

# Press Release



March 9, 2015

## Akustica Hears the Call for High Quality Voice Input Introduces Two New High Performance Microphones

- ▶ AKU151 delivers the world's only microphone with both very high SNR and high performance density (SNR/mm<sup>3</sup>) in a tiny top-port package
- ▶ High performance AKU350 delivers an outstanding 67dB SNR
- ▶ New products leverage the in-house design and manufacturing capabilities of the world's #1 MEMS supplier

PITTSBURGH – March 9, 2015- [Akustica](#), Inc., a Bosch Group company and provider of MEMS microphones, expands the Bosch consumer MEMS sensor portfolio with the addition of two new, highly robust, high performance analog microphones. The AKU151 is a tiny, top-port microphone with both high SNR and high acoustic performance density (SNR/mm<sup>3</sup>), and the AKU350 is an ultra-high performance 67dB SNR bottom-port microphone. The new microphones leverage Akustica/Bosch's latest MEMS, ASIC, and package designs and enhanced manufacturing processes to deliver the industry-leading performance and quality requested by consumer electronics manufacturers and expected from Bosch, the world's leading MEMS sensor supplier.

According to IHS, the MEMS microphone market will exceed \$1.4B by 2018, almost doubling in size from 2012, with high performance microphones (>64dB SNR) being the quickest growing and largest segment of the market. This growth is being fueled by an increased focus on voice-input quality by smartphone manufacturers who are integrating multiple MEMS microphones into each smartphone to achieve improved noise suppression and speech recognition accuracy for their end users. In recent years, MEMS microphones have also become increasingly important for use in wearable devices which rely on voice as a key user interface such as headsets, smart glasses, and smart watches. These space-constrained, battery-operated devices bring a whole new set of acoustic challenges to device manufacturers who need microphones that are smaller and lower power but still provide high acoustic performance to address far-field use cases where the user's mouth is farther away from the microphone.

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### **In-House Design and Manufacturing Advantages**

Akustica's newest microphones once again demonstrate the advantage of combining in-house MEMS, ASIC, and package design with in-house fabrication facilities. The microphones are the first to make use of new ASIC design elements that optimize performance depending on the target market. The two new microphones are also the first to be built using a new MEMS architecture and fabrication process which includes additional material layers and optimized thicknesses of current layers. And, the AKU151 is the world's first microphone to use an advanced, metal-lid, direct-port package.

The final performance of a MEMS microphone depends not only on how each component of the design performs independently, but also on how all pieces interact and perform together as a microphone system. In particular, high performance MEMS microphone design requires outstanding modeling capabilities, broad system understanding, and tight control of all aspects of design and fabrication. The combination of these competencies is what results in superior microphones that exceed customer requirements for acoustic performance and robustness. Akustica/Bosch is the world's only MEMS microphone supplier with all of these proficiencies under one roof, thereby enabling the type of industry-leading technical innovation that has been demonstrated by Akustica's recent introductions of its first and second generation HD microphone families, and again with the introduction of the AKU151 and AKU350.

### **AKU151 – Industry Leading Top-Port Acoustic Performance Density**

The AKU151, in its tiny 5.4mm<sup>3</sup> package, presents consumer device manufacturers with a durable, RF-immune microphone in the top-port configuration that is easiest for use in their high volume assembly lines. Unlike other microphones where a smaller package typically results in lower performance, the AKU151 delivers a high SNR of 65dB, meaning that the AKU151 delivers almost twice the acoustic performance density (SNR/mm<sup>3</sup>) of any other top-port MEMS microphone. The AKU151 is also optimized for low power applications, consuming only 60µA during standard, full-performance operation, making it ideal for use in applications like wearables which require small, high performance microphones but have limited battery life.

### **AKU350 High Performance Bottom-Port Analog Microphone**

The AKU350 is a robust, bottom-port, metal-lid, 9.1mm<sup>3</sup> microphone with a single-ended output that provides an outstanding 67dB SNR and a tight +/-1dB sensitivity matching. With its high SNR and accompanying microphone-to-microphone uniformity, the AKU350 is optimized to meet the needs of smartphone manufacturers who use multiple microphones with noise cancellation algorithms. These algorithms rely on well-

matched, high-performance microphones to deliver superior noise suppression and speech recognition accuracy to the end user.

Higher accuracy microphones can significantly improve the quality of sound recordings made with mobile devices. This is particularly evident when one is making a recording of a quiet or distant sound whose signal level approaches the inherent noise level of the microphone. As Akustica recently demonstrated at the Consumer Electronics Show in Las Vegas, making a recording using a microphone such as the AKU350 - with a higher SNR than a typical smartphone MEMS microphone - can eliminate the hiss that can often be heard in recording playback, resulting in a crisper, more realistic sound.

“Akustica’s customers continue to benefit from the unique combination of experienced designers and industry-leading facilities that we have at our disposal as part of the Bosch Group,” said Horst Muenzel, CEO and General Manager, Akustica. “Nobody else in the world has the capabilities that we have. This is what allows us to uniquely respond to our customer’s needs and to deliver new, innovative microphones with higher performance, more uniformity, greater robustness, and smaller footprints.”

### **Availability**

Samples of both products are currently available. For samples and customer pricing information, please visit [www.akustica.com/contact.asp](http://www.akustica.com/contact.asp) to find a local sales representative. For more information, please visit [www.akustica.com](http://www.akustica.com).

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**About Akustica:**

*Akustica is a wholly owned subsidiary of the Bosch Group and a top supplier of silicon microphone products that are improving voice-input quality in a host of voice-enabled applications, from mobile phones, laptops and tablets to small wearable accessories like headsets. The company offers worldwide customer support services, from design-in services to post-production quality assurance.*

*Akustica is a global organization with corporate headquarters in Pittsburgh, PA, regional offices in Taiwan and Shanghai, and a worldwide team of distributors. For more information about Akustica, go to: [www.akustica.com](http://www.akustica.com).*

*The Bosch Group is a leading global supplier of technology and services. According to preliminary figures, its roughly 290,000 associates generated sales of 48.9 billion euros in 2014. Its operations are divided into four business sectors: Mobility Solutions, Industrial Technology, Consumer Goods, and Energy and Building Technology.. The Bosch Group comprises Robert Bosch GmbH and its more than 360 subsidiaries and regional companies in some 50 countries. If its sales and service partners are included, then Bosch is represented in roughly 150 countries. This worldwide development, manufacturing, and sales network is the foundation for further growth. In 2014, Bosch applied for some 4,600 patents worldwide. The Bosch Group's strategic goal is to deliver innovations for connected life. Bosch improves quality of life worldwide with products and services that are innovative and spark enthusiasm. In short, Bosch creates technology that is "Invented for life."*

*Additional information is available online at [www.bosch.com](http://www.bosch.com), [www.bosch-press.com](http://www.bosch-press.com), <http://twitter.com/BoschPresse>*

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