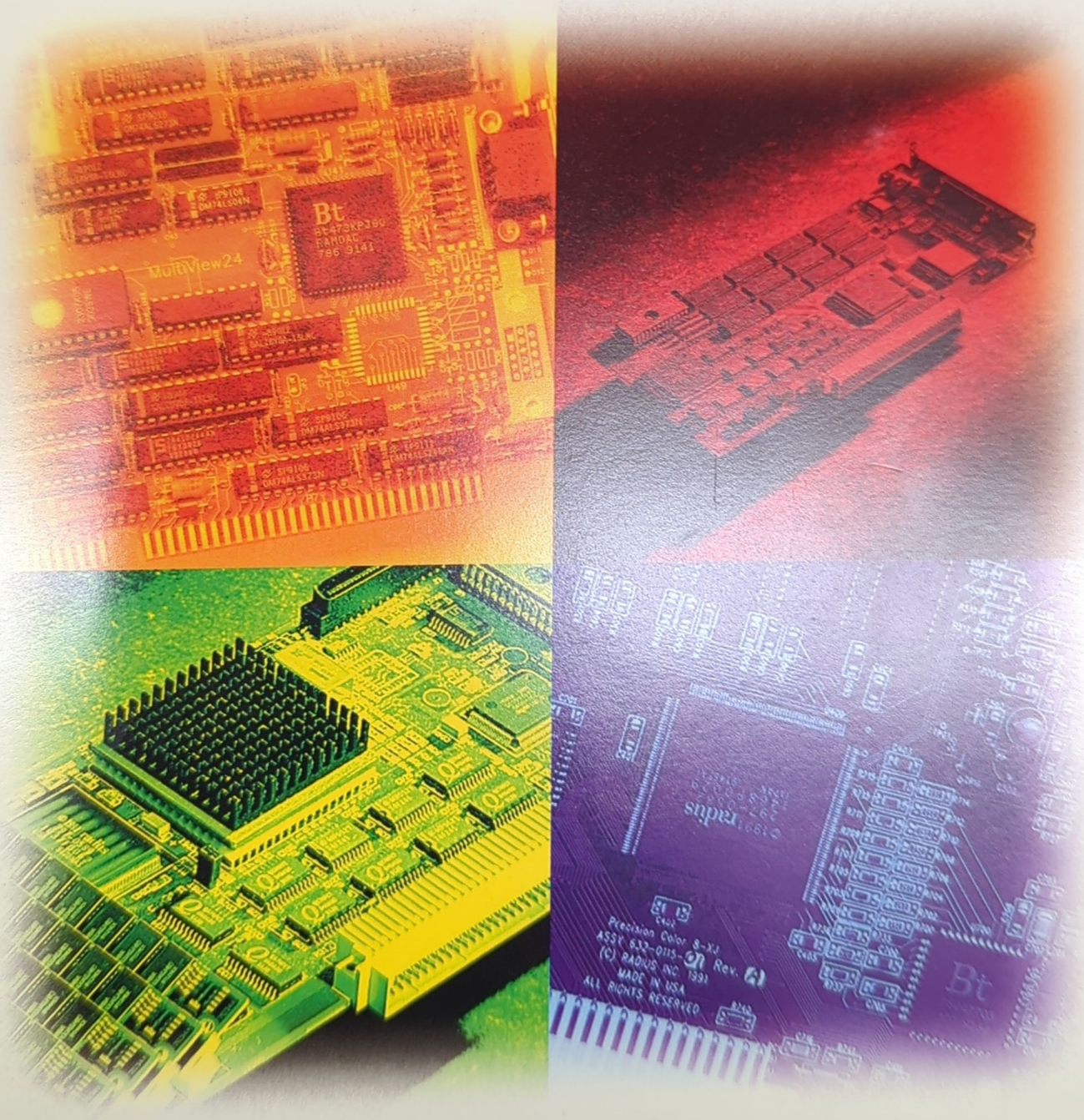
RADIUS PHOTOBOOSTER™ for ROCKET™ and STAGETWO ROCKET™

User's Manual



radius™

Radius PhotoBooster™ for Rocket™ and StageTwo Rocket™

User's Manual

March 1994

Radius Inc
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Introduction

Congratulations on your purchase of the Radius PhotoBooster™ processor-direct daughter card, which will compute most of Photoshop's time-consuming production operations more than *ten times* faster than a Macintosh Quadra 950.

PhotoBooster is an Adobe-Charged™ accelerator card that uses twin AT&T 3207 DSPs (digital signal processors) running at 66MHz to provide acceleration of critical Adobe Photoshop processes, such as filters, image resizing and rotation, color separations and conversions. PhotoBooster is designed for Radius Rocket™ or StageTwo Rocket running Adobe Photoshop™.

The Adobe Charged certification indicates that PhotoBooster uses Adobe technology to achieve visually identical results as those achieved without acceleration. The image quality is the same; the only difference is the speed of the operations. Your new PhotoBooster software will take advantage of Adobe's extension architecture to transparently divert Photoshop operations to the DSPs, or engage them in combination with the Macintosh processor.

Once you have installed the PhotoBooster card and its software, you'll see a dramatic improvement in the processing of many Photoshop operations, including:

- ✔ Filters such as those in the Sharpen and Blur submenus
- ✔ Mode conversions such as RGB to CMYK color separations
- ✔ Image transformations, such as rotations, effects, resizes

All accelerated operations use standard Photoshop menu commands. Using PhotoBooster is easy, because there's nothing new to learn. Additionally, your PhotoBooster card carries the famous Radius life-time warranty.

About This Manual

This manual is divided into four chapters:

Chapter **1** ***Installing PhotoBooster*** tells you how to connect the PhotoBooster to your Radius Rocket card, and how to install the Rocket card in your Macintosh computer.

Chapter **2** ***Installing PhotoBooster Software*** shows you how to run the Installer program to install the PhotoBooster software.

Chapter **3** ***Using PhotoBooster*** lists and explains the Photoshop operations that are accelerated by PhotoBooster. This chapter also explains how to activate the DSP Process Indicator.

Chapter **4** ***Reference*** contains a list of Photoshop operations accelerated by PhotoBooster, a troubleshooting section, and technical-support and customer-service information.

Chapter 1

Installing PhotoBooster

This chapter explains how to connect the Radius PhotoBooster to a Radius Rocket card, and how to install the Rocket card in your Macintosh.

For brevity, the illustrations in this chapter show a Macintosh Quadra 650. For information specific to your Macintosh, refer to the owner's manual that was provided with your computer.

Unpacking

A packing list is included in your PhotoBooster kit. Check the items listed on the packing list against the actual contents of the PhotoBooster kit.

If you are missing any of the items, immediately contact your Radius Authorized Reseller.

Registration Card

You will find a Warranty Registration card in your PhotoBooster kit. Please fill out the card and return it to Radius so we can provide you with the best customer service and support possible.

Installation Considerations

The Radius PhotoBooster is designed to be installed piggy-back onto a Radius Rocket card. Because it connects directly to the Rocket, it does not require the use of an additional NuBus slot. The PhotoBooster speeds the processing of many Photoshop commands, while leaving your NuBus slots free for other system enhancements.

Important: *Because the amount of power available to any Macintosh NuBus slots is limited, you may need to analyze the total power requirements if you are using several expansion cards. The PhotoBooster uses only 1.0 ampere from the +5VDC bus (in addition to the amount ordinarily consumed by your Radius Rocket card, which itself, is dependent upon the amount of RAM you have installed on your Rocket. Please refer to your Rocket or StageTwo Rocket User's Manual).*

Important: *Two versions of PhotoBooster daughtercards are available from Radius: one designed for the Radius StageTwo Rocket, and one designed for previous versions of the Radius Rocket. The packing list included with your PhotoBooster explains Rocket compatibility.*

System Requirements

Your system should comprise the following hardware and software to properly operate the Radius PhotoBooster:

- ✔ A Macintosh computer with an empty, full-size, NuBus-expansion slot
- ✔ A Radius Rocket card
- ✔ Macintosh System software 7.0.1 or later (as appropriate for your particular Macintosh computer)
- ✔ Adobe Photoshop version 2.5 or later.

Installing Your PhotoBooster Card

The PhotoBooster card is designed to be installed as a daughter card, connected to a Radius Rocket card. Complete step-by-step, illustrated instructions are provided in this section. If necessary, refer to the Apple *Getting Started* manual (supplied with your Macintosh) for supplemental information about how to install NuBus expansion cards.

Removing the Rocket Card

If the Rocket card that you want to use with PhotoBooster is currently installed in your Macintosh, it must be removed before you proceed with the PhotoBooster installation.

To remove the Rocket card,

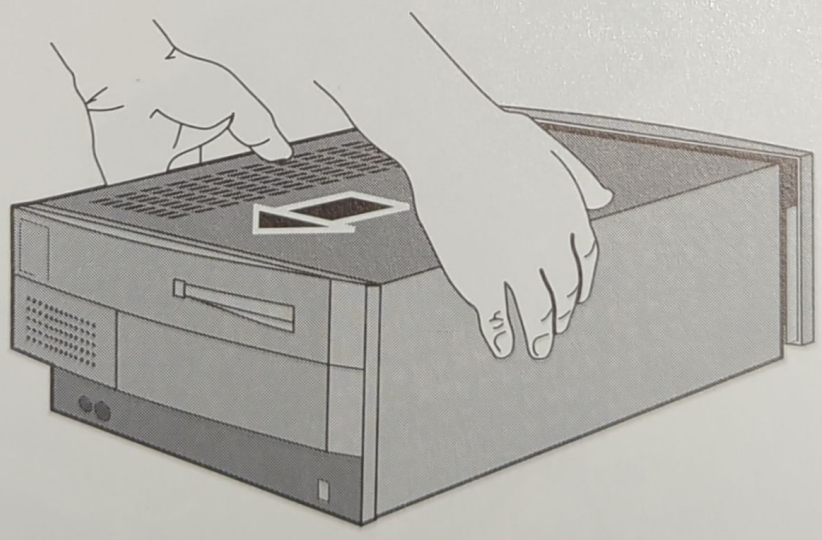
1. Turn off the power to your Macintosh.

2. Unplug your Quadra 900 or 950. If you are installing the PhotoBooster card *in any other type of Macintosh,* leave the power cord plugged into a live, grounded AC socket.

Warning: *The Quadra 900 and 950 maintain a small trickle charge (voltage) to their expansion slots even when turned off. Thus, users of a Quadra 900 or 950* ***must unplug*** *the power cord to avoid damage possible from a trickle-charge current.*

3. Remove the chassis security screw, if one is installed. Then remove the cover from the computer.

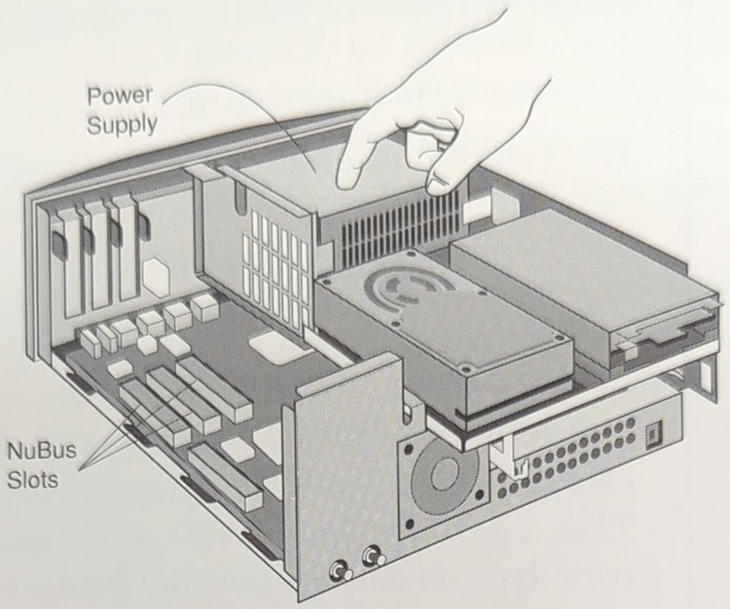
Once you have removed the cover, the removal of a Rocket card is virtually the same in any supported Macintosh model. (A Quadra 650 is depicted below.)



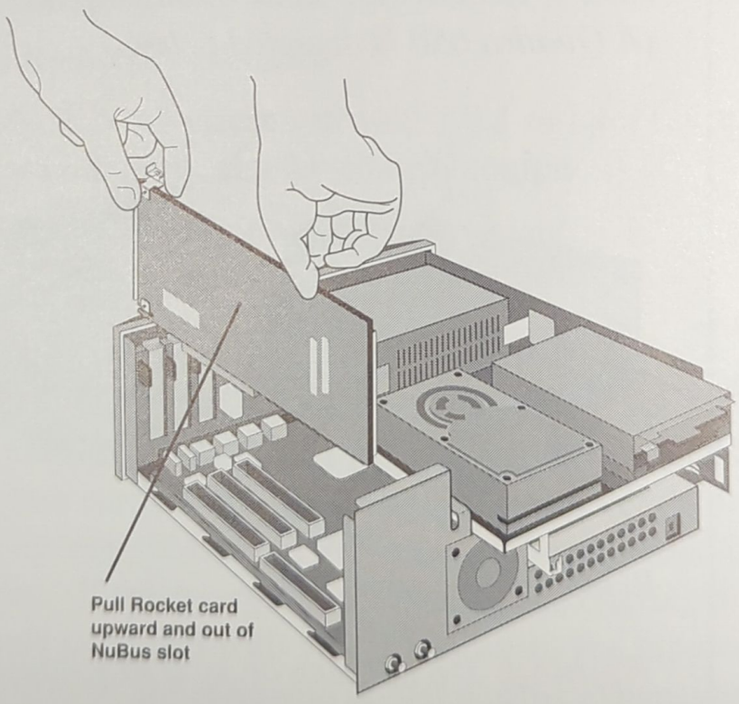
Removing the cover

Warning: *Do not turn on your Macintosh.*

4. Touch one of your hands to a bare metal surface on the power supply; this will discharge any static electricity from your body and clothing.



5. Remove the Rocket card from the Macintosh. Grasp gently on the edges of the card, and lift it straight upward and away from the NuBus connector. Place the Rocket card face (chip side) *upward* on a clean, anti-static work surface.



Removing the Rocket from the Macintosh

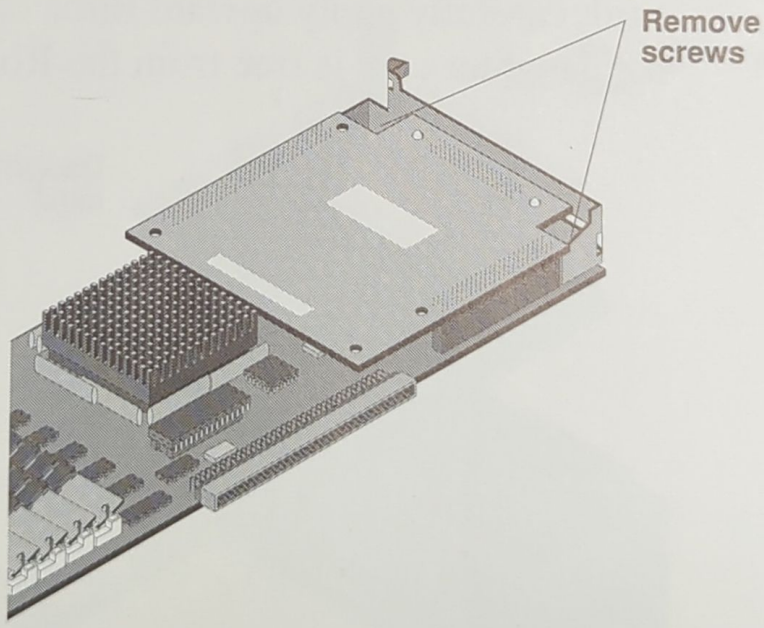
Removing any Daughter Card from the Rocket

The PhotoBooster is designed as a daughter card that must connect to a Radius Rocket card. If a daughter card is currently connected to the Rocket, it *must* be removed before you can install the PhotoBooster. For example, the Radius StageTwo Rocket is equipped with a SCSI-2 Booster daughter card, which must be removed before you install the PhotoBooster card.

If there is no daughter card connected to your Rocket card, skip ahead to the next section: *Connecting the PhotoBooster Card to the Rocket Card.*

To remove any existing daughter card,

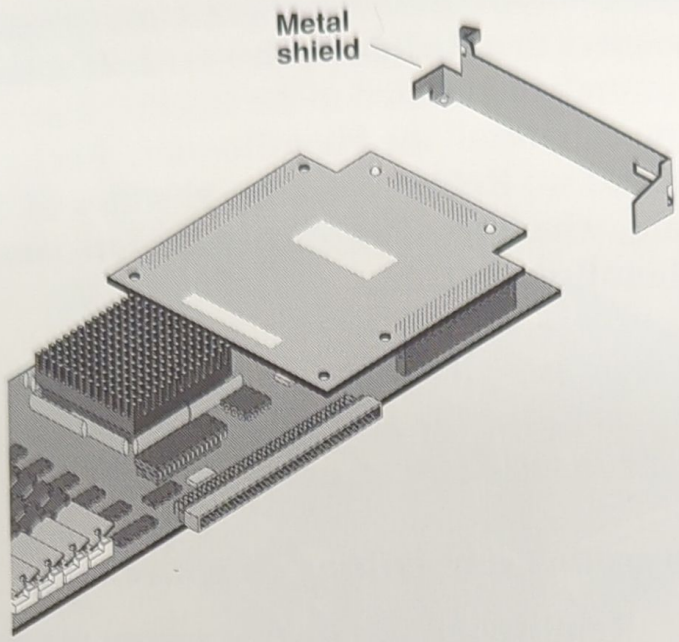
1. Remove the screws that secure the metal shield to the end of the Rocket card. Depending on the particular daughter card, there may be two or four screws used to secure the metal shield. Save the screws; they will be used to secure the metal shield after you install the PhotoBooster card.



Screw location for metal shield

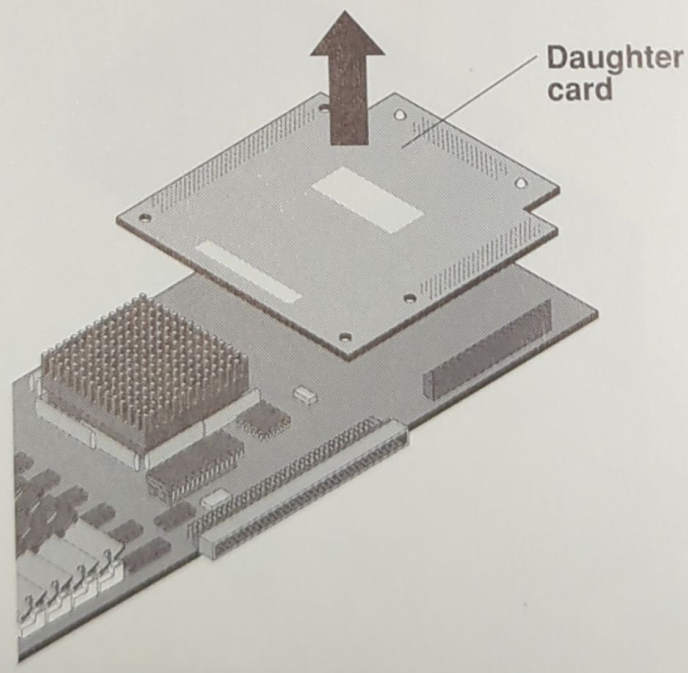
If you do not have a daughtercard attached to your Rocket, you do not need to remove the metal shield in order to install the PhotoBooster.

2. Pull the metal shield away from the Rocket. Set it aside.



Removing the metal shield

3. Pull straight up on the daughter card to remove it from the Rocket card. Be aware that the daughter card connectors are designed to make a tight connection to the Rocket card; carefully apply upward force on the connectors until the daughter card is free from the Rocket card.



Removing the daughter card

At this point, you are ready to connect the PhotoBooster card to the Rocket.

Connecting the PhotoBooster Card

Once you have removed the existing daughter card from the Rocket card, you are ready to connect the PhotoBooster to your Rocket card.

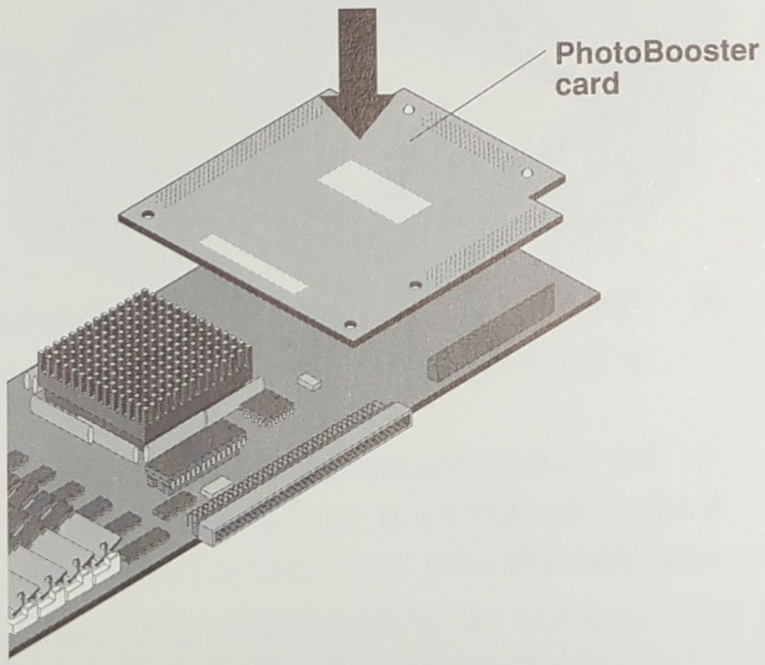
Similarly, if no daughter card was connected to your Rocket card when you removed it from your Macintosh, the following procedure explains how to connect the PhotoBooster to your Rocket card.

To connect the PhotoBooster to your Rocket card,

1. Remove the PhotoBooster card from its antistatic bag.

If you have previously removed a daughter card from the Rocket card, place the daughter card in the antistatic bag and store it in a safe place in case it is needed for future use.

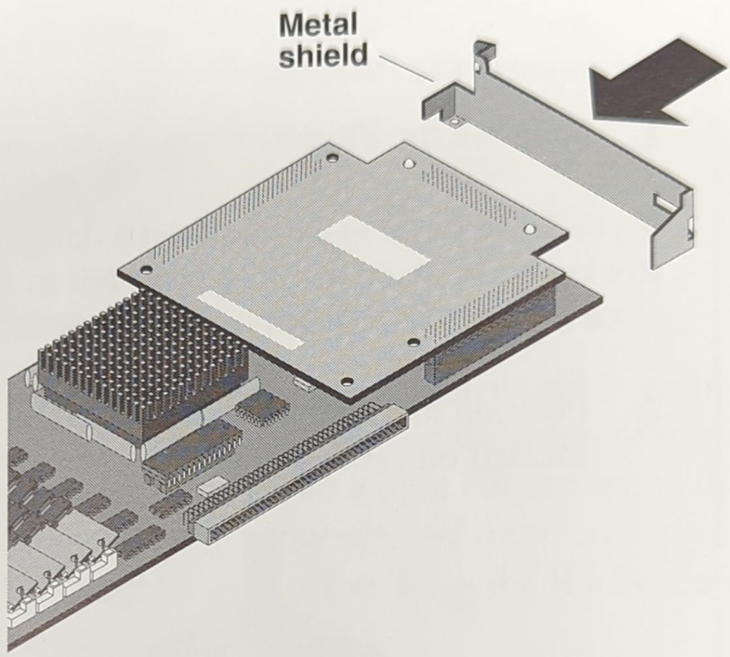
2. Position the PhotoBooster card over the connectors located on the Rocket card.



PhotoBooster card positioned for connection

3. Press the PhotoBooster card down, so that its connectors are firmly seated in the Rocket card.

4. If you removed the metal shield from the Rocket card in one of the previous procedures, replace it with the solid metal shield included with the PhotoBooster. The use of the solid metal shield will insure proper air flow within your Macintosh.



Replacing the metal shield

5. Secure the metal shield to the Rocket card, using the screws removed in the previous procedure.

At this point, you have connected the PhotoBooster card to the Radius Rocket card, and are ready to install the Rocket card in your Macintosh.

Installing the Rocket with PhotoBooster

Once you have connected the PhotoBooster to your Rocket, you are ready to install the Rocket in your Macintosh.

Before you proceed, make sure that your Macintosh is turned off, and that the cover is removed.

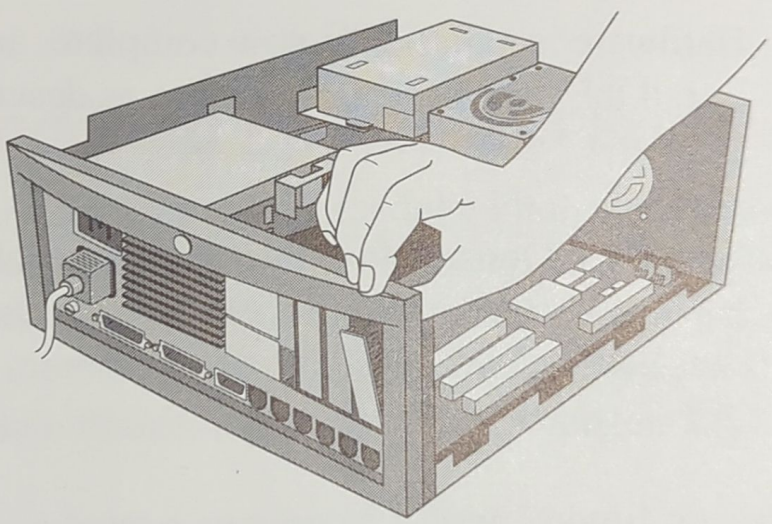
Once the cover of the Macintosh is removed, installation of the Rocket card is virtually the same in any supported Macintosh model. For brevity, a Macintosh Quadra 650 is depicted in the illustrations that follow.

To install the Rocket/PhotoBooster board set,

1. Choose an empty NuBus expansion slot. The expansion slots are the narrow plastic strips running along the bottom of the main logic unit — the Macintosh motherboard.

2. Touch the bare metal of the power supply in your Macintosh.

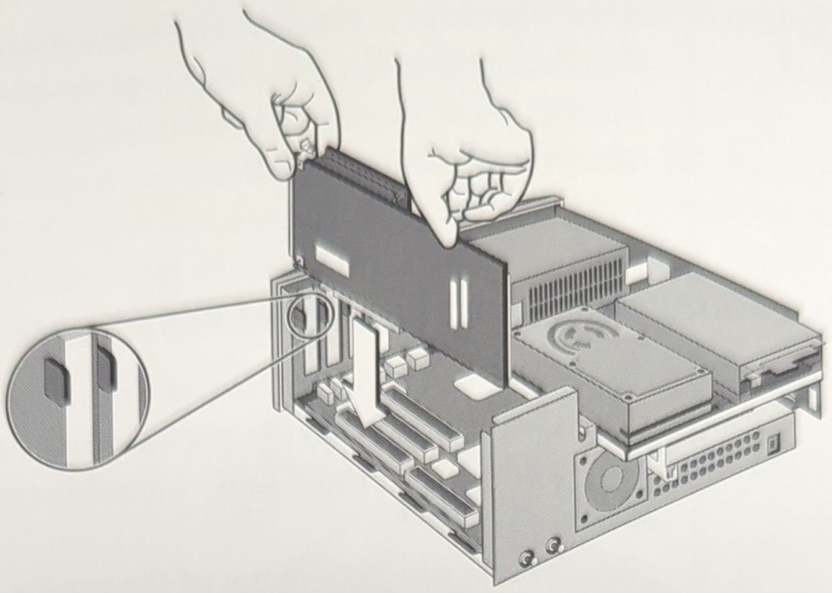
3. Push out the plastic cover from the rear of your selected NuBus slot.



Pushing out the plastic cover

4. Align the Rocket card over the NuBus expansion slot. While aligning the card, do not touch the pins on the bottom of the NuBus connector.

5. Press straight down to insert the Rocket card into the NuBus expansion slot. Do not bend or wiggle the card. Do not force the card; if you meet a lot of resistance, pull the card out and try again.



Installing the Rocket card

6. Replace the cover on the Macintosh, tighten the security screw(s), and restore power to your Macintosh.

Hardware installation is now complete, and you are ready to install the PhotoBooster software as described in the next chapter.

If you need more information about installing NuBus expansion cards, refer to the Apple *Getting Started* manual, supplied with your Macintosh computer.

Chapter 2

Installing PhotoBooster Software

This chapter explains how to update your Photoshop software, and install the PhotoBooster software.

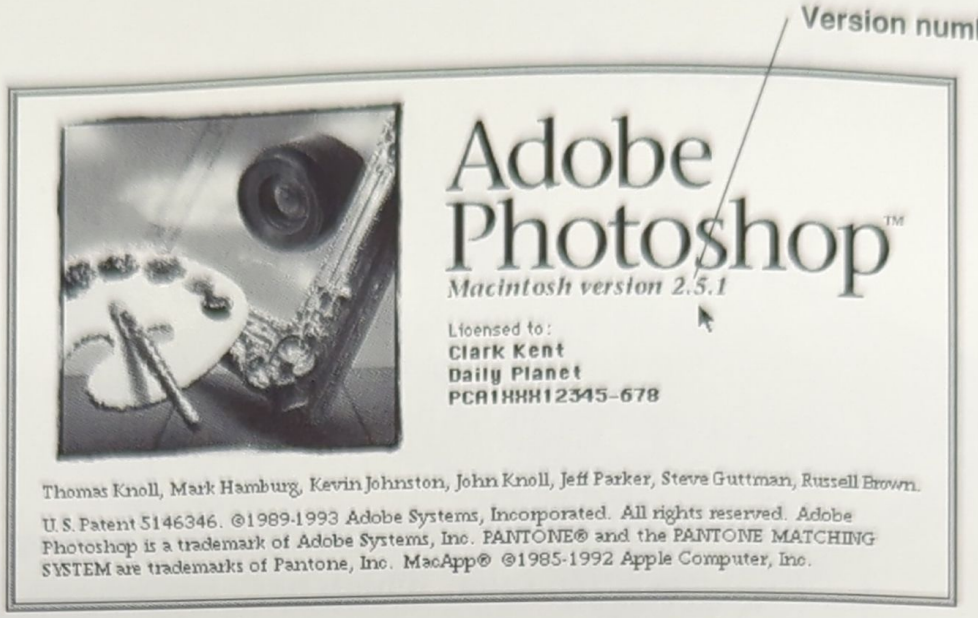
The PhotoBooster kit contains two diskettes: an *Adobe Photoshop Updater*, which has compressed software to update U.S. editions of Photoshop to version 2.5.1, and the *Radius PhotoBooster* diskette, which contains an Installer program, the PhotoBooster Plug-in, and the Radius DSP system extension. If necessary, you should install the Adobe Photoshop update before you install the Radius PhotoBooster software.

Updating Photoshop Software

PhotoBooster requires Adobe Photoshop version 2.5.1 or later (which means a higher number). If you are using Photoshop version 2.5, special updating software is included on the *Adobe Photoshop Updater* diskette. This will automatically update Photoshop version 2.5 to version 2.5.1.

If you have a version of Adobe Photoshop earlier than version 2.5, contact your Adobe reseller for information about how to obtain a software update.

You can determine which version of Photoshop is installed on your Macintosh by starting Photoshop, and choosing About Photoshop from the Apple (🍎) menu. The About Photoshop dialog box will appear, as shown in the following diagram.



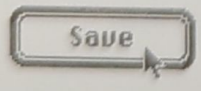
The About Photoshop dialog box, showing the version number

Updating Photoshop Version 2.5

1. Insert the *Adobe Photoshop Updater* diskette. If the disk's window doesn't open automatically, double click on the diskette icon in the Finder.

The Adobe Photoshop Updater window

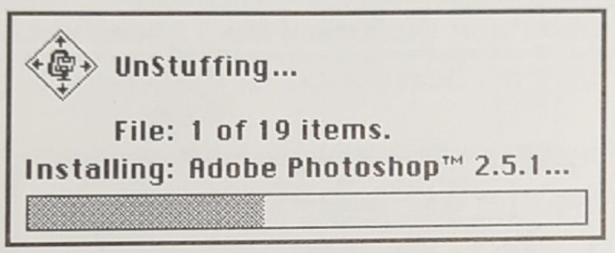
2. Double click on the *Install 2.5.1 Updater* icon. An information screen will appear. Click on the Continue button to proceed. A dialog box will appear, prompting you to define the location of the Adobe Photoshop™ Updater folder.



3. Click on the Save button to create the new folder and continue.

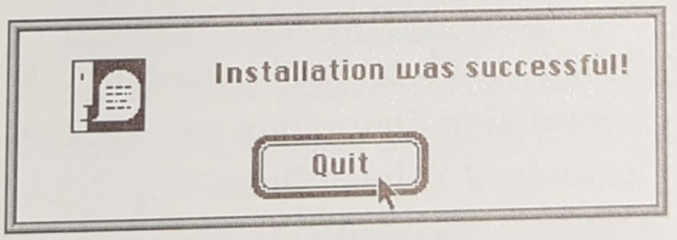
Photoshop Updater save dialog box

4. A progress box will appear while the necessary files are installed on your disk drive, as shown in the following diagram:

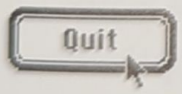


Install Progress dialog box

5. When the file installation is complete, an alert dialog box will appear, as shown in the following diagram:

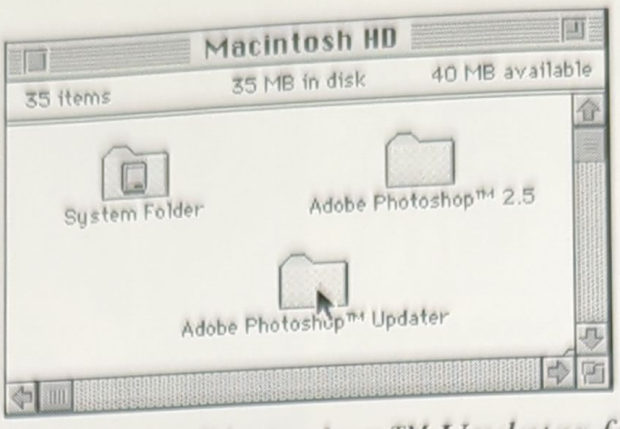


Successful installation alert



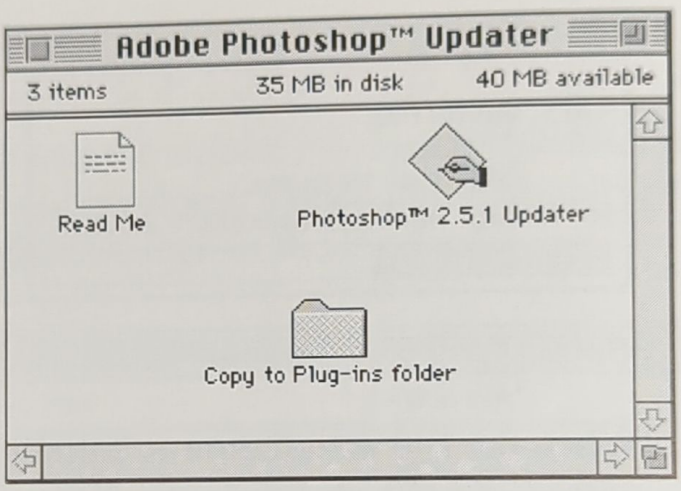
Click on the Quit button to continue.

6. At this point, you will be returned to the Macintosh Finder. Locate the new folder entitled Adobe Photoshop™ Updater, as shown below:



The Adobe Photoshop™ Updater folder

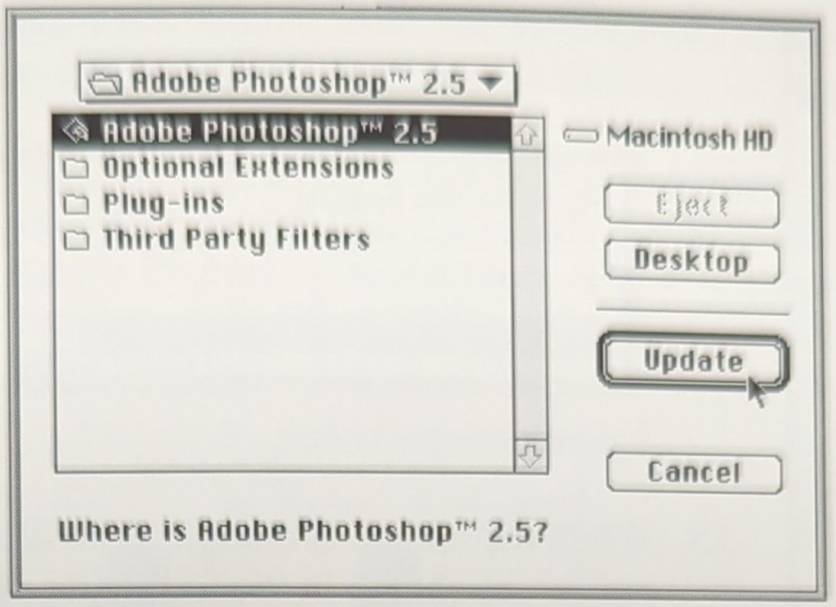
7. Double-click on the Adobe Photoshop™ Updater folder icon. The contents of this folder will appear in a window, as shown in the following diagram:



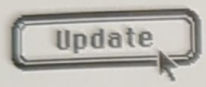
Contents of the Adobe Photoshop™ Updater folder

8. Double-click on the Photoshop 2.5.1 Updater icon. An information dialog box will appear, describing the new features of Adobe Photoshop 2.5.1. Click on the Update button to proceed.

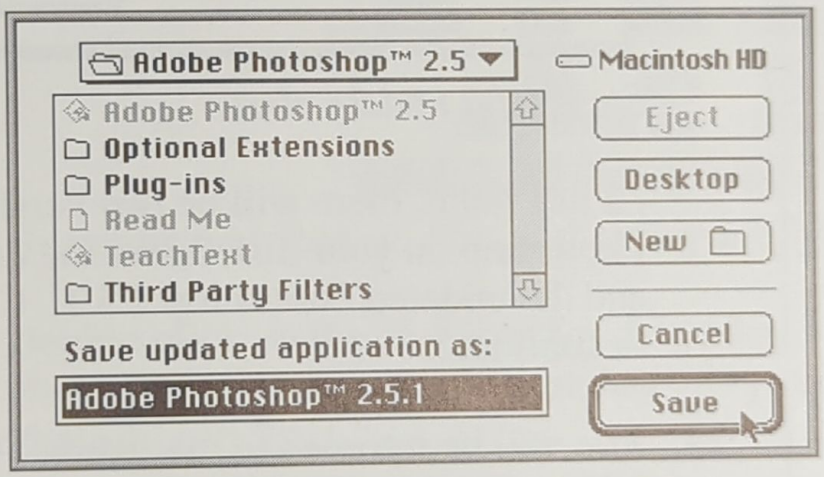
9. A dialog box will appear, prompting you to locate your current version of the Adobe Photoshop (v2.5) application. Use the controls that are available in this dialog box to locate Photoshop so that it is highlighted, as shown below:



Photoshop location dialog box

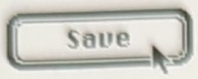


10. Click on the Update button. A dialog box will appear, prompting you to define *where* the updated version of Photoshop will be located on your disk drive:

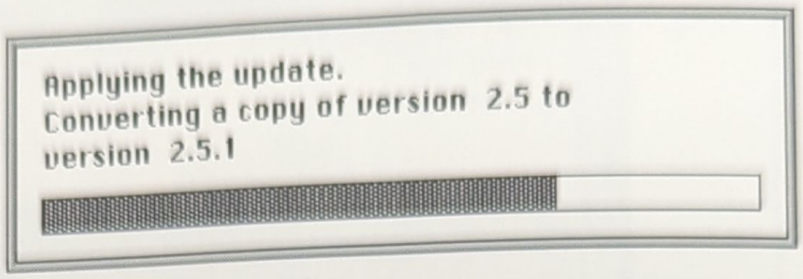


Updated Photoshop location dialog box

11. Use the controls that are available in this dialog box to define where the updated version of the Photoshop application will be located. If necessary, you can click on the New button to create a new folder.

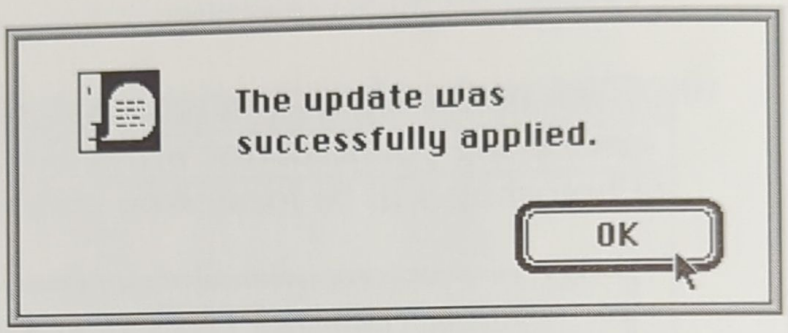


12. Click on the Save button. A progress box will appear while the updated version of Photoshop is created:

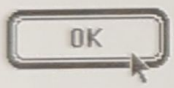


Update progress box

13. When the update is complete, an alert dialog box will appear, as shown in the following diagram:

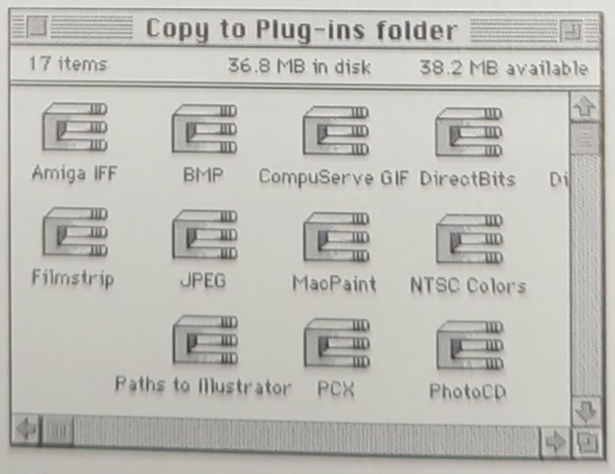


Successful update alert

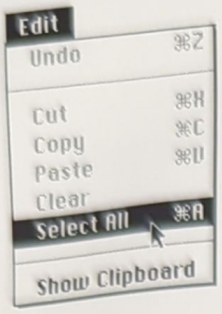


At this point, there will be *two* versions of Adobe Photoshop on your disk drive: the original Photoshop 2.5, and the updated Photoshop 2.5.1. Click on the OK button to continue.

14. You will be returned to the Adobe Photoshop Updater folder. Double-click on the folder named "Copy to Plug-ins folder." The Copy to Plug-ins folder will appear, as shown in the following diagram:

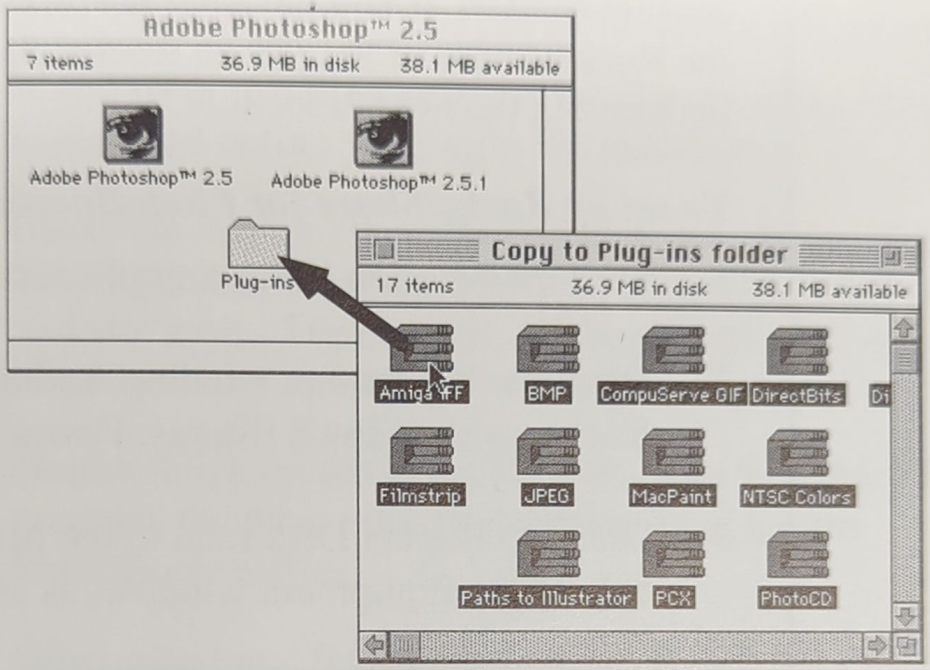


The Copy to Plug-ins folder



15. Choose Select All from the Edit menu. This will select all of the updated Plug-in files in the Copy to Plug-ins folder.

16. Drag the files in the Copy to Plug-ins folder to the icon of the folder named Plug-ins, located in the folder of your Adobe Photoshop application. The Macintosh may alert you that some files will be replaced. Click OK to update these files.



Dragging new Plug-in files to the Plug-ins folder

17. Double-click on the new icon for the updated version of Photoshop: in this case, the icon named "Adobe Photoshop™ 2.5.1."

18. The Photoshop desktop will appear. This will establish that your updated version is installed and operating correctly.

19. Choose Quit from the File menu to quit Photoshop.

20. Drag your version of Photoshop 2.5 to the Trash icon. Choose Empty Trash from the Special menu, so that Photoshop version 2.5 is removed from your disk drive.

Your Photoshop upgrade is now complete.

RocketShare Setup

If you will be using the PhotoBooster in a RocketShare environment, you must mount the startup Rocket Disk on your motherboard desktop before you install PhotoBooster software.

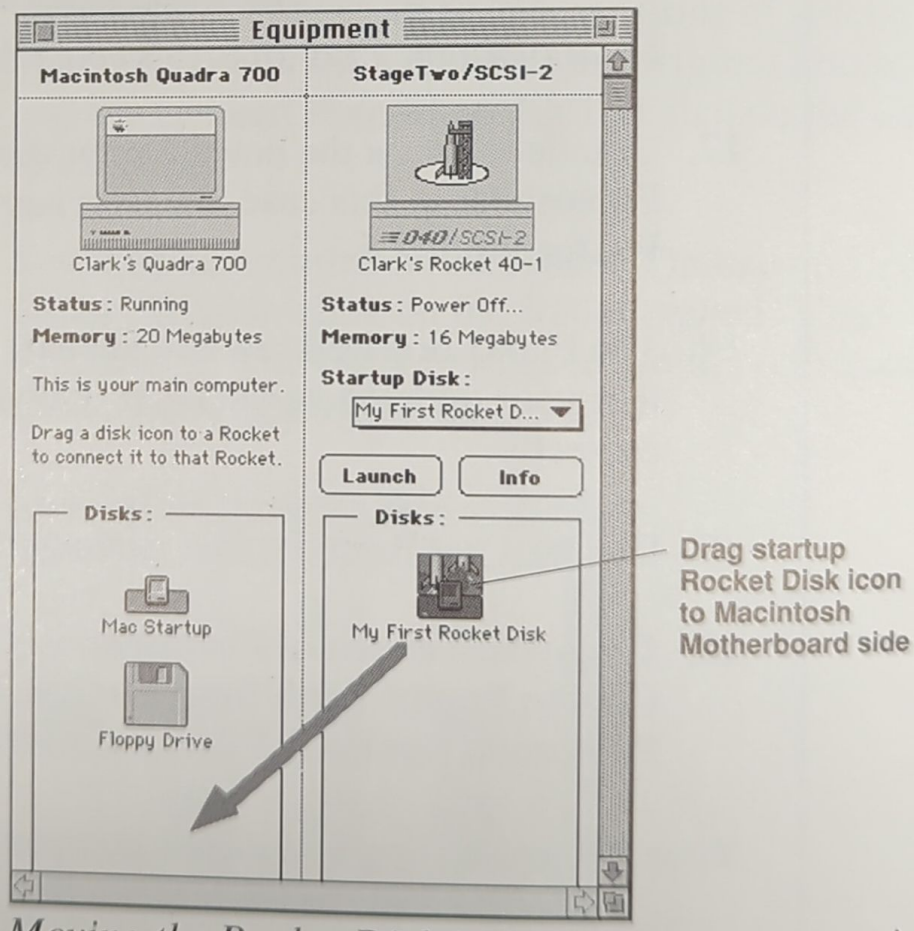
Important: The following procedure assumes that you have installed the RocketShare software on your Macintosh startup drive, and have created a startup Rocket Disk with a complete System Folder. If you have not performed these steps, refer to the RocketShare or StageTwo Rocket Manual before performing the next procedure.

To set up RocketShare for PhotoBooster software installation,

1. Start the Mission Control application.

2. Open the Equipment window, and make sure that the Rocket is shut down (Status: Power Off).

3. Drag the Rocket Disk icon to the Macintosh Motherboard side of the Equipment window, as shown below.



Moving the Rocket Disk icon in the Equipment window

4. At this point, the startup Rocket Disk icon will appear on the Macintosh Motherboard desktop, and can be accessed for PhotoBooster software installation.

Remember to drag the startup Rocket Disk back to a Rocket in the Equipment window when you have completed the PhotoBooster software installation.

PhotoBooster Software Installation

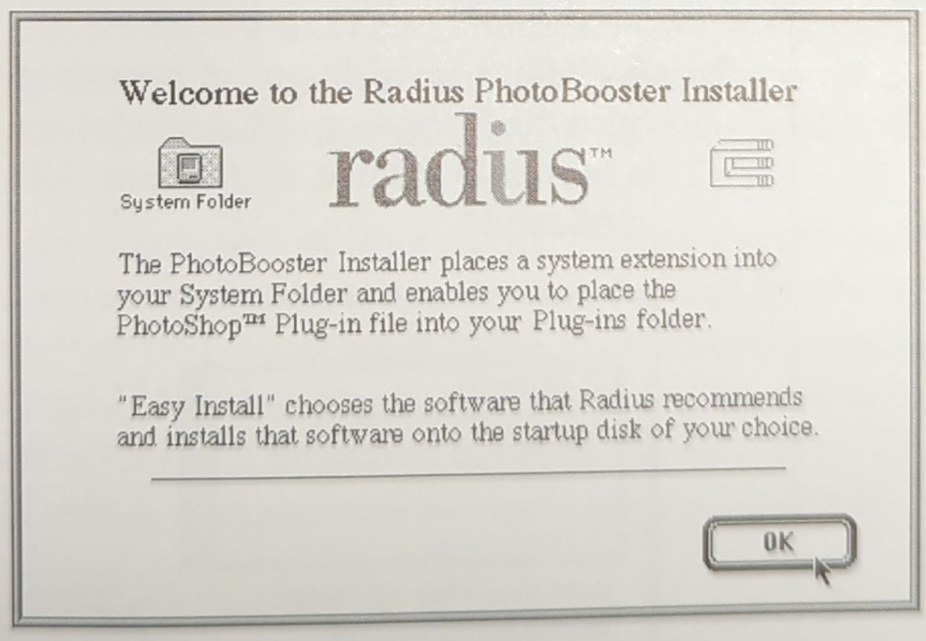
1. If you have installed anti-virus software, make sure that it is disabled before you begin the installation.

2. Insert the *Radius PhotoBooster* diskette. If the disk's desktop doesn't automatically open, double-click on the diskette icon. The contents of the diskette will appear in a window.

3. Double-click on the ReadMe icon. The ReadMe file contains the most current information about the PhotoBooster files.

   When you have finished reviewing the ReadMe file, choose Quit from the File menu.

4. Double-click on the Installer icon. The Installer startup screen will appear.

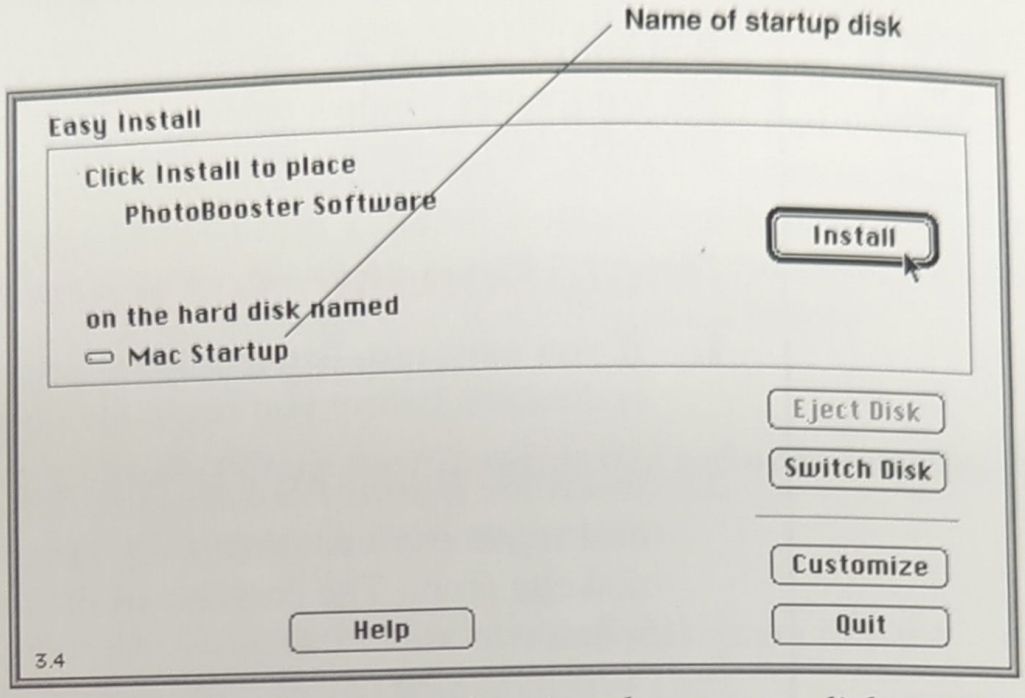


The Installer startup screen

OK

Click on the OK button to continue.

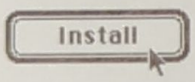
5. The Easy Install dialog box will appear, as shown below.



Easy Install dialog box, showing the startup disk name

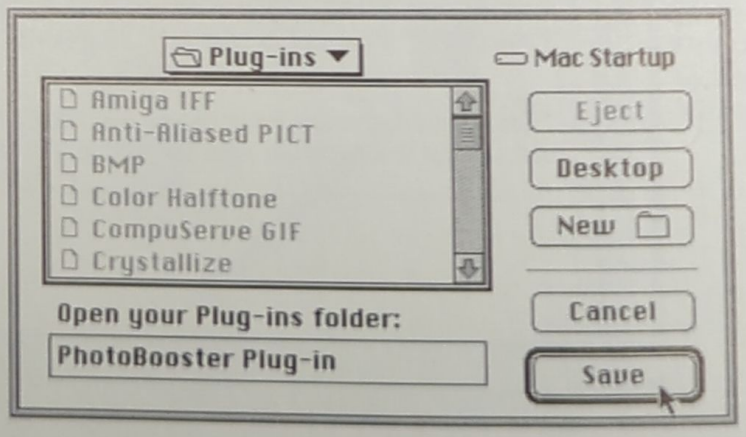
If the name of your startup disk does not appear in the box, click on the Switch Disk button until it does.

If you are using RocketShare, you should click on the Switch Disk button until the name of your startup Rocket Disk appears.



6. Click on the Install button.

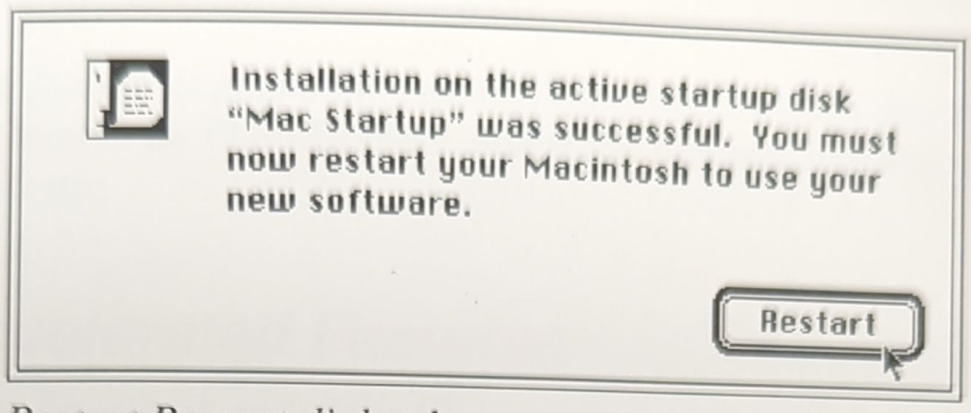
7. A dialog box will appear, prompting you to locate and open the Photoshop Plug-ins folder. The Plug-ins folder is normally located in the same folder as the Photoshop application.



Plug-In Folder Location dialog box

Use the dialog box to locate and open the Plug-ins folder, and then click on the Save button.

8. When the installation is complete, you will be prompted to restart your Macintosh.



Restart Prompt dialog box

Click on the Restart button.

9. Restore any virus-protection software that you may have disabled prior to the software installation.

At this point, the PhotoBooster software has been installed. You are now ready to start using key Photoshop operations at accelerated speeds.

RocketShare provides unique multi-processing capabilities. You may wish to install a second copy of Photoshop (with a different serial number) and PhotoBooster software on your startup drive. To do this, repeat the previous procedure and select the Macintosh startup drive in the Easy Install dialog.

With a second copy of Photoshop, you can start Photoshop from your Macintosh startup drive and it will be able to find and use the DSP processors of the PhotoBooster attached to the Rocket. In other words, the processing capabilities of the PhotoBooster will be shared between the Rocket on the RocketShare desktop, and the motherboard Macintosh.

Chapter 3

Using PhotoBooster

This chapter explains the Adobe Photoshop features that are accelerated by PhotoBooster, and some tips and considerations for its use.

Accelerated Features

PhotoBooster is an Adobe Charged certified product that takes advantage of Adobe's extension architecture to speed up many of the menu commands and routines in Photoshop. The Adobe Charged certification means that all of the accelerated features available with PhotoBooster create results that are visually identical to those of Photoshop without acceleration.

The extent of acceleration provided by PhotoBooster depends on number of calculations that must be performed on each pixel in the image. For example, a Gaussian Blur requires more calculations per pixel than a simple Blur. In this case, the Gaussian Blur algorithm checks the value of many surrounding pixels (depending on the value of the radius in the dialog box), as compared to the Blur algorithm that checks only adjacent pixels.

PhotoBooster software accelerates the following Photoshop operations:

Mode Menu

The following image conversions, which appear in the Mode menu, are accelerated by PhotoBooster:

- RGB Color to Lab Color
- RGB Color to CMYK Color

Image Menu

The following Image menu selections are accelerated by PhotoBooster for the *Bicubic* and *Bilinear* interpolation methods. (The interpolation method used by Photoshop is set in the *General Preferences* dialog box.) The greatest acceleration (compared to a Macintosh without PhotoBooster) will occur when the Bicubic interpolation setting has been selected, which produces the most precise results, but requires the most calculations.

- Arbitrary Rotate
- Free Rotate
- Scale
- Skew
- Perspective
- Image Size...

Filter Menu

The following commands appear as pop-out sub-menu commands in the Filter menu of Photoshop. For example, to activate the Blur More command, choose Blur from the Filter menu, and then hold down the mouse button and drag to the right to choose the Blur More command.

- Blur
- Blur More
- Gaussian Blur...
- Despeckle
- Sharpen
- Find Edges
- Emboss (to a maximum height of 6)
- Motion Blur... (for Bicubic and Bilinear interpolation settings)
- Sharpen More
- Unsharp Mask...
- Sharpen Edges
- High Pass
- Custom

Select Menu

The following Select menu command is accelerated:

- Feather

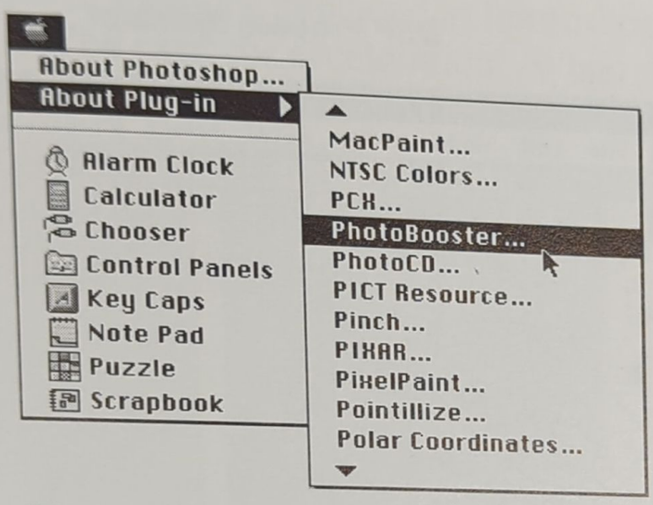
DSP Process Indicator

The PhotoBooster software incorporates a special DSP Process Indicator that can be activated to appear in the menu bar when using Adobe Photoshop. When activated, the DSP Process Indicator appears as a flashing dot in the menu bar whenever the PhotoBooster is executing a Photoshop command.

To activate the DSP Process Indicator,

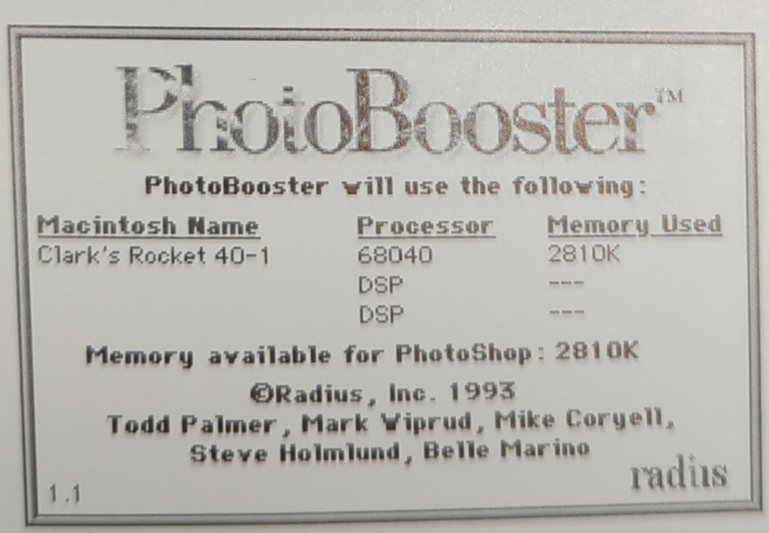
1. Start Adobe Photoshop in the usual manner.

2. Choose About Plug-in from the Apple menu, hold down the mouse button, and drag to the right to select PhotoBooster, as shown in the following diagram.



PhotoBooster selected from the About Plug-in menu

3. The Configuration About box will appear, as shown below.



The Configuration About box

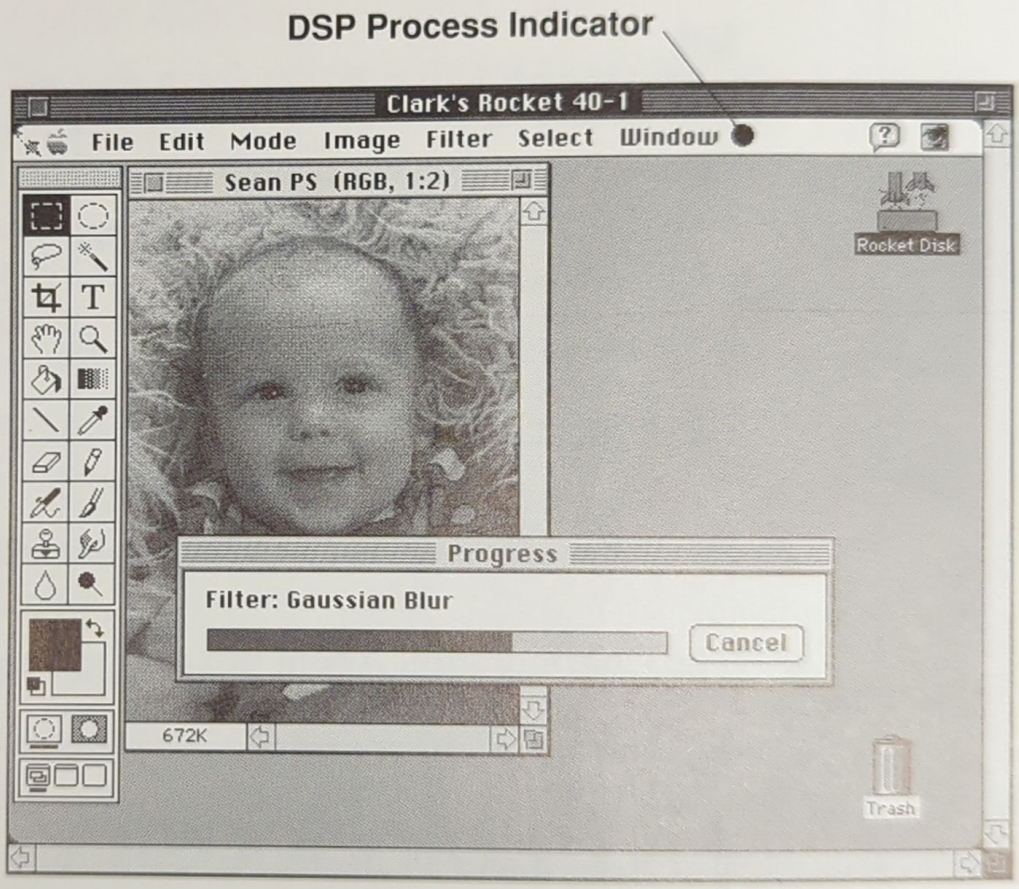
option

4. Hold down the Option key on the keyboard, and click in the Configuration About box. This activates the DSP Process Indicator, and closes the box.

The DSP Process Indicator appears as a green dot in the Photoshop menu bar. The DSP Process Indicator *only* appears while the PhotoBooster card is processing an accelerated Photoshop function.

note

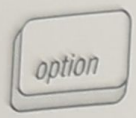
The DSP Process Indicator appears only when it has been enabled, and processing speed is not affected by the presence of the indicator. To view the DSP Process Indicator, it must be activated each time Photoshop is restarted.



DSP Process Indicator in a RocketShare Desktop window

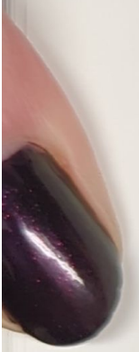
Considerations and Tips

For optimum performance, make sure you have allocated as much memory as possible to Photoshop. As a rule of thumb, Photoshop runs fastest when the memory assigned to it is 3 to 5 times the size of the largest image file you will be processing. By allocating sufficient memory to Photoshop, you ensure that PhotoBooster's processing power is not impeded by frequent accesses made to your hard disk.



Holding down the option key when you start Photoshop will display the Configuration About box. This will also activate the green DSP-Process Indicator.

The Configuration About box lists information such as the amount of memory allocated to Photoshop, and the processors that will be used for acceleration. When you have finished reviewing this information, click the mouse button to close the Configuration About box.



Chapter 4

Reference

This chapter contains troubleshooting tips, and information about Radius Customer Support and Service.

Troubleshooting

Should you experience a problem with your PhotoBooster system, first take a few minutes to try to isolate the difficulty. Performing a few basic steps will verify whether there is, in fact, a problem.

If the icon for the* •Radius DSP *system extension appears with an "x" through it when your Macintosh starts up,

- ✔ Make sure the PhotoBooster card is properly connected to the Rocket card.

- ✔ PhotoBooster for the Radius Rocket and StageTwo Rocket only operates in the Radius RocketShare or RocketWare environments. Make sure that you have correctly installed RocketShare or RocketWare, and that it is currently operating on your system. For more information, refer to the RocketShare or RocketWare User's Manuals supplied with your Rocket card.

- ✔ Make sure that 32-bit Addressing is turned **on** in the Memory Control Panel.

If the Photoshop operations listed earlier do not appear to be running faster, make sure that,

- ✔ Make sure the PhotoBooster card is properly connected to the Rocket card.
- ✔ The •*Radius DSP* system extension has been placed in the Extensions folder in the System Folder of your Rocket startup disk. If the •*Radius DSP* system extension is correctly placed, try shutting down and restarting all Rocket(s) under RocketShare.
- ✔ The PhotoBooster Plug-in has been placed in the folder you have designated as your Photoshop Plug-ins folder. You designate the Plug-ins folder using the Photoshop *Preferences* menu command. Changing this preference requires that you quit and restart Photoshop. When installed correctly, PhotoBooster… will appear under About Plug-in, in the Apple menu.
- ✔ You are using Photoshop version 2.5.1 or later (which means a higher number). If you are using Photoshop version 2.5, run the Photoshop updating software that is included in the PhotoBooster kit. This is described in Chapter 2: *Installing PhotoBooster Software*. If you are using a version of Photoshop prior to 2.5, contact your Adobe reseller for a software update.
- ✔ If you have more than one copy of Photoshop on your hard disk, make sure that the version you are currently running is at least 2.5.1. Launching Photoshop by double-clicking on a Photoshop document will not always launch the latest version of the program.
- ✔ You have allocated as much memory as possible to Photoshop. As a rule of thumb, Photoshop runs fastest when the memory assigned to it is 3 to 5 times the size of the largest image file you will be processing. By allocating sufficient memory to Photoshop, you ensure that PhotoBooster's processing power is not impeded by frequent hard disk access.

Radius Customer Support and Service

Radius has created a worldwide authorized reseller network to provide extensive support in both sales and service. If you cannot return your equipment to the Reseller from whom you purchased your Radius system, or do not know the location of the nearest Radius Authorized Reseller, please contact the Radius Information Center at **(800) 227-2795**. For Reseller information outside the United States, contact the local Radius International Distributor or write to:

Radius Inc, International Sales Department
1710 Fortune Drive
San Jose, California 95131-1744 USA
(408) 434-1010

If you have a problem, need answers to technical questions, or need information about product updates, you should contact your Radius Authorized Reseller for assistance. If you have a problem, be sure to review the troubleshooting section of this manual, and write out the following information prior to your call. This will expedite the correction of your problem.

- Macintosh model and general configuration (hard drives and other peripherals)
- System software version
- Adobe Photoshop version
- PhotoBooster software version

If, after consulting with your Radius Authorized Reseller, you need further assistance, contact Radius Customer Support through any of the following services:

Service	Address	Forum Address
AppleLink	RADIUS.TECH	
America Online	RadiusTS	Keyword: RADIUS
CompuServe	76004,2155	GO APVENB, Library 14
Internet	support@radius.com	

Radius also maintains a multi-line bulletin board service (BBS) that contains the most-current software releases and other current information. This is available at **(408) 954-1689**, from 1200 to 9600 baud (V.32, V.42bis). Your terminal program must be able to emulate either VT100, VT52, or ANSI. Set your modem for no parity, 8 data bits, 1 stop bit.

Telephone voice support is available at **(408) 434-1012**, Monday through Friday, 6:00 AM to 6:00 PM, Pacific Standard Time.

Radius FAX-Information System

If you wish to take advantage of an immediate response system for information on Radius products and domestic-suggested, retail price lists, you can call one of the following numbers 24 hours a day, and by following the instructions, you will automatically receive the information you want by return-facsimile transmission.

- United States and Canada **(800) 966-7360**
- Outside U.S. & Canada **(408) 954-6670**

Communicating with Radius

The Radius telephone and facsimile numbers for various functions are summarized below for your convenience:

Developer Information	(408) 954-6600
Electronic On Line Service	(408) 954-1689
International Product Information **FAX**	(408) 954-6670 *f*
Main Corporate Number	(408) 434-1010
Reseller Information	(800) 227-2795
Technical Information **FAX**	(800) 332-9255 *f*
Technical Questions (submittal) **FAX**	(408) 434-1015
Technical Support	(408) 434-1012
U. S. Product Info **FAX**	(800) 966-7360 *f*

f denotes an automatic FAX-back system to which you telephone instructions; you will need a facsimile machine to receive information

Radius International Sales Offices

Radius Canada
250 The Esplanade
Suite 110
Toronto, Ontario, M5A 1J2

telephone: (416) 777-9900
fax: (416) 777-9911

Radius France
BP422, Bureau 300
World Trade Center 2
CNIT, 2 place de la Défense
92053 Paris-la-Défense

telephone: 1 4692-2335
fax: 1 4692-2337

Radius K. K. (Japan)
Yanaba Bldg. 5F
6-7-10 Roppongi, Minato-ku, Tokyo

telephone: 3-5410-2480
fax: 3-5410-1624

Radius United Kingdom
13 Westminster Court
Hipley Street
Old Working, Surrey GU22 9LQ

telephone: 0483-772773
fax: 0483-750540

Appendix A: Regulatory Approvals

RFI Statements

RFI: FCC Class B, Canadian DOC Class B

FCC Statement

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. 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 communications. 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 or more of the following measures:

- Connect the equipment into 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.
- In case of TV or radio interference, turn the antenna until the interference stops, or consider installing an antenna with coaxial cable lead-in between the antenna and the TV.
- Increase the separation between the equipment and receiver
- Reorient or relocate the receiving antenna

Modifications or changes to this product that are not expressly approved by Radius could void the user's authority to operate the equipment. To ensure compliance to FCC non-interference regulations, peripherals attached to this product require shielded I/O cables.

You may find the following booklet prepared by the Federal Communications Commission helpful:

How to Identify and Resolve Radio-TV Interference Problems
Stock # 004-000-00345-4

The above booklet is available from:
U.S. Government Printing Office
Washington, DC 20402
(202) 783-3238

Canadian RFI Statement

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruit radioélectrique dépassant les limites applicables aux appareils numériques de Classe B prescrites dans le réglement sur le brouillage radioélectrique édicté par le Ministére des Communications du Canada.

Appendix B: Radius Warranty

LifeTime Warranty On Radius Hardware And Media And Warranty Disclaimer For Radius Software

What is covered: All defects and faulty workmanship in the hardware components of your Radius board-level product (the "Product").

For how long: *For as long as you own the Product.*

Who is covered: You, as the original purchaser of the Product, are eligible for this warranty if you fully complete and return the enclosed warranty registration card within thirty (30) days of purchase. If you do not return the enclosed warranty registration card, only Radius' standard one year, limited warranty will apply to you.

What we will do: Radius, at its option and expense, may repair the Product, replace the Product with the most comparable product in Radius' then current product line, or refund your original purchase price.

What you must do:
In the United States or Canada. Call Radius at (408) 434-1012, be the original owner, and provide proof of ownership. Radius will ship a replacement to you overnight. You may return your defective Product only (do not return cables, software or manuals) to Radius. Please return your defective Product using the Radius-supplied mailer or as otherwise instructed by Radius.

In areas other than the United States or Canada. Unless otherwise instructed by Radius, return the defective Product only (do not return cables, software or manuals) with all transportation and insurance charges prepaid, to an Authorized Radius Reseller within the country of original retail purchase. Please include your name, address, telephone number, a description of the problem and a copy of a bill of sale bearing a Radius serial number as proof of original retail purchase. If you do not know the location of an Authorized Radius Reseller in your area, please contact Radius.

Other conditions: This warranty does not apply if the Radius serial number has been removed or if the Product has been damaged by misuse, accident, modification or unauthorized repair. Radius may use remanufactured, refurbished, or used parts and modules in making warranty repairs or replacements. This warranty does not

apply to the software contained in or accompanying the Product, nor does it cover software or hardware upgrades to the Product. This warranty is not transferable.

While Radius products are designed to work with various other hardware and software products, some features of such software or hardware may not be available when used with this Product. Accordingly, Radius does not warrant or represent that all software or hardware will function error-free when used in conjunction with this Product. Nor does Radius warrant or represent that the Product will be compatible with future revisions to other hardware or software products.

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