1623 Buckeye Dr.
Milpitas, CA 95035
P. 408-969-6600
W. www.lumissil.com

LED Driver with CAN Bus for Dynamic Automotive Interior RGB Lighting

The IS32FL3202 integrates CAN Bus interface that enables rapid response for LED strings with 256 RGB LEDs

MILPITAS, Calif., June 11, 2024 -- Lumissil Microsystems sets a new standard for dynamic interior automotive lighting with the release of the IS32FL3202 RGB LED driver. This smart LED driver significantly increases the number of addressable RGB LEDs within a single communication channel, facilitating dynamic color and intensity changes across hundreds of RGB LEDs. The IS32FL3202 enables lighting engineers to innovate automotive cabin lighting applications, including decorative trim, roof starlight, and integrated seat and door RGB lighting.

Lumissil's new smart RGB LED driver technology simplifies the implementation of dynamic color and intensity-changing arrays of hundreds of RGB LEDs in car interior lighting. A demonstration of the IS32FL3202's capabilities in RGB lighting control and communication speed will be displayed at the DVN Detroit Workshop on June 11th-12th, 2024.

The IS32FL3202 is a three-channel smart LED controller. Each channel supports 6-bit current adjustment for color setting and 12-bit PWM for smooth LED dimming control. To minimize EMI, the IS32FL3202 supports spread spectrum on the PWM clock generator. It supports Location Address Assignment for addressing hundreds of RGB LEDs without the need for address pins. The maximum output current of each LED channel is 63mA.

The new IS32FL3202 incorporates a state machine core that enables low-latency communication with any microcontroller over a CAN bus interface, speeding up the transmission of instructions for individual LED brightness and color control. This integrated state machine also measures the RGB LED temperature and employs a built-in temperature compensation algorithm to ensure consistent luminance across a wide temperature range. The temperature compensated PWM data is stored in 16-bit registers. All the IS32FL3202 registers can be accessed and updated via the fast CAN Bus.

"Automotive lighting engineers can achieve innovative dynamic lighting effects in car interiors using the IS32FL3202," said Ven Shan, VP of Lumissil Marketing. "Up to 256 RGB LEDs connected in a single daisy chain string and multiple other LED strings, can be controlled by a single industry-standard microcontroller. Additionally, the die can be co-packaged with LEDs to offer integrated SMART LEDs."

Lumissil also offers the IS32FL3202 in die form, with a layout optimized for LED integration. The resulting co-packaged SMART LEDs are factory calibrated, digitally addressable RGB LEDs with

1623 Buckeye Dr.
Milpitas, CA 95035
P. 408-969-6600
W. www.lumissil.com

an integrated IS32FL3202 smart LED driver. This design eliminates the need for LED binning and manufacturing line calibration. These pre-calibrated SMART LEDs are ideal for compact, fast-to-market applications, as they require no additional calibration steps and minimal components and PCB space.

The IS32FL3202 is available now in production quantities in a WFDFN-10 (3mm×3mm) package or in die form. It operates within a voltage range of 3.5V to 6.5V over the temperature range of -40°C to +125°C.

About Lumissil Microsystems

Lumissil Microsystems specializing in analog/mixed-signal products for automotive, communications, industrial, and consumer markets. Lumissil's primary products are LED drivers for low to mid-power RGB color mixing and high-power lighting applications. Other products include audio, sensors, high-speed wire communications, optical networking, and application-specific microcontrollers. Lumissil Microsystems have worldwide offices in the US, Taiwan, Japan, Singapore, mainland China, Europe, Hong Kong, India, and Korea. Website: https://www.lumissil.com

Ven Shan

P: 408-969-4622
vshan@lumissil.com

Aaron Reynoso

P: 408-969-5141
areynoso@lumissil.com