

Radius FPD Interface Card
For the Macintosh SE

Installation Guide

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San Jose, CA

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Macintosh SE Installation

This installation guide explains how to install a Radius Full Page Display (FPD) interface card in a Macintosh SE. It is intended for a Radius Authorized Dealer or an authorized Apple Service Provider.

Warning:

*Macintosh SE installation **must** be performed by a Radius Authorized Dealer, or an Apple Level 1 Certified technician at an authorized Apple Service Provider — or the Radius warranty will be invalidated. Since the procedures described in this chapter expose lethal voltages within the Macintosh SE, always take appropriate safety precautions: keep hands and equipment away from the areas labeled HIGH VOLTAGE.*

All Radius interface kits contain a packing list. Check the materials in the kit against the packing list; if something is missing, notify Radius Customer Support at (408) 434-1012. Please be able to provide the serial number for the interface card.

This installation procedure requires the following tools:

- Macintosh Torx (T-15) driver
- Macintosh chassis wedge
- Needle-nose pliers
- Phillips screwdriver
- Flat-blade screwdriver

Be sure that these tools are available before you begin the installation.

Once you have installed the FPD interface card in the Macintosh SE, you will need to connect the display with an appropriate interface cable, and install RadiusWare on the user's startup disk. Complete information about how to place and connect the display is supplied with the Radius display user's manual. Likewise, complete information about how to install and use RadiusWare is supplied with the *Radius Software for the Macintosh User's Manual*.

Before You Begin

Your work area should include a grounded, anti-static pad to prevent damage to the Macintosh SE cabinet, as well as to avoid potential damage from static electricity.

It is recommended that you read through the entire installation procedure before you begin.

Before you start the installation process, you should run the Macintosh diagnostics test. This will determine if there are any problems with the Macintosh before you install the Radius interface card. If you do not run the diagnostic test, you may spend a lot of time troubleshooting a problem that has nothing to do with the Radius equipment.

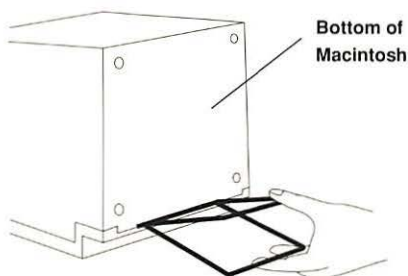
See your Macintosh technical manual for complete details on running the diagnostics test.

Disassembling the Macintosh SE

The procedure steps in this section explain how to open the case of the Macintosh SE.

1. Make sure that the Macintosh SE is turned off and unplugged. Also make sure that any peripherals, such as printers, modems, or disk drives, are disconnected.

2. Remove the four screws from the rear of the Macintosh case using the Macintosh Torx driver (two screws are located on the back of the case and the remaining two are inside the handle at the top).
3. Separate the case from the chassis by using the Macintosh chassis wedge, as shown in the following diagram:



Using the chassis wedge

4. Slide the case off the back of the Macintosh and remove the foil shielding.

Removing the Logic Board

The procedure steps in this section explain how to remove the main logic board from the Macintosh SE.

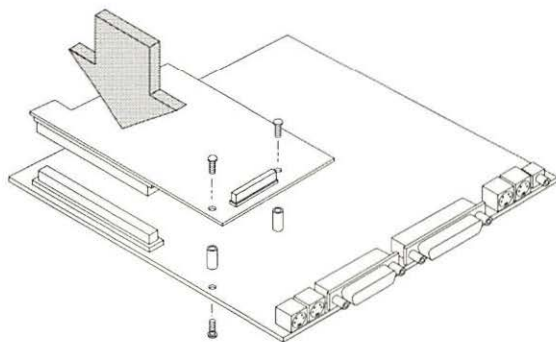
5. Unfold the wrist grounding strap provided with the interface card, and wrap the double-folded end firmly around your wrist. Peel and remove the paper liner on the copper strip located at the other end of the strap. Attach the copper strip to the grounded post of the anti-static pad.
6. Remove the video/power cable, the floppy drive cable, and the hard disk drive cable (if present) from the main logic board.

7. Slide the logic board out about two inches and disconnect the speaker connector. Then slide the board the rest of the way out.

Installing the MagicBus Jumper Card

The procedure steps in this section explain how to install the MagicBus Jumper Card on the main logic board of the Macintosh SE.

8. Install the two plastic standoffs on the bottom of the MagicBus Jumper Card using the #6-32 screws provided.
9. Plug the MagicBus Jumper Card into the expansion slot on the Macintosh main logic board as shown in the following diagram:



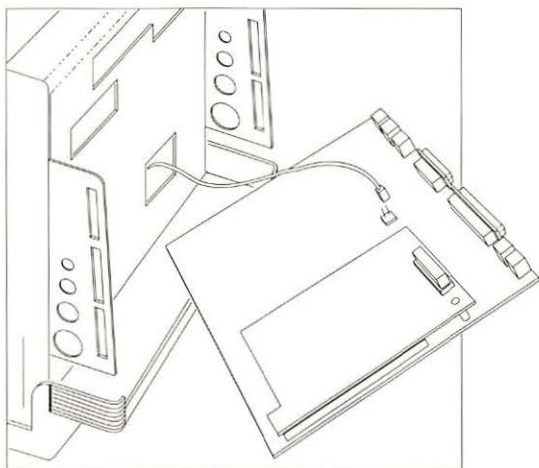
Installing the MagicBus Jumper Card

10. Secure the MagicBus Jumper Card to the main logic board with one of the #6-32 screws provided.

Reinstalling the Main Logic Board

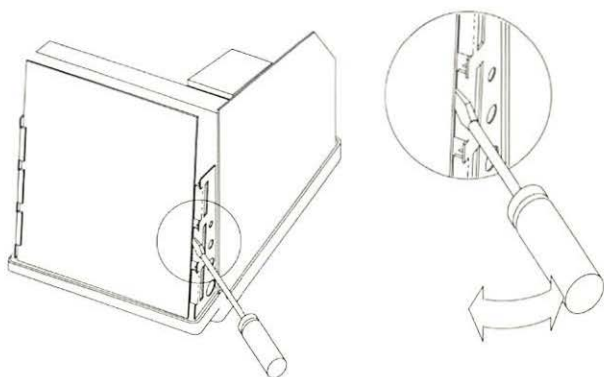
The procedure steps in this section explain how to reinstall the main logic board in the Macintosh SE.

11. To reinstall the main logic board, begin by holding the logic board against the bottom of the Macintosh and attaching the speaker connector, as shown in the following diagram.



Attaching the speaker connector

12. Put one edge of the logic board into the side rail, and then pry with a flat blade screwdriver to pop the other edge into its rail. (You cannot slide the main logic board into place with the MagicBus Jumper Card in place.)



Prying the main logic board into position

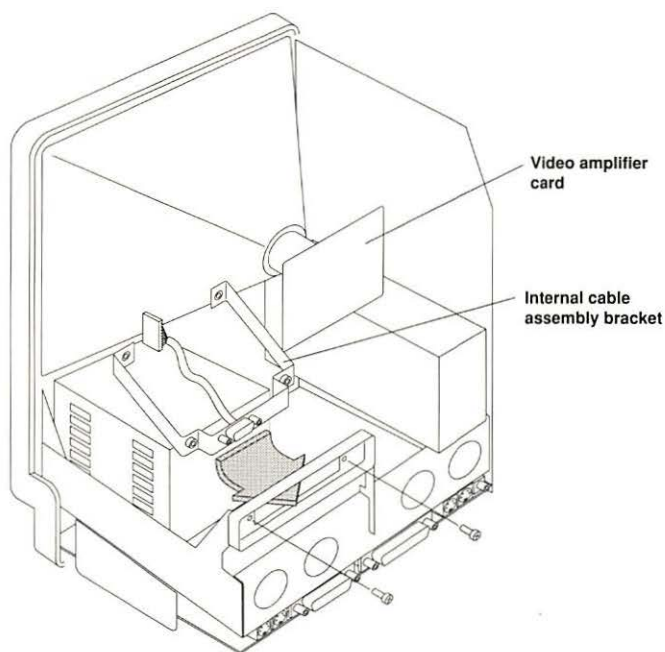
13. Attach the video/power cable, the floppy drive cable, and the hard disk drive cable (if present) to the main logic board.

Note: Be careful to check that both ends of the floppy, and hard disk drive cables are firmly seated in their sockets. Sometimes these cables can become dislodged during this installation procedure.

Connecting the FPD Interface Card

The procedure steps in this section explain how to connect the FPD interface card to the MagicBus Jumper Card.

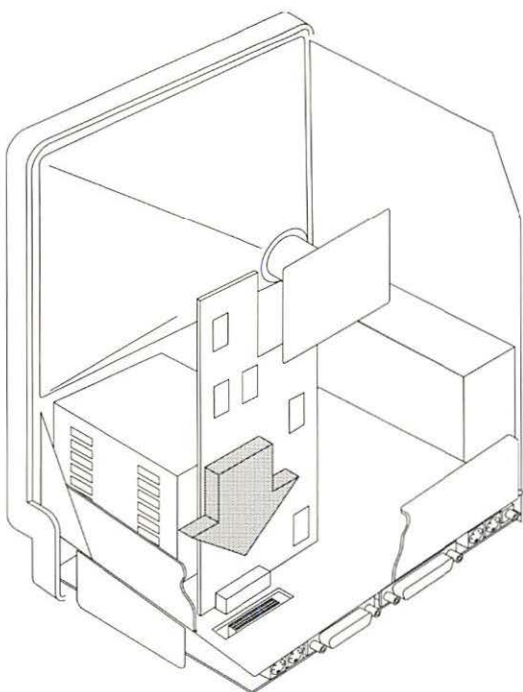
14. Install the internal cable assembly bracket using the #4-40 screws provided, as shown in the following diagram.



Installing the internal cable assembly bracket

Note: To make this step easier, you can temporarily remove the video amplifier card from the rear of the CRT tube. Wiggle the card slightly as you remove it.

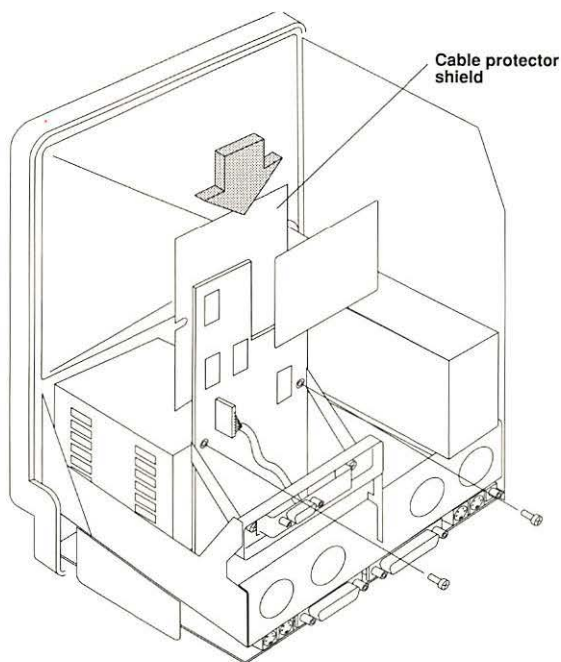
15. Plug the interface card into the MagicBus Jumper Card with the component side facing out (towards the rear of the Macintosh). Note that the connector is keyed and will only fit one way.



Connecting the FPD card to the MagicBus card

Arrange the cables carefully so that the board fits firmly into the socket on the MagicBus Jumper Card. Push the video/power cable from the main logic board around the side of the drive, so that it is not behind the FPD interface card.

16. Insert the cable protector shield behind the FPD interface card, and between the ends of the bracket as shown in the following diagram.



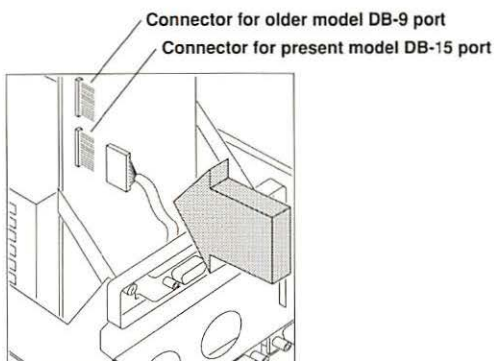
Installing the cable protector shield

Note: If you removed the video amplifier card as described in step 14, reinstall it now.

17. Install the two #4-40 screws to secure the FPD interface card to the internal cable assembly bracket.

When the screws are secure, check to be sure the FPD interface card is still properly seated in the MagicBus Jumper Card.

18. Connect the internal cable to the FPD interface card. Note that the connector is keyed, and will only fit one way.



Connecting the internal cable

Push the connector firmly so that it “snaps” into place.

Note: The type of internal cable provided is for the present model of the Radius FPD. If you will be using the FPD interface card with an older model Radius display, you may require a different type of internal cable assembly bracket.

Present models require a DB-15 connector on the back of the Macintosh to connect the video cable. Older model Radius displays require a DB-9 connector. If you require the older style internal cable assembly bracket with the DB-9 connector, contact Radius Customer Support at (408) 434-1012. Refer to Radius part #630-0017.

Testing the Installation

The procedure steps in this section explain how to test the Radius FPD interface card as installed in the Macintosh SE.

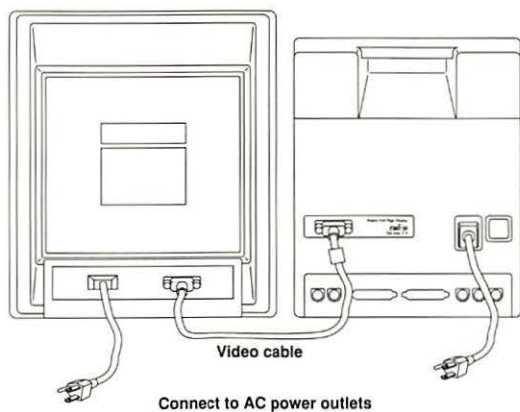
Before you finish the installation and reassemble the Macintosh, you should power up the system to make sure everything works properly.

Warning:

This step involves operating the Macintosh with its cover removed. Doing so could expose you or others to lethal voltages.

Take proper precautions while the Macintosh is connected to line power, and make sure that you disconnect it once you are sure that the FPD interface card works properly.

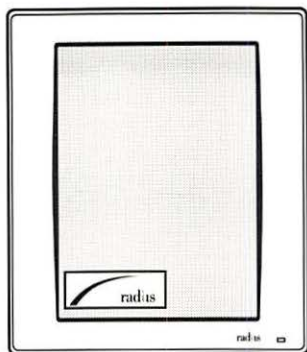
19. Connect the video cable between the FPD and the Macintosh SE as shown in the following diagram.



FPD connected to the Macintosh SE

20. Connect the power cords for both the FPD and the Macintosh to live, grounded power outlets.
21. Turn on the power for the FPD, wait a few seconds, and then turn on the power for the Macintosh.

When the Macintosh starts, you should see the Radius logo as shown in the following diagram.



Radius logo displayed on the FPD

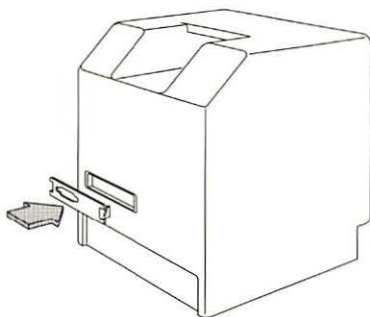
If you do not see the Radius logo shown in the previous diagram, stop. Retrace your steps and check all your work. If you still have problems, see if your symptoms match those listed in the Troubleshooting section of the *Radius FPD User's Manual*.

If you do see the Radius logo shown in the diagram above, everything is working. Turn off the FPD and the Macintosh, unplug their power cords, and disconnect the Macintosh cables.

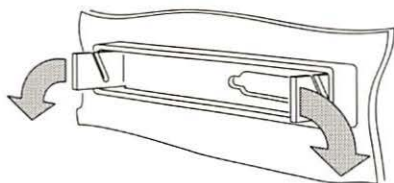
Installing the Cover Plate

The procedure steps in this section explain how to install the Radius cover plate in the case of the Macintosh SE.

22. Carefully push out the rear slot cover from the inside of the Macintosh case.
23. Install the Radius cover plate in the opening, as shown in the following diagram.



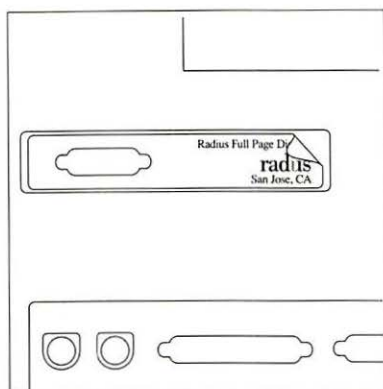
24. From the inside of the Macintosh case, use needle-nose pliers to bend the cover plate tabs over at a 90° angle as shown in the following diagram.



Bending the cover plate tabs

Bending these tabs will secure the Radius cover plate to the Macintosh case.

25. Remove the adhesive backing from the Radius label, and place the label over the cover plate on the back of the Macintosh case as shown in the following diagram.



Placing the Radius label over the cover plate

Reassembling the Macintosh SE

The procedure steps in this section explain how to reassemble the Macintosh SE.

26. Place the Macintosh face-down on a padded anti-static mat. Be careful not to scratch the screen.
27. Re-install the foil shielding over the lower part of the chassis.
28. Slide the Macintosh case over the chassis.
29. Secure the case with the four screws using the Macintosh Torx driver.

Installation is now complete, and the Macintosh SE is ready for use. Information about connecting, placing, and using the display is included in the *Radius Full Page Display User's Manual*. Please suggest that the customer fill out the warranty registration card and mail it to Radius Inc. Also, make sure to return all packaging material and product information to the customer. The product packaging contains serial numbers which are necessary for warranty registration.

Regulatory Approvals

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Modifications or changes to this product not expressly approved by Radius could void the user's authority to operate the equipment.

To insure compliance to FCC non-interference regulations, peripherals attached to this computer require shielded cables.

Canadian RFI statement:

This digital apparatus does not exceed the Class A 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 bruits radioélectriques dépassant les limites applicables numériques de Classe A prescrites dans le règlement sur le brouillage radioélectrique édicté par le Ministère des Communications du Canada.

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