPak diskette in drive A: if it is not already there. The following message will appear:

Enter the letter of the disk drive containing your SuperPak software:

Enter **A**.

This concludes the procedure for creating a sample SuperPak boot disk. You will now want to copy your application software to the disk. You must reboot the system with your new boot diskette before you can use expanded memory (and any fASTdisk, SuperDrive RAM disks, or SuperSpool print spooler you have created). If you a PC or PC XT and have added a SuperDrive RAM disk, be sure that your system board switch is set for the total number of diskette drives you have, including the new SuperDrive you have created. (See the AST board's user's manual for instructions on setting the system board switch.)

NOTES

This section provides more advanced information on how to use the INSTALL program, including step-by-step details on how to modify the default operating parameters for each SuperPak program. You should read Section 2 of this supplement before proceeding.

You will have to modify your AUTOEXEC.BAT and/or CONFIG.SYS files (using a text editor) after running INSTALL if you want to send printer output to a serial (not parallel) port, or if you want to use advanced parameters for the SuperPak software. The *SuperPak User's Manual* discusses the SuperPak utilities in greater detail.

3.1 Using INSTALL

For your convenience, INSTALL uses a screen and keyboard interface design similar to popular spreadsheet programs:

The main SuperPak INSTALL menu offers several options (including SuperDrive, SuperSpool, and fASTdisk). To install an option on your boot disk (such as a SuperDrive), you must first select that option by highlighting it, then create the highlighted option by pressing the <Enter> or <Ins> key. When you exit the INSTALL program, all the options you have created are saved on your boot disk.

- The currently selected option is highlighted in reverse video. To move from one option to another, press the right- or left-arrow keys on the numeric keypad to the right of your keyboard.
- Once you have selected (highlighted) an option, you create that option by pressing the <Enter> or <Ins> key.

- Press **<F1>** to bring up a help screen that corresponds to the currently highlighted option.
- Press **<Ctrl>-<C>** to abort the INSTALL program without changing your AUTOEXEC.BAT or CONFIG.SYS files.

If you want to modify the default parameters (such as memory size) for an option you have created, then you need to call up the INSTALL edit box after you have created the option. This is applicable only to the fASTdisk, SuperDrive, and SuperSpool options.

- To call up the INSTALL edit box, highlight the created option you want to modify (for example, one of two fASTdisks you may have created). After this, press **<Enter>** to invoke the edit box.
- The edit box presents the parameters you can change for the created option you are editing. Select the parameter you want to change by pressing the up- or down-arrow key. If the parameter requires a numeric value, you can enter a new value. If the parameter is for a memory type, device letter or device name, you can press the right- or left-arrow key to select from the available parameters.
- To exit the edit box once you have set the parameters as you want them, press **<Esc>**.
- The cursor appears as an underline character when an alphanumeric entry is required from you.

If you want to delete an option, highlight the option you wish to delete (such as fASTdisk). Then press the up- or down-arrow key to select (highlight) the particular created option you want to delete. Next press the **** key to delete the highlighted created option. Once you have installed and configured your SuperPak options, you can choose to save the installation you have created. When this is done, INSTALL modifies the

AUTOEXEC.BAT and CONFIG.SYS files on your boot disk. If those files do not already exist on your boot disk, INSTALL will create them for you. If those files do already exist on your boot disk, any existing statements not changed by the new installation will remain. INSTALL appends its statements to the end of existing AUTOEXEC.BAT and CONFIG.SYS files.

AUTOEXEC.BAT is a batch file that contains commands that are automatically executed when you boot up your computer. The CONFIG.SYS file installs the software drivers that allow devices that are external to your computer (such as REMM, REX and fASTdisk) to function.

INSTALL first creates fASTdisks, SuperDrives, and the SuperSpool from expanded memory that is emulating extended memory, then uses conventional memory if available expanded memory is exhausted. If you create a device that is larger than available expanded memory, this message is displayed at the bottom of the screen:

Not enough extended memory--switching to conventional

NOTE

The term "extended memory" in the INSTALL program refers to expanded memory that emulates extended memory (such as the PC AT provides).

Each device can be composed of only one memory type (extended or conventional). INSTALL allocates available expanded memory as extended memory only as necessary to create the device.

3.2 Running the INSTALL Program

Go to Section 2.1 for full instructions on how to start the INSTALL program running.

3.3 Installing SuperPak Software for Another System

After you have started running the INSTALL program (as described in Section 2.1 of this supplement), you will be presented with the following question:

Is installation for this machine (y/n)?:

Press **N** if you are installing SuperPak software for another computer. This causes INSTALL to display these questions about the PC for which you are installing software:

Is your computer a PC AT or AT-compatible (Y/N)?

Enter amount of conventional memory in K bytes:

Enter amount of extended memory in K bytes:

Enter amount of expanded memory in K bytes:

Enter number of floppies and RAM diskettes (1-4):

These amounts are automatically determined by the INSTALL program if you answered "Y".

Is your computer a PC AT or AT-compatible (Y/N)?: Press **Y** if you are installing software for a PC AT or compatible (like the AST Premium/286). Press **N** if you are installing software for a PC that is not a PC AT. The PS/2 Model 30 is *not* AT-compatible.

Enter amount of conventional memory in kilobytes: Conventional memory (as opposed to expanded or extended memory) is the memory between 0 and 640 KB.

Enter the number of kilobytes (from 0 to 640) of conventional memory for the computer whose software you are installing (including memory on other expansion boards). Pressing **<Enter>** is equivalent to entering "0".

Enter amount of extended memory in kilobytes: If you are using REMM, enter the number of kilobytes (from 0 to 15360) of actual,

physical extended memory for the computer whose software you are installing. Extended memory (not expanded memory) is the non-paged memory in the 1 to 16 megabyte range. Pressing **< Enter >** is equivalent to entering "0".

Enter amount of expanded memory in kilobytes: Enter the number of kilobytes (from 0 to 8192 -- 8 megabytes of expanded memory) for the computer whose software you are installing. The amount of expanded memory is the total amount of memory on your AST expanded memory product that is not allocated as conventional or extended memory.

For example, if you have a 2-MB AST board and you have allocated 384 KB of the board's memory as conventional memory, enter "1664" (2048 minus 384) for the amount of expanded memory.

Expanded memory (as opposed to conventional or extended memory) is also known as "paged memory", and is available for paging or extended memory emulation. Pressing **< Enter >** is equivalent to entering "0".

EXAMPLES

Here are some examples of how you would supply the requested memory amounts for several different configurations:

- Your PC has 256 KB of system memory, a 384-KB SixPakPlus board, and a 1-MB Rampage/2 board. You have allocated all of Rampage/2's memory as expanded. Enter these parameters:

Conventional memory: **640**

Extended memory: **0**

Expanded memory: **1024** (1 MB)

- Your PC XT has 256 KB of system memory and a 2-MB Rampage/2 board. You have allocated 384 KB as

conventional memory and 512 KB as extended memory.
Enter these parameters:

Conventional memory: **640**

Extended memory: **512**

Expanded memory: **1152** -- (2048 minus 512 minus 384)

- Your PS/2 Model 30 has 640 KB of system memory and a 2-MB Rampage/2 board. You have allocated 1024 KB as conventional memory and all remaining Rampage/2 memory as expanded memory. Enter these parameters:

Conventional memory: **640**

Extended memory: **1024**

Expanded memory: **1024** -- (2048 minus 1024)

Enter number of floppies and RAM diskettes (1-4): Enter the number (from 1 to 4) of floppy diskettes (including random access memory (RAM) floppy diskettes, such as SuperDrive), then press <Enter>.

3.4 INSTALL Main Menu

Once you have installed all the questions in the initial INSTALL screen (described in Section 2.1), the Main INSTALL menu shown in Figure 3-1 appears.

As you progress, you will notice that as extended memory is allocated, it may be subtracted from expanded memory. This indicates that extended memory is "borrowing" from expanded memory (that is, expanded memory is emulating extended memory). You can install the programs on the main menu using the keys as described in Section 3.1. Detailed step-by-step procedures follow for installing and modifying each SuperPak program.

3.5 Installing fASTdisk

This option allows you to create up to two RAM fixed disk drives (default size: 512 KB each).

To create a fASTdisk:

1. Press the right- or left-arrow key to highlight "fASTdisk".
2. Press < **Enter** > or < **Ins** > once for each fASTdisk you want to create. If you press < **Enter** > more than twice, this message will appear at the bottom of the screen:

Maximum of two fASTdisks allowed

If extended memory is exhausted, the memory totals in the lower right corner of the screen (Figure 3-1) will show 512 KB subtracted from expanded memory, (and added to extended memory) each time you create a fASTdisk. This indicates that fASTdisk is using expanded memory that is emulating extended memory.

To change the size or memory type of a fASTdisk:

1. Press the right- or left-arrow key to highlight "fASTdisk".
2. Press the down-arrow key to highlight the fASTdisk you want to modify (Figure 3-2 shows fASTdisk "1" highlighted).

more than four digits. This message will appear at the bottom of your screen if you enter a non-numeric character:

Input must be a decimal digit

To change the memory type: Press the right- or left-arrow key to select the memory type ("Conventional" or "Extended") you want the fASTdisk to use.

6. Press **<Esc>** to exit the edit box. Notice that the memory allocation at the lower right corner of the screen changes to reflect changes you have made.

To delete a fASTdisk:

1. Press the right- or left-arrow key to highlight "fASTdisk".
2. Press the down-arrow key to highlight the fASTdisk you want to delete.
3. Press **** -- the fASTdisk will disappear from the screen.

3.6 Installing SuperDrive

This option allows you to create up to three 360-KB RAM floppy disk drives (depending on PC system board switch settings for the number of floppy drives). SuperDrive is not available for the PS/2 Model 30.

To create a SuperDrive:

1. Press the right- or left-arrow key to highlight "SuperDrive".
2. Press **<Enter>** once for each SuperDrive you want to create.

Watch the memory totals at the lower right corner of the screen (see Figure 3-3). 360 KB is subtracted from expanded memory, and added to extended memory, each time you create a SuperDrive.

INSTALL assumes your PC has one floppy diskette drive installed (therefore the first SuperDrive will be B:). If you told INSTALL that your PC has one floppy installed (see the INSTALL initial screen shown in Figure 3-1) and you try to create a SuperDrive, this message will be displayed at the bottom of your screen:

Not enough disk devices to add SuperDrive

If, for example, you attempt to create two SuperDrives when you have entered "2" for the total number of floppies and RAM diskettes, this message would be displayed at the bottom of your screen:

Maximum of one SuperDrive allowed

To change the letter designation or memory type of a SuperDrive:

1. Press the right- or left-arrow key to highlight "SuperDrive".
2. Press the down-arrow key to highlight the SuperDrive you want to modify (Figure 3-3 shows SuperDrive B: highlighted).
3. Press < **Enter** > to invoke the edit box shown in Figure 3-3.

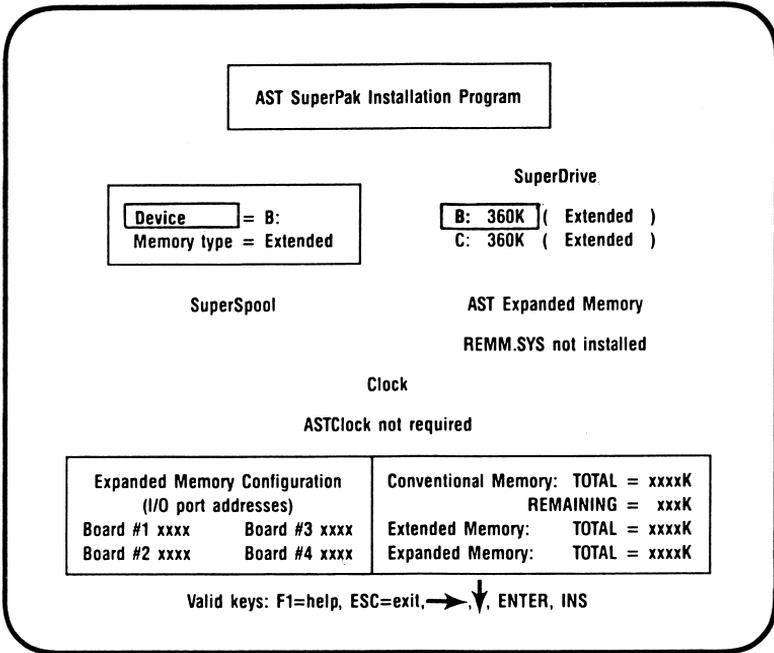


Figure 3-3. INSTALL with SuperDrive Edit Box.

4. Press the up- or down-arrow key to highlight "Device" or "Memory type" (Figure 3-3 shows "Device" highlighted).
5. To change the letter designation: Press the right or left-arrow key to select the letter you want (A:, B:, C:, or D:).

To change the memory type: Press the right- or left-arrow key to select the memory type ("Conventional" or "Extended") you want the SuperDrive to use.

6. Press < **Esc** > to exit the edit box. Notice that the memory allocation at the lower right corner of the screen now reflects changes you have made.

To delete a SuperDrive:

1. Press the left- or right-arrow key to highlight "SuperDrive".
2. Press the down-arrow key to highlight the SuperDrive you want to delete.
3. Press < **Del** > to delete the SuperDrive.

3.7 Installing the AST Expanded Memory Manager

This option automatically installs REMM.SYS and REX.SYS in your CONFIG.SYS file. REMM.SYS and REX.SYS are the software drivers that make your expanded memory available for expanded memory application programs and for emulation of extended memory. You must install REMM.SYS in order to use expanded memory with application programs, or to use memory beyond 640 KB for RAM disks and spoolers.

NOTE

The expanded memory manager software installed by the INSTALL program is appropriate for most applications. However, software developers who want to edit the REMM and REX command lines in the CONFIG.SYS file can use the parameters described in Appendix B of the *Rampage/2 User's Manual*. Make sure you're using the version of REMM.SYS that came with your board.

To install or delete AST expanded memory software:

1. Press the left- or right-arrow key to highlight "AST Expanded Memory Manager".
2. Press <Enter> to select "REMM.SYS installed" or "REMM.SYS not installed". If you press the downarrow key, this message will appear at the bottom of the screen:

Device can only be enabled or disabled

3.8 Installing the Clock/Calendar

This option installs the ASTCLOCK program. ASTCLOCK maintains the time and date even when your computer is off and provides that information to DOS whenever you boot up your PC.

You must have AST Clock/Calendar hardware in order to use the ASTCLOCK program, such as the Clock/Calendar on the SixPakPlus board. However, in order to use this version of the ASTCLOCK software, you would have to remove your existing ASTCLOCK software before adding the new one. ASTCLOCK is only compatible with AST Clock/Calendar hardware. Do not use it with Clock/Calendars from other manufacturers.

After installing the ASTCLOCK program, you must still initialize ASTCLOCK as described in the manual for the hardware product with a clock, such as the *SixPakPlus User's Manual*.

To install or delete ASTCLOCK software:

1. Press the left- or right-arrow key to highlight "Clock".
2. Press <Enter> to select "ASTCLOCK installed" or "ASTCLOCK not installed". If you press the down-arrow key, this message will appear at the bottom of the screen:

Device can only be enabled or disabled

3.9 Installing SuperSpool

This option allows you to create one RAM print spooler buffer. Whether or not you use INSTALL, your computer can accommodate only one SuperSpool.

You must edit the SUPERSPL command in the AUTOEXEC.BAT file if you are spooling to a serial printer port or you are changing any default parameter (see your SuperPak User's Manual for more details).

INSTALL will first attempt to create a SuperSpool buffer from available extended memory, then uses conventional memory. If you create a SuperSpool that is larger than available extended memory, INSTALL will create a buffer from the extended memory that is available. If no extended memory is available, this message is displayed at the bottom of the screen:

Not enough extended memory--switching to conventional

If no extended or conventional memory is available, this message is displayed at the bottom of the screen:

Not enough memory for spooler

The SuperSpool buffer is composed of only one memory type (extended or conventional). INSTALL allocates available expanded memory as extended memory to create a SuperSpool.

NOTE

The term extended memory here refers to expanded memory emulating extended memory.

To create a SuperSpool:

1. Press the left- or right-arrow key to highlight "SuperSpool".

2. Press **<Enter>** to create a SuperSpool.

If you press **<Enter>** again, this message will be displayed at the bottom of the screen:

Maximum of one spooler allowed

To change the device name, size, or memory type of the SuperSpool buffer:

1. Press the left- or right-arrow key to highlight "SuperSpool".
2. Press the down-arrow key to highlight the SuperSpool buffer ("LPT1:" is highlighted in Figure 3-4).
3. Press **<Enter>** to invoke the edit box shown in Figure 3-4.

many digits. This message will appear at the bottom of your screen if you enter a non-numeric character:

Input must be a decimal digit

To change the memory type: Press the left- or right-arrow key to select extended or conventional memory.

6. Press **<Esc>** to exit the edit box. Notice that the memory allocation at the lower right corner of the screen reflects any changes you have just made.

To delete SuperSpool:

1. Press the left- or right-arrow key to highlight "SuperSpool".
2. Press the down-arrow key to highlight "LPTx:".
3. Press **** to delete the SuperSpool.

3.10 Saving the Installation

1. Press **<Esc>**. This question will appear at the bottom of the screen:

Are you sure you want to quit (y/n)?

Press **Y** to exit INSTALL. Press **N** to return to the main INSTALL menu.

2. If you press **Y**, this question appears at the bottom of the screen:

Do you want to save configuration (y/n)?

Press **Y** to save the SuperPak software you have just configured using the INSTALL program. Pressing **N** exits INSTALL without making any changes.

3. If you save the configuration, these messages flash at the bottom of the screen:

Writing CONFIG.SYS to x:...
Writing AUTOEXEC.BAT to x:...

where **x**: is the drive containing the boot disk.

4. The screen will then clear and show this message:

For the configuration process to be complete, the following SuperPak utility files need to be present on your boot disk:

The above message is followed by a list of the files necessary to install your SuperPak software, and this question is displayed:

Do you want these files copied to your boot disk (Y/N)?:

5. If you press **Y**, your screen will display this message:

Enter the letter of the disk drive containing your SuperPak software:

Enter the letter of the drive that currently contains your SuperPak software. Your screen will then list the appropriate files as they are copied from the SuperPak diskette to your boot disk.

If there is an error copying SuperPak software to your boot disk, this message will be displayed:

Error copying utility files to drive x:

where x: is the letter of the drive containing the boot disk.

Check that the boot disk is not write-protected, that there is enough room on the boot disk for SuperPak files, that the SuperPak software is in the specified drive, and that the disk drives are closed.

6. If you press **N** (do not copy SuperPak files to the boot disk), or once the SuperPak files have been copied, this message appears on your screen:

Configuration is now complete.

You will need to reboot the system for your updated configuration to take effect.

7. Press **<Ctrl> - <Alt> - ** to reboot your PC. If you have installed one fASTdisk, one SuperDrive B:, and one SuperSpool buffer, and you have enabled AST memory manager software, your AUTOEXEC.BAT and CONFIG.SYS files will contain the following lines at the end of the file (assuming you did not change any default parameters. If you did, your actual information may be different.):

AUTOEXEC.BAT

```
superdrv b: /extm  
superspl lpt1: /extm
```

CONFIG.SYS

```
device = remm.sys /x = B000-BFFF  
device = rex.sys 936  
device = fastdisk.sys /extm
```

