

Envelope-tracking power supply supports all 3G and LTE bands, including full 20-MHz LTE spectrum

To help get more life out of a battery, Texas Instruments introduced the industry's most efficient envelope-tracking power supply solution to support 3G and 4G LTE multi-mode, multi-band RF power amplifiers used in smartphones and tablets. The new LM3290 step-down converter with integrated DC boost and companion LM3291 linear amplifier enable the use of envelope tracking techniques in RF transmitters to reduce the power amplifier temperature by 20 degrees C and reduce overall power consumption by 25 percent, compared to systems that use average power tracking. For more information, visit www.ti.com/lm3290-pr [1].

Supports all 3G and 4G LTE bands

LTE signals, available in more than 20 distinct bands across the world from various carriers, provide high-speed data transmission that need a high peak-to-average ratio (PAR), and generate higher transmit power, which reduces the efficiency of RF power amplifiers and creates extra heat. The LM3290 and LM3291, which support battery voltages down to 2.5 V, provide high efficiency at higher power output levels and high PAR, while meeting stringent receive band noise requirements in all LTE bands. View an Engineer It video, which outlines how to design with envelope tracking.

Key features and benefits of LM3290 and LM3291:

- **Bandwidth and battery voltage flexibility:** Manages all 3G and 4G LTE bandwidths up to 20 MHz and battery voltages from 2.5 V to 5 V; supports requirements for major suppliers' power amplifiers.
- **Highest efficiency:** The devices' envelope tracking capability helps reduce heat and power consumption by as much as 25 percent; and achieves greater than 90-percent efficiency using advanced power tracking for LTE 25RB.
- **Increased power capacity:** Smartphones and tablets do not need to depend on maximum power reduction when battery power is low. The integrated DC boost converter in the LM3290 provides maximum transmit power – supporting higher LTE data rates even at lower battery voltage levels.
- **Seamless analog and digital interface support:** Supports the MIPI eTrak analog differential front end interface for envelope tracking and a 1.8-V MIPI RFFE digital interface to simplify integration with the industry's newest RF platforms. The devices also allow seamless transition between envelope tracking and average power tracking operating modes.

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· High performance, low noise: The LM3290 and LM3291 provide high efficiency, low noise, low output impedance and low output ripple voltage at high LTE bandwidths (LTE10 and 20). The devices support a minimum bandwidth of 75 MHz -- an industry-first when using envelope tracking -- providing high accuracy with excellent adjacent channel leakage ratio and noise performance.

Availability and pricing

The LM3290 buck-boost converter comes in a 30-bump, lead-free DSBGA package, and is priced at US\$0.80 in 1,000-unit quantities. The LM3291 linear amplifier comes in a 12-bump lead-free DSBGA package, and is priced at US\$0.75 in 1,000-unit quantities. Samples, evaluation modules and complete data sheets are available to select customers

Learn more at www.ti.com [2].

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Links:

[1] <http://www.ti.com/lm3290-pr>

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