

## Overview

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The Macintosh® SE personal computer combines the compact design of the Macintosh Plus with added power, faster file access, and greater flexibility.

It includes an internal expansion slot that allows you to customize the system to meet your needs, and it offers a choice of three storage configurations.

The Macintosh SE uses the Apple® FDHD™ Internal Drive, a high-capacity 3.5-inch floppy disk drive capable of reading 400K, 800K, and 1.4-megabyte Macintosh disks. In addition, the FDHD drive lets you read from and write to MS-DOS,

OS/2, and ProDOS formatted disks. This combination of capabilities makes the Macintosh SE an excellent choice for use in multivendor environments.

Adding to the power and versatility of the Macintosh SE is Apple's multitasking operating system, MultiFinder™. MultiFinder allows you to open multiple applications concurrently and perform background tasks—such as printing documents on laser printers—while you continue to work in an application.

In addition to the system software, the Macintosh SE is packaged with Apple's Hyper-

Card® software. HyperCard lets you organize information on your computer the way you organize it in your mind—by association and with unlimited cross-references.

The Macintosh SE continues to offer the benefits that characterize all Macintosh computers: a consistent user interface and intuitive design that make the Macintosh easy to learn and use.

The Macintosh SE is compatible with existing Macintosh hardware and software, and lets you share files with other members of the Macintosh family of computers.

## ***Features***

## ***Benefits***

▶ Macintosh SE expansion slot with accessory access port

▶ Allows you to customize a system with products such as accelerator cards, external monitor adapters, MS-DOS coprocessor cards, networking cards, communications cards, or a 5.25-inch MS-DOS disk drive controller card.

▶ Lets you install internal cards without modifying the system.

▶ Provides an easy way for external devices to be connected to cards plugged in to the expansion slot.

▶ Apple FDHD Internal Drive

▶ Provides almost twice the storage capacity of existing 800K disks (1.4 megabytes).

▶ Allows you to conveniently transfer data files between Macintosh, MS-DOS, OS/2, and Apple II systems using the Apple File Exchange software.

▶ Offers compatibility with existing 800K and 400K Macintosh disks.

▶ Three options for built-in storage: An FDHD drive and one of the following: a second FDHD floppy disk drive, a Macintosh Internal Hard Disk 20SC, or a Macintosh Internal Hard Disk 40SC

▶ Increases storage capacity with a second internal disk drive that requires no additional desk space.

▶ Minimizes disk swapping and, with a hard disk, provides ample storage for all applications and files.

▶ Significantly speeds program/data storage and retrieval using hard disk option.

▶ Macintosh user interface: mouse, icons, windows, and pull-down menus

▶ Makes applications easy to learn and intuitive.

▶ Provides a consistent interface across applications.

▶ Reduces training and support costs.

▶ Compact design with a high-resolution 9-inch screen

▶ Offers an economical, compact system that requires little desk space and is easy to set up and transport.

▶ MultiFinder multitasking operating system

▶ Lets you easily integrate information from multiple applications by cutting and pasting.

▶ Lets you move quickly and easily between applications.

▶ Allows you to continue working with applications while performing some tasks in the background, such as print spooling to an Apple Laser-Writer® printer or downloading remote files.

▶ 68000 microprocessor

▶ Provides compatibility with existing Macintosh software.

## *Features*

## *Benefits*

- ▶ Improved processing speed relative to the Macintosh Plus
- ▶ 1 or 2 megabytes of RAM, expandable to 4 megabytes (the Macintosh SE with 40-megabyte hard disk comes standard with 2 megabytes of RAM)

- ▶ 256K of ROM that includes:
  - Hierarchical File System
  - Drivers for the FDHD disk drive, AppleTalk<sup>®</sup> network system, Apple Desktop Bus<sup>™</sup>, and SCSI connector
  - Macintosh Toolbox
  - QuickDraw<sup>™</sup> graphics

- ▶ Advanced graphics capability, including on-screen integration of text and graphics

- ▶ Seven built-in ports (one SCSI, one drive, two serial, two Apple Desktop Bus, one sound)

- ▶ Apple Desktop Bus interface

- ▶ Keyboard options
  - Apple Keyboard
  - Apple Extended Keyboard

- ▶ Completes work such as recalculations or repagination more quickly.

- ▶ Lets you work with large amounts of data, and run most available software applications.
  - ▶ Provides memory-expansion options sufficient for running multiple applications concurrently under MultiFinder, and for running memory-intensive software applications.

- ▶ The Hierarchical File System organizes storage for documents and allows easy access to files.
- ▶ The SCSI interface supports high-performance peripherals.
- ▶ QuickDraw provides the consistent interface throughout the Macintosh family.

- ▶ Lets you produce professional-quality reports, newsletters, and business forms that integrate text and graphics.
  - ▶ Ensures fidelity between what you see on the screen and what you get on the printed page.

- ▶ Makes it easy to expand your system with additional peripherals.
  - ▶ Provides access to LocalTalk<sup>™</sup> networks, allowing you to connect the Macintosh SE to other computers and to LaserWriter printers through the AppleTalk network system.
  - ▶ Supports up to seven high-speed SCSI peripherals.
  - ▶ Provides connections for Apple Desktop Bus devices, such as a keyboard, hand-controlled pointing device (such as a mouse or trackball), or graphics tablet.

- ▶ Allows daisy-chaining of up to 16 Apple Desktop Bus devices.

- ▶ Apple Keyboard includes a numeric keypad and cursor keys for efficient operation.
  - ▶ Apple Extended Keyboard also includes 15 function keys, letting you work effectively with alternate operating systems, terminal-emulation programs, and other data communications applications.

# Product Details

## Configuration

- ▶ Three Macintosh SE systems are available:
  - The Macintosh SE CPU (includes the CPU, 1 megabyte of RAM, two 1.4-megabyte FDHD floppy disk drives, and mouse)
  - The Macintosh SE Hard Disk 20 CPU (includes the CPU, 1 megabyte of RAM, an internal 20-megabyte SCSI hard disk, one 1.4-megabyte FDHD floppy disk drive, and mouse)
  - The Macintosh SE Hard Disk 40 CPU (includes the CPU, 2 megabytes of RAM, an internal 40-megabyte SCSI hard disk, one 1.4-megabyte FDHD floppy disk drive, and mouse)
- ▶ The keyboard and other peripheral devices are packaged and sold separately.

## RAM

- ▶ The Macintosh SE can be upgraded to 4 megabytes of RAM.

## Performance

- ▶ Overall performance is 15 percent to 20 percent faster than that of the Macintosh Plus. Hard disk performance is up to two times faster with the Macintosh SE than with the Macintosh Plus.

## SCSI (Small Computer System Interface)

- ▶ SCSI is a high-performance interface for connecting the computer to a hard disk and other mass-storage peripherals. Up to seven SCSI peripherals (including an internal hard disk) can be connected to the Macintosh SE.

## Network support

- ▶ The Macintosh SE serial ports include full support for connection to the AppleTalk network system.

## Upgrade path for Macintosh SE computers with 800K disk drives

- ▶ An upgrade path is available for the standard 68000-based Macintosh SE.

## Expansion slot

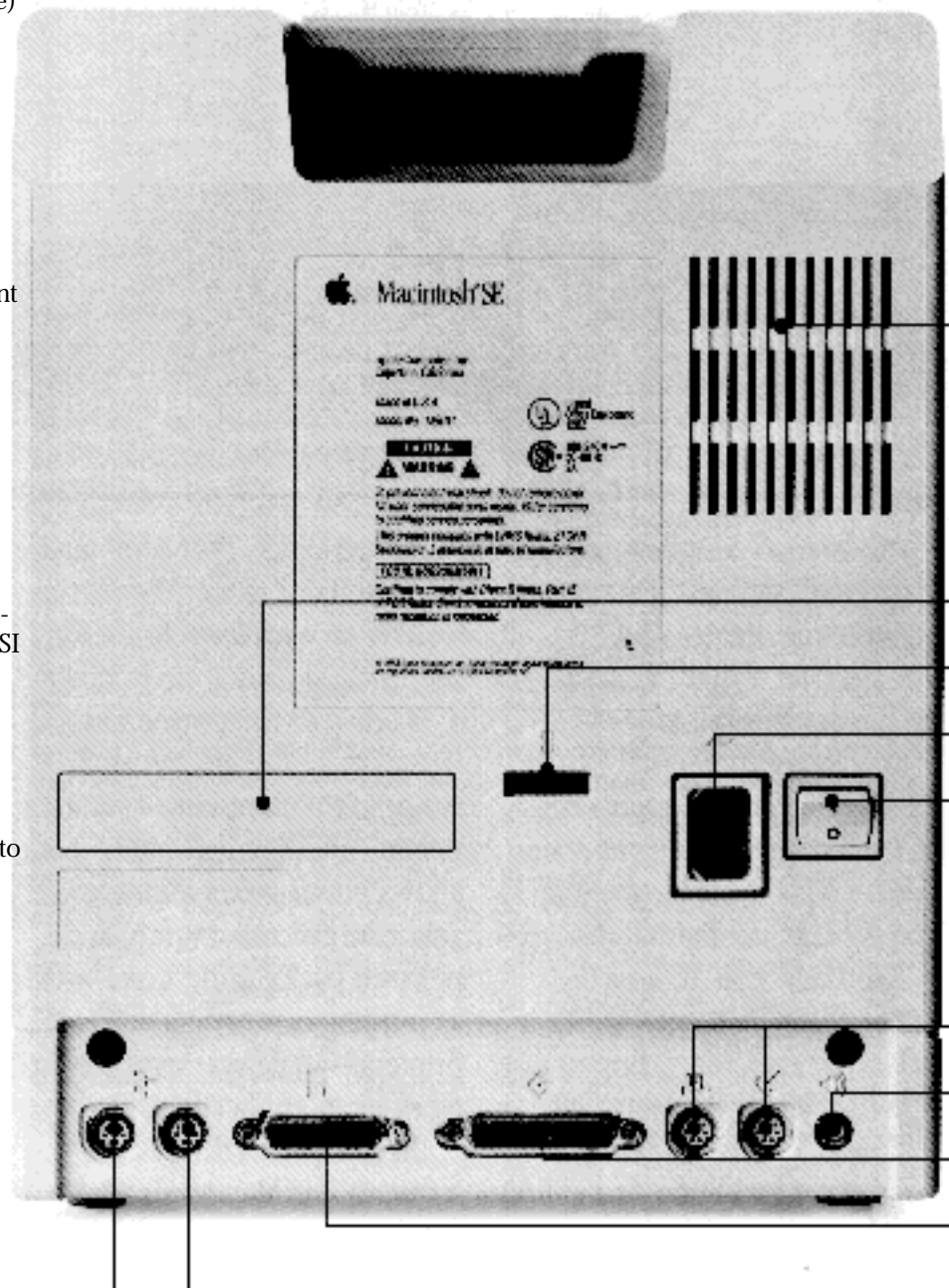
- ▶ The high-performance expansion slot supports one "SE-Bus" card. (Note: The expansion slot is not compatible with Macintosh SE/30 or NuBus™ expansion cards.)

## Operating system software

- ▶ Macintosh system software includes:
  - System Tools 6.0.3 or higher (the Macintosh operating system) and Finder™ 6.1 or higher
  - Printer disk (the printer drivers for all Apple printers)
  - Utility disks, which include utilities such as Apple File Exchange, HD SC Setup, Disk First Aid™, and Font D/A Mover

## HyperCard

- ▶ HyperCard software is included.



# Technical Specifications

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## Processor

- ▶ MC68000; 32-bit internal architecture; 7.83-megahertz clock speed

## Memory

- ▶ 1 or 2 megabytes of RAM, expandable to 4 megabytes
- ▶ 256K of ROM standard
- ▶ 256 bytes of parameter memory

## Disk storage

- ▶ Internal 1.4-megabyte FDHD floppy disk drive
- ▶ Either a second internal 1.4-megabyte FDHD floppy disk drive, or a 20- or 40-megabyte internal Apple SCSI hard disk drive
- ▶ Optional external floppy disk drive or SCSI hard disk drives

## Keyboard

- Detachable keyboard options:
- ▶ Apple Keyboard: 81 keys, including numeric keypad and cursor keys
  - ▶ Apple Extended Keyboard: 105 keys, including 15 function keys, separate cursor pad, 10-key numeric keypad, and Apple Desktop Bus connectors

## Mouse

- ▶ Mechanical tracking; optical shaft encoding at 3.94 pulses per mm (100 pulses per inch) of travel; connects through Apple Desktop Bus

## Screen

- ▶ 9-inch diagonal, high-resolution, 512- by 342-pixel bit-mapped display

## Interfaces

- ▶ Two Apple Desktop Bus connectors for communication with keyboard, mouse, and other input devices
- ▶ Two RS-232/RS-422 serial ports, 230.4 kilobaud maximum; use mini-8 connectors
- ▶ External disk drive interface
- ▶ Macintosh SE expansion slot; uses a 96-pin Euro-DIN connector
- ▶ SCSI interface; uses a 50-pin connector (internal) and a DB-25 connector (external)
- ▶ Sound port for external audio amplifier (standard miniature)

## Sound generator

- ▶ Four-voice sound with 8-bit digital/analog conversion using 22-kilohertz sampling rate

## Clock/Calendar

- ▶ CMOS custom chip with seven-year lithium battery

## Fan

- ▶ 10 CFM cross flow
- ▶ 38 dB

## Electrical requirements

- ▶ Line voltage: 90 to 140 volts AC; 170 to 270 volts AC
- ▶ Frequency: 47 to 63 Hz
- ▶ Maximum power: 100 watts

## Size and weight

- Main unit
- ▶ Height: 13.6 in. (34.5 cm)
  - ▶ Width: 9.6 in. (24.4 cm)
  - ▶ Depth: 10.9 in. (27.6 cm)
  - ▶ Weight: 17 to 21 lb. (7.7 to 9.5 kg)\*

## Mouse

- ▶ Height: 1.1 in. (2.8 cm)
- ▶ Width: 2.1 in. (5.3 cm)
- ▶ Depth: 3.8 in. (9.7 cm)
- ▶ Weight: 6 oz. (.17 kg)

\* Weight varies depending on whether hard disk or second floppy disk drive has been installed.

- ▶ Fan Outlet

- ▶ Accessory Access Port
- ▶ Security Connector
- ▶ Power
- ▶ On/Off Switch

- ▶ Serial Ports
- ▶ Audio Jack

- ▶ SCSI Connector

- ▶ External Drive Port

- ▶ Apple Desktop Bus Connectors



# Macintosh SE

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**Ordering Information****Macintosh SE CPU**

Order No. M0029LL/A

With your order, you'll receive the following:

- ▶ Macintosh SE personal computer with built-in 9-inch monitor, 1 megabyte of RAM, and two built-in 1.4-megabyte FDHD drives
- ▶ Mouse
- ▶ System software
- ▶ HyperCard software
- ▶ Guided Tour disk
- ▶ Owner's guide
- ▶ Getting Started guide
- ▶ Limited warranty statement

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**Macintosh SE  
Hard Disk 20 CPU**

Order No. M0028LL/A

With your order, you'll receive the following:

- ▶ Macintosh SE personal computer with built-in 9-inch monitor, 1 megabyte of RAM, a built-in 1.4-megabyte FDHD drive, and an internal 20-megabyte hard disk drive
- ▶ Mouse
- ▶ System software
- ▶ HyperCard software
- ▶ Guided Tour disk
- ▶ Owner's guide
- ▶ Getting Started guide
- ▶ Limited warranty statement

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**Macintosh SE  
Hard Disk 40 CPU**

Order No. M0031LL/A

With your order, you'll receive the following:

- ▶ Macintosh SE personal computer with built-in 9-inch monitor, 2 megabytes of RAM, a built-in 1.4-megabyte FDHD drive, and an internal 40-megabyte hard disk drive
- ▶ Mouse
- ▶ System software
- ▶ HyperCard software
- ▶ Guided Tour disk
- ▶ Owner's guide
- ▶ Getting Started guide
- ▶ Limited warranty statement

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