

Prioris[™] XL and XLDP Server Powergrade Kit

Installation Guide

Order Number: ER-PC97U-IA. A01

Digital Equipment Corporation

August 1996

The information in this document is subject to change without notice and should not be construed as a commitment by Digital Equipment Corporation.

Restricted Rights: Use, duplication, or disclosure by the U.S. Government is subject to restrictions as set forth in subparagraph (c) (1) (ii) of the Rights in Technical Data and Computer Software clause at DFARS 252.227-7013.

FCC Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. Any changes or modification made to this equipment may void the user's authority to operate this equipment.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio and television reception; however, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful 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 of the following measures:

- Re-orient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

DO NOT attempt to modify this equipment. If modified, the FCC may void your authority to operate this equipment.

Canadian Department of Communications Statement

This Class B digital apparatus meets all requirements of the Canadian Interference Causing Equipment Regulations.

Prioris, DEC, DECpc, and the DIGITAL logo are trademarks of Digital Equipment Corporation. Intel and Pentium are registered trademarks of Intel Corporation. MS-DOS is a registered trademark of Microsoft Corporation. All other trademarks and registered trademarks are the property of their respective holders.

© 1996 Digital Equipment Corporation.
All Rights Reserved.

Contents

Introduction	1
Kit Contents	1
Tools Needed	2
Update Your BIOS	2
Power Down the Server	2
Check the Jumper Settings	2
Replace the Panel and Reconnect the Cables	4
Power Up the Server and Update Your BIOS	4
Powergrade Installation	5
Remove the CPU Module	5
Install a Second CPU Chip (Kit FR-PC97U-AA Only)	6
Install the Secondary Cache.....	7
Check the Jumper Settings	8
Install the Voltage Regulator Module	9
Install the CPU Module	9
Install the New Medallion	10
Replace the Panel and Reconnect the Cables	10
Run the System Configuration Utility (SCU)	11
Troubleshooting	12
Using the Crisis Recovery Diskette	12
Bulletin Board Access	12

Figures

Figure 1 Main Logic Board Jumper Locations	3
Figure 2 Removing the CPU Module	5
Figure 3 Installing a Second CPU Chip	6
Figure 4 Installing the Secondary Cache.....	7
Figure 5 CPU Module Jumper and Socket Locations.....	8
Figure 6 Installing the CPU Module	9

Tables

Table 1 Kit Contents	1
Table 2 CPU Module Jumper Settings	8

Conventions

Symbol	Meaning
	NOTE: Provides general information.
	CAUTION: Provides information to prevent damage to equipment.
	WARNING: Indicates the presence of a hazard that can cause personal injury if the hazard is not avoided.



NOTE: You may lose data if you have not backed up your system. If you do not wish to install this kit yourself, contact Digital Customer Service. For a nominal fee, a Customer Service Technician can install it for you.

Prioris™ XL and XLDP 5166

CPU Powergrade Kit

Introduction

Thank you for purchasing the Prioris™ XL or XLDP Powergrade Kit. These Powergrade kits contain all the components and instructions required to upgrade your CPU configuration to one of the following:

Model	Processor
Prioris™ XL (P5166)	1 - Intel® Pentium® 166 MHz
Prioris™ XLDP (P5166DP)	2 - Intel® Pentium® 166 MHz

Kit Contents

Table 1. Kit Contents

Kit Number: FR-PC97U	-AA	-AB	-AC	-AD*	-AE*
Pentium® 166 MHz (P5166) CPU	✓				
CPU board with 1 Pentium® 166 MHz CPU		✓			✓
CPU board with 2 Pentium® 166 MHz CPUs			✓	✓	
Main logic board				✓	✓
512KB cache	✓		✓	✓	✓
Voltage regulator board		✓	✓	✓	✓
BIOS update diskette	✓	✓	✓	✓	✓
SCU diskette	✓	✓	✓	✓	✓
Crisis recovery diskette	✓	✓	✓	✓	✓
Prioris medallion (product)	✓	✓	✓	✓	✓
Antistatic wrist strap	✓	✓	✓	✓	✓

* These kits are used when a Main Logic Board does not meet upgrade specifications; in which case, a new MLB is included in the kit, which requires Digital MCS installation.

Tools Needed

- Phillips screwdriver, 1 pt.
- Antistatic wrist strap with grounding clip

Update Your BIOS

A diskette containing the required BIOS (Basic Input-Output System) software is included with the Powergrade kit. BIOS is software that is in a nonvolatile read-only memory (ROM) chip, which is on the main logic board of your computer. The BIOS has several functions, including initializing hardware and booting the operating system when the computer is turned on.

You **must** install the new BIOS before installing your Powergrade kit. When updating the BIOS, you must remove any video option card and enable the onboard VGA.

Power Down the Server

1. Turn off your server.
2. Disconnect any external devices, the **ac power cord**, and the monitor power cord.
3. Unlock the front security lock on the server.
4. Remove the left side panel by sliding it toward the rear of the server.



WARNING: You might injure yourself or damage your server if you attempt to remove the side panel before unplugging the ac and monitor power cords.

Check the Jumper Settings

Make sure that the following jumpers are installed:

J17 (Figure 1)	Onboard VGA	Enabled (On)
J41	BIOS upgrade	Enabled (On)
J50	Boot block writable	Enabled (Jumper pin 1 to pin 2.)

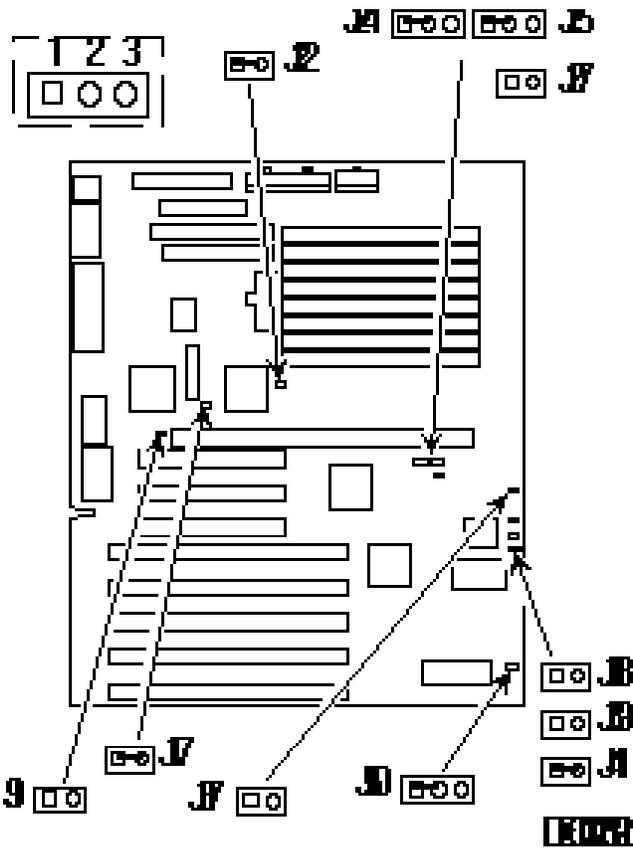


Figure 1. Main Logic Board Jumper Locations



NOTE: Remember to return jumper J50 to its disabled position (jumper pins 2-3) to prevent unauthorized personnel from changing the BIOS boot block.

Replace the Panel and Reconnect the Cables

1. Install the left side panel. The server will not power up with the side panel removed.
2. Connect the cables, the monitor power cord, and the server power cord to the back of the server.

Power Up the Server and Update Your BIOS

1. Turn on your server and allow the POST to complete. Your computer automatically boots from the BIOS Upgrade diskette in Drive A.
2. At the MS-DOS prompt, change the directory:

```
A:\cd upgrade
```
3. At the MS-DOS prompt, type: upgrade



NOTE: You must have an MS-DOS formatted diskette for the current BIOS and for the upgrade BIOS.

4. At the menu, select "Make Recovery Diskette From Flash."
5. At the menu, select "Make Recovery Diskette From Image File."
6. At the menu, select "Flash BIOS from IMAGE File." Press Continue and select the following:

```
V207_EN.BIN  
Program
```

The BIOS upgrade procedure will run automatically.



NOTE: DO NOT power down the system once this procedure has started. If the system loses power, or if at the end of this procedure the system fails, please refer to the section, "Troubleshooting – Using the Crisis Recovery Diskette if Necessary."

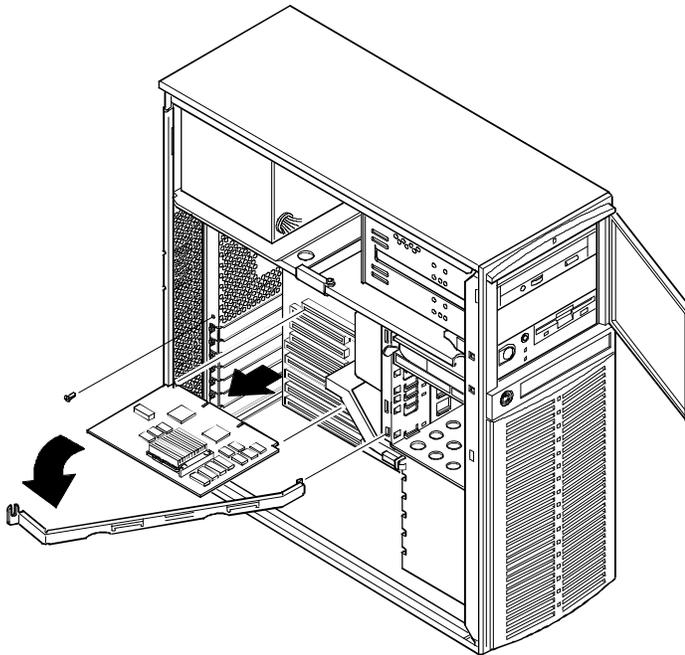
The system will reboot at the termination of the upgrade procedure.

7. Remove the diskette from Drive A.

Powergrade Installation

Remove the CPU Module

1. As described previously, power down the server.
2. Place the antistatic wrist strap on your wrist and connect the grounding clip to a non-painted metal surface of the computer's chassis.
3. Using a Phillips screwdriver, unscrew and remove the CPU module retaining bracket (Figure 2).
4. Grasping both ends of the CPU module, carefully remove it from the main logic board and place it on an antistatic surface.



DEC00243-2

Figure 2. Removing the CPU Module

Install a Second CPU Chip (Kit FR-PC97U-AA Only)

The CPU module has either one or two Intel® Pentium CPUs mounted with heat sinks in socket 5 type ZIF sockets. If you are upgrading the existing CPU module from a single processor to a dual processor (kit FR-PC97U-AA), install the new Pentium Processor chip as follows:

1. Unlatch and lift up on the release lever.
2. Install the CPU chip (Figure 3). The arrangement of the pins is keyed for correct placement. The chip also has a beveled corner (A), which may be different on your board.
3. Return the release lever to its original position.

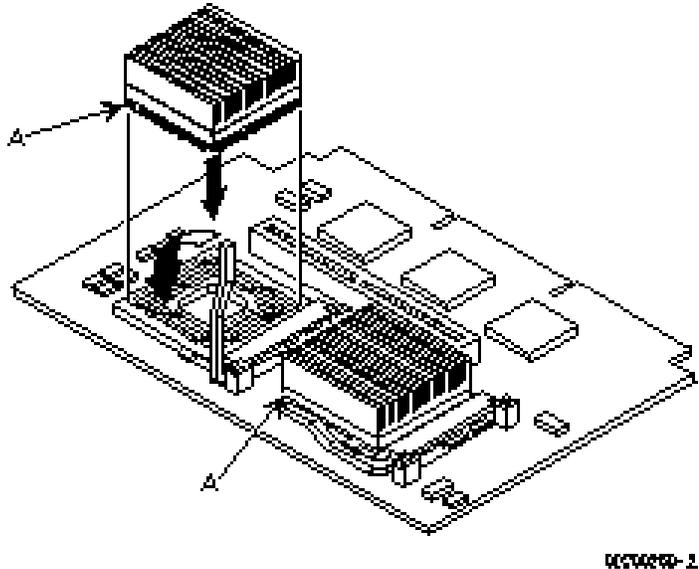


Figure 3. Installing a Second CPU Chip

Install the Secondary Cache

Move the secondary cache (if present) on the old CPU module to the new CPU module (Kit FR-PC97U-AB only). Kits FR-PC97U-AA, -AC, -AD, and -AE have a new 512 KB cache module. Seat the cache firmly into the socket (Figure 4).

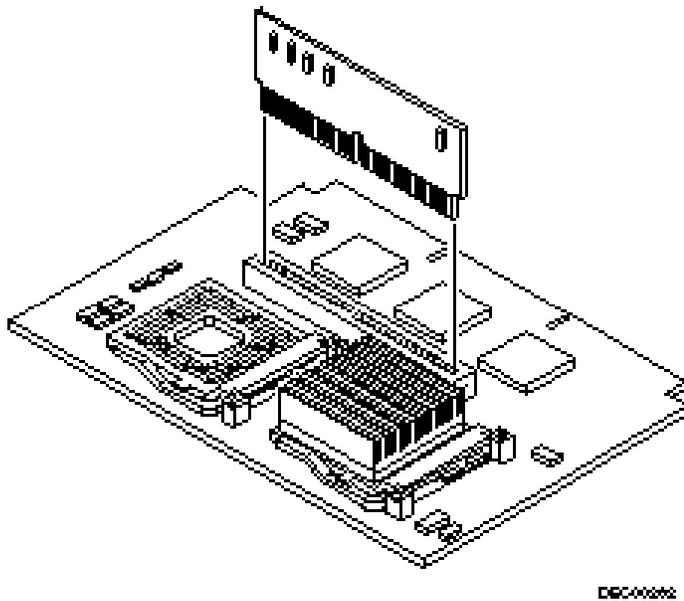


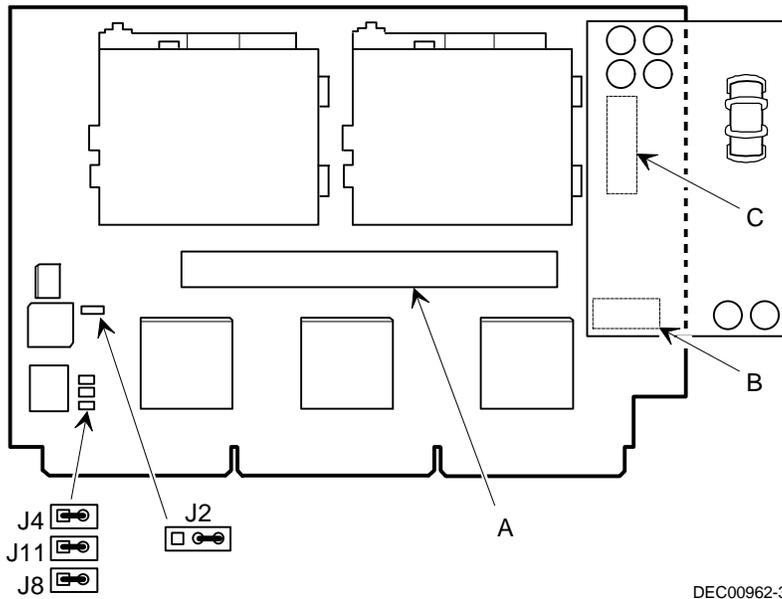
Figure 4. Installing the Secondary Cache

Check the Jumper Settings

Figure 5 shows the CPU module's jumper locations. The jumper settings for a CPU with a speed of 166 MHz are shown in Table 2.

Table 2. CPU Module Jumper Settings

	166 MHz CPU Speed			Pipeline
Jumper	J2	J4	J11	J8
Setting	Pin 2 to 3	On	On	On



A = Secondary cache socket
 B + C = Voltage regulator pins
 D = Voltage regulator board

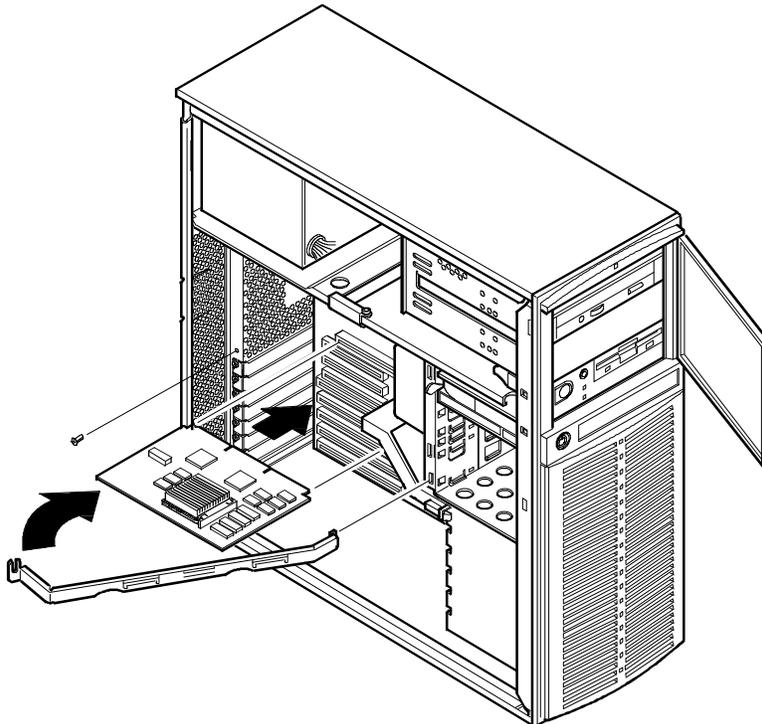
Figure 5. CPU Module Jumper and Socket Locations

Install the Voltage Regulator Module

For kits FR-PC97U-AB, -AC, -AD, and -AE only, install the Voltage Regulator module onto the voltage regulator pins on the CPU module, B and C in Figure 5.

Install the CPU Module

1. Install the CPU module into the dedicated CPU slot on the main logic board.
2. Secure the CPU module to the main logic board using the previously removed retaining bracket, screw, and a Phillips screwdriver (Figure 6).



DEC00243-3

Figure 6. Installing the CPU Module

Install the New Medallion

Install the new medallion (product nameplate) to identify your server to service personnel. To replace the nameplate:

1. Remove the tape on the back to expose the adhesive surface.
2. Press the new nameplate into place over the previous nameplate.

Replace the Panel and Reconnect the Cables

1. Install the left side panel and lock the server.



NOTE: The server will not power up with the side panel removed.

2. Connect the cables, the monitor power cord, and the server power cord to the back of the server.

Run the System Configuration Utility (SCU)

The SCU enables you to check or change your server's configuration. Run the SCU to configure your server for the new CPU chip or module.

To start and run the SCU:

1. Insert the SCU diskette into drive A and turn on your server. The diskette should boot automatically from the diskette.
2. When the SCU title appears, press any key to continue. Afterwards, follow the instructions on your screen to access the SCU main menu.
3. From the main menu, press the up or down arrow to highlight an item and then press Enter to select it. Press F1 at any time for help about a selection.
4. From the main menu select `Configure Computer` and then `View and Edit Details`.
5. Select `Save and Exit` to configure your server for the CPU module.
6. When complete, remove the SCU diskette from drive A and reboot your server.

Refer to Chapter 3, "Server Utilities," in your computer user's guide for any additional information on running the SCU.

Troubleshooting

Using the Crisis Recovery Diskette if Necessary

The crisis recovery diskette may be used only if your computer's BIOS fails or if a BIOS upgrade is unsuccessful.

When using the Crisis Recovery diskette, you must remove any video option card and enable the onboard VGA.

1. Turn off the server and make sure that the Onboard VGA jumper (J17, Figure 1) is installed (enabled).
2. Install a jumper on J39 (Figure 1) to set it to Recovery mode.
3. Insert the Crisis Recovery diskette into drive A and reboot the computer.



NOTE: Remember to remove jumper J39 to return it to Normal mode after using the Crisis Recovery diskette.

Bulletin Board Access

For future reference, you can access product information and software updates using the Internet at:

<http://www.pc.digital.com>

<http://www.pc.digital.com/~ftp>

You can also access software updates through Digital's Bulletin Board Service (BBS) by calling in the United States **508-496-8800**.

The BBS is **not** a source for technical support. For advice, please call your local Digital Service Representative.