

Marvell And Osram Further Adoption Of Superior Quality LED Lighting With Turnkey Reference Design

Marvell and Osram to showcase multi-channel professional LED lighting solution at LIGHTFAIR International 2012

SANTA CLARA, Calif., and LAS VEGAS, May 9, 2012 /PRNewswire/ -- Marvell (Nasdaq: MRVL) and Osram Opto Semiconductors today announced the availability of the Marvell-Osram two-color LED downlight reference design to further facilitate mass market adoption of high-quality, affordable LED lighting. The turnkey reference design, based on high performance LEDs from Osram and highly integrated and advanced driver ICs from Marvell, drastically reduces the engineering complexity involved in designing and manufacturing premium performance, high-color rendering index (CRI) LED luminaires for professional and commercial lighting applications. This is expected to enable lighting original equipment manufacturers (OEMs) to easily develop and offer significantly higher quality LED products at more affordable prices to end users. The reference design will be shown at LIGHTFAIR International 2012 from May 9 - 11 in Las Vegas.

(Photo: <http://photos.prnewswire.com/prnh/20120509/AQ03824>)

(Logo: https://investor.marvell.com/image/Marvell_logo.jpg)

This turnkey reference design, based on Osram's Brilliant Mix LEDs and the Marvell® 88EM8801 LED driver IC, offers an unparalleled solution for mixing and controlling the EQ-white and amber LEDs to achieve higher CRI and lumens per watt. Marvell's 88EM8801 LED driver IC integrates circuitry for two-channel drive electronics and various on-chip digital controls, addressing complex design challenges commonly faced by OEMs, and lowering the overall bill of materials (BOM).

"With standard LEDs, current color mixing technologies make it impossible to realize a LED luminaire with both high efficiency and high CRI. EQ-white and amber LEDs have different luminous flux behavior causing complex operating temperature design challenges," said Joerg Schmidt, marketing manager with Osram Opto Semiconductors. "Joining forces with Marvell was instrumental in furthering Osram Opto Semiconductors' deployment of high-quality, low-cost LEDs for mass market commercial and residential lighting. Leveraging Marvell's innovative LED IC driver and Osram's Brilliant Mix technology, OEMs can easily build a feedback controlled system for temperature drift compensation to enable brilliant color, high performance and energy efficient lighting."

"Our collaboration with Osram Opto Semiconductors validates Marvell's continued commitment to providing innovative, high-performance and low-cost LED driver solutions that further the mass market adoption of environmentally friendly, quality lighting," said Lance Zheng, senior technical marketing manager for the Green Technology Products Group at Marvell Semiconductor, Inc. "Building on Marvell's dual-string smart LED driver controller and single chip ZigBee microcontroller, the Marvell-Osram two-color downlight reference design brings us one step closer to the widespread implementation of LED lighting. With this reference design, we anticipate manufacturers should be able to quickly produce LED lamps and fixtures with superior light quality with integrated control that not only meets, but often exceeds consumers' performance needs."

Reference Design Details

The Marvell-Osram two-color LED downlight reference design uses the Marvell dual-string intelligent LED driver IC 88EM8801 and the Marvell microcontroller System-on-a-Chip (SoC) 88MZ100. The 88EM8801 is the industry's first dual-string smart LED controller chip, which uses the company's unique mixed-signal power technology to enable superior lighting performance while maintaining high-levels of integration and efficiency. The 88MZ100 microcontroller is the industry's first SoC with the highest level of integrated features for both ZigBee and DALI standards as well as custom lighting applications. Leveraging Osram's Brilliant-Mix LED mixing concept, the reference design achieves CRI of greater than 90; efficacy is 30 percent higher than other mass market LEDs; and an innovative temperature compensation feature overcomes color point shift issues.

Key Features

Lighting:

- 6-inch down light
- 1500 lm at 3000 K, 95 CRI
- 7 amber LEDs: 80 lm @ 350 mA
- 8 EQ-white LEDs: 145 lm @ 350 mA
- High efficacy: 90 lm/W @ T_J = 95 degrees C

LED Driver:

- Universal AC input - 85 to 265VAC
- High Power Factor - 0.99
- High Efficiency - 85percent
- Dimming down to 0.1 percent
- DALI or Wireless control

Marvell will showcase its technology from May 9 - 11 in Osram's booth (#2114 at the Las Vegas Convention Center) and the Marvell suite at LIGHTFAIR International 2012. For more information about Marvell's LED reference designs, visit www.marvell.com/green-technology.

About Marvell

Marvell (NASDAQ: MRVL) is a world leader in the development of storage, communications and consumer silicon solutions. Marvell's diverse product portfolio includes switching, transceiver, communications controller, wireless and storage solutions that power the entire communications infrastructure, including enterprise, metro, home and storage networking. As used in this release, the term "Marvell" refers to Marvell Technology Group Ltd. and its subsidiaries. For more information, visit Marvell.com.

About OSRAM Opto Semiconductors

OSRAM is part of the Industry sector of Siemens and one of the two leading lighting manufacturers in the world. Its subsidiary, OSRAM Opto Semiconductors GmbH in Regensburg (Germany), offers its customers solutions based on semiconductor technology for lighting, sensor and visualization applications. Osram Opto Semiconductors has production sites in Regensburg (Germany) and Penang (Malaysia). Its headquarters for North America is in Sunnyvale (USA), and for Asia in Hong Kong. Osram Opto Semiconductors also has sales offices throughout the world. For more information go to www.osram-os.com.

Disclaimer

No representation or warranties are made concerning third party patents with regard to the use of Marvell products. The mixing of red LEDs with phosphor-converted LEDs may be protected by certain third party patents.

OSRAM Opto Semiconductors GmbH and its subsidiaries generally make no representations and warranties in cases where LEDs as offered or sold are used in applications that could touch potential intellectual property rights of third parties. For example, the LED applications described herein may be protected in certain countries by members of the patent families including US patents no. 6,234,648, 6,577,073, and 7,213,940.

Marvell and the M logo are registered trademarks of Marvell and/or its affiliates. Other names and brands may be claimed as the property of others.

For Further Information Contact:

Marvell Media Relations

Daniel Yoo
Tel: (408) 222-2187
yoo@marvell.com

Kim Anderson
Tel: (408) 222-0950
kimander@marvell.com

Osram Media Relations

Kate Cleveland
Tel: (248) 277-8018
kate.cleveland@osram-os.com

SOURCE Marvell Semiconductor, Inc.

Additional assets available online: [Photos \(1\)](#)

<https://investor.marvell.com/2012-05-09-Marvell-and-Osram-Further-Adoption-of-Superior-Quality-LED-Lighting-with-Turnkey-Reference-Design>