Noise cancelling ICs enable improved clarity in Bluetooth and wired mono headsets

Unterpremstaetten, Austria (October 27, 2011) – austriamicrosystems today announced two new additions to its active noise cancellation (ANC) IC family for improved hearing in noisy environments. Both the AS3400 and AS3420 feature the lowest power available, resulting in at least 20 % longer battery life than other ANC solutions. They also improve audio performance [BUL1] over competing solutions with a 10 dB positive SNR -- no matter the environment -- improving intelligibility in wired or wireless mono communication headsets.

The AS3420 is a fully differential ANC speaker driver IC specifically designed to connect directly to common SoC's for mono Bluetooth applications. It can also be used with other types of wireless headsets. The fully analog implementation reduces ambient background noise and achieves the lowest power and the best received voice quality. The AS3420 Bluetooth speaker driver can be used in both feed-forward and feedback configurations. The device allows for the development of simple low-order filters as well as complex multiple-order filters, thanks to the integrated low noise amplifiers. In addition, the microphone input features a fully differential low-noise amplifier, adjustable gain over 128 steps, and OTP (one time programmable) ROM for factory setting of gain.

Complementing the AS3420, the AS3400 is a low-power ANC speaker driver designed to reduce ambient background noise in wired headsets and improve the quality of conversations or listening to music. Like the AS3420, the AS3400 can be configured for feedback or feed-forward operation. Both receive path ICs deliver up to 30 dB of noise reduction, provide click- and pop-less operation at start-up and during mode switching. They also include highly efficient, low THD (total harmonic

distortion) headphone amplifiers -- 0.1 % and 0.03 % for the AS3420 and AS3400, respectively. Both driver ICs draw just 3.8 mA at 1.5 V and less than 1 µA quiescent current in mono mode.

“How many times do you say ‘Could you repeat that please, I didn’t quite understand you’”, commented Oliver Jones, austriamicrosystems’ Marketing Manager for Audio products. “People want to stay in touch, no matter where they are. Active noise cancelling significantly improves listening quality even in mono applications. Solutions that implement the ANC function digitally via software enhancements require more power and do not achieve the same performance. That approach simply increases the sound volume in loud environments and, under certain conditions, distorts the caller’s voice.”

The AS3400 is housed in a 4 x 4 mm QFN24 package; the AS3420 comes in a QFN20 4 x 4 mm package. Both speaker driver ICs operate with a 1.0 to 1.8 V supply and are specified over a -20 to +85°C temperature range.

Price and availability

The AS3400 and AS3420 are available now and are priced at $2.10 and $1.95, respectively, in 1000-piece quantities. A demo board is also available to speed development time. For more information on the new AS3400/AS3420 and the demo board, please visit http://www.austriamicrosystems.com/audio/ANC [1]

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