

ALANGO COMPANY NEWS

December 19, 2019

Alango OnlyVoice™ Technology Preserves Clear Voice

Hands-free communication via headphones is convenient, but only if the person on the other end of the call — or the voice assistant — hears and understands what's communicated, even when speech originates from a noisy environment.

Consumers are attracted to the new breed of hearables and OEM's are responding with sleek headphone designs such as the increasingly popular True Wireless Stereo "TWS" form-factor. Unfortunately, voice signal acquisition techniques employing microphone beamforming have reached their practical performance limit. Technological advancement of voice acquisition is necessary to improve communication reliability and customer satisfaction for sustainable market growth in the next generation of communication headphones.

Neural network-based noise reduction algorithms have the potential to improve communication performance but are presently unsuitable for implementation in ultra-low power chipsets because of the significant computational resources required. However, there exists the potential to employ [advanced algorithmic noise reduction](#) utilizing a combination of a traditional microphone beamforming array with additional signal sources such as an [in-ear microphone](#) or [accelerometer](#). Alango has been engaged in developing internal sensor-based voice processing technology for the past three years.

Alango OnlyVoice improves communication intelligibility in noisy environments by employing in-ear signal sources, which due to their positioning are isolated from ambient noise. User's speech is acquired with either an [in-ear microphone via the eustachian tube](#) or an [in-ear accelerometer via bone conduction](#). The in-ear signal is combined with the external microphone's beamforming signal and intelligently mixed since the frequency limit of internal voice pick-up is effectively 1.5kHz. Hence, the combination of the in-ear sensor and external beamforming array is necessary to capture clear, full-spectrum speech. OnlyVoice breaks through the performance limitations of modern-day headphones.

The functionality of OnlyVoice includes acoustic echo-cancellation (AEC), noise reduction (NR), multi-microphone beamforming, gain control (AGC, DRC), equalization (EQ) and special processing combining acoustic microphone(s) with a vibration sensor or in-ear microphone. Processing occurs on both the transmit (Tx) and receive (Rx) channels. OnlyVoice also includes Voice Activity Detection (VAD) functionality allowing low-power always-listening operation of voice-activated devices.



Alango OnlyVoice
TECHNOLOGY PROTOTYPE
vs. Apple AirPods Pro

Noise reduction • 6 scenarios

The image shows a video thumbnail with a dark blue background. On the left, there are images of an Apple AirPods Pro case and a pair of black AirPods. In the center, there is a red YouTube play button icon. On the right, there is a white silhouette of a human head in profile, facing right, with a glowing blue light effect around the ear area. The Alango logo is visible in the top right corner of the thumbnail.

[OnlyVoice Demo Video:](#)

Alango OnlyVoice technology
vs. Apple AirPods Pro

Noise reduction compared in 6
scenarios

[Watch on YouTube](#)

More information about Alango OnlyVoice can be found [here](#).

Upcoming Events

Visit [Alango at CES 2020](#) to see and hear demos of our latest sound enhancement technologies.

We'll be on the 2nd floor of the Sands, booth 40219.

[Click here to set up a personal meeting](#) or email Robert Schragger at robert.schrager@alango.com.



CES 2020 INNOVATION AWARD PRODUCT

BeHear Access

By Alango Technologies, Ltd.

Honoree

Accessibility, Tech for a Better World



Alango Technologies | alango.com

