

Toshiba, NEC and Memory-Tech to Spotlight the Latest Advances in Next Generation HD DVD

July 27 2004

Toshiba Corporation, NEC Corporation and Memory-Tech Corporation today announced a three-day "HD DVD Showcase" that will present the latest advances in the HD DVD format to 1,000 key executives from 150 companies in Japan's entertainment industry. The three companies, proponents of the High-Definition DVD format ("HD DVD"), will host the event from July 26 through 28, 2004 in downtown Tokyo, providing leaders from major Japanese movie studios, animation film creators, the broadcasting, music and publishing industries and the retail sector, with a total venue for experiencing the impressive advances HD DVD has achieved as it moves toward its 2005 launch as the next-generation DVD standard.

The Tokyo Showcase will shine a light on the very latest hardware prototypes supporting the format, including HD DVD players and PC ROM drives. It will include demonstrations of film clips from major studios authored and recorded on to HD DVD discs for technical evaluation purposes, and also deliver an update on disc manufacturing status, all in preparation for the volume launch of HD DVD hardware and discs when they are commercialized in 2005.

Japan's largest DVD distributor announces support for HD DVD On the eve of the Tokyo event, Pony Canyon Inc, Japan's largest distributor of DVD titles, became the first company in the world to announce its clear support for HD DVD. "HD DVD is a promising



format that will secure continuous growth of the DVD industry as well as bringing about fresh innovation to the consumer experience," said Hideki Oyagi, General Manager, Visual Entertainment Headquarters, Pony Canyon. "We very much look forward to launching HD DVD titles at an early stage of 2005, in line with the expected launch of HD DVD players and recorders." The initial titles for release include "Moonlight Jellyfish," a Japanese Hi-Vision movie.

Commenting on Pony Canyon's decision, Mr. Yoshihide Fujii, Corporate Senior Vice President and President and CEO of Toshiba's Digital Media Network Company, noted: "We are pleased by this formal announcement of support for the HD DVD format by Japan's largest supplier of DVD titles. This is a clear sign of recognition of the benefits and potential this advanced format offers the entertainment industry as the most affordable, the most realistic package media for inheriting and building on the legacy and success of the DVD industry. We are confident we will see a number of major studios and software companies launch titles to coincide with our release of HD DVD products in 2005."

Continuity: Extending the successes of today's DVD industry

DVD burst on to the market in November 1997. Toshiba introduced the world's first DVD player in Japan, while a number of international movie studios launched a handful of DVD titles. The rest is history, as the DVD market has grown explosively, to embrace and change the entertainment, consumer electronics and computing industries.

More than 60 million DVD players and recorders were produced worldwide in 2003 alone, and an estimated 800 DVD disc production lines manufacture now produce more than 240 million discs a month. Digital Entertainment Group of the US reports that 649 million DVD titles were shipped to retailers in the first six months of 2004 in the United States, a huge 52 percent increase over the same period a year earlier. In the US and Japan, DVD revenues exceeded movie theater



ticket sales in 2003.

By adopting the same, fully backward compatible design concept as current DVD, HD DVD is the only practical medium that can secure seamless continuity and the sustained success of the current DVD industry. The new HD DVD format also assures maximization of business opportunities offered by the appearance of high-definition programming and content that is accompanying the transition to digital broadcasting in the United States and Japan and the exponential market growth in large-sized flat panel screens.

"HD DVD, the successor of DVD, will further encourage the convergence of PC and audio visual products, as it realizes crystal-clear picture quality in the personal computing environment," commented Mr. Hiroshi Gokan, Executive General Manager, NEC's Computers Storage Products Operations Unit.

ROM: Key for momentum in the next-generation format

"The success of today's DVD industry clearly indicates that the timely release of movie and audio titles on read-only memory discs will be key to triggering the take-off of the next-generation DVD format," predicts Mr. Shiroharu Kawasaki, President and CEO of Memory-Tech Corporation, Japan's leading disc replicator. "We are working with almost every major studio in the United States and Japan to establish the HD DVD format through extensive joint evaluation, and already getting strong, positive feedback from many of these companies."

Memory-Tech installed HD DVD disc mass production line at its Tsukuba plant in Ibaraki Prefecture, Japan in May 2004. The facility has a capacity of 1.4 million discs a month, and an authoring and mastering system that is already available for comprehensive disc creation. Production yields have already reached 90 percent, a level practical for volume production of commercial discs and comparable with the 95



percent yield rate of current DVD discs. The flexible convertible line can switch between standard DVD and HD DVD production in five minutes. Memory-Tech's Kofu Plant in Yamanashi Prefecture will also be ready for HD DVD production this August, doubling the company's total capacity to 2.8 million discs a month.

In order to support and expedite the early diffusion of this promising format. Memory-Tech and Toshiba are preparing to disclose and provide expertise on disc manufacture to major disc replicators around the world, starting in late August.

Background

What is HD DVD? Why it is gaining real, worldwide support HD DVD, or high-definition DVD, is the next-generation DVD format that allows recording of more than eight hours of high-resolution movies on a single ROM disc (in case of 30-gigabyte (GB), double-layer ROM disc), using a blue-laser diode and advanced video compression technology. Today's DVD ROM discs contain 8.5GB on a singe-sided, double-layer disc.

HD DVD has made steady progress over the last six months as the only official format authorized and approved by the DVD Forum, the international association that brings together some 220 consumer electronics, entertainment, software and other related companies around the world. In November, 2003, the DVD Forum approved version 0.9 of the physical specifications for the HD DVD ROM format, followed by the release of the specifications Book version 1.0 in June, 2004. This February, the Forum approved version 0.9 of the HD DVD rewritable, with final approval expected this autumn. Technical studies have been also completed for HD DVD-R, a one-time recordable version of the format, and disk evaluation tests are being conducted by the DVD Forum in preparation for possible adoption of version 0.9 this



September.

MPEG4 AVC (H.264) and VC-9 were selected as the mandatory video compression schemes by the DVD Forum in June 2004. Both achieve three times the compression efficiency of MPEG-2, the video compression technology used in current DVDs.

In the area of copy protection, a key concern of film studios, a major step was taken this July, when the Advanced Access Content System License Administrator, comprising eight major US and Japanese firms in the entertainment, IT and CE industries, was formed to define and promote a highly advanced copy protection system for next-generation optical discs.

Same disc structure as today's DVD

With 0.6-millimeter thick discs bonded back to back, HD DVD discs adopt completely the same disc structure as current DVD discs. Because of that, disc manufacturers will be able to utilize their current disc manufacturing lines with only minimum upgrades. To cover the anticipated global demand for next-generation, high-capacity optical discs, building new plants to produce discs with a completely different disc structure that adopts a 0.1 millimeter-thick cover layer, for example, is estimated to require a gross new investment in excess of 400 billion yen worldwide. Meeting the same capacity with HD DVD will require far less investment, as currently operational DVD plants around the world can be fully utilized with minor modifications, while additional capacity can be filled with brand-new convertible lines built from scratch.

For further information please access the official web sites indicated below: www.toshiba.co.jp/index.htm

www.nec.com/



www.memory-tech.co.jp/index_e.html www.ponycanyon.co.jp/

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