ZiiLABS unveils 100-Core ZMS-40 processor: Double the performance, half the power consumption

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ZMS-40 StemCell Media Processors

ZiiLABS, a pioneering media processor and platforms company (a wholly-owned subsidiary of Creative Technology Ltd), today unveiled its ground-breaking 100-core ZMS-40 StemCell Media processor optimized for Android. The ZMS-40 combines 96 of ZiiLABS' StemCell media processing cores with four 1.5GHz ARM Cortex-A9 CPUs to deliver stunning multi-tasking application and media processing performance.

By doubling the number of StemCell Media processors compared to the previous ZMS-20, the ZMS-40 delivers twice the peak media performance, while running the larger array at lower clock speeds to achieve the same performance leads to greater energy efficiency and a reduction in power consumption of up to 50 percent. With 2X the

performance and 2X the power efficiency, the ZMS-40 delivers ground-breaking media capabilities to handheld devices such as tablets, including ultra-high-resolution H.264 HP decoding of up to 3840x1080 for true 1080p 3D stereo, a rich and interactive desktop browsing experience, 2560x1600 (WQXGA) display resolution support, higher-quality video encoding and immersive OpenGL ES graphics and future support for High Efficiency Video Coding (HEVC).

The up-and-coming HEVC standard (also known as H.265), besides other qualitative benefits, can also increase data compression ratio by up to 2X as compared to H.264. These technology wizardries are achieved by requiring many more times the computational complexity. HEVC claims to target the next generation Hi-Def TV market which can support scalable resolutions from 320x240 to 1080p with improved picture quality in terms of noise level, color and dynamic range, and all the way up to an incredible resolution of 7680x4320. Being fully programmable and with their massive parallelism, the 96 cores of StemCell Media processors can easily handle the onerous computational requirements of this new CODEC and support higher resolutions that are beyond today's display systems.

The latest ZiiLABS MandelMark data highlights how the increase in size of the StemCell array results in a 2X increase in performance or a 50% reduction in power consumption. MandelMark is ZiiLABS' OpenGL ES 2.0 shader implementation of the Mandelbrot algorithm and is designed to test the computing performance of modern GPUs. Additional information on MandelMark can be found at: www.ziilabs.com/mandelmark

The ZMS-40 supports ZiiLABS' enhanced Android 4.0 implementation that complements the standard Android offering with a rich suite of software to exploit the massive computing power of the ZMS processor and includes support for:

• ZiiPhoto for intelligent photo browsing, 3D slide show and special photo effects,

• ZiiCamera for real-time preview and capturing of photos with 3D effects; live ultra high resolution 40 megapixel Panoramic photo capture in one sweep; and high dynamic range images,

• ZiiVideo for advanced video playback including 1080p WebM (VP8) support and trick modes (such as reverse play, frame-by-frame advance and reverse, multi-speed play and more), and skip to any part of a movie by browsing a timeline with thumbnails,

• Creative Sound Blaster X-Fi's Crystalizer and CMSS-3D audio effects.

ZiiLABS' enhanced Android supports not just cloning of the device display onto a TV but also APIs to enable dual independent displays, where the TV is showing a different screen from the device. For example, a user could be browsing the web for information while watching an HD video on the TV all at the same time. This usage model has a tremendous range of applications, and is only made possible due to the power of the ZMS-40.

"The ZMS-40 continues our strategy to deliver ground breaking processors, hardware platforms and software solutions that enable our partners to differentiate and win market share in the Android tablet space," said Hock Leow, President of ZiiLABS. "Our customers demand innovation and ready-for-market solutions and with ZMS-40, JAGUAR and the latest Android software we continue to deliver phenomenal performance, features and value."

"We are already working through the draft specifications of High Efficiency Video Coding (HEVC) and expect the flexibility and performance of the ZMS-40 to meet the challenging computation

complexity of this emerging CODEC in order to deliver higher-quality and lower bandwidth." said Tim Lewis, Director of Marketing at ZiiLABS.

"The tablet market for China is going to explode, especially with China's recent emphasis on digital textbooks, digital school bags and digital classrooms for all of its students. We have gained tremendous momentum by working with various partners in this vertical segment of the market alone during the past year," said Sim Wong Hoo, Chairman and CEO of Creative Technology Ltd. "The ZMS-40 further allows us to design and develop a breath-taking 4th generation Android tablet aimed squarely at the Chinese market. Leveraging on the vast Chinese computing technologies and educational content expertise we have mustered over the decades, we have developed a beautiful, ultra-slim, ultralight Chinese tablet with Chinese characteristics and unprecedented performance based on the ZMS-40 and Android 4.0 with our very own Chinese platform."

"We are now forging ahead to form a Chinese Tablet Alliance with several major Chinese partners both in the horizontal and vertical market segments to further develop, build and market this timely tablet, ” added Sim. “Details of this Chinese tablet and the alliance will be unveiled soon."

Android 4.0 (ICS) tablets and associated design-kits based on the ZMS-40 will be showcased at the ZiiLABS suite (Venetian) in Las Vegas between 10 - 13 Jan at the CES 2012 tradeshow.

Provided by Creative Technology

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