

## Best-in Class Family of 1 to 3 RGB LED Drivers

Lumissil recently announced the IS31FL3293 (1 RGB), IS31FL3296 (2 RGB), and IS31FL3299 (3 RGB) micropower LED drivers. These drivers represent a technology refresh for the older IS31FL3193, IS31FL3196 and the IS31FL3199 devices which have been and will continue to be available for many years to come. The refresh is required as our customers are coming aware of the value of color LEDs in wearables, Bluetooth appliances, AI speakers, personal grooming, medical devices and other applications. These applications require small package devices, with high quality color output and extremely low power consumption.

The IS31FL3293/6/9 devices consume less than 200uA when fully operational and only 0.3uA when placed into sleep mode, making them ideal for applications requiring long battery life. In comparison, the older IS31FL3193/6/9 devices consumed 3mA (3,000 uA) which is 15x more than the latest IS31FL3293/6/9 devices.

Another feature requested by customers is an enhanced breath engine. The older IS31FL319x devices have a programmable breath engine for LED fade ON/OFF which is also supported in the IS31FL329x devices. However, the IS31FL329x's new enhanced breath engine adds a greater dimension with performance features such as pre-configured breath color change registers, independent RGB group color changing patterns, gamma corrected fading, and finer breath cycle control.

Color accuracy is another enhanced feature found in the new IS31FL329x devices. Accurate color is achieved with a higher resolution PWM clock and fine current adjustments. The IS31FL329x support a 12-bit PWM, 6-bit (64 levels) current and 8-bit individual LED current; an improvement over the IS31FL319x's 8-bit PWM, only 8 current level selections and no individual LED current adjustment.

The only feature found in the IS31FL319x and not supported in the IS31FL329x is the audio input mode with AGC function. We found this feature was not used by customers and therefore we decided to remove it to make room for the many other enhancements.

The good news is the IS31FL319x and IS31FL329x are package pinout drop-in replacements. The removed audio input feature resulted in No Connect (NC) pins on the IS31FL329x packages, otherwise the pinout positions are identical. However, since many feature enhancements have been packed into the IS31FL329x family, the registers and quantity are different from the IS31FL319x requiring the software code to be re-written. [Click here](#) for press release.