Voice Enable Smart Home Appliances

Smart Home Appliance manufacturers are increasingly looking to leverage technology to deliver new smart home use cases to their customers. Sound recognition and voice interfaces are expected to become a highly requested feature that consumers look for in their new appliances. Voice offers OEMs and ODMs a way to differentiate their products by opening up entirely new connected use cases and services.

Consumers will soon be looking for new convenience features in their appliances. Examples include the ability to ask a refrigerator to read aloud a grocery list based on the inventory on the refrigerator shelf, play a recipe video while cooking, or ask the oven to pre-heat handsfree using voice, when preparing dinner. With voice control, user's don't have to struggle with the microwave's touchpad, they can just say what they're cooking, and the appliance responds. These types of enhancements to the user experience will be needed to stay competitive, but they come with a price.

CHALLENGES TO ADD VOICE TO APPLIANCES

- User interface to add Wi-Fi
- Ease of integration with legacy MCU system boards
- Voice commands with negative SNR with Babble or Loud Distractors
- Noise suppression of loud fans, motors and vibrations
- Increased range requirements for large rooms and room to room communication
- Reduction in available power and memory

KEY TECHNOLOGY

The AISonic™ Audio Edge Processor provides low-power, high efficiency, privacy and compute power enabling customers to design modern products with far-field voice processing functionality for accurate listening.

The AISonic™ White Goods Standard Solution is a development package built upon Knowles' industry-leading AISonic Audio Edge Processor IA8201 for the most accurate contextual audio and sensing and includes an IA8201 reference board accompanied by an API supporting integration with Application Processors, or MCUs or RF chipsets, a system firmware release configured to support sensors, and pre-integrated microphones from Knowles to enable high-quality audio capture and high signal-to-noise ratio.
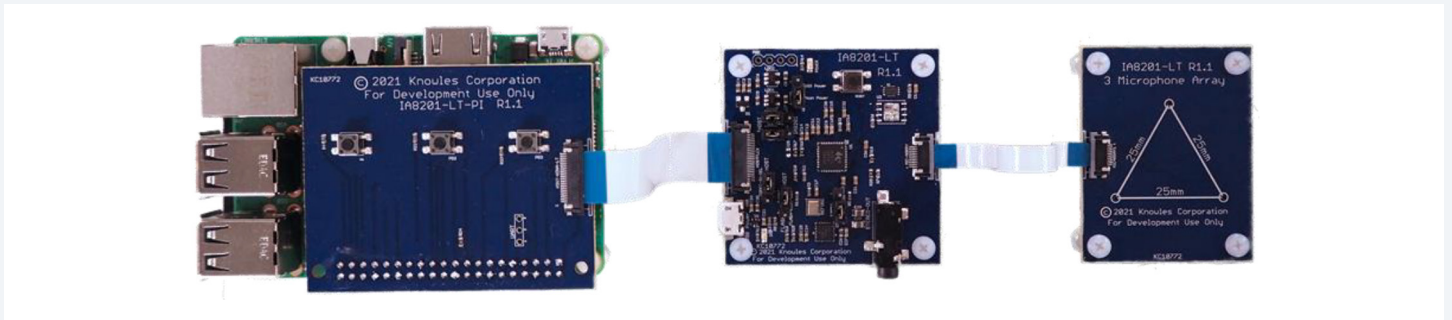
DATASHEET

KNOWLES STANDARD SOLUTION BENEFITS

- Improve Time to Market
- Flexible and Scalable
- Wake-on Voice
- Industry leading DSP with Far-Field Algorithms
- Low Power
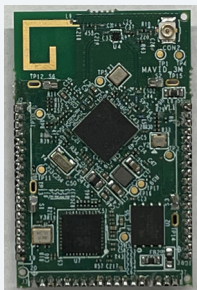- Support for local commands - No need to pay for cloud-connected assistants

REFERENCE AND INTEGRATION PLATFORMS

Reference Platform with Raspberry Pi, IA 8201 and 3-mic array with Sensory Voice Hub wake word and local command support.
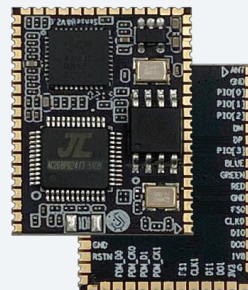

INTEGRATION PLATFORMS

Knowles White Goods standard solution also provides multiple integration kits made with our system integrator and algorithm partners with RF and ASR combinations of BT, Wi-Fi with AMA, AVS, or AWS-IoT Profiles. These kits can be included in a system with minimum impact on legacy MCU system boards.

Libre withBT, Wi-Fi and AWS Integration

Self-Boot Module for White Goods with BLE by Sugr

AVAILABILITY

The AISonic White Goods Standard Solution & Integration Modules are now available.
Contact your local Knowles's salesperson for more information or to order an evaluation sample.