

reSpeaker XVF3800
AI-powered 4-Mic Array





PRODUCT DESCRIPTION

A professional 4-mic circular array based on XMOS XVF3800, enabling clear target voice capture in noisy environments. Features dual modes, 360° far-field voice pickup (up to 5m), AEC, AGC, DoA, VAD, dereverberation, beamforming, and noise suppression.

FEATURES

- **XMOS XVF3800 Upgrade**
Smarter voice processing for clearer voice capture—even in noisy environment.
- **Advanced Audio Processing**
Clear capture in tough environments—featuring Acoustic Echo Cancellation (AEC), multi-beamforming, de-reverberation, direction of arrival (DoA) detection, dynamic noise suppression, 60dB Automatic Gain Control (AGC).
- **4-Microphone Circular Array**
360° far-field voice pickup up to 5 meters, cuts through noise and echoes effortlessly.
- **Plug-and-Play Simplicity**
Standard USB interface enables easy connection with any USB-enabled device - from SBCs like Raspberry Pi and NVIDIA Jetson to PCs running Windows, Linux, or macOS. No drivers or complex setup required.
- **I2S Interface for MCU Integration**
Direct I2S support allows seamless integration with MCU platforms like XIAO Series and Arduino, enabling embedded voice applications with minimal hardware overhead.
- **Compact Design for Embedded Applications**
Bottom-firing microphones and a flat PCB for easy embedding into space-constrained devices without obstruction.

APPLICATION

- **Smart Voice Assistants:**
Seamlessly integrates with Amazon Alexa, Google Assistant, Home Assistant, and other mainstream voice platforms for far-field voice control and smart home automation.
- **Conference Systems:**
Compatible with Microsoft Teams, Zoom, and other popular conferencing software via USB Audio Class 2.0, delivering clear multi-person audio pickup and real-time status feedback.
- **Audio Processing Development:**
Ideal for developers working on audio signal processing, speech recognition, and acoustic algorithm prototyping with open-source platform support.
- **Robotics Voice Interaction & Control:**
Enables 360° voice localization, voice command recognition, and noise suppression for interactive robots, smart toys, and voice-controlled machines.
- **Industrial Voice Control:**



Supports robust voice command applications in factory, retail, and commercial environments, offering reliable performance in noisy and complex scenarios.

SPECIFICATIONS

PRODUCT MODEL

Model	reSpeaker XVF3800
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GENERAL PARAMETER

Core Chip	XMOS XVF3800
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Digital Microphones	High-performance digital microphones * 4
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Microphone Pattern	Circular array
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Sensitivity	-26 dBFS
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Acoustic Overload Point	120 dBL
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SNR	64 dBA
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Voice Pickup Range	Up to 5 meters, 360° far-field
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Power Supply	USB 5V, external 5V
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Dimensions	108mm x 108mm x 18mm
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Audio Output	Speaker Connector / 3.5mm Headphone jack
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Maximum Sampling Rate	16Khz
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Speaker	Supports 5W amplifier speakers.
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USB Interface	USB Type-C
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Storage	32 Mbit Flash
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AI Algorithms	AEC: Acoustic Echo Cancellation (full duplex)
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	AGC: Automatic Gain Control (60 dB range)
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GENERAL PARAMETER

DoA: Direction of Arrival detection

VAD: Voice Activity Detection

Multi-beamforming (3 beams: 2 focused + 1 scanning)

De-Reverberation

Noise Suppression: DNN-based, up to 25 dB

Beamformer Angle: 360 degrees
