seeed studio

INDUSTRIAL PRODUCT DATASHEET

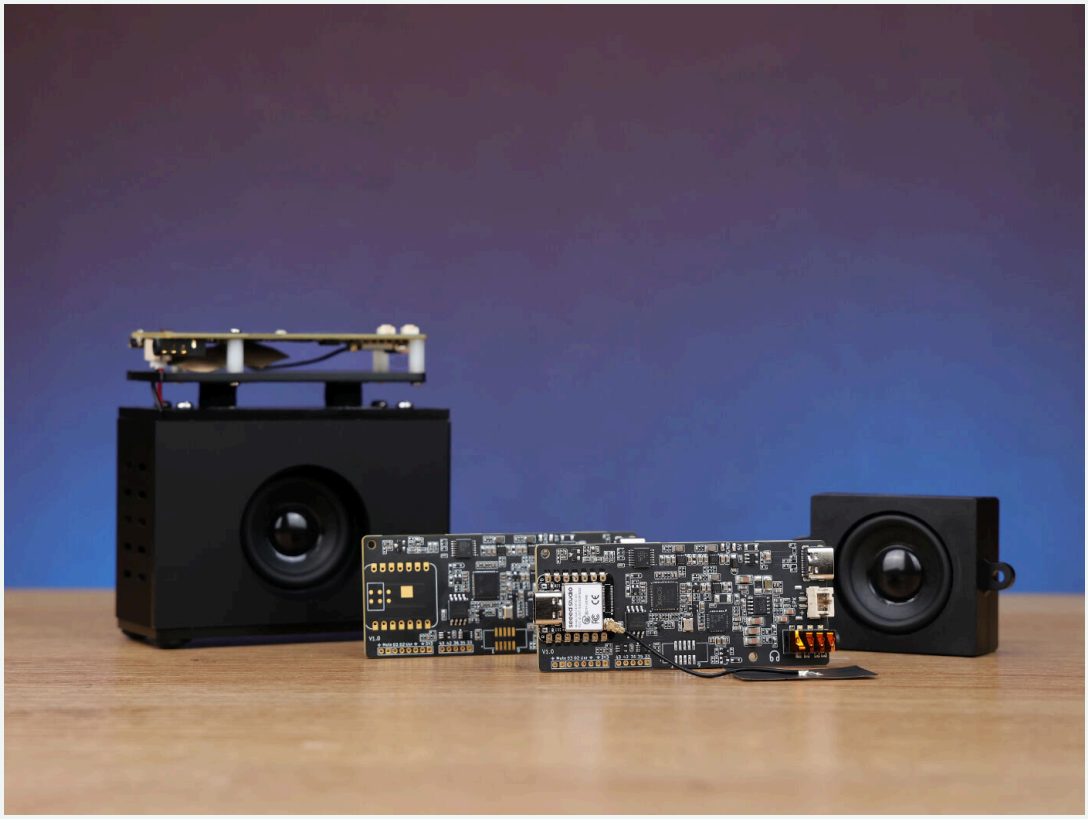
reSpeaker Lite Voice Assistant Kit,（Optional）Full Kit of 2 Mic Array, Mono Enclosed Speaker, and Enclosure

Optional full kit of reSpeaker Lite with dual mic array, mono enclosed speaker, and acrylic enclosure for far-field voice assistant applications.

SKU	UPDATED
E24072601	2026-10-23 03:32:02



Overview



The reSpeaker Lite Voice Assistant Kit is an optional full kit featuring a 2-microphone array, mono enclosed speaker, and acrylic enclosure. It offers far-field voice capture up to 3 meters with onboard AI ASR algorithms and supports integration with voice assistants like Amazon Alexa, Google Assistant, and Home Assistant via ESPHome.

Key Features

Explore the full reSpeaker lineup. Compare specs, find your ideal fit, and catch the latest updates & community news. Check the reSpeaker Series Landing Page

Note:

- The reSpeaker Lite with no XIAO versions (**107990273**) come with factory-installed **USB audio firmware**.
- The reSpeaker Lite with XIAO ESP32S3 versions (**110061601**) come with factory-installed **I2S firmware** for MCU integration.
- If you want to buy a complete Voice Assistant Kit, please visit **here**. The kit offers options for different reSpeaker Lite models, **speaker**, and **Acrylic Enclosure**.

How to choose this kit

reSpeaker Lite with XIAO ESP32S3 comes with the **XIAO ESP32S3** already soldered on.

reSpeaker Lite does not come with a MCU for data access and transmission (eg. a XIAO ESP32S3), and it is only for audio processing with XMOS's XU316.

Mono Enclosed Speaker: The reSpeaker Lite supports 5W audio output, and if you need a speaker, you can add it as an option.

Acrylic Enclosure for reSpeaker Lite: It can combine the reSpeaker Lite with the Mono Enclosed Speaker.

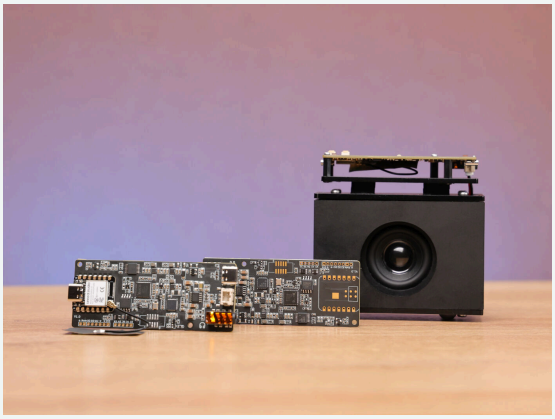
Note: The acrylic enclosure comes as separate components and needs to be assembled by the user according to the instructions.

- **Dual Microphone Array for Far-Field Voice Capture**: The 2 high performance digital microphones capture and extract far-field speech and voice (up to 3 meters) even in noisy environments as it cancels point noise using two microphone input.
- **Onboard AI ASR Algorithms**: Powered by **XMOS XU-316** AI sound and audio chip, the kit includes Automatic Speech Recognition algorithms for Interference Cancellation (IC) , Acoustic Echo Cancellation, Noise Suppression, Voice-to-Noise Ratio (VNR), and Automatic Gain Control (AGC), enabling high quality voice capture.
- **Embracing Open Source**：The **reSpeaker Lite** is compatible with Raspberry Pi, PC via USB (Audio Class 2.0 (UAC2)). It's also compatible with popular hardware platforms of **XIAO ESP32S3** (Sense), **Adafruit QT Py** via I2S.
- **High-Quality Audio Output**: Equipped with a Mono Enclosed Speaker - 4R 5W, providing clear and loud audio output, enhancing the user experience.
- **Acrylic Acousitc Enclosure**: We offer a matte black acrylic enclosure, laser-cut with an acoustic design. This DIY assembly enclosure not only provides fun but also enhances audio performance.
- **Smart Home Integration**: Supports integration with voice assistants like **Home Assistant via ESPHome**, Amazon Alexa, and Google Assistant, enabling smart home control.
- **Open Source Compatibility**: Compatible with Arduino, PlatformIO, MicroPython, and CircuitPython, offering a flexible development environment.

Product Gallery





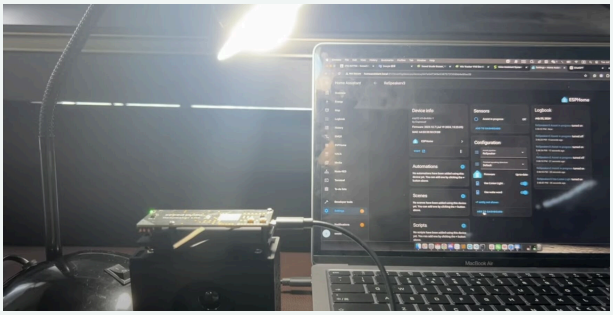










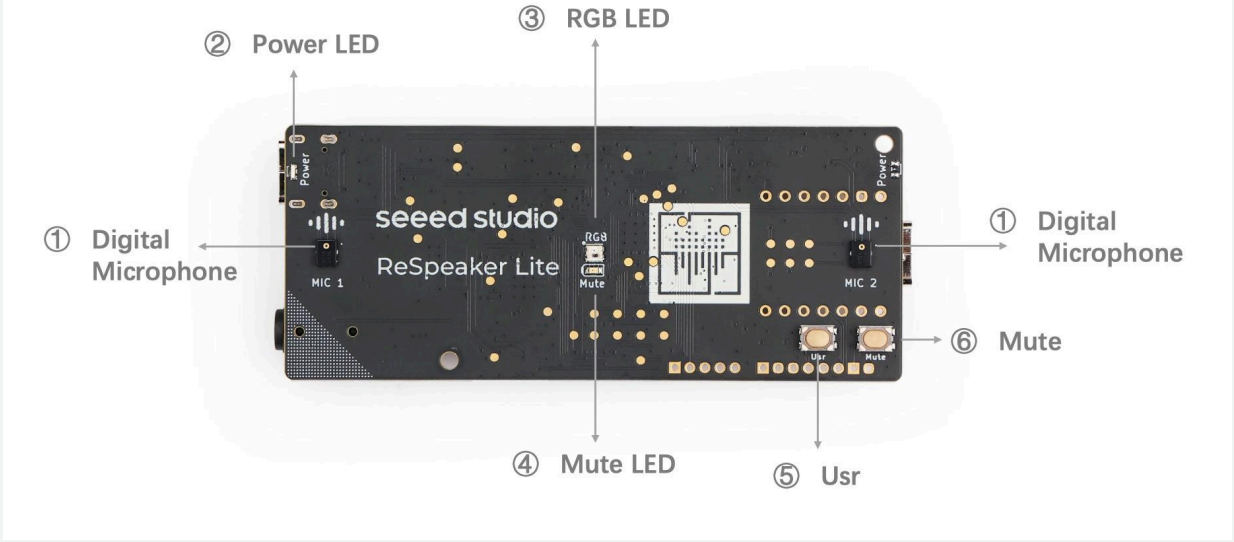


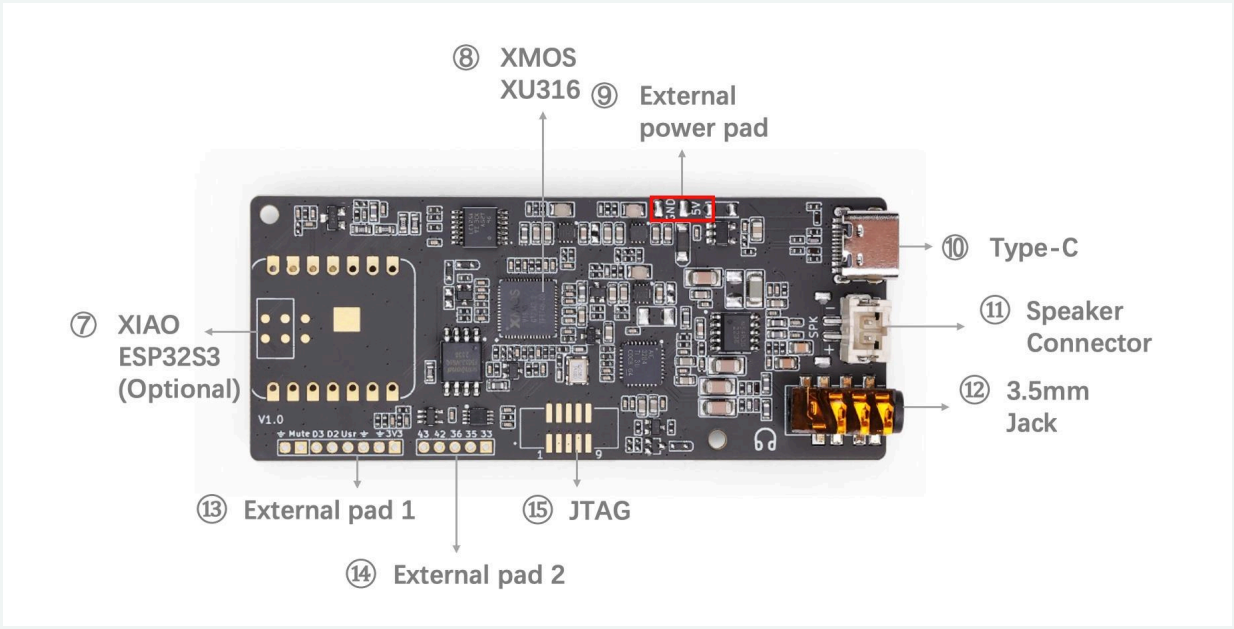
Specification

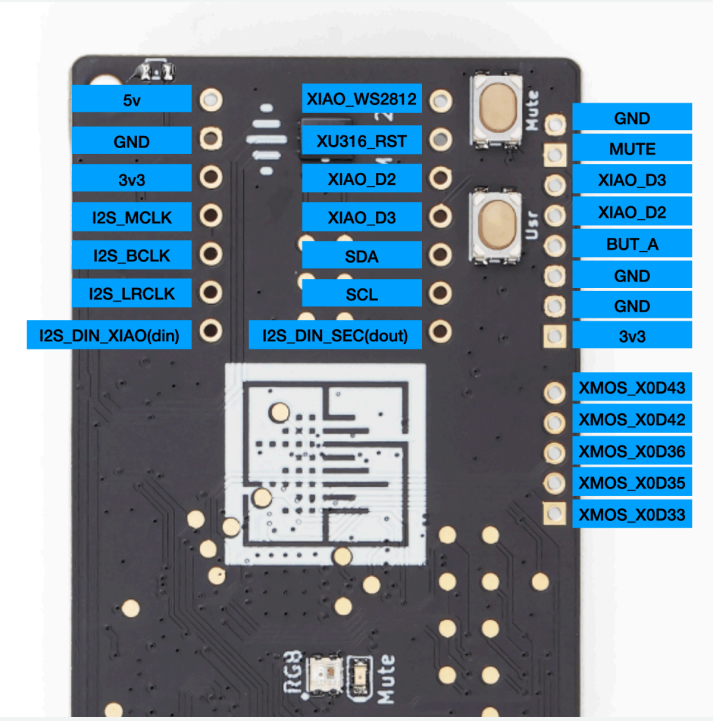
General	Digital Microphones	High-Performance Digital Microphones * 2
	Sensitivity	-26 dBFS
	Acoustic Overload Point	120 dBL
	SNR	64 dBA
	Far-Field Voice Capture	Up to 3m
	Audio Output	Speaker Connector / 3.5mm Headphone Jack
	Power Supply	USB 5V, External 5V
	Dimensions	Length: 92mm Width: 42mm Height: 95mm
	Weight	200 g
Audio Processing Chip	Model	XMOS XU316
	Maximum Sampling Rate	16Khz
	Automatic Speech Recognition Algorithms	NLU, IC, AEC, NS, VNR, AGC
Processor (Optional)XIAO ESP32S3	Processor	ESP32-S3R8
		Xtensa LX7 dual-core, 32-bit processor running up to 240 MHz
	Wireless	Complete 2.4GHz WiFi subsystem
		BLE: Bluetooth 5.0, Bluetooth mesh
	On-chip Memory	8M PSRAM & 8MB Flash
Speaker	Model	Mono Enclosed Speaker
	Rated Input Power	at 5.0W
	Rated Impedance	4ohm±15%
	Output S.P.L	88±3dB
	Distortion	10% Max
Enclosure	Model	Acrylic Enclosure for reSpeaker Lite
	Material	Acrylic
	Color	Matte Black

1	Dual Microphone Array	Provides high-quality audio input.
2	Power Indicator Light	Illuminates when powered on.
3	RGB Light	Programmable WS2812, provides visual feedback.
4	Mute Indicator Light	Lights up red when the mute button is pressed.
5	USR Button	User-defined button.
6	Mute Button	Mutes audio input when pressed.
7	XIAO ESP32S3(Optional)	For further development and integration.
8	XU316 Core Processor	Responsible for audio processing and transmission.
9	External Power Supply Solder Pad	Supports external 5V power supply.
10	USB Type-C Port	Used for power and data transmission.
11	Speaker Connector	For audio output. Supports 5W amplifier speakers.
12	3.5mm Headphone jack	Output audio, We can plug active speakers or Headphones into this port.
13	External power pad 1	Unused IO pins on the XIAO ESP32.
14	External power pad 2	Unused IO pins on the XU316.
15	JTAG	For debugging and programming the XU316.

Hardware Overview







Applications

- **Smart Speakers and Virtual Assistants:** Work with Amazon Alexa and Google Assistant to improve voice command recognition.
- **Audio Processing Development:** Suitable for projects involving audio signal processing and analysis.
- **Conference Systems:** Ensures clear communication during video and audio conferences.
- **Voice-Bsed Remote Control Cars**
- **Keywords Spotting and Wake up**
- **Voice Control for Home Assistant**

Part List

Must choose one	ReSpeaker Lite with XIAO ESP32S3	1
	ReSpeaker Lite	1
Optional	Mono Enclosed Speaker - 4R 5W	1
Optional	Acrylic Enclosure for ReSpeaker Lite	1

Resource Links

- https://www.seeedstudio.com/ReSpeaker-Lite-Voice-Assistant-Kit-Full-Kit-of-2-Mic-Array-pre-soldered-XIAO-ESP32S3-Mono-Enclosed-Speaker-and-Enclosure.html
- reSpeaker Series Flyer
- Acrylic Enclosure for ReSpeaker Lite.dxf
- Assembly instructions for Acrylic Enclosure
- Product-Brief of XMOS XU316
- ReSpeaker Lite - CE certifications
- ReSpeaker Lite - FCC certifications
- ReSpeaker Lite Voice Assistant Kit with XIAO ESP32S3 - CE certifications
- ReSpeaker Lite Voice Assistant Kit with XIAO ESP32S3 - FCC certifications
- Schematic diagram of ReSpeaker Lite

Seeed Technology Co.,Ltd.
9F, Building G3, International E City,
Zhongshanyuan Road, Nanshan, Shenzhen, China

Tel: +86 0755-80695676
Web: www.seeed.cc
Shop: www.seeedstudio.com