APPLICATION BRIEF

Smart lighting solutions

From cost-sensitive to smart and connected lighting applications

Infineon supplies tailored products for LED drivers, LED strips, horticultural, and smart lighting. Its broad portfolio of LED lighting comprises LED driver ICs, MOSFETs, and microcontrollers suited for LED drivers as well as sensors and dedicated ICs for secure communication. In addition to offering products of proven quality, a global lighting team of experts, supports customers in designing LED lighting products and systems in collaboration with channel partners. For more information visit: infineon.com/lighting

In the last few years, connected and smart lighting have gained high momentum in the lighting industry. In this application field, sensing and connectivity play an essential role. Besides helping realize energy savings, they also enable new use cases beyond lighting controls.

For energy saving, passive infrared (PIR) sensors are used. Novel sensors like radar can overcome weaknesses of PIR sensors like poor design, limited detection of micro-movements, and limited area coverage, to name a few. Radar sensors can be seamlessly integrated into the luminaires enabling nice designs, since there is no need for drilling holes as in the case of PIR sensors. Advanced use cases like counting and tracking people can also be ensured with radar technology. For more information visit: infineon.com/makeradar

To add more intelligence to the entire system, connectivity is a key element. Embedding Bluetooth® Mesh networking in luminaires, fixtures, and wall switches, opens a range of system applications to manage brightness or color, efficiency based on occupancy movements, and correlation of lighting ecosystem components. The range and coverage of Bluetooth® Mesh allow for low latency, whole building coverage of automation and occupancy interaction via smartphone, tablet, and cloud applications for building management. Infineon provides a range of Bluetooth® Mesh MCUs and certified modules that enable lighting control functionality, safety and occupancy sensor management, and robust, secure, reliable networked managed solutions.

Wi-Fi is the backbone of enterprise, retail, and home internet connectivity. Wi-Fi is the bridging medium for Bluetooth® Mesh networks to enterprise networks and cloud applications, capturing messaging from across the lighting installation for secure enterprise building management applications. Wi-Fi can also connect sensors and fixtures directly to enterprise or home access points for long-range or integrated solutions, including security lighting and cameras. Infineon offers a range of secure, high-performance enterprise-ready Wi-Fi solutions that can be added to switches, panels, and lighting bays. These solutions can be stand-alone network nodes or offer Bluetooth® Mesh Gateway services bridging Mesh-networked devices to cloud applications. For more information visit: infineon.com/smart-lighting

Features and benefits

Wide portfolio
- Overall system coverage from power and connectivity to microcontroller
- Products enable future-proof and cost-effective designs

Broad offering
- One stop shop
- Reduction of suppliers
- Less sourcing cost, and effort

MOSFET offering
- Granular portfolio of Si MOSFET
- Up to 950 V in different packages, WBG suited for high performance

Application knowledge
- Excellent design support and technical expertise
- System optimization
- Reduction of development time
- Acceleration of time to market



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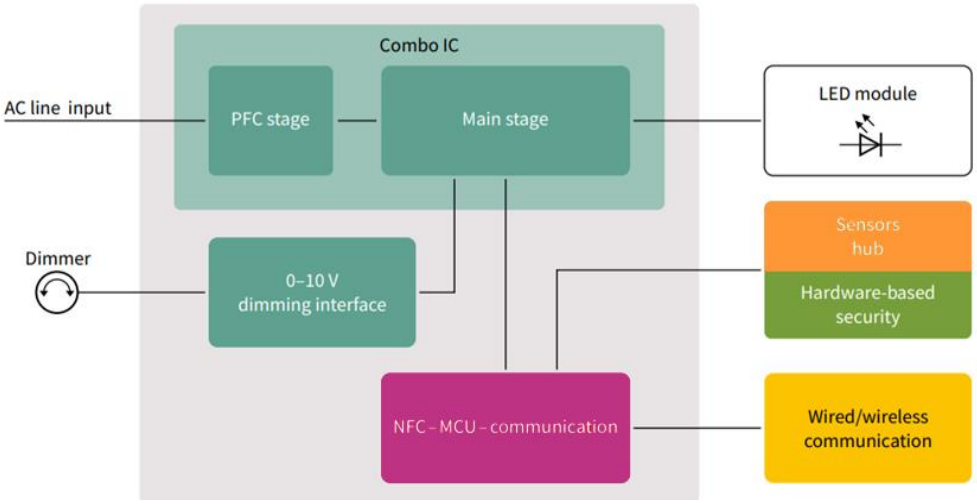

Functional Block	Product	Product Family	Specification	Benefits
PFC stage + main stage	LED driver ICs	XDPL8219 XDPL8221 ICL8810 ICL5102 ICL5102HV	Flyback controller with enhanced PFC Supports AC and DC input PFC flyback controller, constant voltage output Combo controller IC with input of 70V to 325V Unique one-package solution up to 350W	High-performance and robust designs Advanced LED driver for connected lighting Low BOM for 2-stage topologies Best-in-class PFC/THD at full and light load Combo IC of PFC + LLC/LCC
	Gate driver	CoolMOS™ 8 CoolMOS™ P7/PFD7		
	Power	CoolGaN™	40 V – 700 V GaN devices	Improve efficiency and power density
	Linear LED Driver IC	BCR 40XX	LED Driver ICs for low power LEDs	Quality and cost-efficient
	DC-DC LED Driver IC	ILD 8150 ILD 6150	80V DC-DC buck with hybrid dimming down to 0.5% Wide usable input voltage from 4.5-60V	Safe extra-low voltage (SELV) limits High efficiency, High output current accuracy ± 3%
Microcontroller	Microcontroller	XMC™ 1000 series XMC1201 XMC1301 XMC1302 XMC1400	32-bit Arm® Cortex®-M0	#1 choice to bring traditional 8-bit designs to the next level
Connectivity	Wireless connectivity	AIROC™ Wi-Fi and Wi-Fi+Bluetooth® Combo	IEEE 802.11a/b/g/n/ac/ax Wi-Fi and Bluetooth® 5.x in a single-chip	Technical support through our global network of IoT partners
	NFC-PWM configuration IC	NLM0010 NLM0011		
	OPTIGA™ Authenticate	NTB2000	NFC-I2C bridge tags	
Dimming interface	LED Dimming Driver IC	CDM10V-4/-3/-2 CDM10VD	Fully integrated 0-10V dimming interfaces IC	6-pin SOT package to cover space requirements on small PCBs
Sensing	XENSIV™ radar sensors	XENSIV™ 24GHz XENSIV™ 60GHz	XENSIV™ highly integrated 24 and 60 GHz radar sensors for consumer electronics and IoT applications	Energy and lifetime saving, small form factor

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