Chapter 4 **System Software**

This chapter describes the system software portion of the total software environment for the Macintosh Portable computer. The total software environment includes both ROM-stored code (firmware) and disk-stored code (system software). This chapter describes the contents of the system tools disk. See also Chapter 2, "Software Developer Guidelines." ▪

4.1 Overview

These notes primarily describe the *changes* from the previous version of the system tools disk.

The Macintosh SE software is extensively documented in *Inside Macintosh,* Volume V and the *Macintosh Technical Notes*. The contents of Volume V that apply to the Macintosh SE describe its software in terms of changes from the Macintosh Plus, documented in *Inside Macintosh*, Volume IV. Volume IV, in turn, describes changes from the classic Macintosh as documented in *Inside Macintosh*, Volumes I, II, and III.

Terminology

The Macintosh Portable software comes in two components:

- Firmware—contents of the three ROMs, one for each of the three processors (68000 CPU, power manager processor, and the keyboard processor). See Chapter 3, "Firmware".

- System software—contents of an 800 KB, 3.5" disk, Version 6.0.3, plus the Macintosh Portable-specific extensions. The disk containing the system software is called the *system tools disk* (also commonly referred to as the *system disk*).

System tools software conversion

The Macintosh system software first seeded will be Version 6.0.3 plus Macintosh Portable-specific extensions, all contained on one system tools disk. This chapter describes the Macintosh Portable-specific elements. The description of Version 6.0 and the change history to Version 6.0.3 are provided in other documents that are a part of this seeding package.
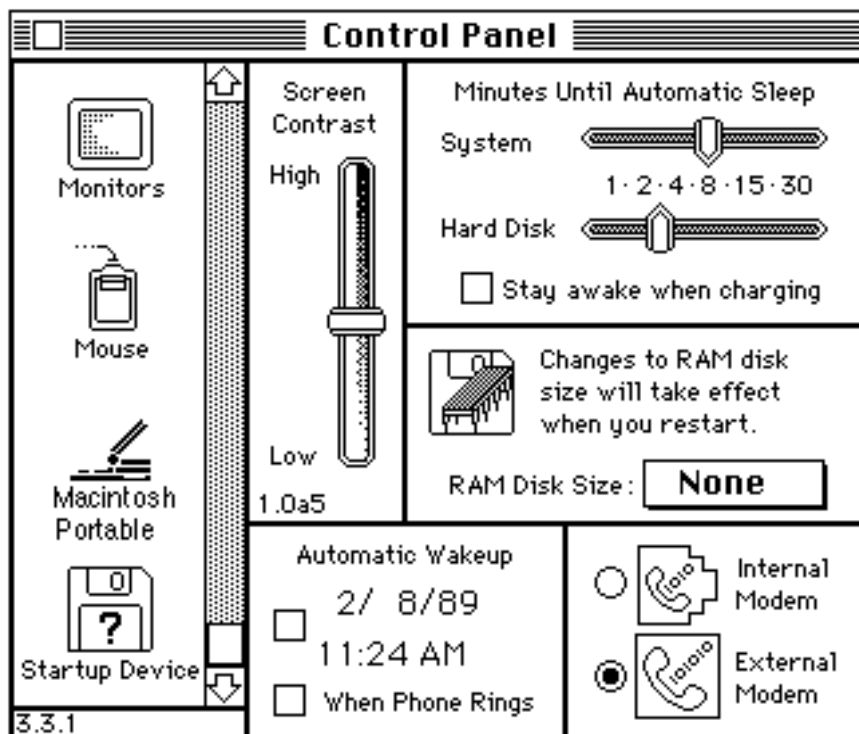
The system tools disk to be provided with customer shipments will be part of the standard Macintosh system software kit applicable to all members of the Macintosh family of computers. The Macintosh Portable installation script included will allow installation of the appropriate software onto the users' floppy or hard disk.

4.2 The Macintosh Portable control panel cdev resource

This cdev will generate the screen display elements shown in Figure 4-1. The display elements are

- a Macintosh Portable icon, the opening of which produces the window shown

- a screen contrast control slide

- a pair of sliding controls for adjusting the time to automatic sleep (one for the hard disk and the other for the remaining power manager controlled subsystems)

- a checkbox for disabling the automatic sleep functions while the battery recharger is connected

- a control to select RAM disk size

- a means of setting the time for automatic wakeup from the sleep state

- a set of two buttons to control modem operation if a modem card is present in the machine

- **Figure 4-1**   Control Panel

4.3 The Macintosh Portable battery desk accessory

This desk accessory will generate the screen display elements shown
in Figure 4-2. The display elements (accessible from the Apple
menu) are

■   an indicator to show the battery charge level

■   an icon to indicate whether battery recharging is in progress

■   a button to toggle the sleep state on and off

■   **Figure 4-2**   Battery desk accessory

4.4 Macintosh Portable battery monitor

This resource is called by the one-second interrupt and has the following functions:

- Monitors the state of battery charge and applies the criterion for system shutdown to avoid battery damage.

- Defines and applies the criteria of inactivity to cause the CPU to instruct the power manager to put the computer in the idle or sleep states.

- Monitors the sound chip usage, looking for opportunities to turn off the sound circuit. Any use of the ASC automatically enables all the sound circuitry with its heavy current load. The monitoring code looks for 10 seconds without any ASC accesses; when such an interval is found the sound circuit is turned off.

Activities that prevent sleep (and also idle) are

- Any operating system Read or Write call

- A call to a post event trap

- A call to set a cursor trap that changes the cursor

- Executing an ADB completion routine

- Having a trackball or mouse button down (pressed)

See Chapter 6, "*The Power Manager*," for a more detailed description of the functions of the battery monitor resource.

4-6   Developer Notes