

**New Life™ Video
SE**
video upgrade

for the Mac SE

**Installation Manual and
User's Guide**

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NewLife Computer Corporation

99 Michael Cowpland Drive, Unit 101
Kanata, Ontario, K2M 1X3
Telephone : (613) 592-5080
Fax : (613) 592-9738

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Before You Start!

**Please read this manual
before you install your NewLife
board.**

**It provides important safety
procedures
and describes the recommended
installation steps.**

The following symbols are used in this manual to indicate important items:



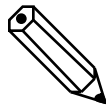
WARNING!

A life-threatening situation. Serious injury or death can result if the hazard is ignored.



CAUTION!

Static discharge can damage equipment.



part 1

Introduction

The New Life Video SE video upgrade

Congratulations!

We're glad you've chosen to give **New Life™** to your Macintosh with a **New Life Video SE** video upgrade. We're sure you'll be pleased with the improved display capabilities of your enhanced system.

With the **New Life Video SE** you can attach an external monochrome monitor to your system to increase your viewable desktop area.

New Life Video SE features and benefits

- **New Life Video SE** comes with support software which allows you to use a wide range of monochrome monitors
- **New Life Video SE** allows you to use either your external monochrome monitor, the Mac SE's internal 9" screen, or both
- **New Life Video SE** is installed by simply plugging the board into the SE's processor-direct slot.

part 2

Preparation and Safety Precautions

Gather the tools you will need

- CRT discharge tool
- Macintosh case opening tool or equivalent (also known as the pull-apart tool)
- 12-inch T-15 Torx screwdriver or equivalent
- Safety goggles
- Antistatic wrist strap
- Soft cloth or foam pad

Check the package contents

- **New Life Video SE** board.
- 3.5 inch diskette with support software
- User Guide & Installation Manual (this book)
- Video Cable
- Video bracket and two jackscrews
- two 4-40 bolts (may be attached to bracket)
- Warranty card
- Inquiry card

Understand the hazards



WARNING!

Macintosh computers contain high voltages and a high vacuum picture tube. Both can cause serious personal injury and property damage. This equipment should only be installed by a qualified technician.

Serious injury or death may result from improper handling of the interior components of the Macintosh.

DO NOT attempt this installation unless you are completely familiar with the methods for preventing electrical discharge and shock.

Always unplug the Macintosh

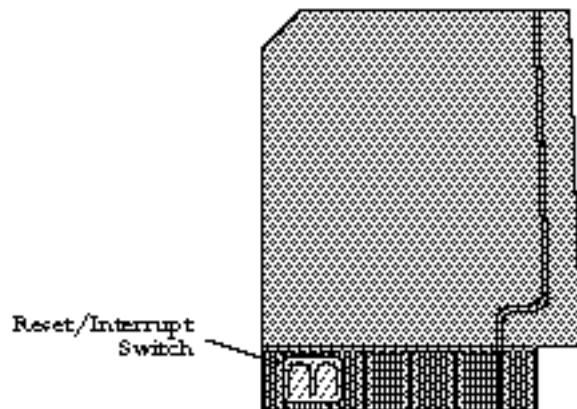
Make sure that the Macintosh is disconnected from AC power. Working within the Macintosh computer requires skill and expertise to prevent electrical discharge and shock, even when the Macintosh has been disconnected from its power source.

Discharge the CRT anode

The CRT anode can have extremely high voltages present (up to 12,000 volts). Follow the steps specified in the Macintosh Technical Procedures manual to discharge the CRT anode. For your convenience, we have summarized the basic instructions in Part 3. Consult the original Macintosh documentation for all of the details.

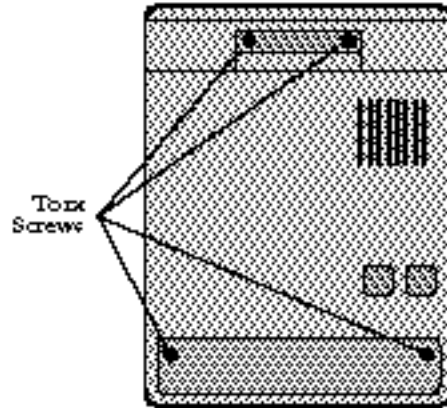
NOTE:

Failure to follow instructions can result in equipment damage or malfunction.



part 3


Installing the New Life Video SE in



the Macintosh SE

Five easy installation steps

You install the **New Life Video SE** in five easy steps:

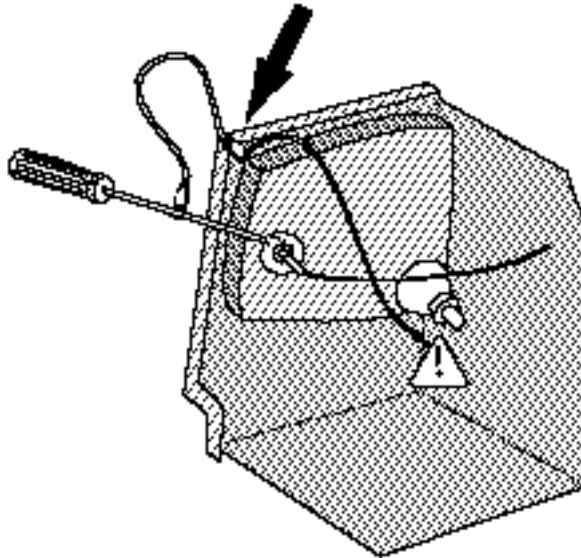
- 
- Step one: **Open the Macintosh case.**
 - Step two: **Install the New Life Video SE board.**
 - Step three: **Install the video cable and bracket.**
 - Step four: **Close the Macintosh case.**
 - Step five: **Install the New Life Video Software.**

Step one Remove the Macintosh motherboard

To open the Macintosh SE case:

1. Turn off the power and disconnect the AC power cord from the source and from the

- back of the computer.
2. Disconnect the mouse and all other external cables from the back of the computer.
Disconnect the keyboard.
 3. Remove the reset/interrupt switch (if installed) from the side of the case by prying it off with a small flat-blade screw driver.
- Figure 1: The reset/interrupt switch



4. To avoid scratching the bezel, place the computer face down on a soft cloth or foam pad.
5. Use a Torx screw driver to remove the four screws from the back of the Mac. Note that the upper screws are silver and the lower ones are black.

Figure 2: The back of the Macintosh SE

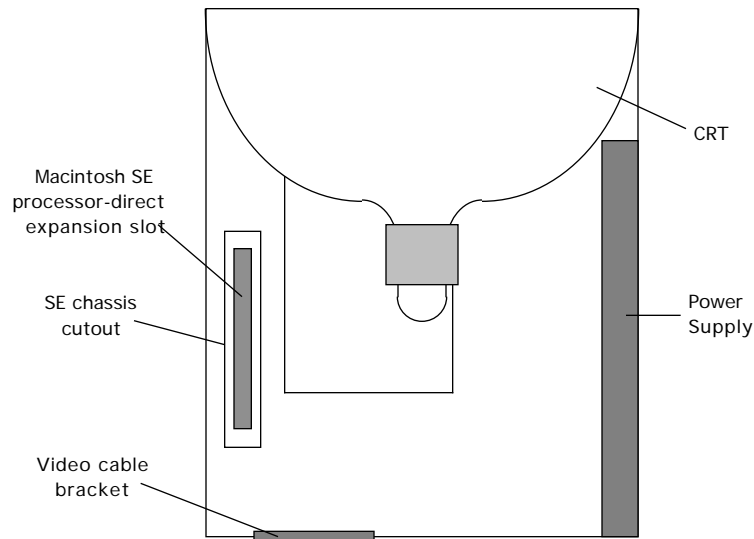
6. Use the pull-apart tool to gently pry the cover loose. Carefully lift up the cover and

Step two

Install the New Life Video SE board

To install the New Life Video SE board:

1. Plug the board into the SE's processor-direct slot. The location of the PDS as seen through the cutout in the Macintosh SE's chassis is shown in Figure 4. The PDS connector is keyed such that the New Life Video SE board will only attach with the board's circuitry oriented towards the inside of the Mac SE.
2. If the chassis in your Macintosh SE does not have a cutout for a vertical expansion card,



then you must have a certified Apple® dealer install a new chassis into your Macintosh SE.
Figure 4: Processor-direct slot

Step three

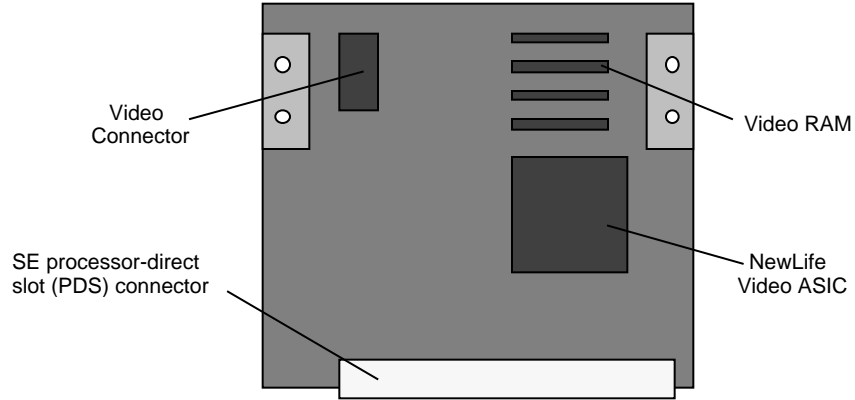
Install the video cable and bracket

To install the video cable and bracket:

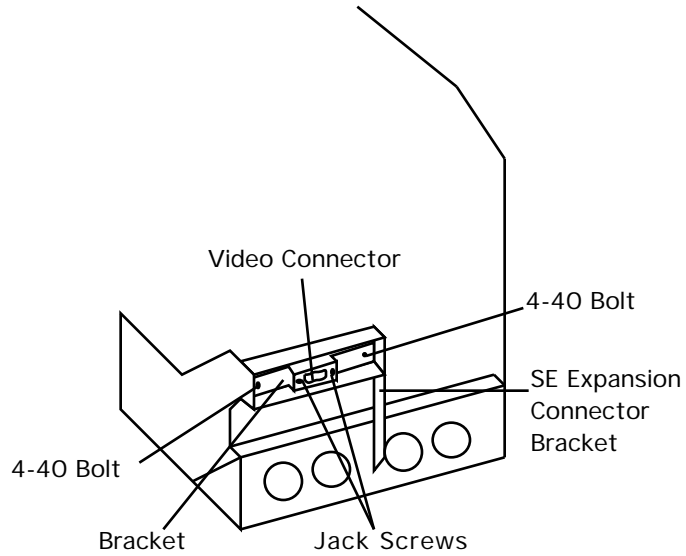
1. Locate the video connector on the New Life Video SE board shown in Figure 5. Attach the video cable to the right-angle connector. The

black rectangular connector on the video cable is keyed to prevent improper installation.

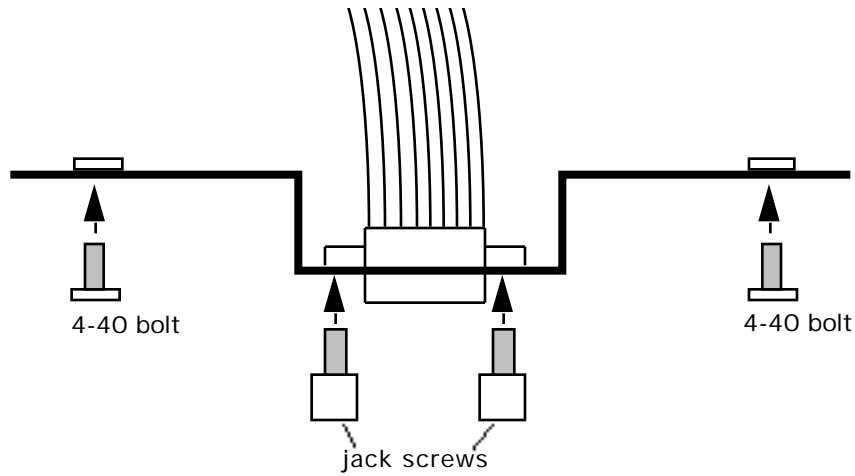
2. Ensure that the SE expansion bracket which is shown in Figure 6 is installed in your Macintosh SE. If this is not the case, then you



may obtain one from a certified Apple® dealer. Ensure that the New Life video



bracket is firmly attached to the video cable



with two jackscrews. Attach the video bracket to the SE expansion bracket as shown in Figure 7.

Figure 5: The New Life Video SE board

Figure 6: SE Expansion Bracket

Figure 7: Video Connector Assembly

Step four Close the Macintosh case

To close the case:

1. Place the Mac face down on the cloth or foam pad and replace the back cover.
2. Replace the four screws that fasten the back cover. Note that the upper ones are silver and the lower ones black.
3. Stand the Mac up and reconnect the cables, including the cable for your external monitor.

Step five

Install the New Life Video Software

The NewLife Video control panel device (cdev) has been divided into two parts. If you are running a full page display, use the cdev 'NewLife Video FPD'. If you are running a dual page display, use the cdev 'NewLife Video DPD'.

To invoke the video software simply copy the appropriate cdev from the floppy disk into the System Folder on your boot disk. Click on the 'NewLife Video' icon within your Control Panel and select the appropriate software configuration. You may then choose to use either the Mac's internal screen, the external monitor, or both screens. If you choose to use both screens, you may then select your 'main monitor' by dragging the miniature Menu Bar to the selected screen. You may also configure the monitors' relative positions by dragging the screens into various positions. Note that you must *Restart* your computer to invoke a new video configuration.

Attached is an updated list of monitors with their corresponding software configurations.

Other Notes

If you wish to disable the NewLife Video software when you boot your computer, simply hold down the mouse button as the NewLife Video icon appears on your screen. This should strike out the icon and disable your external monitor.

If you are using VIRTUAL™ with the NewLife Video option, then you must choose 'Custom Configure' under the 'Monitor Settings' menu of the VIRTUAL™ cdev. The following values should be entered: base address = \$780000, address length = \$20000.

part 7

Technical Information

System Requirements

- Macintosh SE

Hardware

- Custom Video Controller CMOS ASIC
- 128K of Video RAM
- Software programmable oscillator

Power

- Voltage Required: +5V, +12V and -12V
- Power Consumption: Max 2.0 Watts

Troubleshooting

The **NewLife Video SE** is a complex piece of electronic hardware. It has been manufactured with great skill and care. In the unlikely event that you encounter a problem, follow these steps:

1. Refer to the **Troubleshooting Guide** to remedy the problem and re-test your system. *If the remedy requires you to open the Mac case, observe the safety precautions described in part 2 of this manual. Always discharge the CRT after opening the Macintosh case. With the NewLife board installed, the motherboard will not slide out. Remove with care.*
2. If you are still experiencing problems, or if the instructions in the **Troubleshooting Guide** tell you to do so, contact your dealer or the NewLife technical support group for assistance.

**For technical support call:
1 (800) 663-6395
Monday to Friday,**

from 09:00 to 5:00 Eastern Time
Fax: (613) 592-9738

Troubleshooting

for New Life Video

Symptom

External monitor's screen is black

Possible Problem and Suggested Remedy

- **Monitor not plugged in.** Ensure that the monitor is plugged in (both the power and video cables) , turned on and that the brightness is turned up.
- **New Life Video software not installed correctly.** Drag the appropriate New Life Video cdev (either FPD or DPD, but NOT both) into your System Folder. Select the appropriate **Controller Configuration** in the New Life Video cdev, configure for 'both screens' and Restart your Mac. Ensure that the New Life Video icon appears on your internal screen during startup. If you are using Virtual™, ensure that the Monitor Settings are correct.
- **Internal video cable not installed correctly.** Ensure that the internal video cable is plugged into the New Life board correctly. The label on the video cable should correspond with that which is given in the list of supported monitors which accompanies this manual.

Symptom

External monitor's screen appears jumbled

Possible Problem and Suggested Remedy

- **Incorrect Controller Configuration.** Select the correct Controller Configuration in the New Life Video cdev and Restart your computer.
- **Incorrect Video Cable.** Ensure that the label on the New Life internal video cable corresponds with that which is given in the list of supported monitors which accompanies

this manual.