ENCORE™/ZIF G4

Processor Upgrade Card for G3/G4 Power Macintosh® Computers

Quick Start Guide For Encore/ZIF G4

Power Macintosh and Operating System Compatibility

Encore/ZIF G4 processor upgrade cards are compatible with Power Macintosh G3 All-in-one, Desktop, Minitower, and Blue & White models, and Power Mac® G4 (PCI Graphics) models.

At this printing, the Encore/ZIF G4 supports most versions of the Mac OS® that Apple supports on your system. For Power Macintosh G3 Blue & White and Power Mac G4 (PCI Graphics) systems, this includes Mac OS 9.2 through OS X Version 10.4.x. For all beige Power Macintosh G3 models, Mac OS Versions 8.6 through OS X 10.2.8 are supported. Mac OS 9.0 or higher is required for G4 AltiVec use. For up-to-date Mac OS compatibility, check our web site.

- **Beige G3 system owners please note, for complete compatibility with Mac OS X, your system must have a bootable Mac OS 9.1.x System Folder residing on a hard drive.**

- **Blue & White G3 system owners please note, for complete compatibility with Mac OS X, your system must have a bootable Mac OS 9.2.x System Folder residing on a hard drive.**

1 GHz model shown;
*your card may differ
from what is pictured*

You Should Have

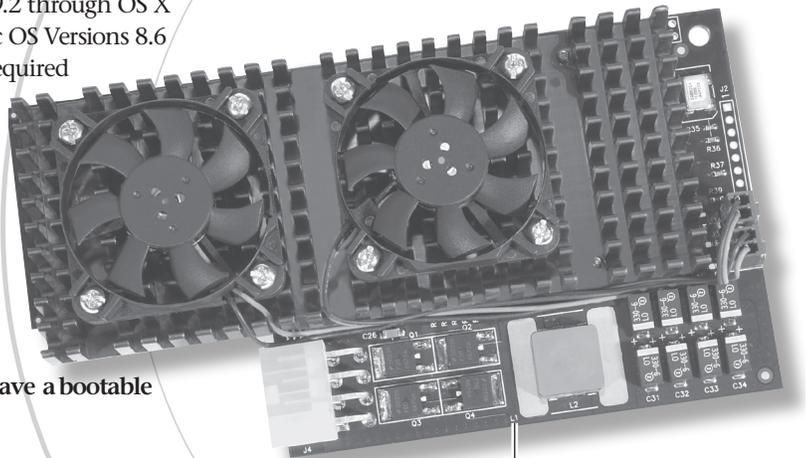The following items should be included in your product package:

- Encore/ZIF G4 processor upgrade card
- Power adapter cable
- Sonnet Installer CD
- *Powered by Sonnet* label
- Jumper blocks (for use only in G3 Blue & White and G4 PCI Graphics Models)

For the installation you will need:

- Small flat blade screwdriver
- Medium Phillips head screwdriver
- Short-handled, small Phillips head screwdriver (only for G3 All-in-one)
- Needle-nose pliers

Multiple Upgrade Recommendation

If you intend to perform multiple hardware upgrades to your computer, we recommend that you complete the installation of the Encore/ZIF G4 processor upgrade card first, then install the remaining upgrades; *complete each upgrade and test it before proceeding to the next.*

Support Notes: Please familiarize yourself with the following instructions before beginning the installation. This product has fragile pins that can be easily damaged; careful installation is required. **Broken pins are not covered under warranty.** If you feel you are unable to install the computer hardware, please contact a qualified computer technician.

We recommend you make a backup of important information on your system's current hard drive(s) prior to installing new hardware or software.

When handling computer products, you must take care to prevent components from being damaged by static electricity. Before opening your computer or removing parts from their packages, always ground yourself first by touching a metal part of the computer, such as a port access cover, and work in an area free of static electricity; avoid carpeted areas. Handle all electronic components by their edges, and avoid touching connector traces and component pins.

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Install Software... First!

Install or Upgrade to Mac OS 9.2.x or Later, If Necessary—Power Macintosh G3 Blue & White and Power Mac G4 (PCI Graphics) Users

If you have either a Power Macintosh G3 Blue & White or Power Mac G4 (PCI Graphics) computer, the Encore/ZIF G4 requires that Mac OS 9.2 be installed on your system on a writeable local hard disk (not a CD, DVD or network disk). You must boot your system from a Mac OS 9.2 system folder in order to patch the Power Mac firmware so your system can support this Encore/ZIF G4 card. Verify the Mac OS version on your system is at least Mac OS 9.2, and then install or upgrade the OS software if necessary.

> ⚠️ **Mac OS X Alert:** (*This does not apply to Power Mac G4 (PCI Graphics) models.*) Due to technical issues that arise from the operation of a modern 745x G4 processor (used on the Encore/ZIF card) in an older system, your computer will not be able to boot from a Mac OS X CD using the usual methods (starting your system while you hold down the C key on your keyboard, or launching the Mac OS X install application and then clicking the Restart button). After you install the Encore/ZIF G4 processor card, **in order to boot from a Mac OS X Install or Update CD, you must maintain a bootable Mac OS 9.1.x or 9.2.x System Folder on a hard drive (*not* a CD).**
>
> To boot from the Mac OS X Install or Update CD, you must first boot into Mac OX 9.1.x or 9.2.x, open the Startup Disk X control panel (installed by the Crescendo/Encore Install application), and choose the install or update CD as your Startup Disk.
>
> The alternative is to reinstall either your original processor card or previous processor upgrade card, which may allow you to boot from the CD.

Software Installation—ALL USERS

This section describes the installation of software required to support the Encore/ZIF G4 under Mac OS 8.x or 9.x. *Additional software required to support the Encore/ZIF under Mac OS X must be installed after you finish installing the Encore/ZIF card*; **see page 24.**

1. If you are upgrading to Mac OS 9.x or Mac OS X as part of this installation, do so now; complete the Mac OS upgrade, and then restart your computer. Please note, Mac OS 9 or higher is required to fully support AltiVec-enhanced applications.

> ⚠️ **WARNING:** Before running the Crescendo/Encore Install application, you must ensure your system is booted in Mac OS 8.6 or 9.x; do not attempt to run this in Mac OS X Classic mode. This software will only function in Mac OS 8.6 through OS 9.x.
>
> *If you are installing this product into Power Macintosh G3 Blue & White system AND you are replacing a processor upgrade card not manufactured by Sonnet, you may need to uninstall the firmware patch used to make your system compatible with the processor upgrade card before you install Sonnet software. In some cases, unless you uninstall the firmware patch, the Sonnet software will not install on your system.*

2. If your system is booted in Mac OS X, switch back to OS 9; otherwise, skip to the next step. From the Apple menu, select System Preferences..., and then click on the Startup Disk icon. When the System Folders appear, select the Mac OS 9 System Folder in which you will install the Sonnet software.

3. Insert the Sonnet Installer CD into the CD-ROM drive. Double-click the *Mac OS 7-9 ONLY, not Classic* folder, and then double-click the Crescendo/Encore Install icon. By default, with "Easy Install" selected from the pop-up menu, the required software will be installed into the active System Folder on the boot drive. If this is okay, click the Install button; otherwise, select "Custom Install" from the pop-up menu for more options or to select another drive to install the software. The installer will install the appropriate software into the System Folder of your computer.

4. *If you are installing the Encore/ZIF into a Power Macintosh G3 Blue & White or Power Mac G4 (PCI Graphics) system, skip to the next step.* Otherwise, if the installation was successful, a dialog box will appear. Click Quit to leave the installer and shut down your computer; go to page 2.

The steps in this section apply only to the remaining software installation in Power Macintosh G3 Blue & White and Power Mac G4 (PCI Graphics) systems.

5. If the installation was successful, a dialog box will appear. The program will then install a firmware patch that enables the use of the Encore/ZIF G4 in your computer. (The Sonnet patch may be uninstalled. However, doing so prevents your system from working with the Encore/ZIF G4.) Read the instructions in the dialog box, and click OK to shut down your computer.

6. Press *and hold* down the Programmer's button (the button on the right, beneath the Power button) on the front of your computer.

7. While holding down the Programmer's button, press and release the Power button on your computer or keyboard. Continue to hold down the Programmer's button until you hear a tone play through the speaker.

8. When the tone is heard, release the Programmer's button; a progress bar will appear at the bottom of the screen.

9. Once the firmware update is complete, your system will restart. If an error occurred, a message will appear; you must rerun the installer. Otherwise, a dialog box will appear, stating it is okay to install the Encore/ZIF G4; click OK.

Hardware Installation—G3 Desktop

This section covers the installation of the Encore/ZIF G4 processor upgrade card into Power Macintosh G3 Desktop computers. If you have a Power Macintosh G3 Minitower or Macintosh Server G3 system, skip to page 7. If you have a Power Macintosh G3 All-in-one system, skip to page 12. If you have a Power Macintosh G3 Blue & White or Power Mac G4 (PCI Graphics) system, skip to page 19.

Shut Down and Open Computer

1. Shut down your Power Macintosh. If the computer has been on for any length of time, wait a few minutes for it to cool before beginning the installation.

2. If you need to move the computer to a different area where you can work freely, disconnect any connected cables, move the computer, then reconnect the power cord and plug it in to an outlet.

3. With the front of the computer facing you, locate the two tabs on the underside of the front cover (**Figure 1**). Press them in, and then slide the cover forward and off the computer.

4. Touch the power supply case (**Figure 2**) to discharge any potentially damaging static electricity, then disconnect the power and peripheral cables from the back of the computer.

> **Support Note:** To avoid generating a static charge in your body, do not walk around the room until after you finish installing the Encore/ZIF card and close the computer.

5. Rotate the expansion card cover up and to the left (**Figure 2**).

6. Locate the two latches securing the internal assembly in place, and slide them toward each other, and then rotate the support foot into its locked position (**Figure 3**).

7. Rotate the internal assembly out of the case (**Figure 4**); be sure to lock the support arm into place.
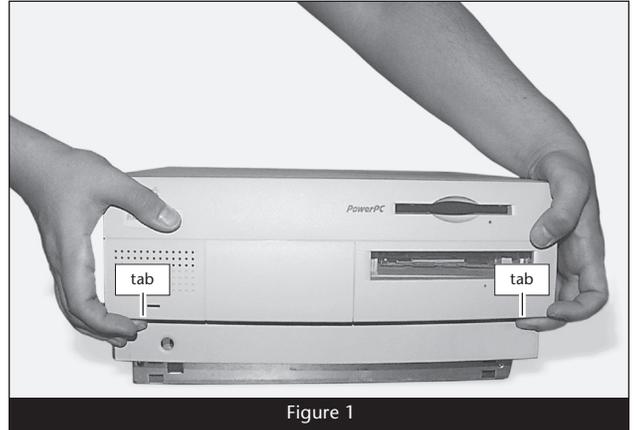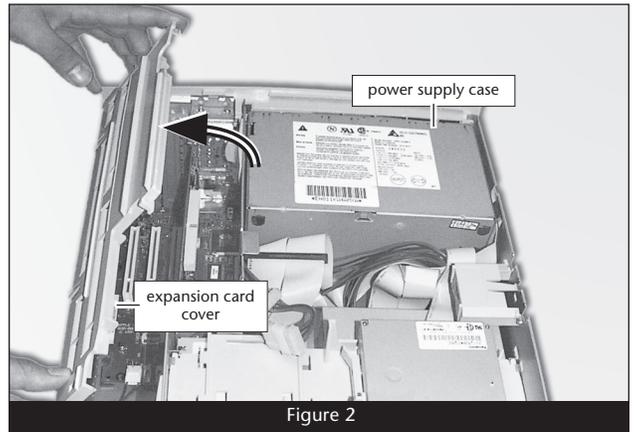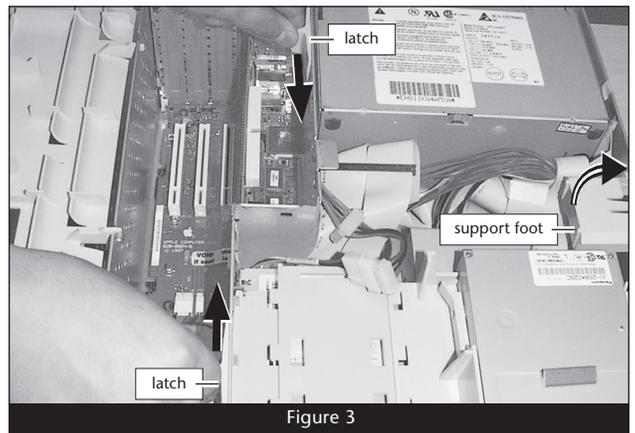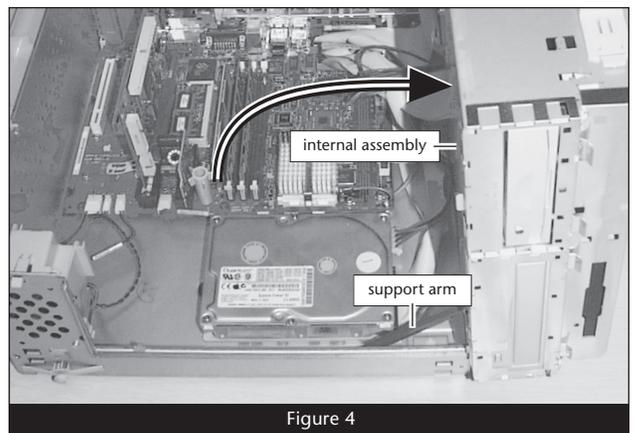

Figure 1

Figure 2

Figure 3

Figure 4

Hardware Installation—G3 Desktop

8. Locate the spring clip on the internal assembly (**Figure 5**), unhook and remove it from the assembly; **do not reinstall the spring clip**.
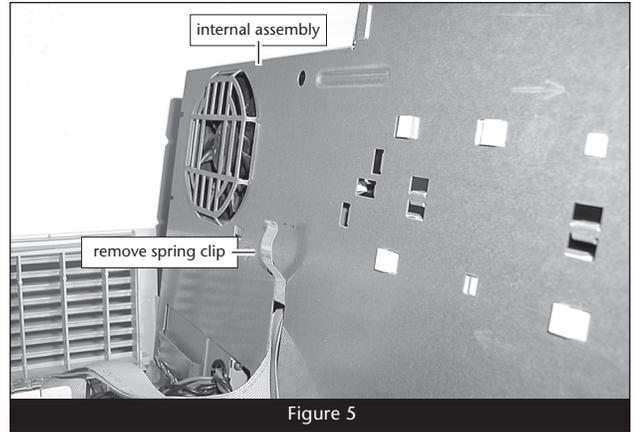
Figure 5

Remove Heat Sink

1. Locate the screw securing the heat sink ground wire to the logic board (**Figure 6**). Remove the screw, move the wire out of the way, and then replace the screw; **do not overtighten it**.
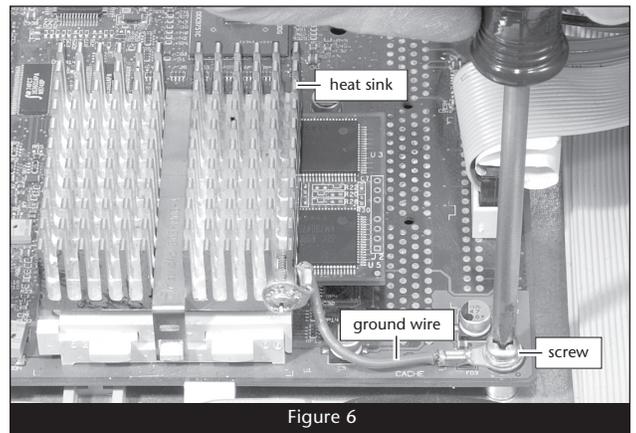
Figure 6

2. Locate the clip securing the processor heat sink to the ZIF socket (**Figure 7**). Carefully insert a small flat blade screwdriver between the clip and the socket. While pressing down on the top of the clip with your finger, gently twist the screwdriver until you see the clip unhook from the ZIF socket tab. Unhook the clip from the other side of the heat sink, remove the clip and heat sink from the processor, and then set them aside.
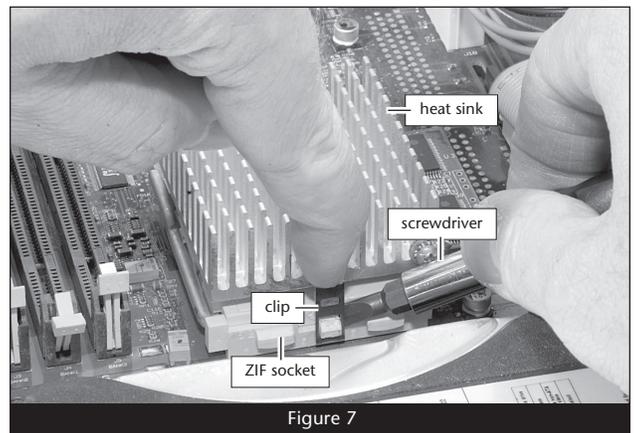
Figure 7

Remove Processor Card

Push down and out on the ZIF socket lever (**Figure 8**) to disengage it from the side tab on the socket. Once the lever is clear of the side tab, rotate the lever up 90°. Gently lift the existing processor card up and out of the ZIF socket.
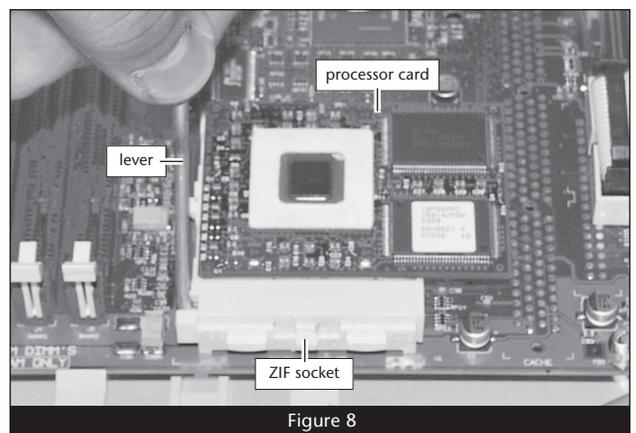
Figure 8

Hardware Installation—G3 Desktop

Install Encore/ZIF Processor Upgrade Card

1. Remove the Encore/ZIF card from its anti-static package, making sure to handle the card by its edges **(Figure 9)**; *your card may differ from what is pictured*.

Figure 9

2. Gently peel the pin protection foam off the Encore card, and then transfer it to the processor card you removed from the computer. With the foam attached, place the processor card into the anti-static package and store it and the heat sink, in a safe place.
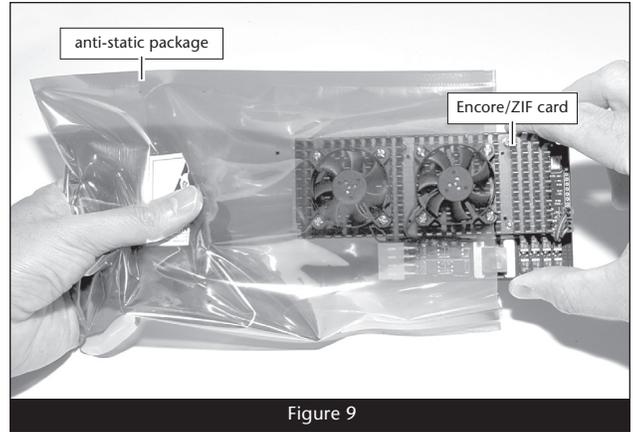
3. Turn the Encore/ZIF card so that the narrow end of the card is pointing toward you, with the pins facing down. Plug the 8-pin connector from the included power adapter cable into the 8-pin connector on the Encore/ZIF card **(Figure 10)**; **verify the connector is plugged in securely**.
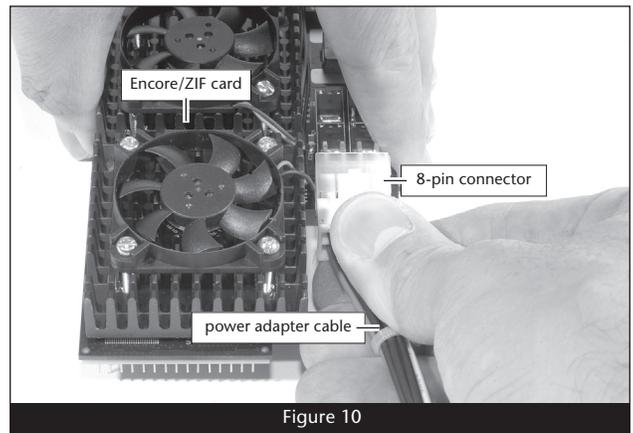
Figure 10

4. Grasp the Encore/ZIF card so that the narrow end of the card is pointing toward you **(Figure 11)**. Holding it level with the logic board, align the Encore/ZIF card's pins over the ZIF socket's holes, and then carefully lower the Encore/ZIF card into the ZIF socket; with all the pins aligned, the card will be easy to push into the socket. If you encounter any resistance, raise the card and check for bent pins, if none are bent, realign the card's pins with the socket and gently lower it again. **Be very careful! Broken pins are not covered under warranty**.
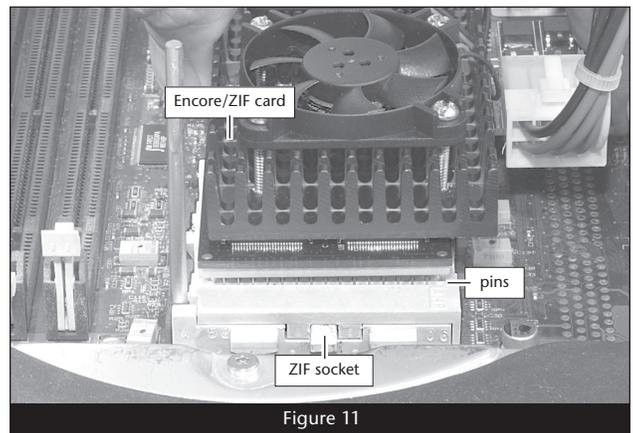

Figure 11

5. While applying moderate pressure on top of the Encore/ZIF card's heat sink above the ZIF socket, secure the card in place by pressing down on the ZIF socket lever until it latches under the socket's side tab **(Figure 12)**.
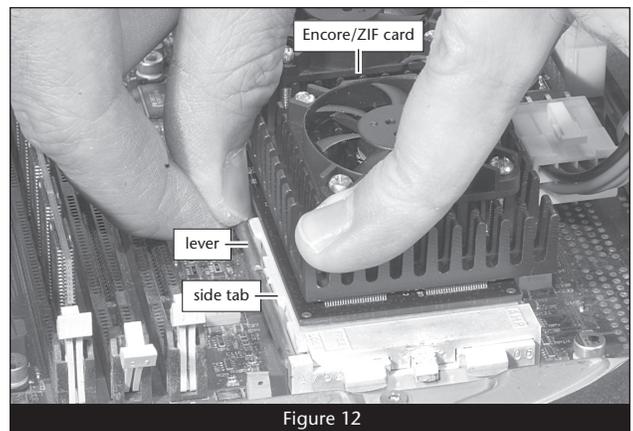

Figure 12

Hardware Installation—G3 Desktop

> ⚠️ **WARNING:** When disconnecting cables from the logic board, do not pull on the wires; always pull on the connectors.

Install Power Adapter Cable Between Computer and Encore/ZIF Card

1. Locate the logic board power cable plugged in next to the Encore/ZIF card **(Figure 13)**. Unplug the connector by pulling it straight up while squeezing its locking tab.
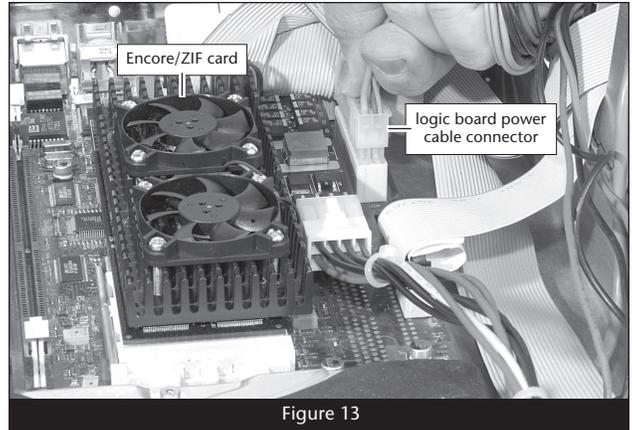

Figure 13

2. Plug in the provided power adapter cable between the connector on the logic board and the logic board power cable **(Figure 14)**; **verify that all the connectors are plugged in securely**.
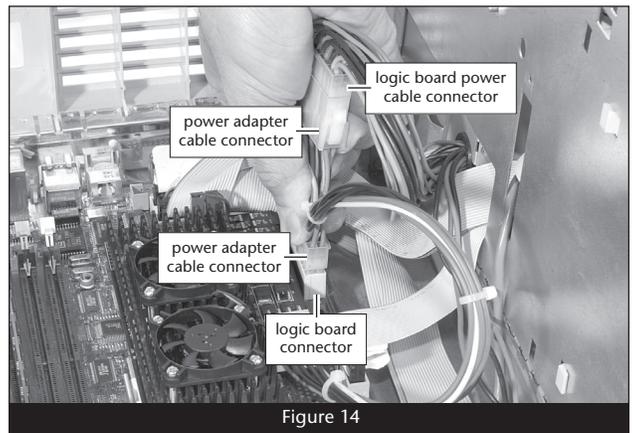
Figure 14

Close Computer

1. Arrange the wires and cables inside the computer so that nothing which may block airflow through the cooling fans runs across the top of the Encore/ZIF card, and so that nothing will be pinched when you close the internal assembly **(Figure 15)**.
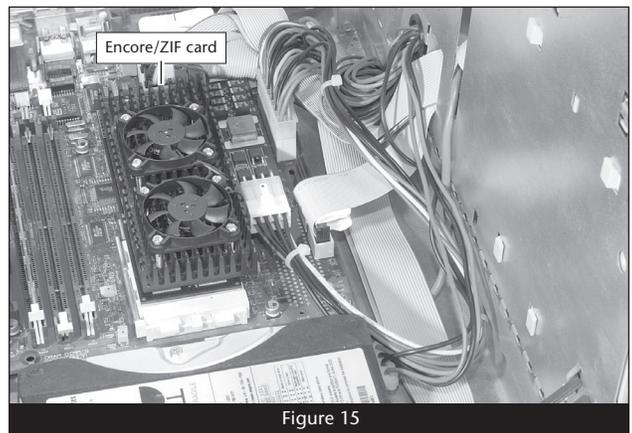

Figure 15

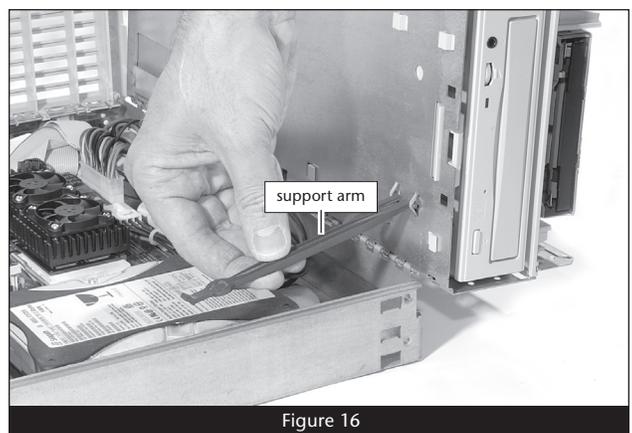2. Disengage the support arm from the bottom of the computer's case **(Figure 16)**.

Figure 16

Hardware Installation—G3 Desktop

3. Rotate and carefully lower the internal assembly back into the computer's case **(Figure 17)**, **making sure that no wires or cables get pinched or crushed**.
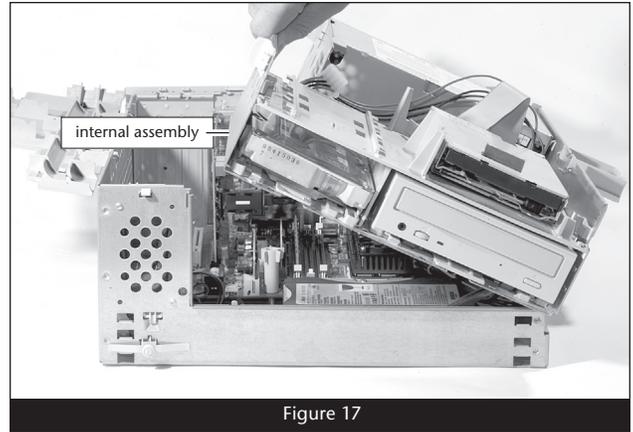

internal assembly

Figure 17

4. Slide and lock the internal assembly latches back into their original position, and flip the support foot back into the case **(Figure 18)**.
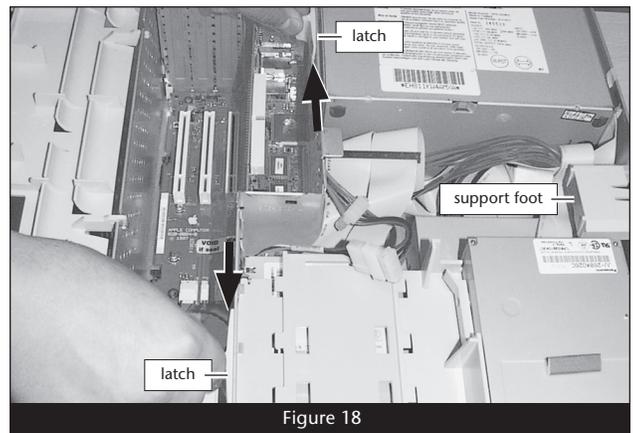

latch

support foot

latch

Figure 18

5. Rotate and snap the expansion card cover back into place **(Figure 19)**.

6. Replace the case cover onto your computer.

7. Affix the *Powered by Sonnet* label to the front of your computer.

8. Return the computer to your computing area and reconnect the power and peripheral cables to the computer.
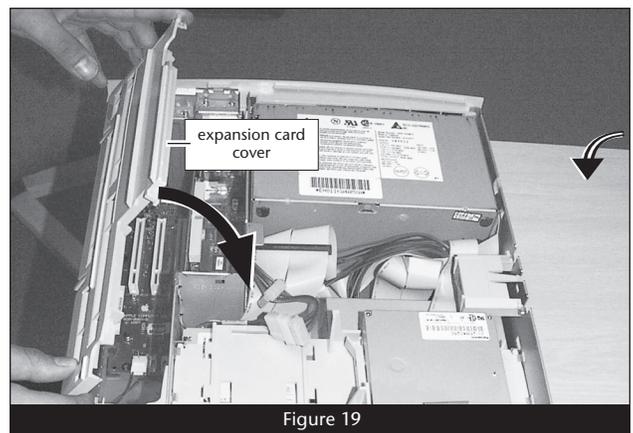
Turn On Computer

1. Turn on your Power Macintosh; your accelerated machine should boot normally.

2. If your system is running Mac OS 8.6, 9.1.x or 9.2.x, your installation is complete. If your system is running Mac OS 9.0.x, or Mac OS X (any version), see page 24, "Installing Additional Software".

expansion card cover

Figure 19

Hardware Installation—G3 Minitower/Server G3

This section covers the installation of the Encore/ZIF G4 processor upgrade card into Power Macintosh G3 Minitower and Macintosh Server G3 systems. If you have a Power Macintosh G3 Desktop computer, return to page 2. If you have a Power Macintosh G3 All-in-one system, skip to page 12. If you have a Power Macintosh G3 Blue & White or Power Mac G4 (PCI Graphics) system, skip to page 19.

Shut Down and Open Computer

1. Shut down your Power Macintosh. If the computer has been on for any length of time, wait a few minutes for it to cool before beginning the installation.

2. If you need to move the computer to a different area where you can work freely, disconnect any connected cables, move the computer, then reconnect the power cord and plug it in to an outlet.

3. With the front of the computer facing you, remove the side access panel from your Power Macintosh (**Figure 20**).

4. Carefully lay the computer on its side. Touch the power supply case **(Figure 21)** to discharge any potentially damaging static electricity, then disconnect the power and peripheral cables from the back of the computer.

> **Support Note:** To avoid generating a static charge in your body, do not walk around the room until after you finish installing the Encore/ZIF card and close the computer.

5. Locate the two latches securing the internal assembly in place, and flip them up **(Figure 21)**.

6. Using its built-in handle, rotate the internal assembly out of the chassis **(Figure 22)**.

Remove Heat Sink

1. Locate the screw securing the heat sink ground wire to the logic board **(Figure 23)**. Remove the screw, move the wire out of the way, and then replace the screw; **do not overtighten it**.
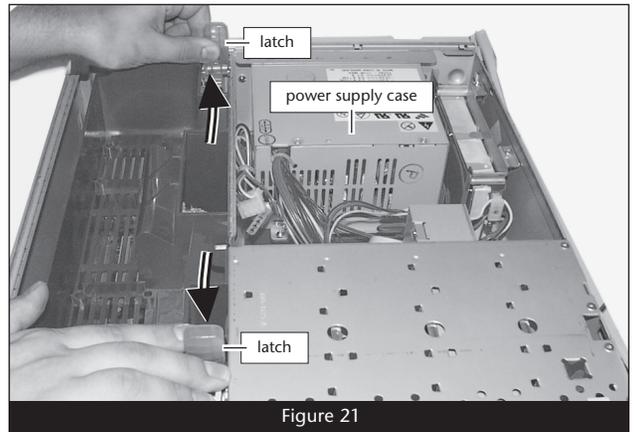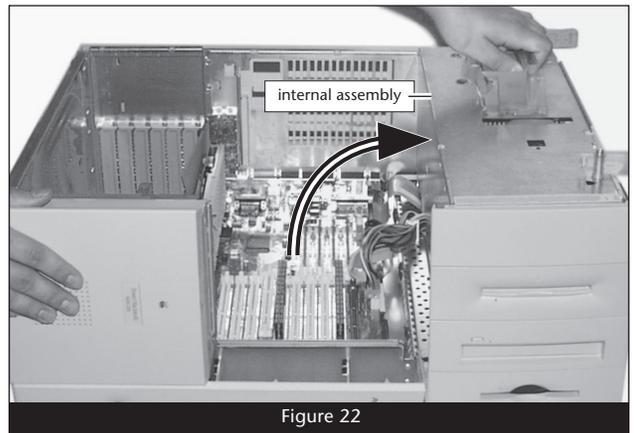

Figure 20

Figure 21

Figure 22
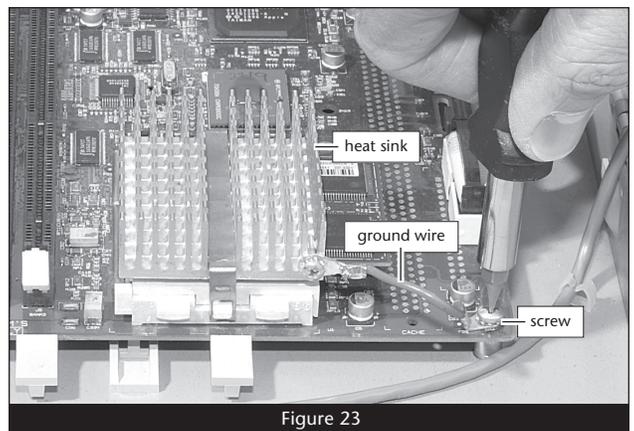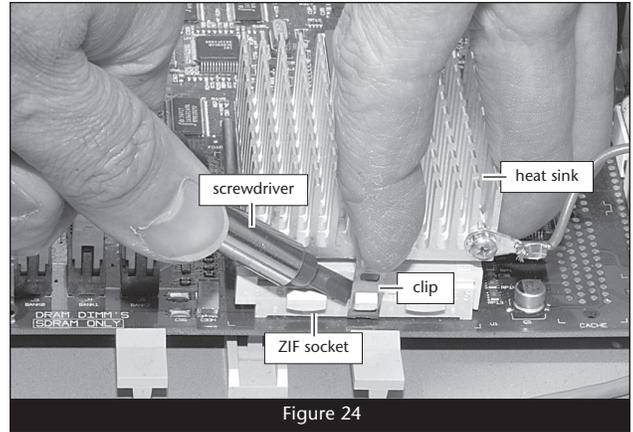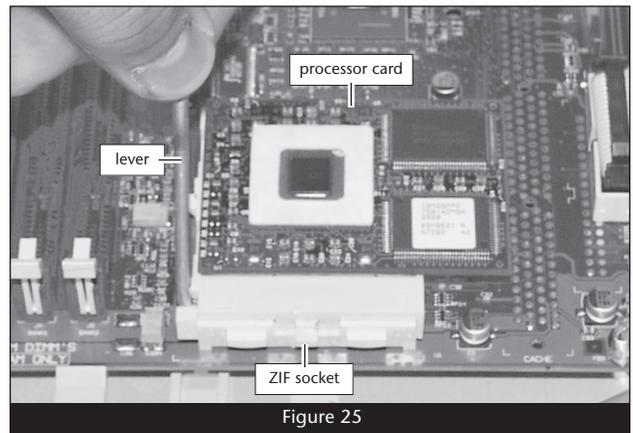

Figure 23

G3 Minitower/Server G3

2. Locate the clip securing the processor heat sink to the ZIF socket **(Figure 24)**. Carefully insert a small flat blade screwdriver between the clip and the socket. While pressing down on the top of the clip with your finger, gently twist the screwdriver until you see the clip unhook from the ZIF socket tab. Unhook the clip from the other side of the heat sink, remove the clip and heat sink from the processor, and then set them aside.
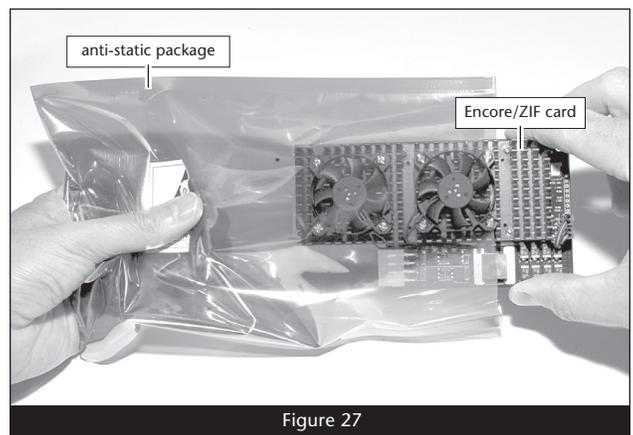

Figure 24

Remove Processor Card

Push down and out on the ZIF socket lever **(Figure 25)** to disengage it from the side tab on the socket. Once the lever is clear of the side tab, rotate the lever up 90˚. Gently lift the existing processor card up and out of the ZIF socket.
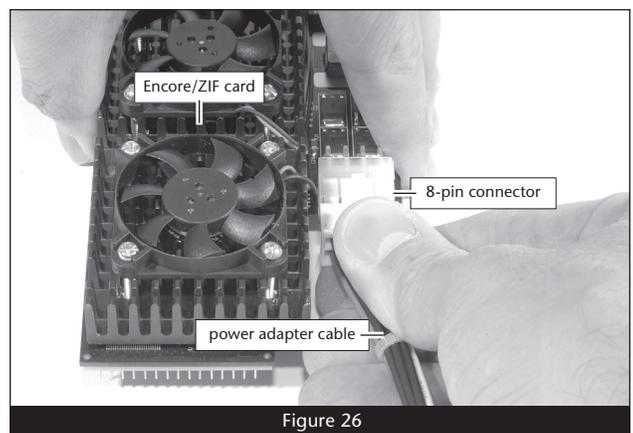

Figure 25

Install Encore/ZIF Processor Upgrade Card

1. Remove the Encore/ZIF card from its anti-static package, making sure to handle the card by its edges **(Figure 26)**; *your card may differ from what is pictured*. Gently peel the pin protection foam off the Encore card, and then transfer it to the processor card you removed from the computer. With the foam attached, place the processor card into the anti-static package and store it and the heat sink in a safe place.
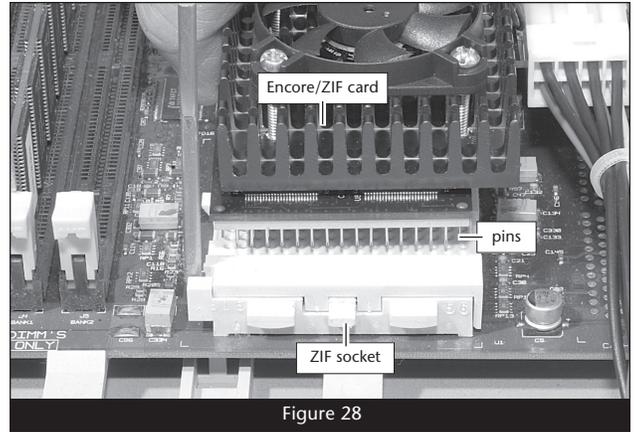

Figure 27

2. Turn the Encore/ZIF card so that the narrow end of the card is pointing toward you, with the pins facing down. Plug the 8-pin connector from the included power adapter cable into the 8-pin connector on the Encore/ZIF card **(Figure 27)**; **verify the connector is plugged in securely**.

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Figure 26

3. Grasp the Encore/ZIF card so that the narrow end of the card is pointing toward you **(Figure 28)**. Holding it level with the logic board, align the Encore/ZIF card's pins over the ZIF socket's holes, and then carefully lower the Encore/ZIF card into the ZIF socket; with all the pins aligned, the card will be easy to push into the socket. If you encounter any resistance, raise the card and check for bent pins, if none are bent, realign the card's pins with the socket and gently lower it again. **Be very careful! Broken pins are not covered under warranty**.
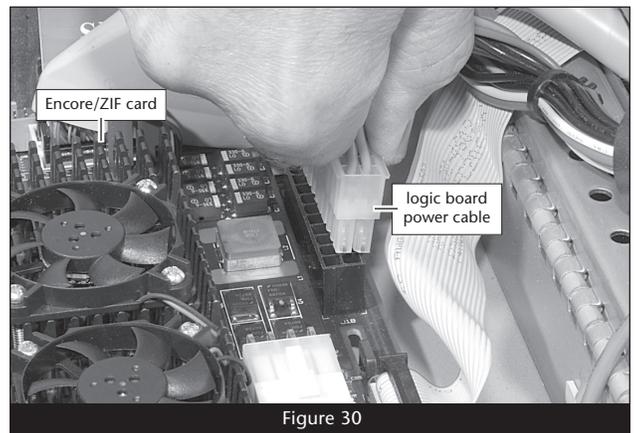

Figure 28

4. While applying moderate pressure on top of the Encore/ZIF card's heat sink above the ZIF socket, secure the card in place by pressing down on the ZIF socket lever until it latches under the socket's side tab **(Figure 29)**.
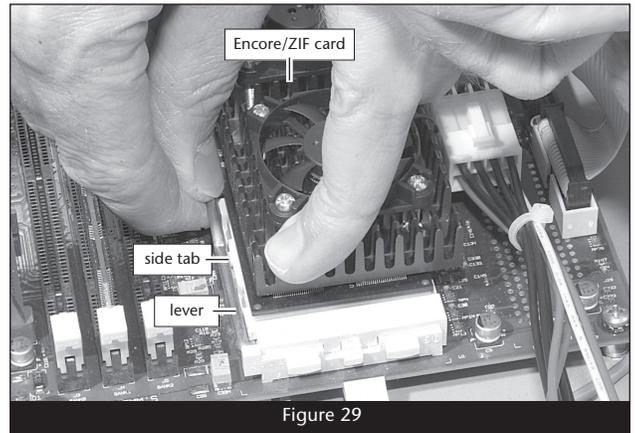

Figure 29

⚠️ **WARNING:** When disconnecting cables from the logic board, do not pull on the wires; always pull on the connectors.

Install Power Adapter Cable Between Computer and Encore/ZIF Card

1. Locate the logic board power cable plugged in next to the Encore/ZIF card **(Figure 30)**. Unplug the connector by pulling it straight up while squeezing its locking tab.

Figure 30

2. Plug in the provided power adapter cable between the connector on the logic board and the logic board power cable **(Figure 31)**; **verify that all the connectors are plugged in securely**.

Figure 31
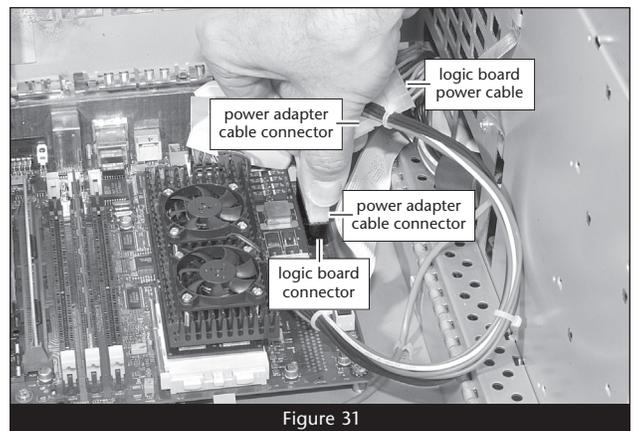
Hardware Installation—G3 Minitower/Server G3

Close Computer

1. Arrange the wires and cables inside the computer so that nothing runs across the top of the Encore/ZIF card, and so that nothing will be pinched when you close the internal assembly **(Figure 32)**.

Encore/ZIF card

Figure 32

> ⚠️ **WARNING:** You must remove the spring clip from the internal assembly, otherwise the Encore/ZIF card will be damaged when you close your computer.
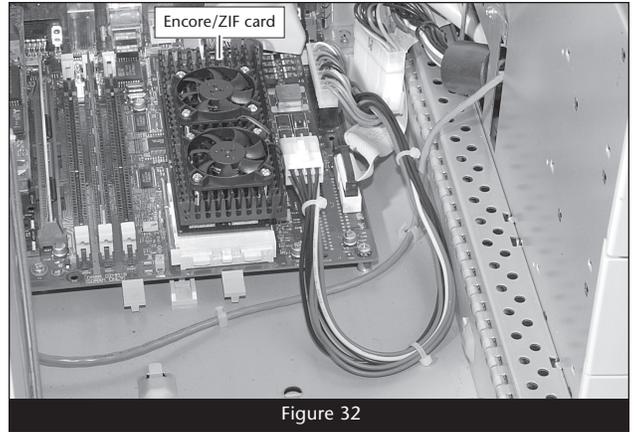
2. Locate the spring clip on the internal assembly **(Figure 33)**, unhook and remove it from the assembly; **do not reinstall the spring clip**.
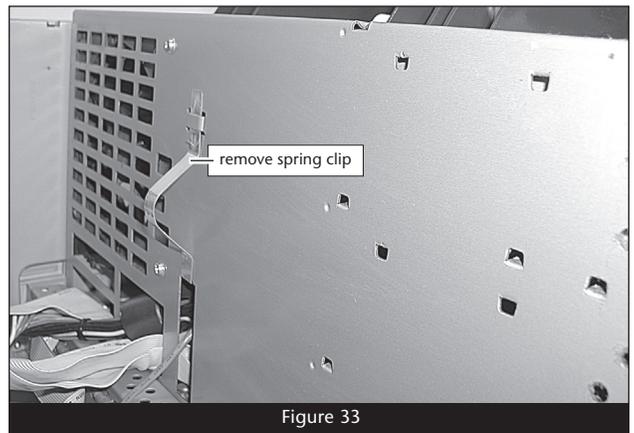

remove spring clip

Figure 33

3. Rotate and carefully lower the internal assembly back into the computer's case **(Figure 34)**, **making sure that no wires or cables are getting pinched**.
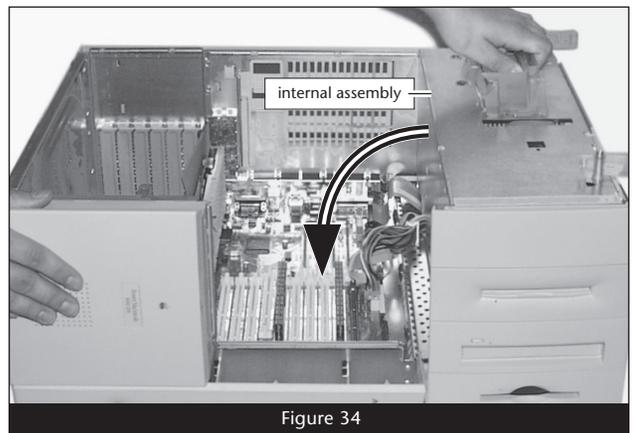

internal assembly

Figure 34

4. Lock the internal assembly latches into their original positions **(Figure 35)**.
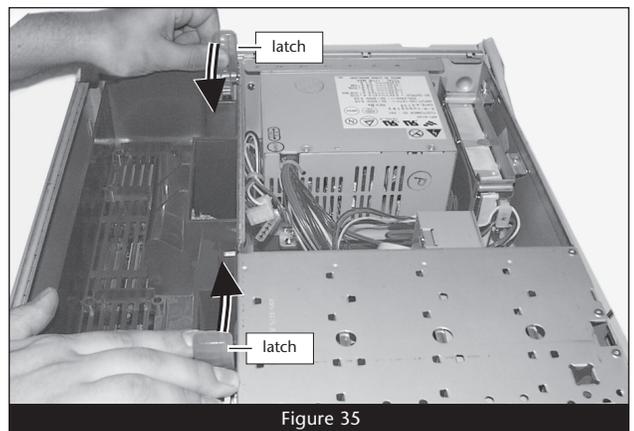

latch

latch

Figure 35

Hardware Installation—G3 Minitower/Server G3

5. Tip your computer back into the upright position, and then replace the side access panel **(Figure 36)**.

6. Affix the *Powered by Sonnet* label to the front of your computer.

7. Return the computer to your computing area and reconnect the power and peripheral cables to the computer.

Turn On Computer

1. Turn on your Power Macintosh; your accelerated machine should boot normally.

2. If your system is running Mac OS 8.6, 9.1.x or 9.2.x, your installation is complete. If your system is running Mac OS 9.0.x, or Mac OS X (any version), see page 24, "Installing Additional Software".
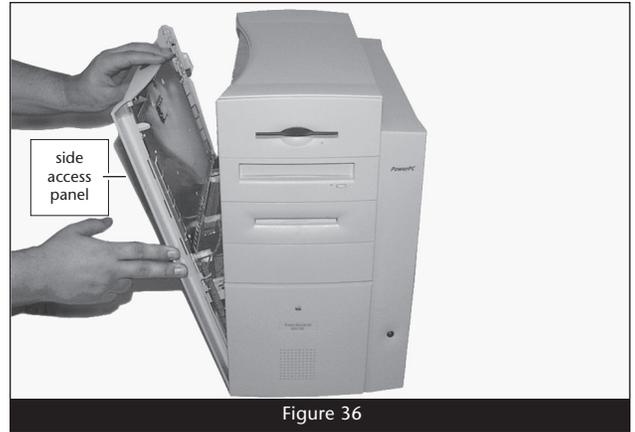

side access panel

Figure 36

Hardware Installation—G3 All-in-one

This section covers the installation of the Encore/ZIF G4 processor upgrade card into Power Macintosh G3 All-in-one computers. If you have a Power Macintosh G3 Desktop computer, go back to page 2. If you have a Power Macintosh G3 Minitower or Macintosh Server G3 system, go back to page 7. If you have a Power Macintosh G3 Blue & White or Power Mac G4 (PCI Graphics) system, skip to page 19.

Shut Down and Open Computer

1. Shut down your Power Macintosh. If the computer has been on for any length of time, wait a few minutes for it to cool before beginning the installation.

2. If you need to move the computer to a different area where you can work freely, disconnect any connected cables, move the computer, then reconnect the power cord and plug it in to an outlet.

3. With the rear of the computer facing you, touch a port access cover **(Figure 37)** to discharge any potentially damaging static electricity, then disconnect the power and peripheral cables from the back of the computer.

> **Support Note:** To avoid generating a static charge in your body, do not walk around the room until after you finish installing the Encore/ZIF card and close the computer.

4. Remove the four screws securing the chassis carrier to the computer case **(Figure 37)**.

5. Without completely removing it, slide the chassis carrier out of the case as far as it will go **(Figure 38)**.

Remove Cable Support Bracket

1. Unlock the clamp securing the main SCSI cable to the cable support bracket **(Figure 39)**.

2. Locate the screw securing the cable support bracket to the chassis carrier; it is screwed into the panel next to the drives, between the bracket's tabs **(Figure 40)**. Using a short-handled, small Phillips head screwdriver, remove the screw.
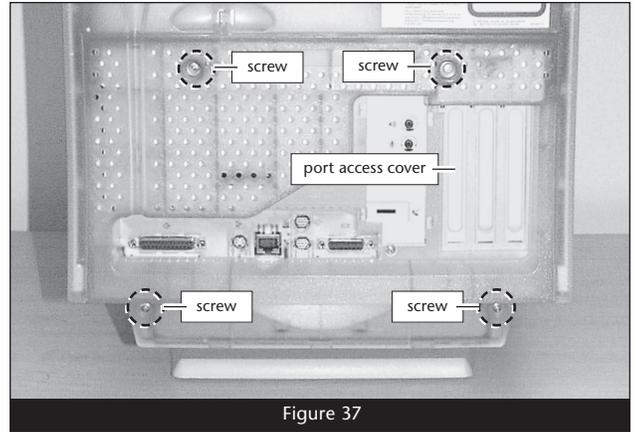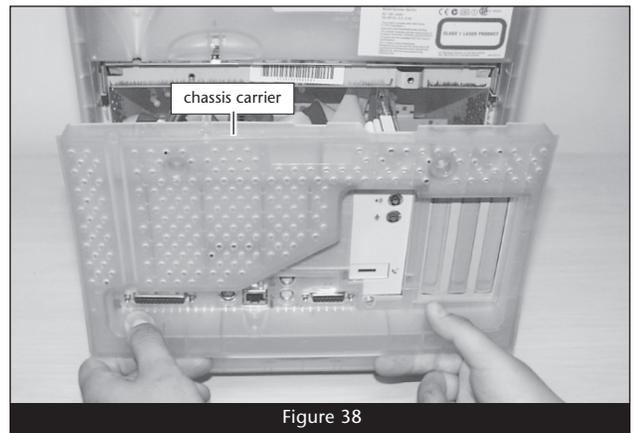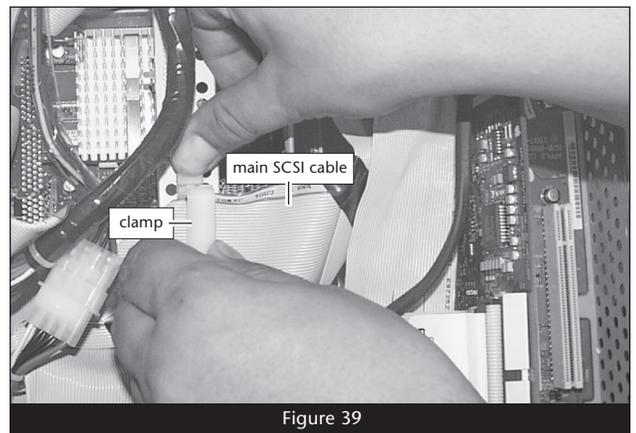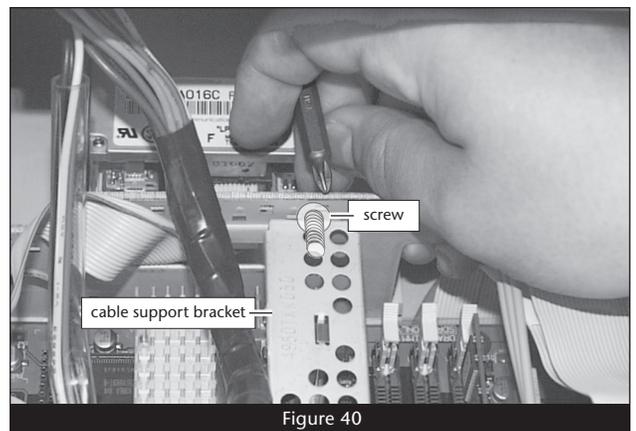

Figure 37

Figure 38

Figure 39

Figure 40

Hardware Installation—G3 All-in-one

3. Remove the screw securing the cable support bracket to the rear panel **(Figure 41)**; *be careful not to lose the screw when removing it, as it can easily drop into the chassis carrier.*
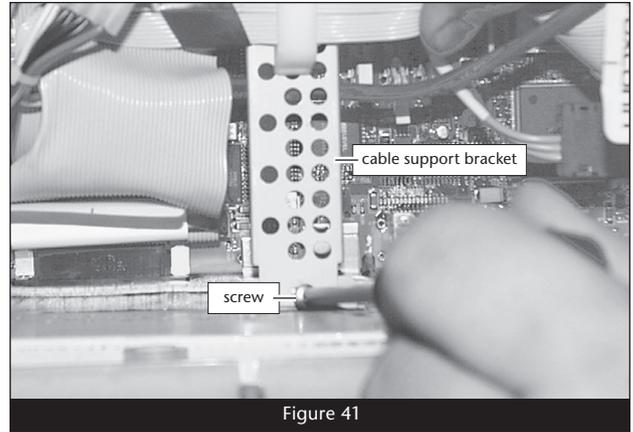

Figure 41

4. Carefully remove the cable support bracket from the chassis carrier **(Figure 42)**.
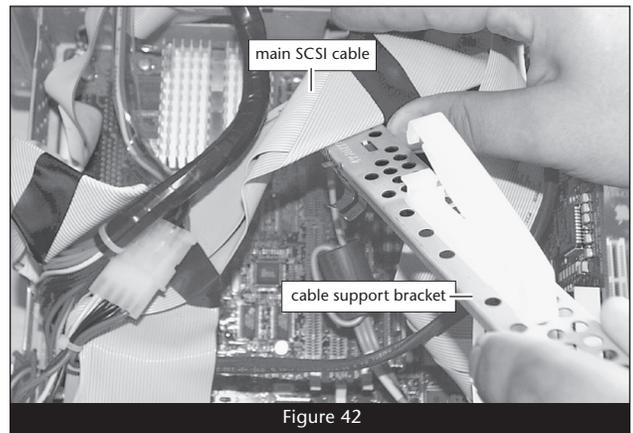

Figure 42

⚠️ **WARNING:** You must remove the spring clip from the cable support bracket, otherwise the Encore/ZIF card will be damaged when you reassemble and attempt to operate your computer.

5. Slide the brass-colored spring clip off of the cable support bracket, and then set it, the bracket, and the screws aside **(Figure 43); do not reinstall the spring clip.**
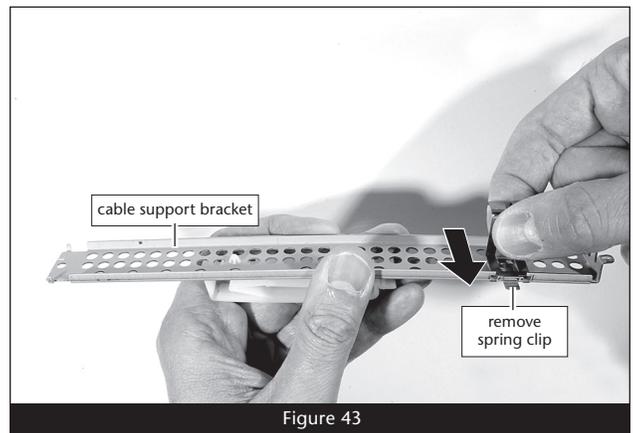

Figure 43

⚠️ **WARNING:** When disconnecting cables from the logic board, do not pull on the wires; always pull on the connectors or their pull tabs.

Disconnect Logic Board Cables

In order to install the Encore/ZIF processor upgrade card and its included power adapter cable, you will need to disconnect various connectors, and unplug cables from the logic board first. **Figure 44** identifies the cables and the order in which they should be disconnected.

• Internal drives power cable connectors **(A)**
• Main SCSI cable **(B)**
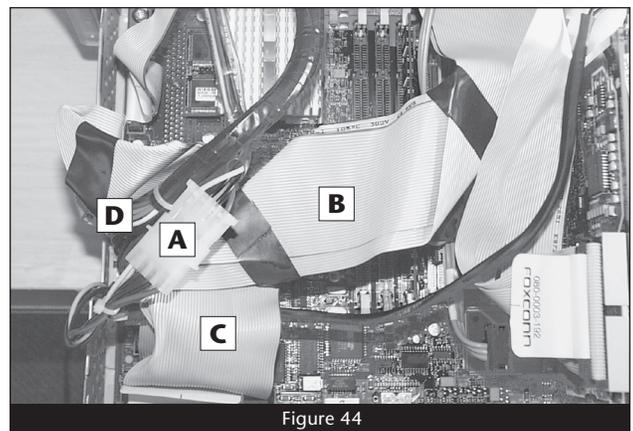• Secondary SCSI cable **(C)**
• Logic board power cable **(D)**

Figure 44

G3 All-in-one

13

Hardware Installation—G3 All-in-one

1. Disconnect the internal drives power cable connectors **(Figure 45)**.

internal drives power cable
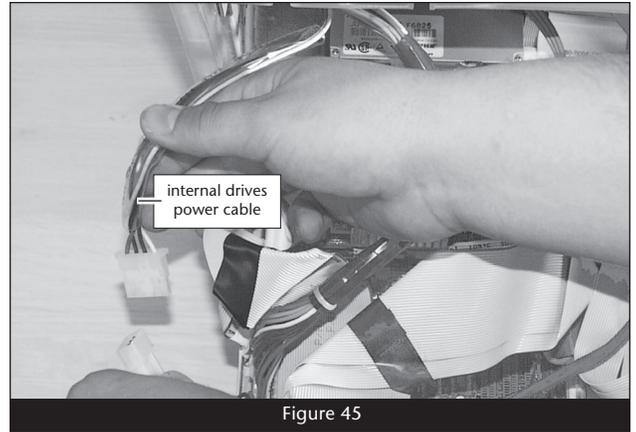
Figure 45

2. Disconnect the main SCSI cable connectors from the logic board **(Figure 46)**.

pull tab
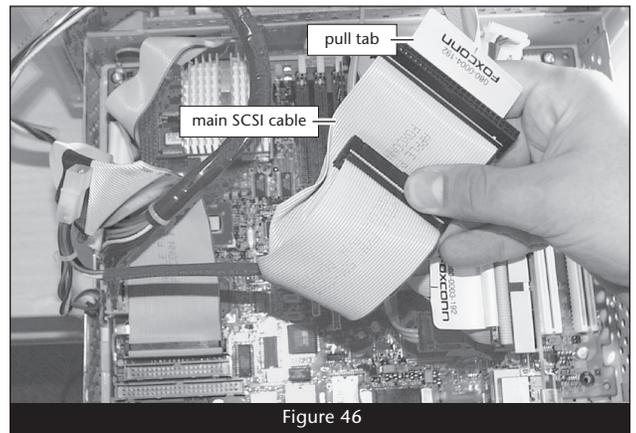
main SCSI cable

Figure 46

3. Disconnect the secondary SCSI cable from the logic board **(Figure 47)**.
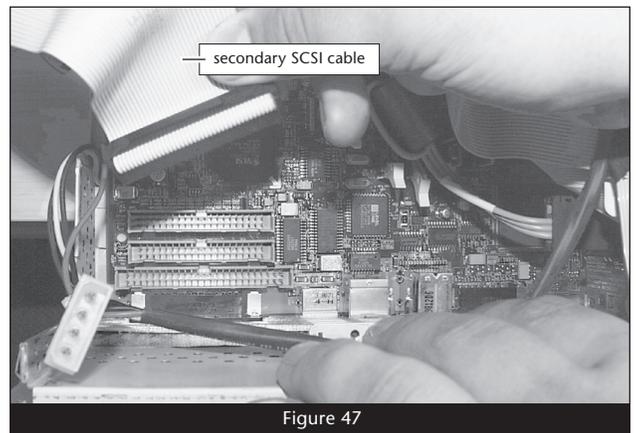

secondary SCSI cable

Figure 47

4. Move the SCSI cables out of the way to expose the logic board power connector **(Figure 48)**.

logic board power cable

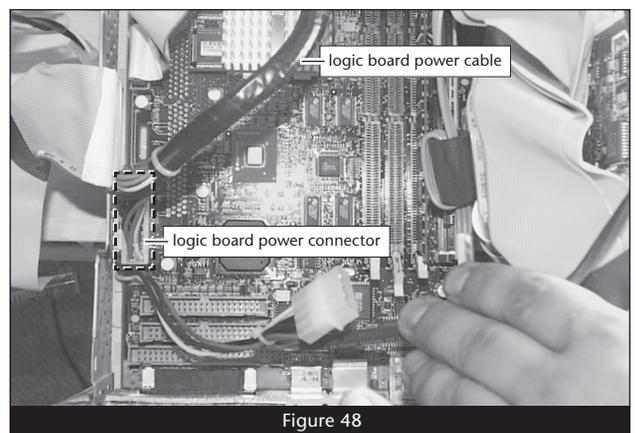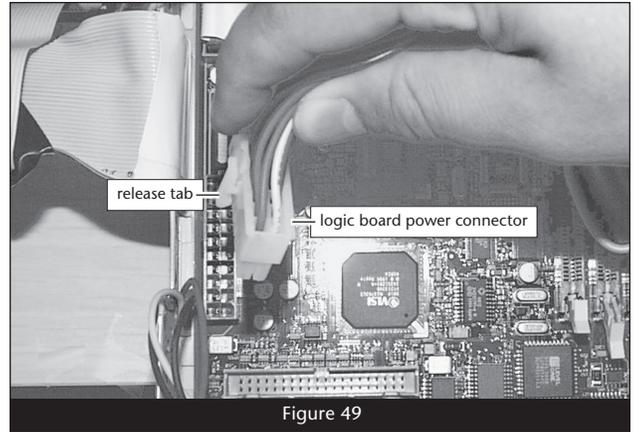logic board power connector

Figure 48

Hardware Installation—G3 All-in-one

5. While squeezing its release tab, disconnect the logic board power connector from the logic board **(Figure 49)**.
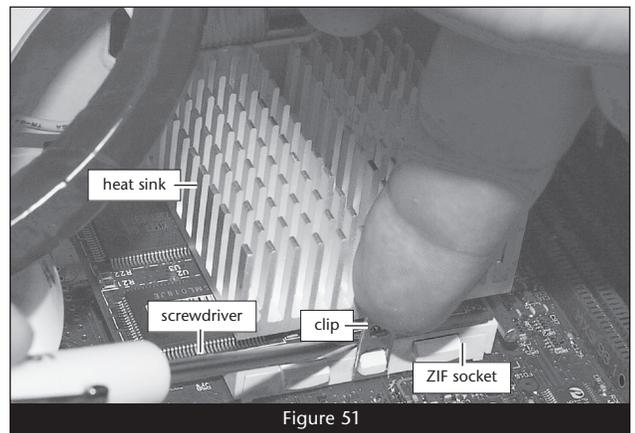

Figure 49

Remove Heat Sink from Computer

1. Locate the screw securing the heat sink ground wire to the logic board **(Figure 50)**. Remove the screw, move the wire out of the way, and then replace the screw; **do not overtighten it**.
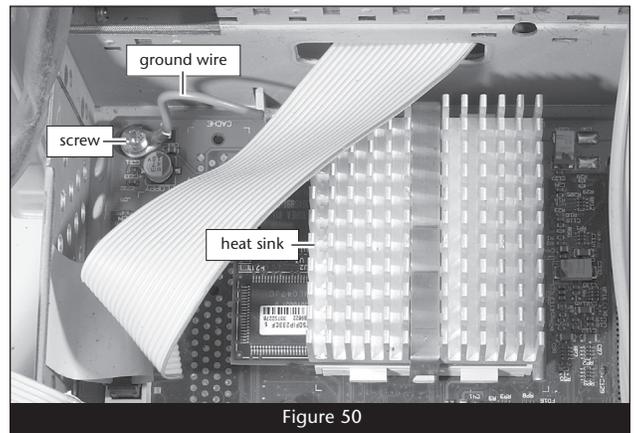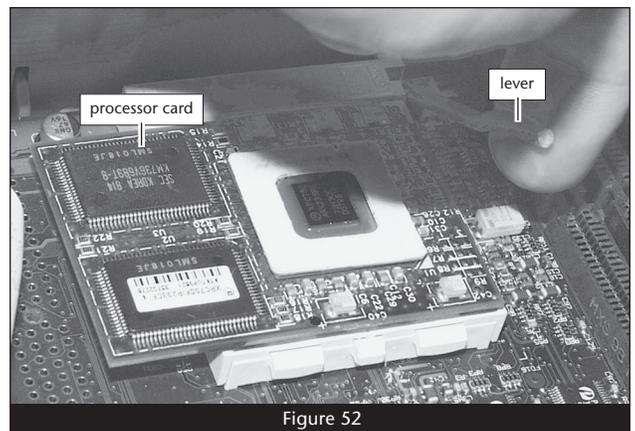

Figure 50

2. Locate the clip securing the processor heat sink to the ZIF socket **(Figure 51)**. Carefully insert a small flat blade screwdriver between the clip and the socket. While pressing down on the top of the clip with your finger, gently twist the screwdriver until you see the clip unhook from the ZIF socket tab. Unhook the clip from the other side of the heat sink, remove the clip and heat sink from the processor, and then set them aside.
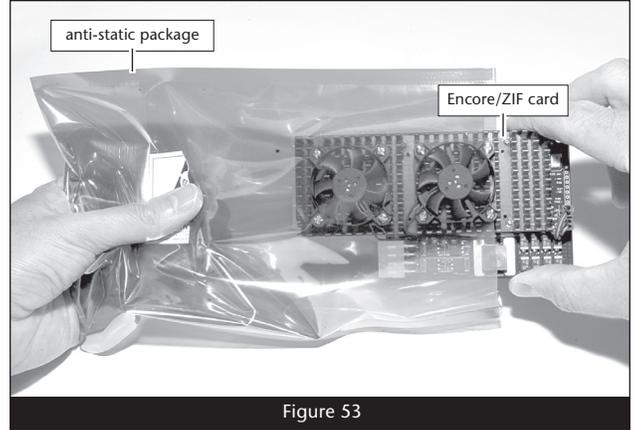

Figure 51

Remove Processor Card

Push down and out on the ZIF socket lever **(Figure 52)** to disengage it from the side tab on the socket. Once the lever is clear of the side tab, rotate the lever up 90˚. Gently lift the existing processor card up and out of the ZIF socket.
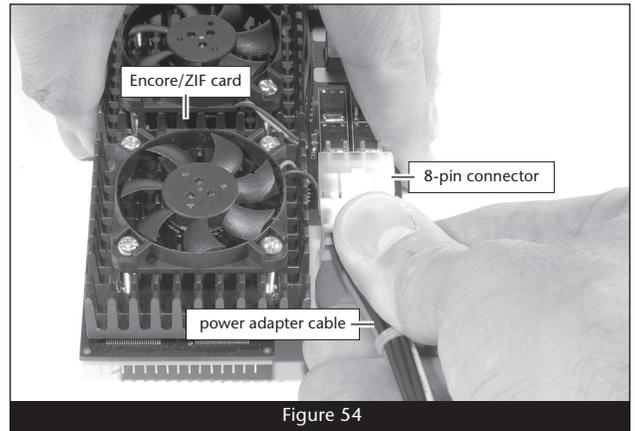

Figure 52

Hardware Installation—G3 All-in-one

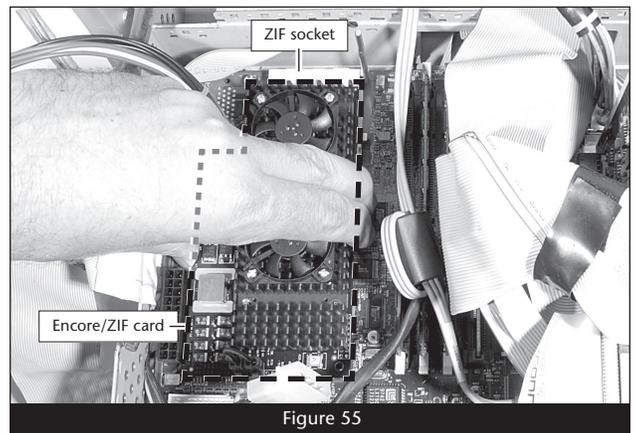### Install Encore/ZIF Processor Upgrade Card

1. Remove the Encore/ZIF card from its anti-static package, making sure to handle the card by its edges **(Figure 53)**; *your card may differ from what is pictured*. Gently peel the pin protection foam off the Encore card, and then transfer it to the processor card you removed from the computer. With the foam attached, place the processor card into the anti-static package and store it and the heat sink in a safe place.
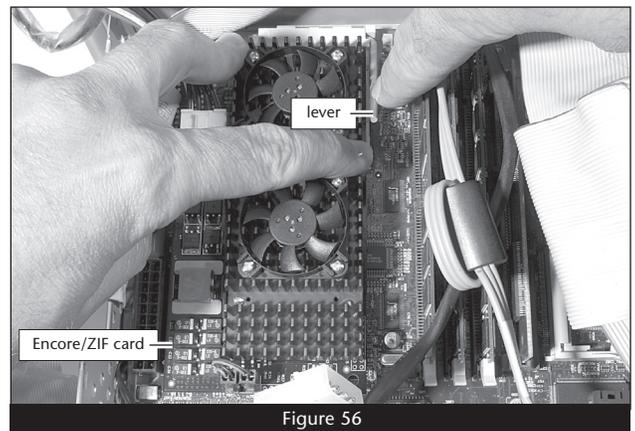

Figure 53

2. Turn the Encore/ZIF card so that the narrow end of the card is pointing toward you, with the pins facing down. Plug the 8-pin connector from the included power adapter cable into the 8-pin connector on the Encore/ZIF card **(Figure 54)**; **verify the connector is plugged in securely**.

Figure 54

3. Turn the Encore/ZIF card so that the narrow end of the card is pointing away from you **(Figure 55)**. Holding it level with the logic board, align the Encore/ZIF card's pins over the ZIF socket's holes, and then carefully lower the Encore/ZIF card into the ZIF socket; with all the pins aligned, the card will be easy to push into the socket. If you encounter any resistance, raise the card and check for bent pins, if none are bent, realign the card's pins with the socket and gently lower it again. **Be very careful! Broken pins are not covered under warranty**.

Figure 55

5. While applying moderate pressure on top of the Encore/ZIF card's heat sink above the ZIF socket, secure the card in place by pressing down on the ZIF socket lever until it latches under the socket's side tab **(Figure 56)**.

Figure 56

Hardware Installation—G3 All-in-one

Reconnect Logic Board Cables and Install Power Adapter Cable

Except for the power cable, the logic board cables should be reconnected in the reverse order that they were disconnected:

- Secondary SCSI cable
- Main SCSI cable
- Internal drives power cable
- Logic board power cable (with power adapter cable)

1. Reconnect the secondary SCSI cable **(Figure 57)**; **verify the connector is plugged in securely.**
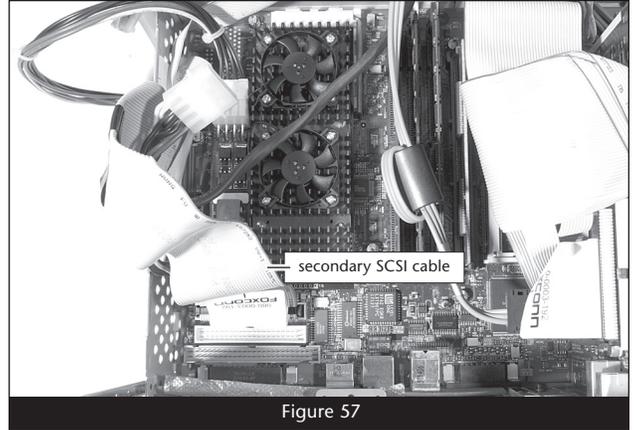

secondary SCSI cable

Figure 57

2. Reconnect the main SCSI cable **(Figure 58)**; ve**rify the connectors are plugged in securely**.

main SCSI cable
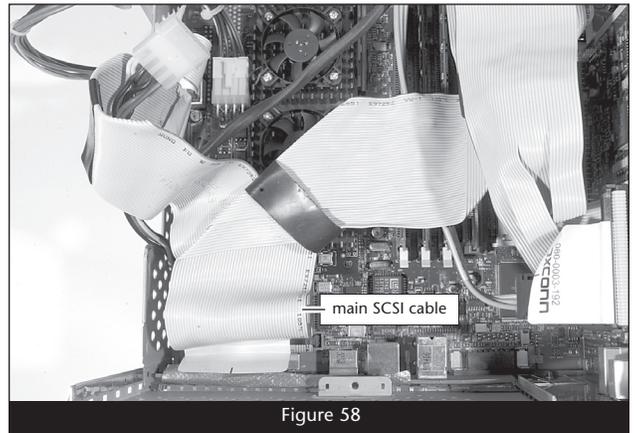
Figure 58

3. Reconnect the internal drives power cable connectors **(Figure 59)**; v**erify the connectors are plugged in securely**.

internal drives power cable

Figure 59

4. Plug in the provided power adapter cable between the connector on the logic board and the logic board power cable **(Figure 60)**; **verify that all the connectors are plugged in securely.**

power adapter cable connector

logic board power cable connector

power adapter cable connector

Figure 60

Hardware Installation—G3 All-in-one

Replace Cable Support Bracket

1. Insert the cable support bracket underneath the logic board cables and back into place in the chassis carrier **(Figure 61)**. Secure the bracket in place using the two screws you removed previously.
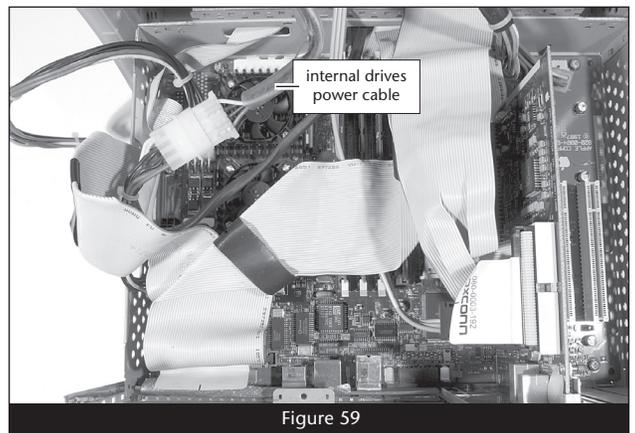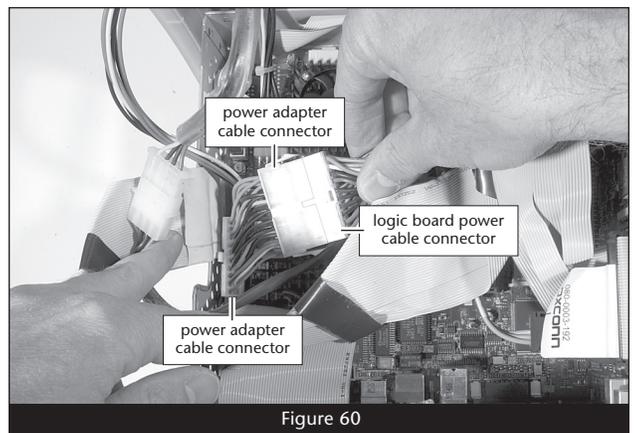
2. Secure the main SCSI cable and the internal drives power cable to the cable support bracket, clamping them in place **(Figure 61)**.
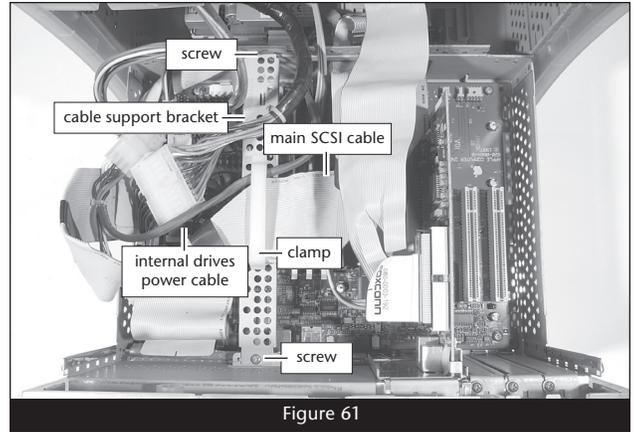

Figure 61

Close Computer

1. Tuck the power adapter cable against the chassis carrier, so that it rests below the cable support bracket **(Figure 62)**. Verify the power adapter cable's connectors are not making contact with Encore/ZIF card's fan(s).

Figure 62

2. While holding down the internal drives power cable connectors, the secondary SCSI cable, and the power connectors, carefully slide the chassis carrier back into the computer case **(Figure 63)**. **If you encounter excessive resistance, stop**; pull the chassis carrier back out, make sure all the wires, cables and connectors are secure, and try again.
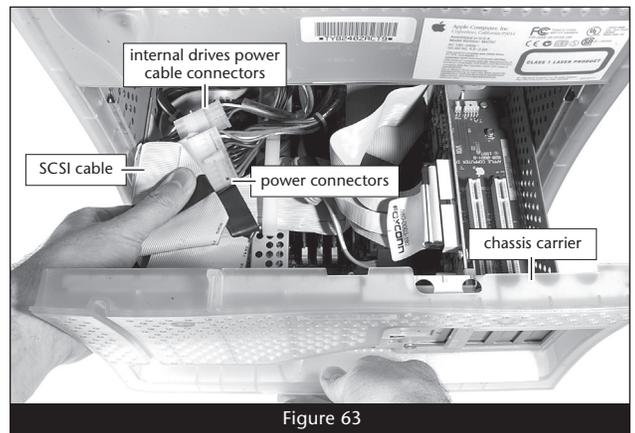
Figure 63

3. Replace the four screws you removed previously to secure the chassis carrier to the computer case **(Figure 64)**.

4. Affix the *Powered by Sonnet* label to the front of your computer.

5. Return the computer to your computing area and reconnect the power and peripheral cables to the computer.

Turn On Computer

1. Turn on your Power Macintosh; your accelerated machine should boot normally.

2. If your system is running Mac OS 8.6, 9.1.x or 9.2.x, your installation is complete. If your system is running Mac OS 9.0.x, or Mac OS X (any version), see page 24, "Installing Additional Software".

Figure 64

Hardware Installation—G3 Blue & White, G4 PCI Graphics

This section covers the installation of the Encore/ZIF G4 processor upgrade card into Power Macintosh G3 Blue & White and Power Mac G4 (PCI Graphics) systems (and equivalent servers). If you have a Power Macintosh G3 Desktop computer, return to page 2. If you have a Power Macintosh G3 Minitower or Macintosh Server G3 system, go back to page 7. If you have a Power Macintosh G3 All-in-one system, go back to page 12.

Shut Down and Open Computer
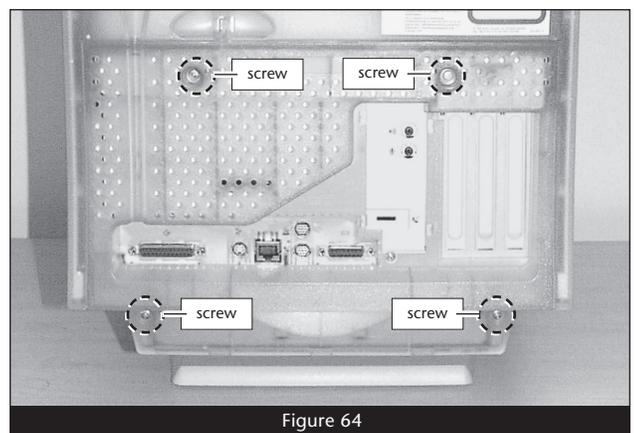
1. Shut down your Power Macintosh. If the computer has been on for any length of time, wait a few minutes for it to cool before beginning the installation.

2. If you need to move the computer to a different area where you can work freely, disconnect any connected cables, move the computer, then reconnect the power cord and plug it in to an outlet.

3. Locate the security lock at the back of the computer **(Figure 65)**. If it is not already pressed in, do so now.

4. With the right side of the case facing you, open your Power Mac by lifting the release latch and lowering the side panel away from the computer's case **(Figure 66)**.
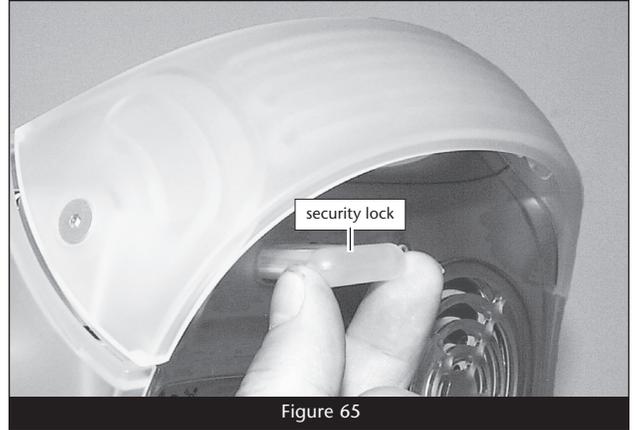

security lock

Figure 65

side panel

release latch
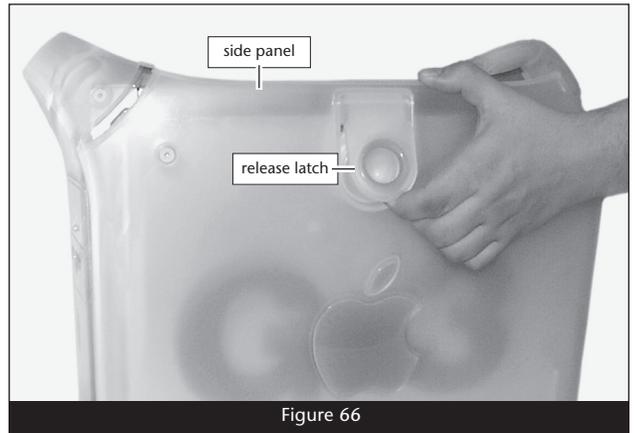
Figure 66

5. Touch the power supply case **(Figure 67)** to discharge any potentially damaging static electricity, then disconnect the power and peripheral cables from the back of the computer.

> **Support Note:** To avoid generating a static charge in your body, do not walk around the room until after you finish installing the Encore/ZIF card and close the computer.

power supply case
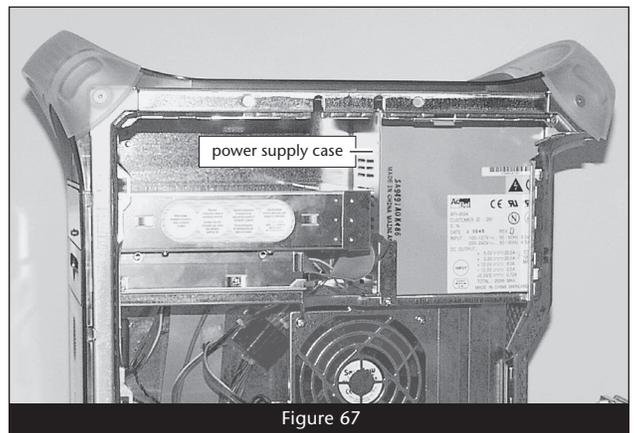
Figure 67

Remove Heat Sink—G3 Blue & White

This section explains the process to remove the processor heat sink in a Power Macintosh G3 Blue & White system. If you have a Power Mac G4 (PCI Graphics) system, skip to "Remove Heat Sink—G4 PCI Graphics" on the next page.

1. Locate the screw securing the heat sink ground wire to the logic board **(Figure 68).** Remove the screw, move the wire out of the way, and then replace the screw; **do not overtighten it**.

heat sink

ground wire

screw

Figure 68

G3 Blue & White, G4 PCI Graphics

Hardware Installation—G3 Blue & White, G4 PCI Graphics

2. Locate the clip securing the processor heat sink to the ZIF socket **(Figure 69)**. Carefully insert a small flat blade screwdriver between the clip and the socket. While pressing down on the top of the clip with your finger, gently twist the screwdriver until you see the clip unhook from the ZIF socket tab. Unhook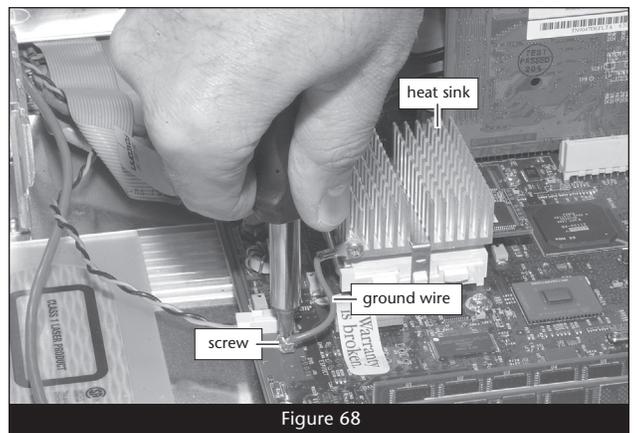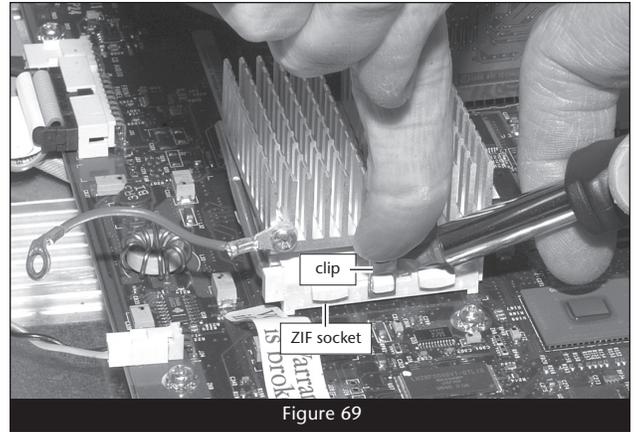 the clip from the other side of the heat sink, remove the clip and heat sink from the processor, and then set them aside. Skip to "Remove Processor Card" below.

Figure 69

Remove Heat Sink—G4 PCI Graphics

This section explains the process to remove the processor heat sink in a Power Mac G4 (PCI Graphics) system. If you have a Power Macintosh G3 Blue & White system, go back to the previous page.

1. Locate the clip securing the processor heat sink to the ZIF socket **(Figure 70).** Remove the screw securing the heat sink clip to the logic board and set the screw aside.

Figure 70

2. Carefully insert a small flat blade screwdriver between the heat sink clip and the ZIF socket **(Figure 71)**. While pressing down on the top of the clip with your finger, gently twist the screwdriver until you see the clip unhook from the ZIF socket tabs. Unhook the clip from the other side of the heat sink, remove the clip and heat sink from the processor, and then set them aside. Replace the screw you removed previously; **do not overtighten it**.
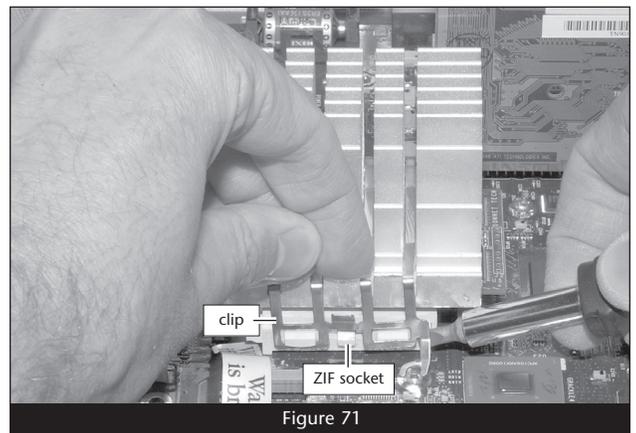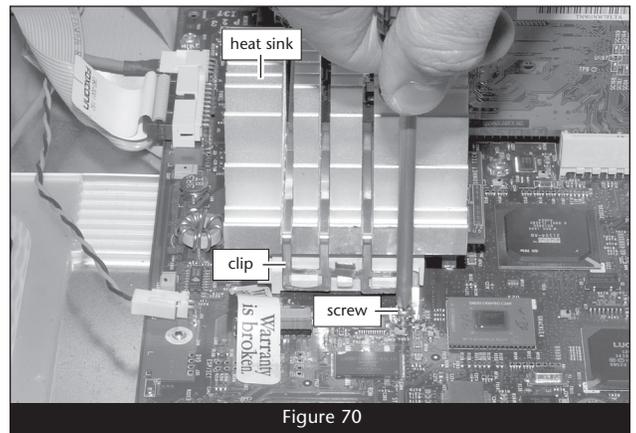
Figure 71

Remove Processor Card

Push down and out on the ZIF socket lever **(Figure 72)** to disengage it from the side tab on the socket. Once the lever is clear of the side tab, rotate the lever up 90˚. Gently lift the existing processor card up and out of the ZIF socket.
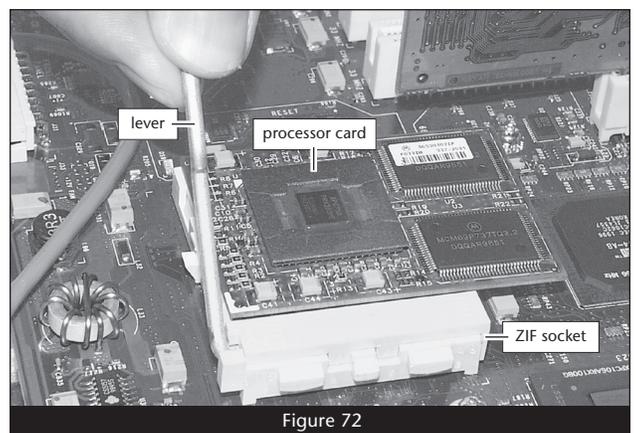
Figure 72

Hardware Installation—G3 Blue & White, G4 PCI Graphics

Remove System Bus Jumper Block

Peel back the "VOID Warranty if seal is broken" seal and carefully remove the jumper block **(Figure 73)**; set the jumper block aside, but do not discard it.
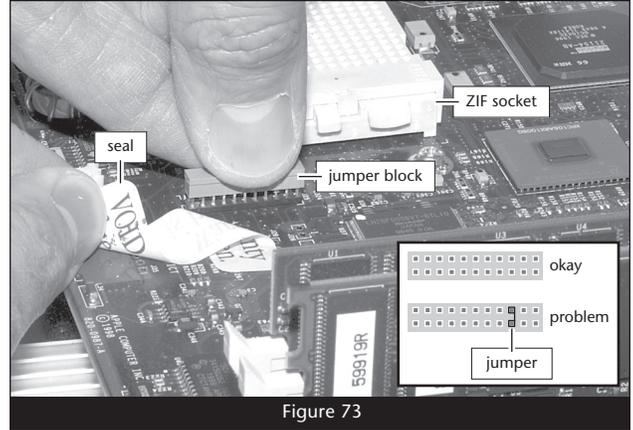
⚠️ **WARNING:** After removing the jumper block, you must carefully examine the jumper pins on the logic board and verify no jumpers were left behind **(Figure 73)**. Failure to remove any jumpers may prevent the Encore/ZIF from operating in your system. If you do have to remove any jumpers, be sure to insert them back into the jumper block in their original positions.
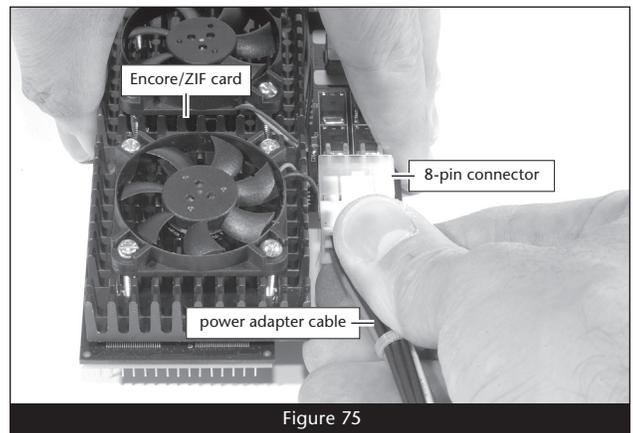

Figure 73

Install Encore/ZIF Processor Upgrade Card

1. Remove the Encore/ZIF card from its anti-static package, making sure to handle the card by its edges **(Figure 74)**; *your card may differ from what is pictured*. Gently peel the pin protection foam off the Encore card, and then transfer it to the processor card you removed from the computer. With the foam attached, place the processor card into the anti-static package and store it, the heat sink, and the jumper block in a safe place.
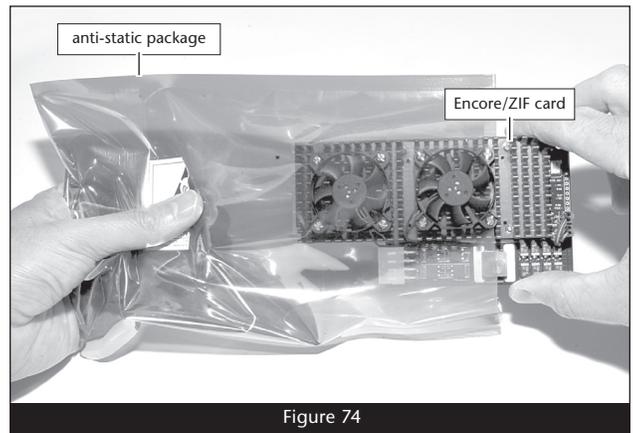
Figure 74

2. Turn the Encore/ZIF card so that the narrow end of the card is pointing toward you, with the pins facing down. Plug the 8-pin connector from the included power adapter cable into the 8-pin connector on the Encore/ZIF card **(Figure 75)**; **verify the connector is plugged in securely.**

Figure 75

3. Grasp the Encore/ZIF card so that the narrow end of the card is on the left **(Figure 76)**. Holding the Encore/ZIF card level with the logic board and its long edges parallel to the video card, align the card's pins over the ZIF socket's holes, and then carefully lower the Encore/ZIF card into the ZIF socket. With all the pins aligned, the card will be easy to push into the socket; if you encounter any resistance, raise the card and check for bent pins, if none are bent, realign the card's pins with the socket and gently lower it again. **Be very careful! Broken pins are not covered under warranty.**

Figure 76
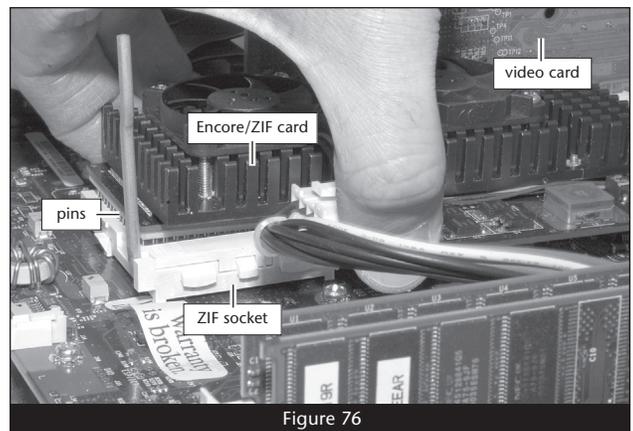
Hardware Installation—G3 Blue & White, G4 PCI Graphics

4. While applying moderate pressure on top of the Encore/ZIF card's heat sink above the ZIF socket, secure the card in place by pressing down on the ZIF socket lever until it latches under the socket's side tab **(Figure 77)**.
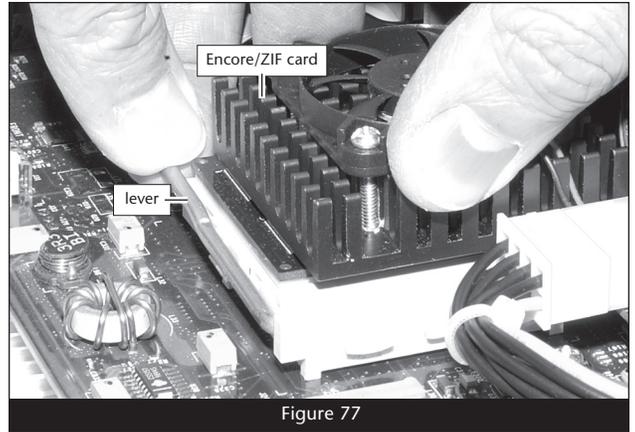
Figure 77

Install Jumper Blocks

Install the four small jumper blocks included with the Encore/ZIF card in the positions shown **(Figure 78)**; **verify the jumper blocks are installed onto the pins, not between them.**
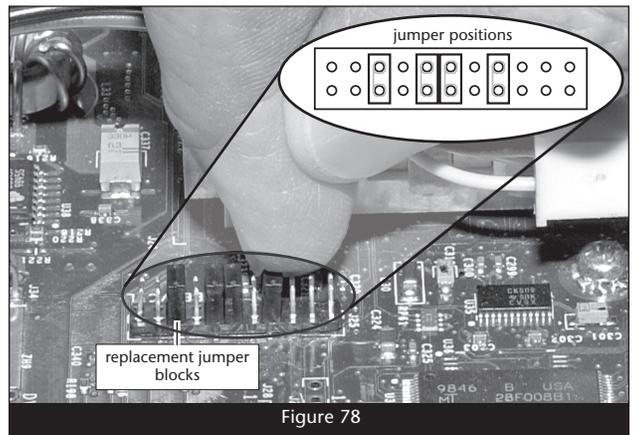
Figure 78

Install Power Adapter Cable Between Computer and Encore/ZIF Card

> ⚠ **WARNING:** When disconnecting cables from the logic board, do not pull on the wires; always pull on the connectors.

1. Locate the logic board power cable plugged in next to the PCI slots **(Figure 79)**. Unplug the connector by pulling it straight up while squeezing its locking tab.
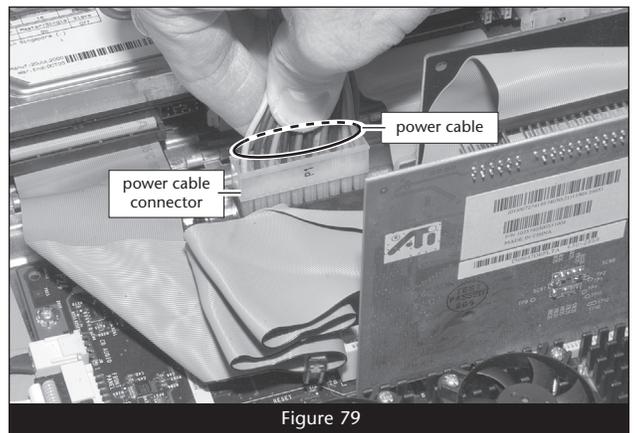
Figure 79

2. Plug in the provided power adapter cable between the connector on the logic board and the logic board power cable **(Figure 80)**; **verify that all the connectors are plugged in securely.**
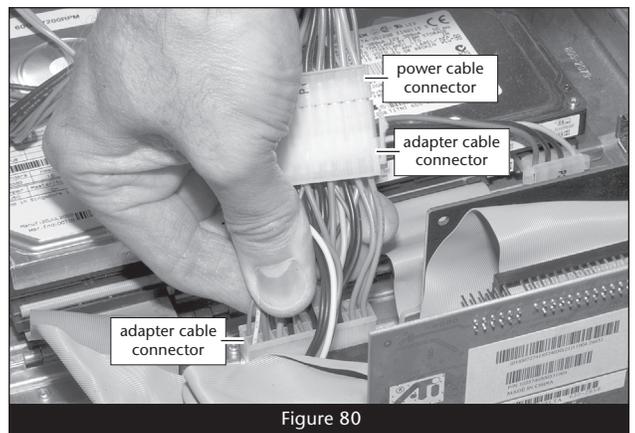
Figure 80

Hardware Installation—G3 Blue & White, G4 PCI Graphics

Close Computer

1. Arrange the wires and cables inside the computer so that nothing will be pinched when you close the side panel **(Figure 81)**.

adapter cable
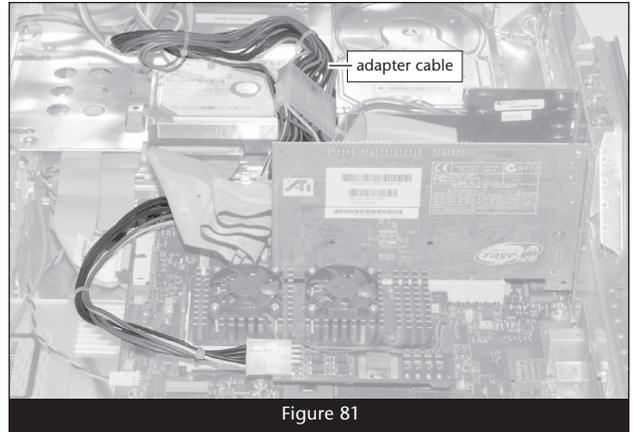
Figure 81

2. Raise the side panel back into place, making sure it latches securely **(Figure 82)**.

3. Affix the *Powered by Sonnet* label to the front of your computer.

4. Return the computer to your computing area and reconnect the power and peripheral cables to the computer.

Turn On Computer

1. Turn on your Power Macintosh; your accelerated machine should boot normally.

2. If your system is running Mac OS 8.6, 9.1.x or 9.2.x, your installation is complete. If your system is running Mac OS 9.0.x, or Mac OS X (any version), see page 24, "Installing Additional Software".

side panel

Figure 82

G3 Blue & White, G4 PCI Graphics

23

Installing Additional Software

This section covers the installation of additional software your system may require to fully support the Encore/ZIF G4 processor upgrade card. Complete the steps on the following pages after you have successfully installed the Encore/ZIF card.

Check the requirements listed below to determine which, if any, additional software you must install. If you have multiple operating systems installed, install software into the appropriate System folder for each operating system (OS). **If you have already installed Mac OS X on your system, be sure to also read the important information on page 26 regarding updating your Mac OS X software**.
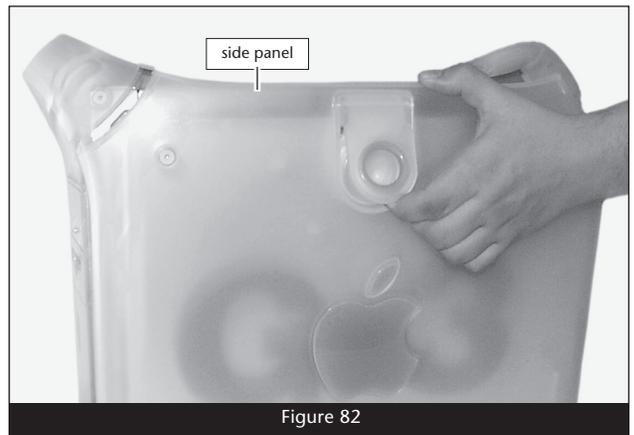
• **Mac OS 8.6**: No additional software installation is required; you may skip this section if OS 8.6 is your system's only OS.

• **Mac OS 9.0.x**: You must rerun the Mac OS 9 install application to install AltiVec libraries into your System Folder* (instructions follow). You do not need to perform this installation if you replaced an existing G4 processor card.

• **Mac OS 9.1.x or 9.2.x**: No additional software installation is required; you may skip this section if OS 9.1.x or 9.2.x is your system's only OS.

• **Mac OS X (any version)**: You must run the SonnetCache install application; this software enables L2 and L3 cache support for the Encore/ZIF G4 card under OS X (see page 25). Also, unless you are using a Power Mac G4 (PCI Graphics) system, you must install a bootable Mac OS 9.1.x or 9.2.x System Folder (selectable from System Preferences) if your system does not have one*.

Support Note: If you upgrade to Mac OS 9.1 or 9.2, AltiVec support is installed automatically; the procedure detailed below will be unnecessary.

Enable AltiVec—Existing OS 9.0.x installation

This section describes how to update an existing Mac OS 9.0.x installation to enable AltiVec on your Encore/ZIF G4-upgraded Power Macintosh (when no G4 processor was installed in your system before).

1. Complete the installation of the Encore/ZIF processor upgrade card, then turn on your computer.

2. Insert the Mac OS 9 CD into your CD-ROM drive. In the finder menu, select Special: Restart, then immediately press and hold down the C key on your keyboard until your system restarts and the *Welcome to Mac OS* screen appears.

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* Options for completing this task include A) installing Mac OS 9.1.x or 9.2.x on one of your Mac OS X hard drives, B) connecting a spare hard drive inside your computer and installing Mac OS 9.1.x or 9.2.x, or C) reformatting your existing hard drive with two or more partitions (erasing all data on the drive in the process), and then installing Mac OS 9.1.x or 9.2.x on one partition, Mac OS X on another..

Installing Additional Software

Enable AltiVec—Existing OS 9.0.x installation (continued)

3. Double-click the Mac OS Install icon. Proceed through the next several screens until the installer tells you that Mac OS 9 is already installed. Click the Add/Remove button to continue until you reach the *Install Mac OS 9* window.

4. Click the Customize button. In the *Custom Installation and Removal* window deselect all software components except for Mac OS 9. Click the pop-up menu to the right of Mac OS 9 and change "Recommended Installation" to "Customized installation." The *Select Mac OS 9 Features to Install* window will appear shortly. Change "Recommended Installation" to "None" from the pop-up menu. Click the Core System Software checkbox (it should be the only checkbox with a check mark). Click OK, Start, then Continue to complete the installation. After the software is installed, quit the Mac OS Install application and restart your computer; your system is ready to use and your installation is complete.

Install SonnetCache.pkg

Installing SonnetCache.pkg is necessary only when Mac OS X (any version) is installed on your system. Remember to install this software when you upgrade to Mac OS X. For complete information on SonnetCache, please refer to the Read Me notes provided with the software.

1. If your system is booted in Mac OS 9.2, switch back to OS X; otherwise, skip to the next step. From the Apple menu, select Control Panels > Startup Disk X. When the *Startup Disk X* window opens, select the Mac OS X System Folder in which you will install the Sonnet software.

2. If it is not already inserted, insert the Sonnet Installer CD into the CD-ROM drive. Double-click the *Mac OS X ONLY* folder, and then double-click the SonnetCache.pkg file to start the built-in Mac OS X install program. Follow the directions to complete the installation, and then turn off your computer.

Installing Additional Software

Updating and Maintaining Mac OS X—All Systems Except Power Mac G4 (PCI Graphics)

At some time in the future, you may wish to upgrade your Mac OS X software to a higher version using a Mac OS X Update CD, you may need to run Disk Utility from the Mac OS X Install CD, or you may even need to reinstall Mac OS X software. Every one of these tasks require you to boot from the CD. With an Encore/ZIF G4 processor upgrade card (running at 700 MHz or faster) installed in your system, you must perform the following steps in order to boot from a Mac OS X CD:

1. With your system booted in OS X, select System Preferences… from the Apple Menu. (If your system is booted in OS 9.1.x or 9.2.x, skip to step 4.)

2. Click on the Startup Disk icon, and then select a Mac OS 9.1.x or 9.2.x System Folder in which the Startup Disk X control panel (installed by Sonnet X Tune-Up) is present.

3. Click Restart to boot your system into Mac OS 9.1.x or 9.2.x.

4. Insert the Mac OS X CD into your CD drive.

5. From the Apple Menu, select Control Panels: Startup Disk X.

6. Choose the Mac OS X CD, and then click Restart.

Without a bootable Mac OS 9.1.x or 9.2.x System Folder present on a drive or partition in your system (with the Startup Disk X control panel installed), you will only be able to boot from a Mac OS X CD if you reinstall the original processor card, or a previous processor upgrade card; the Encore/ZIF G4 can be replaced after the OS installation or update is completed. See the footnote on page 24 for information on how to install a bootable Mac OS 9.1.x or 9.2.x System Folder.