

MLX91804

INTEGRATED

TIRE SENSORS

SMALLEST TPMS SENSOR SOLUTION

One of the most fully featured, ultra-low power tire pressure measurement system (TPMS) solutions available today, the new MLX91804 integrates all the electronic sub-systems required to develop a high performance TPMS with a minimum of external components. Pressure and acceleration sensors, an LF transceiver and RF transmitter circuits combine with a low power MLX16 RISC microcontroller in a single tiny form factor.

With a height of less than 2.5 mm, the ultra-compact 14 pin wettable flanks DFN package has been specially engineered to limit real estate demanded to a minimal 20 mm² (that's 60% smaller than current alternatives). This helps leading TPMS and smart tire system suppliers meet or exceed the most stringent size, weight and cost constraints in their next generation designs.

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Melexis

The MLX91804 can be powered from typical small Lithium button cells such as CR2032/CR1632 types.

CUSTOMER BENEFITS

- Industry's lowest current draw
 Extended operation from a single CR1632 cell
- Smallest and lightest autonomous TPMS solution Designed to support direct tire attach strategies (TMS)
- Broad feature set including multi-mode sensing (pressure & acceleration)
 Enables advanced, high value solution development
- Highly ruggedized
 Long service life
 Insensitive to tire mounting soap and
 moisture residues
- Specialized design-in support includes:
 - Firmware development & design-in
 - Field based application experts
 - Powerful MLX16 TPMS code libraries available speeds application

FOR MORE INFORMATION: WWW.MELEXIS.COM/MLX91804



APPLICATIONS

- Iire pressure monitoring systems for passenger and commercial vehicles
- Supports tire mounted systems (TMS) and enhanced car telematics
- \bigotimes Ideal for use in low power, micro-miniature pressure & acceleration sensing environments

BLOCK DIAGRAM



COMPREHENSIVE FEATURE SET

- Integrated multi-function sensing: pressure, acceleration, temperature & voltage
- Different pressure ranges up to 1400 kPa
 Down to ±4 kPa accuracy and 0.2 kPa resolution
- Integrated multi-axis accelerometer (X, Z or XZ)
 Up to 700 g measurement range
- Ultra-low power operation from 3.6 down to 1.8V
 90 nA sleep current (LFO and timer running, memory retention)
- Power efficient 315/433 MHz RF transmission
 Up to 150 kbps data rate

Ø Tiny 4 x 5 mm, wettable flanks DFN-14 package

✓ Integrated 16-bit RISC MCU including:

- 16 kB FLASH, 512 B SRAM, 128 B NVRAM
- 47 B register memory (On during sleep)
- 3 GPIOs
- Iltra-low power LFO and wake-up scheduler
- 🛇 Built-in self-test features with fault detection
- ✓ 40 to 125 °C operating temperature range
- 🧭 RoHS compliant green packaging
- O Automotive qualified with PPAP

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