

## NEWS RELEASE

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### **Summit's Programmable Environmental Monitor Provides Real-time Power Information and Enables Green System Designs**

*Real-time output voltage and input current monitoring allows for sophisticated power control, while output voltage margining maximizes system reliability.*

**SAN JOSE, CALIF. – AUGUST 19, 2008 - Summit Microelectronics** has announced the new SMM151/2/3 product family of environmental monitoring products. The devices provide complete digital power supply monitoring and control functions, utilizing I2C for communication. Their unique ability to measure system input current eliminates the efficiency and accuracy issues associated with monitoring output current.

The monitoring semiconductors are ideal for high-reliability environments requiring real-time power intelligence, high-accuracy monitoring and system protection to ensure high performance and zero downtime. Typical applications are in computing, data communications, and telecommunications.

“Real-time power monitoring enables “green” system operation and addresses the electronics industry’s efforts to minimize power losses in high-power systems,” stated George Paparrizos, Summit marketing director. “At the same time, high-performance systems implement voltage margining to ensure maximum run-time under all conditions. Summit’s new environmental monitors address both requirements while maintaining low system cost. The unparalleled integration of the SMM151/2/3 family and its ability to enable digital power control allows for high system performance and improved system reliability.”

## **Features**

Summit's new environmental monitors allow input current and differential output voltage monitoring via integrated, high-accuracy, 10-bit A/D conversion. This allows systems to obtain real-time power information and adjust operating modes for achieving maximum efficiency. Unlike other solutions that monitor output current, the SMM151/2/3 measure input current. This eliminates the side effects of the output sense resistor adding directly to the output impedance of the supply and resulting in higher voltage drops. Given the low duty-cycle operation in most modern high-reliability systems, input current measurement provides good accuracy while eliminating efficiency losses of output current sensing.

The SMM151 and SMM152 devices provide output voltage margining with a range of 0.3V to VDD (up to 5V) or a wider range via an external resistor divider. The high-accuracy (1% or better) control of the output voltage ensures signal integrity of digital chips, even when low-accuracy DC/DC converters are utilized. Furthermore, margining during development or production enables worst-case testing of power supply tolerance combinations, thereby increasing overall system reliability for maximum product quality and minimum field failure rates (and associated costs). The SMM151 and SMM152 allow margining control via I2C commands or two dedicated pins.

All devices offer two general-purpose voltage comparators that can be used for detecting under- and over-voltage conditions. Furthermore, the SMM152 and SMM153 also integrate four general-purpose inputs/outputs, whose power-on state is determined by non-volatile memory settings. Two logic outputs are also available for notifying the system of error conditions and of margining status.

## **Programmability**

The SMM151/2/3 family provides Digital Power Management via an I<sup>2</sup>C interface and non-volatile memory allowing the user to retrieve real-time parametric information (voltage/current) and configure power functions, such as: glitch filter duration for ignoring spurious noise signals, margin delay, margin high and low limits, GPIO power-up polarity, voltage monitoring mode (under-voltage or over-voltage) and device handling of fault conditions. Enhancing flexibility even further, the device can be programmed during development and then used in a "fixed" configuration, or it may be re-programmed in-

system via the I<sup>2</sup>C interface. 256 bytes of general-purpose EEPROM memory are also available for system use, thereby eliminating the need for external EEPROM chips, frequently used for data logging.

The SMM151/2/3 family is supported by Summit's easy-to-use PC-based graphical (GUI) development environment that allows system designers to digitally program the output power supply, read current and voltage information and control a variety of power management functions with a few clicks of a mouse. In high-volume production Summit provides product that is pre-programmed with the customer's "custom configuration" at no extra cost. Compared to inflexible conventional analog power ICs, the SMM151/2/3 yield optimized power system designs in significantly shorter development time.

### **Applications**

The SMM151/2/3 family is ideal for a wide range of computing and datacom equipment such as computing servers, wireless and wireline routers, switches, storage servers, telecom equipment, as well as other "high-reliability" applications utilizing high-performance ASICs, CPUs, DSPs and FPGAs. The real-time power supply information is particularly useful in applications that focus on high-efficiency (Green) operation.

The SMM151/2/3 operate directly from +2.7V to +5.5V input, however their current sense input can accept voltages from +4.0V to +15V, making them ideal for monitoring +12V power input rails. The devices have an operating temperature range of +0°C to +70°C or -40°C to +85°C and are available in the space-saving 5mm x 5mm 28-pad QFN package that is lead-free and RoHS-standard compliant.

### **Price and Availability**

Available now in production quantities, the SMM151 and SMM152 devices are priced at \$3.49 and \$3.79 respectively, each in quantities of 1,000 units (commercial temperature range). The SMM153 is priced at \$2.79 for a quantity of 1,000 units (commercial temperature range).

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

To speed user product development, Summit offers customers the SMM151EV companion evaluation board and a graphical user interface (GUI) software so designers can quickly see the features and benefits and design a prototype, digital power supply

controller/monitor solution with the SMM151/2/3 family. This is a complete development tool that lets designers easily manipulate the characteristics of their systems. The SMM151EV 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 SMM151EV 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. The design kit software can be downloaded today from Summit's website ([www.summitmicro.com](http://www.summitmicro.com)).

### **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.

**The URLs for these products are:**

<http://www.summitmicro.com/SMM151>

<http://www.summitmicro.com/SMM153>

**The URL for this news release is**

[http://www.summitmicro.com/comp\\_info/press/08-0819](http://www.summitmicro.com/comp_info/press/08-0819)

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