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1 Amp Buck-Boost, 600mA Buck Dual Synchronous DC/DC Converter Extends Battery Run-Time

MILPITAS, CA – October 11, 2007 – Linear Technology announces the LTC3520, a dual channel, 2MHz synchronous converter. One channel utilizes a synchronous buck-boost topology which can deliver up to 1A of continuous output current with inputs above, equal, or below the output. In single cell Li-Ion applications requiring a 3.3V output, the buck-boost topology can enable over 25% longer battery run-times compared to a standard buck converter. The second channel is a synchronous buck regulator which can deliver up to 600mA of continuous output current to voltages as low as 0.80V. An uncommitted gain block can be configured as an LDO or a battery-good comparator. This combination is ideal for powering applications such as DSPs/microcontrollers that require both a 3.3V I/O rail and a 0.8V to 1.8V rail for the core voltage. The LTC3520 operates from 2.2V to 5.5V inputs while switching frequency is user programmable between 100kHz and 2MHz, enabling designers to maximize efficiency while keeping externals small. The combination of its high switching frequency and a 4mm x 4mm QFN package ensures a very compact solution footprint for handheld applications.

The LTC3520's unique synchronous buck-boost topology on its 1A channel enables it to regulate a constant output voltage when the input voltage is above, equal to or below the output, enabling complete use of the Li-Ion battery's stored energy. The LTC3520 utilizes automatic BurstMode operation to offer only 55uA (both channels) of no load quiescent current. For applications requiring very low noise, the Burst Mode[®] operation can be defeated and replaced with a forced continuous mode. Shutdown current is less than 1uA, further extending battery life. Each channel has independent internal soft-start, enabling design flexibility. Other features include short-circuit protection and over-temperature protection.

LTC3520EUF is available from stock in a 24-lead QFN package. Pricing is \$3.50 each for 1,000 piece quantities.


Photo Caption: Dual Synchronous Buck & Buck-Boost Regulator

Summary of Features: LTC3520

- Dual High Efficiency DC/DC Converters:
 - Buck-Boost (V_{OUT} : 2.2V to 5.25V, I_{OUT} = 1A at V_{OUT} = 3.3V, V_{IN} \geq 3V)
 - Buck (V_{OUT} : 0.8V to V_{IN} , I_{OUT} = 600mA)
- Uncommitted Gain Block for LDO Controller, Battery Good Indication or Sequencing
- 2.2V to 5.5V Input Voltage Range
- Pin-Selectable Burst Mode® Operation
- Programmable 100kHz to 2MHz Switching Frequency
- 55uA Total Quiescent Current for Both Converters in Burst Mode Operation
- Thermal and Overcurrent Protection
- <1uA Current in Shutdown
- 24-Lead 4mm \times 4mm QFN 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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