

ARM set to improve battery life for Internet of Things devices

April 17 2015, by Nancy Owano

The ARM logo, consisting of the letters "ARM" in a bold, blue, sans-serif font, with a registered trademark symbol (®) to the upper right of the "M".

Wearables and IoT gadgets, featuring smart functions in much smaller form factors, pose battery challenges and headaches by their small size. ARM has made moves that might change the story of battery life of many wearables and other small devices, with its recent acquisition of two companies. Reports on Friday about ARM focused on its having

acquired two low-power wireless communications companies.

The technology could extend the [battery](#) life of Internet of Things (IoT) devices, including wearables, by up to 60 per cent (compared to radio hardware that operates at 1.2 volts), said *Daily Telegraph* technology reporter Sophie Curtis. ("ARM claims that the Cordio radio technology system, operating below one volt, can extend battery life by 60 per cent, compared to radio hardware that operates at 1.2 volts," said the report. The two companies, Sunrise Micro Devices and Wicentric, said Curtis, will form the basis of its new Cordio [portfolio](#). The result could brighten the picture for the development of low-power wireless communications for power-hungry devices.

Aatif Sulleyman in *TrustedReviews* similarly observed how "Much of the [power](#) consumed by wearables is used up while communicating with other devices, such as smartphones. ARM wants to make this process less draining."

ARM describes Cordio as a family of standards-based, low-power radio IP solutions. Each Cordio solution includes a pre-qualified, self-contained radio block, related link layer firmware, stack and profiles. It also carries guidelines for design, test, integration, qualification, and application development. ARM said [semiconductor](#) companies can benefit by having access to sub-volt radio solutions.

Sunrise Micro Devices, said ARM, focuses on radio IP solutions and provides "a pre-qualified, self-contained radio block and related firmware to simplify radio deployment." Central to SMD radios is native sub-one volt operation. "Operating below one volt enables the radio to run much longer on batteries or harvested energy." Wicentric focuses on providing Bluetooth Smart software solutions. Curtis said Wicentric's Bluetooth Smart software solutions will run on the sub-one volt radios and help ease power consumption too.

Paul Buckley in *EE/Times* said, "ARM is keen to make the Cordio solutions efficient enough to be powered using energy harvesting and sees SMD's sub-one volt Bluetooth radio IP as a vital ingredient in the design armory."

The Cordio radio IP is being promoted as a fully integrated platform which includes transceiver, baseband, and link layer (LL) subsystem including firmware. The subsystem, said ARM, provides an "energy efficient, timing-independent interface to the host processor, enabling easy implementation of the stack and application layers. In addition, the subsystem intelligently controls the sleep and wake-up times of the host processor leading to lower system-wide power consumption."

ARM said that "Core to all Cordio radio hardware is native sub-volt operation. Operating below 1 Volt enables the radio to 'sip' energy from a battery, thus greatly extending the device's life. In addition, it makes it easier to run without batteries by using energy harvesting technologies."

In the bigger picture, "ARM is gradually building up a suite of IoT-focused solutions," said Buckley, "that address key stumbling blocks associated with developing commercially viable IoT [products](#)."

ARM announced the acquisition of the two companies on Thursday. The ARM Cordio portfolio is available for immediate [licensing](#).

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