

NEWS RELEASE

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Synopsys Introduces Dolby TrueHD Decoder and Dolby Digital 5.1 Creator Encoder for DesignWare ARC Sound Audio Processors

Dolby Codecs Expand the Audio Software Portfolio Optimized for ARC Sound IP Solution

MOUNTAIN VIEW, Calif., August 8, 2011 -- Synopsys, Inc. (Nasdaq: SNPS), a world leader in software and IP for semiconductor design, verification and manufacturing, today announced the availability of two Dolby™ software codecs for the popular [DesignWare® ARC™](#) Sound AS211SFX and AS221BD audio processors. Dolby TrueHD™ and Dolby Digital 5.1 Creator™, implemented in DesignWare ARC Sound processors, deliver multi-channel, high-definition sound quality and have been certified by Dolby for use in DesignWare ARC Sound devices. The integration of these Dolby audio codecs within DesignWare ARC Sound processors enables system-on-chip (SoC) designers to more efficiently implement high-quality audio in a wide variety of commercial products including digital home theater systems, digital recorders, digital TV, personal media players and other consumer electronics.

"Synopsys delivered a comprehensive IP solution with hardware, software and fully certified codecs to meet all our embedded audio requirements," said Robert Chen, president of AVID Electronics. "Taking advantage of Synopsys' DesignWare ARC processors and audio codecs saved us at least nine months of development and validation effort and enabled us to release our latest portable audio SoC products on schedule and with full compliance to the approved standards."

“We are pleased that Synopsys has selected Dolby TrueHD and Dolby Digital to facilitate its customers in the delivery of enhanced audio performance across a wide range of media,” said Craig Eggers, Blu-ray Ecosystem Product Marketing, Dolby Laboratories. “These technologies can help audio-enabled devices deliver a richer, more immersive experience.”

The DesignWare ARC Sound IP solution is a comprehensive hardware and software offering that includes codecs, audio processors, media frameworks and [DesignWare Sonic Focus](#)® audio post-processing software. The [DesignWare ARC Sound AS211SFX](#) audio processor incorporates a dual MAC (Multiply-Accumulate) for efficient audio processing, making it possible to run at lower frequency and therefore reduced power consumption, while offloading audio processing tasks from the host processor. The [DesignWare ARC Sound AS221BD](#) audio processor, specifically developed for HD audio and Blu-ray Disc™ applications, can run the full range of high definition codecs with an architecture that enables flexible execution of concurrent audio processing tasks. Synopsys’ family of DesignWare ARC Sound audio codecs is optimized for performance and ease of integration into SoCs and is fully compliant to audio standards including AC-3, MPEG4, AAC-LC, WMA and MP3. The media streaming framework provides a software interface that allows users to rapidly implement multi-codec audio-processing while retaining a modular design. In addition, Synopsys’ Sonic Focus audio post-processing software helps overcome limitations of data compression by restoring clarity, warmth, detail and realism from digitally compressed audio.

“By providing Dolby TrueHD and Dolby Digital 5.1 Creator for its audio processors, Synopsys continues to demonstrate the scalability of our end-to-end DesignWare ARC Sound IP solution and our support for the latest audio technologies,” said John Koeter, vice president of marketing for IP and Systems at Synopsys. “Synopsys’ optimized DesignWare ARC Sound processors, which include approved Dolby codecs, are specifically designed to significantly reduce the amount of integration and testing SoC designers must do to deliver high-fidelity audio performance in their consumer entertainment products.”

Dolby TrueHD and Dolby Digital 5.1 Creator are audio coding technologies targeting high-definition consumer and home entertainment applications. Dolby TrueHD is Dolby’s lossless multi-channel audio technology. It is intended primarily for high-definition disc-based media such as Blu-ray Disc. Dolby Digital 5.1 Creator is a version of Dolby Digital perceptual

audio coding optimized for consumer applications, making it possible to store high-quality digital sound far more efficiently than storing conventional PCM recording. This surround sound audio technology is designed to deliver up to 5.1 channels of audio to many popular forms of entertainment and is used in digital TVs, camcorders, digital still cameras, DVDs and Blu-ray Discs.

Availability

The DesignWare ARC Sound Dolby TrueHD decoder and the Dolby Digital 5.1 Creator encoder, optimized for the AS211SFX and AS221BD audio processors, are available now. The AS211SFX and AS221BD processors are available now. For more information, visit: http://www.synopsys.com/arc_audio.

About DesignWare IP

Synopsys is a leading provider of high-quality, silicon-proven IP solutions for SoC designs. The broad DesignWare IP portfolio includes comprehensive interface IP solutions consisting of controllers, PHY and Verification IP for widely used protocols, analog IP, embedded memories, logic libraries, embedded test & repair IP and configurable processor cores. In addition, Synopsys offers SystemC™ transaction-level models to build virtual prototypes for rapid, pre-silicon development of software. With a robust IP development methodology, reuse tools, extensive investment in quality and comprehensive technical support, Synopsys enables designers to accelerate time-to-market and reduce integration risk. For more information on DesignWare IP, visit: <http://www.synopsys.com/designware>. Follow us on Twitter at http://twitter.com/designware_ip.

About Synopsys

Synopsys, Inc. (Nasdaq: SNPS) is a world leader in electronic design automation (EDA), supplying the global electronics market with the software, intellectual property (IP) and services used in semiconductor design, verification and manufacturing. Synopsys' comprehensive, integrated portfolio of implementation, verification, IP, manufacturing and field-programmable

gate array (FPGA) solutions helps address the key challenges designers and manufacturers face today, such as power and yield management, system-to-silicon verification and time-to-results. These technology-leading solutions help give Synopsys customers a competitive edge in bringing the best products to market quickly while reducing costs and schedule risk. Synopsys is headquartered in Mountain View, California, and has approximately 70 offices located throughout North America, Europe, Japan, Asia and India. Visit Synopsys online at <http://www.synopsys.com/>.

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