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Ultra Low Power RGBW LED Driver with Color Crossfade and Automated Sequences

Integrated charge pump delivers >92% efficiency with 3V LI coin cell battery in IoT applications

MILPITAS, CA: October 27, 2020 – Lumissil Microsystems, a division of ISSI, today announced the release of the IS31FL3197, a feature rich upgrade to the previously announced 4-channel LED driver IS31FL3195. The IS31FL3197 integrates a high-efficiency charge pump for operation down to 2.0V, a crossfade engine to create smooth color transitions and a programmable self-running pattern generator for automated RGBW lighting effects. With the introduction of this new device, Lumissil further expands its LED driver presence in energy saving markets for Internet-of-Things (IOT), wearable and battery operated devices.

The new IS31FL3197 is ideal for power-conscious applications where long battery life, high efficiency, small footprint and total RGBW color management is critical. LEDs can consume a considerable amount of power therefore, the IS31FL3197 with its low voltage range of 2.0 to 3.3V, low 700µA quiescent and 0.5µA shutdown current simplifies low power management applications. The individual LED current can be configured for up to 10mA with current-level adjust to maintain consistent LED brightness and color.

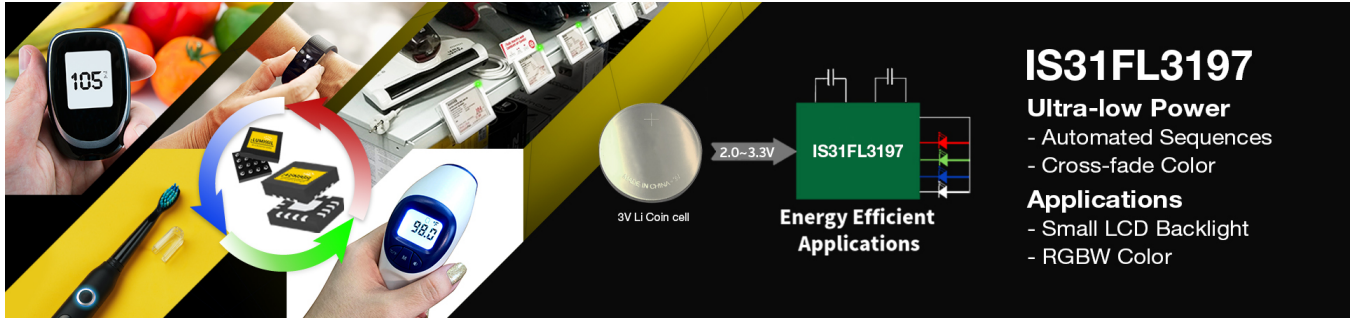
“Operating LEDs with lithium coin cell batteries can be a challenge especially when the battery voltage reaches its cutoff voltage of about 2.0V. The electronics might be capable of operating down to 1.8V but LEDs require a higher voltage for LCD backlighting and visual notification. The IS31FL3197 with its highly efficient charge pump and power saving features will enable RGBW LED operation down to the battery’s cutoff voltage.”, said Ven Shan, VP of Marketing at Lumissil Microsystems. Once programmed by the local microcontroller, the IS31FL3197 will continue its color crossfade or lighting sequences even when the microcontroller is shut down to conserve power. The 1MHz charge pump in the IS31FL3197 is automatically enabled when the battery voltage is not sufficient to power the LEDs. For additional power savings, the driver will disable unused blocks when the LEDs are not active and when the automated sequence is running; significantly decreasing the average power consumption.

Key features and benefits of the IS31FL3197

- Built-in 1MHz charge pump with 1.0x, 1.5x and 2.0x gain providing up to 92% LED drive efficiency
 - Operation from 2.0 to 3.3V
 - 0.5µA shutdown current; 700µA quiescent operating current
- I2C interface to configure RGBW LED sequences and current
- Support four LEDs – RGBW
 - Each LED current is configurable up to 10mA with software current adjust
 - Each LED has its own fade registers with independent start/stop
- Automatic operation with pre-established lighting patterns
 - Crossfade function to automatically cycle between predefined colors
- Very small footprint WLCSP-16 (1.88mm×1.8mm) and QFN-16 (4mm×4mm) packages

Price and Availability

The IS31FL3197-QFSL2-TR is available and priced at \$0.35 in quantities of 10,000.



IS31FL3197
Ultra-low Power
- Automated Sequences
- Cross-fade Color
Applications
- Small LCD Backlight
- RGBW Color

About Lumissil

Lumissil is the analog/mixed-signal product division of ISSI, a fabless semiconductor company that designs and markets high performance integrated circuits for the following key markets: (i) automotive, (ii) communications, (iii) industrial/medical, and (iv) digital consumer. Lumissil's primary products are LED drivers for low to mid-power RGB color mixing and high power lighting applications. Other products include audio, sensor, high speed wired communications, optical networking ICs and Application-specific microcontrollers. ISSI/Lumissil is headquartered in Silicon Valley with worldwide offices in Taiwan, Japan, Singapore, China, Europe, Hong Kong, India, and Korea. Visit our web site at <http://www.lumissil.com/>

About Integrated Silicon Solution, Inc. (ISSI)

ISSI is a fabless semiconductor company that designs, develops and markets high performance SRAM, DRAM, Flash memory (including NOR flash, NAND flash and managed NAND solutions (eMMC)), and Analog/Mixed-signal integrated circuits. ISSI provides high-quality semiconductor products and has been a committed long-term supplier to its customers. ISSI is headquartered in Silicon Valley with worldwide offices in Taiwan, Japan, Singapore, China, Europe, Hong Kong, India, and Korea. Visit our web site at <http://www.issi.com/>

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