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High-Voltage 950mA Lithium Battery Charger Automatically Selects Between USB or Wall Adapter

MILPITAS, CA – April 11, 2007 – Linear Technology Corporation introduces the LTC4075HVX, a standalone dual-input linear battery charger that efficiently manages charging single-cell Li-Ion/Polymer batteries from two separate power sources: a wall adapter and USB. Using a constant-current/constant-voltage algorithm, the charger can deliver up to 950mA of charge current from a wall adapter supply, or up to 850mA of charge current from a USB supply and automatically sense the presence of voltage at each input. The final float voltage accuracy is $\pm 0.6\%$ in either case. The LTC4075HVX provides protection up to 22V(max) on both inputs. If the selected power source exceeds the overvoltage lockout limit, the LTC4075HVX will stop charging. The LTC4075HVX disables the trickle charge function, benefiting systems requiring higher charge current during low battery conditions. Applications include PDAs, MP3 players, lightweight portable medical and test equipment and large color screen cell phones.

The LTC4075HVX is equipped with a patented thermal regulation scheme that maximizes the charging rate without the risk of overheating. The device is extremely flexible, enabling programmability via a single resistor of wall adapter supply charge current, USB supply charge current and charge termination current. As a standalone charger, the LTC4075HVX simplifies design, since no external microprocessor is required for charge termination. The IC features undervoltage lockout, automatic recharge, charge status and “power present” status indication.

The LTC4075HVX draws $<12\mu\text{A}$ of current from the battery terminal in both standby and shutdown modes, preserving battery energy. It is offered in a low profile (0.75mm) 10-lead 3mm x 3mm DFN package. The total solution footprint is less than 25mm^2 since no external MOSFET, sense resistor or blocking diode is required. The LTC4075HVX is rated for operation from -40°C to 85°C . 1,000-piece pricing begins at \$2.00 each.

Photo Caption: High Voltage Lithium Charger with Automatic Power Selection

Summary of Features: LTC4075HVX

- Standalone Charger for Single Cell Li-Ion/Polymer Batteries
- 22V Maximum Voltage from Wall Adapter and USB Inputs
- Automatic Input Power Detection & Selection
- Over-Voltage Lockout for Wall Adapter & USB Inputs
- Programmable Charge Current up to 950mA from Wall Adapter Input
- Programmable Charge Current up to 850mA from USB Input
- No MOSFET, Sense Resistor or Blocking Diode Required
- Thermal Regulation Maximizes Charge Rate without Risk of Overheating
- Preset Charge Voltage with $\pm 0.6\%$ Accuracy
- Programmable C/X Charge Current Termination
- 45 μ A USB Suspend Current in Shutdown
- Low-Profile (0.75mm) 10-Lead 3mm 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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Press Contacts:

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

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