

Product Report: Intel-based Portable Media Player

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[This product report provides a fairly good idea about the Intel-based Portable Media Player (PMP) – technologies involved with it, desirable features, potential bottlenecks, alternative technologies that can improve the product, etc. Audience is expected to be technically competent people with background in video communications.]

Introduction

The PMP is a new type of mobile entertainment product. PMPs are designed to be portable player for audio, video, and still images. Intel-based PMPs are powered by Intel's XScale Technology-based PXA255 processor. PMPs are the next step in the evolution of handheld digital entertainment by connecting to the PC for content creation, while allowing anytime, anywhere access to favorite authorized video, pictures and music residing on PMP. Intel and Microsoft are working together with Samsung Electronics, SANYO, iRiver America, Creative Labs, and ViewSonic to build devices based on Intel's Xscale Technology and Microsoft's Media2Go platform. [1] [2] [3]



Europeans will be the first to get Intel-based PMPs during the second half of 2004 [4]. I visited some local stores and the only PMPs available were RCA Lyra audio/video Jukebox (Model RD2780, price \$399.99) and ARCHOS Video AV320 + MP3 Player (Model AV320, price \$549.99) [5].

Design Factors: Portability, weight, size, storage, quality, battery life, and cost

Intel-based PMP

Having PMP means taking the digital home on the go. Intel-based PMPs are expected to perform the followings [2],

- Create an exciting, feature rich, and high quality user experience
- Enable users to enjoy video, still images and music in a device small enough to fit in a coat pocket
- Accommodate the quick transfer of different types of media from a PC or Personal Video Recorder using USB 2.0
- Deliver high video performance with low battery consumption

Technologies involved in PMP includes [6],

Hardware – initial design based on Intel XScale Technology-based PXA255 processors
Software – Microsoft Media2Go software platform
(Real-time) OS – Microsoft's Windows CE .NET (and Linux)

Potential bottlenecks

Video compression is no more an issue. For mobile and wireless devices like Intel-based PMPs some critical issues are power consumption, bandwidth, copy protection, and security. These issues have not been addressed in Intel's original design and can be potential bottlenecks in the future.

Desirable features [7]

- High quality video and audio playback
- H.264 codec support for high quality video with excellent compression
- Macromedia Flash support for interactive games, video, catalogs, and more
- Comprehensive Real and Windows Media codec support
- PC software for transcoding and secure transfer of content
- USB 2.0 support for fast data transfers (different types from different sources)
- Re-skin able, touch-screen compatible, and TV-formatted user interface
- Completed integration with the Implicit Server
- Large storage and low power consumption

Alternative technologies to improve the product

In order to perform various tasks different vendors introduced core processors such as ARM RISC processors, TI OMAP processors, Intel XScale/PXA255, Apple G5, and Sun UltraSPARC. ARM and OMAP are the best choices if performance, power, cost, mobility, and security are considered. I would not be surprised if ARM, OMAP, or G5 replaces PXA255 in future. The unit can conceivably use FireWire (instead of USB 2.0) interfaces, but it is absence from Intel's original plans. "Longhorn", Microsoft's next version of Windows (XP is the first) may replace Media2Go. Apple (or somebody else) may come up with iPod like PMPs to outperform Microsoft's Intel-based PMPs.

My thoughts

Intel-based PMP is a new type of device in the field of portable (mobile and wireless) media players. One can think that Archos jukebox is the closest thing to it, which has nowhere near the same size screen. Some people are excited and waiting for Intel-based PMPs. Regardless of all the controversy in the market, there should be similar devices from other vendors as well.

Resources (personally visited/contacted)

- [1] Intel Corporation, General Inquiries at (800) 628-8686 in US, www.intel.com
- [2] <http://www.intel.com/design/pca/otherdevices/>
- [3] <http://www.bit-tech.net/feature/17/>
- [4] <http://www.arstechnica.com/news/posts/1079626795.html>
- [5] Best Buy, Circuit City; Boca Raton, FL, USA
- [6] <http://www.intel.com/labs/features/cn01031.htm>
- [7] <http://www.microsoft.com/presspass/press/2003/jan03/01-09M2GLaunchPR.asp>