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 then 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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