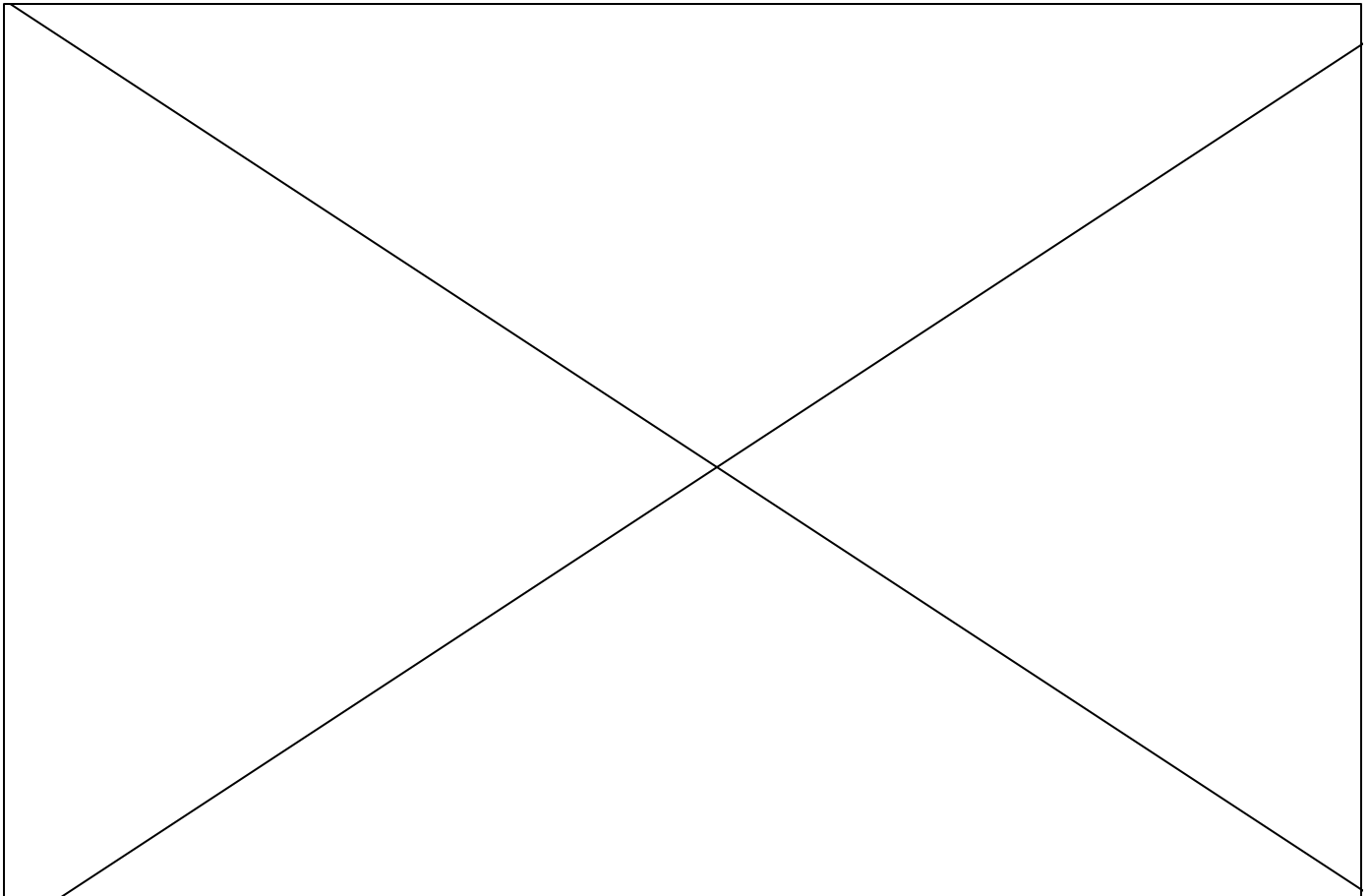


# Apple Macintosh SE/30 Logic Board Upgrade



## Overview

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The Apple® Macintosh® SE/30 Logic Board Upgrade offers users of Macintosh SE computers an excellent way to get the system performance and capabilities of the Macintosh SE/30.

The Macintosh SE/30 Logic Board Upgrade incorporates a full 32-bit 68030 microprocessor, which enables the Macintosh SE to execute most applications up to four times faster than 68000-based Macintosh computers. The

Macintosh SE/30 Logic Board Upgrade also includes a 68882 floating-point coprocessor for faster processing of complex mathematical functions—in some cases, up to 100 times faster than the Macintosh SE.

The Macintosh SE/30 Logic Board Upgrade is compatible with the optional Apple FDHD<sup>®</sup> Internal Drive Upgrade, the full range of Macintosh SE/30 expansion cards for such capabilities as

network communications and high-performance video, and virtually all current versions of Macintosh applications.

# 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 up to four times the speed of the 68000-based Macintosh SE.  
• Provides hardware support for advances in software.

• 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.

• 030 Direct Slot

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

• Support for RAM expansion up to 8 megabytes

• Lets you work with large amounts of data, such as large spreadsheets, scanned images, and sound files.

• 256K of ROM on a SIMM (Single In-line Memory Module), including:  
– Hierarchical File System  
– Drivers for Macintosh hard disks, Apple Desktop Bus<sup>®</sup>, 68882 floating-point coprocessor, SCSI, and AppleTalk<sup>®</sup> network  
– Macintosh Toolbox  
– QuickDraw<sup>®</sup> and Color QuickDraw

• 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.

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

• Makes it easy to expand your system with additional peripherals.  
• Provides access to LocalTalk<sup>®</sup> cable-based networks, allowing you to connect the Macintosh SE/30 to other computers and to LaserWriter<sup>®</sup> 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 graphic tablet.

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Product Details

The Macintosh SE/30 Logic Board Upgrade is compatible with virtually all of the current versions of Macintosh applications. Some older versions of software, however, may require an update from the software vendor.

The Macintosh SE/30 Logic Board Upgrade is compatible with

030 Direct Slot expansion cards, but not with Macintosh SE expansion cards. Contact the manufacturer of your expansion card for specific compatibility information.

The Macintosh SE/30 Logic Board Upgrade supports only one internal floppy disk drive. Users of

Macintosh SE computers with dual floppy disk drives may want to consider adding an optional internal hard disk during installation of the Macintosh SE/30 Logic Board Upgrade.

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System Requirements

The following chart shows the possible configurations and the upgrade required for each.

Starting Configuration

- Macintosh SE personal computer with 1 megabyte of RAM
- Macintosh SE personal computer with 2 megabytes or 2.5 megabytes of RAM
- Macintosh SE personal computer with 4 megabytes of RAM

Required Upgrade

- Macintosh SE/30 Logic Board Upgrade (M0713)
- Macintosh SE/30 Logic Board Upgrade (M0713)
- Apple 2MB Memory Expansion Kit (M0219)
- Macintosh SE/30 Logic Board Upgrade (M0713)

Upgraded Configuration

- 1 megabyte of RAM
  - 4 megabytes of RAM
  - 4 megabytes of RAM
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Recommended Options

Disk Drives

The Apple FDHD Internal Drive Upgrade (M0247) provides 75 percent more storage capacity than existing 800K disk drives, and it is compatible with Macintosh, MS-DOS, OS/2, and ProDOS<sup>®</sup> formatted disks. It can also format, read from, and write to Apple 400K, 800K, and 1.4-megabyte disks; and MS-DOS 720K, 1.44-megabyte, and compatible 3.5-inch disks.

Macintosh Internal Hard Disks 20SC, 40SC, and 80SC (M0216, M0269, and M0270, respectively) can accommodate multiple applications and large data files. RAM

The Apple 1MB Memory Expansion Kit (M0218) can expand Macintosh SE memory to up to 2 megabytes. The Apple 2MB Memory Expansion Kit (M0219) can expand Macintosh SE memory to up to 5 or 8 megabytes.



# Apple Macintosh SE/30 Logic Board Upgrade

## 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)

### Interfaces

- Two Apple Desktop Bus connectors for communication with keyboard, mouse, and other input devices
- 030 Direct Slot supporting full 32-bit address and data lines through 120-pin Euro-DIN connector
- Two RS-232/RS422 serial ports, 230.4 kilobaud maximum; use mini-8 connectors (up to 0.920 megabit per second if clocked externally)

- External disk drive interface
- SCSI interface
- Stereo sound port for external audio amplifier

### Sound generator

- Apple Sound Chip (ASC) including four-voice, wavetable 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

## Ordering Information

Apple Macintosh SE/30 Logic Board Upgrade\*

Order No. M0713

- With your order, you'll receive:
- Macintosh SE/30 Logic Board
  - *Macintosh SE/30 Owner's Guide*
  - Macintosh SE/30 bezel (front plastic panel)
  - Macintosh SE/30 chassis
  - Macintosh System Software version 6.0.3 or greater
  - Macintosh SE logic board return form\*\*
  - Limited warranty statement

Apple 1MB Memory Expansion Kit

Order No. M0218

Apple 2MB Memory Expansion Kit

Order No. M0219

\* Dealer installation is required.

\*\* The Macintosh SE logic board must be returned in accordance with upgrade procedures for authorized Apple dealers.