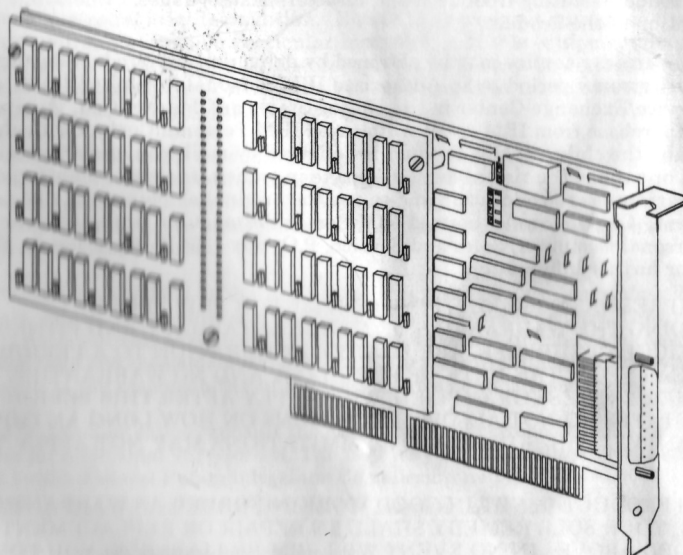


Option Instructions

for the

IBM 2MB Expanded Memory Adapter



This option should contain the:

IBM 2MB Expanded Memory Adapter

If your card is missing or damaged, contact your place of purchase.

90X7125

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Federal Communications Commission (FCC) Statement

Warning: This equipment has been certified to comply with the limits for a Class B computing device, pursuant to Subpart J of Part 15 of FCC rules. Only peripherals (computer input/output devices, terminals, printers, etc.) certified to comply with the Class B limits may be attached to this computer when this computer is operated in a residential environment. Operation with non-certified peripherals is likely to result in interference to radio and TV reception.

Instructions to User: This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio or television reception. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient the receiving antenna.
- Relocate the computer with respect to the receiver.
- Move the computer away from the receiver.
- Plug the computer into a different outlet so that computer and receiver are on different branch circuits.

In many instances, shielded cables and connectors must be used for connection to peripherals. Proper IBM cables are available from authorized dealers. The manufacturer is not responsible for any radio or television interference caused by using other than the recommended cables or by unauthorized modifications to this equipment; it is the responsibility of the user to correct such interference.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful:

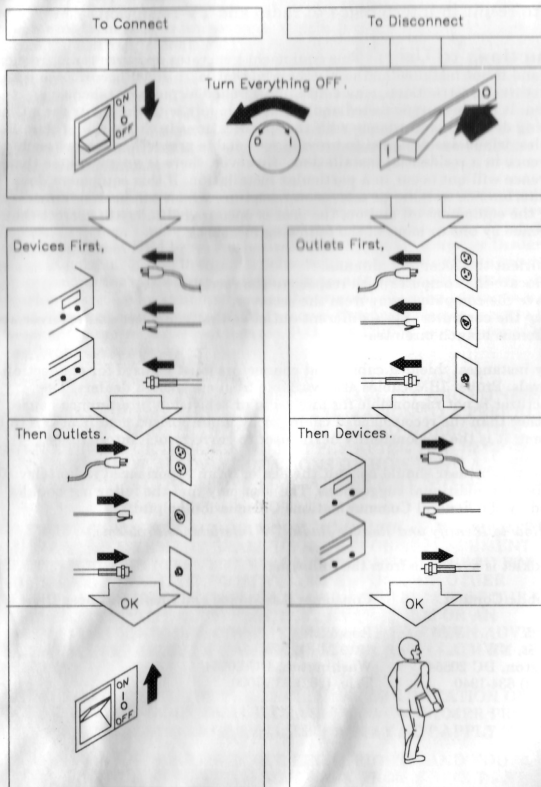
How to Identify and Resolve Radio-TV Interference Problems.

This booklet is available from the following:

FOB Public Contact	Consumer Assistance and Small Business Div.
Branch	
Room 725	Room 254
1919 M St. NW	1919 M St. NW
Washington, DC 20554	Washington, DC 20554
Tele. (202) 634-1940	Tele. (202) 632-7000

These are general electrical safety guidelines. Do not perform these operations until told to do so in this book.

Electrical Safety Electrical current from power, telephone, and communication cables is hazardous. Connect and disconnect cables as shown when installing, moving, or opening the covers of personal computers or attached devices.



Getting Started

This manual will show you how to install the IBM 2MB Expanded Memory Adapter Option. The following discussion of chapter contents will help you decide where to begin.

Chapter 1. Introduction: If terms like base memory and expanded base memory are new to you, you might want to read the introduction before you begin. It briefly describes the types of memory in the IBM Personal Computer and how expanded base memory is used by the IBM 3270 PC Control Program and the IBM 3270 Workstation Program.

Chapter 2. Installing the Hardware: When you're ready to install the Expanded Memory Adapter Card, this chapter explains how.

Chapter 3. Removing and Inserting Adapter Cards: If you are not familiar with how to remove and insert adapter cards, this chapter will assist you.

Required Publications

- The *Guide to Operations* that came with your IBM Personal Computer, and/or where appropriate,

- The *Installation and Setup* manual for your IBM Personal Computer.

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Chapter 1. Introduction

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Introduction

This manual contains instructions for installing the IBM 2MB Expanded Memory Adapter option. The option occupies a single, full-length card slot and provides 2 megabytes (MB) of additional memory that can be used as:

- Base Memory—fills in memory up to 640KB.
- Expanded Base Memory—when used with a control program such as the IBM 3270 PC Control Program, provides additional memory that can be swapped or paged into base memory for use.

Figure 1-1 on page 1-3 shows the types of PC memory.

This option also provides a standard parallel printer port (configurable as LPT1 or LPT2).

Base Memory

Base memory refers to memory from 0KB to 640KB regardless of its physical location. Base memory can be located on the system board or the IBM 2MB Expanded Memory Adapter. Therefore, when the IBM 2MB Expanded Memory Adapter is installed, the base memory is always 640KB.

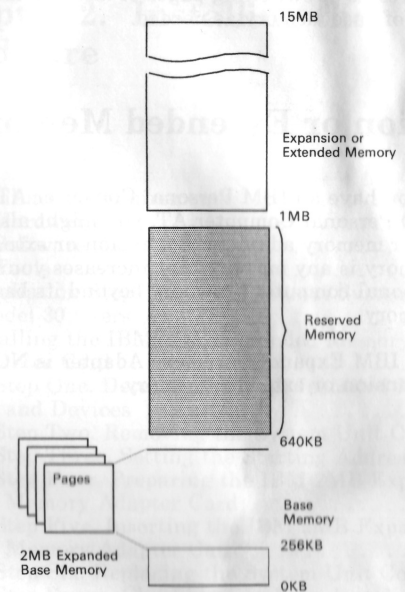


Figure 1-1. Memory as Used by the IBM 3270 PC Control Program and the IBM 3270 Workstation Program

Expanded Memory

Expanded base memory lets the IBM 3270 PC Control Program or the IBM 3270 Workstation Program *indirectly* access memory beyond base memory by dynamically swapping memory

addresses or switching pages of memory into and out of base memory as needed.

Expansion or Extended Memory

If you have an IBM Personal Computer AT or 3270 Personal Computer AT, you might also have other memory adapters. Expansion or extended memory is any memory that increases your personal computer's memory beyond its base memory.

The IBM Expanded Memory Adapter is **NOT** expansion or extended memory.

Chapter 2. Installing the Hardware

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Installation Requirements

The next three sections list the hardware, software, and tools you need to install and use the IBM 2MB Expanded Memory Adapter.

Note: For the latest information on available hardware and software that can be used with this product, see your authorized IBM Personal Computer dealer or local IBM representative.

Hardware

To install this adapter, you must have:

- A PC system unit that supports it
- A minimum of 256KB of base memory already installed.

Warning: The IBM 2MB Expanded Memory Adapter card can be damaged by static discharge. To prevent this damage, don't remove it from the anti-static packaging until you are told in this book how to do so.

Software

To use expanded base memory with the IBM 2MB Expanded Memory Adapter card option, you must have:

- Additional supporting software, such as the IBM 3270 Personal Computer Control Program Version 3.0 or the IBM 3270 Workstation Program for 5271 and 5273 system units; the IBM 3270 Workstation Program for all other supported system units

- DOS Version 2.1 or higher for Version 3.0 of the IBM 3270 PC Control Program
- DOS Version 3.3 for the IBM 3270 Workstation Program

Tools

- Medium-size, flat-blade screwdriver
- Needle-nose pliers
- Optional:
 - Medium screwdriver
 - 3/16-inch nutdriver
 - 1/4-inch nutdriver.

Installation Steps for IBM Personal System/2 Model 30 Users

If you are installing the IBM 2MB Expanded Memory Adapter card in an IBM Personal System/2 Model 30, you will need to refer to your system unit *Guide to Operations* to perform some of the steps that are outlined in this option installation booklet. A note at the beginning of each step will refer you to your *Guide to Operations* when necessary.

The location of each of the steps you need to follow are presented below:

- “Step One. Determining Your Installed Memory and Devices” on page 2-5.
- “Step Two. Removing the System Unit Cover.”

Refer to your *Guide to Operations*.

- “Step Four. Preparing the IBM 2MB Expanded Memory Adapter Card” on page 2-25.
- “Step Five. Inserting the Adapter Card.”

Refer to your *Guide to Operations*.

- “Step Six. Replacing the System Unit Cover.”

Refer to your *Guide to Operations*.

- “Step Seven. Checking Out Your Installation.”

Refer to your *Guide to Operations*.

Installing the IBM 2MB Expanded Memory Adapter Card

To install the adapter card, follow the steps outlined in the rest of this chapter.

Step One. Determining Your Installed Memory and Devices

Before you begin installing your IBM 2MB Expanded Memory Adapter, you must first determine how much memory your system has and the options currently installed.

- 1 Get the Diagnostic diskette located in the back of your *Guide to Operations* manual.
- 2 Insert the Diagnostic diskette into diskette drive A.
- 3 Turn on all externally attached devices.
- 4 Turn on your system unit.
- 5 Watch the upper left corner of your screen. A number will appear and gradually increases as the memory is verified for operation. The final number that appears represents the amount of memory you have installed. Write this number down in the blank below.

The amount of memory installed is _____.

Note: If you have less than 256KB, don't continue with these instructions. You need a minimum of 256KB to use the IBM 2MB Expanded Memory Adapter. See your authorized IBM Personal Computer dealer to find out how to bring your system up to 256KB.

6 On the diagnostic menu options screen:

- a** Follow instructions on the screen to select option **0 - System Checkout.**

Note: If you have an IBM Personal System/2 Model 30, you must first select option 2, Services, from the Starter Diskette Main Menu.

A list of installed devices displays.

- b** Compare the installed devices with the table shown on the next page. Check the Yes column for each of the following devices you have installed on your system. Check the No column if the device is not installed.

DEVICE TYPE	INSTALLED DEVICE	YES	NO
A	Monochrome and Printer Adapter		
A	Serial/Parallel Adapter - Parallel Port		
A	Printer Adapter		
A	Primary - Parallel Port		
B	Alternate Serial/Parallel Adapter - Parallel Port		
B	Alternate Parallel Port		

- 7** You do not need to continue with Diagnostics at this time. Remove the Diagnostic diskette, and turn the system unit off. Continue with "Step Two. Removing the System Unit Cover" on page 2-8.

Step Two. Removing the System Unit Cover

CAUTION

Do not connect or disconnect the cables attached to your PC during an electrical storm.

These instructions are used for several system unit types. Don't be concerned if some of the illustrations do not exactly match your system unit.

Note: IBM Personal System/2 Model 30 users should refer to their Guide to Operations for cover removal instructions. When you have removed the cover, continue with "Step Four. Preparing the IBM 2MB Expanded Memory Adapter Card" on page 2-25.

- 1 Set the On/Off (I/O) switches for all devices to Off (O).
- 2 Unplug your PC power cord from the wall outlet.
- 3 Position the system unit to allow access to the rear.
- 4 Note where all the cables are connected to the rear of the system unit:
 - a Follow each cable back from the device (for example, the keyboard or the display) to the receptacle where it is plugged in.

- b Note where each cable plugs into the system unit. Use the chart in Figure 2-1 to keep track of this information, since you will need it later when you reconnect these devices.

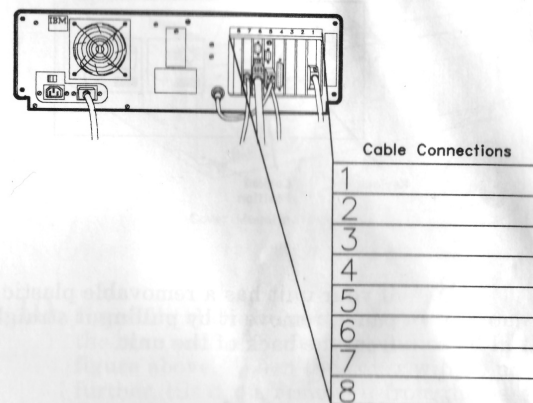
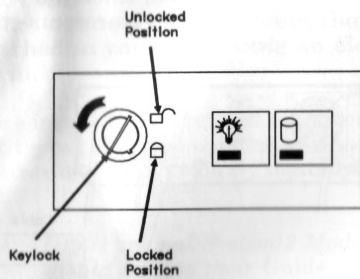


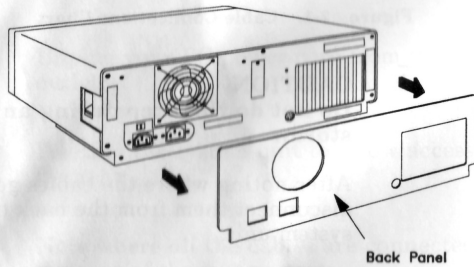
Figure 2-1. Cable Connections Chart

- 5 **CAUTION**
Do not do this step during an electrical storm.
After noting where the cables go, disconnect them from the back of your system unit.
- 6 Move the components away from the immediate area to give yourself room to work on the system unit.

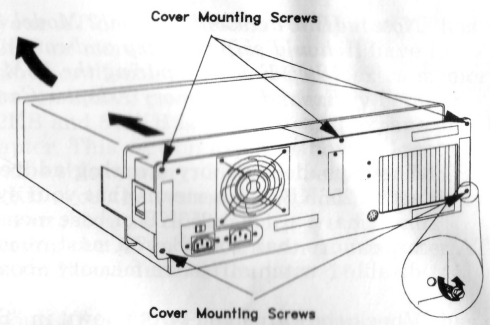
- 7 If your unit has a keylock, turn the key counterclockwise to unlock it and remove the key.



- 8 If your unit has a removable plastic back panel, remove it by pulling it straight out from the back of the unit.



- 9 Remove the cover mounting screws. Save them for replacing the cover later on.



- 10 Carefully slide the unit cover away from the rear and to the front as indicated in the figure above. When the cover will go no further, tilt it up, remove it from the base, and set it aside.

Step Three. Setting the Starting Address

Note: IBM Personal System/2 Model 30 users should skip this step and continue with "Step Four. Preparing the IBM 2MB Expanded Memory Adapter Card" on page 2-25.

The expanded memory **starting address** must be set at 256KB. This means that your system unit must have at least 256KB of base memory. If you have more than 256KB, you must remove or disable (switch off) extra memory above 256KB.

Check the value you wrote down in "Step One. Determining Your Installed Memory and Devices" on page 2-5.

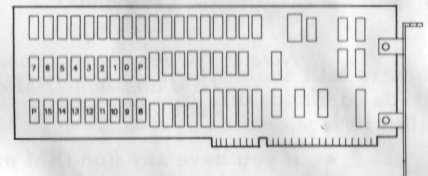
If you have:	For an AT or 3270 Personal Computer AT, go to:	For an XT or 3270 PC, go to:
Less than 256KB	A PC dealer	A PC dealer
256KB	Page 2-25	Page 2-25
256 to 512KB	—	Page 2-20
512KB	Page 2-17	Page 2-20
512 to 640KB	Page 2-13	Page 2-20
More than 640KB	Page 2-13	—

Preparing an AT or 3270 Personal Computer AT System Unit

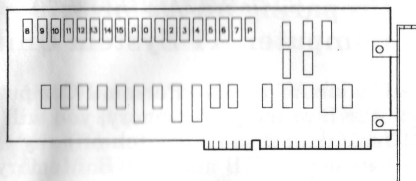
If your AT or 3270 Personal Computer AT has 512KB or more of memory, you will have to remove or disable (switch off) any extra memory between 256KB and 640KB. Memory between 512KB and 640KB is on a memory expansion adapter. This section explains how to locate and disable this memory. Memory between 256KB and 512KB is on the system board and instructions for switching off this memory are given in "Setting the AT or 3270 Personal Computer AT System Board Jumper" on page 2-17.

If your AT or 3270 Personal Computer AT has a card that gives it extended memory (memory between 1MB and 15Mb), you may be able to use the extended memory card and the IBM 2MB Expanded Memory Adapter card together.

- 1 Look inside your system unit for either of these IBM memory expansion adapters. If you are unsure of the type of adapter card, look for the name printed on the card.



IBM 128/640Kb Memory Expansion Adapter



IBM 128Kb Memory Expansion Adapter

- If you have the IBM 128/640KB card, you need to switch off 128KB of base memory on this card. Continue with step 2 on page 2-16 for instructions on disabling memory.
- If you have the IBM 128KB Memory Expansion Adapter, disable this memory by removing the card from your system unit. If you need instructions on removing adapter cards, leave a bookmark here and refer to "Removing Adapter Cards" on page 3-2. Be sure you return here when you are done.

When you're done, continue with "Setting the AT or 3270 Personal Computer AT System Board Jumper" on page 2-17.

Note: You may have a combination of IBM and non-IBM adapters installed.

- If you have any non-IBM memory expansion adapters, check the documentation that came with the adapter to see if the adapter only provides extra memory (and possibly a parallel printer port). If so, remove the adapter. If you need instructions on removing adapter cards, leave a

bookmark here and refer to "Removing Adapter Cards" on page 3-2. Be sure you return here when you are done.

When you're done, continue with "Setting the AT or 3270 Personal Computer AT System Board Jumper" on page 2-17.

- If you have a non-IBM memory expansion adapter that provides functions other than memory expansion and a parallel printer port, check its documentation for switch or jumper settings and disable the memory if possible. This will allow you to keep the adapter installed with the IBM 2MB Expanded Memory Adapter card.

If you can't disable the memory, remove the adapter. If you need instructions on removing adapter cards, leave a bookmark here and refer to "Removing Adapter Cards" on page 3-2. Be sure you return here when you are done.

When you're done, continue with "Setting the AT or 3270 Personal Computer AT System Board Jumper" on page 2-17.

- If you have any other IBM extended memory card, you should be able to use it without an address space conflict.

- 2 To use the 128/640KB memory adapter with the IBM 2MB Expanded Memory Adapter card, you must first disable the 128KB that is addressed as base memory. To do this, set switch 7 on the 128/640KB memory adapter to Off.

Make sure switch 8 on the 128/640KB memory adapter is set to On, so that the extended memory on this adapter is not disabled.

In the following diagram, a 0 indicates it should be set to Off, and a 1 indicates it should be set to On. An X indicates that the switch is for another function; don't change these settings.

1	2	3	4	5	6	7	8
x	x	x	x	x	x	0	1

- 3 After you disable or remove the extra memory, reinstall the adapter card and continue with the next section.

Setting the AT or 3270 Personal Computer AT System Board Jumper

To use the IBM 2MB Expanded Memory Adapter card with the AT or 3270 Personal Computer AT, you must reduce memory on the system board to 256KB. Jumper J18 on the system board tells your computer how much system board memory to use. To reduce your memory to 256KB, you must change this jumper setting.

- 1 Refer to Figure 2-2 on page 2-18 for the location of jumper J18. This jumper is between the fixed disk/diskette drive adapter card in slot 8 and the fixed disk drive near the front of the system board. The system board is the board that all other adapters plug into and is located at the base of your system unit.
- 2 To get access to the jumper, remove the fixed disk/diskette drive adapter from slot 8. Be careful to note the location of any cables you remove so you can reinstall them correctly. If you need instructions on removing adapter cards, leave a bookmark here and refer to "Removing Adapter Cards" on page 3-2. Be sure you return here when you are done.

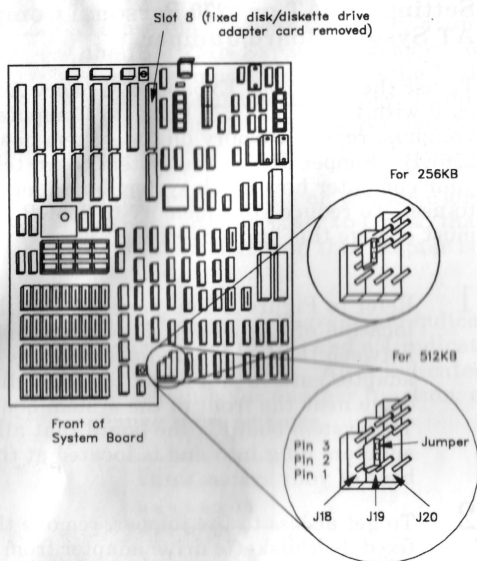


Figure 2-2. Location and Setting of Jumper J18 on the System Board

- 3 Locate jumper J18 on the front of the system board.

Note: You may need to remove the wires connected to pins J19 and J20 to see the jumper. Note the location of these wires before removing them so that you can reattach them correctly.

You should see a rectangular connector across pins 1 and 2 of J18 as shown in the lower inset of Figure 2-2.

- 4 To set the starting address to 256KB, lift the connector from pins 1 and 2 and place it over pins 2 and 3 as shown in the upper inset in Figure 2-2.

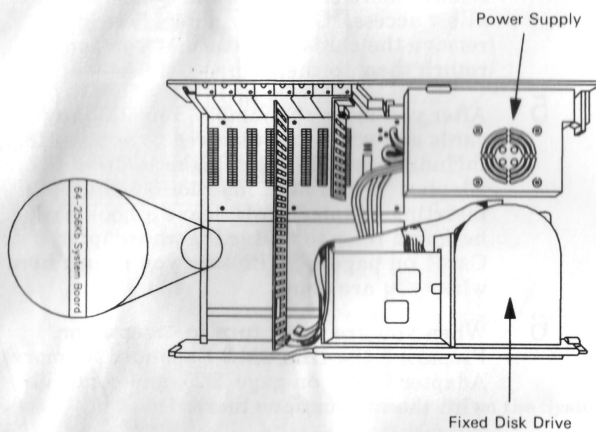
If you can't reach the jumper assembly with your fingers, use needle-nose pliers or remove more cards from the system unit to allow access. Carefully note where you remove the cards from, so that you can return them to their correct slots.

- 5 After you move the jumper, reinstall any cards and wires you removed to access J18, including the fixed disk/diskette drive adapter. If you need instructions on inserting adapter cards, leave a bookmark here and refer to "Inserting an Adapter Card" on page 3-5. Be sure you return here when you are done.

- 6 When you are done, turn to "Step Four. Preparing the IBM 2MB Expanded Memory Adapter Card" on page 2-25, and continue with the instructions there.

Preparing an XT or 3270 PC System Unit

Look at the edge of your system unit that is farthest from your fixed disk drive. There is a label on the system board that reads either 64-256KB or 256-640KB.



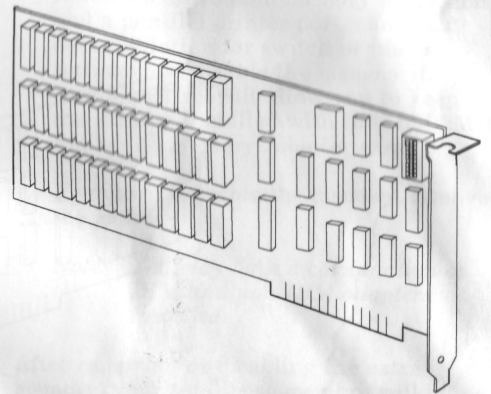
- If your system board is labeled 64-256KB, go to "Preparing an XT or 3270 PC with a 64-256KB System Board" on page 2-21.
- If your system board is labeled 256-640KB, go to "Preparing an XT or 3270 PC with a 256-640KB System Board" on page 2-24.

Preparing an XT or 3270 PC with a 64-256KB System Board

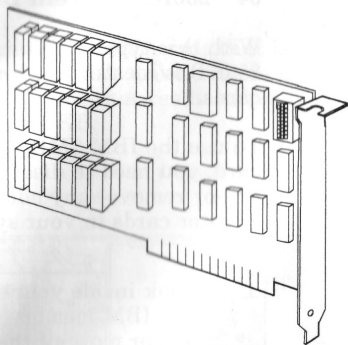
With this type of system board, all memory above 256KB is located on memory expansion adapter cards.

To use the IBM 2MB Expanded Memory Adapter card, you need to disable (switch off) the memory on—or remove—any additional memory expansion adapter cards in your system unit.

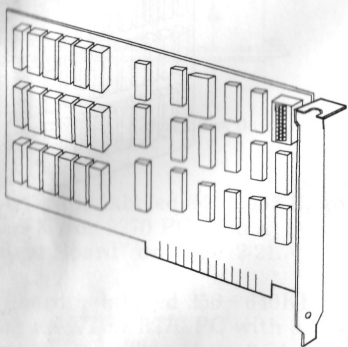
- 1 Look inside your system unit for any non-IBM memory expansion adapters, or one or more of the IBM memory expansion adapters shown below:



IBM 64/256KB Memory Expansion Adapter



IBM 64KB Memory Expansion Adapter



IBM 32KB Memory Expansion Adapter

- 2 Read the following, then remove or disable the expansion memory as necessary. If you need instructions on removing adapter cards, leave a bookmark here and refer to

“Removing Adapter Cards” on page 3-2. Be sure you return here when you are done.

- If you have any IBM memory expansion adapters, remove them. This sets your base memory to 256KB.
- If you have any non-IBM memory expansion adapters, check the documentation that came with each adapter to see if the adapter only provides extra memory (and possibly a parallel printer port). If so, remove the adapter.
- If you have a non-IBM memory expansion adapter that provides functions other than memory expansion and a parallel printer port, check its documentation for switch or jumper settings and disable the memory if possible. This will allow you to keep the adapter installed with the IBM 2MB Expanded Memory Adapter card.

If you can't disable the memory, remove the adapter.

Note: You may have a combination of IBM and non-IBM adapters installed.

After removing or disabling the extra memory, your total base memory will be 256KB. This will be the **starting address** for the IBM 2MB Expanded Memory Adapter card.

- 3 When you are done, turn to "Step Four. Preparing the IBM 2MB Expanded Memory Adapter Card" on page 2-25 and continue with the instructions there.

Preparing an XT or 3270 PC with a 256 – 640KB System Board

In an IBM Personal Computer XT or 3270 PC with this type of system board, all memory is on the system board itself.

You need to disable (switch off) enough memory to bring base memory down to 256KB.

- 1 To reduce your base memory to 256KB, set system board switches 3 and 4 as follows.

In the diagram below, a 1 indicates the switch should be set to On. An X indicates that the switch is for some other function; don't change these settings.

1	2	3	4	5	6	7	8
x	x	1	1	x	x	x	x

After disabling the extra memory, your total base memory will be at 256KB. This will be the **starting address** for the IBM 2MB Expanded Memory Adapter card.

- 2 Now turn to "Step Four. Preparing the IBM 2MB Expanded Memory Adapter Card" on page 2-25 and continue with the instructions there.

Step Four. Preparing the IBM 2MB Expanded Memory Adapter Card

In Step Three you set the starting address to 256KB on your system board. You now need to verify that a jumper on your adapter card is set to the same starting address. You must also assign the parallel printer port on the card.

Note: If you have an IBM Personal System/2 Model 30, you were instructed to skip step 3. You do not need to set a starting address on the system board. Setting the starting address on the adapter card is all that is necessary. Continue with these instructions.

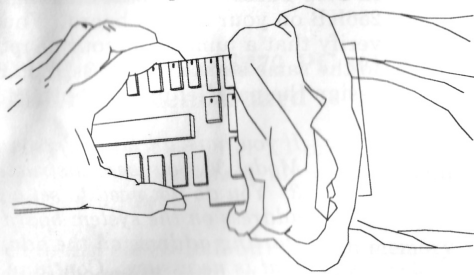
CAUTION

Make sure the power to your PC and all attached devices is turned off.

- 1 To protect against static damage, hold the adapter (still wrapped in the anti-static bag) in one hand, and with your other hand hold the metal part of a screwdriver or other metal object.
- 2 To equalize any static charge, touch the metal part of the screwdriver or metal object to an unpainted metal part of your system unit.

You may see a small spark pass between the two metal objects, but you should not feel any shock.

- 3 Hold the adapter by the edges only, taking care not to touch the components or connections on the adapter. Carefully remove the adapter from its bag.



- 4 Gently set the adapter on a flat surface.

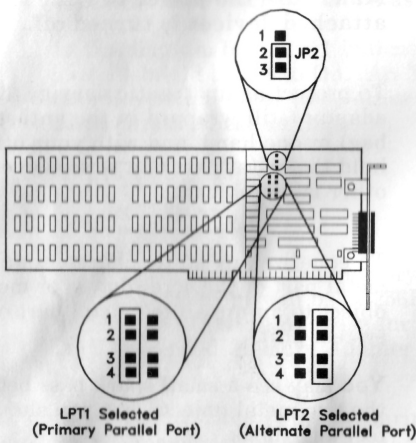


Figure 2-3. Location and Setting of IBM 2MB Expanded Memory Adapter Card Jumpers

- 5 Locate the starting address jumper (JP2) and the parallel printer port jumper (LPT) on the adapter card. Refer to Figure 2-3.
- 6 Verify that the JP2 jumper is over pins 2 and 3 as shown in Figure 2-3. This sets the starting address to 256KB.
- 7 Your IBM 2MB Expanded Memory Adapter has a printer port that can be set to LPT1 or LPT2. Refer to the table you completed in "Step One. Determining Your Installed Memory and Devices" on page 2-5.
 - a If your installed devices do not include a Device Type A, set your IBM 2MB Expanded Memory Adapter to LPT1 as shown in Figure 2-3.
 - b If your installed devices do not include a Device Type B, set your IBM 2MB Expanded Memory Adapter to LPT2 as shown in Figure 2-3. If you have an XT or a 3270 PC, you must remove the jumper.
 - c If your installed devices include both a Device Type A and Device Type B, you must disable the printer port on the IBM 2MB Expanded Memory Adapter by removing the 4-pin jumper shown in Figure 2-3.
 - d If you have neither Device Type A nor Device Type B, set your IBM 2MB Expanded Memory Adapter to LPT1 as shown in Figure 2-3.

- 8 Continue with "Step Five. Inserting the IBM 2MB Expanded Memory Adapter Card."

Step Five. Inserting the IBM 2MB Expanded Memory Adapter Card

If a slot is already prepared and you know how to insert adapter cards, insert the adapter and install the retaining screw. Otherwise, leave a bookmark here, and refer to "Inserting an Adapter Card" on page 3-5.

Notes:

1. *If you have an IBM Personal System/2 Model 30, refer to your Guide to Operations for adapter card installation instructions.*
2. *If you have an AT, install the adapter card in a double socketed slot, such as 2, 3, 4, 5, or 6, for optimum performance.*

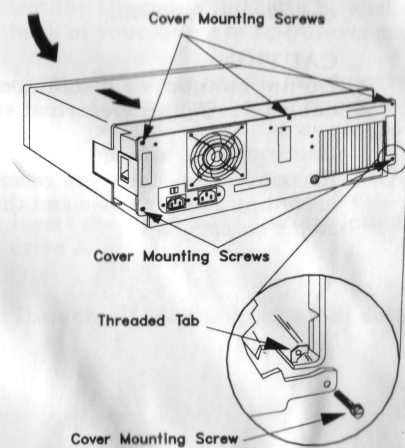
When you are done, return here and continue with "Step Six. Replacing the System Unit Cover."

Step Six. Replacing the System Unit Cover

Notes:

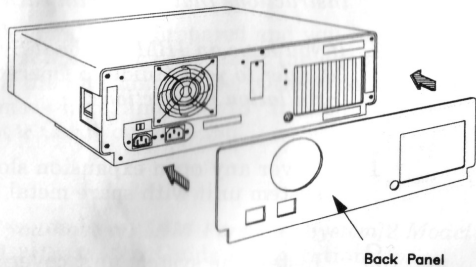
1. *If you have any other options to install, do so now before installing the cover. Use the instructions that came with each option.*
2. *If you have an IBM Personal System/2 Model 30, refer to your Guide to Operations for cover installation instructions.*

- 1 Cover any open expansion slots in your system unit with spare metal slot covers.
- 2 Install the system unit cover by positioning it as shown and carefully sliding it toward the rear of the unit.



- 3 When the cover is all the way on, align the cover screws with the threaded tabs and tighten.

- 4 If you removed a back panel earlier, install it by pressing it into place.



- 5 If you are reconnecting a coaxial cable, observe the following:

CAUTION

Do not connect or disconnect any cables during an electrical storm.

- 6 Reconnect the cables you removed earlier according to your notes and the diagram in step 4 on page 2-8.

- 7 Observe the following:

CAUTION

The system unit is equipped with a line cord and plug designed for the user's safety. Use it with a properly grounded receptacle to avoid possible electrical shock.

Plug the power cords you unplugged earlier back into properly grounded power outlets.

Step Seven. Checking Out Your Installation

Following the installation of any option you should run your system diagnostics to verify that your system is functional.

- 1 Get the Diagnostic diskette located in the back of your *Guide to Operations* manual.

Note: Be sure to use the latest version of the Diagnostics diskette available when performing the diagnostics portion of the checkout procedure.

- 2 Insert the Diagnostic diskette into diskette drive A.

- 3 Turn on all externally attached devices.

4 Turn on your system unit.

Note: If you have an IBM Personal Computer AT, you may get the following error message:

164 - Memory Size Error - (Run Setup)

Follow the instructions on the screen to run the setup option.

Remember that on the IBM Personal Computer AT, your Base Memory is now 640KB. The IBM 2MB Expanded Memory Adapter is NOT expansion memory. If you are unsure of the total system memory, look at the number that appears in the upper left corner of your screen during the power on sequence of your system. This number is the total memory installed in your system. Expansion memory is this total memory number minus 640KB.

5 Refer to your system unit *Guide to Operations* for instructions on running diagnostics and testing your system.

When you have successfully completed the setup and checkout procedures outlined in your *Installation and Setup* and/or *Guide to Operations* manuals, your system unit hardware is ready for operation. It may be necessary to customize your software in order to use the IBM 2MB Expanded Memory Adapter card. Refer to your software documentation.

What to Do If There Are Problems

If you are not able to successfully complete the checkout procedure, review these installation instructions to make sure your adapter card has been installed correctly. Some of the possible causes of problems are listed below.

- Switch or jumper settings are not correct.
- Cables are loose or incorrectly connected.
- Other components were loosened during installation.
- The adapter is defective.

If you continue to have problems, contact your service organization.

Chapter 3. Removing and Inserting Adapter Cards

Removing Adapter Cards	3-2
Inserting an Adapter Card	3-3

This chapter contains two procedures which are referenced throughout Chapter 2:

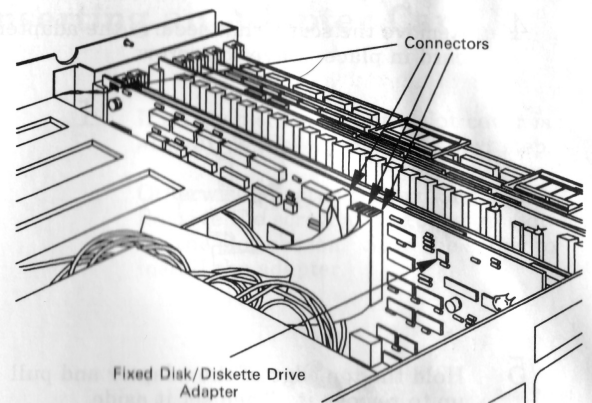
- Removing Adapter Cards
- Inserting Adapter Cards.

Note: IBM Personal System/2 Model 30 users should refer to their Guide to Operations for adapter card removal and installation instructions.

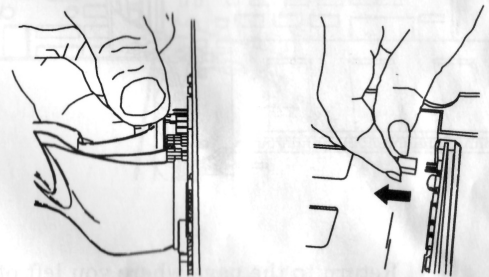
Removing Adapter Cards

The following is a general procedure to show how to remove adapter cards. If you are removing several adapters temporarily to get access to the system board, note where each adapter came from so that you can return it to its proper place later on.

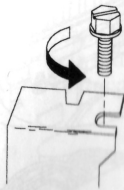
- 1 If no connectors are attached to the adapter you are removing, go to 4 on page 3-4.
- 2 If cables are attached to the adapter card, note where the cables go so that you can reattach them correctly.



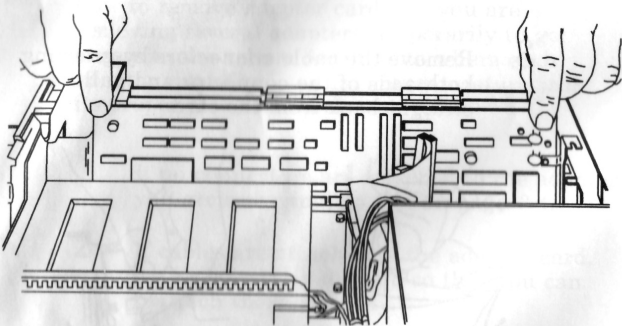
- 3 Remove the cable connectors by grasping both ends of the connector and pulling straight back from the card.



- 4 Remove the screw that secures the adapter card in place. Save the screw.



- 5 Hold the top edge of the adapter and pull up to remove it. Then set it aside.

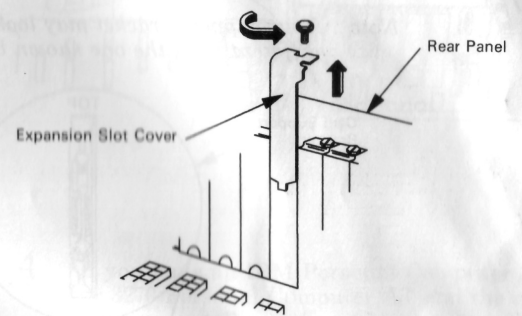


- 6 Return to the page where you left off.

Inserting an Adapter Card

- 1 If an open slot without a slot cover is already available, go to the next step.

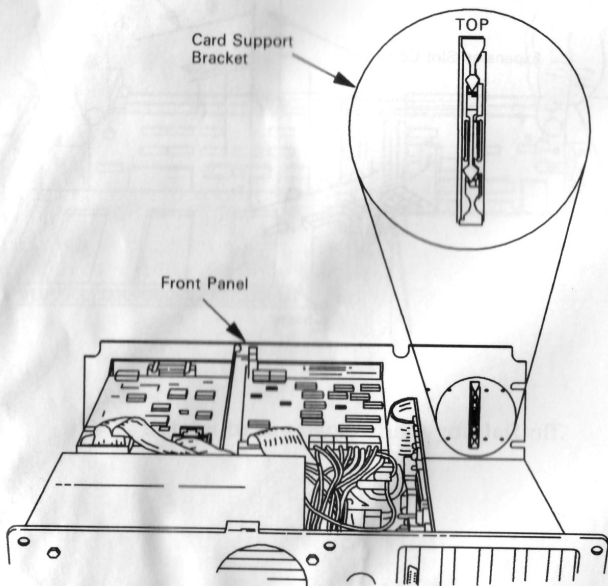
Otherwise, locate an open long slot. Remove the screw and expansion slot cover for the slot chosen. Save the screw to install the adapter.



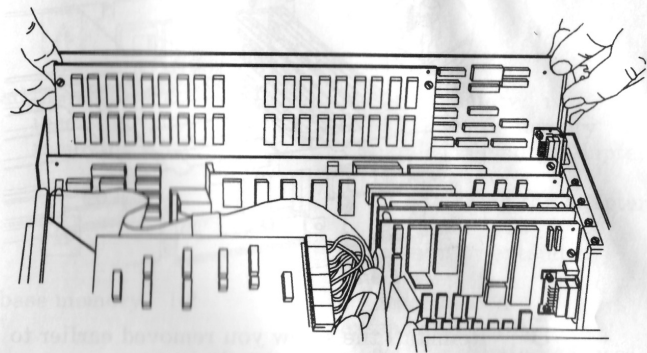
- 2 If you have an IBM Personal Computer AT or 3270 Personal Computer AT, skip this step and continue with 3 on page 3-7.

If you have an IBM Personal Computer XT or 3270 PC, check inside the front panel of your system unit to see if there is a card support bracket for the slot you have chosen. If one is present, go to 3 on page 3-7. If not, press the adapter support bracket that came with this package into the corresponding holes inside the front panel.

Note: Your support bracket may look different than the one shown below.

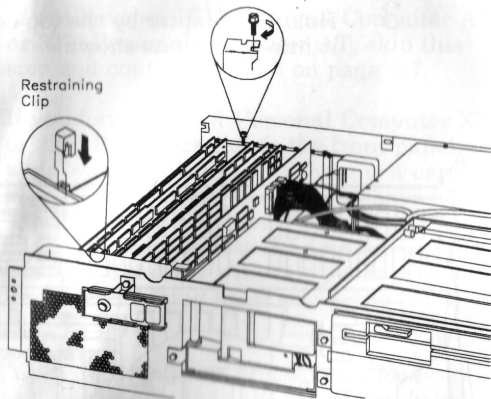


- 3 Hold the adapter by the top edge and press it into the slot as shown.



- 4 If you have an IBM Personal Computer AT or 3270 Personal Computer AT and the card you are installing came with a restraining clip, press the restraining clip into place as shown below.

If you have an IBM Personal Computer XT or 3270 PC and the card you are installing came with a restraining clip, discard the restraining clip.



- 5 Reinstall the screw you removed earlier to secure the adapter in place.
- 6 If you disconnected any cables from the adapter when you removed it, reinstall them also.
- 7 Return to the page where you left off.

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