

Cyrix Technical Connection



Larry Tittle

Cyrix Corporation

Technical Support Manager

In the interest of timely advice and communication, we have decided to use the avenue of a weekly on-line newsletter to keep you, our very important customers, informed of what is going on within our company and what good things are happening here at Cyrix. We also want to offer a few helpful hints and suggestions in order to make your Cyrix experience as positive as possible.

Visualizing Video

It is now necessary to do some basic testing with video upgrades to demonstrate how video enhancements impact performance. This will take a couple of sessions in order to give you all of the data necessary to reach your own upgrade decisions.

The basic benchmark platform is the usual ASUS P5S-VM super socket 7 motherboard with the SiS530 chipset. We are using the Cyrix M II – 300, with the on-board 2D/3D AGP VGA using 4M of our SDRAM dedicated to video, and 64M of PC 100 SDRAM. The hard drive is a WD Caviar 32500 we have had around here for a couple of years.

For this first round of testing, we are going to run the Business Applications of Winstone 99. The OS is Windows 98.

Remember, in our testing we are only making one feature change to the platform. In this suite of testing, we will only be trying different video adapters.

Adapter	Winstone 99
On Board 2D/3D video (AGP) 4M	13.5
On Board 2D/3D video (AGP) 8M	13.3
3D Nitro 8M (PCI)	14.3
Matrox Millenium 4M	13.2
Matrox Millenium 12M	13.2
Matrox Millenium 12M	13.2
plus Voodoo2	
Voodoo 3 (PCI)	14.1

The first observation is that for desktop applications and reasonably good video adapter is all you need. If this is coupled with our results from memory testing last week, it shows that in this type of environment, use the fastest processor your motherboard will support and a minimum of 32M of memory.

Further discussion is necessary regarding these numbers as well as other benchmarks that will be posted in next week's "Cyrix Technical Connection."

Upgrading Continued (Microprocessor)

Cashing in on Cache. So, what does all of this mean? Remembering that our discussion for the past several weeks revolves around upgrading, what can you legitimately do in the area of cache to upgrade your system. If yours is a Socket 7 motherboard, then you may be somewhat limited. The possibility is that you can move from your current part with a 16K cache to one of 32K or even 64K. More than likely, this kind of upgrade would give you other performance features in addition to a larger cache because you are moving to newer technology.

But those underlying questions mentioned back in the first issue of the "Cyrix Technical Connection" (Vol. 1 No.1) may come back to haunt you. Will your motherboard support the correct voltage, host bus speed and clock multiplier specified for the new processor? If so, then what kind of performance should you expect to receive from a new processor with a larger cache?

If you double the size of the cache, don't expect to double your performance. Remember the Performance Curve discussion in last week's "Cyrix Technical Connection." Increasing any performance feature will create dramatic performance improvement up to a point and then tend to flatten out.

So here is a suggestion. If you are upgrading your computer, but still plan on doing the same type things with your computer that you have been doing, then doubling the size of the cache or better will be of benefit to you. However, if you are going to move to more resource intense applications on your computer, then you might need to look at a more comprehensive upgrade of your system and you may ultimately decide to purchase a new computer. At today's prices, the latter option is very attractive.

What you are after is the ability to do what you normally do substantially faster. A significant processor upgrade will be able to provide that for you and the size of the cache is a significant performance feature in this situation. If you are moving to more resource intense applications, high end games, design applications, etc., then upgrading your processor will make your system run faster but you may not visually experience that because you now require more from your system.

Enough about cache for now. We will have more benchmarks in the weeks to come to demonstrate our point. Hope it helps! More next week.

Tech Tip: Your Motherboard and Memory

If your upgrade procedure is going to include a new motherboard, be sure and double check the memory slots. Many newer motherboards come with only SDRAM DIMM slots and no 72 pin slots for EDO or FP. If you plan on using your old memory, take a look at those memory slots on the new board