

# DIGITAL Personal Workstation

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## 433a Upgrade Guide

Part Number: EK-ALMIA-KU. A01

**April 1997**

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# Preface

## Welcome

This manual describes the upgrade of your DIGITAL Personal Workstation Model 180*i*, 200*i*, or 200*i*(2) to a DIGITAL Personal Workstation Model 433*a* by replacing the Main Logic Board (MLB).

## Audience

If you are converting your DIGITAL Personal Workstation Model 180*i*, 200*i*, or 200*i*(2) to a DIGITAL Personal Workstation Model 433*a*, the information included here is helpful to you.

## Organization of the Information

This guide contains information on upgrading DIGITAL Personal Workstation Models 180*i*, 200*i*, or 200*i*(2) to a DIGITAL Personal Workstation Model 433*a*. The following topics (see the Table of Contents for a detailed listing) are covered:

- *Overview* lists the contents of the kit and provides an overview of the upgrade procedures.
- *Installation* provides step by step instructions for removing the current MLB and installing the new one.

## Conventions

This guide uses the following conventions:

Example	Description
<code>c:\windows</code>	Monospaced text indicates file names, path names, directories, or screen text. Each operating system has its own specific syntax.
[Enter]	Square brackets surrounding text represent a key on the keyboard.
[Ctrl]+[R]	A plus sign indicates that you press both the keys shown at the same time.
	A pointing hand indicates a reference to additional information.

## Abbreviations

This guide uses the following abbreviations:

Abbreviation	Meaning
CD	Compact disc.
CD-ROM	Compact disc read-only memory.
CPU	Central processing unit.
DIMM	Dual inline memory module.
DMA	Direct memory access.
DRAM	Dynamic random access memory.
DROM	Diagnostic read only memory.
EIDE	Enhanced integrated drive electronics.
FDC	Floppy disk controller.
flashROM	Electrically erasable, rewriteable, nonvolatile memory.
GB	A GB suffix to a numerical value indicates size in <i>gigabytes</i> (for example, 1 GB). A gigabyte equals 1,073,741,824 bytes.
IRQ	Interrupt request.
ISA	Industry-standard architecture.
Kb	A Kb suffix to a numerical value indicates size in <i>kilobits</i> (for example, 512 Kb). A kilobit equals 1024 bits.
KB	A KB suffix to a numerical value indicates size in <i>kilobytes</i> (for example, 640 KB). A kilobyte equals 1024 bytes.

LED	Light-emitting diode.
MAU	Media adapter unit.
Mb	An Mb suffix to a numerical value indicates size in <i>megabits</i> (for example, 10 Mb). A megabit equals 1,048,576 bits.
MB	A MB suffix to a numerical value indicates size in megabytes (for example, 550 MB). A megabyte equals 1,048,576 bytes.
MHz	Megahertz.
MII	Media independent interface.
MLB	Main logic board.
ns	Nanoseconds.
NVRAM	Nonvolatile random access memory.
PCI	Peripheral component interconnect.
RISC	Reduced instruction set computing.
ROM	Read only memory.
SCSI	Small computer system interface.
SDRAM	Synchronous dynamic random access memory.

## Special Notices

This guide uses four kinds of notices to emphasize specific information.

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### WARNING

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A **WARNING** indicates the presence of a hazard that can cause personal injury.

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### CAUTION

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A **CAUTION** indicates the presence of a hazard that can damage hardware or corrupt software.

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### NOTE

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A **NOTE** gives general information, such as compatibility with other products or pointers to other information.

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### HINT

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A **HINT** includes suggestions to make your computing tasks easier.

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## Additional Information Resources

You may wish to consult the following information resources on your DIGITAL Personal Workstation which were included in your original your DIGITAL Personal Workstation documentation kit:

- *Quick Setup Guide* (order number ER-B30WW-IM. A01) presents a graphical overview of the DIGITAL Personal Workstation system installation. (Note that not all DIGITAL Personal Workstation systems will be shipping with USB.)
- *DIGITAL Personal Workstation User Information* (order number EK-ALMIA-UI. A01) provides detailed user information for the installation, operation, and maintenance of your DIGITAL Personal Workstation.

For other product-related information, we suggest that you consult our Web site at <http://www.workstation.digital.com/>. Your distributor or DIGITAL representative also can provide you with information on products and services.

## Feedback

Our readers' opinions about this guide or any other DIGITAL manual is important to us. If you have any comments, we'd appreciate your taking the time to send us electronic mail at [reader\\_comments@eng.pko.dec.com](mailto:reader_comments@eng.pko.dec.com).

Please reference order number EK-ALMIA-KU. A01 in your correspondence about this manual.



# 1

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## The 433a Upgrade

### Overview

This manual describes the upgrade of your DIGITAL Personal Workstation Model 180*i*, 200*i*, or 200*i*(2) to a DIGITAL Personal Workstation Model 433*a*.

### Kit Components

The kit for conversion of a DIGITAL Personal Workstation Model 180*i*, 200*i*, or 200*i*(2) to a DIGITAL Personal Workstation Model 433*a* is shown in Table 1-1. For further information, see the DIGITAL Systems and Options Catalog (SOC).

**Table 1-1 SN-PBXBA-CA Kit List**

Part Number	Description
54-24767-01	Main Logic Board
74-51176-38	Speed button
20-47405-D2	SDRAM DIMMs (2)
QB-5L5AA-SA	Software floppy diskettes
EK-ALMIA-KU	Documentation (this manual)
12-36175-01	Wrist grounding strap

## The 433a Upgrade

### Upgrade Procedures

You will perform the following general steps to upgrade your system.

- Backup all applications and data.
- Shut down the system
- Remove the present Main Logic Board (MLB).
- Install the new cache memory
- Install the new MLB.
- Move the power connector on the riser card.
- Replace the speed button.
- Power on the system and reinstall Windows NT.

### Installation

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#### CAUTION

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Do not touch any electronic component unless you are safely grounded. Wear the grounded wrist strap provided, or touch an exposed metal part of the system unit chassis. A static discharge from your fingers can result in permanent damage to electronic components.

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To convert your DIGITAL Personal Workstation Model 180*i*, 200*i*, or 200*i*(2) to a DIGITAL Personal Workstation Model 433*a*, follow these procedures:

1. Backup all applications and data.
2. Shut down your system and all peripheral devices.
3. Unplug the power cord.

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#### WARNING

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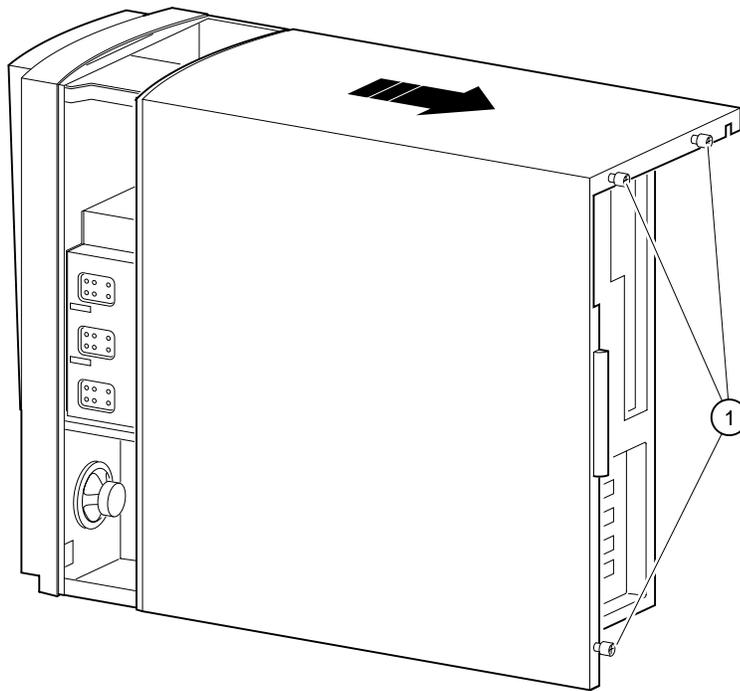
**Allow at least 15 seconds for the power supply capacitors to discharge safely.**

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4. Remove the system lock, if necessary.

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5. Locate and loosen the three thumb screws ❶ that fasten the system cover to the rear panel (see Figure 1-1). Place your thumbs on the upper corners of the system cover, pull back on the cover, and slide the cover back and away from the system enclosure. Then lift the cover up and away from the system.



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**Figure 1-1 Unlocking and Removing the System Cover**

## The 433a Upgrade

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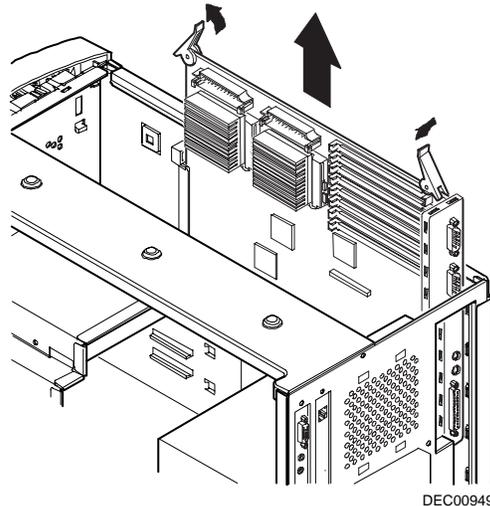
### CAUTION

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To avoid static discharge damage to sensitive components, wear the wrist grounding strap provided in your kit.

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6. Remove the keyboard, mouse, and any other external cables attached to the MLB, and release the two MLB-retaining clips on top of the MLB. (See Figure 1-2.)
7. Hold onto either end of the MLB as you slide it up and out of the system chassis.
8. Carefully place the MLB onto a static-free, flat surface.



**Figure 1-2 Removing the MLB**

9. Carefully remove the new MLB from its ESD-protected bag and place it onto a static-free, flat surface.
10. Carefully remove the DIMM modules from their ESD-protected bag.

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### NOTE

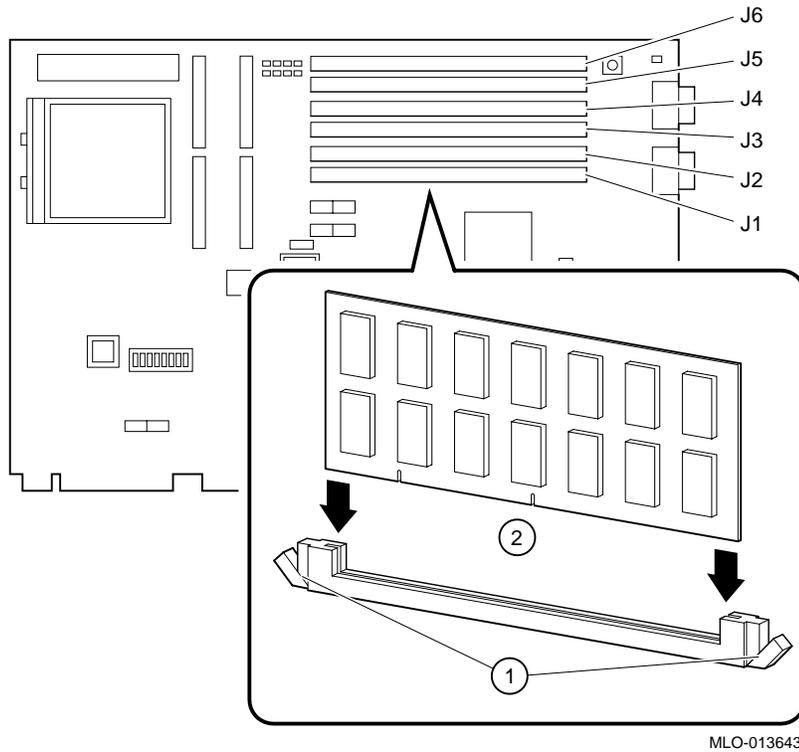
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There are three memory banks (J1/J2, J3/J4, and J5/J6) in the system; each bank consists of two DIMMs; it is suggested that you use bank J5/J6 for this upgrade.

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## The 433a Upgrade

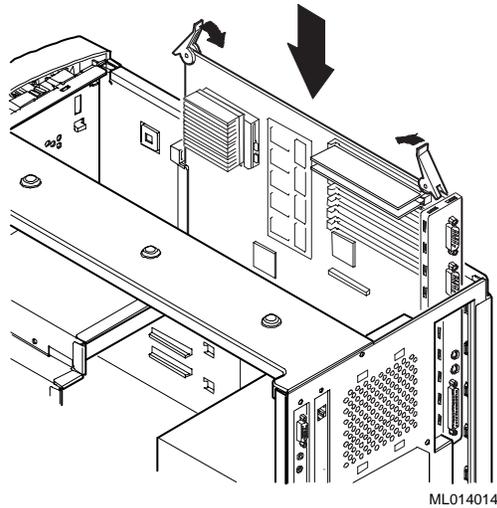
11. To add memory modules (DIMMs), refer to Figure 1-3 as you perform the following steps:
  - a) Install the DIMM ② straight into the socket. Position the DIMM so that both the retaining clips ① at the socket ends engage. Pay close attention to the keying on the DIMM and the socket.
  - b) Repeat for the remaining module.



**Figure 1-3 Installing the Memory**

## The 433a Upgrade

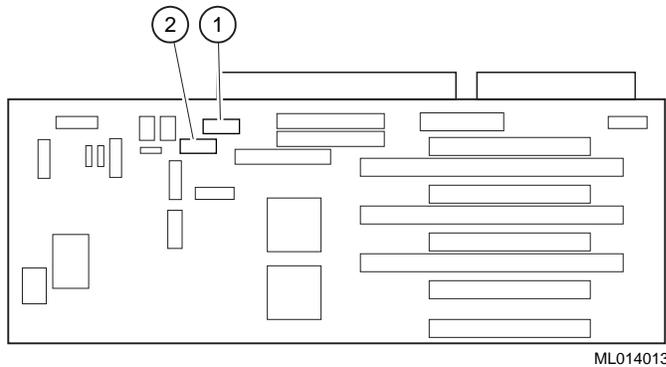
12. Hold onto either end of the new MLB as you slide it down into the system chassis. See Figure 1-4.
13. Carefully seat the new MLB onto the connectors inside the system chassis.
14. Lock the MLB-retaining clips over the MLB to secure it.
15. Reconnect the keyboard, mouse, and any other external cables you removed to the new MLB.



**Figure 1-4 Installing the New MLB**

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14. Move the power connector on the riser card from the Intel connector ❶ to the Alpha connector ❷. See Figure 1-5.

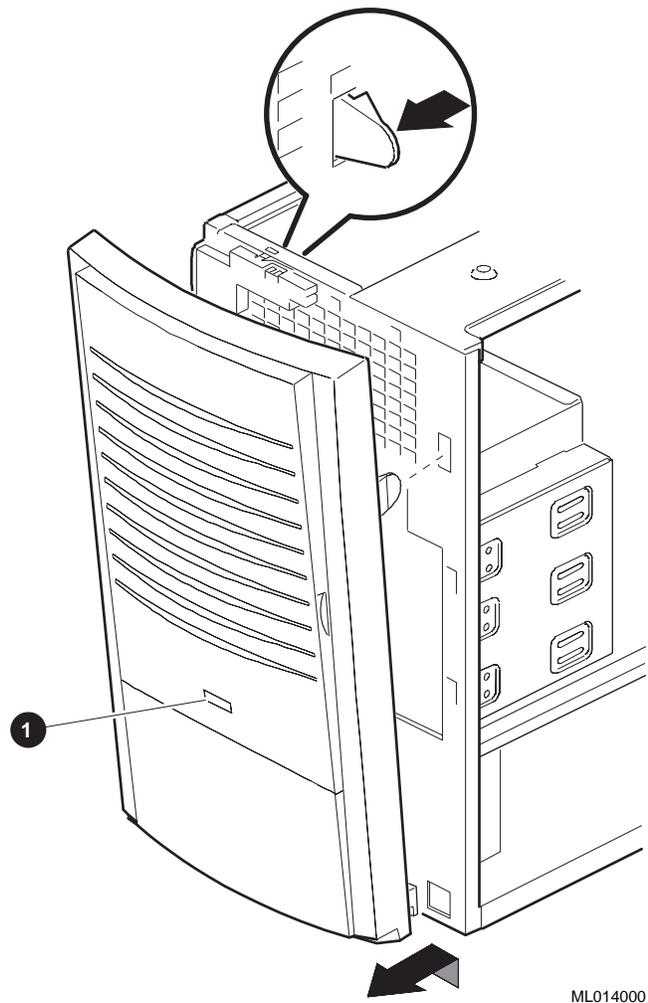


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**Figure 1-5 Moving the Power Cable**

15. To replace the speed button with the new 433a speed button, you must first remove the front bezel. Refer to Figure 1-6 and follow these steps:
  - a) From the top of the workstation, looking down toward the bottom of the front of the chassis, view the two tabs from the front bezel that hold the bezel in place and secure it to the chassis. Find both tabs (one on the left and one on the right).
  - b) Push both tabs toward the center of the workstation to release the top of the bezel.
  - c) Gently pull the top of the bezel approximately 1 inch away from the top of the chassis.
  - d) Gently, but firmly, pull up on the bezel to unhook the bottom bezel mounts.

## The 433a Upgrade

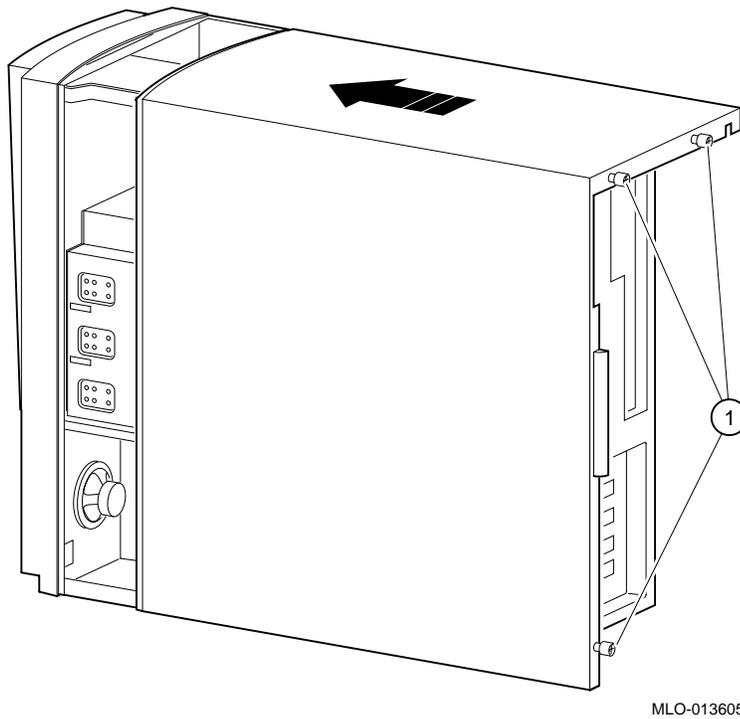


**Figure 1-6 Replacing the Speed Button**

- e) From the inside of the bezel, compress the tabs on the speed button ❶ and slide it through the bezel to the front.
- f) To install the new speed button, reverse the procedure above.

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16. Line up the flanges on the inside of the bottom-left portion of the cover so that they overlap the edge of the chassis body. (See Figure 1-7.)
17. Slide the cover forward to secure it into place. Fasten the system cover with the three thumbscrews ❶ provided.



**Figure 1-7 Replacing the Cover**

17. Plug in the power cord.
18. Power on the system.
19. Reinstall Windows NT. See EK-ALMIA-UI, *Windows NT*, (in the index) for details.
20. Place the old MLB in the ESD-protected bag which the new one came in and store it in case you wish to use it in the future.