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Switch Mode USB Power Manager & Triple Buck Regulator Provides Faster Charge Time & Minimizes Heat

MILPITAS, CA – May 14, 2007 – Linear Technology Corporation announces the LTC3555, the first in a family of next generation multi-function power management solutions for Li-Ion/Polymer battery applications. The LTC3555 integrates a switching PowerPath™ manager, a standalone battery charger, an ideal diode, I²C control, three high efficiency synchronous buck regulators plus an always-on LDO, all in a compact, low-profile 4mm x 5mm QFN package. The LTC3555's PowerPath control feature seamlessly manages power flow between an AC wall adapter or USB port, Li-Ion battery and system load while its "instant-ON" operation ensures system load power even with a dead or missing battery. For fast charging, the LTC3555's switching input stage converts nearly all of the 2.5W available from the USB port to charging current, enabling up to 700mA from a 500mA limited USB supply and up to 1.5A when wall powered. An internal 180milliOhm ideal diode plus optional external ideal diode controller provide a low loss power path, further minimizing heat generation and maximizing efficiency.

The LTC3555's three integrated synchronous buck regulators feature 100% duty cycle operation and are capable of delivering output currents of 1A/400mA/400mA, respectively, with adjustable output voltages down to 0.8V. The internal low R_{DS(ON)} switches enable efficiency as high as 94%, maximizing battery run time. In addition, Burst Mode® operation optimizes efficiency at light loads with a quiescent current of only 35uA per regulator (<1uA in shutdown). The high 2.25MHz switching frequency allows the use of tiny low cost capacitors and inductors

less than 1mm in height. Furthermore, the regulators are stable with ceramic output capacitors, achieving very low output voltage ripple.

The LTC3555 features USB-compatible programmable current limiting to 100mA/500mA/1A, while its Bat-Track™ adaptive output control enables high efficiency charging and reduces power dissipation. Standalone autonomous operation simplifies design, eliminating the need for an external microprocessor for charge termination. To preserve battery energy, the LTC3555 draws <23uA from the battery in suspend mode. The charger is compatible with inputs up to 5.5V (7V absolute maximum transient for added robustness).

The LTC3555 is available from stock in a compact, low-profile (0.75mm) 4mm x 5mm QFN-28 package. Pricing starts at \$4.65 each for 1,000-piece quantities.

Photo Caption: Multi-Function Switching Power Manager + Battery Charger + Triple Sync Buck + LDO

Summary of Features: LTC3555

- Complete Multi-Function PMIC: Switching Power Manager, Li-Ion/Polymer Battery Charger, Three Buck Regulators & LDO
- Thermally Enhanced, Low Profile (0.75mm) 28-Lead 4mm x 5mm QFN Package

POWER MANAGER & BATTERY CHARGER

- High Efficiency Switching PowerPath Controller with Bat-Track Adaptive Output Control
- Programmable Input Current Limit (100mA/500mA/1A)
- Maximum Charge Current Programmable up to 1.5A from Wall Adapter
- 180mOhm Internal Ideal Diode Plus Optional External Ideal Diode Controller Provides Low Loss Power Path from Battery to Load

DC/DCs

- Three High Efficiency 2.25 MHz Synchronous Buck Regulators: 1A, 400mA, 400mA I_{OUT}
- Adjustable Output Voltage Range: 0.8V to V_{BAT}
- Burst Mode Operation with Low I_Q: 35uA per Regulator
- Always-On 25mA/3.3V LDO

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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