

Noise-free Voice: AI-based Noise Reduction

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Crosscall's newest smartphone benefits from Fraunhofer upHear

Sirens, traffic noise, and crowds. A wide variety of everyday noises interfere with clear, intelligible voice recordings and phone calls. Traditional noise reduction technologies struggle to effectively suppress all types of noises. This is why Fraunhofer IIS developed upHear AI-Based Noise Reduction as a feature within their Microphone Processing product range.

First responders such as police officers and firefighters are exemplary users of this feature, as clear and intelligible communication is key in hectic and dangerous situations. Field duties are often linked to a variety of loud, undesirable background noises. AI-powered noise reduction effectively removes all noises while preserving voice, streamlining communication with the office and other operational personnel. Indoor staff can understand first responders without any interruption, allowing the responders to work more efficiently. Additionally, on-site communication can run smoothly.

The upHear formula: minimum complexity and power consumption – maximum audio quality

"Most state-of-the-art AI-based noise reduction technologies achieve excellent performance; however, their high complexity and memory requirements demand significant processing power. This is a major challenge for battery-powered devices and makes these algorithms unsuitable for small devices like smartphones," says Edwin Mabande, Head of the Communication Acoustics Group at Fraunhofer IIS.

Even though AI algorithms are very complex by nature, Fraunhofer scientists have managed to create a sophisticated technology that requires surprisingly little processing power to provide what is arguably the best noise reduction solution on the market. The technology is reliable in a wide range of scenarios, which include many different languages and a wide variety of background noises. The icing on the cake: its low battery consumption makes it suitable for mobile devices.

The new, platform-agnostic technology, now available as a feature in Crosscall's latest Stellar X5 smartphone, delivers clear, intelligible speech. The new phone allows users to activate

and control the AI-Based Noise Reduction feature during in-app calls, video and audio recordings. It provides users with a high degree of freedom to deliberately choose what they want and need in the very moment: Users can choose to record background sounds if they want to create ambience or filter out any undesired noises to communicate efficiently.

upHear AI Noise Reduction at CES 2024

In January, visitors at CES in Las Vegas were able to try out upHear AI-Based Noise Reduction and all other solutions from the upHear range. The Stellar X5 and other solutions were demonstrated in the Fraunhofer IIS Venetian Tower Exhibit Suite at the world's most important consumer electronics trade show. Find out more about [Fraunhofer upHear](#).