



# Tech Info Library

## Macintosh IIVx: Memory (7/93)

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TOPIC -----

This article describes the Macintosh IIVx (Performa 600 and Performa 600CD) DRAM, VRAM, ROM configurations, and the Memory Map.

DISCUSSION -----

DRAM (Dynamic Random Access Memory)

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All Macintosh IIVx configurations have 4MB of DRAM soldered to the logic board. The 5MB configuration with the AppleCD 300i CD-ROM drive has another 1MB of DRAM installed in the four 30-pin DRAM SIMM sockets. The sockets support up to 16MB DRAM SIMMs, for a maximum of 68MB. All DRAM must be at least 80 ns fast page mode.

Possible DRAM Configurations

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4MB      4MB soldered to logic board, empty SIMMs  
5MB      4MB soldered and 1MB in SIMMs (four 256K SIMMs)  
8MB      4MB soldered and 4MB in SIMMs (four 1MB SIMMs)  
12MB     4MB soldered and 8MB in SIMMs (four 2MB SIMMs)  
20MB     4MB soldered and 16MB in SIMMs (four 4MB SIMMs)  
68MB     4MB soldered and 64MB in SIMMs (four 16MB SIMMs)

VRAM (Video RAM)

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The Macintosh IIVx uses VRAM for video and sound data storage. This internal video support is similar to that of the Macintosh LC and Macintosh LC II. It's an improvement on the Macintosh IICi and IISI scheme, which uses available main DRAM for video and sound, causing delays when both the video circuitry and the CPU were accessing DRAM at the same time. The VRAM is installed into two 68-pin SIMM sockets with pinouts identical to that of VRAM sockets on the Macintosh LC and Macintosh Quadras. Both SIMM sockets must be filled with either 256K or 512K SIMMs. The video data path is 32 bits wide.

Two 256K SIMMs (part #M5953LL/A) yield 512K of VRAM and support 640 x 480 monitors at up to 8 bits per pixel (256 colors or shades of gray) or 512 x 384 monitors at up to 16 bits per pixel (thousands of colors).

Two 512K SIMMs (part #M0517LL/A) yield 1MB of VRAM, which supports 640 x 480 and 512 x 384 monitors at up to 16 bits per pixel. This 1MB VRAM configuration is standard on any Macintosh IIVx configured with the AppleCD 300i.

ROM

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Macintosh IIVx has 1MB of ROM and can be upgraded via the ROM expansion SIMM (for ROM SIMM pinout see article "Macintosh IIVx: Pinouts").

Memory Map (32-bit)

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DRAM -4MB on logic board	\$00000000	-	\$003FFFFFF	
Expansion DRAM (in SIMMs)	\$00400000	-	\$043FFFFFF	(up to 68MB)
Unassigned DRAM space	\$04400000	-	\$3FFFFFFF	
ROM read	\$40000000	-	\$403FFFFFF	
ROM flash write	\$40400000	-	\$407FFFFFF	
Repeated ROM images	\$40800000	-	\$4FFFFFFF	
VIA1	\$50x00000	-	\$50x01FFF	(x = \$0 - F)
SCC	\$50x04000	-	\$50x05FFF	
SCSI	\$50x10000	-	\$50x11FFF	
SCSI DMA	\$50x12000	-	\$50x13FFF	
SCSI Handshake	\$50x06000	-	\$50x07FFF	
Sound	\$50x14000	-	\$50x15FFF	
SWIM	\$50x16000	-	\$50x17FFF	
VDAC	\$50x24000	-	\$50x25FFF	
VIA2/VASP registers	\$50x26000	-	\$50x27FFF	
CPUID	\$5FFFFFFC	-	\$5FFFFFFF	
VRAM	\$60000000	-	\$600FFFFFF	(up to 1MB)
VRAM repeated images	\$60100000	-	\$6FFFFFFF	
NuBus space	\$70000000	-	\$FFFFFFF	

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