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ISSI Launches Next Generation Family of Matrix FxLED Driver ICs

IS31FL3741, IS31FL3742 drive up to 351 LEDs and support individual LED lighting effect functions for creating a configurable array of color animation visuals with fault reporting

Integrated Silicon Solution, Inc., a leader in advanced memory and analog IC solutions, today announced a family of high performance LED drivers, IS31FL3741 & IS31FL3742 to support LED matrices consisting of 351 & 180 LEDs respectively. With the introduction of these two devices, ISSI expands its FxLED driver family to offer the widest selection of matrix LED driver solutions for gaming, consumer and white goods applications. ISSI's LED matrix architecture provides designers with flexibility in controlling individual LEDs or an array of LEDs resulting in simplified color & dimming adjustment and lighting zone selection for a large array of LEDs.

The IS31FL374x family of matrix LED drivers integrates many advanced features such as a configurable matrix (row/column) architecture, global dimming, individual LED peak current control registers, individual LED PWM control registers, individual LED open/short fault detection; all accessible via a fast 1MHz I2C compatible bus interface. Each LED has its own corresponding control and fault status register to provide individual LED color and dimming effects, de-ghosting and fault reporting for enhanced overall system performance and reliability. LED matrix architectures typically experience a "ghosting effect" where an LED remains dimly ON due to a residual charge in the LED array matrix. The IS31FL374x family eliminates this residual charge and therefore the ghosting effect. In addition LEDs can fail to turn ON due to an LED open or short condition without the knowledge of the system. The IS31FL374x family detects the failed LED condition, stores this in the open or short registers and generates an interrupt to notify the failure LED within the array.

Compared to the traditional LED dimming control, the IS31FL374x family features individual LED peak current adjust called "Dot Correction" to adjust the brightness of the LED in 256 steps. This feature allows the user to adjust the color of LED to get the pure white color and keep 1.6 million levels of PWM dimming. It also allows the user to set different maximum current levels for different zones to get a better brightness balance.

"The growth in video gaming peripherals requires ever more customizable RGB LEDs synchronized to the gaming environment," said Ven Shan, ISSI VP of Analog products. "ISSI's latest family of matrix FxLED drivers provides peripheral designers with a feature rich, fast and flexible control of a large number LEDs; simplifying the integration and synchronization of the LED lighting effects for the high end gaming platforms."

The signals required to support 351, or 180 LEDs are driven in a row/column multiplexed architecture which reduces device package size while resulting in fewer traces and minimal PCB area. The added advantage of driving LEDs in this row/column configuration is that no LED will ever be reverse-biased at any time thereby improving LED longevity. For applications requiring a huge array of LEDs, up to 4 IS31FL374x devices can be connected with one I2C bus.

Key features and benefits of the IS31FL3741, IS31FL3742:

- **High LED Count** - Up to 351 LEDs (39x9) matrix
- **1/9 Duty Cycle Scanning**- Higher average LED brightness
- **Theatrical Dimming** – Three selectable smooth dimming scenarios for each LED
- **De-Ghost Function** – Guarantees LED is either fully ON or OFF
- **Global Current Set** - 256 steps Global Current Setting
- **8-bit Dot Correction** - Individual 256 DC peak current control steps
- **8-bit Grayscale Control** - Individual 256 PWM control steps
- **Fault Detection** - Individual LED open or short detection with system notification
- **High Speed Interface** - 1MHz I2C-compatible interface provides fast access to LED registers
- **Industrial Temperature** – Operating temperature range -40°C to +125°C for high reliability

Price and Availability

The IS31FL3741 is available now in a QFN 60 (7x7) package and is priced at \$1.76 each in 2500 pcs quantities. The IS31FL3742 is available now in a QFN-48 (6x6) package and is priced at \$1.29 each in 2500 pcs quantities.

ISSI Analog Product Line

The IS31FL3741, IS31FL3742 are members of ISSI's FxLED Family of LED drivers which add an attractive multi-color aspect to any application. The FxLED driver family blends the Red-Green-Blue (RGB) LEDs to produce a broad range of predefined colors and sequences into 3 to 351 LEDs. The ISSI analog product line includes five different members; FxLED Driver, Audio Amplifier, HBLED Driver, White (Backlight) LED Driver, and sensor IC devices.

For more information on this and other RGB LED products, visit the ISSI Analog products website at www.issi.com/US/product-analog-fxled-driver.shtml

About Integrated Silicon Solution, Inc.

ISSI is 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. The Company's primary products are high speed and low power SRAM and low, medium, and high density DRAM. The Company also designs and markets Serial/Parallel NOR and SLC NAND Flash Products and high performance analog and mixed signal integrated circuits. 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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Maximize LED Control with the IS31FL374x Matrix Driver Family
Drive up to 351 single color LEDs or 117 RGB LEDs

Drive entire RGB keyboard with one IC!

ISSI IS31FL3741

ISSI IS31FL3742

Drive entire RGB LEDs with one IC!

RGB Gaming Keyboard

Appliance Control

The advertisement features a red banner at the top with white text. Below the banner, there are two main images: a backlit gaming keyboard on the left and a washing machine control panel on the right. Two ISSI IC chips are shown in the center, one labeled IS31FL3741 and the other IS31FL3742. Two yellow starburst callouts point to the keyboard and the washing machine, each containing the text 'Drive entire RGB keyboard with one IC!' and 'Drive entire RGB LEDs with one IC!' respectively. The keyboard is labeled 'RGB Gaming Keyboard' and the washing machine is labeled 'Appliance Control'.