

FAQ for AudioCenter PC

1. I've heard that AMD processors actually run slower than Intel. Doesn't the 4000+ CPU only run at 2.4ghz? I've got a Pentium 3.2ghz, shouldn't mine be faster?

Maybe it should, but it isn't. This is the reason that AMD does not name their CPUs based on the clock speed of the processor. Their 2.4ghz would certainly sound slower than a 3.2.

But it's not. The reason has to do with how the processors are designed to do their work. In both chips, the main clock is simply a device which sends a pulse to the chip Billions of times per second. In both processors, each clock pulse tells the CPU to do something. It's like "Tick - do something", "Tock - do something" and so on.

But the real key to speed is based on what the CPU does with each clock Tick - and the AMD chips do more. Let's use our example from [http:here](http://here) to illustrate this point.

With an Intel chip you'll have something like this:

Tick - get the first number out of the hat
Tock - get the second number out of the hat
Tick - read the first number into your brain
Tock - read the second number into your brain
Tick - add the two numbers
Tock - record answer

While in an AMD chip, it may look like this:

Tick - get both numbers
Tock - Read both numbers
Tick - Add the two numbers
Tock - record answer

So the Intel would take 6 clock ticks and the AMD would take only 4 to do the same job. In reality, the AMD will normally take about 40% fewer clock ticks to do the same thing as an Intel chip.

The result - very fast execution of commands without having to have a super fast clock. Therefore, the 2.4ghz AMD64 4000+ should perform at about the same level as an Intel 4ghz Pentium - if Intel made such a thing (which they don't).

2. Why do I need both a wired and a wireless network interface?

This gives you maximum flexibility. If your setup at home or in your forensic lab allows you to have data cables easily installed, by all means used the wired connection. It's easier and MUCH faster. The wired network included is called a Gigabit network which means it transfers data at about 1000mbps. That's about 100 Meg per second! At its theoretical top speed (which you will NOT get), you could transfer a CD of data in about 7 seconds. It will be fast, reliable and secure.

If you can't or don't want to run wires here and there, then wireless is the way to go. There are several wireless standards out there right now that are all compatible with each other, but differ in speed. Our PCs comes with 54G wireless which means you get 54mbps or about 7Meg per second. This would (at it's highest speed), transfer an entire CD is about 90 seconds. 54G is plenty fast for audio and for video using a wireless extender.

You can use both interfaces at once, but we recommend you pick only one.

3. Is this the fastest PC in the world?

Not quite. We have designed this system to offer blazing speed and a gigantic improvement over most computers that it will be replacing. If you have a Pentium of 2ghz or less, this thing is going to totally blow you away. This is the type of system that most people are replacing since they are starting to get old. For anyone with a 3ghz or slower system, you are going to see a large improvement in speed.

If you want the fastest computer you can build, you'll have to make a pretty significant investment in more exotic stuff. You'll have to get an AMD FX-55 processor (for about \$1000), a water or chemical cooling system for aggressive over clocking, arcane ram technologies, a very expensive motherboard, and 15,000 rpm drives . All these "upgrades" will likely make your system 10-15% faster at an additional cost of more than \$1000-\$2000 more.

For most of our customers, the **AudioPC** offers an astounding speedup of 100-1000% over their existing system. To get just a little bit more would cost a LOT.

4. What are the Northbridge and Soundbridge on this system?

First a bit of info. Think of your CPU as if it were sitting in a field of daises. To the north is a stream and there is another one to the south. On the other side of the northern stream is our memory. We need to have our CPU connected to the memory and so we need a bridge. This is the Northbridge. Since memory speed is an important factor in the overall speed of the PC, we'd like this bridge to be nice and fast. If it is some rickety, one lane bridge, our memory accesses will be slow regardless how fast our actual memory and processor are.

AMD processors do not require a traditional Northbridge. It's built into the chip where it's MUCH faster. The actual connection to the memory is thru a technology called HTT - Hyper Transport Technology. Trust us - it's fast.

The Southbridge connects our processor to the hard drive, PCI buss, etc. This should be fast too. In our machines, it's a VIA VT8237R

5. What is the speed of the Memory in this system?

The memory is 400mhz - which is PC3200.

6. How much can I over clock the system?

The system can be both manually and automatically overclocked. In either case, you set the limits of the amount of overclocking. We find that 5% is rock solid and does not cause any component to get very hot. If you want to get even higher (you can go to 10% with a click of a key), you'll need more exotic memory and CPU cooler. Probably not worth it.

For those who want to manually setup an overclock situation, you can adjust the FSB and CPU speeds, Memory access numbers, and PCIE speed.

7. What is the Front Side buss speed?

Stock speed is 200mhz which is correct for AMD 64bit processors. You can overclock this as well.

8. What is the Power Supply?

This is a special power supply from Antec only available with their high-end Media Center cases. It is called a TruePower supply. It's 380 watts which is perfect for this machine and will allow full expansion with new hard drives, etc. The nice thing about it is that each of the voltage outputs have their own electronics - they are not tied together like cheaper power supplies. Each output is individually monitored by the supply and it will adjust each one as needed for the correct voltages. This makes for superb system stability. Additionally, the power supply adjusts it's own fan speed and the two case fans automatically.

9. How loud is this machine?

The only fan that you can really hear in normal use is the CPU fan. It's not loud, but you can hear it. The harder the machine works (or the more it's overclocked) the faster the fan will run and the louder it will be. It's a quiet machine, but if you put it in your home theater and everything was quiet in your room, you'd be able to hear the fan. The CPU fan normally runs 4000-5000rpm, while the chipset fan (which is small) runs about 8000rpm. The two case fans and the power supply fan run so slowly in normal use that they don't register on the Windows program which monitors fan speed. This is normal.

10. Do you Enable the AMD Cool n. Quiet function?

No. This technology is fully included and you can enable it if you'd like. For those of you not familiar with this, the idea is the slow down everything when possible to reduce heat and fan revolutions. When the fans run slower, the machine gets quieter. This is great, but we have found that the machine frequently keeps itself in "slow" mode when we really want "fast" mode - especially when you are running complex filters with DC Six and aren't touching the keyboard. We prefer to set them up to be fast, fast, fast. If you want to enable Cool n' Quiet, you can.

11. Since the PC comes with a wireless keyboard and mouse, I guess I can't put it to sleep and wake it up from the keyboard?

Yes, you can. We setup these machines to wake from sleep via the USB keyboard or mouse. There's even a sleep key on the keyboard so you can put the computer to bed from across the room. To wake it up, just touch any key or move the mouse.