

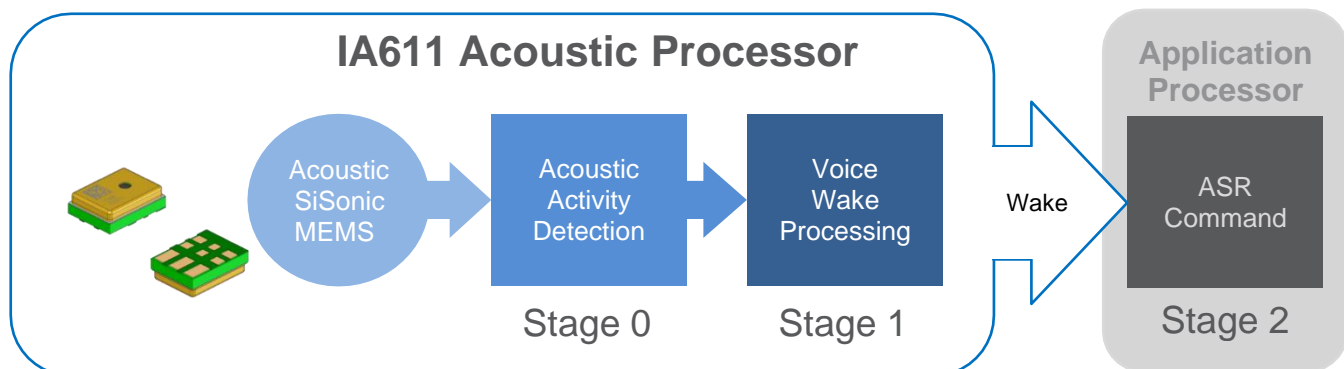
The IA611 is an “always-on” Acoustic Processor featuring Voice Wake and Voice ID keyword detector, a three second buffer, and Knowles’ proven high performance acoustic SiSonic™ MEMS technology in a single, miniature, top-port package. The IA611 offers flexibility by supporting the most relevant audio and data interfaces. Its integrated programmable DSP with 248 KBytes of RAM is available for customer and 3<sup>rd</sup> party algorithms, enabling unlimited creativity. The solution pushes the system performance to ultra-low power with its custom core design, and accelerates times to market with its unique combination of hardware, software, and firmware.

## Product Features

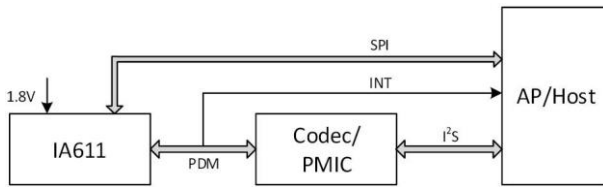
- High-accuracy Voice Wake and Voice ID keyword recognition to wake-up any system from a trigger phrase
- Minimum latency when burst out three-second audio buffer using SPI
- Ultra-low-power “always on” Acoustic Activity Detector (AAD) capable waking the embedded DSP
- Interrupt signal to the host processor when a voice keyword trigger is detected
- Integrated power tree from a single 1.8 V supply
- Extra flexibility with I<sup>2</sup>C/UART interfaces
- 248 KB RAM, 160 MFLOPS, 43 MHz, 32-bit complex-valued floating-point ALU, low-power open developer platform with SDK
- High-Performance Acoustic SiSonic MEMS with ±1 dB matched sensitivity, 65.5 dB SNR and 132.5 dB SPL AOP
- Packaged in SPK 4.00 x 3.00 x 1.30 mm

## Typical Applications

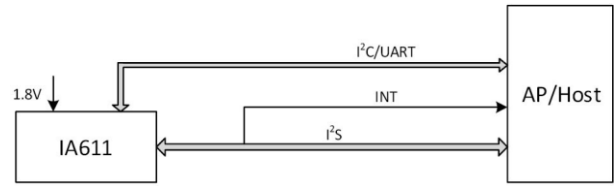
- Smartphones
- Wearables
- Tablets
- Small, portable electronics
- Remote controllers
- Connected home devices



## Typical Application Block Diagrams



Application Schematic for a Host System using PS with SPI



Application Schematic for a Host System using PS and IC or UART

## Pin Descriptions

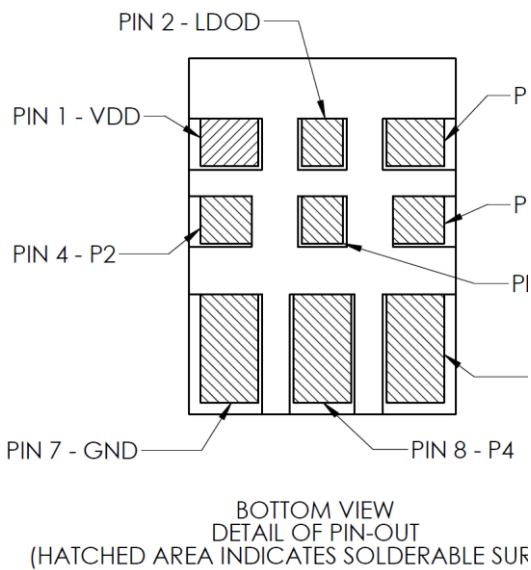


Figure 1 Pin Assignments (Bottom View)

Table 1 Pin Descriptions

Pin#	Name	Type	Description
1	VDD	Power	Power Supply
2	LDOD	Power	Connect to Bypass Capacitor
3	P0	Digital I/O	P0 I/O
4	P2	Digital I/O	P2 I/O
5	P1	Digital I/O	P1 I/O
6	P3	Digital I/O	P3 I/O
7	GND	Power	Ground
8	P4	Digital I/O	P4 I/O
9	P5	Digital I/O	P5 I/O

## Mechanical Specifications

Item	Dimension	Tolerance	Units
Length (L)	4.00	±0.10	Mm
Width (W)	3.00	±0.10	mm
Height (H)	1.30	±0.15	mm
Acoustic Port (AP)	0.65	±0.05	mm

For more information, visit <https://solutions.knowles.com/>