

ams introduces world's first noise cancellation speaker driver ICs to produce zero audible hiss

Innovations in latest ANC devices include ultra-low noise amplifiers and integrated bypass switches

Unterpremstaetten, Austria (17 September, 2013), ams AG (SIX: AMS), a leading provider of high performance analog ICs and sensors, has introduced the AS3435 and AS3415 ANC speaker drivers, paving the way for a new generation of noise cancellation stereo headsets with zero audible hiss.

The AS3435 and AS3415 are also the industry's first ANC (active noise cancellation) ICs to feature integrated bypass switches, offering headset manufacturers the freedom to create sleeker – and cheaper – industrial designs.

The AS3435, for feedback systems, and AS3415, for feed-forward systems, are the latest additions to the renowned portfolio of analog ANC ICs from ams. Incorporating new ultra-low noise amplifiers with a 900nV input referred noise floor, the devices are the first ANC speaker drivers to produce no audible high-frequency hiss when paired with low-noise microphones.

This means that manufacturers of audiophile products can replace existing ANC solutions with the AS3435 and AS3415 to provide users with an improved listening experience, benefiting from the devices' outstanding audio characteristics including 35mW stereo output power with THD+N of 0.1% into a 32Ω load and a typical signal-to-noise ratio of >110dB.

The new ANC ICs from ams also provide for improvements to the mechanical design of a headset's housing. Conventional ANC headsets require a mechanical switch, to activate a bypass mode. When the headset's battery is completely discharged, the user must bypass the noise cancellation function in order to continue listening to music via the Line In channel. The need to accommodate this switch constrains the design of the headset's housing and circuit board.

The AS3435 and AS3415, however, feature integrated bypass switches, so that the music signal coming from the 3.5mm audio jack may be routed through the ANC chipset without any power source connected to the device. By eliminating the external switch, this feature helps to reduce bill-of-materials cost and the size of the PCB, as well as relieving the designer of the need to accommodate a mechanical switch on the headset's housing.

At the same time, the devices' analog implementation of noise cancellation provides for power consumption often two or three times lower than equivalent digital solutions. Featuring typical power



consumption of 10mW at 1.5V in noise cancellation mode, either device can support operation for more than 100 hours from a single AAA battery.

ams has supported the introduction of the AS3435 and AS3415 ANC ICs with the release of an improved design tool, enabling the quicker and easier development of the filter networks that match the operation of noise cancellation to the sonic characteristics of the headset design.

The straightforward graphical interface of the Windows-based ams tool can display the entire signal chain across the user's screen, and provides a SPICE module for simulating the operation of filter architectures.

In the AS3435 and AS3415, ams has also added a new bass boost equalization capability, eliminating the need for a discrete signal processing IC to perform equalization functions.

'We incorporated these new features at the request of the industry leaders in the noise-cancelling headsets. The AS3435 and AS3415 will help headset OEMs to achieve new high levels of audio quality in their next designs,' said Oliver Jones, marketing manager for ANC products at ams.

Price & Availability

The AS3415 and AS3435 ANC speaker driver ICs are available for sampling now. The AS3435 feedback ANC IC is priced at \$3.90 for 1,000 pieces. The AS3415 feed-forward ANC IC is priced at \$3.50 for 1,000 pieces. The AS3435 is in a QFN36 package, and the AS3415 in a QFN32 package, both 5mm x 5mm.

Technical Support

An evaluation kit for the AS3435 and AS3415 is available online from ams. For further information on the AS3415/AS3435 or to request samples, please visit www.ams.com/ANC/AS3415 and www.ams.com/ANC/AS3435

About ams

ams develops and manufactures high performance analog semiconductors that solve its customers' most challenging problems with innovative solutions. ams' products are aimed at applications which require extreme precision, accuracy, dynamic range, sensitivity, and ultra-low power consumption. ams' product range includes sensors, sensor interfaces, power management ICs and wireless ICs for customers in the consumer, industrial, medical, mobile communications and automotive markets.

With headquarters in Austria, ams employs over 1,300 people globally and serves more than 7,800 customers worldwide. ams is the new name of austriamicrosystems, following the 2011 acquisition of optical sensor company TAOS Inc. ams is listed on the SIX Swiss stock exchange (ticker symbol: AMS). More information about ams can be found at www.ams.com.



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