Product brief

NLM0011 and NLM0010

Dual-mode NFC configuration ICs with pulse width modulation (PWM) output

The NLM0011 is a dual-mode NFC wireless configuration IC with PWM output. It is compatible with existing analog LED-driver designs and with the NFC-programming specification from the Module-Driver Interface Special Interest Group (MD-SIG). This device is primarily designed for LED applications to enable NFC programming. In addition, advanced features such as the constant lumen output (CLO) as well as the on/off counting are integrated, and there is no need for an additional microcontroller. Since the NLM0011 is designed to work together with mainstream analog driver ICs, there are no firmware development efforts needed. It can be easily adapted into existing designs to replace the “plug-in resistor” current configuration concept. The NLM0010 is a light version without CLO function.

The NLM0011 operates in two operating modes: passive and active mode. In the passive mode, where no V_{CC} voltage supply is applied, PWM parameters can be configured wirelessly via the NFC interface. In active mode, as soon as the V_{CC} voltage supply is applied, a PWM output is generated according to the stored PWM parameters. With an external R/C filter, the PWM signal is converted to the desired DC voltage to control the current output of the LED driver. With an integrated operation-time counter and the LED degradation curve stored in the CLO table, the PWM signal is automatically adjusted to compensate for the LED degradation.

Applications

› Primarily designed for lighting applications
› Applications which use a PWM or a DC voltage as control signal

EVAL_NLM0011_DC – evaluation board demo kit

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Typical example of NFC lighting application

Ease of identification and authentication
The near-field communication (NFC) ensures that only objects at a defined physical position are contacted and programmed, significantly reducing the complexity of the identification and authentication process.

Flexibility and compatibility of LED driver and module
NFC programming enables the continuous adjustment of the light output level. Programming to match LED drivers to the modules can be done precisely at any time.

Improved operational efficiency
In a system consisting of an NFC reader and an NFC tag, the tag can operate without an external power supply. The power is supplied by the energy sent by the NFC reader and harvested in the RF field. Thus, an object equipped with an NFC tag can be programmed in a moving assembly line without the need to connect to a power supply, significantly improving operational efficiency.

Efficient product management reducing total ownership cost
The current level can be set automatically in the manufacturing line, saving labor costs. Enhanced supply chain flexibility and reduced logistics costs are also possible as the system can be adjusted just before shipping to distribution centers. Logistics complexity related to the national standards is reduced thanks to destination standard based NFC configuration features.

Postproduction reprogramming
The NFC feature allows for additional setup options such as individual on-site room lighting configuration.

Product brief

NLM0011 and NLM0010 are dual-mode NFC configuration ICs with pulse width modulation (PWM) output. They are designed for near-field communication (NFC) applications, allowing for easy identification and authentication of objects. The NFC programming enables continuous adjustment of the light output level, making them suitable for various application scenarios. Improved operational efficiency is achieved by operating without an external power supply, significantly reducing the need for labor-intensive setups. Efficient product management reduces total ownership costs, allowing for automatic setup in the manufacturing line and enhanced supply chain flexibility. Postproduction reprogramming options further enhance the adaptability of these ICs, allowing for individual on-site room lighting configuration.