



## FOR IMMEDIATE RELEASE

### **AKUSTICA LAUNCHES THE WORLD'S FIRST SINGLE-CHIP MICROPHONE**

*--Based on CMOS MEMS technology, Akustica microphones solve acoustic performance issues in laptops, mobile phones, digital-video and still cameras*

Monterey, CA/Globalpress—February 27, 2006—Akustica, a pioneer in microelectromechanical systems (MEMS) technology, today announced at the Globalpress Electronics Summit the availability of Akustica Microphone Chips, the first single-chip microphones on the market. The Akustica Microphone Chips are small, thin, light devices designed to replace the Electret Condenser Microphone (ECM), a fifty-year old technology that has been used in billions of portable electronic devices—while remaining fundamentally unchanged. The ECM, however, is limited by a number of acoustic issues: From RF noise, environmental noise, and mechanical/electromagnetic noise, the ECM cannot be used to easily eliminate all this mechanical and ambient noise—creating a number of pain points for millions of users of mobile phones, laptop computers and other digital media devices. As a silicon microphone, Akustica's Microphone Chips are not prone to the same degree of noise from any of these sources—thereby enabling superior acoustic environments.

Akustica's Microphone Chips also offer numerous benefits to consumer electronics manufacturers. Because of their small size and surface-mountable design, Akustica's Microphone Chips are ideally suited to space-constrained consumer electronics devices that are manufactured in high volumes. As the first MEMS devices manufactured using standard Complementary Metal Oxide Semiconductor (CMOS) processes, Akustica's Microphone Chips can be manufactured in quantity, with guaranteed uniformity, by existing CMOS foundries—rather than by dedicated MEMS foundries. Easier manufacturing increases access to the chips, lowering costs.

“With the consumer electronics industry recognizing the demand for improved voice input quality, our launch of the world's first single-chip microphones could not come at a better time,” said Jim Rock, co-founder and CEO, Akustica, Inc. “On the one hand, we are mainstreaming MEMS devices with our Microphone Chips for a broad consumer audience. On the other, we are helping manufacturers of laptop PCs, mobile phones and other digital media devices to overcome

the acoustic problems that have seriously limited the widespread adoption of VoIP and other voice-based applications in the past.”

Yole Développement, industry analysts closely following this market, forecasts significant growth for the silicon microphone market, projecting an increase from 100 million units in 2005 to a TAM of 800 million units by 2010. “The MEMS industry is changing: The winning companies are delivering devices with embedded functionality. Featuring small size and easier integration, these devices also leverage the benefits of the semiconductor infrastructure in terms of manufacturing and cost structure. Companies such as Akustica are using this model to pave the way to high-volume applications,” said J-C Eloy, general manager of Yole Développement.

#### **Akustica’s Microphone Chip: The AKU2000**

Akustica’s first Microphone Chip is the first CMOS MEMS chip in the industry. It is a surface-mountable, automatic pick-and-place compatible, monolithic device that provides high-quality voice input for consumer electronics applications. The AKU2000 is a digital-output silicon microphone that is optimal for use in microphone array applications requiring a high degree of noise immunity. The AKU2000 integrates an acoustic transducer, output amplifier and a 4th order sigma-delta modulator on a single chip. The AKU2000 is ideal for microphone array applications where multiple microphones will be used together to perform noise cancellation and/or beamforming. Additionally, the AKU2000 is suited for other portable applications requiring RF/EM noise immunity and low power including cell phones and digital cameras. The small form factor and surface-mount capability of the AKU2000 allows placement of the microphone in very thin profile end-user devices. The AKU2000 is sampling now and is priced at \$3.87 per unit in 1,000 piece quantities.

#### **Akustica’s Unique IP: CMOS MEMS**

Akustica’s patented CMOS MEMS technology is an industry first in both the new products it enables and the fabrication methods by which those products are manufactured. Unlike other MEMS devices which must be fabricated by special MEMS foundries, Akustica’s CMOS MEMS structures are composed of the metal-dielectric structures within a standard CMOS wafer. Since they are fabricated using the industry-standard CMOS processes and equipment currently used to make integrated circuits, CMOS MEMS chips can be manufactured in any CMOS foundry worldwide. In fact, CMOS MEMS device fabrication has been proven in nine different foundries and eleven different CMOS technologies, ranging from a 0.6µm three-metal process to a 0.18µm

copper interconnect process. The result is a technology that can be mass-produced in extremely high volumes with the accompanying high yields and repeatability associated with semiconductor manufacturing. This makes Akustica's CMOS MEMS extremely attractive from both a performance and a manufacturing point of view.

Industry analysts commented on Akustica's CMOS MEMS platform:

"Akustica's ability to combine sensors and integrated circuits on a single silicon die using a standard CMOS process is a huge step forward for MEMS technologies," said Marlene Bourne, MEMS industry analyst with Bourne Research. "The use of an economical, high-volume fabrication process is truly a turning point for the MEMS industry and one that will open new doors. By taking the CMOS MEMS approach, Akustica's Microphone Chips are well positioned to fulfill a real market demand."

"Akustica's use of standard CMOS processes to produce MEMS allows it to take advantage of Moore's law, enabling MEMS to enter the consumer markets and go mainstream at last," stated Stephen Cullen, Contributing Analyst, InStat.

### **About Akustica**

Founded in 2001, Akustica, Inc. is a privately held company based in Pittsburgh, PA. Through a revolutionary technology known as Sensory Silicon™, Akustica products enable electronic devices to sense and respond to the world around them. By leveraging standard CMOS processes and MEMS technology, Akustica acoustic system-on-chip solutions combine the functionality of microphones with microelectronics and software onto a single chip. Only Akustica's CMOS MEMS Microphone Chips—which were pioneered by Dr. Ken Gabriel during his tenure at Carnegie Mellon University—enable single-chip solutions with arrays of transducers and integrated signal processing that disrupt both conventional microphone and speaker technologies. Smaller and more reliable than the current crop of ECMs, silicon microphones can be customized with advanced sound capture features and noise reduction capabilities. For more information on Akustica, please contact us via phone: (412) 390-1730, Fax (412) 390-1737, email:

[contact@akustica.com](mailto:contact@akustica.com) or web: [www.akustica.com](http://www.akustica.com).

-end-

Akustica and the Akustica logo are registered trademarks and Sensory Silicon is a trademark of Akustica, Inc. All other product and company names are trademarks or registered trademarks of their respective holders.

**PRESS CONTACTS (not for publication):**

AKUSTICA, INC.

Davin Yuknis

Phone: 412/390-1730

Email: [dyuknis@akustica.com](mailto:dyuknis@akustica.com)

VETRANO COMMUNICATIONS

Maria Vetrano

Phone: 617/876-2770

Email: [m.vetrano@vetrano.com](mailto:m.vetrano@vetrano.com)