

# 107990273 | reSpeaker Lite - USB 2-Mic Array with Onboard AI Audio Processing Algorithms, compatible with Seeed Studio XIAO ESP32S3 (Sense), Raspberry Pi, Adafruit QT Py

SKU: 107990273

## Product Overview

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This dev board uses an XMOS XU316 AI Sound and Audio chipset for audio processing. It includes a dual microphone array for speech recognition and voice control, along with onboard NLU algorithms that offer interference cancellation, echo cancellation, and noise suppression. The board supports I2S and USB connections and is compatible with Seeed Studio XIAO ESP32S3 (Sense), Adafruit QT Py, Raspberry Pi, and PC.

## Features

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**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 Audio front-end Algorithms:** Powered by XMOS XU-316 AI sound and audio chip, the kit includes Natural Language Understanding 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:** This board is compatible with popular hardware platforms (XIAO ESP32S3 (Sense), Adafruit QT Py) via I2S, and compatible with Raspberry Pi, PC via USB (Audio Class 2.0 (UAC2)).

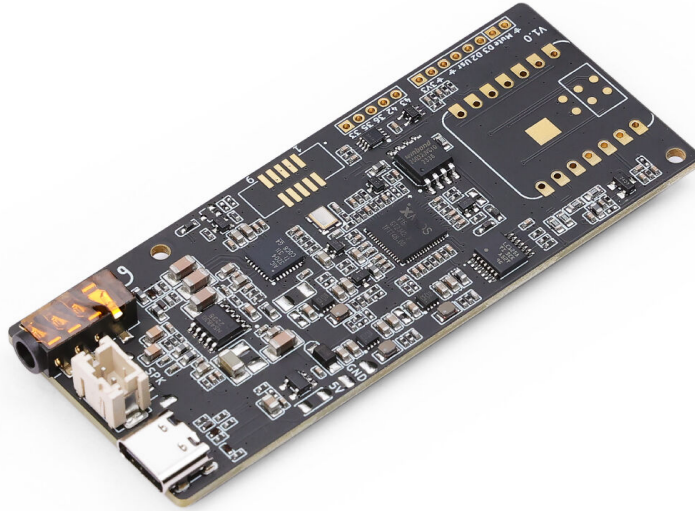
**Onboard RGB LED:** The board features a programmable WS2812 RGB LED, supporting custom effects and offering a visual interface for your applications.

**External Power Supply Support:** this board supports external 5V power supply, which can be flexibly applied in different scenarios.

**DFU for Custom Development:** the board supports custom firmware update via DFU-Util.

## Product Image

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*Product image*

## Specifications

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**Core Chip:** XMOS XU316

**Digital Microphones:** High-performance digital microphones 2

**Sensitivity:** -26 dBFS

**Acoustic Overload Point:** 120 dBL

**SNR:** 64 dBA

**Power Supply:** USB 5V, external 5V

**Dimensions:** 35\*86 mm

**Audio Output:** Speaker Connector / 3.5mm Headphone jack

**Maximum Sampling Rate:** 16Khz

**Speaker:** Supports 5W amplifier speakers.

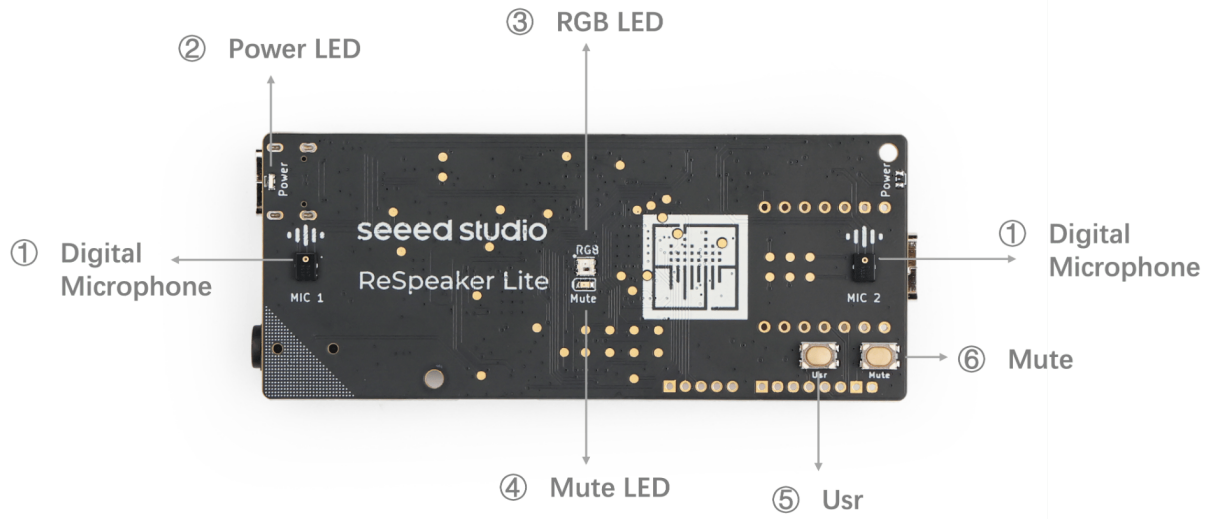
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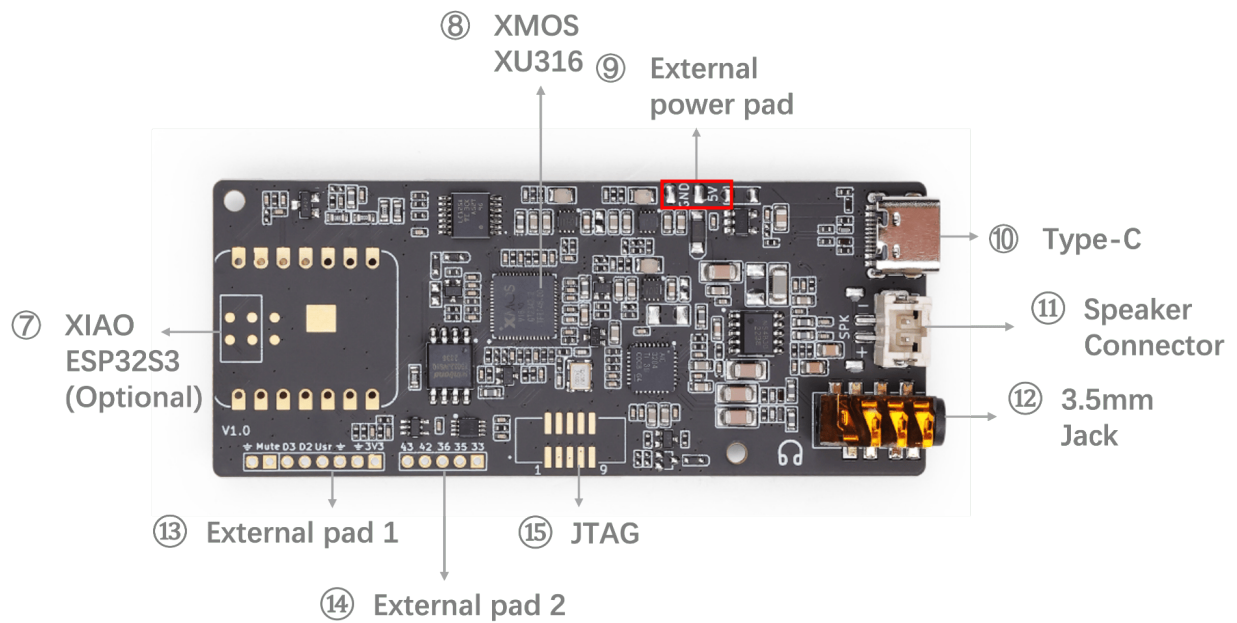
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Hardware Overview



Hardware overview image



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