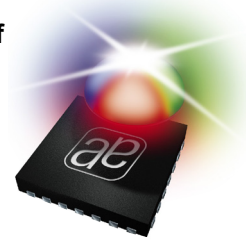


AS3675

ProductBrief

Flexible Lighting Management Unit (Charge Pump, DCDC, 13 Current Sinks, ADC, LED Test, LDO, Audio Controlled Light)



1 General Description

The AS3675 is a highly-integrated CMOS Power and Lighting Management Unit for mobile telephones, and other 1-cell Li+ or 3-cell NiMH powered devices.

The AS3675 incorporates one Step Up DC/DC Converter for white backlight LEDs, one high-power Charge Pump, one Analog-to-Digital Converter, 13 current sinks, the RGB and white LEDs can be controlled by an audio input, LED in-circuit function test, a two wire serial interface, and control logic all onto a single device. Output voltages and output currents are fully programmable.

The AS3675 is a successor to the austriamicro-systems AS3687/87XM and AS3689. It is software compatible to AS3687/87XM and AS3689.

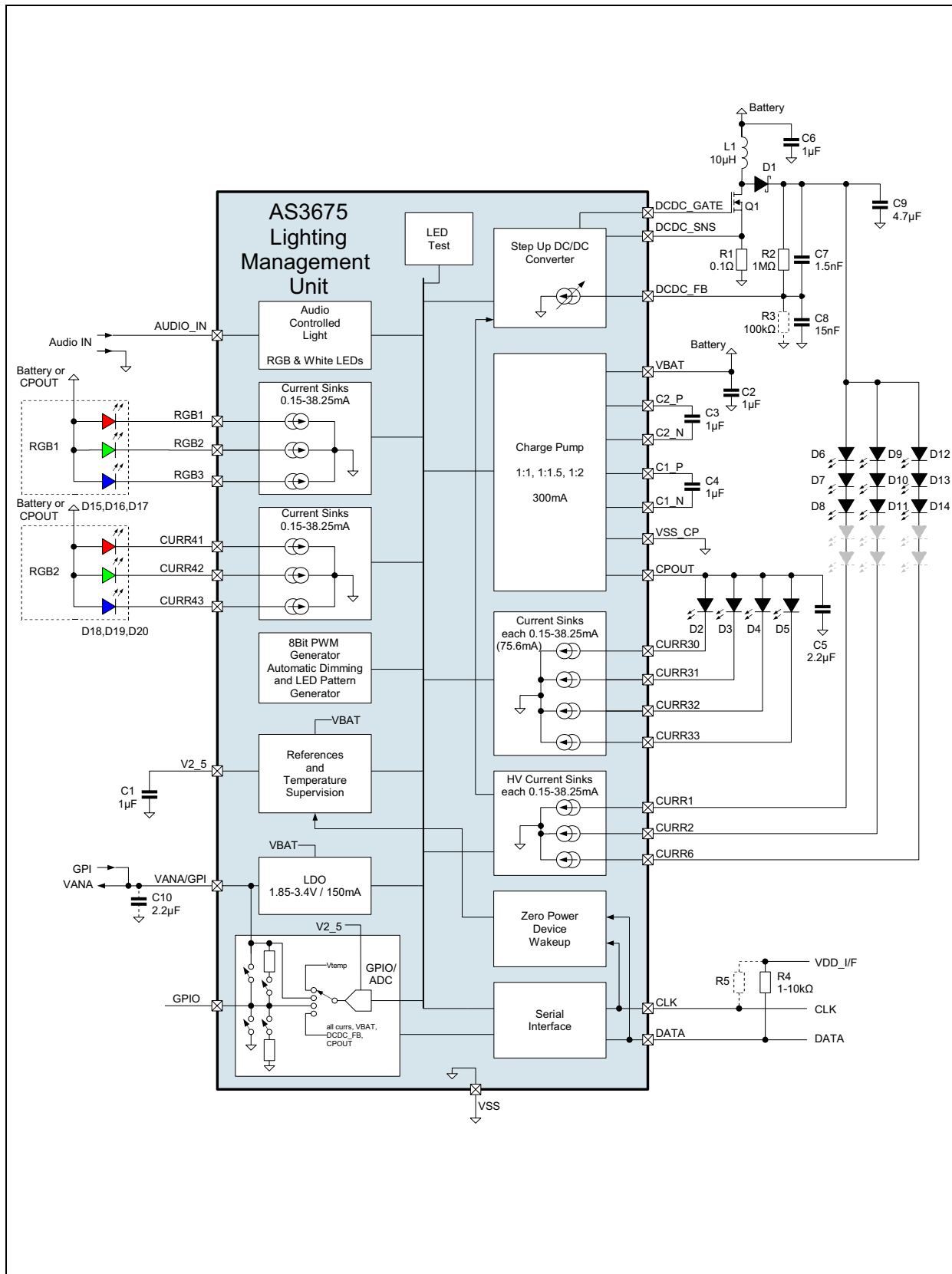
2 Key Features

- High-Efficiency Step Up DC/DC Converter
 - Up to 16V/55mA (or 25V/35mA) for White LEDs
 - Programmable Output Voltage with External Resistors and Serial Interface
 - Over voltage Protection
- High-Efficiency High-Power Charge Pump
 - 1:1, 1:1.5, and 1:2 Mode
 - Automatic Up Switching (can be disabled and 1:2 mode can be blocked)
 - Output Current up to 300mA/500mA pulsed
 - Efficiency up to 95%
 - Very Low effective Resistance (2.5Ω typ. in 1:1.5)
 - Only 4 External Capacitors Required: 2 x 1μF Flying Capacitors, 2 x 2.2μF Input/Output Capacitors
 - Supports LCD White Backlight LEDs, or RGB LEDs
- 13 Current Sinks
 - All 13 current sinks fully Programmable (8-bit) from: 0.15mA to 38.5mA (up to 75.6mA for CURR30...CURR33)
 - Three current sinks are High Voltage capable (CURR1, CURR2, CURR6)
 - Programmable Hardware Control (Strobe, and Preview or PWM)
 - Selectively Enable/Disable Current Sinks
- Internal PWM Generation
 - 8 Bit resolution
 - Autonomous Logarithmic up/down dimming
- Led Pattern Generator
 - Autonomous driving for Fun RGB LEDs
 - Support indicator LEDs
- 10-bit Successive Approximation ADC
 - 27μs Conversion Time
 - Selectable Inputs: GPIO, all current sources, VBAT, CPOUT, DCDC_FB
 - Internal Temp. Measurement
 - Light Sensor input
- Support for automatic LED testing (open and shorted LEDs can be identified)
- Support for external Temperature Sensor for high current LED protection (CURR3x)
- Strobe Timeout protection
 - Up to 1600ms
 - Three different timing modes
- Two General Purpose Inputs/Output
 - VANA/GPI Input, GPIO Input/Output
 - Digital Input, Digital Output using VANA/GPI supply and Tristate
 - VANA/GPI internal pull down
 - GPIO Programmable Pull-Up/Down
- Programmable LDO
 - 1.85 to 3.4V, 150mA
 - Programmable via Serial Interface
- Standby LDO always on
 - Regulated 2.5V max. output 10mA
 - 3μA Quiescent Current
- Audio can be used to drive RGB LED or up to four white LEDs
 - RGB Color and Brightness is dependent on audio input amplitude or frequency
- White LEDs can be controlled by amplitude or frequency (different modes like bar-type or two and two LEDs driven by frequency filters)
- Wide Battery Supply Range: 3.0 to 5.5V
- Two Wire Serial Interface Control
- Over current and Thermal Protection
- WL-CSP30 3x2.5mm, 0.5mm pitch Package

3 Applications

Power- and lighting-management for mobile telephones and other 1-cell Li+ or 3-cell NiMH powered devices.

Figure 1. Block Diagram



Copyrights

Copyright © 1997-2008, austriamicrosystems AG, Schloss Premstaetten, 8141 Unterpremstaetten, Austria-Europe. Trademarks Registered ®. All rights reserved. The material herein may not be reproduced, adapted, merged, translated, stored, or used without the prior written consent of the copyright owner.

All products and companies mentioned are trademarks or registered trademarks of their respective companies.

Disclaimer

Devices sold by austriamicrosystems AG are covered by the warranty and patent indemnification provisions appearing in its Term of Sale. austriamicrosystems AG makes no warranty, express, statutory, implied, or by description regarding the information set forth herein or regarding the freedom of the described devices from patent infringement. austriamicrosystems AG reserves the right to change specifications and prices at any time and without notice. Therefore, prior to designing this product into a system, it is necessary to check with austriamicrosystems AG for current information. This product is intended for use in normal commercial applications. Applications requiring extended temperature range, unusual environmental requirements, or high reliability applications, such as military, medical life-support or life-sustaining equipment are specifically not recommended without additional processing by austriamicrosystems AG for each application. For shipments of less than 100 parts the manufacturing flow might show deviations from the standard production flow, such as test flow or test location.

The information furnished here by austriamicrosystems AG is believed to be correct and accurate. However, austriamicrosystems AG shall not be liable to recipient or any third party for any damages, including but not limited to personal injury, property damage, loss of profits, loss of use, interruption of business or indirect, special, incidental or consequential damages, of any kind, in connection with or arising out of the furnishing, performance or use of the technical data herein. No obligation or liability to recipient or any third party shall arise or flow out of austriamicrosystems AG rendering of technical or other services.



Contact Information

Headquarters

austriamicrosystems AG
A-8141 Schloss Premstaetten, Austria

Tel: +43 (0) 3136 500 0
Fax: +43 (0) 3136 525 01

For Sales Offices, Distributors and Representatives, please visit:

<http://www.austriamicrosystems.com/contact>