



Developer Note

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# Macintosh Quadra 610 and 650 Computers

*Including an Update for the Macintosh Quadra 800*



*Developer Note*

October 1993

Developer Press

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# About This Note

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This developer note provides information about the Macintosh Quadra 610 and Macintosh Quadra 650 computers, which are essentially Macintosh Centris 610 and Macintosh Centris 650 computers with their processor clock speeds increased to 25 MHz and 33 MHz, respectively.

This note also includes updated information about the front-bezel shields in the Macintosh Quadra 800.

This developer note is intended primarily for hardware engineers who are experienced Macintosh developers and who wish to create products that are compatible with the computers described in the note.

**Note**

To make effective use of the information in this developer note, you should already be familiar with the earlier Macintosh models it refers to and with the general technology of Macintosh computers. If you are not, or if you would like more information, you may wish to obtain copies of the related technical books listed in “Supplementary Documents,” later in this preface. ♦

## Contents of This Note

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This developer note contains only two chapters.

- Chapter 1, “Delta Guide to the Macintosh Quadra 610 and 650 Computers,” describes the differences between the new models and the Macintosh Centris 610 and Macintosh Centris 650 computers.
- Chapter 2, “Bezel Shields in the Macintosh Quadra 800 Computer,” describes the modifications to the shields incorporated into the front bezels of the Macintosh Quadra 800.

## Supplementary Documents

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This note describes only the differences between the new machines and their earlier counterparts, so you should also have the developer note that describes the Macintosh Centris 610 and 650 computers and the Macintosh Quadra 800 computer: *Macintosh Developer Note Number 3*, APDA catalog number R0461LL/A

Developer notes are available from APDA and are also on the Reference Library Editions of the developer CDs; Number 3 has been available since March 1993.

**Note**

In addition to the aforementioned computers (the Macintosh Centris 610 and 650 and the Macintosh Quadra 800), *Macintosh Developer Note Number 3* also describes the Macintosh Color Classic®, the Macintosh LC III, the Macintosh PowerBook 165c, and the Macintosh Quadra 800. ♦

To supplement the information in the developer notes, developers should have copies of the appropriate Apple reference books, including *Inside Macintosh*, Volumes IV, V, and VI; *Guide to the Macintosh Family Hardware*, second edition; and *Designing Cards and Drivers for the Macintosh Family*, third edition. These books are available in technical bookstores and through APDA.

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## Conventions and Abbreviations

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This developer note uses the following typographical conventions and abbreviations.

### Typographical Conventions

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Computer-language text—any text that is literally the same as it appears in computer input or output—appears in `Courier` font.

#### **Note**

A note like this contains information that is interesting but not essential. ♦

### Standard Abbreviations

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When unusual abbreviations appear in this book, the corresponding terms are also spelled out. Standard units of measure and other widely used abbreviations are not spelled out. Here are the standard abbreviations used in this developer note:

CD-ROM	compact-disc read-only memory
FPU	floating-point unit
MB	megabytes
MHz	megahertz
ROM	read-only memory

P R E F A C E

# Delta Guide to the Macintosh Quadra 610 and 650 Computers

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## Delta Guide to the Macintosh Quadra 610 and 650 Computers

The Macintosh Quadra 610 and Macintosh Quadra 650 computers are essentially the same as the Macintosh Centris 610 and Macintosh Centris 650 models with the processor clock speeds increased to 25 MHz and 33 MHz, respectively. This chapter is a delta guide: it describes only the *differences* between the new models and their earlier counterparts. For descriptions of the earlier machines, see *Macintosh Developer Note Number 3*.

## Summary of New Features

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The Macintosh Quadra 610 and Macintosh Quadra 650 computers are essentially higher-performance versions of the Macintosh Centris 610 and Macintosh Centris 650. The changes in the new machines include

- faster processors: 25 MHz in the Macintosh Quadra 610 and 33 MHz in the Macintosh Quadra 650
- FPU in all configurations except the entry-level configuration of the Macintosh Quadra 610
- enlarged floppy disk slot to allow the user to push a floppy disk all the way in (the drive no longer injects the disk automatically)
- built-in Ethernet port (optional on Macintosh Quadra 610)
- modified shield on the CD-ROM drive bay to accommodate alternative 5.25-inch storage devices with controls on the front, such as a 44 MB removable cartridge drive (only on the Macintosh Quadra 650 )
- new machine identification values returned by the Gestalt Manager

## Appearance

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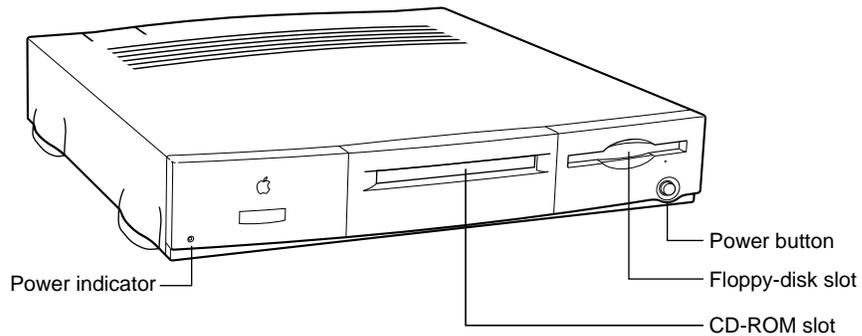
The Macintosh Quadra 610 and Macintosh Quadra 650 computers are similar to the Macintosh Centris 610 and Macintosh Centris 650 computers, respectively. This section shows how the new machines' appearances differ from those of the earlier models.

### Front View of the Macintosh Quadra 610 Computer

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Figure 1-1 shows the front of the Macintosh Quadra 610 computer. The computer is similar to the Macintosh Centris 610 except for the access slot for the floppy disk, which has a larger cutaway so that the user can insert a disk all the way in.

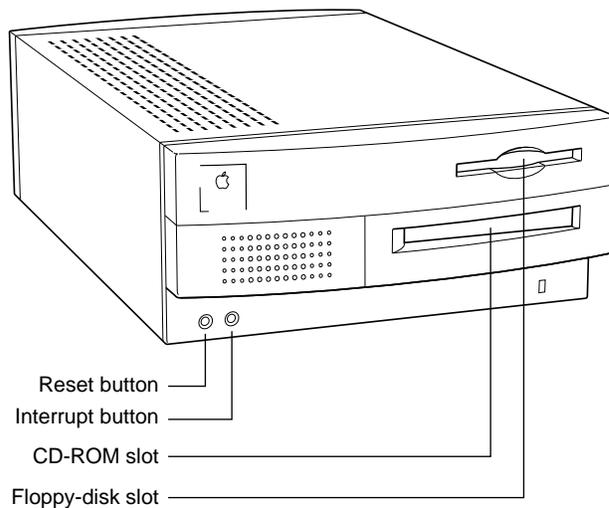
**Figure 1-1** Front view of the Macintosh Quadra 610 computer



### Front View of the Macintosh Quadra 650 Computer

Figure 1-1 shows the front of the Macintosh Quadra 650 computer. The computer is similar to the Macintosh Centris 650 except for the access slot for the floppy disk, which has a larger cutaway so that the user can insert a disk all the way in.

**Figure 1-2** Front view of the Macintosh Quadra 650 computer



## Processor Speeds

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The processor clock speeds in the Macintosh Quadra 610 and Macintosh Quadra 650 computers are increased by 25 percent and 33 percent, respectively, over their earlier counterparts. Table 1-1 shows the clock speeds for all four computers.

**Table 1-1** Comparison of processor speeds

<b>Model</b>	<b>Processor clock speed</b>
Macintosh Centris 610	20 MHz
Macintosh Quadra 610	25 MHz
Macintosh Centris 650	25 MHz
Macintosh Quadra 650	33 MHz

## Built-in FPU

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All configurations except the entry-level model of the Macintosh Quadra 610 have the MC68040 microprocessor with its built-in floating-point unit (FPU). The entry-level Macintosh Quadra 610 has the MC68LC040 microprocessor, which does not have a built-in FPU.

**Note**

The microprocessor is installed in a socket, so it is possible to upgrade to a processor with an FPU by unplugging the MC68LC040 and plugging in an MC68040. ♦

## Built-in Ethernet Port

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All configurations of the Macintosh Quadra 650 computer and most configurations of the Macintosh Quadra 610 include a built-in Ethernet port. The port has an Apple AUI connector that accepts an Apple AUI adapter for one of three types of connector and cable: the AUI (thick) cable, thin net cable, or 10BaseT (twisted pair) cable.

## Machine Identification

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The ROM includes new tables and code for identifying the machines. Applications can find out which computer they are running on by using the Gestalt Manager routines; see *Inside Macintosh*, Volume VI. Table 1-1 shows the 'gestaltMachineType' values for the new machines and for their earlier counterparts.

**Table 1-2** Machine identification values

<b>Model</b>	<b>gestaltMachineType value</b>
Macintosh Centris 610	52
Macintosh Quadra 610	53
Macintosh Centris 650	30
Macintosh Quadra 650	36

## Shield for CD-ROM Opening

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The spaces for internal storage devices in the Macintosh Quadra 610 and Macintosh Quadra 650 computers are identical to those in the Macintosh Centris 610 and Macintosh Centris 650, respectively. In the Macintosh Quadra 650, the metal part that provides EMI shielding for the CD-ROM opening has been modified. It now has a larger opening to accommodate alternative storage devices with controls on the front.

The opening in the shield is large enough to provide access to the controls of a typical 44 MB cartridge drive but not large enough to admit the drive's front panel. To keep EMI radiation within limits, storage devices that are installed in the CD-ROM bay must not project beyond the front-panel shield.



# Bezel Shields in the Macintosh Quadra 800 Computer

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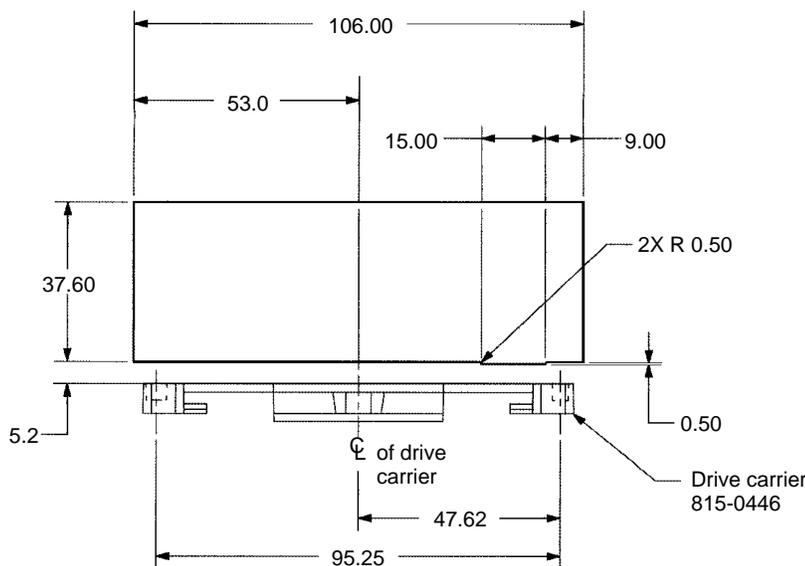
## Bezel Shields in the Macintosh Quadra 800 Computer

The Macintosh Quadra 800 has been modified so that its internal storage bays can accept devices that require larger openings in the bezel shields. This chapter gives information about the new shields.

## Shield for the 3.5-Inch Device Bay

The opening in the shield for the 3.5-inch device bay has been enlarged. Figure 2-1 shows the dimensions and the location of the opening with reference to the drive carrier.

**Figure 2-1** Shield opening for the 3.5-inch device bay



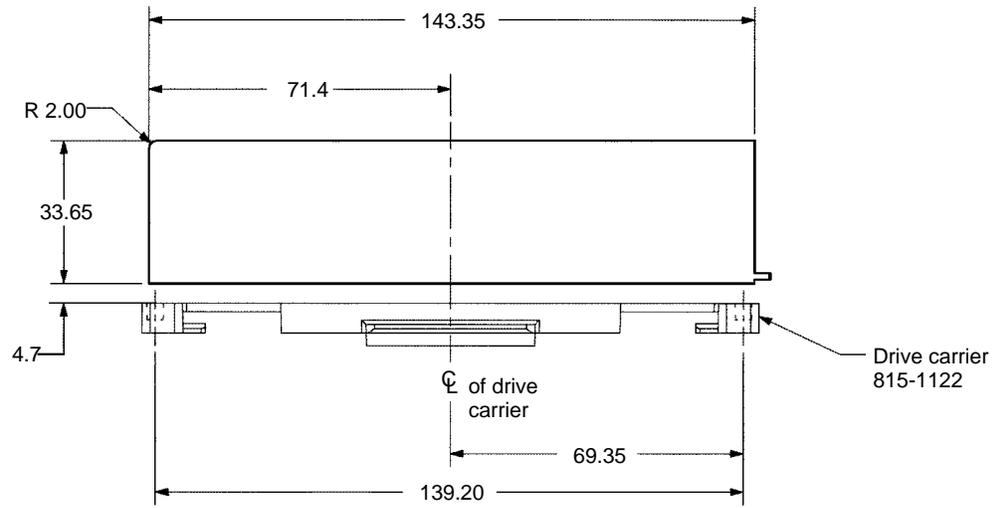
Note: Dimensions are in millimeters.

## Shield for the 5.25-Inch Device Bay

The opening in the shield for the 5.25-inch device bay has been enlarged. Figure 2-2 shows the dimensions and the location of the opening with reference to the drive carrier.

Bezel Shields in the Macintosh Quadra 800 Computer

**Figure 2-2** Shield opening for the 5.25-inch device bay



Note: Dimensions are in millimeters.

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