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36V_{IN}, Buck-Boost DC/DC uModule Regulator Provides up to 34V_{OUT} & 98% Efficiency

MILPITAS, CA – February 10, 2009 – Linear Technology Corporation extends its family of buck-boost DC/DC uModule™ regulator systems with the introduction of a third pin-compatible product, the LTM4609, a high voltage and high efficiency DC/DC system in a surface mount 15mm x 15mm x 2.8mm LGA (land grid array) package. The LTM4609 regulates an output voltage from a variable input voltage greater than, less than or equal to the output voltage. The device operates from 4.5V_{IN} to 36V_{IN} and regulates an output voltage from 0.8V to 34V and can deliver an output power up to 120W. The LTM4609 integrates a synchronous buck-boost DC/DC controller, four N-channel MOSFETs, input and output bypass capacitors and the compensation circuitry in a small plastic molded package. Only an inductor, feedback and sense resistors and bulk capacitors are required to implement a very low profile, compact and high efficiency design. The device has applications in point-of-load and intermediate-bus regulation in networking, industrial and automotive systems and high power battery-operated devices.

The LTM4609's onboard proprietary 4-switch synchronous MOSFET design enables up to 98.3% efficiency in boost mode and 97.3% efficiency in buck mode (condition: V_{IN}: 6.5V to 36V, V_{OUT}: 30V, I_{OUT}: 2A). Unlike SEPIC (Single Ended Primary Inductor Converter) topologies requiring as many as 20 components and custom magnetics, the LTM4609 uses only six external components, including an off-the-shelf inductor, ensuring a very simple PCB layout. Furthermore comparable SEPIC circuits achieve significantly lower efficiency in the range of 76% to 84%. In order to reduce undesirable frequency harmonics, the LTM4609 is phase-lockable to an external clock frequency ranging from 200kHz to 400kHz. Safety features include overvoltage and foldback current protection.

The LTM4609 is offered for operation from -40°C to 85°C with 125°C maximum junction temperature. Pricing for 1,000-piece quantity starts at \$22.55. For more information, visit www.linear.com.


Photo Caption: High Voltage Buck-Boost DC/DC uModule Regulator

Summary of Features: LTM4609

- Single Inductor Buck-Boost Architecture
- Synchronous 4-Switch Operation for High Efficiency (up to 98%)
- Wide Input Voltage Range: 4.5V to 36V
- Wide Output Voltage Range: 0.8V to 34V
- 15mm x 15mm x 2.8mm LGA 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, uModule™ products, 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.

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Press Contacts:

John Hamburger, Director Marketing Communications
jhamburger@linear.com
Tel: 408-432-1900 ext 2419

Doug Dickinson, Media Relations Manager
ddickinson@linear.com
Tel: 408-432-1900 ext 2233