# Product Abstract

## MLX81115
## Dual LIN RGB Slave Controller

## 1. Features

***Configurations***

- 12 pin device in DFN12 4x4 package

***Application Controller***

- Internal RC-Oscillator (24 MHz default clock)
- 16-bit MULAN MCU with
  - 32kByte Flash
  - 16kByte ROM for Bootloader, LIN driver
  - 2kByte RAM
  - 512 Byte NVRAM with ECC (380 Byte for customer purpose)
- Math Co-processor for 32 bit MUL/DIV Operations
- 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 Autoconfig according bus shunt method

***IO configuration***

- 6x high voltage I/Os with free configurable current sources (up to 48mA) for 2 times RGB
- Diagnostic capability for connected LED
- 6x 16-bit PWM outputs
- Interrupt capability for all inputs
- 10 bit ADC with DMA, conversion time <6us, multiple channels and 3 different reference voltages

***Voltage Regulator***

- Low standby current consumption of typ 25µA (max 50 µA) in sleep mode
- Integrated battery monitor including over- and under-voltage detection

***Other Features***

- Automotive Temperature Range of -40°C to 125°C
- 28V jump start
- Integrated temperature sensor

# Product Abstract

## MLX81115
## Dual LIN RGB Slave Controller

## Contents

## 2. Scope

This document is intended to give a brief introduction of the MLX81115 – Dual LIN RGB Controller.

The detailed information regarding this product as well as all the required development tools are available via the Melexis softdist service (https://softdist.melexis.com).

## 3. Melexis Softdist Server

Melexis SoftDist (https://softdist.melexis.com) is a software distribution system which allows customers to download documents, development software and other stuff related to Melexis products. In case updates or new items are available a notification email will be send automatically to all subscribers.

It's required to register in order to access the Melexis Softdist server.

In case you are not registered yet, please contact our sales team and specify which Melexis product you are interested in, in order to create an account and grant access to the correct product specific information:

| | |
|---|---|
| Europe, Africa | Email : sales_europe@melexis.com |
| Americas | Email : sales_usa@melexis.com |
| Asia | Email : sales_asia@melexis.com |

## 4. Short Description

This IC is a fully integrated low end LIN Slave for ambient light applications in automotive environment 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 physical layer LIN transceiver and LIN protocol controller in combination with current controlled outputs make it possible to develop in a short timeframe simple, but powerful and cheap ambient light modules connected to LIN Bus systems.

## 5. General Overview

### 5.1. Memory Configuration

| Part | Program Memory | User NVRAM | RAM | Package |
|---|---|---|---|---|
| **MLX81115** | 32kByte Flash<br>16kB ROM | 380Byte | 2kByte | DFN4x4 12 leads |

### 5.2. Block Diagram

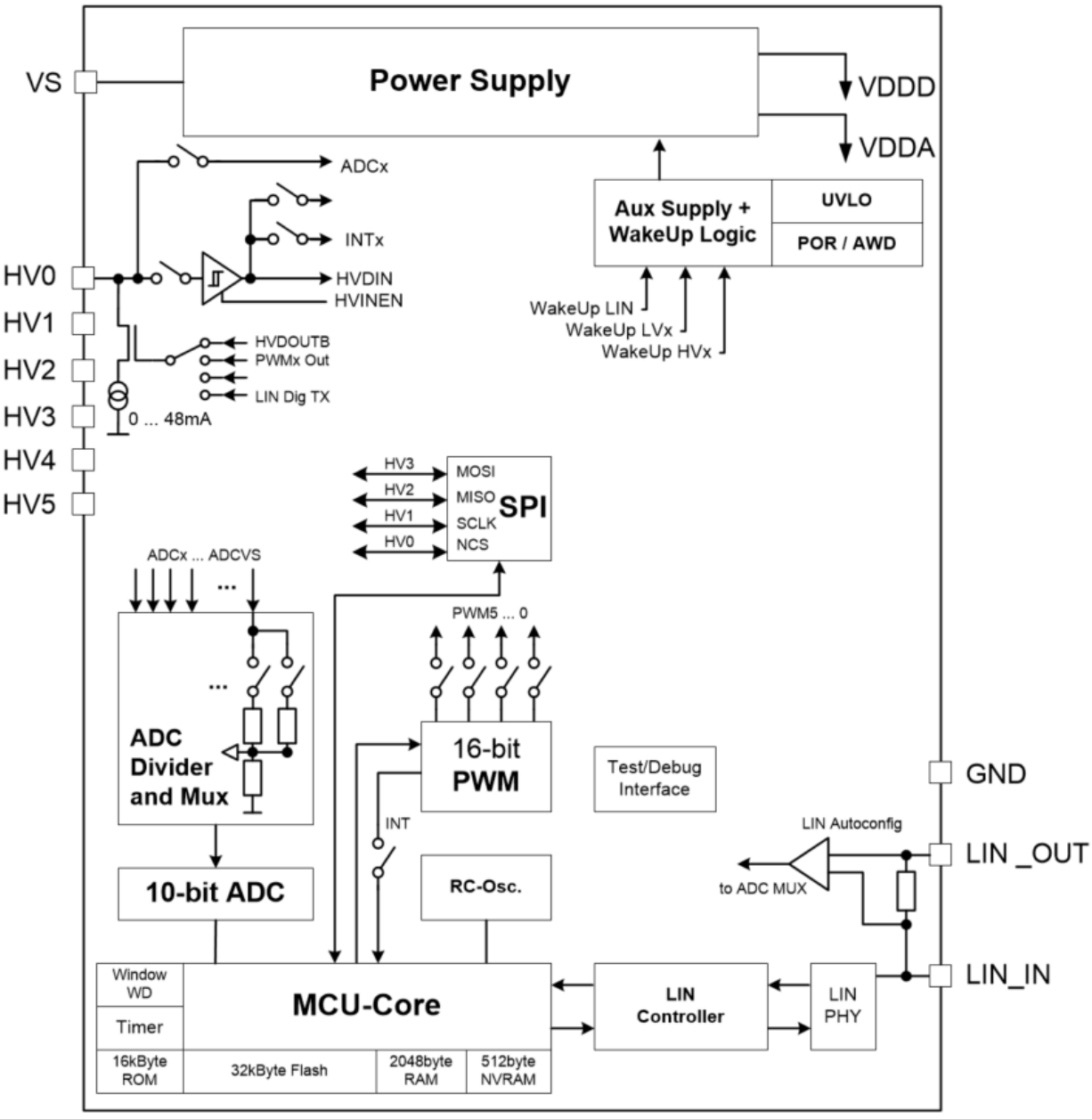


*Figure 1 - Block Diagram*

## 6. Electrical Characteristics

All voltages are referenced to ground (GND). Positive currents flow into the IC.

### 6.1. Operating Conditions

| Parameter | Symbol | Min | Max | Unit |
|---|---|---|---|---|
| Battery supply voltage [1] | $V_S$ | 5.5 | 18 | V |
| Operating ambient temperature | $T_{amb}$ | -40 | +125 | °C |

*Table 1 - Operating Conditions*

1) $V_s$ is the IC supply voltage including voltage drop of reverse battery protection diode, $V_{DROP}$ = 0.4…1V, $V_{BAT\_ECU}$ = 6…27V.

## 7. Application Hints

### 7.1. Application Example

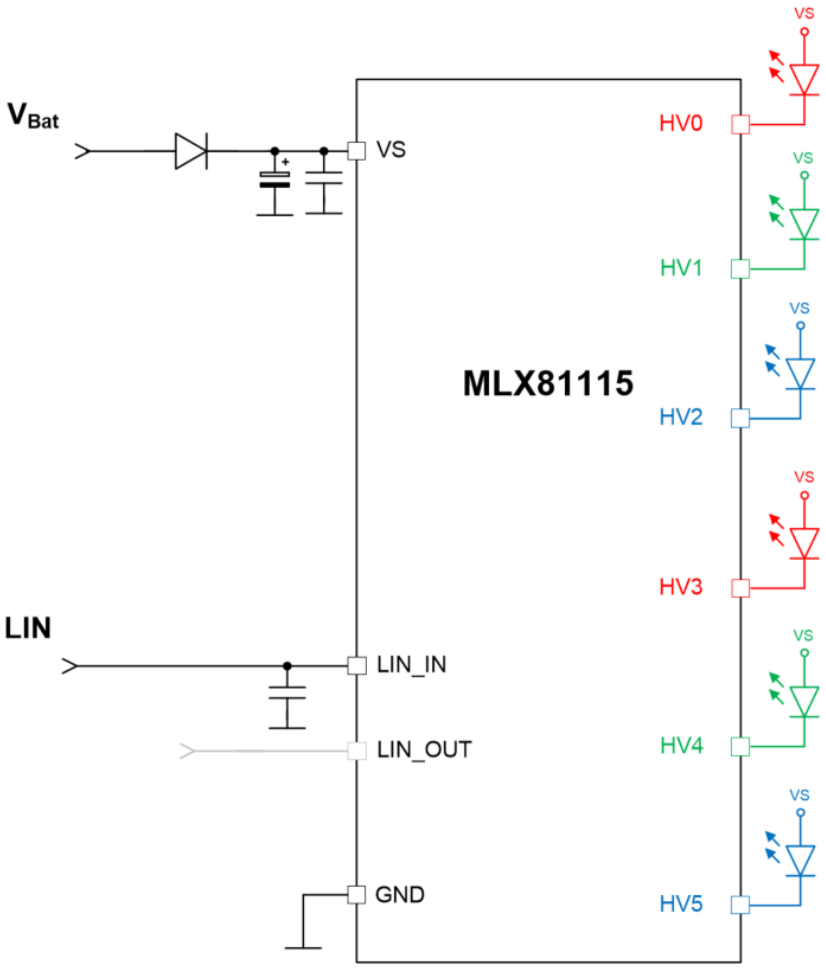


*Figure 2 - LIN RGB Slave*

## 8. Soldering information

Please see

http://www.melexis.com/Assets/Soldering-Application-Note-and-Recommendations-5446.aspx

## 9. Contact

For the latest version of this document, go to our website at www.melexis.com.

For additional information, please contact our Direct Sales team and get help for your specific needs:

| | |
|---|---|
| Europe, Africa | Email : sales_europe@melexis.com |
| Americas | Email : sales_usa@melexis.com |
| Asia | Email : sales_asia@melexis.com |

## 10. Disclaimer

# X-ON Electronics

Largest Supplier of Electrical and Electronic Components

***Click to view similar products for*** LED Lighting Drivers ***category:***

***Click to view products by*** Melexis ***manufacturer:***

Other Similar products are found below :

LV5235V-MPB-H MB39C602PNF-G-JNEFE1 MIC2871YMK-T5 AL1676-10BS7-13 AL1676-20AS7-13 AP5726WUG-7 ICL8201 IS31BL3228B-UTLS2-TR IS31BL3506B-TTLS2-TR AL3157F-7 AP5725FDCG-7 LV52204MTTBG AP5725WUG-7 STP4CMPQTR NCL30086BDR2G CAT4004BHU2-GT3 LV52207AXA-VH AP1694AS-13 TLE4242EJ AS3688 IS31LT3172-GRLS4-TR TLD2311EL KTD2694EDQ-TR KTZ8864EJAA-TR IS32LT3174-GRLA3-TR MP2488DN-LF-Z NLM0010XTSA1 AL1676-20BS7-13 ZXLD1370QESTTC MPQ7220GF-AEC1-P MPQ7220GR-AEC1-P MPQ4425BGJ-AEC1-P MPQ7220GF-AEC1-Z MPQ7220GR-AEC1-Z MPQ4425BGJ-AEC1-Z IS31FL3737B-QFLS4-TR IS31FL3239-QFLS4-TR KTD2058EUAC-TR KTD2037EWE-TR DIO5662ST6 KTD2026BEWE-TR MAX20052CATC/V+ MAX25606AUP/V+ BD6586MUV-E2 BD9206EFV-E2 LYT4227E LYT6079C-TL MP3394SGF-P MP4689AGN-P MPQ4425AGQB-AEC1-Z