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## Innovation winners span analog ICs to EDA

**O**n Monday, April 2, in San Jose, CA, *EDN* again honored the most innovative products and engineers at the 17th rendition of the *EDN* Innovation Awards. As always, we had an outstanding set of nominees. I appreciate the diligent work of the *EDN* staff in selecting finalists. And thanks to all of the readers and the *EDN* Editorial Advisory Board members that voted. You will find the full list of winners on pg 53.

I'd like to highlight a few of the winners here and spotlight how the winners match industry trends and map to trends in consumer products. Without a doubt, consumers buying digital-media products are now directly driving the tech industry. The PC is still vitally important, although the PC now arguably fits into the consumer category. The communication segment also remains key, but remember: Those digital consumer products drive much of the market growth in communications. Even segments such as automotive these days include a tremendous amount of digital-media technology.

The best example of enabling technology matching the digital-media trend came in the new category of mixed-signal ASSPs (application-specific standard products). In the past, we've force-fit these types of products into one of the other digital categories or into the broad analog-IC category.

The mixed-signal category included a motor controller from International Rectifier that cuts energy use and boosts efficiency in white goods, a software-driven radio from Cambridge Silicon Radio that supports Bluetooth and FM operation, and a miniature microphone from Akustica that deliv-

ers a digital output. All creatively mix the analog interface to the real world with digital circuits that simplify end-product design and improve the product. The winner, the Akustica digital MEMS (microelectromechanical) microphone, will find use in a variety of products ranging from mobile handsets, to audio recorders, to PDAs.

Every year, we have a broad set of EDA entries. The toughest challenge is always splitting the large number of entries into categories in which the products are somewhat comparable. It's not a perfect science, but Berkeley Design Automation's SPICE program in the front-end-IC category and Cadence's space-based router in the back-end-IC category are both vital in designing for the digital-media world.

I certainly don't want to minimize the importance of pure-digital technologies. Intel did perhaps its best work in more than a decade with the Core 2 Duo processor. The behemoth may have taken awhile to embrace lower clock speeds and multiple cores. But Intel looks to have hit a home run with its new architecture. We're also witnessing the emergence of the DSC (digital-signal controller) as a new

class of processor that melds DSP and traditional processor architectures. Texas Instruments offers a prime example with its winning entry in the microcontrollers and DSCs category.

Plenty of other enablers of digital-media products are on the winners list, as well as the Agilent Medalist bead-probe technology, which enables testing of complex ICs for compelling end products. Winners include Freescale's Class D audio IC and video-codec technology from LSI Logic.

Ironically, however, the Innovator of the Year and the winner in the broad digital-IC category don't at first glance appear to fit the digital-media mold. I beg to differ. Xilinx took on a huge range of challenges, from moving to 65-nm-process technology to finding the right mix of programmability and hard-wired intellectual property in the Virtex-5 LXT FPGA design. Despite the move to a presumably leakier process node, the design yielded a 35% reduction in dynamic power consumption relative to 90-nm designs.

The Innovator of the Year award went to Xilinx's Steve Douglass, Suresh Menon, and their team of more than 200 engineers around the globe. Join me in congratulating the entire team and their dedication to the profession. The Virtex-5 LXT design will have an impact on the digital consumer market. The chip will surely find immediate use in the infrastructure products that feed bits to digital devices. Moreover, the lessons Xilinx learned in pushing the process envelope will trickle down into products that directly enable consumer products. Finally, FPGA advancements have time and again scaled over a few short years to meet the cost and power requirements of consumer-design challenges. Well done, Xilinx.

(Now I must get back to work. I think I've already missed my first deadline on the 2007 Innovation Awards planning calendar.) **EDN**

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