SHORTCUTS TO INSTALLING THE ABOVE™ BOARD/AT (for DOS experts)

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Introduction

If you dislike reading manuals, *Shortcuts* is for you. It helps you install your Above Board/AT with very little reading.

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, extended, *and* expanded *memory. If you don't, read Chapter 9 in the manual.*

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

1 Adding RAM chips (page 2)

2 Setting switches and inserting the board in the computer (pages 3-5)

3 Running the computer's setup program (pages 6-7)

4 Installing the Above Board/AT software (pages 8-14)

5 Running the 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, *Shortcuts* assumes you'd rather edit the CONFIG.SYS and AUTOEXEC.BAT files yourself.

Adding RAM chips

The Above Board/AT uses 64K chips, 256K chips, or a mix of the two. You can mix the two kinds of chips only if you're using the Above Board to add conventional memory.

Buy chips that operate at 150ns or faster. (You can mix chips of different speeds.) For a list of tested chips, see Chapter 3 of the manual.

Use care when inserting the chips. Make sure the dots or notches face away from the metal board retainer.

Start filling the column nearest the metal board retainer. Once it's full, move to the next column and fill it. *You must fill columns in pairs.* 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.

Mixing 64K and 256K chips

You can mix 64K and 256K chips if the Above Board is providing your computer with 128K bytes of conventional memory. In this case, you can fill the first two columns with 64K chips and the remaining columns with 256K chips. No other mix of 64K-bit and 256K-bit chips is valid.

Setting switches and inserting the board in the computer

The Above Board/AT has two switch blocks, each with eight switches. These switches

- Divide the board's memory among conventional, expanded, and extended memory.
- Identify the kind of memory chips on the board (64K-bit, 256K-bit, or both).
- Control the expanded memory I/O addresses used by the processor to communicate with the board.

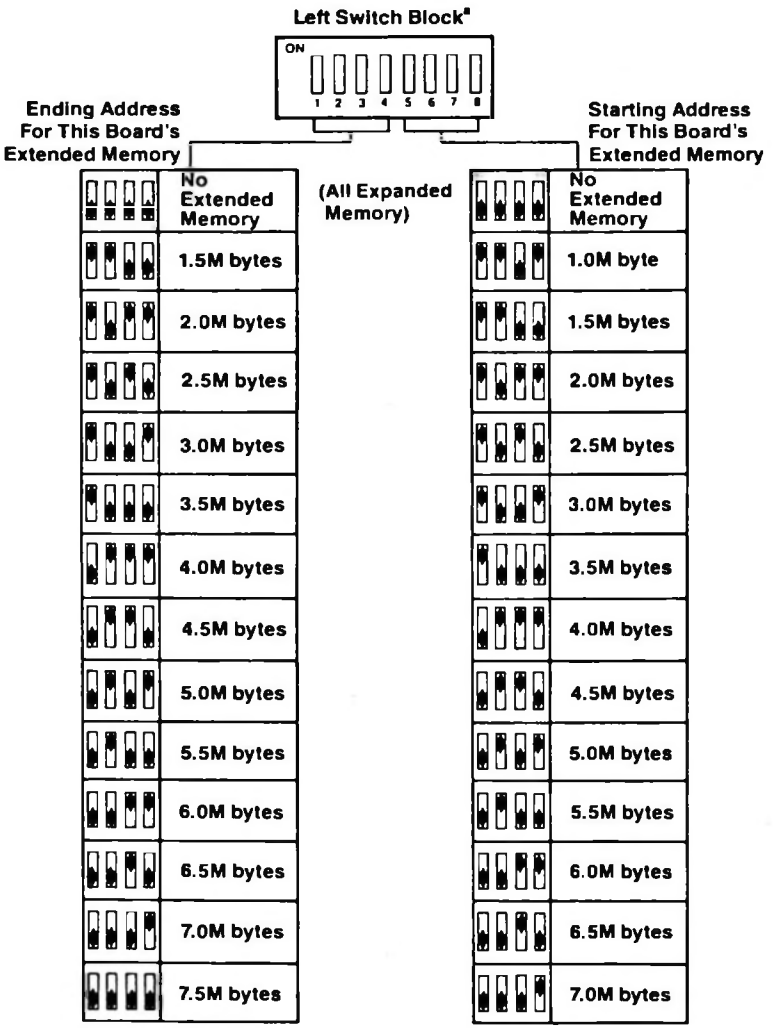
You don't need to set any switches in your IBM AT or COMPAQ 286.

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

After you've set the switches, insert 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 just one.

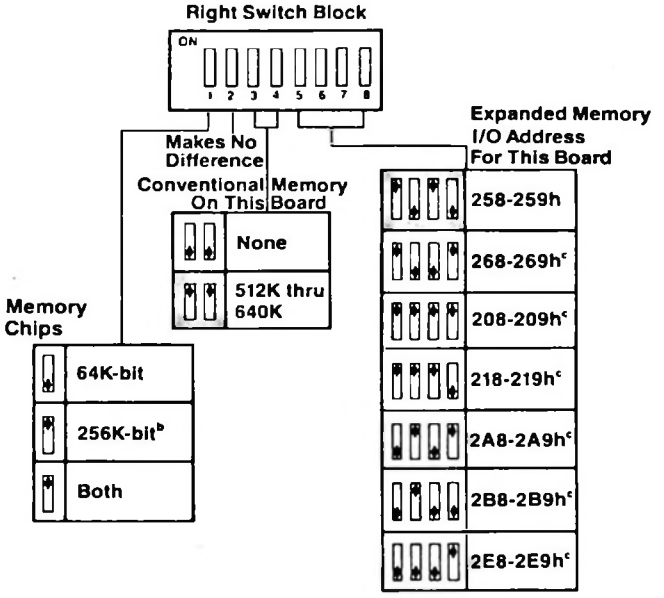
Above™ Board/AT



Most common setting.

*Very few DOS users need extended memory. The exceptions are those users who prefer the VDISK RAM disk to Intel's RAM disk. If you use DOS but not VDISK, leave all switches on this block OFF.

Switch Settings



Most common setting.

[b]If you're using only 256K-bit chips (rather than 64K-bit chips or a combination) and you're adding conventional memory, you'll lose 128K bytes of the board's capacity.

[c]Use one of these settings only if this is your second, third, or fourth Above Board or if you received Message 403.

Running the 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've added.

Who must run setup?

If you use the Above Board to add *conventional* or *extended* memory 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 IBM 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 answer sets up your computer for 640K bytes of conventional memory and 0K bytes of extended memory.

Don't worry about the expanded memory. The software installation instructions later in this guide tell you how to set up expanded memory.

For now, answer the rest of the questions asked by the setup program.

Installing the Above™ Board software

The Above Board/AT comes with software that lets you

- use expanded memory
- create RAM disks
- 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:

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

Installing the software requires three steps:

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

You don't have to do all this copying and editing. The SETUPAT program, described in Chapter 8 of the manual, can do it automatically. This guide describes the DOS expert's technique.

Copying files

Before you can use the Above Board software, you must copy some files from the Intel diskette to your hard disk's root directory or to your 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 (like EDLIN) to edit the file.

To use expanded memory

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

DEVICE=EMM.SYS M*x* Iz_1 Iz_2 Iz_3 Iz_4 D E

The M*x* (or m*x*) parameter sets the address of the 64K-byte segment to 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 (or iz) parameters determine which I/O addresses Above Boards use to access expanded memory. Use one Iz parameter for each Above Board with expanded memory. Don't use Iz parameters for Piggyback Memory

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 right switch block.

z	*Hex expanded memory 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 expanded memory I/O addresses to each board. No boards in your computer can share I/O addresses. When in doubt, try the addresses at I5 and I6 first.

NOTE

No more than four Above Boards can supply expanded memory.

The D (or d) parameter tells the software whether to run a full expanded memory test after a warm boot. You have a choice between fast warm boots or thorough tests. Intel recommends thorough tests.

You can use the D parameter only with Above Board software version 1.1 or 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 run during a cold boot (power-on).

The E (or e) parameter lets computers containing a 3270 emulator board from IBM take advantage of expanded or extended memory.

CAUTION

Add the E parameter only *if your computer contains a 3270 emulator board from IBM. If you ignore this caution, your computer may crash shortly after each boot.*

Use the E parameter only with Above Board software version 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 board is set for expanded memory I/O addresses 258-259 and the other for 268-269. Use this command:

DEVICE=EMM.SYS M5 I5 I6 d

Example. You're using one Above Board, and you're mapping expanded memory to D0000. The board is set for expanded memory I/O addresses 218-219, and full diagnostics will run after warm reboots. Your computer contains a 3270 emulator from IBM. Use this command:

DEVICE=EMM.SYS M5 I1 e

Creating conventional RAM disks

For *each* RAM disk you install in conventional memory, put a line like this in the CONFIG.SYS file:

DEVICE=QUIKMEM1.SYS *x*

The *x* parameter governs the size of the RAM disk in K bytes and must be a decimal 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 drive is D. For a two-floppy AT with no hard disk, the first RAM drive is C. Additional RAM drives receive sequential letters.

Creating expanded RAM disks

For each RAM disk you install in expanded memory, put a line like this in the CONFIG.SYS file after the EMM.SYS line:

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, put these two lines in 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. Use any ASCII file editor (like EDLIN) to edit your file.

You can have only one print buffer. If you already have one being set up by a command in your AUTOEXEC.BAT file, delete that command before adding the commands described in this section.

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 a decimal integer greater than or equal to 3.

The d parameter tells the QUIKBUF program what display adapter is being used in your computer.

Choices for the d parameter are

M (or m)	IBM Monochrome Adapter
H (or h)	Hercules Monochrome Graphics Adapter
G (or g)	IBM, COMPAQ, Zenith, AT&T, or Hercules Color Graphics Adapter
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.

CAUTION

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

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, the first thing you print or the print buffer commands you use will determine whether the buffered port is LPT1, LPT2, or LPT3. See Chapter 11 of the manual for details. If you omit the *t* parameter, the print buffer defaults to parallel.

If you choose an S value for a serial printer, you may have to add one or two MODE commands to your AUTOEXEC.BAT file. See the DOS manual or Appendix D of the Above Board/AT manual for details.

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/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.

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

For more information about the confidence tests, see Chapter 7 of the manual.

Customer support

If after reading this pamphlet, you have questions about the Above Board/AT, please contact us at one of our Customer Support numbers.

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

Customer Support representatives are ready to answer your call Monday through Friday from 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

- CompuServe mailbox 70307,461
- The Source mailbox BCG630