

**SHORTCUTS
TO INSTALLING THE
ABOVE™ BOARD PS/AT**

For DOS Experts

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INTRODUCTION

If you dislike manuals and setup programs, this pamphlet is for you. It helps you install your Above Board PS/AT without them.

But be forewarned -- this pamphlet is for DOS experts. If you get confused, turn to the manual.

NOTE

This pamphlet assumes you know the differences among conventional, expanded, and extended memory. If you don't, read Chapter 9 in the manual.

To install the Above Board, you must perform four steps and optionally a fifth. Each section of this pamphlet describes one of these five steps.

- 1 Stuffing RAM chips (page 2)
- 2 Setting switches and putting the board in the computer (pages 3-5)
- 3 Running the computer's setup program (pages 6-7)
- 4 Installing the Above Board PS/AT software (pages 8-14)
- 5 Running the Above Board confidence tests (page 15)

Most of this information is condensed from the manual. But the instructions for installing the Above Board software aren't. The manual assumes you'll run the SETUPAT program to install the Above Board software. In contrast, this pamphlet assumes you'd rather edit the CONFIG.SYS and AUTOEXEC.BAT files yourself.

STUFFING RAM CHIPS

The Above Board PS/AT uses either 64K chips or 256K chips, but not a mix of the two sizes.

Buy chips that operate at 150 ns or faster. (You can mix chips of different speeds.) Chapter 3 of the manual lists chips that have been verified to work on the Above Board.

Use care when stuffing chips. Make sure their dots or notches face away from the Above Board's parallel and serial ports.

Fill the column nearest the parallel and serial ports first. After the first column is full, move to the next column and fill it. *You must fill pairs of columns.* (Never leave a partially filled column or an odd number of filled columns.) Repeat this pattern to fill the board.

If you need more detailed instructions, turn to Chapter 3 of the manual.

SETTING SWITCHES AND PUTTING THE BOARD IN YOUR COMPUTER

The Above Board PS/AT has three switch blocks, one with four switches, and two with eight. These switches:

- o Divide the board's memory among conventional, expanded, and extended memory.
- o Name the parallel and serial ports (LPT1 or LPT2, and COM1 or COM2).
- o Identify the kind of memory chips on the board (64K-bit or 256K-bit).
- o Control the expanded memory I/O addresses the processor uses to communicate with the board.

You don't need to set any system board switches in your IBM AT or COMPAQ 286.

Use the chart on pages 4 and 5 to set the Above Board PS/AT's switches. For a more detailed explanation, see Chapter 4 of the manual.

You'll need to know your Above Board switch settings before you run the confidence tests. To save time, fill out the worksheet in Chapter 7 of the manual before you install the Above Board.

After you've set the switches, put the Above Board in one of the 16-bit expansion slots in your computer. To distinguish between 16-bit and 8-bit slots, count the connectors for each slot. Each 16-bit slot has two connectors for the gold fingers at the bottom of the Above Board, whereas each 8-bit slot has one connector.

RUNNING YOUR COMPUTER'S SETUP PROGRAM

Both the IBM AT and the COMPAQ 286 come with a setup program that allows you to tell the computer how much conventional and extended memory you have. The setup program is on the IBM AT's Diagnostics diskette and on the COMPAQ's User Programs diskette.

Who must run setup?

If you use the Above Board to add *conventional* memory, *extended* memory, or both to your computer, you must run your computer's setup program.

If you've added only *expanded* memory, you don't need to run the computer's setup program.

When to run setup

Run the computer's setup program after you put the Above Board into the computer, but before you install the Above Board software.

Starting setup for an IBM AT

To start the setup program for an IBM AT, put your Diagnostics diskette in drive A, and boot your computer. When the diagnostics menu appears, choose the setup option.

Starting setup for a COMPAQ 286

To start the setup program for a COMPAQ 286, put your User Programs diskette in drive A, and boot your computer. Then type

TEST

and press Enter. When the diagnostics menu appears, choose the setup option.

What to tell setup

When the setup program asks how much *base memory* is in your computer, it means *conventional memory*.

When the setup program asks how much *expansion memory* is in your computer, it means *extended memory*.

If you're unsure, try the most common answers: 640K base memory and 0K expansion memory. This sets up the computer for 640K bytes of conventional memory and 0K bytes of extended memory. The software installation instructions beginning on page 8 will tell you how to set up expanded memory.

INSTALLING SOFTWARE

The Above Board PS/AT comes with software that lets you use expanded memory, create RAM disks, and create a print buffer. If you don't want to use any of this software, skip to page 15.

These instructions depend upon whether you boot from floppy disks or a hard disk:

- o Floppy disks -- install the Above Board software on each system diskette from which you boot.
- o Hard disk -- install the software just once in the root directory.

Installing the software requires three steps:

- o Copying files (pages 8-9)
- o Editing the CONFIG.SYS file (pages 9-12)
- o Editing the AUTOEXEC.BAT file (pages 12-14)

You don't have to do all this copying and editing. The Above Board's SETUPAT program can do it easily and automatically. To start SETUPAT, see Chapter 8 of the manual. This pamphlet describes the do-it-yourself technique.

Copying files

Before you can use the Above Board software, you must copy some files from the Above Board's Installation and Utility Software diskette to the root directory on your hard disk or system diskettes.

If you have more than one Above Board in your computer, make sure you install the most recent version of the software. (Use the diskette with the highest version number on the label.)

To use expanded memory, copy EMM.SYS.

To use one or more RAM disks in conventional memory, copy QUIKMEM1.SYS.

To use one or more RAM disks in expanded memory, copy QUIKMEM2.SYS.

To use a print buffer in conventional memory, copy QUIKBUF1.COM.

To use a print buffer in expanded memory, copy QUIKBUF2.COM.

Editing the CONFIG.SYS file

To use the expanded memory on the Above Board, or to use RAM disks, you'll need to add commands to your CONFIG.SYS file. Use any ASCII file editor (such as EDLIN) to edit the CONFIG.SYS file.

Using expanded memory

To use expanded memory, add this command as the first line in your CONFIG.SYS file:

```
DEVICE=EMM.SYS Mx Iz1 Iz2 Iz3 Iz4 D E
```

The **Mx** parameter sets the address of the 64K-byte segment through which expanded memory is mapped. Replace **x** with one of the following numbers:

x Hex address

1	C0000
2	C4000
3	C8000
4	CC000
5	D0000

If in doubt, choose an address near the bottom of the list.

The **Iz** parameters determine which expanded memory I/O addresses the Above Boards use to access expanded memory. Use one Iz parameter for each Above Board with expanded memory. Don't use any Iz parameters for Piggyback Memory boards.

Replace each z with one of the characters listed. Be sure your z values match the I/O addresses you set up using switches 4-6 on the Above Board's middle switch block.

z Hex I/O address

0	208-20F
1	218-21F
5	258-25F
6	268-26F
A	2A8-2AF
B	2B8-2BF
E	2E8-2EF

Assign unique I/O addresses to each board. Boards in your computer can't share I/O addresses. When in doubt, try the addresses at I5 or I6 first.

NOTE

You can use up to four Above Boards (or two Above Boards and two piggyback boards) to add expanded memory.

The **D** (or **d**) parameter tells the software not to run a full expanded memory test after a warm boot. You have a choice between fast warm boots and thorough tests. Intel recommends thorough tests.

You can use the D parameter only with the Above Board's Installation and Utility Software diskette versions 2.2 and greater. The version number is on the Above Board diskette label.

If D is present, EMM will run abbreviated memory tests during a warm boot (Ctrl-Alt-Del). If D is absent, EMM will run full tests. In either case, full tests are always done on cold boot (power-on).

The **E** (or **e**) parameter lets computers containing the 3278/79 emulator board from IBM take advantage of expanded and extended memory.

Use the E parameter only with the Above Board's Installation and Utility diskette versions 2.2 or greater. The version number is on the Above Board diskette label.

Example. You're using two Above Boards, and you want abbreviated memory tests during warm reboots. You're mapping expanded memory to D0000. One Above Board is set for I/O addresses 258-25F, the other for I/O addresses 268-26F. Use this command:

```
DEVICE=EMM.SYS M5 I5 I6 D
```

Example. You're using one Above Board, and you're mapping expanded memory to C8000. The board is set for I/O addresses 218-21F, and full diagnostics will run after warm reboots. Your computer contains a 3278 emulator from IBM. Use this command:

```
DEVICE=EMM.SYS M3 I1 E
```

Creating conventional RAM disks

For each RAM disk, put a line like this at the end of your CONFIG.SYS file:

```
DEVICE=QUIKMEM1.SYS x
```

The *x* parameter controls the size of the RAM disk in K bytes and must be an integer greater than or equal to 4.

Example. To set up a 360K-byte RAM disk in conventional memory, use:

```
DEVICE=QUIKMEM1.SYS 360
```

DOS limits you to 26 RAM disks. It also assigns a drive letter to the RAM disk. For a typical AT with a hard disk, the first RAM disk is D. For a two-floppy AT with no hard disk, the first RAM disk is C. Additional RAM disks receive letters in alphabetical order.

Creating expanded RAM disks

For each RAM disk you install in expanded memory, put a line like this at the end of your CONFIG.SYS file:

```
DEVICE=QUIKMEM2.SYS x
```

This command is like QUIKMEM1, except that *x* must be at least 16. Values that aren't multiples of 16 are treated as the next-higher multiple of 16.

Example. For two 1600K-byte RAM disks in expanded memory, add these two lines to the CONFIG.SYS file:

```
DEVICE=QUIKMEM2.SYS 1600  
DEVICE=QUIKMEM2.SYS 1600
```

Editing the AUTOEXEC.BAT file

To set up a print buffer each time you turn on or restart your computer, you'll need to add a command to your AUTOEXEC.BAT file.

You can have only one print buffer. If you already have one that is set up by a command in your AUTOEXEC.BAT file, delete that command before adding either of these commands.

Use any ASCII file editor (such as EDLIN) to edit the AUTOEXEC.BAT file.

Creating a conventional print buffer

To set up the print buffer in conventional memory, use this command:

```
QUIKBUF1 x d t
```

The *x* parameter governs the size of the buffer in K bytes. The *x* must be an integer greater than or equal to 3.

The *d* parameter tells the QUIKBUF program what display adapter your computer uses.

CAUTION

If you enter the wrong value for the adapter parameter, you could damage your monitor.

Choices for the *d* parameter are:

M (or m) IBM Monochrome Adapter or compatibles.

H (or h) Hercules Monochrome Graphics Adapter or compatibles.

G (or g) IBM, COMPAQ, Zenith, AT&T, Hewlett-Packard, or Hercules Color Graphics Adapter or compatibles.

O (or o) All other boards, including the IBM Enhanced Graphics Adapter. Choosing this option disables the print buffer command menu. The print buffer will still work, but you won't be able to control it from the command menu.

The *t* parameter indicates the type of port to be buffered. The choices are:

P Parallel (LPT1, LPT2, or LPT3)
S1 Serial (COM1)
S2 Serial (COM2)

If you choose P, two things determine whether the buffered port is LPT1, LPT2, or LPT3: the first thing you print or your using certain print buffer commands. Refer to Chapter 11 of the manual for details.

If you choose an S value, you may have to add one or two MODE commands to your AUTOEXEC.BAT file. Refer to the Above Board PS/AT manual (Chapter 13) and your DOS manual for details.

If you omit the *t* parameter, the print buffer defaults to parallel.

Example. You have a Hercules Monochrome Graphics Adapter, you want a 20K-byte print buffer in conventional memory, and you want to print your data on a parallel NEC 3550 Spinwriter. Use this command:

```
QUIKBUF1 20 H P
```

Creating an expanded print buffer

To set up the print buffer in expanded memory, use the QUIKBUF2 command, which is like QUIKBUF1 with one difference. The *x* value must be 16 or greater. Any value that isn't a multiple of 16 is treated as the next higher multiple of 16.

Example. You have an IBM Color/Graphics Adapter, you want a 160K-byte print buffer in expanded memory, and you want to print your data on a serial printer attached to COM1. Use this command:

```
QUIKBUF2 160 G S1
```

RUNNING THE CONFIDENCE TESTS

Your Above Board PS/AT Installation and Utility Software diskette contains a program that runs confidence tests. These tests pinpoint bad RAM chips on your Above Board.

You can run the tests any time after your Above Board is installed.

NOTE

These confidence tests use all the RAM in your computer. If you have important data stored in your computer's RAM (in a print buffer or RAM disk, for example), save the data before starting the tests.

Throughout the confidence tests, the TESTAB program, which runs the tests, will ask for facts about your computer. If you haven't already done so, fill out the worksheet in Chapter 7 of the manual. This will save you the trouble of looking up this information during the tests.

To start the confidence tests, boot or reboot your computer from your original DOS disk. When the DOS prompt appears, put the Above Board diskette in drive A. Type:

A:TESTAB

See Chapter 7 of the manual for more information about the confidence tests.

CUSTOMER SUPPORT

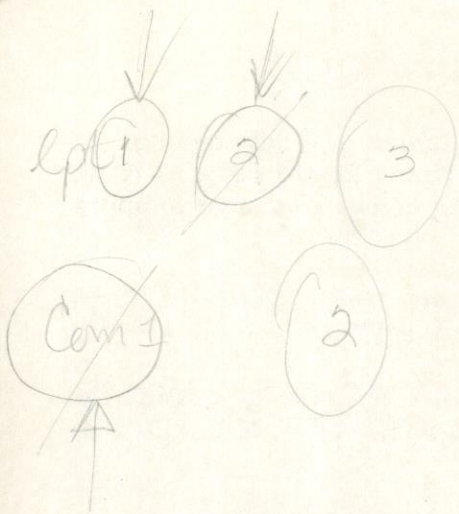
After reading this pamphlet, you may have questions or opinions about the Above Board PS/AT. If so, please contact us at one of our Customer Support numbers.

- o From the continental United States but outside Oregon, call (800) 538-3373.
- o From Oregon, Alaska, Hawaii, or outside the United States (except Canada), call (503) 629-7354.
- o From Canada, call (800) 235-0444.

Customer Support representatives are available Monday through Friday, 7 a.m. to 5 p.m. Pacific time.

If your computer has a modem and you subscribe to CompuServe or The Source, you can reach Customer Support through:

- o CompuServe mailbox 70307,461
- o The Source mailbox BCG630



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