

Infineon alarm system

Sensor fusion based alarm system powered by XENSIV™ IM69D130 microphone and DPS310 barometric pressure sensor

Infineon's alarm system is a sensor fusion based intruder detector. It enables detection of two event types:

- > Glassbreak – when a window or door glass is broken, the algorithm extracts the intensities in the frequency spectrum. At the same time it captures the signature pattern of the change in pressure. The sensor fusion software synchronizes the output and triggers a glassbreak alarm.
- > Intruder – when all windows and doors are closed, there is a stable pressure inside the room. Opening or closing a window or door triggers a pressure change within the room. Each pressure event has a signature pattern. Therefore, opening or closing a door or window triggers an intruder alarm.

Key features

- > Sensor fusion based alarm system detects intrusion via glass break
- > Additional protection against intrusion by opening or closing a door or window
- > Reliable coverage of up to 50 m² room with one alarm system¹⁾
- > Adjustable sensitivity based on the house environment
- > Armed stay and armed away mode supported
- > No line of sight requirement at high sensitivity mode

Key benefits

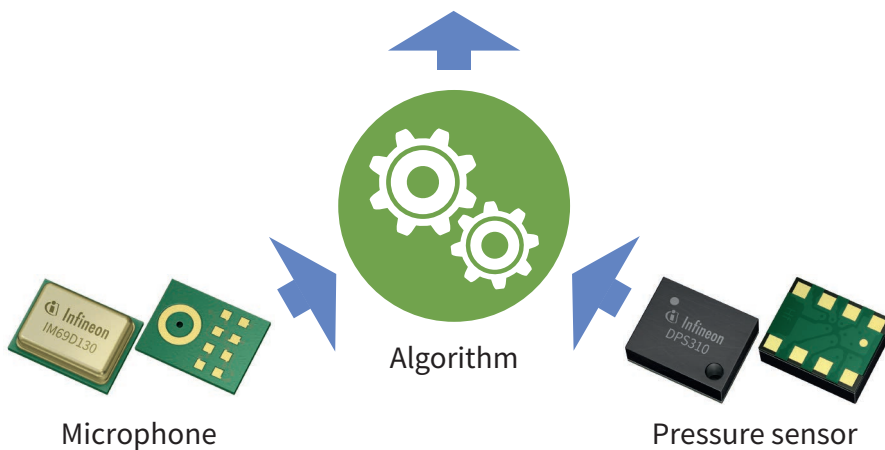
- > F1 scores²⁾
 - Glass break detection system in high sensitivity settings – 99%
 - Intruder detection – 96%
- > Fully tested and qualified software

Applications

- > Home protection
- > Store protection

1) Refer to use case conditions
2) Tested according to Infineon test methods

Glass break and intruder event



Use case conditions

Title	Description
Room size	<p>> Minimum: 22 m²</p> <p>> Maximum: See figure below</p>
Window size	<p>> Minimum window size : 0.5 x 0.5 m²</p> <p>> Maximum window size: 3 x 2 m²</p>
Sensitivity settings	
Detection range (Depends on the sensitivity setting)	<p>> Minimum: 1.5 m</p> <p>> Maximum: 8 m</p>
Thickness of glass	<p>> Minimum : 2.5 mm</p> <p>> Maximum: 6.5 mm</p>
Target platforms	<p>> Evaluation platform based on Raspberry Pi</p> <p>> Reference design based on QuickLogic microcontroller (board size: 32 x 16 mm²) and XMC 4500 microcontroller</p>
Minimum required microcontroller performance	<p>Arm® Cortex® M4F</p> <p>> Speed: ≥ 60 MHz (120 MHz is recommended)</p> <p>> RAM: ≥ 32 KB</p> <p>> Flash: ≥ 160 KB</p>
Target applications	<p>> Home, stores</p>

Note: For full use case conditions refer to mounting recommendation guide for understanding mounting considerations

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