Microcontrollers for Advanced Lighting Solutions

TI's MCU lighting solutions give designers efficient, flexible and scalable intelligent lighting management and control

Intelligent lighting is the ability to reduce the amount of light and/or energy used so that only the right amount of light is delivered exactly where it is needed. Digitally controlled lighting using microcontrollers (MCUs) allows developers to take advantage of the unique characteristics of LEDs and other light sources to develop efficient, scalable and flexible designs for intelligent lighting. With digital control, designers can scale and easily adjust designs to multiple applications, maximizing reuse and decreasing design time. A digital approach also allows many hardware features, such as soft startup, delay and PWM phase shifting, to be implemented in software, eliminating extra components, cost and complexity. TI's communications and control solutions are for both wired and wireless systems supporting a wide selection of communication standards.

Texas Instruments offers a broad suite of microcontroller solutions for your LED and other lighting design and control needs as well as demonstration platforms and development kits. The table to the left is a sample of what is available now. For more information on these and new products throughout the year, visit **www.ti.com/mculighting**.

Solution/ Protocol	Product	Tool/Kit	For more info
DALI	MSP430™ MCU	TPS62660 LED-338 EVM	**www.ti.com/daliappnote**
DMX512	MSP430 MCU/ Stellaris®	DMX512 apps note/Third-party design	**www.ti.com/mculighting**
Power line communication	C2000™ MCUs	TMDSPLCKIT-V2	**www.ti.com/mculighting**
ZigBee® / 802.15.4	MSP430F54xxA	MSP430F5438 Experimenter's Board	**www.ti.com/msp430f5438**
6LoWPAN	CC430 (MSP430 MCU + Low-Power RF)	Third-party design	**www.ti.com/mculighting**
Digital power	Piccolo™ (C2000 MCU)	TMDSDCDCLEDKIT TMDSRGBLEDKIT	**www.ti.com/led_devkit** **www.ti.com/rgb_led**
Ethernet	Stellaris	Ethernet development and evaluation kits	**www.ti.com/stellariskits**
General-use MCU (user interface, system supervisor, etc.)	MSP430 MCU	Development and evaluation kits	**www.ti.com/msp430**

What's new:

Design cutting-edge lighting systems with Piccolo LED Lighting Developer's Kits

- Independent control of 8 LED strings
- Digitally controlled DC/DC power stages
- Open-source development through controlSUITE™ software
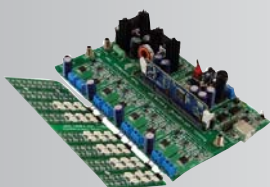

Piccolo DC/DC Lighting Kit

Piccolo Multi-DC/DC Color LED Kit

Key benefits

- Support for industry-standard communications: Power line communications (PLC), DALI, DMX512, ZigBee®, 6LoWPAN, and many others
- Design flexibility and scalability for maximum reuse of designs and cost management
- High-efficiency control of LEDs and other light sources
- Intelligent lighting management allows delivery of the right amount of light at the right time in the right place
- Power supply integration through digital power for an adaptable, full-system design with fewer components
- Accelerated development with extensive array of evaluation tools and kits

MCU Advanced Lighting: Multi-String LED Driver
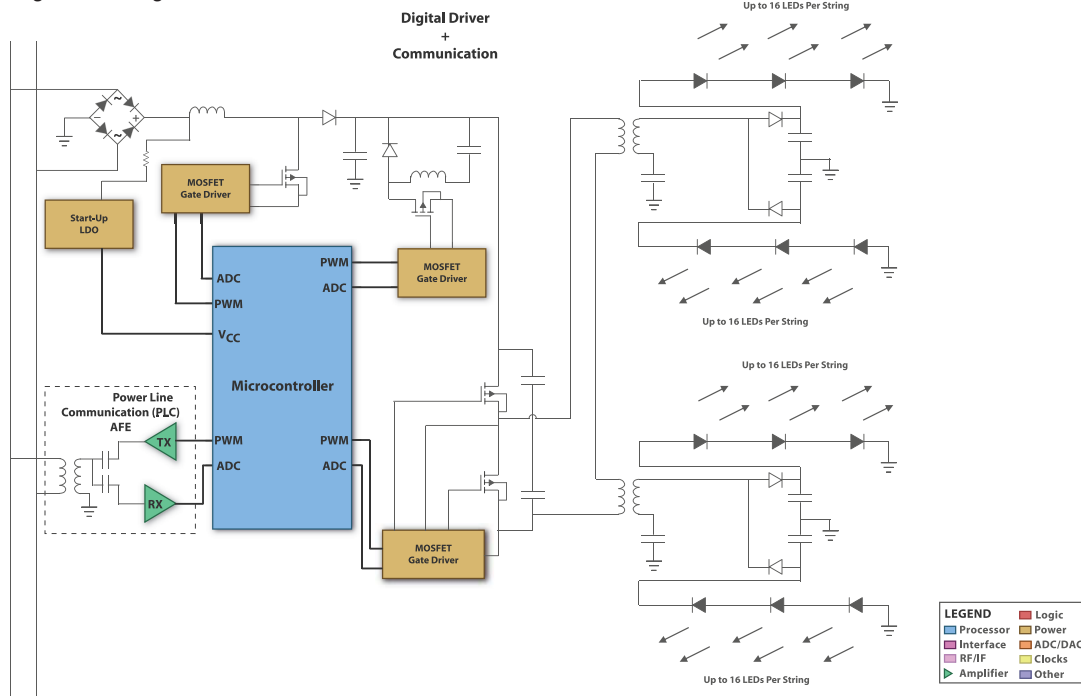
▲ *Digital control of LEDs using MCUs allows developers to take full advantage of the unique characteristics of LEDs. TI's C2000™ and Piccolo™ real-time MCUs can perform all power management functions needed in a lighting product, giving flexibility for regional products or quick design spins. MCUs have a low-cost adder for additional LED strings, a high-dimming ratio of greater than 20,0000:1 and a high PWM-dimming frequency of >100KHz. Digital communications can be achieved via wired or wireless communications through a number of different communication standards including 6LoWPAN and power line communications. TI offers microcontroller solutions for all your LED lighting design and control needs, including demonstration platforms and development kits. Visit www.ti.com/led for more information.*

TI Worldwide Technical Support

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support.ti.com

TI E2E™ Community Home Page
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Product Information Centers

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Mexico	Phone	0800-670-7544
	Fax	+1(972) 927-6377
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Note: The European Free Call (Toll Free) number is not active in all countries. If you have technical difficulty calling the free call number, please use the international number above.

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