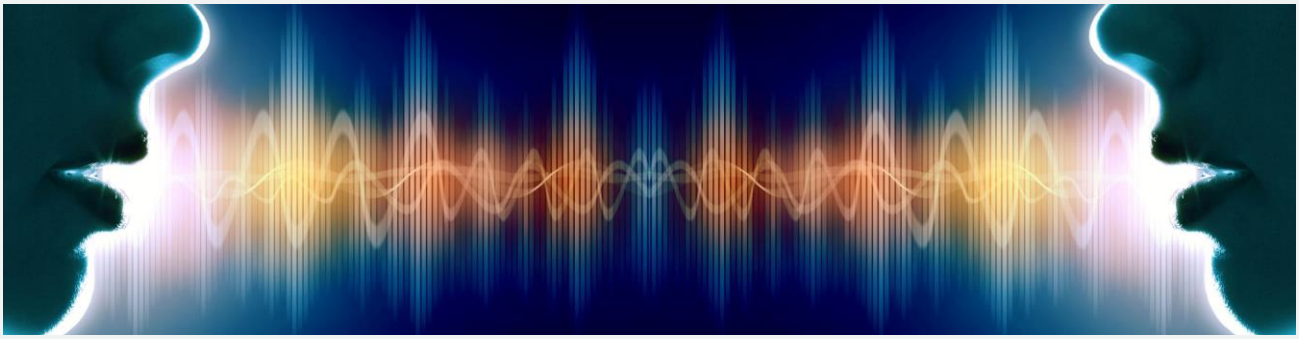
VocalFusion™ Stereo Dev Kit for Amazon AVS

FAR-FIELD VOICE CAPTURE FRONT END FOR DEVELOPING ALEXA-ENABLED PRODUCTS



KEY FEATURES

- **XVF3500 processor**
  - Programmable voice processor for far-field, voice capture applications
  - Integrated Voice DSP processing includes:
    - Full duplex stereo Acoustic Echo Cancellation (AEC) with barge-in and programmable AEC latency
    - Adaptive beamformer for linear arrays
    - Dereverberation, noise suppression, Automatic Gain Control (AGC)
  - 4-mic digital microphone interface
  - Inter-IC Sound (I^2S) audio interfaces
  - Inter-Integrated Circuit (I^2C) serial control interface
  - High speed USB2.0 compliant device
    - Multi-channel USB Audio Class 1.0
  - 167-pin FBGA package 0.5mm pitch
- **XVF3500 processor baseboard**
  - XVF3500 voice processor
  - Low jitter audio clock source
  - Stereo DAC with headphone amplifier
  - USB bus powered
- **Linear microphone array card**
  - 4x PDM MEMS microphones
  - 33.33mm inter-mic spacing

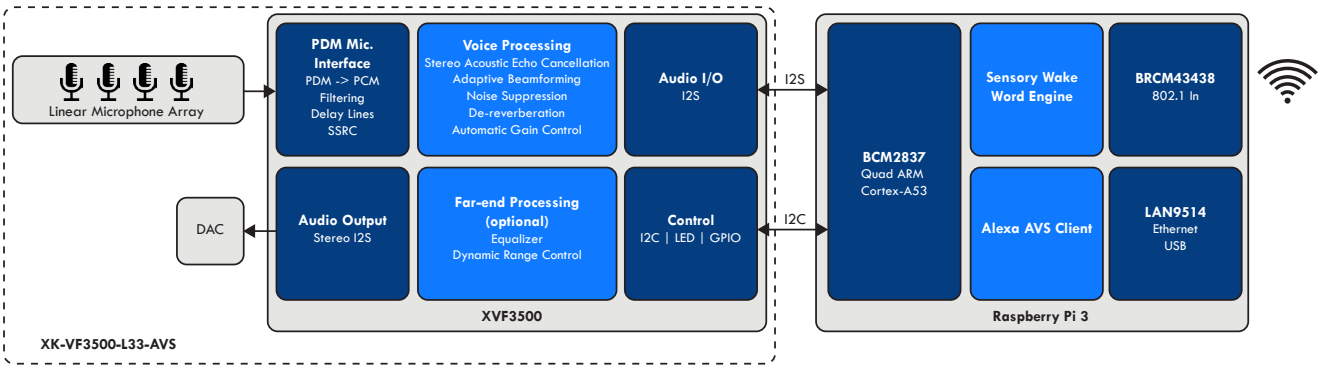
The VocalFusion Stereo Dev Kit for Amazon AVS enables developers of smart TVs, soundbars, set-top boxes and digital media adaptors to evaluate and prototype far-field voice interfaces using the Amazon Alexa Voice Service.

Built around XMOS' XVF3500 voice processor, the VocalFusion Stereo Dev Kit for Amazon AVS provides embedded far-field voice capture and processing. With direct interfacing to a linear array of four digital microphones, the VocalFusion Stereo Dev Kit for Amazon AVS (together with a Raspberry Pi) is an ideal platform for developers who want to integrate Alexa into 'flat' devices with stereo loudspeakers.

Enabling voice control of devices located 'across the room' from the user requires the challenges of distance, isolation, noise and directivity to be addressed, whilst also enhancing voice clarity. The XVF3500 achieves this using full-duplex stereo Acoustic Echo Cancellation (AEC) in combination with an adaptive beamformer and noise suppression, to locate the desired speech source and effectively isolate voice commands from the stereo audio the device is playing, while suppressing background noise and room echoes.

Getting started with VocalFusion Stereo Dev Kit for Amazon AVS couldn't be easier, find out how at www.xmos.com/vocalfusion-stereoavs.

FUNCTIONAL BLOCK DIAGRAM



VOCALFUSION STEREO DEV KIT FOR AMAZON AVS

Features

- XVF3500 processor base board
- Linear microphone array
  - 4x Infineon IM69D130 MEMS microphones
  - 100mm long, 33.33mm inter-mic spacing
- Raspberry Pi header
  I²S audio and I²C control connectivity
- Micro-USB connector for power
  (and optional USB2.0 device connectivity)
- Low jitter, audio quality clock
- DAC with integrated headphone amplifier
- 4 configurable user input buttons
- 13 user-controlled LEDs

ORDERING INFORMATION

For a list of XMOS distributors, please visit www.xmos.com/support/distributors.

Part number	Description
XK-VF3500-L33-AVS	**VocalFusion Stereo Dev Kit for Amazon AVS** **Contents:** XVF3500 base board, 100mm linear microphone array, mounting kit, xTAG debugger, USB cable x2, ribbon cable

Note: Other components required for evaluation are: a Raspberry Pi 3 (RPi 3) and USB power supply (minimum 2A), microSD card (minimum 16GB), USB keyboard and mouse, monitor, internet connection and a powered loudspeaker.

FURTHER INFORMATION

To learn more about XMOS and the VocalFusion Stereo Dev Kit for Amazon AVS, please visit www.xmos.com/vocalfusion-stereoavs