The MLX81113 IC is a fully integrated low-end LIN slave for ambient light applications in automotive environments to drive via LIN bus RGB LEDs. It is suitable for bus systems according to LIN 2.x as well as SAE J2602.

The combination of a physical layer LIN transceiver and a LIN protocol controller together with current-controlled outputs make it possible to develop in a short timeframe simple, but powerful and cost-efficient ambient light modules connected to LIN bus systems.

**SINGLE-CHIP RGB LED CONTROL**

Like the chameleon we can set the RGB LED to every possible color.

**MLX81113**

The MLX81113 IC is a fully integrated low-end LIN slave for ambient light applications in automotive environments to drive via LIN bus RGB LEDs. It is suitable for bus systems according to LIN 2.x as well as SAE J2602.

The combination of a physical layer LIN transceiver and a LIN protocol controller together with current-controlled outputs make it possible to develop in a short timeframe simple, but powerful and cost-efficient ambient light modules connected to LIN bus systems.

**KEY FEATURES**

- 16-bit pipelined RISC microcontroller with
  - 32 kByte Flash
  - System ROM with bootloader and LIN driver
  - 2 kByte RAM
  - 576 Byte EEPROM
- Math co-processor for 32-bit MUL/DIV operations
- Watchdog timers with independent clocks
- Internal RC oscillator
- LIN protocol controller according to LIN 2.x and SAE J2602
  - Baudrate up to 19.2 kBaud
  - Frame processing
  - Low interrupt load to the application
- LIN transceiver according to LIN 2.x and SAE J2602
  - Support for autoaddressing according to bus shunt method
- 4x high voltage I/Os with free configurable current sources (up to 60 mA) for RGB+W
- Diagnostic capability for connected LED (short, open, threshold)
- 4x 16-bit PWM outputs
  - Configurable resolution

FOR MORE INFORMATION: WWW.MELEXIS.COM/MLX81113
10 bit ADC with DMA
- Multiple channels (outputs, VS, temperature sensor, IOs)
- Different reference voltages
- Differential as well as single-ended measurement capability
- DMA access

Low standby current consumption of typ. 25 μA (max 50 μA) in sleep mode

Integrated battery monitor including over- and under-voltage detection

Automotive temperature range of -40 °C to 125 °C

28 V jump start

Integrated temperature sensor

Developed following ISO26262 supporting safety system up to ASIL-A

AECQ-100 qualified

SOIC8 package with exposed pad

DFN10 3x3 package with exposed pad

---

EASY APPLICATION CONFIGURATION

![LIN Interface with autoaddress](image)

MLX81113

- LIN Interface with autoaddress
- VBat
- VS
- LC0
- LC1
- LC2
- GND
- LIN_IN
- LIN_OUT