

## Overview

The Macintosh® SE/30 personal computer was designed for people who want maximum performance from a compact computer system. It provides up to four times the computational speed of the Macintosh SE, while continuing to offer the benefits that characterize all Macintosh computers: a consistent user interface and intuitive design that make Macintosh easy to learn and use. The Macintosh SE/30 runs virtually all current versions of Macintosh software. And, like the Macintosh SE, it features a small footprint, easy setup, and transportability.

The performance increase of the Macintosh SE/30 derives

from the full 32-bit 68030 microprocessor. The 68030 runs at twice the clock speed of the 68000 microprocessor used in the Macintosh SE. And twice as much data can be moved at a time because its external data bus is twice as wide as that of the 68000. The Macintosh SE/30 also includes a 68882 floating-point coprocessor for faster processing of complex math functions—up to 100 times faster than the Macintosh SE.

The Macintosh SE/30 uses the new Apple® FDHD™ 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 lets users read from and write to MS-DOS, OS/2, and ProDOS® formatted disks through the Apple File Exchange utility. This combination of capabilities makes the Macintosh SE/30 an excellent choice for use in multivendor environments.

Expansion options for the Macintosh SE/30 can be accommodated through the 030 Direct Slot. Via the 030 Direct Slot, the Macintosh SE/30 can accept communications cards, such as Ethernet and Token Ring cards, as well as high-performance video cards that support large gray-scale and color monitors.

## Features

## Benefits

▶ 32-bit 68030 microprocessor (operating at 16 megahertz) with instruction and data caches, and built-in Paged Memory Management Unit (PMMU)

▶ Executes applications at up to four times the speed of the 68000-based Macintosh SE.  
▶ Provides hardware support for advanced, multitasking operating systems.

▶ 68882 floating-point coprocessor (operating at 16 megahertz)

▶ Provides fast processing of complex mathematical functions (such as logarithmic or trigonometric calculations) often used in spreadsheets and high-end graphics and statistics applications.

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

▶ Makes most applications intuitive and easy to learn.  
▶ Provides a consistent interface across applications.  
▶ Reduces training and support costs.

▶ Compact design with high-resolution 9-inch screen

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

▶ 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.

▶ MultiFinder™ 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 LaserWriter® printer or downloading remote files.

▶ Macintosh software compatibility

▶ Runs virtually all current versions of Macintosh SE and Macintosh II software, including applications designed to take advantage of the 68882 floating-point coprocessor.

▶ 030 Direct Slot

▶ Allows you to customize your system with high-performance expansion cards, including video cards for external color and gray-scale monitors, special memory cards, communications cards, and digital signal processing cards.

## Features

## Benefits

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- ▶ 030 Direct Slot access port
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- ▶ 1 or 4 megabytes of RAM, expandable to 8 megabytes
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- ▶ Apple Sound Chip
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- ▶ 256K of ROM on a SIMM (Single In-line Memory Module), including:
    - Hierarchical File System
    - Drivers for Macintosh hard disks, Apple Desktop Bus, 68882 floating-point coprocessor, SCSI, and AppleTalk® network
    - Macintosh Toolbox
    - QuickDraw™ and Color QuickDraw
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- ▶ Seven built-in ports (one SCSI, one disk drive, two serial, two Apple Desktop Bus, one stereo sound)
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- ▶ Choice of keyboards (sold separately):
    - Apple Keyboard
    - Apple Extended Keyboard
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- ▶ Provides an easy way to connect external devices to 030 Direct Slot cards.
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- ▶ Lets you run multiple applications concurrently under Apple's MultiFinder operating system.
  - ▶ Lets you work with large amounts of data, such as large spreadsheets, scanned images, and sound files.
  - ▶ Provides the flexibility to grow as you need additional memory.
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- ▶ Provides high-quality, four-voice stereo sound.
  - ▶ Offers compatibility with all applications that use Macintosh sound.
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- ▶ The SIMM mounting makes it easy to remove and replace ROMs for more convenient servicing.
  - ▶ 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.
  - ▶ Color QuickDraw provides a consistent interface for both black-and-white and color applications.
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- ▶ Makes it easy to expand your system with additional peripherals.
  - ▶ Provides access to LocalTalk™ cable-based networks, allowing you to connect the Macintosh SE/30 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.
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- ▶ 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

## System Configuration

- ▶ Three configurations are available:
  - The Macintosh SE/30 CPU includes the main unit, 1 megabyte of RAM, one 1.4-megabyte FDHD floppy disk drive, and mouse.
  - The Macintosh SE/30 Hard Disk 40 CPU includes the main unit, 1 megabyte of RAM, an internal 40-megabyte hard disk, one 1.4-megabyte FDHD floppy disk drive, and mouse.
  - The Macintosh SE/30 Hard Disk 80 CPU includes the main unit, 4 megabytes of RAM, an internal 80-megabyte hard disk, one 1.4-megabyte FDHD floppy disk drive, and mouse.
- The keyboard and other peripheral devices are packaged and sold separately.

## 030 Direct Slot

- ▶ The 030 Direct Slot provides a 32-bit slot directly connected to the microprocessor bus that will support one high-performance expansion card. (Note: The slot is not compatible with SE-Bus expansion cards or Macintosh II expansion cards.)

## RAM

- ▶ The Macintosh SE/30 CPU and the Macintosh SE/30 Hard Disk 40 CPU with 1 megabyte of RAM can be upgraded to 2 megabytes of RAM with a 1-megabyte Memory Expansion Kit, 5 megabytes of RAM with two 2-megabyte Memory Expansion Kits, or 8 megabytes of RAM with four 2-megabyte Memory Expansion Kits.
- ▶ The Macintosh SE/30 Hard Disk 80 CPU with 4 megabytes of RAM can be upgraded to 8 megabytes of RAM with two 2-megabyte Memory Expansion Kits.

## Stereo Sound

- ▶ The Apple Sound Chip provides four-voice, wave-table synthesis and a stereo sampling generator capable of mixing left and right channels for the internal speaker or providing full stereo sound output through a miniature stereo phone plug.

## SCSI (Small Computer Systems Interface)

- ▶ Up to seven SCSI peripherals (including an internal hard disk) can be connected to the Macintosh SE/30.
- ▶ SCSI provides data transfer rates of up to 1 megabyte per second.

## Network Support

- ▶ The Macintosh SE/30 serial ports provide full support for LocalTalk network connections.
- ▶ The Macintosh SE/30 provides full ROM support for all AppleTalk protocols.

## 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)

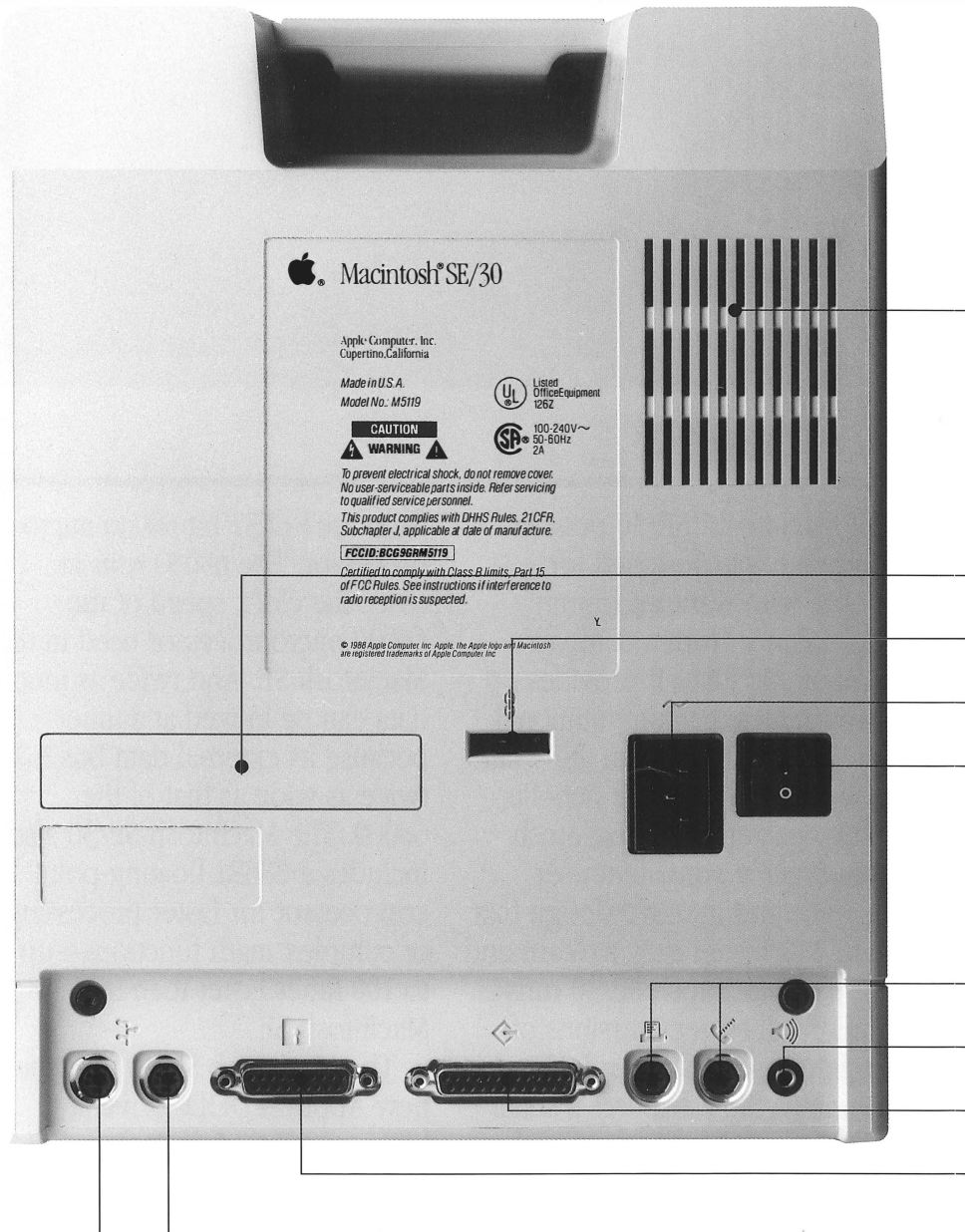
- Utility disks, which include utilities such as Apple File Exchange, HD SC Setup, Disk First Aid, and Font/DA Mover

## HyperCard

- ▶ Apple's HyperCard® software (version 1.2 or higher) and manual are included.

## Upgrade Path for Current Macintosh SE Computer Owners

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



# Technical Specifications

## Processor

- ▶ MC68030 32-bit internal Harvard architecture
- ▶ 15.667-megahertz clock frequency
- ▶ Built-in Paged Memory Management Unit (PMMU)
- ▶ 256-byte instruction and data caches

## Coprocessor

- ▶ MC68882 floating-point unit (follows IEEE standards)

## Memory

- ▶ 1 or 4 megabytes of RAM, expandable to 8 megabytes (expandable to 128 megabytes when SIMMs with higher-density DRAM chips become available; additionally expandable through 030 Direct Slot)
- ▶ 256K of ROM
- ▶ 256 bytes of user-settable parameter memory

## Disk storage

- ▶ 1.4-megabyte high-density floppy disk drive (external floppy disk drive optional)
- ▶ Optional internal 40- or 80-megabyte Apple SCSI hard disk (external SCSI hard disks optional)

## Video display

- ▶ Built-in 9-inch diagonal, high-resolution, 512- by 342-pixel bit-mapped display
- ▶ Color QuickDraw in ROM provides support for gray-scale and color video cards installed in the 030 Direct Slot

## Interfaces

- ▶ Two Apple Desktop Bus connectors for communication with keyboard, mouse, and other input devices over low-speed, synchronous serial bus
- ▶ 030 Direct Slot supporting full 32-bit address and data lines through 120-pin Euro-DIN connector
- ▶ Two RS-232/RS-422 serial ports, 230.4 kilobaud maximum (up to 0.920 megabit per second if clocked externally)
- ▶ SCSI interface
- ▶ Stereo sound port for external audio amplifier

## Sound generator

- ▶ Apple Sound Chip (ASC) including four-voice, wave-table synthesis and stereo sampling generator capable of driving stereo mini-phone-jack headphones or other stereo equipment
- ▶ Mixed stereo monophonic sound output through internal speaker

## Clock/Calendar

- ▶ CMOS custom chip with long-life lithium battery

## Keyboards (not included)

- ▶ Apple Keyboard
- ▶ Apple Extended Keyboard

## Mouse

- ▶ Apple Desktop Bus mouse with mechanical tracking; optical shaft or contact encoding at  $3.94 \pm 0.39$  pulse per mm ( $100 \pm 10$  pulses per inch) of travel

## Fan

- ▶ 10 CFM radial

## Electrical requirements

- ▶ Line voltage: 120 to 240 volts AC, RMS automatically configured
- ▶ Frequency: 48 to 62 Hz, single phase
- ▶ Maximum power: 75 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: 21.5 lb. (9.75 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)

▶ 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/30

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**Ordering Information**

**Macintosh SE/30 CPU**  
(1 megabyte of RAM)

Order No. M5392

With your order, you'll receive:

- ▶ Macintosh SE/30 personal computer with 1 megabyte of RAM and a built-in 1.4-megabyte FDHD drive
- ▶ Mouse
- ▶ Owner's guide
- ▶ System software and HyperCard software
- ▶ Guided Tour disk
- ▶ Limited warranty statement

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**Macintosh SE/30  
Hard Disk 40 CPU**  
(1 megabyte of RAM)

Order No. M5390

With your order, you'll receive:

- ▶ Macintosh SE/30 personal computer with 1 megabyte of RAM, a built-in 1.4-megabyte FDHD drive, and an internal 40-megabyte SCSI hard disk drive
- ▶ Mouse
- ▶ Owner's guide
- ▶ System software and HyperCard software
- ▶ Guided Tour disk
- ▶ Limited warranty statement

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**Macintosh SE/30  
Hard Disk 80 CPU**  
(4 megabytes of RAM)

Order No. M5361

With your order, you'll receive:

- ▶ Macintosh SE/30 personal computer with 4 megabytes of RAM, a built-in 1.4-megabyte FDHD drive, and an internal 80-megabyte SCSI hard disk drive
- ▶ Mouse
- ▶ Owner's guide
- ▶ System software and HyperCard software
- ▶ Guided Tour disk
- ▶ Limited warranty statement

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January 1989. Product specifications are subject to change without notice.  
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