

110061601 | reSpeaker Lite 2-Mic Array Voice Kit, Compatible with ESPHome

SKU: 110061601

Product Overview

Powered by XMOS XU316 AI Sound and Audio chipset, this high-performance open source voice assistant development kit integrates a reSpeaker Lite dual-microphone array and an XIAO ESP32S3 processor. It offers excellent voice recognition, noise reduction, and voice processing capabilities with onboard AI NLU algorithms. The kit provides firmware integration with Home Assistant via ESPHome.

Features

Pre-Soldered ESP32 Controller: A powerful XIAO ESP32S3 is pre-soldered via the I2S pins, offering a solderless experience for further development and integration.

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.

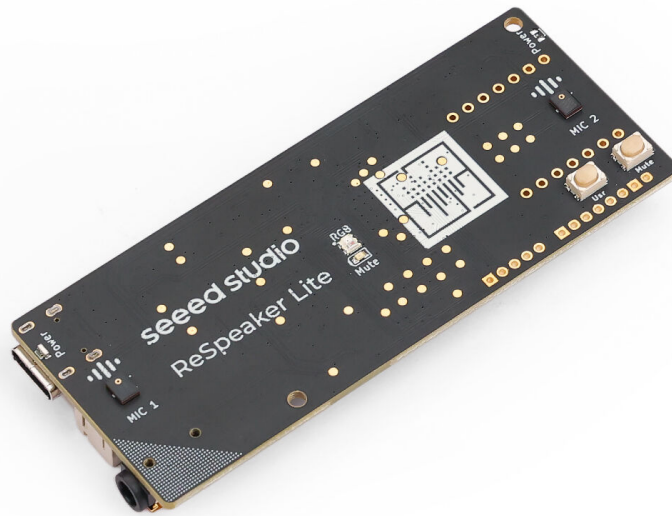
Onboard Audio front-end Algorithms: Powered by XMOS XU-316 AI sound and audio chip, the kit includes Natural Language Understanding algorithms for Interference Cancellation (IC), Acoustic Echo Cancellation, Noise Suppression, and Automatic Gain Control (AGC), enabling high quality voice capture.

Embracing Open Source: It's compatible with Arduino, PlatformIO, MicroPython, CircuitPython for further development.

Compatible with Popular Voice Assistants: This kit allows you to build your own natural language processor and connect it to Home Assistant via ESPHome, Amazon Alexa Voice Service, Google Assistant, or Cloud Speech-to-Text service, enabling you to ask questions and issue voice commands to your programs.

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

Product Image



Product image

Specifications

General

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.

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

Interface: 1x UART, 1x IIC, 1x IIS, 1x SPI, 11x GPIO(PWM), 9x ADC, 1x User LED, 1x Charge LED

1x Reset button, 1x Boot button:

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Dimensions: 21 x 17.5mm

Power: Input voltage (Type-C): 5V Input voltage (BAT): 4.2V

Circuit operating Voltage (ready to operate):- Type-C: 5V@19mA- BAT: 3.8V@22mA:

Charging battery current: 100mA:

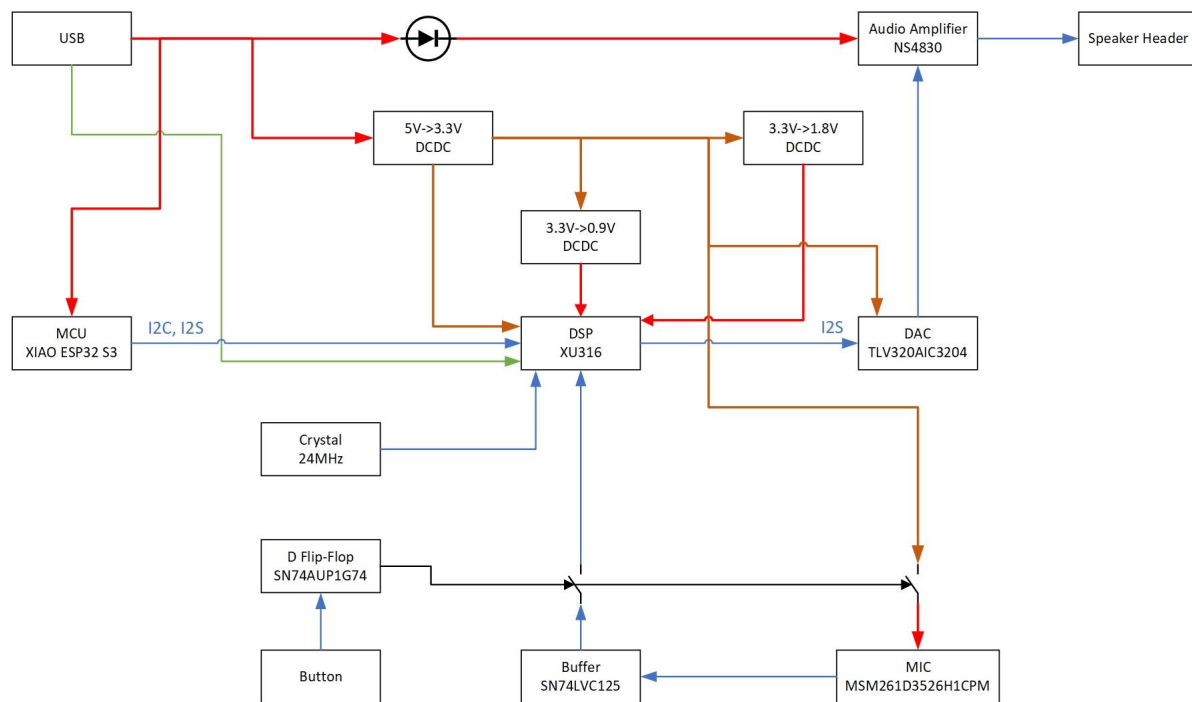
Low Power Consumption Model(Supply Power: 3.8V): Modem-sleep Model: ~ 25 mA Light-sleep Model: ~ 2mA Deep Sleep Model: ~ 14 uA

WiFi Enabled Power Consumption: Active Model: ~ 100 mA

BLE Enabled Power Consumption: Active Model: ~ 85 mA

Working Temperature: -40degC ~ 65degC

Hardware Overview



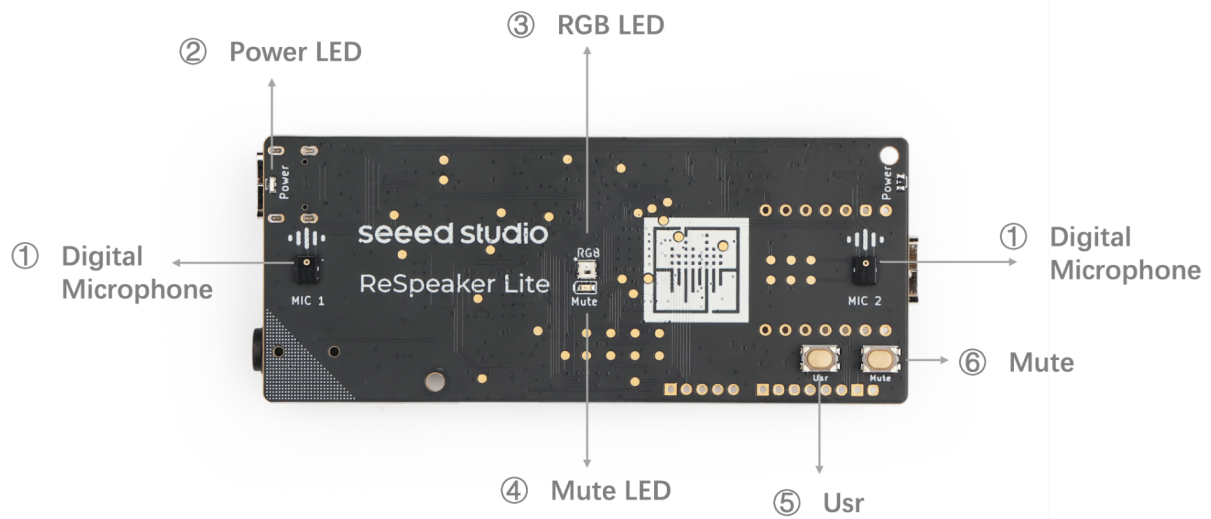
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