

## NEWS RELEASE

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### **Summit Introduces Industry's First Battery Charger to Enable True Universal USB Charging While Minimizing Solution Footprint**

*Automatic input current limit, dead-battery charging and automatic power source detection meet latest battery charging specifications and reduce system cost.*

**San Jose, Calif. – October 6, 2008 – Summit Microelectronics** has introduced its third-generation programmable battery charger integrated circuit (IC) for single-cell Li-Ion and Li-Polymer powered systems. The SMB339 integrates the largest feature set in the industry, including compatibility with all relevant industry standards: USB 2.0 Specification, USB "On-The-Go" Supplement, USB Battery Charging Specification 1.0, IEEE1725 Standard, Chinese USB Charging Specification, and others. This innovative charging solution automatically adapts to and delivers the fastest battery charging from any power source (USB host/hub, AC/DC, etc.) without the software required in typical implementations. Additionally, high integration reduces bill-of-material count/cost and solution size to levels comparable to inferior linear charging solutions, while cutting power dissipation by 80percent. Like all Summit's solutions, digital programmability is built-in, providing design and system flexibility at no additional cost.

#### **Features**

The SMB339, based on a high performance 3MHz switch-mode architecture, is the industry's most integrated single-cell Li-Ion charger. The device's high-efficiency operation, coupled with Summit's proprietary TurboCharge™ patent-pending technology, allows for highest charging current (up to 750mA from 500mA USB source) and lowest power dissipation. This allows for slim industrial designs and significantly faster charging times; two valuable differentiating factors for handset and other consumer products.

The SMB339 is industry's first solution that allows true universal USB and AC/DC battery charging. First, the Automatic Power Source Detection differentiates between a USB 2.0 port and a "USB" AC/DC adapter. This allows the charger to comply with the USB 2.0 100/500mA limits, but also to draw higher current levels from an AC/DC wall adapter. Subsequently, since AC/DC adapters can vary widely in current rating, Automatic Input Current Limit (patent pending) detects the maximum current capability of the AC/DC adapter (can be as low as 300mA for Chinese chargers to more than 1.5A per USB charging specification) and automatically programs the SMB339's input current limit accordingly. Unlike existing solutions, the SMB339 performs these functions independently, without the need for external components or system software operation. These two features ensure true USB compliance while providing the fastest safe charging from any source (including AC/DC adapters), giving end-users the best charging performance in any situation. The resulting improved user experience translates into fewer service calls, fewer merchandise returns and increased subscriber revenue for wireless carriers.

"Once again, Summit redefines state-of-the-art Li-Ion battery charging with the SMB339, by cost-effectively providing unmatched integration and valuable features to any portable device, stated George Paparrizos, Summit marketing director. "The SMB339 expands on Summit's portfolio of MobileGreen™ technologies, which maximize energy efficiency and minimize waste by reducing power dissipation and eliminating the need for proprietary AC/DC adapters for every portable device.

Like its predecessor, the SMB339 is also capable of providing USB On-The-Go (OTG) power support, without the need for additional external components. The device has the ability to reverse its power path when not charging, thereby supplying 5V and up to 500mA to VBUS, exceeding the USB OTG Supplement Specification. The chip's parameters are programmable in non-volatile and volatile memory for power-up configuration and in-system adjustments via the I2C host interface. This provides maximum design flexibility to address a variety of system and battery designs and allows the implementation of sophisticated embedded charging algorithms.

A wide variety of programmable safety features are also integrated to meet the strictest safety standards, including IEEE1725. These include dual redundant protection for input/output current and voltage, chip and battery thermal protection, hardware and software safety timers, battery missing detection and a variety of status and fault registers.

## **Applications**

The SMB339 is ideal for a wide range of portable devices such as mobile phones, smartphones/PDAs, portable media/MP3 players (PMP), portable GPS navigation, portable game consoles, and digital cameras/camcorders (DSC/DCC). The features and integration of the SMB339 make it especially suited for devices that include a USB interface because it allows a tiny, low-cost industry-standard micro USB connector to be the primary data and power/charging interface.

The SMB339 operates with an input range from +3.5V to +6.2V input and safely withstands continuous input over-voltage up to +16V (non-operating), while protecting downstream circuitry. The SMB339 is offered in a tiny 2.3mm x 2.0mm, 20-ball, lead-free chip-scale (CSP) package with an operating temperature range of -30C to +85C.

## **Pricing and Availability**

Available now in production quantities, the SMB339 is priced at \$1.24 each in quantities of 10,000 units.

## **Design Software and Programmer for Prototype Development**

To speed user product development, Summit offers customers the SMB339EV companion evaluation board and a graphical user interface (GUI) software so designers can quickly see the features and benefits and design a prototype battery charging solution with the SMB339. This is a complete development tool that lets designers easily manipulate the characteristics of their systems. The SMB339EV design kit includes menu-driven Microsoft Windows (R) GUI software to automate programming tasks and also includes all necessary hardware to interface to the USB port of a laptop or PC.

Once a user completes design and prototyping, the SMB339EV automatically generates a HEX data file that can be transmitted to Summit for review and approval. Summit then assigns a unique customer identification code to the HEX file and programs the customer's production devices prior to final electrical test operations. This ensures that the device will operate properly in the end application.

## **About Summit Microelectronics**

Summit Microelectronics is the leader in flexible, highly integrated power management solutions combining precision power regulation with sophisticated digital control in a single chip. The Company's devices are found in a variety of consumer, communications and computing applications.

Summit's unique programmable, non-volatile mixed-signal IC technology combined with a convenient GUI development environment allows for unparalleled functional and parametric flexibility in power supply design. This flexibility applied to common problems such as dynamic voltage/current control and intelligent battery charging, allows for significant system performance improvement while realizing drastic reductions in design effort.

Digital programmability enables high integration and system flexibility in a single chip - impossible with conventional "hard-wired" analog power ICs. Additionally, this integration reduces the bill-of-materials yielding the lowest total system cost and size. Summit solutions address the biggest challenges facing OEM developers today: increasing system functionality, performance and complexity accompanied by shrinking development time cycles.

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**The URLs for this product is**

[http://www.summitmicro.com/prod\\_select/summary/SMB339/SMB339.htm](http://www.summitmicro.com/prod_select/summary/SMB339/SMB339.htm)

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