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AT&S, Soundchip, and STMicroelectronics Craft Innovative Bionic Ear

Global leaders in packaging design, electro-acoustics, MEMS sensors/micro-actuators, and microprocessor technology team up to develop smart, sensor-rich in-ear audio module that delivers game-changing, wearable sound experience

Leoben, Austria and Genève, Switzerland, 16 September 2014 - AT&S, a leader in advanced packaging solutions, Soundchip SA, a Swiss-based innovator in wearable sound technology, and STMicroelectronics (NYSE: STM), a global semiconductor leader serving customers across the spectrum of electronics applications, today announced their collaboration in innovating a bionic hearing module that, when installed into a personal audio device, delivers an amazing wearable sound experience controlled at the ear by the wearer and software intelligence.

Personal audio devices, like an MP3 player or smartphone, equipped with the bionic hearing module, provide wearers with the ability to electronically “open” and “close” their ears to ambient sound conditions, or even to augment ambient sound with programmed audio from a connected smart device. This capability can fully protect wearers from noise in situations where the ambient sound is too loud, or to open the ear for natural conversation with others, without having to remove the audio device, suffer from the discomfort of occlusion, or worse, the pain of loud noise.

The bionic hearing module integrates a broad spectrum of advanced electronics to further enhance the on-the-go audio experience, including head-tracking and other sensing, to enable exciting new features, including augmented-audio guidance and biometric monitoring.

The multi-mode audio capabilities of the bionic hearing module are enabled through the use of HD-PA® technology developed by Soundchip. Their implementation in a compact form factor is made possible through the use of patented Soundstrate® technology, which enables the efficient combination of electronic, acoustic, and transmission means within a single, compact mechanical structure.

The semiconductor components in the bionic hearing module comprise the latest Motion and Audio MEMS (Micro-Electro-Mechanical System) components from STMicroelectronics, an HD-PA®-compliant Audio Engine for zero-latency sound processing, and an ultra-low-power STM32

MCU from ST's industry-leading portfolio of more than 500 32-bit ARM® Cortex®-M-core microcontrollers.

The bionic hearing module's packaging employs the latest in ECP® (Embedded Component Packaging) and 2.5D® PCB (Printed Circuit Board) technology from AT&S, which is capable of integrating acoustic, electroacoustic, passive and active electronic components with unmatched efficiency, providing module dimensions ideally suited to the comfort and size constraints of in-ear operation, and compatible with most existing in-ear-type personal audio devices.

"For the past four years, Soundchip has been leading the parade for smart wearable sound to market-leading companies in the consumer, mobile and aviation markets. We have been thrilled by their response and now see that consumers are ready to experience a new wave of smart, software-enabled wearable sound devices," said Mark Donaldson, CEO of Soundchip.

"Enabling bionic hearing demands the interconnection of robust and reliable high-performance silicon components within a complex structure—that must be comfortable to wear. By combining our leading MEMS and micro-processing devices with complementary solutions from Soundchip and AT&S, we have the right combination of technology and know-how to deliver this ground-breaking solution," said Andrea Onetti, Volume MEMS & Analog Division General Manager, STMicroelectronics.

"Very-small form-factor devices—especially those that will be worn in ear--demand highly integrated designs and packaging technologies at the leading edge. AT&S, as the foremost supplier of ECP® and 2.5D® packaging solutions, is strongly positioned to enable the bionic ear, and we are thrilled to be joining Soundchip and STMicroelectronics in bringing this exciting technology to market," said Michael Tschandl, VP Sales Advanced Packaging, AT&S.

The bionic hearing module is expected to be available for customer sampling by the second quarter of 2015.

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About AT&S:

AT&S is the European market leader and one of the leading manufacturers of high-value printed circuit boards. The Group produces leading-edge technologies on an industrial scale for its business segments: mobile devices, automotive and aviation, industrial electronics, medical and health care, and advanced packaging. In 2013 AT&S took the next logical step towards implementing its high-tech strategy by entering the IC substrate business, through a collaboration agreement with a leading global semiconductor manufacturer. As an international growth enterprise AT&S has a global presence, with two production facilities in Austria (Leoben and Fehring) and one each in India (Nanjangud), China (Shanghai, Chongqing under construction) and Korea (Ansan, near Seoul). It currently employs about 7,300 people.

For more information visit www.ats.net.

About Soundchip SA:

Soundchip develops revolutionary, HD-PA[®]-compliant wearable sound solutions for the world's leading suppliers of consumer electronics devices and passenger entertainment systems. The company's solutions enthral listeners with their environmentally resilient sound performance, enhanced speaking comfort and software-enabled, smart-audio capabilities.

For additional information, please visit www.soundchip.ch.

About STMicroelectronics N/V:

ST is a global leader in the semiconductor market serving customers across the spectrum of sense and power and automotive products and embedded processing solutions. From energy management and savings to trust and data security, from healthcare and wellness to smart consumer devices, in the home, car and office, at work and at play, ST is found everywhere microelectronics make a positive and innovative contribution to people's life. By getting more from technology to get more from life, ST stands for life.augmented.

In 2013, the Company's net revenues were \$8.08 billion. Further information on ST can be found at www.st.com.