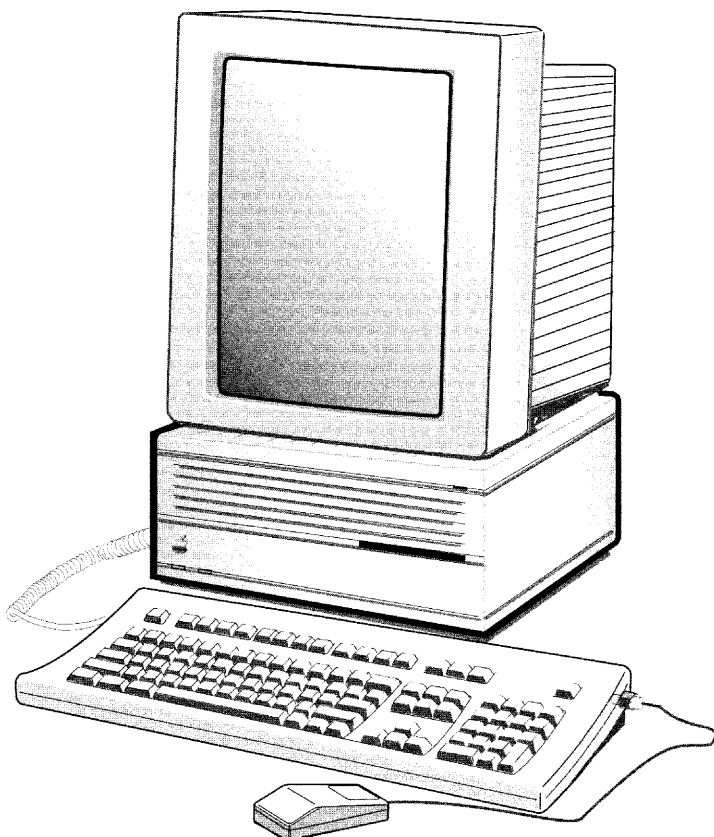


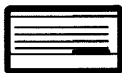


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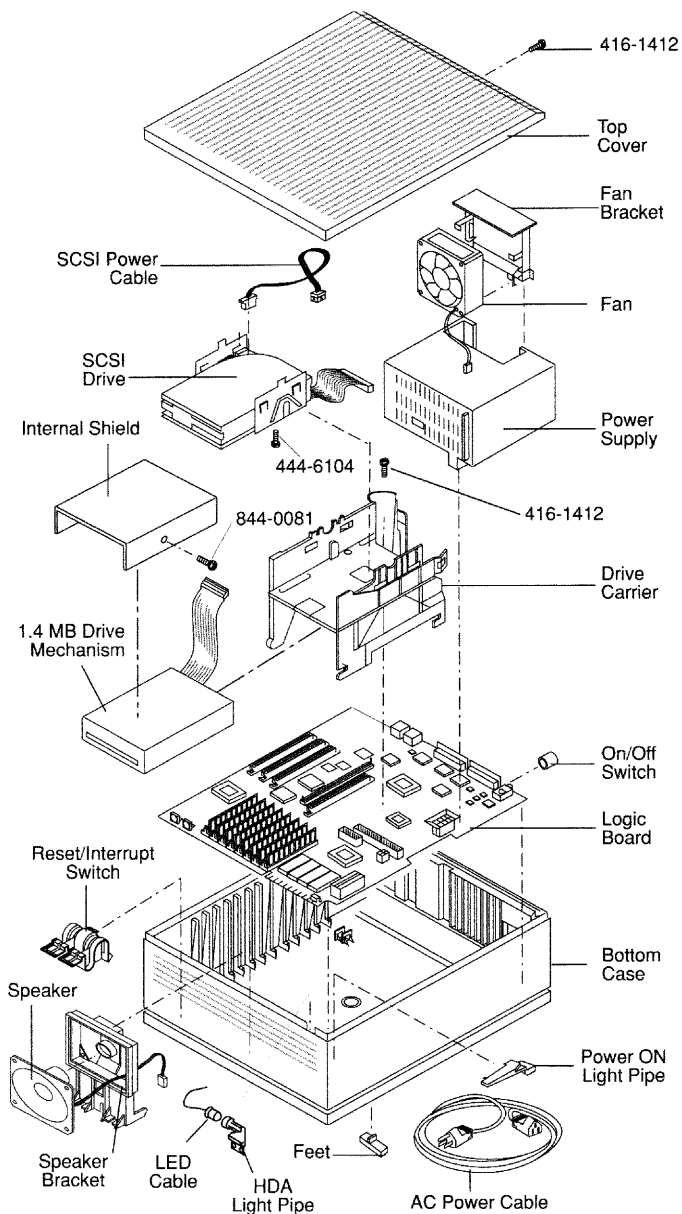
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Macintosh Ilcx and Ilci

Exploded View



Macintosh Ilcx and Ilici

Logic Board Identification

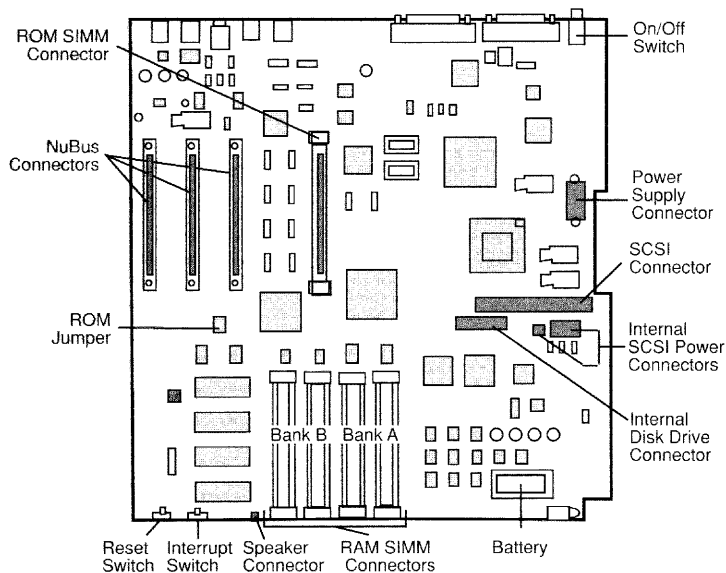
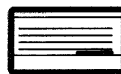


Figure: Macintosh Ilcx Logic Board

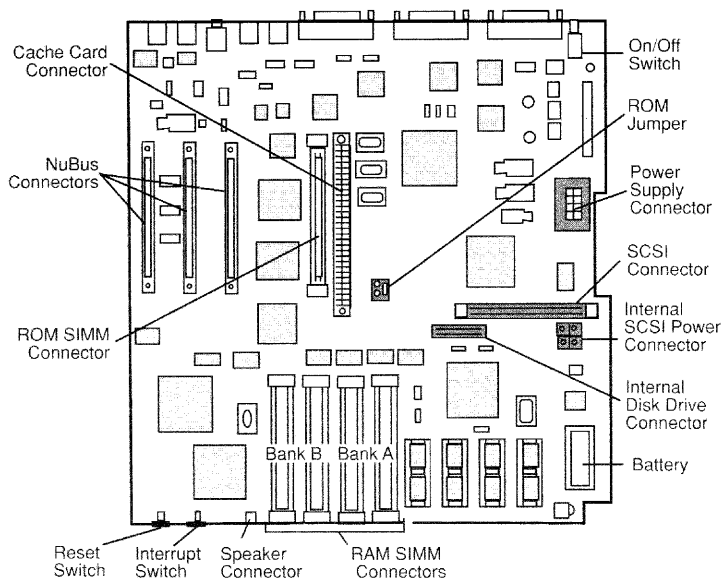
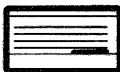


Figure: Macintosh Ilici Logic Board



Macintosh Ilx and Ilci

Specifications

Macintosh Ilx Specifications	
Microprocessor	MC68030, 32-bit internal architecture 15.6672 MHz clock speed Built-in paged memory management unit (PMMU) 256 byte instruction and data caches
Coprocessor	MC68882 floating-point unit (FPU)
Memory	1 MB expandable to 8 MB (120 ns or faster SIMMs) 256K ROM standard
Monitors	Apple High-Resolution Monochrome AppleColor High-Resolution RGB Apple Macintosh Portrait Display Apple Two-Page Monochrome
Interfaces	Two RS-232/RS-422 ports SCSI interface (50-pin internal connector and DB-25 external connector) Two Apple Desktop Bus (ADB) ports Three NuBus internal slots supporting full 32-bit address and data buses Stereo sound port One DB-19 serial (disk drive) port
Internal Storage	Built-in 1.4 MB, FDHD SuperDrive Optional internal Hard Disk 40SC, 80SC
Sound	Apple custom digital sound chip (ASC), including four-voice wave-table synthesis and stereo sampling generator
Electrical	Line voltage: 90 to 140 volts; 170 to 270 volts, automatically configured Frequency: 50 to 60 Hz Maximum power: 90 watts, not including monitor power

Macintosh IIcx and IIci

Specifications



Macintosh IIci Specifications

Microprocessor	MC68030, 32-bit internal architecture 25 MHz clock speed Burst mode RAM access 256 byte instruction and data caches Built-in paged memory management unit (PMMU)
Coprocessor	MC68882 floating-point unit (FPU) 15.6672 MHz clock speed
Cache Connector	120-pin memory cache connector (for connection of optional high-speed memory cache card)
Memory	1 MB expandable to 8 MB (80 ns or faster SIMMs) 512K ROM standard
Parity Support	Purchase of optional parity board with parity generating chip and parity RAM converts the system to a parity system
Built-in Video Support	Apple High-Resolution Monochrome AppleColor High-Resolution RGB Apple Macintosh Portrait Display
Interfaces	Two RS-232/RS-422 ports SCSI interface (50-pin internal connector and DB-25 external connector) One DB-19 serial (disk drive) port Two Apple Desktop Bus (ADB) ports Three NuBus internal slots supporting full 32-bit address and data buses One DB-15 video port for built-in video Stereo sound port
Internal Storage	Built-in 1.4 MB, FDHD SuperDrive Optional internal Hard Disk 40SC, 80SC
Sound	Apple custom digital sound chip (ASC), including four-voice wave-table synthesis and stereo sampling generator
Electrical	Line voltage: 100 to 240 volts AC, automatically configured Frequency: 50 to 60 Hz Maximum power: 90 watts, not including monitor

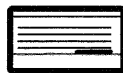


Macintosh IIcx and IIci

Parts List

Macintosh IIcx & Macintosh IIci

1.4 MB Mechanism, Apple FDHD SuperDrive	661-0474
Cable, Internal 1.4 MB Mechanism	590-0607
Screw, Socket, Phillips (1.4 MB Mechanism)	844-0018
Shield, Internal 1.4 MB Mechanism	805-0961
Bottom Case	630-5502
Cable, HDA LED (amber)	590-0506
Light Pipe, Power On	815-6032
Light Pipe, HDA	815-6036
Rubber Feet	865-0026
Cable, AC Power (smoke)	590-0380
Drive Carrier	815-6030
Extended Keyboard, Apple	661-0384
Extended Keyboard, French Canadian	C661-0384
Extended Keyboard, French	F661-0384
Extended Keyboard, German	D661-0384
Extended Keyboard, Spanish	E661-0384
Extended Keyboard, Italian	T661-0384
Extended Keyboard Parts	
Alps Locking Keyswitch	970-1263
Bottom Case	815-1019
Key Cap Set	658-7010
Keyboard Cable, 1 meter	590-0361
Keyswitch Set (of 10), ADB Keyboard	076-0209
Top Case	815-1018
HDA, 20 MB, Internal 3.5 SCSI	661-0373
HDA, 40 MB, Internal 3.5 SCSI	661-0464
HDA, 80 MB, Internal 3.5 SCSI	661-0600
HDA, 80 MB, Int. 3.5 SCSI with A/UX, v.1.1 (replaced by 661-0613)	661-0561
HDA, 80 MB, Internal 3.5 SCSI with A/UX, v.2.0	661-0613
Bracket, HDA, Mounting	805-5078
Cable, Internal HDA Power (Mac IIcx only)	590-0505
Cable, Internal HDA Power (2 x 2 Pin; Mac IIci only)	590-0512
Cable, Internal HDA	590-0609
Screw, 6-32 x .250 (HDA to HDA Bracket)	444-6104
ISO Keyboard, French	F661-0454
ISO Keyboard, German	D661-0454
ISO Keyboard, Italian	T661-0454
Keyboard, Regular Apple	661-0383
Keyboard, French Canadian	C661-0383
Keyboard, Spanish	E661-0383
Keyboard Parts	
Alps Locking Keyswitch	970-1263
Bottom Case	815-1017
Key Cap Set	658-7011
Keyboard Cable, 1 meter	590-0361
Keyboard Cable, 2 meter	590-0152
Keyswitch Set (of 10), ADB Keyboard	076-0209
Top Case	815-1016



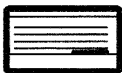
Mouse, Apple Desktop Bus	661-0338
Mouse Ball (25.4 mm dia)	699-8001
Mouse Ball (21.9 mm dia)	699-8038
Retainer, ADB Mouse (38 mm dia)	076-0231
Retainer, ADB Mouse (34 mm dia)	815-0816
Mouse, ADB (replacing part 661-0338)	661-0479
Mouse Ball (for part 661-0479)	815-1135
Retainer, ADB Mouse (for part 661-0479)	815-1136
Power Supply with Fan	661-0467
Bracket, Power Supply Fan	815-5071
Power Supply Fan	982-0023
Reset/Interrupt Switch	815-6034
Speaker	590-5503
Speaker Bracket	815-6031
Top Cover	810-6028
Screw, M 3.5 x .6 x 8 (Top Cover; HDA Bracket/Bottom Case)	416-1412

Macintosh Ilcx

Logic Board (w/o RAM; replaces 661-0459)	661-0537
Battery Holder Cover	520-0344
Lithium Battery (without Leads)	742-0011
On-Off Button	815-6033
SIMM, 256K, 120 ns	661-0402
SIMM, DIP, 256K, 120 ns	661-0494
SIMM, 1 MB, 120 ns	661-0403
SIMM, DIP, 1 MB, 120 ns	661-0410

Macintosh Ilci

Logic Board	661-0532
Battery Holder Cover	520-0344
Lithium Battery	742-0011
On-Off Button	815-6033
SIMM, 256K x 4, 80 ns	661-0519
SIMM, 1 MB, 80 ns	661-0520
Logic Board, Parity	661-0583
Battery Holder Cover	520-0344
Lithium Battery	742-0011
SIMM, 1 MB x 9, 80 ns, Parity	661-0546



Macintosh Ilcx and Ilci

Symptom/Cure Chart

System Problems

Solutions

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. Check batteries. **Refer to Troubleshooting—Startup Problems, Flowchart 5, in General Information.**
5. Replace power supply.
6. Replace logic board.

Clicking, chirping, or thumping sound

1. Replace power supply.
2. Replace logic board only.

System shuts down intermittently

1. Make sure air vents on back side and top of main unit are kept clear. Thermal protection circuitry may shut down system. After 30 to 40 minutes, system should be OK.
2. Replace power cable.
3. Replace power supply.
4. Replace logic board only.

System intermittently crashes or locks up

1. Make sure correct version of system software is being used.
2. Make sure software is known-good.
3. Replace logic board only.
4. Replace SIMMs.
5. Replace power supply.

System seems to boot, then message “Finder is old version” displays

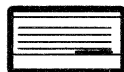
1. Clear parameter RAM. Hold down <Command> <Option> <P> <R> keys and reboot system. You will hear normal startup chords and about two seconds later you will hear another chord. This means parameter RAM has been cleared.
2. Replace logic board only.

Video Problems

Solutions

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

1. Adjust brightness on monitor.
2. Replace monitor.
3. Replace video cable.
4. Move video card (if installed) to a different slot.
5. Replace video card (if installed).
6. Make sure ROM jumper is on logic board.
7. Replace SIMMs.
8. Replace logic board.
9. Replace power supply.



Screen is dark,
no audio, but fan is
running and LED is lit

1. Replace video cable.
2. Replace monitor.
3. Move video card (if installed) to a different slot.
4. Replace video card (if installed).
5. Make sure ROM jumper is on logic board.
6. Remove any NuBus cards, if installed.
7. Remove any external peripheral, if installed.
8. Replace SIMMs.
9. Replace logic board.
10. Replace power supply.

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

1. Replace monitor.
2. Replace video cable.
3. Move video card (if installed) to a different slot.
4. Replace video card (if installed).
5. Make sure ROM jumper is on logic board.
6. Replace logic board only.

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. Remove any installed NuBus cards.
3. Remove any external peripherals, if attached.
4. Replace power supply.
5. Replace logic board only.

Black and white
video only

- Change monitor CDEV in Control Panel for additional shades of gray.

Note: Systems with 1 MB of memory default to black and white video. Allocating additional memory to video on 1 MB systems can be done, but this leaves little free RAM for other applications.

Drive Problems

Solutions

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

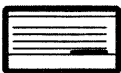
1. Replace bad disk.
2. Verify that all external SCSI devices are disconnected.
3. Replace internal disk drive cable.
4. Replace internal disk drive.
5. Replace logic board only.
6. Replace power supply.

Disk ejects; display
shows icon with
blinking "X"

1. Replace disk with known-good system disk.
2. Replace internal disk drive cable.
3. Replace internal disk drive.
4. Replace logic board only.

Will not eject disk

1. Switch power off and hold mouse button down while switching power back on.
2. Eject disk manually by pushing opened paper clip into hole beside the drive slot.
3. Replace disk drive.



Macintosh IIcx and IIci

Symptom/Cure Chart

Drive Problems (continued)

Solutions

System attempts to eject disk but cannot

1. Try pushing disk completely back in.
2. Eject disk manually by pushing opened paper clip into hole beside the drive slot.
3. Replace disk drive.

Internal disk drive runs continuously

1. Replace bad disk.
2. Replace internal disk drive cable.
3. Replace internal disk drive.
4. Replace logic board only.

SCSI Problems

Solutions

Internal hard disk will not operate

1. Replace SCSI cable connector.
2. Replace SCSI power connector.
3. Replace hard disk.
4. Replace logic board only.

Works with internal or external SCSI device but will not work with both

1. Check SCSI device switch setting on external device.
2. Replace terminator on external device.
3. Verify that terminator is installed on internal SCSI drive.
4. Replace SCSI device select cable.

Peripheral Problems

Solutions

Cursor does not move

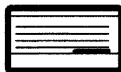
1. Check mouse connection.
2. If mouse was connected to a keyboard, connect it to a rear ADB port. If mouse works, replace keyboard.
3. If mouse does not work in any ADB port, replace mouse.
4. Replace logic board only.

Cursor moves but clicking the mouse button has no effect

1. Replace mouse.
2. Replace logic board only.

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

1. Remove any multiple system files on hard disk.
2. Clear parameter RAM. Hold down <Shift> <Option> <Command> keys and select Control Panel from Apple menu. Reset mouse controls.
3. If mouse was connected to keyboard, connect it to rear ADB port. If mouse works, replace keyboard.
4. If mouse does not work in any ADB port, replace mouse.
5. Replace logic board only.



No response to any key on the keyboard

1. Check keyboard connection to ADB port.
2. Replace keyboard cable.
3. Replace keyboard.
4. Replace logic board only.

Known-good ImageWriter or ImageWriter II will not print

1. Make sure correct version of system software is being used.
2. Make sure that Chooser and Control Panel are set correctly.
3. Replace printer interface cable.
4. Replace logic board only.

Known-good LaserWriter will not print

1. Make sure correct version of system software is being used.
2. Make sure that Chooser and Control Panel are set correctly.
3. Refer to Networks tab in *Apple Service Technical Procedures* for more information.

Miscellaneous Problems

Solutions

No sound from speaker

1. Verify that volume setting in the Control Panel is set to 1 or above.
2. Replace speaker.
3. Replace logic board only.

Clock not running

1. Replace battery.
2. Replace logic board only.



Macintosh IIcx and IIci

Macintosh IIcx Memory Upgrade

The Macintosh IIcx requires 120-ns (or faster) SIMM modules. The 150-ns SIMMs will cause serious timing problems. All SIMMs in each bank must be the same size.

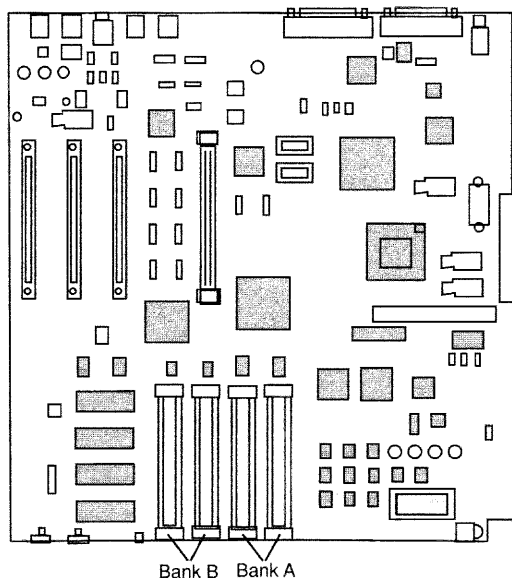
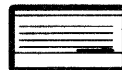


Figure: Macintosh IIcx Logic Board

Size	Bank A	Bank B
1 MB	4—256K SIMMs	Empty
2 MB	4—256K SIMMs	4—256K SIMMs
4 MB	4—1 MB SIMMs	Empty
5 MB	4—1 MB SIMMs	4—256K SIMMs
8 MB	4—1 MB SIMMs	4—1 MB SIMMs

Macintosh Ilcx and Ilci

Macintosh Ilci Memory Upgrade



The Macintosh Ilci requires 80-ns fast page mode SIMM modules. The 100-, 120-, and 150-ns SIMMs will cause serious timing problems. All SIMMs in each bank must be the same size. SIMMs must be installed in Bank A if built-in video mode is being used. To upgrade a parity system the 80-ns, 1 MB x 9-bit parity SIMMs must be used or the parity function will be disabled.

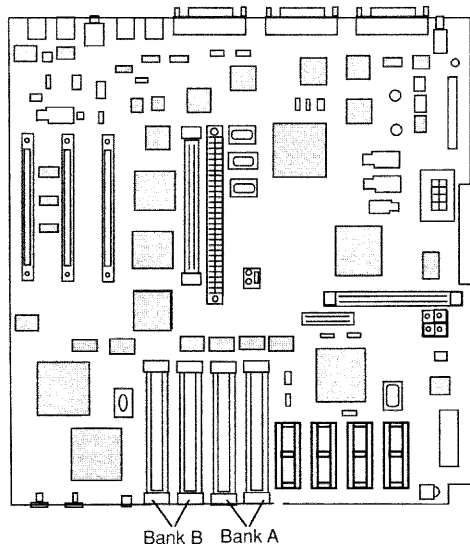


Figure: Macintosh Ilci Logic Board

Size	Bank A	Bank B
1 MB	4—256K SIMMs Empty	Empty 4—256K SIMMs
2 MB	4—256K SIMMs	4—256K SIMMs
4 MB	4—1 MB SIMMs Empty	Empty 4—1 MB SIMMs
5 MB	4—1 MB SIMMs 4—256K SIMMs	4—256K SIMMs 4—1 MB SIMMs
8 MB	4—1 MB SIMMs	4—1 MB SIMMs
4 MB Parity	4—1 MB parity SIMMs Empty	Empty 4—1 MB parity SIMMs
8 MB Parity	4—1 MB parity SIMMs	4—1 MB parity SIMMs