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Macintosh SE/30 Versus Macintosh IIfx: Video Speed

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TOPIC -----

I have written code in Lightspeed C that makes many QuickDraw calls. When I run it on my Macintosh SE/30 with an external 19-inch mono monitor attached to a video card in the PDS, I notice that it runs significantly faster than when I run the same program on my Macintosh IIfx with either the Apple 4•8 card and the Apple 21-inch mono or an emachines 19-inch monitor also in black and white mode.

Is this because the PDS slot is faster than the NuBus slots or are there other factors? It seems that the 40 MHz Macintosh IIfx should be faster than the 16MHz Macintosh SE/30.

DISCUSSION -----

Your assumption is correct. The Macintosh SE/30 PDS (processor direct slot) runs at 16MHz, while NuBus slots are limited to 10MHz. The increased bandwidth available to the PDS due to the 60 percent greater clock lets much more data pass than is possible with NuBus. NuBus overhead and arbitration widens this speed difference.

While the Macintosh IIfx itself runs much faster than the Macintosh SE/30, it cannot move data to the video RAM as quickly, because of this bus limitation. Programs which are calculation-intensive run much faster on the Macintosh IIfx, whereas programs that perform high-speed graphical operations can display faster on the Macintosh SE/30. The deciding factor is a matter of how many bits are being pushed across the bus to video RAM.

The current Macintosh II family shares the 10MHz NuBus speed. To alleviate this shortcoming caused by NuBus compatibility requirements, the Macintosh IIfx has its own PDS that is even faster than the Macintosh SE/30 PDS. It runs at

the full speed of the Macintosh IIfx I/O bus, which is 20MHz, and is, therefore, capable of twice the bandwidth of NuBus, and 25 percent more than the Macintosh SE/30 PDS.

Unfortunately, we do not yet know of any compatible video cards. Although the Macintosh IIfx PDS looks similar to the Macintosh SE/30 PDS, the two slots are not at all compatible. We do not know of any cards in development and wouldn't think that this would be in any company's priorities. Macintosh graphics acceleration is tending toward specialized, dedicated graphics processors, like our 8/24GC card, that are NuBus cards and compatible across the Macintosh II family.

If you require faster video than the Macintosh IIfx can provide, your best alternative is to evaluate graphics accelerator cards. Two sources for such cards are Radius and SuperMac Technology. The Apple 8•24GC card is another option.

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