

30V, 24x4 Dot Matrix LED Driver for Signage and Gaming Machines

10MHz Serial Bus with 8Bit PWM+ 8 Bit Analog Dimming enables rich RGB colors

MILPITAS, Calif., January 18, 2020 -- Lumissil Microsystems today introduced the IS31FL3748, a new class of LED driver designed for creating extremely bright and colorful LED-based signage board displays. The IS31FL3748 is targeted for applications such as indoor or outdoor LED digital sign boards, zonal backlighting of LCD TV displays and attention grabbing RGB color lights for gaming machines.

The IS31FL3748 is firstly a software configurable 24x4 LED matrix driver which designers can use to create LED array sizes of up to 96 individually addressable LED dots. Each LED can be driven by a 0~40mA current, set by an external resistor and scalable through software registers. In addition each LED dot can be replaced by a number of serially connected LEDs. The result is instead of one individually addressable LED driven at 40mA; it is now possible to drive up to 9 Red LEDs or 7 of the Blue, Green or White LEDs in place of a single LED dot. The combined light output of multiple LEDs can then be used in large signs visible in daytime or used in dynamic zonal backlighting of LCD TFT displays or integrated into bright animated RGB color lights.

LEDs used for outdoor signage must compete with the sun for visibility. Viewing digital signs in daylight requires that LEDs output more light than typically required indoors so as to compensate for bright sun conditions. Obtaining a bright LED light can be accomplished by increasing the LED current or by increasing the number of LEDs. The IS31FL3748 addresses both of these requirements by supporting a 40mA current per LED and providing the capability for stacking many LEDs. Furthermore, multiple IS31FL3748 devices can be interconnected with a serial bus to expand the total display area. IS31FL3748 has three serial bus options; HSB (high speed series bus, up to 10MHz), DSB (Manchester encoded, daisy chained serial bus, up to 2MHz) or SPI (12MHz) bus.

“LED arrays are becoming the building blocks for interactive LED signage displays,” said Ven Shan, Vice President of Marketing. “With our latest IS31FL3748 LED matrix driver, sign developers and makers can create highly visible signs for advertising, information displays for transportation vehicles, transit terminals, sporting arenas and anywhere information needs to be displayed to the public. Other creative applications are for interactive LCD display backlighting and gaming machines found in casinos and pachinko parlors.”

The IS31FL3748 provides designers with increased system reliability and dynamic brightness control to enhance the visibility and long-term operation of large LED signboards. Power smoothing features such as LED group delay and system clock skewing minimize power supply stress and transient noise. Spread spectrum technology designed into the IS31FL3748 will further reduce EMI radiation. Additional analog and digital dimming capabilities such as 8-bit dot correction will help compensate for LED luminous mismatch and PWM control will adjust the display brightness.

Other reliability enhancement capabilities integrated into the IS31FL3748 are LED open or short detection and a thermal error flag. The device is designed to operate over a wide temperature range of -40°C to 125°C which is beyond the typical extended industrial temperature range.

Availability and pricing

The IS31FL3748 is available now in production quantities and comes in a 6x6mm 48-pin QFN package. It is priced at \$1.25 each in 10K pcs quantities.

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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IS31FL3748
High Voltage Matrix LED Driver
Signage, Gaming & Backlight Applications