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INDUSTRIAL PRODUCT DATASHEET

reSpeaker XMOS XVF3800 with XIAO ESP32S3 – AI-powered 4-Mic Array for Clear Voice Even in Noise

A professional circular 4-mic array based on the XMOS XVF3800.EquippedwithSeeedStudioXIAOESP32S3,itenables clear and precise target voice capture in noisy environments.

SKU	UPDATED	PRICE
114993700	2026-11-11 09:34:06	$60.90(Excl. VAT)



Overview



A professional circular 4-mic array based on the XMOS XVF3800.EquippedwithSeeedStudioXIAOESP32S3,itenables clear and precise target voice capture in noisy environments. Features dual modes (I2S/USB), 360° far-field voice pickup (up to 5m), on-board AI acoustic algorithms (AEC, AGC, DoA, VAD, dereverberation, beamforming, and noise suppression).

Key Features

01 **Professional AI Voice Capture**

Powered by XMOS XVF3800

02 **5mFar-field Voice CaptureCapture clear voice from up to 5 meters away, enabling reliable interaction in smart homes, robots, and conference environments.**

360°Voice Direction DetectionA circular 4-microphone array detects voice direction accurately from any angle with advanced DoA technology.

03 **Struggling with these voice interaction challenges?**

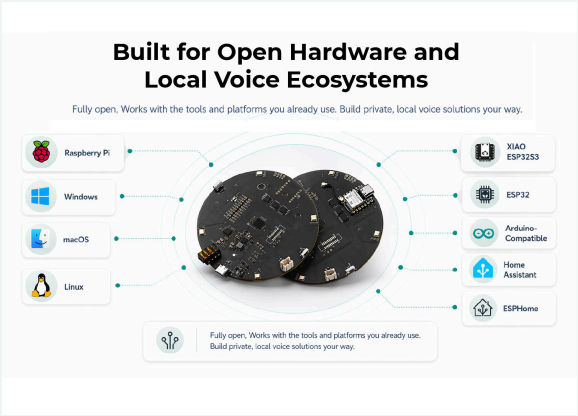
04 **Voice recognition becomes unreliable in noisy environments?**

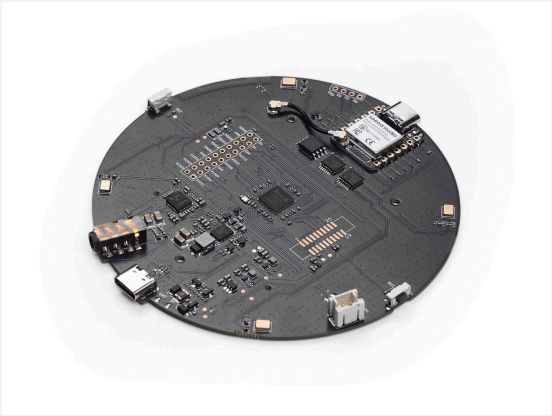
05 **Audio playback causes echo and disrupts voice interaction?**

06 **Voice input levels vary when users speak from longer or different distances?**

07 **reSpeaker XVF3800 is designed to solve these challenges with professional-grade voice front-end processing.**

Product Gallery

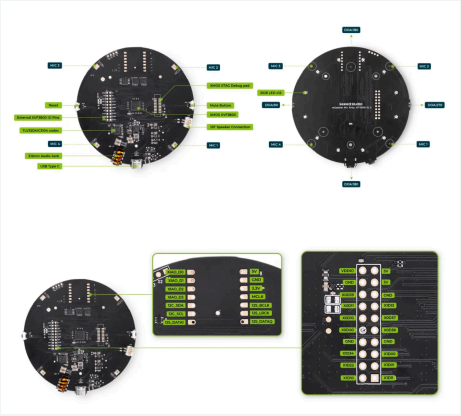


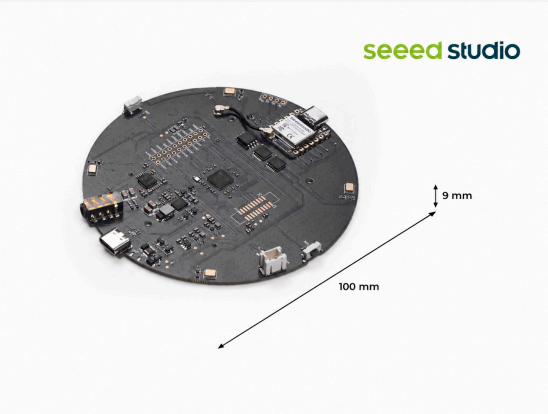




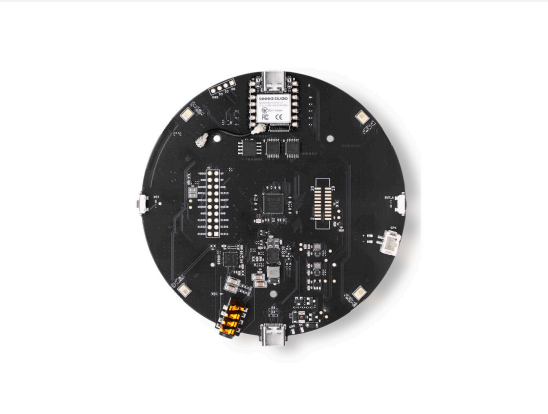






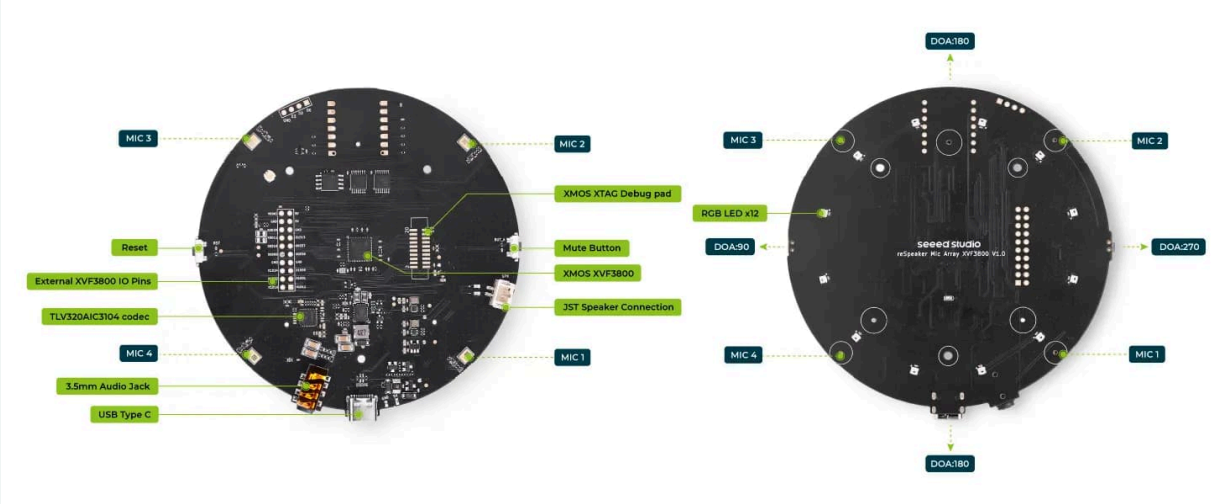

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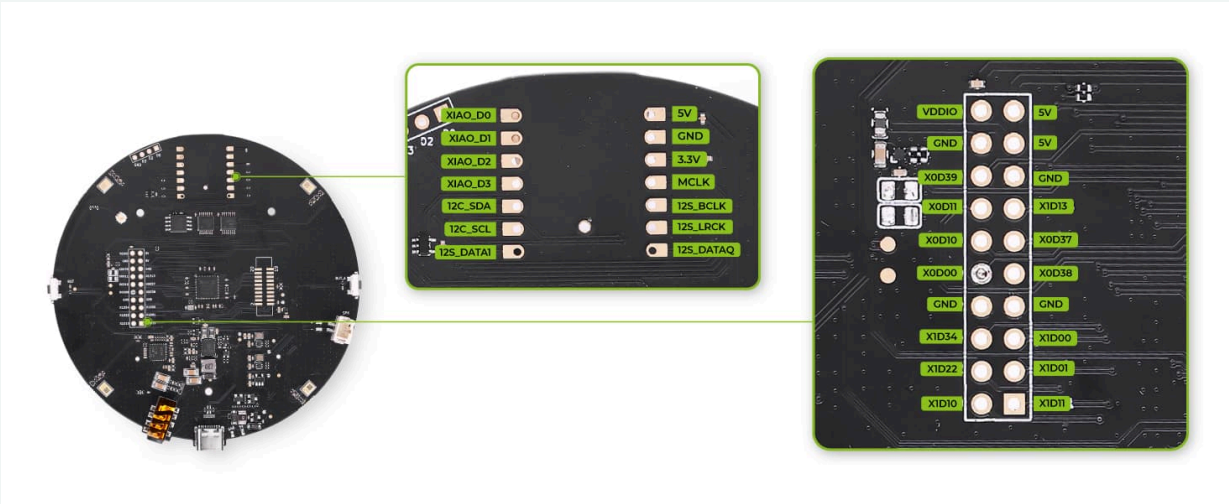

ReSpeaker XVF3800
4-Mic Array





Hardware Overview





Applications

- **Smart Home Voice Control Using reSpeaker XVF3800 Microphone Array:** The reSpeaker XVF3800 4-mic array with XIAO ESP32S3 can be seamlessly integrated into Home Assistant voice systems, serving as dedicated Home Assistant voice hardware for localized control and smart home automation.
- **Robotics Integration with reSpeaker XVF3800 for Embedded Applications:** The compact design supports smooth integration into robotic platforms, with support for ROS2 to streamline system-level communication and development. 4-mic array enables 360° voice localization, voice command recognition, and noise suppression for interactive robotics, smart toys, and voice-controlled machines. Ideal choice for reliable voice interaction and human-machine communication across service, education, and industrial robotics applications.
- **Build Physical AI Voice Agent with reSpeaker XVF3800:** Through SDK and platform compatibility, reSpeaker XVF3800 supports rapid integration with voice AI frameworks and cloud-based services, allowing devices to be quickly transformed into scalable voice agent solutions.
- **1. Running Agora TEN Framework on reSpeaker XVF3800:** Use reSpeaker XVF3800 with XIAO ESP32S3 for audio capture and playback, and use Agora RTC to complete the real-time audio connection. The project provides a standardized configuration method (.env / property.json), supports one-click Docker deployment, dynamic token authentication, and pluggable providers (ASR/LLM/TTS can be replaced as needed).
- **2. Running Agora Conversational AI on reSpeaker XVF3800:** Use reSpeaker XVF3800 with XIAO ESP32S3 as an edge voice AI device to establish a stable, low-latency, bidirectional audio link via Agora RTC, and directly call Agora Conversational AI Agent API v2 on the device to complete the conversational loop of ASR → LLM → TTS: the microphone array captures audio and sends it uplink; the cloud AI generates spoken replies and sends them downlink—delivering a “phone-call-like” voice conversation experience.
- **View more AI agent projects**
- **3. On-Edge AI Voice Agent Using reSpeaker XVF3800 and Jetson AGX Orin:** After the microphone array detects a custom wake word, reSpeaker captures a 5-second voice query and uses a local STT engine. A local Llama 3 model then processes the query, enhanced by a RAG architecture for accurate knowledge retrieval and reasoning. The final answer is generated through a local TTS engine. The solution supports deployment across multiple local environments, including NVIDIA Jetson, Raspberry Pi, x86 servers, and Linux / Windows systems.
- **4. Build Xiaozhi AI Voice Assistant with reSpeaker XVF3800:** Using reSpeaker XVF3800 to build a compact, cloud-connected Xiaozhi voice assistant powered by large language models. With professional far-field audio capture and robust noise suppression, it transforms lightweight edge hardware into a scalable Voice Assistant.
- **5. Bulid You Own OpeClaw Voice AI Agent with reSpeaker XVF3800:** With reSpeaker's powerful audio capture, combined with OpenClaw's flexible AI agent framework, you can easily create a voice-controlled smart assistant that can automatically understand and respond to your commands. (e.g. locate Lark groups and send interactive meeting invitation cards/Voice-based summarization and automated email delivery)
- **6. Build Your AI Assistant Voice Interface with MimiClaw & reSpeaker XVF3800:** MimicLaw is a lightweight implementation inspired by OpenClaw. It explores how similar agent logic can run in extremely resource-constrained environments. By using reSpeaker XVF3800 as the voice interface, we can turn MimicLaw into something more tangible: a physical AI companion that lives on your desk and interacts naturally through voice.

- **Build Smart Voice Assistants Using reSpeaker XVF3800:** Seamlessly integrates with Amazon Alexa, Google Assistant, Home Assistant, and other mainstream voice AI platforms for far-field voice control, smart home automation, and interactive voice applications.
- **Smart Conference Solutions Using reSpeaker XVF3800:** Compatible with Microsoft Teams, Zoom, and other popular conferencing software via USB. 4-mic array supports beamforming and DoA detection to deliver clear multi-person audio pickup and real-time status feedback.

Resource Links

- https://www.seeedstudio.com/ReSpeaker-XVF3800-4-Mic-Array-With-XIAO-ESP32S3-p-6489.html
- XMOS XVF3800 v3.2.1
- reSpeaker XVF3800 Flyer
- reSpeaker XVF3800 Flyer(Chinese)
- reSpeaker Series Flyer
- reSpeaker XVF3800 3D File - Board
- reSpeaker XVF3800 3D-Enclosure-Up File
- reSpeaker XVF3800 3D-Enclosure-Down File

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