

3D-magnetometer optimized for battery powered applications

Low power and wide voltage supply 3D magnetic field sensor IC enables maximum flexibility on the choice of the battery

Tessenderlo, Belgium, 9 June 2022 – Melexis introduced the MLX90397, a three-dimensional magnetometer for cost efficient position sensing. It features a wide supply voltage (1.7 to 3.6 V). This is ideally suited for battery powered appliances for both consumer and industrial applications.

Melexis, a global microelectronics engineering company, introduces the MLX90397, a 16-bit 3-axis sensor device that has a magnetic field range reaching 50mT (with an adaptive range on the z-axis of up to 200mT). The user can choose the fields to measure among B_x , B_y , B_z , temperature or a combination. The sensing element relies on the proven Triaxis® 3D Hall effect technology. Captured data are converted into a digital form and then transferred over an I²C interface.

MLX90397 is designed to address 1.8/2.2/3.3V applications. The key benefits are:

- The signal-to-noise (SNR) figures outperform other products on the market with a typical RMS noise of 2 μ T for a 50mT range.
- The combination of a low 7nA power down current and a wide voltage supply range (1.7V to 3.6V) is ideal for battery powered applications. It not only provides maximum flexibility on the selection of the battery type (Alkaline, Lithium..), but also ensures an extended usage.

The adaptive B_z field range up to 200mT simplifies customer designing with a back bias magnet (e.g. joystick) as it removes the constraint on the saturation.

Another benefit is the inclusion of a VddIO pin. It allows the customer to set the output at a different voltage level than the main supply. This feature avoids the need to place extra level shifters to interface with the μ C.

The MLX90397 comes in a compact surface-mount 8-pin UTDFN package, with a footprint of just 2.0mm x 2.5mm and a height of only 0.4mm. This makes the devices easy to integrate - even into highly space-



constrained electronic designs. A supported operational temperature range of -40°C to 105°C allows the use in demanding industrial applications.

“The arrival of the MLX90397 completes our magnetometer portfolio to address micropower applications supplied from 1.8 V” explains Jerome Degois, Marketing Manager Position Sensor. “With outstanding SNR performances it facilitates the designer’s need to compromise between both noise characteristics and power consumption. The MLX90397 is the magnetometer optimized for battery-powered applications.”

Among the most prominent applications are handheld power tools, gaming consoles, computer peripherals, home automation systems (window/door opening detection), energy metering (for anti-tampering purposes) and the controls of domestic appliances.

More information at www.melexis.com/MLX90397

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About Melexis

Combining a passion for technology with truly inspired engineering, Melexis designs, develops and delivers innovative micro-electronic solutions that enable designers to turn ideas into applications that support the best imaginable future. The company’s advanced mixed-signal semiconductor sensor and actuator components address the challenges of integrating sensing, driving and communication into next-generation products and systems that improve safety, raise efficiency, support sustainability and enhance comfort.

Melexis is a world leader in automotive semiconductor sensors. Today, on average, every new car produced worldwide contains 13 Melexis chips. Melexis has used its core experience to expand its portfolio of sensors and driver ICs. Now they also meet the needs of smart appliances, home automation, industrial and medical applications. Melexis sensing solutions include magnetic sensors, MEMS sensors (pressure, TPMS, infrared), sensor interface ICs, optoelectronic single point and linear array sensors and Time of Flight. The company’s driver IC portfolio incorporates advanced DC & BLDC motor controllers, LED drivers and FET pre-driver ICs, while Melexis has the know-how and expertise to build bridges between components, allowing them to communicate in a clear and fast way.

Melexis is headquartered in Belgium and employs over 1,500 people in 18 locations worldwide. The company is publicly traded on Euronext Brussels (MELE).



For more information, visit www.melexis.com

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