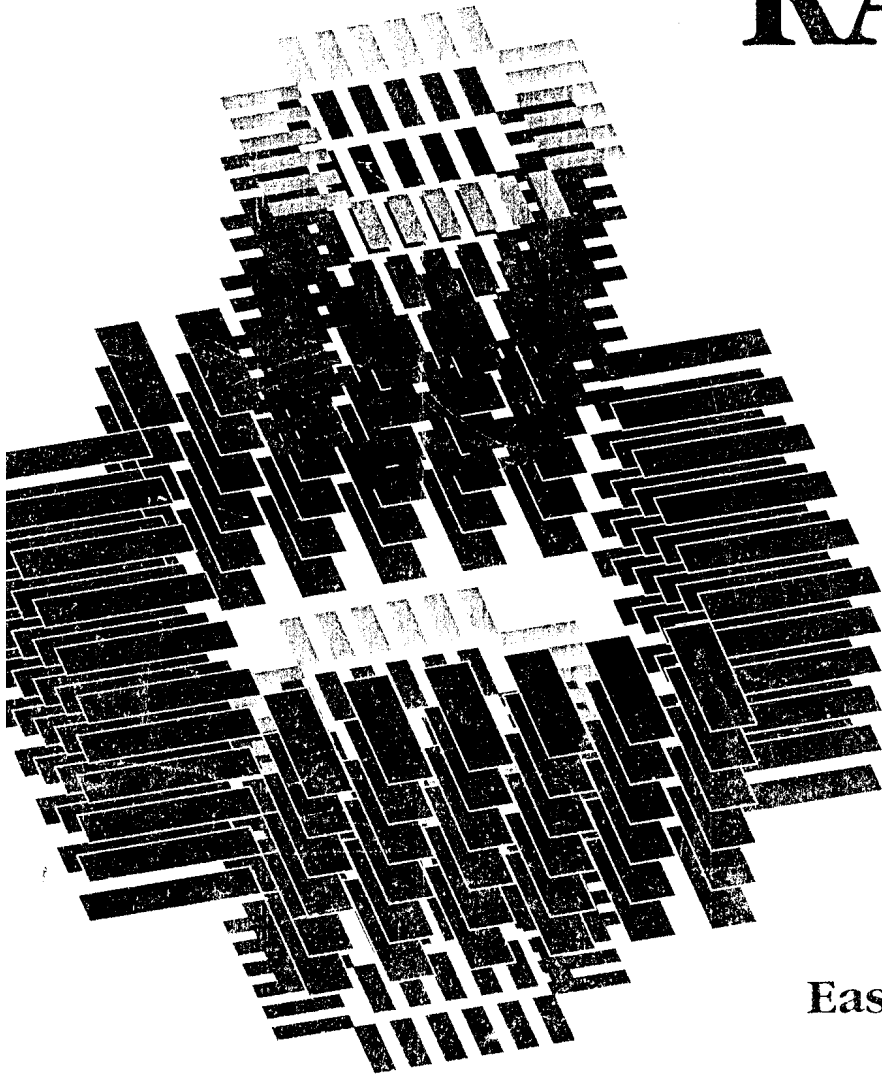


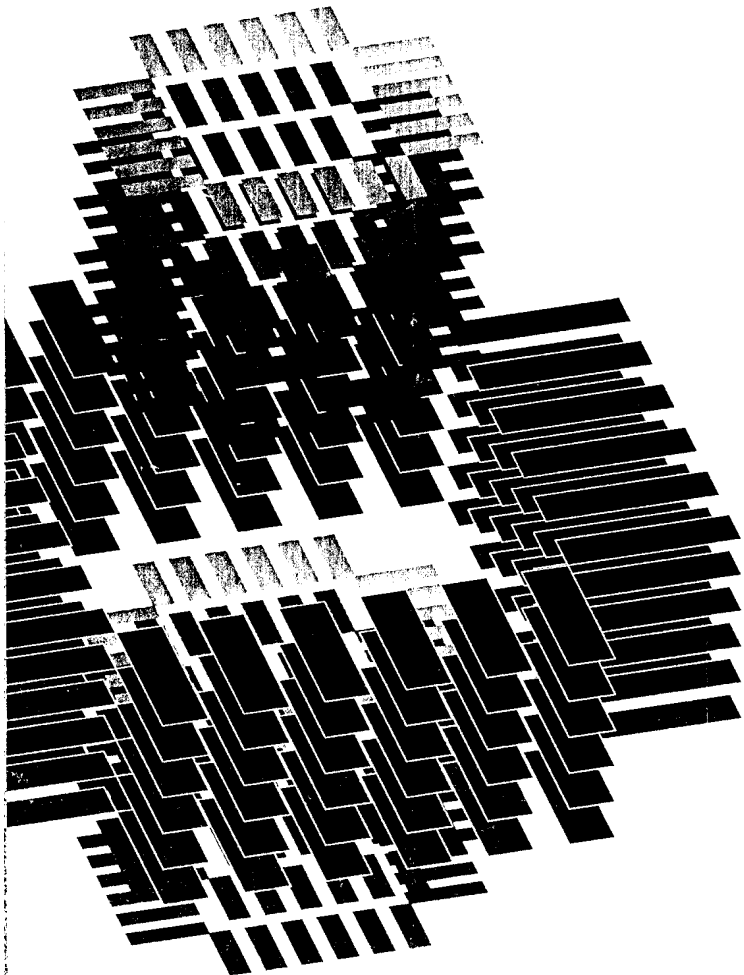
*Acculogic*

# RAMpAT!™



Easy Installation Guide





# RAMpAT!™

**Thank you** for selecting Acculogic's RAMpAT! memory expansion board. RAMpAT! lets you add all types of memory to your computer system. RAMpAT! can be used to backfill the system memory on your computer's motherboard to bring it up to the 640K limit, and to add extended and/or expanded (EMS) memory to go beyond 640K.

RAMpAT! is designed to be quick and easy to install. Installation of your RAMpAT! board involves four general steps:

## Step Description

1. Installing memory modules (SIMMs) on the RAMpAT! board.
2. Plugging the RAMpAT! board into your computer system.
3. Automatically setting up your computer system to include RAMpAT!'s added memory.
4. Installing the expanded (EMS) memory manager software. This step is not required if your software does not use expanded memory.

Just follow the simple instructions below to complete each of these four steps and you'll be up and running in minutes. If you do encounter problems, just give us a call. Our technical support staff will be glad to help.



## Before You Begin

Before you add your RAMpAT! board to your system, make sure that your system is properly configured and set up. To do this power your system up and verify that no errors are reported during the boot sequence. If errors are reported during the boot sequence, you must correct these errors prior to attempting to add the RAMpAT! board. The installation manual provided with your computer will explain how to run your computer's SETUP program to correct any configuration errors.

## STEP 1 Install Memory Modules (SIMMS)

Your RAMpAT! board uses industry standard Single-Inline-Memory-Modules (SIMMs), so you can add as much memory as you need.

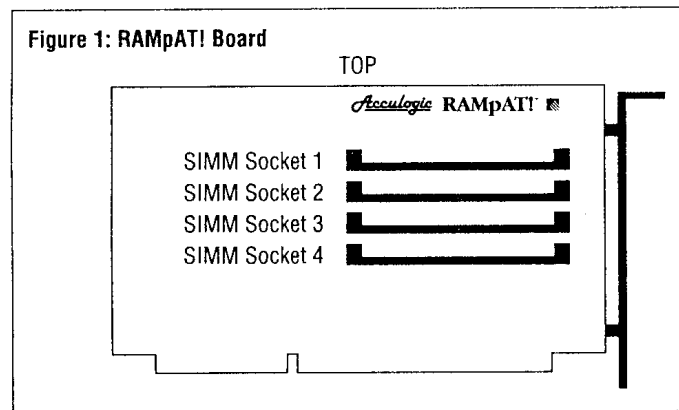
RAMpAT! uses either 1Megx9 or 4Megx9, 80 nanosecond SIMMs. You can put 1Meg and 4Meg SIMMs on the same board. However, SIMMs must always be installed in pairs: that is, you must add two 1Meg or two 4Meg SIMMs at the same time.

Table 1 below shows all the possible ways you can install SIMMs on the RAMpAT! board. RAMpAT! will not function properly unless your SIMMs are installed in one of the 5 configurations shown.

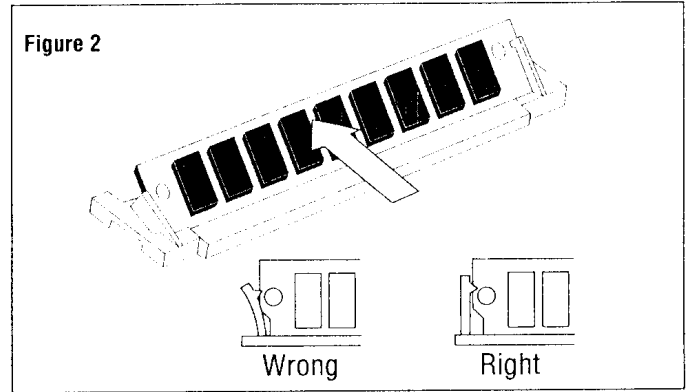
SIMM Socket				Memory Capacity
1	2	3	4	
1Meg	1Meg	None	None	2 Megabytes
1Meg	1Meg	1Meg	1Meg	4 Megabytes
4Meg	4Meg	None	None	8 Megabytes
1Meg	1Meg	4Meg	4Meg	10 Megabytes
4Meg	4Meg	4Meg	4Meg	16 Megabytes

### To Install SIMMS On Your Board:

1. Remove the RAMpAT! board from its packaging.
2. Lay the board on a flat surface with the RAMpAT! name at the top as shown in Figure 1.



3. Locate SIMM Socket 1 at the top of the board.
4. Refer to Table 1 to determine where you will be installing your SIMMs. RAMpAT! will only work with SIMMs installed as shown in Table 1, so make sure you install your SIMMs properly.
5. Install a SIMM in Socket 1 by placing the SIMM in the socket so that the metal contacts on the SIMM line up with the metal contacts in the socket. Then press the top of the SIMM back and down until the SIMM snaps in place in the socket (see Figure 2).



6. Install your second SIMM in Socket 2 in the same manner as described in step 4.
7. If you are installing four SIMMs, install the second pair of SIMMs in SIMM Sockets 3 and 4.

After you've put all your SIMMs on the board, double check your board to make sure:

- You have either two or 4 SIMMs installed. RAMpAT! won't work with 1 or 3 SIMMs.
- If you've only installed two SIMMs they must be in Sockets 1 and 2. Sockets 3 and 4 should be empty.
- If you've installed both 1Meg and 4Meg SIMMs on your board, then Sockets 1 and 2 must contain 1Meg SIMMs and Sockets 3 and 4 must contain 4Meg SIMMs.

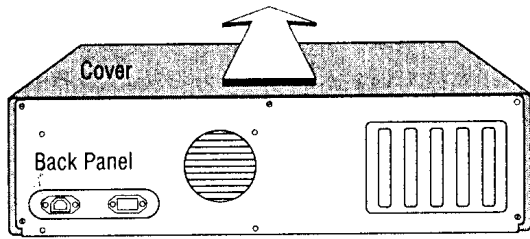
## STEP 2 Plug RAMpAT! into the Computer

**CAUTION:** Before beginning this step make sure you have disconnected the power cord and all other cables from your computer system. Failure to remove the power cord and other cables may result in electrical shock.

Install the RAMpAT! board in your computer system as follows:

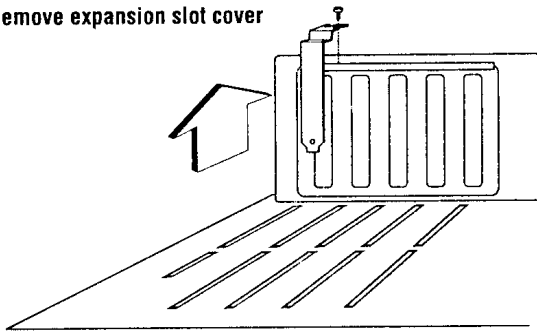
1. Make sure you've disconnected the power cord and all other cables from your system.
2. Remove the cover from your computer. For most systems you must remove 4-6 screws from the back of the computer system using an appropriate screw driver. Other systems have simple thumb screws that can be loosened by hand. After removing the screws, slide the cover forward and pull it off as shown in Figure 3.

Figure 3: Removing Computer Cover



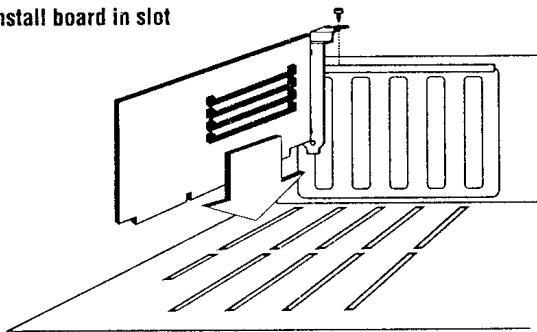
3. Next, locate one of the vacant, 16-bit expansion slots inside your computer
4. Remove the expansion slot cover from the vacant expansion slot in your computer (see Figure 4). Be sure to save the screw that holds the expansion slot cover in place. You will need it to secure the RAMpAT! board in the slot.

Figure 4: Remove expansion slot cover



5. Press the RAMpAT! board firmly into the expansion slot connectors as shown in Figure 5.

Figure 5: Install board in slot



6. Use the expansion slot cover screw removed in step 4 to secure the RAMpAT! board to your computer.
7. Replace your computer cover and all of the screws removed in step 2.
8. Re-connect the power cable and all other cables to your computer.

## STEP 3 Run The Automatic Setup

RAMpAT!'s automatic installation software will automatically set your computer up to recognize the added memory on your RAMpAT! board. To perform the automatic setup:

1. Place either the 3 1/2" or 5- 1/4" RAMpAT! Automatic Installation diskette into the "A:" drive of your computer.
2. Apply power to your computer and allow your computer to boot from the RAMpAT! Automatic Installation diskette.
3. RAMpAT! will be automatically added to your system. When the set up is complete, a screen similar to that shown below will appear:

RAMpAT Automatic Installation, Version 1.1 © 1990, Acculogic Inc.

Existing System Memory Size	=	640 K
Existing Extended Memory Size	=	+ 384 K
		-----
Existing Total Memory Size		1024 K
Next Starting Address	=	[ 1408 K]
RAMpAT Capacity	=	[ 2048 K]
Total System Memory	=	640 K
Total Extended Memory Size	=	2432 K
		-----
Total Memory Size		3072 K

-- Configuration Completed --  
Remove your Installation diskette  
Press CTRL + ALT + DEL to continue

4. Check the memory information displayed on the screen. It will show all of the memory installed in your system including memory on your computer's motherboard, memory on any other memory expansion boards installed in your system, and the memory added on the RAMpAT! board.
5. Remove the Automatic Installation diskette from your "A:" drive, and hold down the <Ctrl> and <Alt> keys and press the <Delete> key to reboot your system.



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## STEP 4 Install The Expanded (EMS) Memory Driver (optional)

Your RAMpAT! board is now fully installed in your system and ready to use. If you are using software that uses expanded memory (EMS memory) you will need to complete Step 4, and install the EMS software. If your software does not use expanded memory, your installation is complete.

The EMS Memory Driver is a software program that allows the RAMpAT! board to function as expanded memory. Expanded memory is used by many MS-DOS programs to go beyond the 640K memory limit imposed by DOS. If you are:

1. Using an operating system other than MS-DOS; or,
2. If your MS-DOS programs do not use EMS memory; or,
3. If you are running Windows 3.0 and all of your programs are Windows 3.0 applications.

You do not need EMS memory and you should skip this step.

You can allocate all or part of RAMpAT!'s total memory to be used as expanded memory. How much memory you allocate as expanded is entirely up to you. You need to review your software manuals to determine whether they use expanded (EMS) memory or extended memory, and allocate memory accordingly.

To install RAMpAT!'s EMS Memory Driver proceed as follows:

1. Place the Automatic Installation diskette in the "A:" drive of your computer.
2. Type: **A: INSTALL** and press the **<ENTER>** key.
3. The Install program will display the screen below:

COPY UTILITIES FROM A DISKETTE	
Path to copy from .....	[A:\]
Path to copy into .....	[C:\RAMUTIL]
↵ = Move curs.   Exc = Exit   F5 = Previous F1 = Help   Enter = Select   F6 = Next	

4. This screen shows the disk drive and the directory that will be used to save the EMS driver on your system's hard disk. Press the **<Enter>** key to confirm the drive, then press the **<Enter>** key to confirm the directory.

**NOTE:** You can change the drive and or directory to specify any drive or directory you wish by simply typing in the new drive and directory name.

5. The Install program will then display the following screen.

MAIN MENU	
<b>Setup Memory Manager</b>	
Save New Configuration	
↵ = Move curs.   Exc = Exit   F5 = Previous F1 = Help   Enter = Select   F6 = Next	

6. Press the **<Enter>** key to select "Setup Memory Manager".
7. The program will display a screen similar to this:

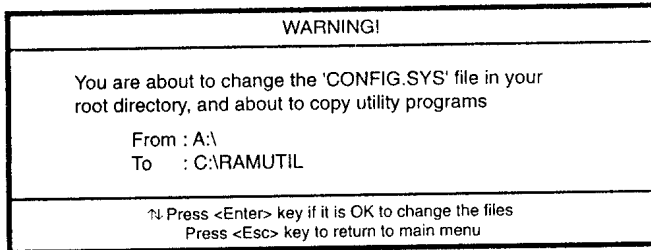
SETUP MEMORY CONFIGURATION	
Memory Manager .....	[ Yes]
Expanded (EMS) Memory Size .....	[ 1024 K]
Extended Memory Size .....	[ 1408 K]
System Memory Size .....	640 K
Total Memory Size .....	3072 K
↵ = Move curs.   Exc = Exit   F5 = Previous F1 = Help   Enter = Select   F6 = Next	

8. Use the **<F5>** and **<F6>** function keys to select (Yes) or deselect (No) installation of the memory manager, and increase or decrease the amount of memory to be used as expanded (EMS) memory. You can allocate all memory as expanded, all memory as extended or some memory as extended and some as expanded. The status information on the screen will show how much memory is available and how it has been allocated.
9. Once you have selected your desired amount of expanded memory, press the **<Esc>** to exit this screen.
10. The Install program will again display the following screen:

MAIN MENU	
Setup Memory Manager	
<b>Save New Configuration</b>	
↵ = Move curs.   Exc = Exit   F5 = Previous F1 = Help   Enter = Select   F6 = Next	

11. Now select "Save New Configuration" by moving the highlight bar over this selection and pressing the **<Enter>** key.
12. The Install program will automatically update the CONFIG.SYS file in the root directory of your hard disk. If you do not have a CONFIG.SYS file the Install program will automatically create one for you.

Before modifying and updating your CONFIG.SYS file, the Install program displays the following "Warning" screen:



13. Press the **<Enter>** key to complete the installation.
14. Before you can run expanded memory, you will have to reboot your system. Remove the Automatic Installation diskette from your "A:" drive and press **<Ctrl> <Alt> <Delete>** to reboot your system.

The installation is now complete and your RAMpAT! board will now function as expanded memory. You can load your software and begin to use your system.

## Reset-Normal-Lock Switch

At the top of the RAMpAT! board you will see a slide switch, with the markings RESET, NORMAL, & LOCK adjacent. Below is a brief description of these switch settings, as well as the procedure to install multiple boards.

**NORMAL:** In this position the board is fully functional. Unless you are installing multiple boards or are having memory conflicts, this is the position the board should be in at all times.

**RESET:** The RESET setting is only used to clear the RAMpAT! configuration and should **ONLY** be used in cases where installation of the RAMpAT! board causes conflicts with the operation of the system.

**LOCK:** Locking the RAMpAT! saves the current configuration of the board, but prevents it from being reconfigured so that multiple RAMpAT! boards may be installed. Use this position only when installing multiple boards.

## Installing Multiple Boards

Should you wish to install multiple RAMpAT! boards, follow this simple procedure:

1. Install your first RAMpAT! board as described previously.
2. Before installing the second RAMpAT! board, place the Reset-Normal-Lock switch on the first RAMpAT! board in the lock position.
3. Install your second RAMpAT! board, with its switch in the NORMAL position, following the steps outlined in this guide.
4. Continue the procedure as described in steps 1 & 2 to install up to 4 RAMpAT! boards.

## If You Run Into Problems

Should you encounter difficulty configuring or using the RAMpAT! memory board, here are a few things to try.

### RAMpAT! Sees No Memory During Configuration

1. Verify that your SIMM modules are installed properly, they are in pairs, seated well into the socket and snapped back into place.
2. Verify that the combination you have chosen is valid. Verify this using the Table in Step 1, Installing Memory Modules.
3. Be certain the slide switch at the top of the RAMpAT! board is in the NORMAL position.
4. Make sure the RAMpAT! board is well seated in a 16-bit system slot, the RAMpAT! will not work in an 8-bit slot.

### System Does Not See The RAMpAT! Memory

1. A "warm" boot (pressing **<Ctrl> + <Alt> + <Del>**) will not always display the system memory count. Turn your computer OFF, then ON to perform a "cold boot." The system should then count up through all of your memory.

### Memory or Parity errors

1. Verify the SIMMs are well seated and snapped into place.
2. Make sure the SIMMs are industry standard 1Mx9 or 4Mx9 modules, 80ns or faster. The dealer who sold you the SIMMs can answer that question.
3. If the errors persist, try new SIMM modules.

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