

Brighter, clearer images from mobile phone cameras as ams introduces intelligent flash LED driver

An LED driver innovation: AS3649 precisely matches flash LED input current with safe output capability of battery – in real time.

Unterpremstaetten, Austria (March 4, 2013) -- ams AG (SIX: AMS), a leading worldwide designer and manufacturer of high-performance analog ICs for consumer & communications, industrial & medical and automotive applications, today introduced a new intelligent LED driver for mobile phone cameras that maximizes the brightness of the flash without causing the phone's battery to fall below its minimum operating voltage.

The AS3649 LED driver uses an innovative "diagnostic pulse" – a burst of controlled high current lasting a few milliseconds – immediately before every flash operation. During this pulse the device measures the momentary voltage across the terminals of the phone's battery. On the basis of this measurement, it reports a value for the highest flash drive current the battery can sustain, up to a maximum of 2.5A, without dropping below its minimum voltage and triggering the phone to reset itself during the main flash.

Drawing on advanced analog sensing technology developed by ams, the AS3649 measures the battery voltage and current with high accuracy, enabling it to precisely calibrate the optimal LED drive current under any given conditions.

Mobile phones that use the AS3649 can therefore generate the brightest possible flash light, without the need for a bulky auxiliary power source such as a super-capacitor. Users benefit from higher image quality and higher resolution. When taking pictures of fast-moving objects, a brighter flash enables the use of faster shutter speeds for sharper, clearer pictures.

The introduction of the LED driver AS3649 also allows mobile phone manufacturers to markedly reduce the engineering and software development effort involved in flash LED implementation. Today, manufacturers exhaustively test the operation of each mobile phone model's LED flash system under all possible operating conditions, and at all operating voltages. The results of these tests are encoded in a software look-up table stored on the phone. Whenever the camera calls for the flash to be operated, the phone's processor must read from the look-up table an estimate for a safe drive current value.

The diagnostic pulse technique implemented by the AS3649 eliminates virtually all of this engineering effort, since it is able to measure the actual behavior of the battery at the time of use, instead of estimating it beforehand on the basis of sampled test results.

Supplying up to 2.5A to a single LED or up to 1.25A each to two LEDs, the AS3649 is well positioned for

next-generation phone cameras using higher-brightness LEDs. The device's current-source architecture provides for effective thermal management, and an on-board NTC (temperature sensor) automatically reduces the current to the LED if it exceeds a programmable temperature threshold.

Ronald Tingl, Senior Marketing Manager at ams, said: "Consumers look carefully at camera performance when choosing a mobile phone – it is a key differentiator. By using the AS3649, handset manufacturers can achieve the best possible lighting for pictures taken in dark conditions, and at the same time benefit from eliminating the huge effort involved in qualifying all components stressed by high LED flash drive currents."

Price & Availability

The AS3649 intelligent flash LED driver is available in volume production now. It is priced at \$0.78 for 1,000 pieces.

Technical Support

A demonstration board for the AS3649 is available. For further information on the Camera Flash LED driver AS3649 or to request samples, please visit www.ams.com/Camera-Flash-LED-Driver/AS3649

about ams

ams develops and manufactures high-performance analog semiconductors that solve its customers' most challenging problems with innovative solutions. ams' products are aimed at applications which require extreme precision, accuracy, dynamic range, sensitivity, and ultra-low power consumption. ams' product range includes sensors, sensor interfaces, power management ICs and wireless ICs for customers in the consumer, industrial, medical, mobile communications and automotive markets.

With headquarters in Austria, ams employs over 1,300 people globally and serves more than 7,800 customers worldwide. ams is the new name of austriamicrosystems, following the 2011 acquisition of optical sensor company TAOS Inc. ams is listed on the SIX Swiss stock exchange (ticker symbol: AMS). More information about ams can be found at www.ams.com.

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