

Macintosh Quadra 700

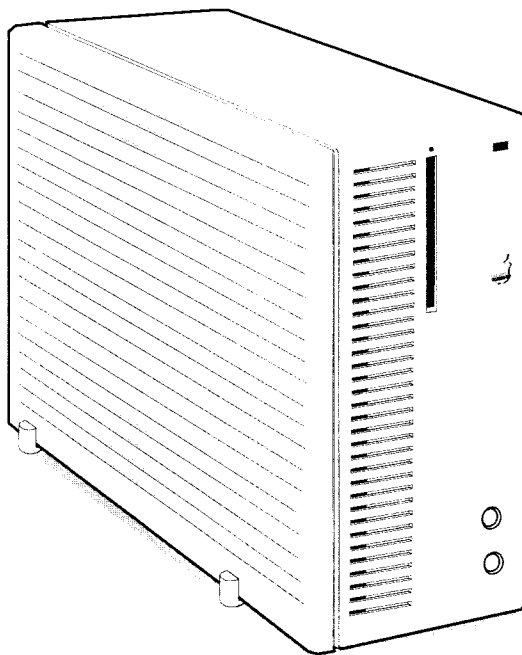
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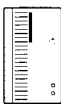


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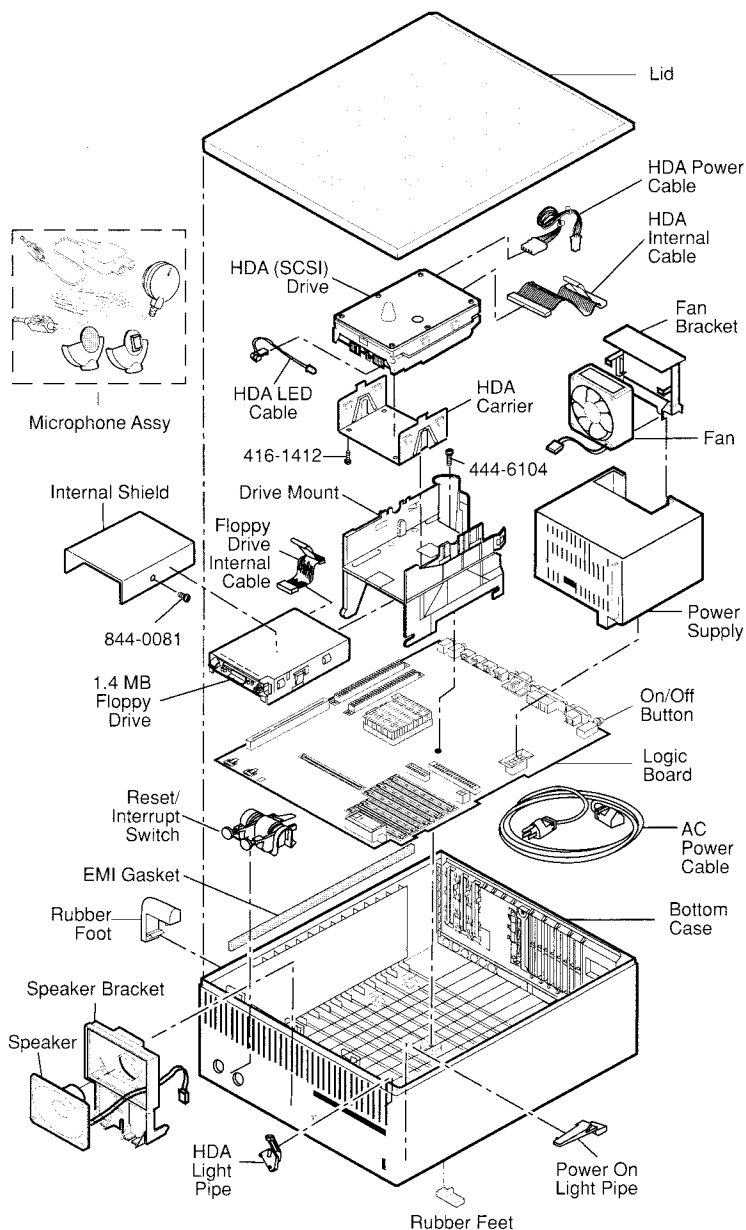
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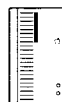
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Exploded View

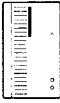


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Parts List



Bottom Case	630-5992
EMI Gasket	875-0110
HDA Light Pipe	815-6271
Light Pipe, Power-On	815-6272
On/Off Button	815-6033
Rubber Feet	865-0026
Rubber Foot	865-0800
Cable, AC Power (smoke)	590-0380
Carrier, HDA, Internal 3.5-Inch, SCSI	805-5078
Drive Mount	810-6040
Dust Shield, Package of 5	076-0439
Floppy Drive, 1.4 MB, Apple SuperDrive (internal)	661-0474
Cable, Internal Floppy Drive (yellow stripe)	590-0607
Screw, Socket, Phillips (1.4 MB mechanism)	844-0018
Shield, Internal (1.4 MB Mechanism)	805-0961
HDA, Internal 3.5-Inch SCSI, 80 MB	661-0600
HDA, Internal 3.5-Inch SCSI, 160 MB	661-1641
HDA, Internal 3.5-Inch SCSI, 400 MB	661-1636
Cable, HDA LED (amber)	590-0506
Cable, HDA LED (fits 1-inch-height drives)	590-0527
Cable, HDA LED (40 MB HDA)	590-0248
Cable, Internal HDA Power (2 x 2 pin)	590-0512
Cable, Internal HDA	590-0609
Screw, 6-32 x .250 (HDA to HDA bracket)	444-6104
Service Packaging, HDA, 3.5-Inch, Half-Height; and 3.5-Inch, 1-Inch-Height, with Carrier.	602-0282
Lid	810-6038
Lithium Battery	742-0111
Battery Holder Cover	520-0344
Logic Board	661-0666
DRAM SIMM, 1 MB, SOJ, 80 ns.	661-0520
DRAM SIMM, 1 MB, SOJ, 80 ns.	661-0719
VRAM SIMM, 256K, 100 ns.	661-0666
VRAM SIMM, 256K, 80 ns.	661-0722
Microphone Assembly	699-5071
Power Supply with Fan	661-0467
Bracket, Power Supply Fan	815-5071
Power Supply Fan	982-0023
Reset/Interrupt Switch	815-6270
Speaker	630-5999
Speaker Bracket	815-6031



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Symptom/Cure Chart

System Problems

Solutions

Startup error chords—
4 tones (hardware
failure)

1. Disconnect SCSI hard disk power and cable connectors; restart.
2. Disconnect floppy drive cable connector; restart.
3. Exchange logic board.

Startup error chords—
8 tones (DRAM SIMM
failure)

1. Exchange DRAM SIMMs.
2. Exchange logic board.
3. Perform DRAM SMM verification with exchange logic board.

Does not power on—
screen is black,
fan is not running,
and LED is not lit

1. Check cables.
2. Plug monitor directly into wall socket and verify that monitor has power.
3. Replace power cord.
4. Replace power supply.
5. Replace logic board. Retain customer's SIMMs.

Clicking, chirping, or
thumping sound

1. Replace power supply.
2. Replace logic board. Retain customer's SIMMs.

System shuts down
intermittently

1. Be sure to keep case air vents on **sides and top**. Thermal protection circuitry may shut system down. After 30-40 minutes, system should be OK.
2. Replace power cord.
3. Check battery. Replace if below 3.2 volts.
4. Replace power supply.
5. Replace logic board. Retain customer's SIMMs.

System intermittently
crashes or locks up

1. Make sure you are using correct version of system software.
2. Make sure you are using known-good software.
3. Identify and replace defective DRAM SIMMs.
4. Replace logic board. Retain customer's SIMMs.
5. Replace power supply.

Video Problems

Solutions

Note: If replacing the monitor corrects the problem, refer to *Apple Service Technical Procedures* or *Service Source* for troubleshooting information.

Screen is completely
dark, fan is not
running, and LED is
not lit

1. Plug monitor directly into wall socket, and verify that monitor has power.
2. Check battery; replace if voltage is less than 3.2.
3. Replace power supply.
4. Replace logic board. Retain customer's SIMMs.

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Symptom/Cure Chart



Screen is black, audio and drive operate, fan is running, and LED is lit

1. Adjust brightness on monitor.
2. Replace video cable.
3. If video interface card is installed, move card to different slot.
4. Replace video interface card, if installed.
5. Replace VRAM SIMMs.
6. Replace defective DRAM SIMMs.
7. Replace monitor.
8. Replace logic board. Retain customer's SIMMs.
9. Replace power supply.

Screen is black, audio and drive do not operate, but fan is running and LED is lit

1. Replace video cable.
2. If a video interface card is installed, move card to a different slot.
3. Replace video interface card, if installed.
4. Replace VRAM SIMMs.
5. Replace defective DRAM SIMMs.
6. Replace logic board. Retain customer's SIMMs.
7. Replace power supply.
8. Replace monitor.

Partial or whole screen is bright and audio is present, but no video information is visible

1. Replace video cable.
2. If a video card is installed, move card to a different slot.
3. Replace video interface card, if installed.
4. Replace VRAM SIMMs.
5. Replace monitor.
6. Replace logic board. Retain customer's SIMMs.

Floppy Drive Problems

Solutions

Internal floppy drive runs continuously

1. Replace bad disk with known-good system disk.
2. Replace internal floppy drive cable.
3. Replace internal floppy drive.
4. Replace logic board. Retain customer's SIMMs.

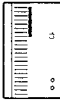
Audio and video are present, but internal floppy drive does not operate

1. Replace bad disk with known-good system disk.
2. Verify that all external SCSI devices are disconnected.
3. Replace internal floppy drive cable.
4. Replace internal floppy drive.
5. Replace logic board. Retain customer's SIMMs.
6. Replace power supply.

Disk ejects; display shows icon with blinking "X"

1. Replace bad disk with known-good system disk.
2. Replace internal floppy drive cable.
3. Replace internal floppy drive.
4. Replace logic board. Retain customer's SIMMs.

continued...



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Symptom/Cure Chart

Floppy Drive Problems (continued)

Solutions

Will not eject
disk

1. Switch power off and hold mouse button down while switching power back on.
2. Replace internal floppy drive.

Attempts to eject
disk but can't

1. Reinsert disk and try to eject disk again.
2. Reseat floppy drive bezel and/or disk drive so the slot in the bezel aligns correctly with the disk drive.

MS-DOS drive does
not recognize a disk
formatted on a 1.4 MB
SuperDrive

- To ensure read/write compatibility with the 1.4 MB SuperDrive, format all disks with the MS-DOS drive first.

SCSI Hard Drive Problems

Solutions

Internal SCSI drive
does not operate;
drive doesn't spin up

1. Replace internal SCSI drive cable.
2. Replace SCSI power cable.
3. Replace SCSI drive.
4. Replace logic board. Retain customer's SIMMS.

Drive does not
appear on the
desktop

1. Verify there are no duplicate SCSI device addresses.
2. Drive may not be initialized. If drive has just been installed, initialize the drive with HD SC Setup and install system software.

Works with internal
or external SCSI
devices, but not
with both

1. Make sure SCSI device switch setting on external device(s) is not set to **7** (the computer's address) or the same number as an internal SCSI device.
2. Replace external SCSI terminator.
3. Verify that SCSI termination is installed on internal SCSI drive.
4. Refer to *Apple Service Technical Procedures* or *Service Source* to troubleshoot the external device.

Peripheral Problems

Solutions

Cursor does not
move

1. Check mouse connection.
2. Inspect inside of mouse for buildup of dirt or other contaminants. Clean mouse if necessary.
3. If mouse was connected to keyboard, connect it to a rear ADB port instead. If mouse works, replace keyboard. If mouse does not work in any ADB port, replace mouse.
4. Replace logic board. Retain customer's SIMMS.

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Symptom/Cure Chart



Cursor moves, but clicking mouse button has no effect

1. Replace mouse.
2. Replace logic board. Retain customer's SIMMs.

No response to any key on keyboard

1. Check keyboard connection to ADB port.
2. Replace keyboard cable.
3. Replace keyboard.
4. Replace logic board. Retain customer's SIMMs.

Cannot double-click to open application, disk, or server

1. Remove duplicate system files on the hard disk.
2. Clear parameter RAM. Hold down <Command><Option><R><P> keys while booting system. Release the keys when the computer generates a startup chord a second time. Reset mouse controls.
3. If mouse was connected to keyboard, connect it to a rear ADB port instead. If mouse works, replace keyboard. If mouse does not work in any ADB port, replace mouse.
4. Replace logic board. Retain customer's SIMMs.

Known-good serial printer does not print

1. Make sure you are using correct version of system software.
2. Make sure Chooser and Control Panel are set correctly.
3. Replace printer interface cable.
4. Replace logic board. Retain customer's SIMMs.

Known-good LaserWriter on an AppleTalk network does not print

1. Make sure you are using correct version of system software.
2. Make sure Chooser and Control Panel are set correctly.
3. Refer to Networks manual in *Service Source*.

Miscellaneous Problems

Solutions

No sound from speaker

1. Verify that volume setting in Control Panel is one or above.
2. Replace speaker.
3. Replace logic board. Retain customer's SIMMs.



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Specifications

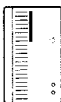
Microprocessor	MC68040, 25.0 MHz Built-in PMMU, math coprocessor, and 8K cache 32-bit address bus; 32-bit registers
ROM	1 MB soldered on the logic board ROM SIMM socket
DRAM	4 MB standard—expandable to 8 MB using 1 MB DRAM SIMMs (80 ns) or 20 MB using 4 MB DRAM SIMMs (from a third party manufacturer) Additional memory expansion through NuBus slots
Video RAM	512K standard—expandable to 1 or 2 MB using 256K VRAM SIMMs (100 ns)
Interfaces	Two ADB connectors (mini DIN-4) for keyboard, mouse, and low-speed input devices Two NuBus slots (96-pin Euro-DIN connector) One 68040 processor-direct slot (PDS) Two RS-422 (RS-232-compatible) serial ports (mini-8), 230.4 Kbaud maximum
Disk Drives	Internal Apple SuperDrive Internal 3.5-inch SCSI hard disk (80, 160, or 400 MB)
Video Display	Built-in VRAM video support for all Apple monitors; six VRAM expansion slots (three banks) Multiple external color and monochrome monitors through NuBus expansion slots
Sound	Enhanced Apple sound chip (EASC), including four- voice wave-table synthesis and stereo sampling generator capable of driving stereo mini phone jack headphones or stereo equipment Mixed stereo monophonic output—internal speaker Sound input—omnidirectional microphone (output voltage is 4 millivolts, peak-to-peak, at normal speaking volume)
Keyboard	Apple Keyboard, Apple Extended Keyboard, Apple Keyboard II, or Apple Extended Keyboard II

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Specifications



Mouse	ADB mouse (mini DIN-4)
Input Power	100 to 240 volts AC (rms), automatically configured 50-60 Hz single phase 130 watts maximum (not including monitor power connector load), 90 watts maximum continuous
Output Power	Output receptacle: 100-240 volts (rms) (determined by actual input voltage) DC output: 90 watts maximum +5 volts 12.0 amps (60 watts) +12 volts 1.5 amps (18 watts) -12 volts 1.0 amps (12 watts)
Power Supply Ratings	Input voltage range: 85-135 volts (rms); 170-270 volts (rms) Input surge range: 300 volts (rms) for 100 ms Input line transient immunity: 0-6 kilovolts with no component failures Peak inrush current: 40 amps for all load and line conditions Input line frequency: 47-63 Hz, single phase Line dropout immunity: 20 ms minimum, for 85 volts (rms); 50 Hz input and maximum load Input/Output power efficiency: 70% minimum for all conditions and maximum load
Clock/Calendar	CMOS custom chip with long-life lithium battery 256 bytes of parameter memory
Operating Temp	50° F to 104° F (10° C to 40° C)
Storage Temp	-40° F to 116.6° F (-40° C to 47° C)
Rel. Humidity	20% to 80% (noncondensing)
Altitude	0 to 10,000 feet (0 to 3048 meters)
Physical Specifications	Height: 5.5 inches (140 millimeters) Width: 11.9 inches (312 millimeters) Depth: 14.4 inches (365 millimeters) Weight: 13 pounds, 10 ounces (6.2 kilograms)



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Logic Board/Memory Upgrades

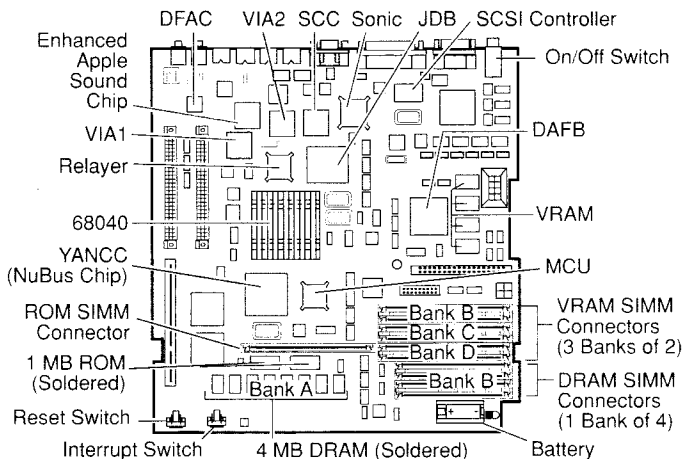


Figure: Macintosh Quadra 700 Logic Board

DRAM

The Macintosh Quadra 700 has 4 MB of DRAM soldered on the logic board (bank A) and accepts four same-size DRAM SIMMs (80 ns or faster) in bank B. Configurations greater than 8 MB require third-party DRAM SIMMs.

Total DRAM	Bank A (soldered)	Bank B
4 MB	4 MB	Empty
8 MB	4 MB	Four 1 MB SIMMs
20 MB	4 MB	Four 4 MB SIMMs

VRAM

The Macintosh Quadra 700 has 512K of VRAM soldered on the logic board (bank A). VRAM is expandable to 1 MB or 2 MB by way of VRAM SIMM sockets (banks B, C, and D), each of which holds two 256K VRAM SIMMs.

Total VRAM	Bank A (soldered)	Bank B	Bank C	Bank D
512K	512K	Empty	Empty	Empty
1 MB	512K	Two 256K SIMMS	Empty	Empty
2 MB	512K	Two 256K SIMMS	Two 256K SIMMS	Two 256K SIMMS