

AMR technology offers several advantages compared to other current-sensing approaches, including Hall, current transformer (CT), and shunt resistors, according to Aceinna. AMR offers significantly higher bandwidth and dynamic range compared to Hall-based current sensors and delivers a smaller size and reduced cost compared to current transformers. As a fully integrated solution, AMR eliminates the need for an external amplifier and related circuitry needed for high-voltage isolation — a challenge at high frequencies — compared to shunt resistors, the company added.

ATMOSIC TECHNOLOGIES

M3 Battery-Free Bluetooth 5 SoC

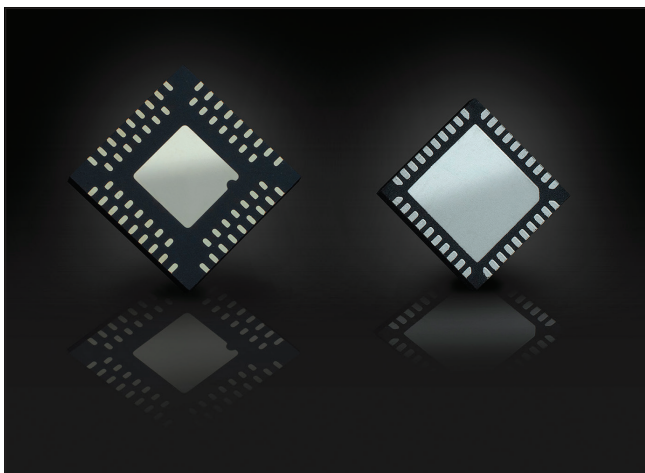
www.atmosic.com

Atmosic Technologies claims that the M3 SoC platform offers the industry's first fully standard compliant and battery-free Bluetooth 5 solution with multi-source energy-harvesting technology. Designed to reduce battery dependence for IoT applications, Atmosic developed three technologies — Lowest Power Radio, On-demand Wake-Up, and Managed Energy Harvesting — all of which are integrated into the M3 Series Bluetooth 5 SoC platform.

With the addition of Atmosic's Managed Energy Harvesting technology, which can harvest power from different sources, the M3 can deliver forever battery life or battery-free operation in connected devices. The energy-harvesting technology enables the M3 to harvest power from multiple sources: radio frequency, photovoltaic, thermal, and motion.

Thanks to the Lowest Power Radio and On-demand Wake-Up technologies, the M3 enables IoT devices to connect while consuming 10× to 100× lower power than other SoCs, according to the company.

The device provides battery-free operation up to several meters from the RF source while transmitting and receiving Bluetooth 5 signals. The M3 Series can be used in a variety of product applications, such as wearables, asset trackers, beacons, remotes, keyboards, and mice across a range of markets, including home, personal, industrial, health care, smart city, and automotive.



“This product will enable Atmosic’s mission to drive the battery-free IoT revolution with its ultra-low-power technologies that dramatically reduce energy usage so connected devices can operate completely battery-free (using energy-harvesting technology) or with batteries that last significantly longer,” said the company. “Atmosic’s M3 will enable a battery-free IoT era, reducing the environmental impact of batteries and decreasing the cost and resources of battery maintenance, benefiting the planet, consumers, and industrial users.”

CORNELL DUBILIER ELECTRONICS

ULP Series of Ultra-Low-Profile Aluminum Electrolytic Capacitors

www.cde.com

Cornell Dubilier Electronics (CDE) has developed an ultra-low-profile family of aluminum-electrolytic capacitors that can replace large arrays of surface-mount (SMT) capacitors.

Called a “game changer” for engineers designing compact electronic devices, the ULP series is designed specifically for applications requiring bulk capacitance and the lowest board profiles and offers considerably higher energy density than arrays of SMT capacitors.

This design allows engineers to use a single component to save space, weight, and cost while improving reliability.

“With energy density exceeding 0.4 J/cc, a single ULP capacitor provides much greater bulk storage in a smaller footprint than a bank of low-profile SMT capacitors,” claimed Mario DiPietro, CDE’s product manager. “The technology is particularly effective at displacing parallel banks of SMT solid tantalum capacitors to achieve high capacitance on the board.”

Capacitance values range from 500 μF to 24,000 μF . Working voltages range from 4 to 63 WVDC, with an operating life of 3,000 hours at 85°C without voltage derating. Unlike solid tantalum capacitors, type ULP capacitors do not require voltage derating, said CDE.

The ULP family is offered in package heights of 2.2 mm and 3.2 mm. With flat ribbon-lead-style terminations, it is even possible to mount the device off-board for added design flexibility. These capacitors are suitable for use in portable devices and a wide range of applications in which height profile, board space, and weight are critical design factors.

The 2.2-mm thin part is available with up to 7,800 μF ; the 3.2-mm part is rated at up to 24,000 μF . Both have voltage ratings from 4 to 63 WVDC, depending on capacitance.

