ReSpeaker Mic Array v2.0 – Far-field w/ 4 PDM Microphones

Product Overview

The ReSpeaker Mic Array v2.0 is an upgrade to the original ReSpeaker Mic Array v1. This upgraded version is based on XMOS's XVF-3000, a significantly higher performing chipset than the previously used XVSM-2000. This new chipset includes many voice recognition algorithms to assist in performance. The array can be stacked (connected) right onto the top of the original ReSpeaker Core to significantly improve the voice interaction performance. The microphones have also been improved in this version allowing significant performance improvements over the first generation mic array with only 4 microphones.

The ReSpeaker Mic Array v2.0 supports USB Audio Class 1.0 (UAC 1.0) directly. All major Operating System, including Windows, macOS, and Linux are compatible with UAC 1.0, allowing the mic array to function as a sound card without the ReSpeaker Core, while also retaining voice algorithms, such as DoA, BF, and AEC on those systems.

The ReSpeaker Mic Array v2.0 is a great solution for those who wish to add voice interface into their existing products or future products. It also works well as an entry point to higher level voice interface evaluation. The board allows some flexibility for customization upon request.

The ReSpeaker Mic Array v2.0 has two firmware versions available, one including speech algorithms and a second for raw voice data.

Key Benefits

- Far-field Voice Capture

- Support USB Audio Class 1.0 (UAC 1.0)

- Four Microphones Array

- 12 Programmable RGB LED Indicators

- Speech Algorithms and Features

  - Voice Activity Detection

  - Direction of Arrival

  - Beamforming

  - Noise Suppression

  - De-reverberation

  - Acoustic Echo Cancellation

Hardware Features

- XVF-3000 from XMOS

- 4 High Performance Digital Microphones

- Supports Far-field Voice Capture

- Speech Algorithms On-Chip

- 12 Programmable RGB LED Indicators

- Microphones: ST MP34DT01TR-M

- Sensitivity: -26 dBFS (Omnidirectional)

- Acoustic Overload Point: 120 dBSPL

- SNR: 63 dB

- Power Supply: 5V DC from Micro USB or Expansion Header

- Dimensions: 70mm (Diameter)

- 3.5mm Audio Jack Output Socket

Applications

- USB Voice Capture

- Smart Speaker

- Intelligent Voice Assistant Systems

- Voice Recorders

- Voice Conferencing System

- Meeting Communicating Equipment

- Voice Interacting Robot

- Car Voice Assistant

- Other Voice Interface Scenarios

Hardware Overview