Cyrix Technical Connection

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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.

How Good Is Your Memory? (continued)

We will take a step backward in our memory testing this time and start with EDO. Now there are several types of memory older than EDO, but we will start here because we are talking about upgrading somewhat older systems.

The platform we are using is an M-Tech R534G motherboard using the SiS 5571 chipset with 512K of onboard cache. We are using the STB Nitro 3D video adapter and the WD Caviar 32500 2.5G HDD.

The OS is Windows 98 and we are running the Desktop applications of Winstone 99 as our benchmark (the high-end applications will not run on Windows 9x but require NT).

We will set our first watermark by running Winstone 99 on this platform using 32M of 60ns EDO memory. Then we will increase to 64M. Since we have the option to use either EDO or SDRAM on this board, we will run one test with 32M of SDRAM.

Here are our results:

EDO	32M	64M	%
Winstone 99 results	10.2	12.9	+26%
SDRAM	32M	64M	
Winstone 99 results	10.2	12.9	+26%
EDO + SDRAM	32+32		
Winstone 99 results	12.7		

There needs to be a little analysis of these numbers as well as last week's tests. We'll do this analysis in the coming weeks when we do Video adapter testing. You need to know the value proposition in upgrading your PC as opposed to purchasing a new one. We will be discussing costs in the weeks to come.

Upgrading Continued (Microprocessor)

L1 cache, L2 cache, MMX, super scalar, super pipelined, FPU, TLB, ScratchPad Ram, Cache line size, etc. Maybe you are of the customer types that really do not care to know what is inside the microprocessor. You are interested in turning on your computer and doing what you need to do in an efficient way and be about other things. That's fine. We like those kinds of customers and we, too, are interested in you having a very efficient computing experience. You may not want to read any further because we will use this column for the next two weeks in talking about features and functional parts of the microprocessor.

First things first. All current x86 PC microprocessors are super pipelined. That means as an instruction runs through the internal workings of the processor, it goes through at least 7 stages. We will not get in to what those stages are. Today's processors are also super scalar, meaning that they have more than one execution pipeline. There are at least two paths each of which have these 7 stages.

The workhorse of the microprocessor is the Integer Unit. This is the where most of your work is done if you are the average computer user doing word processing, email, and keeping up with your checkbook. This part of the processor takes care of the integer math.

FPU stands for Floating Point Unit and handles, as you might have guessed, floating point instructions. High End graphics applications, some games, and other apps use floating point instructions. MMX (MultiMedia Extension) instructions are floating point instructions. You will find some applications, particularly games, that use these MMX instructions By the way, most common spreadsheets do very little floating point math and very much integer math. The point being made here is that if you are not doing anything floating point intense then a fast FPU is not necessary.

Important things you will need to know are what processors including bus speeds, core speeds, voltages and features does your motherboard support. The answers to these questions are important to determining what you will get from an upgrade.

With next week's edition of the Cyrix Technical Connection, we will discuss more basic microprocessor architecture and what you can realistically expect from a microprocessor upgrade. See ya' then.

Tech Tip: The Right Motherboard

Having enough PCI slots is pretty important. Be sure you know what adapter cards you are going to install and made sure that you have enough. Some boards have video, parallel, serial, and all drives integrated onto the board, others only have ports and drives. Be sure you know what you are getting.

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