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Macintosh II and IIx: 16MB SIMMS, MODE32, and RAM (9/95)

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Security:       Everyone
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TOPIC ---

According to the "Macintosh Memory Guide" from Connectix, Page 17, second
paragraph:

"3) On standard Macintosh II computers Bank A cannot use SIMMs larger than 2MB.
4, 8, and 16MB SIMMs must only be put in Bank B. Also, Bank A must be filled
with SIMMs of 2MB or less if Bank B is to be used. Bank A is the set of four
sockets to the right as you face the front of the Macintosh. This is a problem
unique to the Macintosh II, and is caused by problems in the Macintosh II ROMs
which are not overcome by adding MODE32 or MAXIMA. However, you can fix this one
problem by installing the FDHD Apple SuperDrive Upgrade kit, which includes a
set of Macintosh IIx ROMs. As a result of this limitation, the largest memory
configuration on unmodified Macintosh II computers using 1MB and 4MB SIMMs is
20MB: four 1MB SIMMs in Bank A and four 4MB SIMMs in Bank B. When Macintosh IIx
ROMs are added the maximum memory the computer will support is 128MB, eight 16MB
SIMMs."

Is this information accurate? I was under the impression that the Macintosh II
and Macintosh IIx could physically support only 4MB SIMMs.

DISCUSSION --

Below is an excerpt from another article describing MODE32. The excerpt
describes Macintosh II RAM issues. To see the full article, search under
MODE32.

"The Macintosh II and Macintosh IIx require special 4MB SIMMs. Be sure
to specify your Macintosh model when ordering these SIMMs and ensure
that the vendor is aware of the difference. The Macintosh II requires
the Macintosh II FDHD Upgrade to use 4MB SIMMs.

This upgrade has been discontinued.

To take advantage of more than 8MB of physical RAM, the Macintosh II
MUST have a PMMU installed, so that MODE32 can expand the system's
memory map.

The Macintosh II will not start up if you install 4MB SIMMs in bank A.
You'll hear musical chimes at startup, indicating a hardware failure.
Install 4MB SIMMs in bank B, and use 256K or 1MB SIMMs in bank A."

If you read the part about the Macintosh II carefully, you will see that it
cannot have greater than 1MB SIMMs in Bank A, or you will get musical chimes.
Since this happens so early in the boot process, there is nothing that can be
done in software to remedy this. This means that a Macintosh II can have a
maximum of 68MB of RAM installed (using a PMMU and MODE32). To achieve this
amount, you would have 4MB in Bank A, and 64MB in Bank B (using 16MB SIMMs).

A final, but very important issue here concerns the part discussing the special
SIMMs required by the Macintosh II and Macintosh IIx. There is nothing to say
that vendors will actually make 16MB SIMMs using this configuration.

Article Change History:
15 Sep 1995 - Revised to show discontinued upgrade.
02 Apr 1995 - Updated for clarity.
02 Mar 1994 - Emphasized the need for a PMMU to utilize more memory.

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