Lumissil announces a Quad Channel LIN RGB+W LED Controller

60mA LED Current for ambient and animated interior or exterior automotive lighting applications

MILPITAS, Calif., January 23, 2023: Lumissil Microsystems, a division of Integrated Silicon Solution, Inc. (ISSI), announced today the IS32LT3183A, a fully integrated LIN RGB+W LED controller consisting of a LIN transceiver, a LIN protocol engine, four configurable high voltage GPIO outputs and a programmable MCU; ideal for cost-effective ambient light modules connected to the automotive LIN bus. It is compliant with all the latest LIN standards assuring interoperability with current and future automotive lighting in door trim, dashboard and other lighting applications.

The IS32LT3183A is designed for ambient and animated automotive lighting applications compliant with LIN 2.0/2.1/2.2A as well as SAE J2602 bus standards. For accurate color rendition, the integrated math co-processor and flash memory handle color calibration, software animation patterns, LED fade and color transition functions. The four independent outputs have built-in direct and indirect temperature monitoring that enables temperature compensation to ensure accurate color and brightness levels over the full operating temperature range of -40°C to 125°C.

The IS32LT3183A's flexible GPIOs can be programmed for either LED driver or serial bus interface functionality. They can be configured as an I2C master or SPI master interface to create a LIN to serial bus bridge or they can be configured as standard I/O's with ADC, interrupt and de-bounce capability. When configured as LED driver, the four high voltage I/O's can be programmed to sink up to 60mA of LED current with 16-bit PWM dimming and spread spectrum for lowering the EMI noise floor.

The IS32LT3183A's integrated MCU is a single-cycle 8051 based CPU with watchdog timer, math co-processor with 32kB flash and 2kB SRAM ECC protected memory for fast reliable data manipulations. For ease of use it supports a node auto-addressing capability using the bus shunt method (BSM) to detect the relative position of slave devices within the automotive LIN bus. The LIN master can then send RGB color, intensity and control instructions to a specific IS32LT3183A device and read back its operating status and error information at 19.2kbps data rates.

The IS32LT3183A can operate from a wide 5.5V to18V range for reliable performance even when the vehicle's supply fluctuates, such as during stop-start operation. It also includes built-in protection features such as 40V load dump, battery overvoltage and undervoltage detection. In order to minimize current consumption, the IS32LT3183A supports a sleep mode with LIN bus wake-up capability. An integrated 12-bit SAR ADC can be used for power management, GPIO analog readback, and LED temperature/ageing compensation algorithms.

"Lumissil is a recognized leader for high performance RGB LED drivers that go into gaming, consumer and other markets requiring accurate LED color management, " said Ven Shan, Vice President of Marketing. "With RGB lighting becoming a key automotive differentiator, we are responding with our first of more to come LIN compliant LED drivers that benefit from Lumissil's expertise in LED control."

The IS32LT3183A is LIN 2.0/2.1/2.2A, SAE J2602 and AEC-Q100 compliant and comes in a standard thermally enhanced SOP-8-EP package. Available resources to help accelerate application development consist of evaluation boards, GUI for calibration, C-Compiler package, and sample software that includes LIN driver, color mixing, math library, and IC initialization routines.

Availability and Pricing
The IS32LT3183A is sampling and production ready now. Production quantities of 10k are priced at $0.90 each. Contact Lumissil for access to the latest evaluation boards and software development environment.

About Lumissil Microsystems
Lumissil Microsystems is a division of ISSI 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 wired communications, optical networking and application-specific microcontrollers. Lumissil Microsystems has its regional headquarters in Silicon valley and worldwide offices in the US, Taiwan, Japan, and Singapore, mainland China, Europe, Hong Kong, India, and Korea. Website: 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 has its regional headquarters in Silicon Valley and worldwide offices in the US, Taiwan, Japan, Singapore, mainland China, Europe, Hong Kong, India, and Korea. Visit our website at http://www.issi.com/

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