

XENSIV™ – SP49

Tire Pressure Monitoring Sensors

Infineon's SP49 product family provides highly integrated devices which perform all functions for a wheel module of a Tire Pressure Monitoring System (TPMS) suited for high-volume applications. The devices measure pressure in the range from 100 kPa up to 920 kPa, acceleration between -600 g and 600 g as well as temperature and supply voltage. Furthermore, they feature an efficient power management and an integrated microcontroller. An integrated LF receiver and RF transmitter allows wireless communication.

For wired data transfer, the hardware master/slave I²C interface can be used. Further wired interfaces such as UART, SPI or PWM can be realized in software.

Infineon technical leadership in MEMS technology and Patented Glass-Silicon-Glass MEMS pressure sensor with best-in-class media compatibility ensures industry leading performance TPMS.

Customer benefits

Optimized for battery-powered applications, the system controller with flexible wake-up and power management, ultra-low power down current and the wide range of supply voltage ensures a long-lasting battery lifetime (for typical TPMS applications 10 years with a CR2032 battery). Together with the possibility to generate a wake-up from the integrated Interval timer, SP49 products are perfectly suited for standalone remote pressure sensing solutions demanding low charge consumption. For such applications, the LF receiver with wake-up capability and best-in-class sensitivity provides the possibility of on-demand measurements.

SP49 has the tailored ASIC which optimized for the following new intelligent tire features.

- On-Tire Auto-Position-Sensing (APS)
- Tire filling assist
- Tire burst detection
- Load detection



Key features

- Patented Glass-Silicon-Glass MEMS pressure sensor with best-in-class media compatibility
- Industry-standard power efficient 32-bit ARM® Cortex® (*)
- 19 Kbyte of flash memory for the application code and/or user data storage; also usable for a bootloader
- 1 kB RAM plus 192 bytes of retention RAM
- Best in class lifetime charge consumption
- (*) ARM® and Cortex® are trademarks of ARM limited, UK

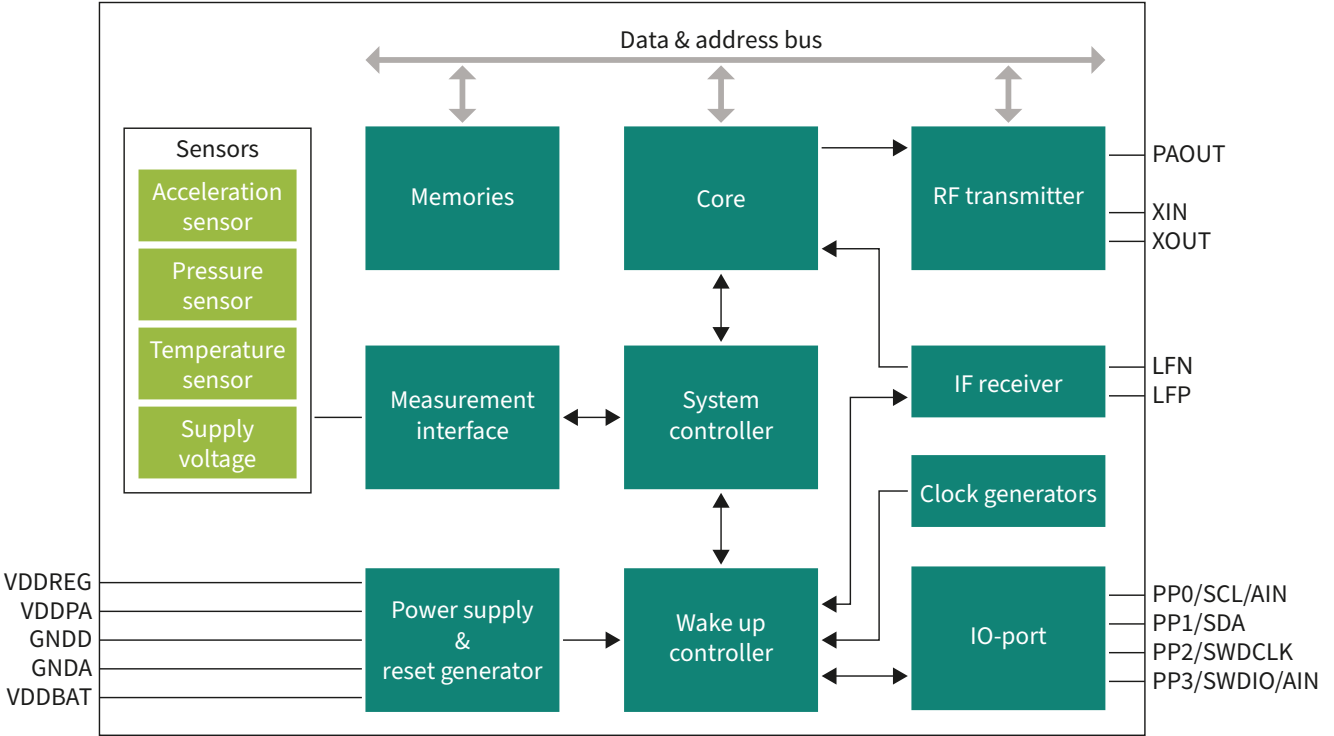
Key applications

- Tire pressure monitoring
- Further possible high-pressure applications
 - Air suspension
 - Air brake, and more



PRODUCT BRIEF

Block diagram



Product table

Product variant	Product name	Pressure range [kPa]	Flash size for code [kB]	Package	Ordering code
SP490-01-11	SP49	920	19	DSOSP-14	SP005878909



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