

SOUND INNOVATION™

Welcome to *Sound Innovation*™, the quarterly newsletter created by Akustica to keep you abreast of technology advancements that can help you deliver the voice improvements demanded by your customers. Each quarter, we explore topics affecting voice communications and provide you with leading-edge information that will help you understand emerging trends and evaluate new offerings.

AKUSTICA MAKING WAVES IN THE INDUSTRY



From launching our first three products to being selected as "Product of the Year" by a leading industry publication, it has been an exciting and productive year for Akustica. In 2006, the first three issues of *Sound Innovation* were focused on educating laptop and tablet PC manufacturers on the best practices for integrating digital microphone arrays in order to achieve the highest quality voice input solutions in their upcoming platforms. Specifically we discussed:

- How Akustica digital microphone products enable the best voice quality for VoIP and speech recognition applications in a laptop.
- How to design an integrated digital microphone array in a laptop using the best acoustic and electronic design practices.
- What Akustica is doing to move the industry forward towards ubiquitous RTC (Real Time Communications).

This issue of *Sound Innovation* wraps up by showing how all of Akustica's activities and accomplishments this year support these efforts and presents our vision for 2007.

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AKUSTICA NEWS and ARTICLES

- Electronic Products names Akustica family of microphones "Product of the Year".
- Electronic Design names Akustica microphones "Leapfrog Technology of the Year"
- Industry Embraces CMOS MEMS Platform
- Akustica's Digital Microphone Chip Improves Voice Quality on Fujitsu's Top-Selling Convertible Tablet PC
- *Sound Innovation* Vol. 2, No. 3 - Akustica Supports a New Era in Mobile Communications.

WHAT OTHERS ARE SAYING

- *EE Times*: MEMS chips accelerate for drive to market
- *EE Times*: MEMS best-practice definition varies by vendor
- *Electronic Design*: Mic-On-A-Chip's Future Sounds Good to the Industry

INDUSTRY EVENTS

- **Semico Summit**
March 12-13
 - **CeBit**
March 15-21
 - **CTIA Wireless**
March 27-29
 - **Embedded Systems Conference**
April 1-5
- [➔ Click here to meet with Akustica at any of these events](#)

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AKUSTICA MAKING WAVES IN THE INDUSTRY

By Dr. Marcie Weinstein, Director of Strategic Marketing

PRODUCTS AND CUSTOMERS: We kicked off 2006 by launching our first product and the world's first single-chip digital MEMS microphone, the AKU2000. As of the publication of this newsletter, Akustica digital microphones remain the only single-chip digital microphones available today. This was followed by the important announcement of the first adoption of both a digital microphone array and Akustica digital microphones by Fujitsu Computer Systems Corporation for use in their LifeBook Q2010 laptop PC. Since that announcement in May, Fujitsu has launched three additional platforms: the LifeBook T4215, LifeBook P1610, and Lifebook P7230 that also utilize Akustica digital microphones.



In the following two quarters of 2006, Akustica announced the availability of two new products in the digital microphone family, the AKU2001 and the AKU2004. These two products demonstrated Akustica's ability to quickly incorporate customer feedback on features into a product using our CMOS MEMS technology. A description of each of the digital microphone products that Akustica launched in 2006 is given in the table below.

Comparison of Akustica Digital Microphone Products			
	AKU2000	AKU2001L/R	AKU2004
Output Type	PDM Output	Tri-state PDM Output	Tri-state PDM Output
Package Footprint	4mm x 4mm	4mm x 4mm	4mm x 6mm
Package Type	Undermount	Undermount	Topmount
Number of Leads	4	4	6
L/R Selection	N/A	Hardwired	User Select
Ideal Applications	Single microphone applications.	Embedded microphone arrays for laptops or other array applications requiring a minimum number of wires.	Single-sided PC board applications such as embedded camera modules with high quality voice input.
Picture			

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INDUSTRY RECOGNITION: Finally, throughout 2006, Akustica saw a number of industry publications recognizing Akustica's CMOS MEMS technology and leadership as well as our digital microphone products through a number of awards including:

<p><i>Electronic Products</i>, earns "Product of the Year" for its AKU2000, AKU2001 and AKU2004 family of digital microphones.</p>	
<p><i>Electronic Design</i> - winning "the most significant Leapfrog technology of the year," according to the publication's readers.</p>	
<p><i>EDN</i> names the AKU2001 on of the "Hot 100 Products of the Year".</p>	
<p><i>MICRO/NANO</i> 25 Award - recognizing the AKU2000 as one of the year's 25 notable "technologies of tomorrow," according to R&D Magazine and its newsletter <i>MICRO/NANO</i>.</p>	
<p><i>SEMICON West</i> Technology Innovation Showcase winner—a recognition that placed Akustica's products in the company of the most innovative emerging technologies in MEMS, nanotechnology and energy.</p>	
<p><i>Small Times</i> - Earning a finalist position for Small Times Magazine Best of Small Tech Business Leader of the Year Award for James H. Rock, co-founder, president and chief executive officer of Akustica, Inc.</p>	
<p><i>EE Times</i> announces Akustica's CTO, Kaigham (Ken) Gabriel as Innovator of the Year .</p>	

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PARTNERS: Throughout the year, Akustica announced strategic manufacturing partners and distribution partners that have helped Akustica ramp to high-volume production of our digital microphones as well as position the company for rapid expansion and adoption in international markets.

A big focus this year at Akustica was on reference designs and partner programs. In 2006, Akustica announced two reference designs targeted at the laptop PC market. The first reference design announced in May 2006 was with IDT, a leading audio CODEC manufacturer, who worked closely with Akustica to provide the industry's first High Definition Audio (HDA), digital microphone array reference design for laptops. For customers that prefer a USB audio interface, Akustica also announced the first reference design for an integrated PC camera module with a digital microphone array with partner Ricoh Company Ltd.



Both of these reference designs enabled our customers to quickly and easily take advantage of digital microphone arrays by providing an optimized interface to the digital microphone. To this end, in September Akustica announced the formation of the industry's first certification program for CODECs that interface with Akustica digital microphones. The Akustica Certification program validates the functionality required for integration of digital microphone arrays and leads to shorter design times by ensuring manufacturers a straightforward and seamless implementation of digital microphone arrays.



OUTLOOK: 2007 promises to be another exciting year for Akustica as we expect to announce more PC notebook design-ins complementing the launch of Microsoft® Windows Vista™ and the next-generation Intel® Centrino™ Pro platform. Akustica also plans to expand to new markets and announce new reference designs for other voice enabled consumer electronics devices that will help the designers of devices such as mobile phones to respond to user-demand for higher quality voice input. Also, look for the expansion of the Sensory Silicon platform into new types of products such as RF and inertial devices that will help to support the integration of new features into mobile devices while at the same time maintaining the small form factors expected in today's mobile devices. We thank our customers, partners, and friends for your support throughout 2006 and look forward to another exciting year ahead.

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