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## **Hot Swap Controller with Onboard Power Monitoring & Fault Logging Protects Dual Supplies**

MILPITAS, CA – November 12, 2008 – Linear Technology Corporation introduces the LTC4222 dual Hot Swap™ controller for protecting boards with multiple load supply voltages ranging from 2.9V to 29V. When a board is plugged into a backplane, inrush currents can be large enough to create a glitch on the load supply, causing other boards on the bus to malfunction. The LTC4222 enables safe board insertion and removal from a live, two-supply backplane by controlling external N-channel MOSFETs to limit the inrush currents during power up. An I<sup>2</sup>C interface and 10-bit ADC then allow users to query important information such as card currents, voltages or fault status and use it to assess the health and integrity of the power distribution network. This information can be used to determine a card's power consumption, check for normal power operation or execute other card diagnostic functions. The dual channels, wide operating voltage, integrated I<sup>2</sup>C/ADC and wide array of features make the LTC4222 a convenient solution for emerging high availability systems today.

The LTC4222 is suitable for a wide variety of electronic circuit breakers, computers/servers and platform management applications. During start-up, inrush currents are safely controlled using current foldback, Soft Start and dI/dt-limiting techniques. A 5% accurate circuit breaker threshold minimizes both power loss and overdesign of power supply requirements. Load currents are then monitored using the voltages sensed across current sense resistors and controlled by adjusting the MOSFET Gate-to-Source voltages accordingly without the need of external gate components. A CONFIG pin allows one to control both channels

independently or simultaneously, giving users maximum flexibility to configure the Hot Swap operations per their application. Each channel is equipped with separate current foldback and configurable GPIO pins that ensure healthy output voltages are being provided to the loads and indicate whether or not power good conditions are maintained. Separate enable, overvoltage and undervoltage comparators are also available. Meanwhile, an I<sup>2</sup>C interface is provided to read the ADC registers, and allow the host to poll the LTC4222 and determine if faults have occurred. The LTC4222's integration allows for preventive maintenance capabilities not traditionally found in Hot Swap blocks of digital power management systems to date.

The LTC4222 is offered in commercial and industrial versions, supporting operating temperature ranges from 0°C to 70°C and -40°C to 85°C, respectively. The LTC4222 can be ordered in either a compact 32-pin 5mm x 5mm QFN package or a 36-lead SSOP, both of which are RoHS compliant. The devices are priced starting at \$5.85 each in 1,000 piece quantities and are available today in production quantities. Please visit [www.linear.com](http://www.linear.com) for more product selection and information.


**Photo Caption:** Dual Hot Swap Controller with I<sup>2</sup>C Compatible Power Monitoring

**Summary of Features: LTC4222**

- Allows Safe Insertion Into a Live Backplane
- 10-Bit ADC Monitors Currents & Voltages
- I<sup>2</sup>C/SMBus Interface
- Wide Operating Voltage Range: 2.9V to 29V
- di/dt Controlled Soft-Start
- High Side Drive for External N-Channel MOSFETs
- No External Gate Capacitors Required
- Input Overvoltage/Undervoltage Protection
- Optional Latchoff or Auto-Retry After Faults
- Alert Host After Faults
- Available in 32-lead (5mm x 5mm) QFN & 36-Lead SSOP Packages

## 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. For more information, visit [www.linear.com](http://www.linear.com).

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