VitaSense

Vehicular heatstroke can be fatal

Each year, on average 37 children die of vehicular heatstroke in the U.S. And, although exact numbers are not recorded, even more children suffer disabilities due to organ or brain damage.

Even though it seems unthinkable to forget a child in a car, a review of the incidents shows that distraction, a change in the daily routine, or misunderstandings play a major role. It can potentially happen to anybody. When children were intentionally left in the car, the caregiver either ignored the risk of leaving a child inside a car, or it simply took them longer to get back to the vehicle than initially planned.

These incidents are not merely a U.S. phenomenon. Although a lack of comprehensive databases masks the problem to a certain extent, there are documented cases of fatalities in other parts of the world as well.

Key Advantages

- **High sensitivity:** VitaSense is sensitive enough to detect the minor movements of a sleeping baby
- **Independence:** VitaSense works independently of any child restraint system (CRS) and is therefore not dependent on correct use and installation
- **Robust sensing technology:** VitaSense is not impacted by clothing or blankets, and is even capable of detecting a child through the sunshade of a rear-facing CRS
- **Flexibility:** As VitaSense is integrated into the vehicle, a number of warning and notification options can be implemented, depending on the vehicle’s capabilities
VitaSense

Detecting forgotten children

To combat this problem, IEE has developed VitaSense – the world’s first vehicle-based sensing system to detect at-risk unattended children. VitaSense detects the breathing of sleeping children who are at risk of being entrapped, and this information can be used by the vehicle to warn parents or other adults that there is a child still in the vehicle. This type of warning can help prevent children dying from vehicular heatstroke.

A radio frequency-based solution

VitaSense uses radio technology to detect vehicle occupants based on their movements. The transmitter emits radio signals that are reflected by objects or occupants. Because an occupant moves, the signal he or she reflects is different from that of an inanimate object. This allows VitaSense to discriminate between a person and an object, based on the pattern of the reflected signal. Quite simply, objects are not detected as people.

VitaSense is able to detect even minor movements of vehicle occupants. In fact, it is so sensitive that it can detect the breathing of sleeping babies.

A safe technology

VitaSense operates in the ISM band (24 GHz), a radio frequency used for industrial, scientific, and medical applications. At this frequency, the low-power radio signals are reflected by the human body – making it the ideal technology for the interior motion detector.

In operation, the power transmitted by the system is a mere 4 mW (milliwatts) – a fraction of what other devices send out. In comparison, a Wi-Fi connection emits around 100 mW and a cell phone between 500 and 1,000 mW.

About Us

IEE is a worldwide pioneer in passenger presence detection and one of the leading suppliers of advanced automotive interior sensing solutions. Founded in 1989 and headquartered in Luxembourg, it has operations in Europe, America and Asia. The innovation driven company has a long history in developing and manufacturing cutting-edge sensing systems for automotive industry, building management and eHealth. IEE employs 4,100 people worldwide and more than 10% of the company’s workforce is engaged in Research & Development.

For more information, please visit www.iee.lu