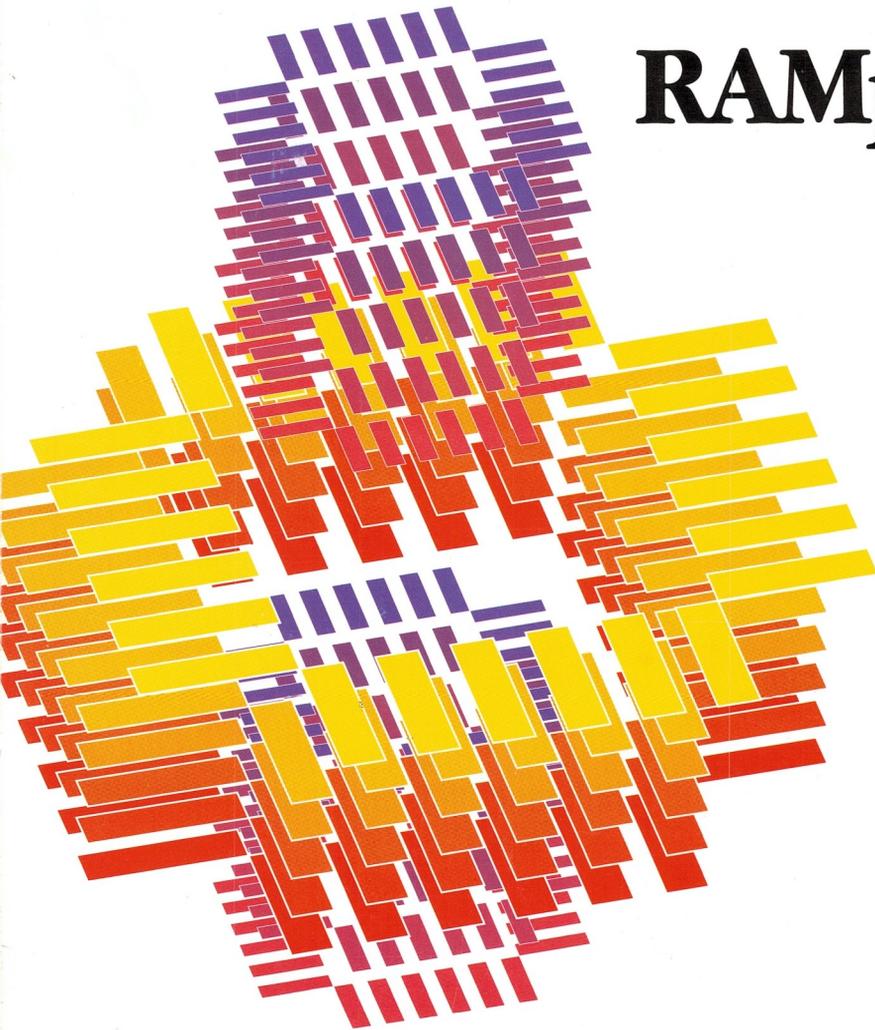




RAMpAT!™-Plus



Board Installation Guide



RAMpAT!™-Plus

Thank you for selecting Accuglogic's RAMpAT!-Plus memory expansion board. RAMpAT!-Plus lets you add all types of memory to your computer system. RAMpAT!-Plus 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 LIM 4.0 expanded (EMS) memory to go beyond 640K. RAMpAT!-Plus is designed to be quick and easy to install. Installation of your RAMpAT!-Plus board involves four general steps:

Step Description

1. Installing memory modules (SIMMs) on the RAMpAT!-Plus board.
2. Plugging the RAMpAT!-Plus board into your computer system.
3. Automatically setting up your computer system to include RAMpAT!-Plus's added memory.
4. Installing the expanded (EMS) memory manager software. Memory Manager installation described in the RAMpAT!-Plus Memory Manager Installation Guide. 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!-Plus 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!-Plus 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)

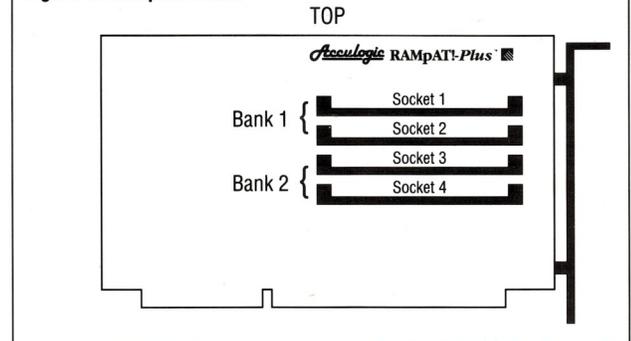
Your RAMpAT!-Plus board uses industry standard Single-Inline-Memory-Modules (SIMMs), to make it easy to add as much memory as you need. RAMpAT!-Plus uses either 1Megx9 or 4Megx9, 80 nanosecond SIMMs. You can put 1Meg and 4Meg SIMMs on the same board. However, SIMMs must always be installed in pairs: that is, you must add two 1Meg or two 4Meg SIMMs at the same time.

Each pair of SIMMs must be installed in two adjacent SIMM sockets called "banks". There are two possible banks on the RAMpAT!-Plus board as shown in Figure 1. The two SIMMs installed in either bank must be of the same type: i.e., both must be 4 Meg or both must be 1 Meg. 1 Meg or 4 Meg SIMM pairs can be installed in either bank.

To Install SIMMS On Your Board:

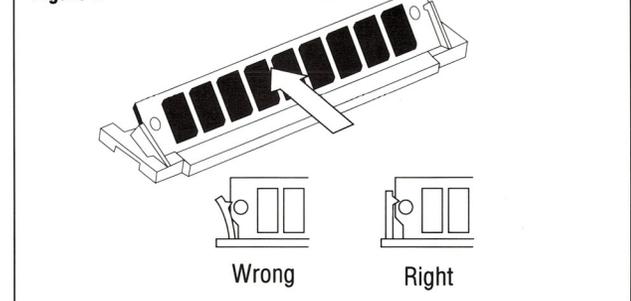
1. Remove the RAMpAT!-Plus board from its packaging.
2. Lay the board on a flat surface with the RAMpAT!-Plus name at the top as shown in Figure 1.

Figure 1: RAMpAT! Board



3. Locate SIMM Socket 1 at the top of the board.
4. 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).

Figure 2



5. Install your second SIMM in Socket 2 in the same manner as described in step 4.
6. 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!-Plus won't work with 1 or 3 SIMMs.
- If you've only installed two SIMMs they must be in Bank 1 or Bank 2
- If you've installed both 1Meg and 4Meg SIMMs on your board, then the SIMMs in Bank 1 and Bank 2 must both be in the same type (1 Meg or 4 Meg).

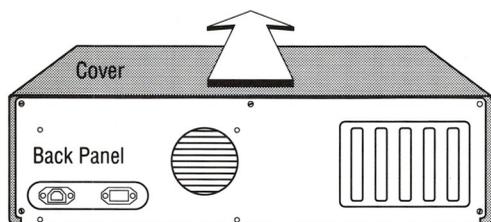
STEP 2 Plug RAMpAT!-Plus into the Computer

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!-Plus board in your computer system as follows:

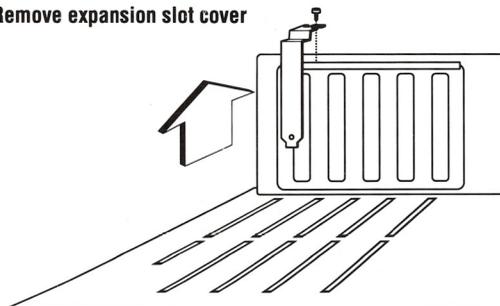
1. Make sure you've disconnected the power cord and all other cables from your system.
2. Remove the cover from your computer. For most systems you must remove 4-6 screws from the back of the computer system using an appropriate screw driver. Other systems have simple thumb screws that can be loosened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

Figure 3: Removing Computer Cover



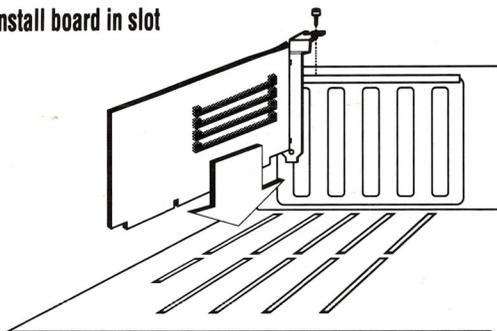
3. Next, locate a vacant 8 or 16 bit expansion slot inside your computer. If your computer is a 16-bit system (80286 or 80386) be sure to choose a 16-bit expansion slot (two connectors).
4. Remove the expansion slot cover from the vacant expansion slot in your computer (see Figure 4). Be sure to save the screw that holds the expansion slot cover in place. You will need it to secure the RAMpAT!-Plus board in the slot.

Figure 4: Remove expansion slot cover



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

1. Place either the 3 1/2" or 5- 1/4" RAMpAT!-Plus 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!-Plus Automatic Installation diskette.
3. RAMpAT!-Plus will be automatically added to your system. When the set up is complete, a screen similar to that shown below will appear:

RAMpAT!-Plus Automatic Installation, Version 1.0 © 1991, 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!-Plus board.

NOTE: If you are installing your RAMpAT!-Plus board in an 8-bit system, or if you have installed your board in an 8-bit slot in a 16-bit system, any memory beyond 640KB must be used as expanded (EMS) memory. If the Automatic Installation determines that the RAMpAT!-Plus board is in a 8-bit slot, it will show the added memory as an "Available Expanded Memory".

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.

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

If you are using software that uses expanded memory (EMS memory), or if you have installed your board in an 8-bit system, you must install the EMS memory management software as described in the accompanying Memory Management Software Installation Guide.

If you have installed your RAMpAT!-Plus board in a 16-bit system and do not require EMS memory, your installation is complete! Once you re-boot your system RAMpAT!-Plus's added memory will be ready to use.

Installing Multiple Boards

RAMpAT!-Plus is designed so that as many as four RAMpAT!-Plus boards can be installed in a single system. To install more than one board, you must install each board individually: i.e., fully install the first board as described in this guide; then, power your system down and install the second board; after the second board is installed, power down and install the third, and so on.

NOTE: The Maximum memory capacity of any 16-bit system is 16MB of conventional and extended memory, and 32MB of expanded (EMS) memory. The maximum memory capacity of any 8-bit system is 640KB of conventional memory and 32MB of expanded memory.

If You Run Into Problems

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

RAMpAT!-Plus 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.

System Does Not See The RAMpAT!-Plus Memory

1. A "warm" boot (pressing <Ctrl> + <Alt> +) 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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