

LTC News for Immediate Release

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**Main/Camera Cell Phone LED Driver Features
500mA Total Output Current & 95% Efficiency**

MILPITAS, CA – February 7, 2006 – Linear Technology Corporation announces the LTC3210, a highly integrated, 800kHz, low noise, high efficiency 1x/1.5x/2x multimode charge pump for driving Main and Camera LEDs in cellular phones. It provides 5 LED current sources at up to 500mA of total output current: a 4x25mA LED Main display, and one high-current 400mA Camera LED display, all from a compact 3mm x 3mm QFN package. Each display is digitally controlled with independent dimming and programming via a single wire interface. The LTC3210's input voltage range of 2.9V to 4.5V is optimized for single cell Li-Ion cellular applications. Efficiencies when driven from a Li-Ion battery (3.6V nominal) reach 95% with quiescent current of only 400uA, maximizing battery run-time. High switching frequency enables the use of small external capacitors. The LTC3210 requires only four small capacitors and two current set resistors to create a tiny, <20mm², low profile (0.75mm) solution footprint.

The LTC3210 charge pump features low-noise constant-frequency operation and automatically optimizes efficiency based on V_{IN} and LED forward voltage conditions. The device powers up in 1x mode and automatically switches to boost mode (1.5x) when any enabled LED current source approaches dropout; a subsequent dropout switches the part into 2x mode. Maximum currents for the Main and CAM displays are set with two resistors, one per display. LED currents are controlled with precision internal current sources, while dimming and ON/OFF control for each display are achieved via a single-wire interface. The LTC3210 has 64 brightness levels for the Main display and 8 levels for the CAM output. Internal circuitry prevents inrush current and excessive input noise during start-up and mode switching; in addition the device has open/short LED protection.

(more...)

The LTC3210EUD is available from stock in a low profile (0.75mm) 16-lead QFN (3mm x 3mm) package. Pricing starts at \$1.70 each for 1,000-piece quantities.

Summary of Features: LTC3210

- Up to 95% Efficiency without Inductors
- Multimode, Automatic Switching 1x/1.5x/2x Charge Pump for Optimal Efficiency
- Up to 500mA Total Output Current
- 5 Current Sources Available for Main Display and Camera LED Drivers:
 - Four 25mA Low Dropout Main LED Outputs
 - One High-Current 400mA Low Dropout CAM LED Output
- Individual Full-Scale Current Set Resistors
- Single Wire Enable Brightness Control for Main and CAM LEDs
- 64:1 Brightness Control Range for Main Display
- Low Noise, Constant Frequency Operation
- Internal Soft-Start Limits Inrush Current During Start-Up and Mode Switching
- Open/Short LED Protection
- 2.9V to 4.5V Input Voltage Range
- 3mm x 3mm x 0.75mm QFN-16 Package

Company Background

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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