



## **Monolithic 18V Prioritizer Provides Low Standby Current Backup Battery Switchover Solution**

MILPITAS, CA – September 1, 2016 – Linear Technology Corporation introduces the [LTC4420](#), a dual input monolithic power prioritizer for 1.8V to 18V systems. To enable portability, preserve memory during brownouts, and ensure a graceful shutdown on power loss, electronic systems employ batteries and capacitors for backup power. The LTC4420 normally powers the load from the higher priority main supply such as a wall adapter or battery, switching to the backup supply—typically a battery or large-value capacitor—during primary brownout or power loss conditions. With up to 18V operating capability, the LTC4420 accommodates a wide range of power sources such as wall adapters, USB ports, supercapacitors, and stacked batteries with Li-Ion, alkaline or NiMH cells. By reducing device operating current to 3.6 $\mu$ A and the backup supply's standby current drain to a low 0.32 $\mu$ A, the LTC4420 extends run time in portable battery-operated systems.

Unlike other solutions, the LTC4420 does not require the backup supply voltage to be lower than the main supply voltage. When the backup supply voltage is higher than the main supply voltage, a prioritizer is a better solution than a simple diode-OR as the prioritizer does not necessarily draw current from the highest voltage supply. Internal 500mA (min) current-limited switches multiplex from the primary to the backup supply when the primary voltage falls below the adjustable switchover threshold. Carefully designed break-before-make fast switch control blocks reverse and cross conduction currents while minimizing output voltage droop. To reduce quiescent current, the backup supply's resistive divider is connected to a strobed ground with a duty cycle that is adjustable down to a low 0.0015%, and an optional undervoltage disconnect prevents deeply discharged batteries. A freshness seal mode further lowers standby current to 0.12 $\mu$ A, minimizing battery discharge during product storage and shipment. Reversed-battery voltages up to  $-15$ V are blocked from propagating to the load.

Specified over the 0°C to 70°C commercial and  $-40^{\circ}\text{C}$  to 85°C industrial temperature ranges, the LTC4420 is offered in thermally enhanced 12-pin MSOP and 3mm x 3mm DFN

packages. 1,000-piece pricing starts at \$2.95 each. Device samples and evaluation circuit boards are available online or from your local Linear Technology sales office. For more information, visit [www.linear.com/product/LTC4420](http://www.linear.com/product/LTC4420).

**Photo Caption:** Monolithic Power Supply Mux for Backup Switchover


### Summary of Features: LTC4420

- Connects Highest Priority Valid Supply to Output
- Internal Dual 2 $\Omega$ , 500mA (Min) Current-Limited Switches
- Wide Operating Range: 1.8V to 18V
- Low 3.6 $\mu$ A Operating Current
- Low 0.32 $\mu$ A Backup Supply Current when Main Powers Output
- $\pm 1.5\%$  Accurate Adjustable Switchover Threshold
- Blocks Reverse & Cross Conduction Currents
- Reverse-Battery Protection to  $-15$ V
- V2 Freshness Seal/Ship Mode
- Overcurrent & Thermal Protection
- 12-Lead MSOP & 3mm  $\times$  3mm DFN Packages

The USA list pricing shown is for budgetary use only. International prices may differ due to local duties, taxes, fees and exchange rates.

### About Linear Technology

Linear Technology Corporation, a member of the S&P 500, has been designing, manufacturing and marketing a broad line of high performance analog integrated circuits for major companies worldwide for over three decades. The Company's products provide an essential bridge between our analog world and the digital electronics in communications, networking, industrial, automotive, computer, medical, instrumentation, consumer, and military and aerospace systems. Linear Technology produces power management, data conversion, signal conditioning, RF and interface ICs,  $\mu$ Module<sup>®</sup> subsystems, and wireless sensor network products. For more information, visit [www.linear.com](http://www.linear.com)

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