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## Macintosh II: Math Coprocessor Can Be Upgraded to MC68882

Article Created: 27 February 1990  
Article Last Reviewed: 20 July 1992  
Article Last Updated:

### TOPIC -----

A third-party supplier told me that I can improve performance of my Macintosh II by upgrading the MC68881 math coprocessor to a MC68882. Is this correct?

Isn't the MC68881 optimized for use with the MC68020 in the Macintosh II? Would using a MC68882 with a MC68020 produce compatibility problems with some software expecting a MC68881? Is an upgrade advisable?

Likewise, can a MC68881 be used with the MC68030, or should the MC68882 always be used? What are the performance issues related to cross-matching CPUs and math coprocessors?

### DISCUSSION -----

The MC68882 Floating Point Unit (FPU) is a superset of the MC68881 and is software- and hardware-compatible with the MC68881 FPU. Generally, the MC68882 is 1.5 to 2 times faster than the MC68881.

The December 1987 issue of "Byte" has a two-page article (pages 120 and 121) testing the Motorola MC68882 math coprocessor chip. The tests show that with the MC68882 installed in a Macintosh II, benchmarks execute from 4 to 22% faster than with the MC68881. Installation in the Macintosh II is done by swapping chips.

The MC68881 can be used with the MC68030. The only concern here is that some software may be written to take advantage of the new features that the MC68882 provides. We can see no reason why you would have a Macintosh system with this combination, so no problems should arise.  
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Keywords: <None>

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19960215 11:05:19.00

Tech Info Library Article Number: 5232