

Macintosh 2

aka Little Big Mac, Medium Mac

Design Proposal

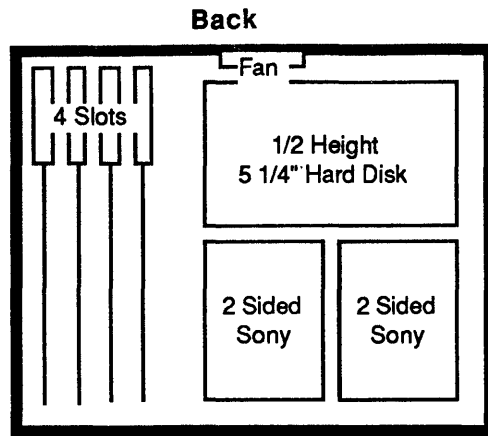
Michael Dhuey

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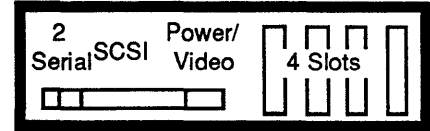
The Macintosh 2 is designed to combine the Macintosh software base with the expandability of an Apple //e. The machine is divided into two parts: the lower box with CPU, slots, disk drives, and memory; and the upper box with power supply and video.

The lower box has the following components:

- * 16 MHz 68000 CPU.
- * 1 Mbyte of RAM, expandible to 2 Mbyte.
- * Four general purpose slots with 32 bits address and 32 bits data defined and all control lines necessary for bus mastership (e.g. 68020 or 80286)
- * Room for two double sided Sony 3 1/2" drives.
- * Room for one half height 5 1/4" SCSI compatible hard disk.
- * DMA support for SCSI hard disk, serial port, Macintosh sound, and memory refresh.
- * Small Computer Standard Interface (SCSI) port to connect external hard disks, tape drives, and printers.
- * Two serial ports with synchronous modem support signals.
- * Memory Map to protect applications in a "Switcher" program and to support Unix operating system.
- * Front Desk Bus to allow various keyboard, mouse, joystick, etc. options.
- * 256 Kbytes of high speed ROM.
- * Built in video circuit for 640 x 480 B&W one bit per pixel video. Seperate video RAM to avoid processor contention for main RAM
- * Soft power control to allow software to save machine state before power-off.
- * Real Time Clock with 10 year battery backup.



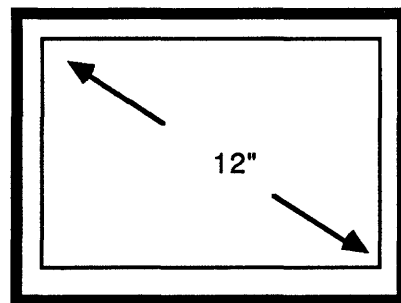
Top View



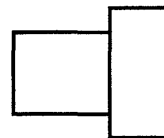
Back View

The upper box has the following components:

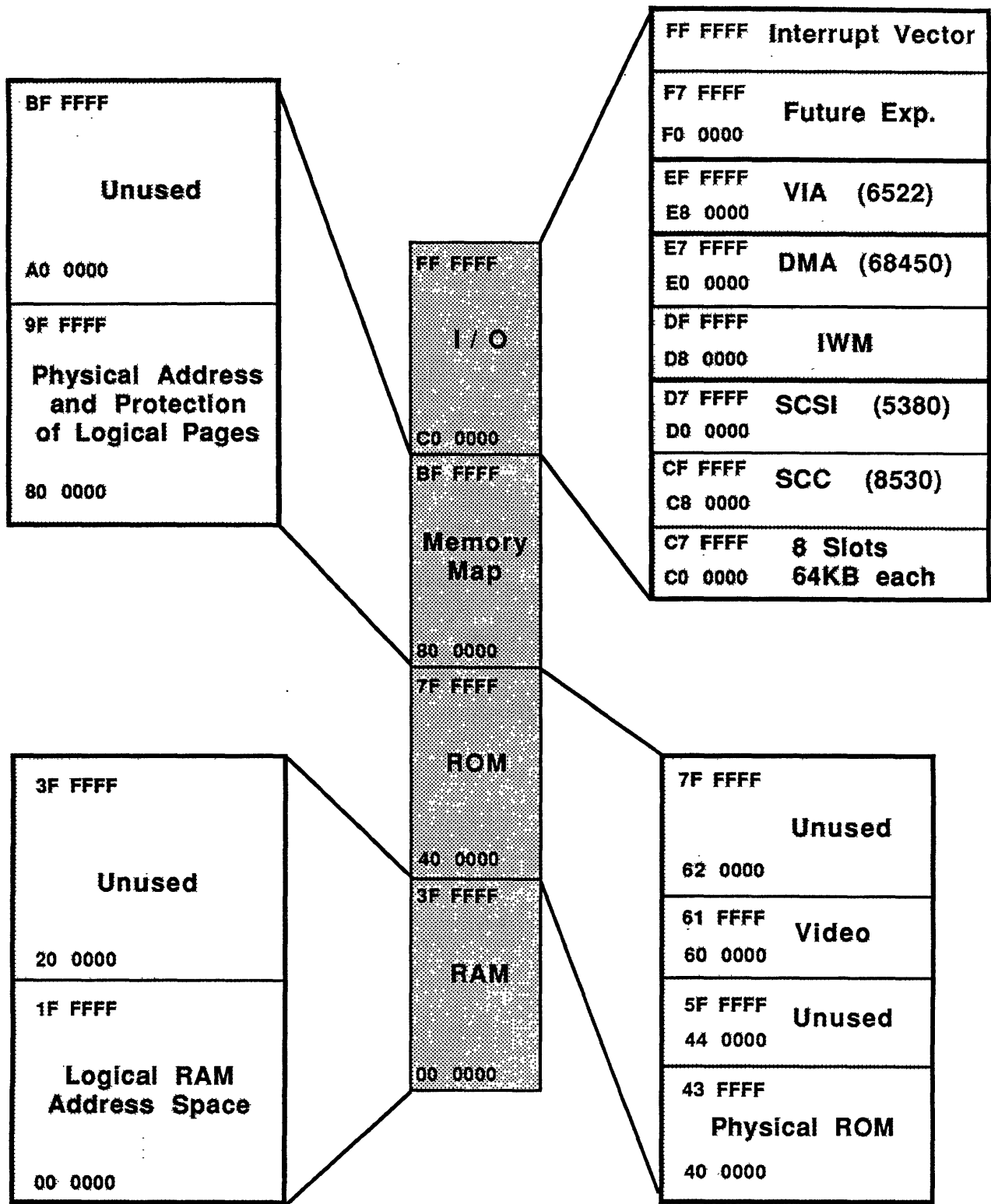
- * 12" diagonal B&W video using Flat / Square CRT (normal CRT is more curved on face).
- * "Square" pixels 640 W x 480 H at physical 76 pixels/inch and logical 72 pixels/inch (Same density as Macintosh).
- * Universal power supply which accepts 85 to 280 volts AC without a switch.
- * Flicker-free video with 68 Hz refresh (normal is 60 Hz) on P4 phosphor (used in B&W TV).



Front View



Side View



X Options/Issues

(7/3/85 - Bill Watson, Peter Friedman)

What are tradeoffs re: customer benefit, costs, schedule, risk and manufacturability?

<u>Option</u>	<u>Issue</u>	<u>Impact?</u>
4 Slots or 6?	Expandability Box size Power requirements Video card?	
Slot power	Regulated vs. unregulated (burden on Apple or 3rd parties?)	
Slot definition	VME or other?	
Video Board	On board or card General vs. Dedicated slot	
Power Supply In Monitors vs. In CPU	CPU box size Heat, RFI, Agencies Cost 1 set of Monitors for MAC & Ap II	
Alt. Videos 12" M, 17" M, 13" Color	Status?	
Floppy Disks	800K vs 1.6 meg Read MAC, AP II Read MSDOS MAC compatibility Method of adding 2nd floppy	
16mhz 68000 vs 68010	Compatibility with Z Compatibility with Y	
MMU approach Direct Map vs Demand Paged vs Nothing	Compatibility with Z Compatibility with Y Relevant time frame for UNIX	
Improvements in Resource Mechanism	Status in each scenario?	
Concurrency	Status in each scenario?	
UNIX	Status in each scenario?	

Preliminary X Schedule

(7/3/85, Bill Watson, Peter Friedman)

- 8/1/85 - Preliminary MRD, product definition, detailed schedule, cost, tradeoffs and market research proposals
- 9/1/85 - Final product definition (except plastic), models for plastic
Second round schedule and costs
Market research in progress (esp re: plastic)
- 9/15/85 - Wirewrap, PC board and preliminary X ROM
Final Z ROM
- 10/15/85 - Hardware design freeze
ROM design freeze
Plastic design freeze (Carton graphics design begins)
DVT
First prototypes
- 11/15/85 - Tooling begins on plastic
Models etc. for drop testing
Photo models
- 12/15/85 - Final box dimensions
Final carton art can begin
Box tooling can begin
- 1/15/86 - X ROM to Mask
Feature freeze on disk based system software
Manuals can begin
Final carton art (production begins)
- 2/15/86 - Seed units for key developers (50 - 100 units)
Developer classes?
- 3/15/86 - Disk software code frozen and debugged (ready for duping)
Final copy for manuals
Manual production begins
Carton manufacture can begin
- 4/15/86 - X ROMs in production
- 5/15/86 - Tooling finished, agency approvals and housing production can begin
Manual production complete, printing can begin
- 6/15/86 - Pilot production and PVT
Manuals printed
Disk software in production
Need for prototypes for introduction program intensifies (500 - 1500 units)
- 7/15/86 - Final production can begin
- 8/1/86 - 2 weeks of production completed and shipped out of Fremont
- 8/15/86 - 2 weeks of production in distribution centers
Product can be announced