

# 3-MHz, 100-mA Step-down DC-DC Converter Adds Run-time to Ultra-low Power Wireless and MCU Applications

Texas Instruments introduced a 3-MHz, 100-mA synchronous step-down DC/DC converter, which integrates a bypass switch and a unique DCS-Control technology and extends battery run-time by 20 percent in low-power wireless and MSP430 MCU-based applications. The high-performance device has an operating current of only 25  $\mu$ A and supports many low-power applications, such as Bluetooth low energy systems, metering and building technologies, mobile phones, consumer electronics, medical and human interface devices.

The TPS62730 reduces current consumption drawn from the battery in transmit and receive modes by achieving 95-percent power conversion efficiency and an on-chip bypass switch with only 30-nA of power. The converter also generates less than 15mVpp typical output voltage ripple, allowing it to support many low-power RF applications, such as those powered by TI's 2.4-GHz CC2540 and CC430 system-on-chip (SOC) solutions. To order samples and evaluation model, and download SwitcherPro™ design tool and PSpice and TINA-TI™ models of the TPS62730, visit: [www.ti.com/tps62730-pr](http://www.ti.com/tps62730-pr).

### DCS-Control technology

DCS-Control technology is an advanced regulation topology that combines the advantages of hysteretic and voltage mode control within a single device, enabling excellent AC line and transient load regulation. The feature provides seamless transition between high-load and light-load (power save) operation. An additional voltage feedback loop also ensures DC accuracy. DCS-Control technology alleviates the need to research external filtering components, thus reducing associated space and cost.

### Key features and benefits

- TPS62730 features DCS-Control with excellent AC-line and load transient regulation.
- Excellent low-output voltage ripple (<15mVpp typical) over the entire load range, which makes this part ideal for RF applications.
- Smallest solution size of 12 mm<sup>2</sup>: 3-MHz frequency and fixed output voltage options require only three external components.
- Input-voltage range of 1.9 V to 3.9 V supports Li-primary battery chemistries such as Li-SOCl<sub>2</sub>, LiSo<sub>2</sub>, Li-MnO<sub>2</sub> and also two alkaline batteries.
- Ultra-low-power shutdown/bypass-mode current of typical 30-nA supports sleep and low power modes of modern RF transceivers.
- DC/DC operation mode provides regulated output voltage consuming typical 25- $\mu$ A quiescent current.

### Availability and pricing

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The TPS62730 is available now from TI and its authorized network of distributors in a small, 6-pin, 1- mm x 1.5-mm x 0.6-mm SON package, priced at \$0.85 in quantities of 1,000. Additional devices with fixed voltages include TPS62731, TPS62372, TPS62374 and TPS62735.

Learn more at [www.ti.com](http://www.ti.com) [1]

See the full PDF version of the TPS62730-step down converter for low-power RF applications: [TPS62730](#) [2]

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### Links:

[1] <http://www.ti.com>

[2] [http://www.ecnmag.com/uploadedFiles/ECN/Products/2011/07/TPS62730 briefing presentation \[Read-Only\] \[Compatibility Mode\].pdf](http://www.ecnmag.com/uploadedFiles/ECN/Products/2011/07/TPS62730%20briefing%20presentation%20[Read-Only]%20[Compatibility%20Mode].pdf)