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800mA, Synchronous Buck-Boost DC/DC Converter Offers Extended Battery Run Time for Li-Ion Powered Handhelds

MILPITAS, CA – July 17, 2007 – Linear Technology announces the LTC3538, a synchronous buck-boost converter that can deliver a regulated output voltage at up to 800mA of continuous current with an input voltage above, below or equal to the output. Its input range of 2.4V to 5.5V and output range of 1.5V to 5.25 makes it ideal for single cell Li-Ion/Polymer applications. The LTC3538 provides a smooth continuous transfer through all of the operating modes, making it ideal for applications that must maintain a constant output voltage even as the battery voltage declines below the output. In Li-Ion/polymer-powered applications that require 3.3V outputs, such as miniature hard disk drives and DSP I/O power, this unique buck-boost design provides over 25% more battery run-time. The LTC3538's constant 1MHz switching frequency ensures low noise while minimizing external component size. The combination of tiny externals and a 2mm x 3mm DFN package provide the tiny solution footprint required in handheld applications.

The LTC3538 includes two N-Channel MOSFETs and two P-Channel MOSFETs (0.17 Ohm and 0.20 Ohm, respectively) to deliver efficiencies of up to 96%. Burst Mode[®] operation requires only 35uA of quiescent current while shutdown current is less than 1uA to further extend battery run-time. Other features include soft-start, current limiting, thermal shutdown and output disconnect in shutdown.

LTC3538EDCB is available from stock in a 2mm x 3mm 8-lead DFN package. Pricing is \$2.65 each in 1,000 piece quantities.

Photo Caption: 800mA, Synchronous Buck-Boost Regulator

Summary of Features: LTC3538

- Regulated Output with Input Voltages Above, Below, or Equal to the Output
- Up to 96% Efficiency
- 800mA Continuous Output Current from a Single Lithium-Ion/Polymer Cell
- Single Inductor
- 1MHz Fixed Frequency Operation
- Output Disconnect in Shutdown
- 2.4V to 5.5V Input
- 35uA Quiescent Current in Burst Mode Operation, <5uA Shutdown Current
- Internal Soft-Start
- Small, Thermally Enhanced 8-Lead (2mm x 3mm) DFN package

About Linear Technology

Linear Technology Corporation, a manufacturer of high performance linear integrated circuits, was founded in 1981, became a public company in 1986 and joined the S&P 500 index of major public companies in 2000. Linear Technology products include high performance amplifiers, comparators, voltage references, monolithic filters, linear regulators, DC-DC converters, battery chargers, data converters, communications interface circuits, RF signal conditioning circuits, and many other analog functions. Applications for Linear Technology's high performance circuits include telecommunications, cellular telephones, networking products such as optical switches, notebook and desktop computers, computer peripherals, video/multimedia, industrial instrumentation, security monitoring devices, high-end consumer products such as digital cameras and MP3 players, complex medical devices, automotive electronics, factory automation, process control, and military and space systems. For more information, visit www.linear.com

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