

PMICs Increase Battery Life In "Hearables"

Designers of Bluetooth headphones, activity monitors, smart garments, smartwatches, and other size-constrained devices can now increase battery life and efficiency and save space using the MAX77650/MAX77651 power management ICs (PMICs) from [Maxim Integrated](#). By integrating multiple regulators and related functions, these ICs are said to reduce solution size by more than 50% versus competing solutions.

Size is critical for hearables and wearables as they continue moving to smaller form factors. Most PMICs for these small, lithium-ion battery-operated devices require additional components, such as boost, buck, and low dropout (LDO) regulators; a charger; and current regulators for LED indicators. For space-savings and efficiency, Maxim has integrated all these functions into a complete power solution that is only 19.2mm²—less than one half the size of existing component combinations, according to the vendor (see the figure).

The MAX77650 and MAX77651 feature single inductor multiple output (SIMO) buck-boost regulators that provide three independently programmable power rails from a single inductor, a 150-mA LDO, and three current sink drivers to reduce overall component count and maximize available board space.

For design flexibility, the MAX77650 operates up to 3.3 V and the MAX77651 operates up to 5 V—both include an analog multiplexer (MUX) output for safe battery monitoring, making them well suited for low-power designs. These devices consume just 0.3 μ A typical (1 μ A max) in standby and just 5.6 μ A of quiescent current typ (13 μ A max) in operation.

The PMICs are offered in a 2.75-mm x 2.15-mm x 0.7-mm, 30-bump WLP. The MAX77650/MAX77651 are available from stock and priced at \$1.99 each in quantities of 1,000.

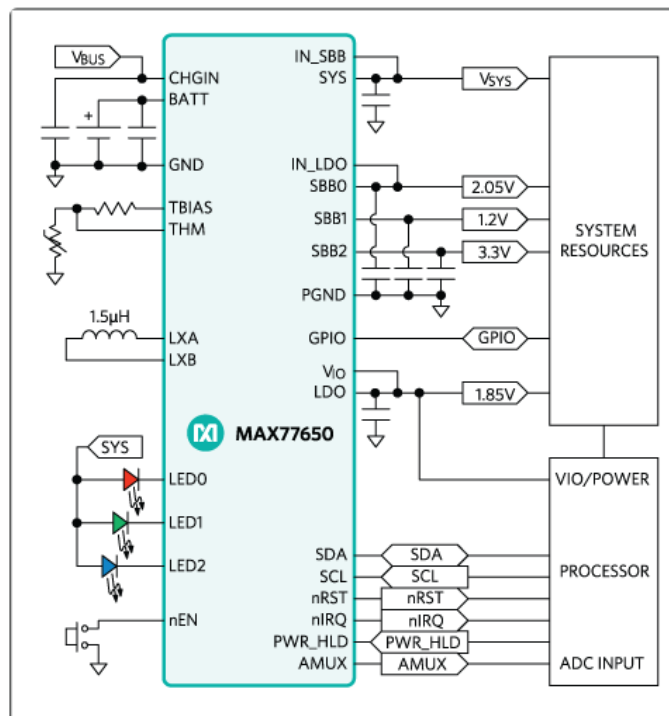


Figure. Targeting Bluetooth headphones, activity monitors, smart garments, smartwatches, and other battery-powered size-constrained devices, the MAX77650/MAX77651 power management ICs (PMICs) feature single inductor multiple output (SIMO) buck-boost regulators that provide three independently programmable power rails from a single inductor, a 150-mA LDO, and three current sink drivers to reduce overall component count and maximize available board space.