



IQS620 / IQS620A Overview

Combination sensor with dual channel capacitive proximity/touch, Hall-effect sensor and inductive sensing

The IQS620(A) ProxFusion® IC is a multifunctional capacitive, Hall-effect & inductive sensor designed for applications where any or all of the technologies may be required. The IQS620(A) is an ultra-low power solution designed for short or long term activations through any of the sensing channels. The IQS620(A) is fully I²C compatible and can be configured to output main trigger events on GPIOs.

Features

- **Unique combination of sensing technologies:**
 - Capacitive sensing
 - Hall-effect sensing
 - Inductive sensing
- **Capacitive sensing**
 - Full auto-tuning with adjustable sensitivity
 - 2pF to 200pF external capacitive load capability
 - Enhanced temperature stability
- **Hall-effect sensing**
 - On-chip Hall-effect measurement plates
 - Dual direction Hall switch sensor UI
 - 2 level detection (widely variable)
 - Detection range 10mT – 200mT
- **Inductive sensing**
 - 2 level detection and hysteresis for inductive sensing
 - Only external sense coil required (PCB trace)
- **Multiple integrated UI options** based on years of experience in sensing on fixed and mobile platforms:
 - Proximity wake-up / Touch; SAR; Hysteresis
- **Automatic Tuning Implementation (ATI)** – performance enhancement (10bit)

- Minimal external components
- Standard I²C interface
- Optional **RDY** indication for event mode operation
- **Low power consumption:**
 - 130uA (100Hz response, 1ch inductive)
 - 105uA (100Hz response, 2ch Hall)
 - 90uA (100Hz response, 3ch capacitive)
 - 75uA (100Hz response, 1ch capacitive SAR)
 - 46uA (20Hz response, 1ch inductive)
 - 38uA (20Hz response, 2ch Hall)
 - 32uA (20Hz response, 3ch capacitive)
 - 27uA (20Hz response, 1ch capacitive SAR)
 - 2.5uA (4Hz response, 1ch cap. wake-up)
- **Supply voltage:**
 - IQS620: 2.0V to 3.3V
 - IQS620A: 1.8V to 3.3V
- **Low profile packages:**
 - DFN(3x3) – 10 pin package
 - WLCSP– 9 pin package



Applications

- Mobile electronics (phones/tablets)
- SAR safety requirements for laptops, tablets and phones
- Wearable devices
- White goods and appliances
- Human Interface Devices
- Proximity activated backlighting
- Applications with long-term activation
- Aftermarket automotive ¹

Available Packages		
T _A	DFN(3x3) - 10	WLCSP-9
-20°C to 85°C	IQS620(A)	IQS620A

¹ The part is not automotive qualified.




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The following patents relate to the device or usage of the device: US 6,249,089; US 6,952,084; US 6,984,900; US 7,084,526; US 7,084,531; US 8,395,395; US 8,531,120; US 8,659,306; US 8,823,273; US 9,209,803; US 9,360,510; US 9,496,793; US 9,709,614; EP 2,351,220; EP 2,559,164; EP 2,748,927; EP 2,846,465; HK 1,157,080; SA 2001/2151; SA 2006/05363; SA 2014/01541; SA 2015/023634; SA 2017/02224;

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