Star TECH

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Sound Blaster

The Sound Blaster family of sound cards was for many years the de facto standard for audio on the IBM PC compatible system platform, before PC audio became commoditised, and backward-compatibility became less of a feature. The history of Creative sound boards started with the release of the Creative Music System ("C/MS") board in August 1987.The creator of Sound Blaster is the Singapore-based firm Creative Technology, also known by the name of its United States subsidiary, Creative Labs.

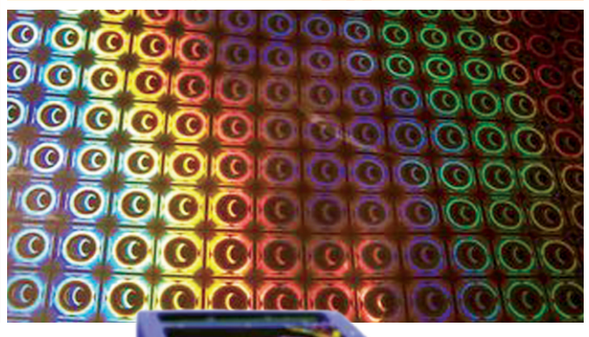
TECHFOCUS

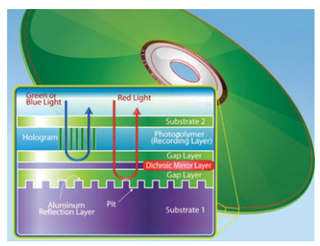
Memories of future

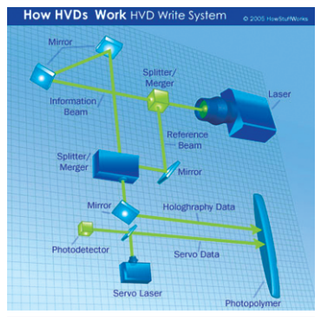
EDWARD APURBA SINGHA

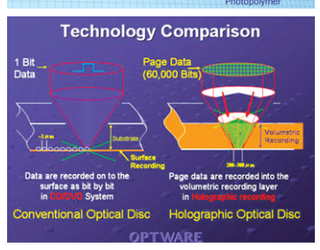
SURELY by this time you have become tired and at the same time frustrated as you have to upgrade your PCs memory so frequently. Ironically, new versions of operating systems or software consume lot of memory to handle different tasks efficiently.

Existing memory technologies face challenge due to their capacity limitations and for this reason researchers have been involved in inventing new technologies to fulfil the thrust. Holographic Memory was invented keeping such demands in mind.









Surprisingly Holographic memory is not a recent innovation and it exists around for more than 40 years, but several technical characteristics hinder the mass implementation of this exciting technology.

For instance, in this system, the reference beam and the information beam send into the recording medium on different axes. This requires highly complex optical systems to line them up at the exact point at which they need to intersect.

Another drawback has to do with incompatibility with current storage media. Traditionally, holographic storage systems contained no servo data, because the beam carrying it could interfere with the holography process. Previous holographic memory discs have been notably thicker than CDs and DVDs.

Nowadays Blu-Ray technology captured huge attention of technology loving people. This technology employs blue wavelength laser to read and write information to the disc. Initial storage capacity of a Blu-ray disc is 25GB for a single layer and 50GB with dual layer. Blu-ray disc products targeted to cover three major application areas such as desktop computer use and home video applications, professional broadcasting and professional data backup applications.

Manufacturers claim information stored into Blu-ray disc will remain readable for 30-50 years. To record data one can use program such as Roxio Digital Media LE version 7, which is bundled, with some of the Blu-ray recorders now available. Sony's Play- station 3 console incorporates Blu-ray technology.

High Density DVD (HD DVD) is another breakthrough technology that is also striving to gain the market-share. Initial storage capacity is around 15GB for a single layer disc and 30GB for a dual layer version. Like DVD, HD-DVD disc is manufactured by bonding two surfaces (substrates) together. Discs are available in a recordable (HD DVD-R & HD DVD-R DL), re-recordable (HD DVD-RW & HD DVD-RW DL), pre-recordable version (HD DVD-ROM) and Re-writable HD DVD-RAM.

Prior to understand holographic memory we should know what "holography" means. Holography is a method of recording patterns of light to produce a three-dimensional object. The recorded patterns of light are called a hologram. The process of creating a hologram begins with a focused beam of light -- a laser beam. This laser beam is split into two separate beams: a reference beam, which remains unchanged throughout much of the process, and an information beam, which passes through an image.

When light encounters an image the composition of it changes. In a reality, once the information beam encounters an image, it carries that image in its waveforms. When these two beams intersect, it creates a pattern of light interference. If you record this pattern of light interference -- for example, in a photosensitive polymer layer of a disc known as Holographic Versatile Disc (HVD) -- you are essentially recording the light pattern of the image.

To retrieve the information stored in a hologram, you shine the reference beam directly onto the hologram. When it reflects off the hologram, it holds the light pattern of the image stored there. You then send this reconstruction beam to a CMOS sensor to recreate the original image.

HVD developed by optware offers several advantages over traditional storage technology. HVDs can store more than 1 terabyte (TB) of information -- that's 200 times more than a single-sided DVD and 20 times more than a current double-sided Blu-ray. This is partly due to HVDs storing holograms in overlapping patterns, while a DVD basically stores bits of information side-by-side. HVDs also use a thicker recording layer than DVDs -- an HVD stores information in almost the entire volume of the disc, instead of just a single, thin layer.

The other major boost over conventional memory systems is HVD's transfer rate of up to 1 gigabyte (GB) per second -- that's 40 times faster than DVD. An HVD stores and retrieves an entire page of data, approximately 60,000 bits of information, in one pulse of light, while a DVD stores and retrieves one bit of data in one pulse of light.

Optware has implemented some changes in its HVD that could make it a better fit for the consumer market. In the HVD system, the laser beams travel in the same axis and strike the recording medium at the same angle, which Optware calls the collinear method. According to Optware, this method requires a less complex system of optics, enabling a smaller optical pickup that is more suited to consumer use.

Recently Molecular memory is also gradually gaining popularity. Molecular memory is a type of experimental data storage technology which hopes to supplant DRAM memory as the lowest cost technology for high-speed computer memory.

Molecular memories are based on special compounds such as prophyrin-based polymers which are capable of storing electric charge. Once a certain voltage threshold is achieved the material oxidizes , releasing an electric charge. The process is reversible, in effect creating an electric capacitor. The properties of the material allow for a much greater capacitance per unit area than with conventional DRAM memory, thus potentially leading to smaller and cheaper integrated circuits.

References: wikipedia.org, tomshardware.com, howstuffworks.com

TECHLOOKBACK

Intel technology and industry leadership highlights 2006

STARTECH DESK

IN 2006, Intel Corporation introduced the most products in its history with industry-leading performance advantages that will change personal and business computing, says a press release.

The summer was highlighted by the introduction of the Intel Core 2 Duo and Intel Xeon processor families across Intel's product lines. In November, Intel introduced the world's first quad-core processor for mainstream servers, workstations and high-end desktop PCs.

Intel also plans to extend its manufacturing and product leadership over the long term with accelerated micro-architecture development cycles and constant manufacturing advances already praised as the world's most advanced. Below are some of Intel's highlights in 2006.

2006 marks the true dawning of the multi core era. Intel in summer unveiled the Intel Core 2 Duo processor that offers undisputed performance leadership for laptops and PCs, and a version for servers. By mid-October, Intel had already shipped 6 million units. Intel Core 2 Duo processors for desktop computers use up to 40 percent less power and improve computer performance by 40 percent versus Intel's previous best microprocessor. Just four months later in November, Intel began selling Intel Core 2 Quad Core processors products that have four "chips" in them that further extended Intel's performance leadership.

Record number of processor introductions. Intel introduced a record 40-plus processor in more than 150 days that covered every major Intel product line and one to two quarters ahead of schedule. The summer introduction of the dual core, multi-threaded Itanium 2 processor helped the architecture become the fastest growing among all other non x86 offerings.

Highlights:

- Intel delivered the industry's first ever dual core laptops powered by Core Duo in January. In June, Intel announced the Core 2 Duo processor and improved the performance by another 20 percent over Core Duo.
- Unparalleled manufacturing, nanotechnology advantages, including three 65nm factories in full production, before most others produce even a single 65nm part. Intel is using its 65nm manufacturing capability to meet worldwide demand for Intel Core 2 Duo processors and other new products.
- Apple goes all Intel. Intel worked closely with Apple to complete its entire transition to Intel architecture in just 7 months -- from desktops to laptops, workstations and servers.
- Intel added market-focused brands. Following the success of Centrino for laptops with wireless networking, the company launched Intel Viiv technology for in-home entertainment computers and then Intel vPro, a technology platform for more manageable and secure business Pcs.
- Intel is working around the world and with emerging countries and local economies to bring the benefits of computers to emerging nations. Platforms including Eduwise, the Rural PC and Discover the PC bring such features as PCs for a child's education in China to those that include special netting and a car battery to keep bugs out.

INTEL TECHNOLOGY HIGHLIGHTS 2006

2006 — Intel launches Intel Viiv technology, the company's premier brand for PCs designed for entertainment in the home to enjoy, share, manage, and control digital content—from photos and music to games and movies.

2006 — Intel announces Intel vPro technology, its forthcoming PC platform brand optimized for businesses. Intel vPro technology is Intel's premier platform for superior manageability, enhanced security, and energy-efficient performance.

2006 — Intel launches the Intel Core2 Duo processor for drastically improved performance and energy efficiency. The Intel Core 2 desktop processors provide up to a 40 percent increase in performance and are more than 40 percent more energy efficient versus Intel's previous best processor.7

2006 — Intel estimates that there are close to one billion Internet-connected PCs worldwide.

PHOTOTECH

LIVING ROOM PC

Japan's electronics giant Sony employee displays the new living room PC with digital braodcasting tuner "Vaio TP1DT" and a 46-inch LCD television set at the company's showroom in Tokyo on January 18, 2007. The new discus shaped PC, equipped with Intel's Core2Duo processor with Windows Vista OS and 500GB HDD, can record, pause and rewind high-definition TV programs for on-demand playback. Sony will put it on the market soon with an estimated price of 200,000 yen (1,700 USD).

TECHNEWS

Asus P5L-MX

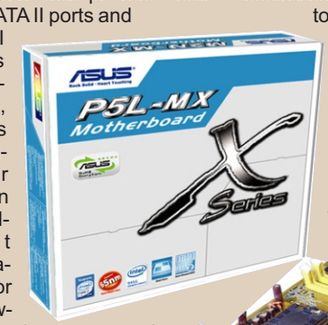
Valuable 945G mATX solution!

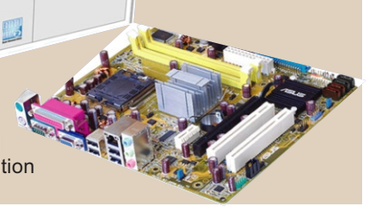
STARTECH DESK

THE combination of Intel Core2 processor with Asus P5L-MX is great. This motherbard supports DirectX 9 integrated graphics, PCI-Express VGA when you're ready for upgrade, furthermore, SATA II, DDR2 memory support, and even Gigabit LAN, says a press release.

This motherboard supports the latest Intel Core2 processors in LGA775 package. With new Intel Core microarchitecture technology and 1066 / 800 / 533 MHz FSB, Intel Core2 processor is one of the most powerful and energy efficient CPU in the world.

The motherboard, equipped with Intel 945G is the latest and one of the most powerful chipsets in personal computing. It supports 1066MHz FSB (front-side-bus), PCI Express x16 graphics card interface and dual-channel DDR2 memory, and Intel' s dual-core CPU for fast multi-tasking. Intel Graphics Media Accelerator 950 provides a significant increase in graphics performance. Combined with the Intel ICH7 that provides four Serial ATA II ports and PCI Express interface, this motherboard is an excellent foundation for a powerful desktop.





The onboard 6-channel HD audio (High Definition Audio, previously codenamed Azalia) Codec enables high-quality 192KHz/24-bit audio output, jack-sensing feature, retasking functions and multi-streaming technology that simultaneously sends different audio streams to different destinations. You can now talk to your partners on the headphone while playing a multi-channel network games. All of these are done on one computer.

The Motherboard has a price-tag of Taka 6,300/- only.