

B R A V O M S

T E C H N O L O G Y O V E R V I E W



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A S T - F L E X C H A S S I S

AST® has designed a new FlexChassis which allows easy access to the inside of your computer with just a push of a button! This tool-less entry chassis, is also the industry's first NLX design, allowing the motherboard to slide out of the chassis with the flip of a lever. AST's new innovative AST-FlexChassis design will dramatically reduce the time it takes to upgrade and service your computer, making system maintenance a snap. The six major components: hard drives, floppy drives, RAM, CPU, CD-ROM and Video RAM have been located to provide optimum accessibility. Upgrading and servicing your Bravo system has never been easier, there's even a no touch zone on the motherboard, allowing space for full length PCI & ISA cards. Other enhancements provided by the AST-FlexChassis design are: improved thermal characteristics, more rear panel I/O connectors, and support for tall memory modules.

S Y S T E M N O I S E R E D U C T I O N (S N R)

In 1993, AST pioneered the energy-managed "Green PC" technology, bringing the first environmentally friendly PC to the world. Today, AST is breaking more new ground, by fighting the newest type of environmental concern - "white noise" pollution. AST first introduced this technology in Europe in 1996, based on the great response it received, AST's System Noise Reduction (SNR) technology is now being made available worldwide. As systems grow more powerful with higher and higher MHz ratings, the cooling requirements and accompanying noise levels rise proportionately. AST's SNR technology addresses this cooling problem by incorporating a thermistor, which controls the variable-speed fan in the power supply. When the system temperature increases, the fan speed increases providing maximum cooling yet generating minimal noise. The noise level that the user perceives is also affected by fan and vent location, which have been designed for quiet operation coupled with maximum cooling. Hard disk drives also contribute to the noise level in a system. For this, AST has incorporated a specially designed sound-dampening enclosure to reduce the mechanical noise emitted from the hard drives. Overall system noise is reduced from 30.7dB to 27.8dB -- a 71% decrease!

A Q U I C K T U T O R I A L O N N O I S E

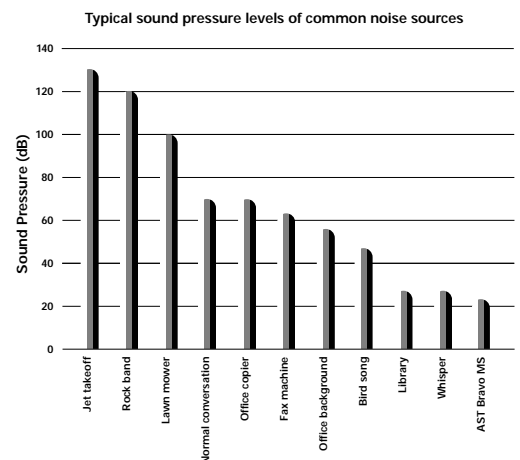
It's true. The decrease in noise levels between 30.7dB to 27.8dB is 71%, this is because the decibel scale is a complicated concept that requires some basic understanding of acoustics. The decibel scale is a logarithmic scale, as opposed to a linear scale, so that small differences in numbers actually have significant real-life effects. Here is a chart that has some everyday dB values:

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L E T ' S D O
A C O M P A R I S O N :

A Dell® OptiPlex® has a 30.9dBA sound output, whereas an AST Bravo MS has a 27.8dBA sound output. In the real world this means that the AST is actually 70% quieter than the Dell. In order to convert dBA reading to a percentage we have to use the following formula:

$$\text{Sound Pressure Ratio} = \left(\frac{\text{Antilog}_{10} (\text{System1} - \text{System2})}{\text{Power Ratio constant}} \right) - 1$$



So if we apply this formula to compare the AST Bravo to the Dell OptiPlex we get:

$$\text{Sound Pressure Ratio} = \left(\frac{\text{Antilog}_{10} (\text{System1} - \text{System2})}{\text{Power Ratio constant}} \right) - 1$$

$$\text{Sound Pressure Ratio} = \left(\frac{\text{Antilog}_{10} (3.1)}{20} \right) - 1$$

$$\text{Sound Pressure Ratio} = (\text{Antilog}_{10} (0.155)) - 1$$

$$\text{Sound Pressure Ratio} = (0.142) - 1$$

$$\text{Sound Pressure Ratio} = (0.704)$$

$$\text{Percentage} = 70.4\%$$

Therefore, the AST Bravo MS is 70.4% quieter than the Dell OptiPlex.

INTEL® 430TX PCISSET AND MMX™ TECHNOLOGY

The Intel 430TX PCISset provides better system integration between components and the core logic, thereby providing system performance gains of up to 15% from previous core logic chipsets. This core logic also enables advanced technology such as SDRAM, ACPI, UltraDMA-33, and MMX technology.



MMX technology uses high performance Single Instruction, Multiple Data (SIMD) technology and brings 57 new instructions to the processor that allow applications to achieve a new level of performance. MMX technology operates at 64-bits – Intel's general-purpose registers have only 32-bits – and is designed to enhance the performance of a variety of multimedia and communications applications. Software developers can use MMX technology to realize faster video frame rates, allowing for smoother, more realistic video. MMX technology will also make advanced applications such as video conferencing, previously requiring expensive hardware, a much more practical business solution for today's PC.

ULTRADMA-33 WITH S.M.A.R.T. DRIVE TECHNOLOGY

UltraDMA-33 represents the latest evolution of IDE hard drive technology. The burst transfer rate doubled from 16.7 MB/s to 33 MB/s bringing the effective transfer rate of the system's bus and a drive's internal data rate into balance. Cyclical Redundancy Checking (CRC) has also been added, providing an increase in data integrity. Self-Monitoring, Analysis and Reporting Technology (S.M.A.R.T.) monitors the hard drive activity to proactively indicate a potential failure. For example, if your hard drive's read/write errors increase dramatically during use, the S.M.A.R.T. technology will alert a system administrator of a potential failure allowing IS departments to resolve problems before they even occur! System downtime, productivity loss, and even loss of valuable data can be prevented through the combined use of S.M.A.R.T. drives and Intel LANDesk® software.

SYNCHRONOUS DYNAMIC RAM (SDRAM)

SDRAM provides the highest memory bandwidth available on the market today to support enhanced media-rich performance and reduced memory access time. Coupled with Intel's new 430TX core logic, it provides a 2% performance improvement over EDO memory. In addition, the Bravo MS has been designed so users can mix and match EDO and SDRAM memory increasing flexibility.

DUAL INLINE MEMORY MODULE (DIMM) TECHNOLOGY

AST has moved from using two 72-pin SIMMs to a single 168-pin DIMM to better utilize valuable motherboard real estate as well as plan for expandability and upgradability. With DIMMs the user can upgrade RAM individually instead of in pairs. DIMMs have separate contacts on each side of the board creating a wider data path and providing twice as much data as a SIMM. The common address and control signals are buffered on DIMMs, reducing the loading effect on these signals when multiple boards are installed. This allows systems with heavy memory requirements to access data faster.

HIGH PERFORMANCE 3D GRAPHICS

The ATI® 3D Rage™ II+ delivers superior 3D features and performance including perspective correct texturing, video texturing, Gouraud shading and a host of other 3D special effects. Superior 2D acceleration is achieved through an advanced architecture that is optimized for SGRAM. These features increase WinBench97 scores from 30 WinMarks to **60 WinMarks**, offering up to 100% increase in graphics performance over previous products. This chipset also allows users to expand their video memory to 6 MB of SGRAM.

SYNCHRONOUS GRAPHICS RAM (SGRAM)

AST was the first in the industry to offer and support SGRAM, which is a high-performance graphics memory that delivers performance close to the level of expensive dual ported VRAM and WRAM, in a highly cost-effective single ported memory configuration. SGRAM delivers 4 MB performance with only 2 MB, for much lower cost than EDO or other graphics alternatives. Up to **25% faster graphics performance** can be achieved when running Microsoft® Windows® 95 at 1024x768x256 colors (compared to EDO-based video memory configurations). Applications such as Microsoft PowerPoint™, Quicktime and ACAD will derive the maximum benefit from this feature.

INTEGRATED ETHERNET

AST is using Intel's 10/100 MB Ethernet, utilizing a 32-bit bus master architecture to provide the right balance of high throughput and low CPU utilization for the best efficiency. A 15% performance enhancement over other network cards, on both standard Ethernet or Fast Ethernet. Network based applications such as E-mail clients, web browsers and group management software will be able to communicate faster and more efficiently over the network. The Ethernet technology AST has chosen also introduces Adaptive™ Technology that provides the ability to update micro-code and adapt to specific environments such as Microsoft Windows NT®, Windows 95, DOS ODI, or heavy-traffic networks!!

INTEGRATED 16-BIT AUDIO

Sound Blaster® compatible 16-bit audio, with 3D audio effects, and high quality FM synthesizer. Through the use of multi-channel virtualization, a 6-speaker (Dolby® AC-3) sound system can be recreated using just 2 computer speakers, taking the sound effects in business presentations to a new level of sophistication. This 3D solution produces an incredible surround sound effect without compromising the quality of the audio stream. As video conferencing technology and audio over the internet become mainstream, audio stream integrity will become very important.

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