Noise Matters

Why PC Noise is important to you.

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As computer technology advances and moves into new markets, consumers have come to expect improvements beyond raw application performance as part of the purchasing decision process and have begun to focus on other product qualities, including that of PC noise.

What is PC System Noise?

PCs and the entertainment devices that make up our daily lives emit mechanical sounds beyond the blips, beeps and music we expect from them. Essentially wherever there is a moving part in your PC device you will find an associated background noise. The main culprits of system noises are the cooling fans and rotating spindles for CDs, DVDs and hard drives.

PC System Noise is Bad Noise

Many people would describe the melodious sounds of jazz music playing at a volume level of 8 as very pleasant. Yet listening to the repetitive sound of a jack hammer at the same volume level might be described as highly annoying. Obviously certain types of sound are more irritating than others and rather than being described as sound, become recognized as noise. Noise experts have noted that sounds that fall in the lower and higher frequency ranges are often described as noise. The whirring metallic sounds from PC systems and devices are always described as noise.

Why Does Noise Matter?

If your construction worker spouse has a choice of using two tools that perform the same function and one of them would allow them to do their job at the construction site in a safer and more efficient manner, wouldn't you want them to use that tool? Office noise levels have been determined to have a direct relationship on productivity and health.

While preparing for that big exam do you seek out the busiest and noisiest public place you can think of to cram in those final study hours? Wisely not. Noise hampers communication and concentration. The World Health Organization has set recommended noise levels for the classroom to encourage a safe and optimal learning environment.

Happily munching popcorn watching a mystery film at the movie theatre the couple beside you begins to whisper back and forth their theories on whom the murderer is. Would you tolerate even whisper quiet annoyances you can control when being entertained in your own home?

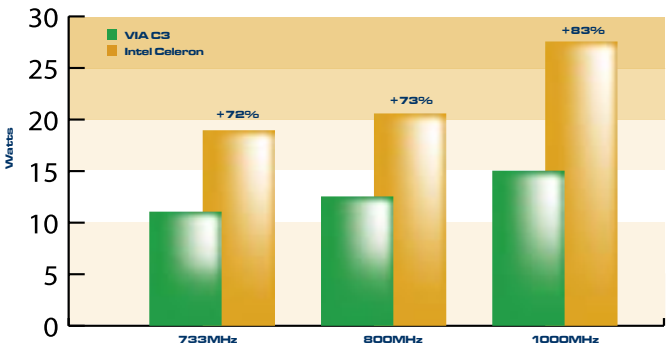
I've Never Noticed PC Noise Before?

Many people seem not to have noticed their PC devices noises before. Does not noticing a noise mean it doesn't exist or impact your life? Consider a loud crowded playground where your ear picks out the sound of your own child's voice. How does that happen? The human ear has the ability to focus on certain sounds occurring simultaneously even when they happen at equal or lesser volumes. The fact that you acknowledge certain sounds doesn't mean the ones you ignore or filter out don't exist or don't affect your life. Just as you "tune out" the hum of the air conditioner and seldom notice the difference in silence until you turn it off, PC system noise is continuously with you.

Why Is My PC Noisy?

As mentioned above the majority of PC noise comes from the hard drive, disk drive and cooling fans for your

New VIA C3 and Intel Celeron Maximum Design Power Consumption



VIA C3 ™ processor worst case power defined as average maximum power consumed running the stress program "MAXPOW.exe". These values are used for worst-case thermal design for VIA C3 ™ processor-based systems. Intel power consumption numbers from Intel Celeron datasheet.

system. The hard drive and disk drive noise levels are decreasing, with manufacturers constantly researching and developing new technologies to reduce their friction and component noise. However fan noise has often been seen to increase in volume and in the number of fans being used. The latest systems requiring large power supplies and over powered silicon generate tremendous amounts of heat, which requires fans to cool the individual silicon hot spots and overall system airflow temperature.

What Can Be Done About PC Fan Noise.

Only a few extreme gamers and professional video editors require the latest MHz specification overpowered PC system. If your system is being used to run standard productivity and office applications or play back music and movies then you are able to make wise purchasing decisions which can include a system with lower power needs, and silicon components that produce less heat. Less heat means significantly reduced fans in terms of numbers and size and fan noise, resulting in noticeably quieter systems. An added benefit of smaller fans is that smaller low profile devices can be built around them, making for systems more appropriate in size and shape for living room as well as office environments.

What's VIA's System Noise Strategy?

VIA products have been specifically designed to address the issues of system noise, power, heat and the relationship between them. At the core is VIA's distributed platform performance strategy. By spreading the workload for specific computing tasks amongst various silicon components and using an ultra low power consumption CPU design, VIA silicon based platforms generate little heat, often require no fan, and result in considerable noise level reductions.

VIA C3 Low Power CPU

The key to low system noise is a low power processor that reduces the need for processor cooling fans and high heat power supplies. As shown in the following chart, the Intel Celeron processor consumes up to 83% more power than the new VIA C3 processor while running at the same clock speed.

VIA EPIA Mini-ITX Series Mainboards

By incorporating low power design values using the new VIA C3 and Eden processors, the VIA EPIA Mini-ITX Series mainboards are able to use a low profile, quieter, combination "Fansink" for the CPU, often eliminating the need for power supply fans and therefore further reducing overall system noise to ideal levels and enabling an even smaller overall system size.

Common Sounds	dBA Levels
Threshold of hearing	0 dBA
Normal breathing	10 dBA
Whispering at 5 feet	20 dBA
EPIA M10000 Mini-ITX Mainboard Series	<25dBA
Mini-box or Standard PC*	35~50 dBA
Rainfall	50 dBA
Normal speech	60 dBA

Probably the most common method of PC noise measurement is the "A" weighted decibel scale (dBA). The dBA scale is logarithmic, i.e. a difference of 10 dBA is estimated at double the perceived volume. dBA values are measured at a distance of one meter in a certified anechoic chamber. *Pentium 4 1.7GHz CPU, Intel 845 Motherboard system