EVB81112-A1

Short Description

Revision 002
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Contents

1. Scope

This document is intended to give a brief introduction of the EVB81112-A1 Evaluation Board (EVB). This EVB is designed to work with the MLX81106/08/12KDC and MLX80110KDC SOIC8 LIN RGB Controller family.

Samples of the MLX81106/08/12KDC or MLX80110KDC are not part of the EVB81112-A1 and they need to be ordered separately.

Beside of this document, several other important documentation papers are necessary for a detailed understanding.

The detailed information regarding our products including all required development tools will be distributed via the Melexis Softdist server (https://softdist.melexis.com).

2. Melexis Softdist Server

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3. MLX81106/08/12KDC / MLX80110KDC - Overview

3.1. Application Examples

- LIN slave for lighting applications to control up to 4 single color LEDs or one RGB LED plus a white one
- LIN slave for switch applications
- LIN slave for IO-Extension

3.2. Features

- 16-bit MULAN MCU with Math Co-processor
  - MLX81106KDC:
    - 24kB Flash
    - 1024 Byte RAM
    - 512 Byte NVRAM with ECC (380 Byte for customer purpose)
  - MLX81108KDC:
    - 32kB Flash
    - 1024 Byte RAM
    - 512 Byte NVRAM with ECC (380 Byte for customer purpose)
  - MLX80110KDC:
    - 32kB ROM
    - 1024 Byte RAM
    - 512 Byte NVRAM with ECC (380 Byte for customer purpose)
  - MLX81112KDC:
    - 32kB Flash
    - 16kB ROM
    - 2048 Byte RAM
    - 512 Byte NVRAM with ECC (256 Byte for customer purpose)
- LIN Protocol Controller according to LIN 2.x and SAE J2602
- LIN Transceiver according to LIN 2.x and SAE J2602
  - Support for LIN auto addressing according bus shunt method
- 4x High voltage I/O pins
  - Constant current sources (up to 48mA)
  - 16-bit PWM outputs
  - 10 bit ADC inputs
  - Diagnostic capability for connected LED
  - Interrupt capability
  - Wake up sources (LIN and IOs)
- Integrated Voltage Regulator
- Integrated RC-Oscillator
- SOIC8 package
- Designed for automotive applications

4. EVB - General Description

The EVB81112-A1 is equipped with SOIC8 socket for:

- MLX81106KDC
- MLX81108KDC
- MLX80110KDC
- MLX81112KDC

It can be used together with the Melexis Mini E-MLX emulator for:

- In-circuit debugging (without external components on HV0...3)
- Program FLASH and NVRAM (without external components on HV0...3)

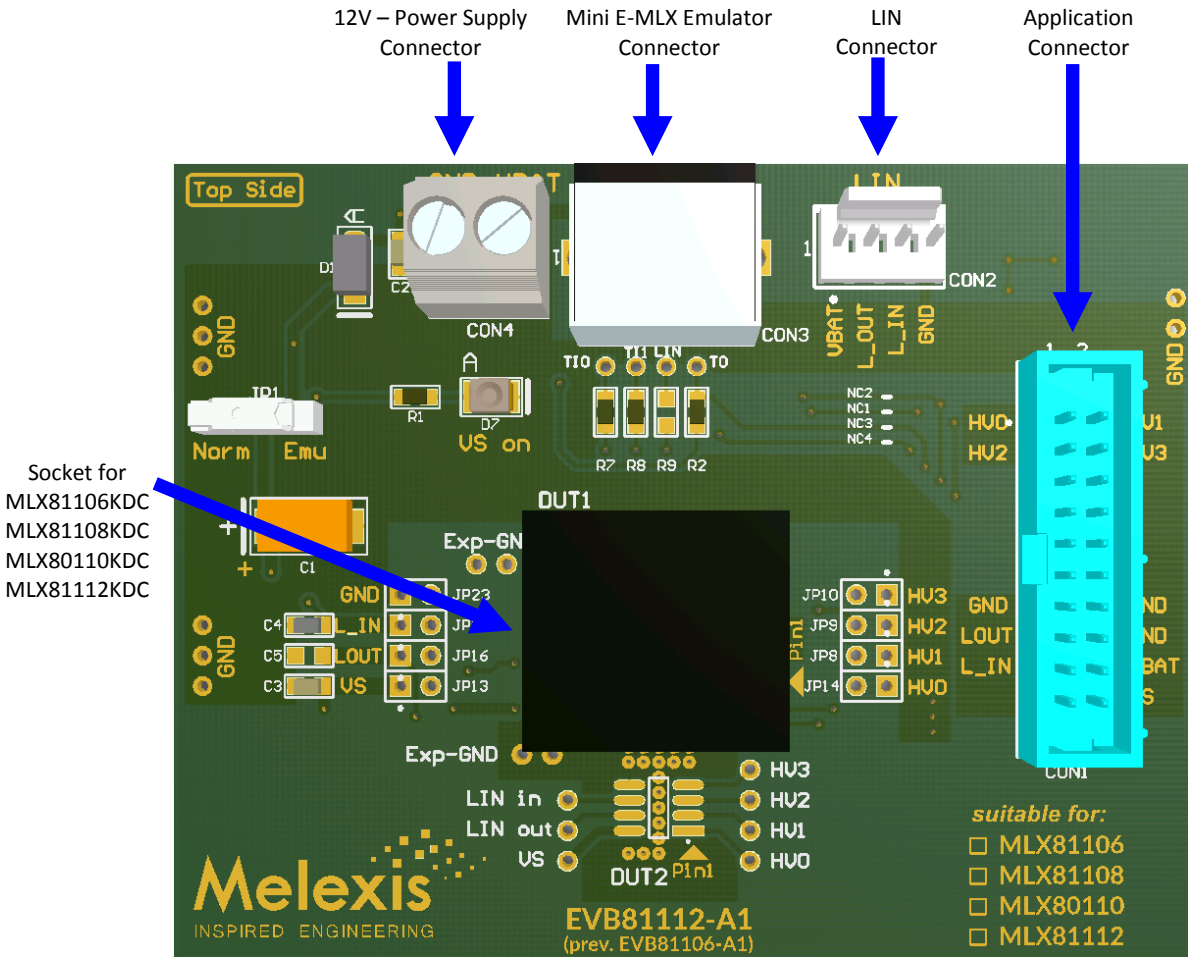
After the programming the EVB81112-A1 can be connected to the customer application in order to run the system standalone without the Mini E-MLX emulator.

For software development purposes it's proposed to use the:

- EVB81107-A1 instead of the EVB81112-A1 for the MLX81106/08 and MLX80110 family.
  The EVB81107-A1 is using a the MLX81109 QFN5x5 device, which offers the possibility to connect the application components (e.g. LEDs) on the HVx pins and at the same time to connect the Mini E-MLX emulator at LVx pins.

- EVB81115-A2 instead of the EVB81112-A1 for the MLX81112/15/20 family.
  The EVB81115-A2 is using a specific MLX81115 EMU QFN5x5 device, which offers the possibility to connect the application components (e.g. LEDs) on the HVx pins and at the same time to connect the Mini E-MLX emulator at dedicated test pins.

5. EVB - Hardware overview



5.1. EVB - Application Connector CON1

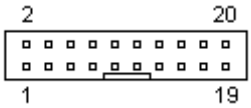
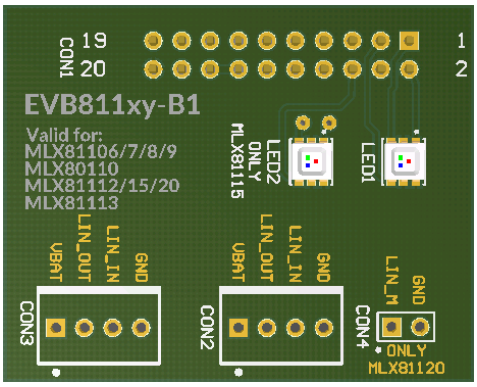


Figure 1 Application Connector - IDC MALE (Top view)

Pin	Name	Description
1	HV0	Configurable: High Voltage Input, Output, PWM, ADC
2	HV1	Configurable: High Voltage Input, Output, PWM, ADC
3	HV2	Configurable: High Voltage Input, Output, PWM, ADC
4	HV3	Configurable: High Voltage Input, Output, PWM, ADC
5	n.c.	not connected
6	n.c.	not connected
7	n.c.	not connected
8	n.c.	not connected
9	n.c.	not connected
10	n.c.	not connected
11	n.c.	not connected
12	n.c.	not connected
13	GND	System ground
14	GND	System ground
15	LOUT	Connection to LIN Bus (LIN OUT)
16	GND	System ground
17	L_IN	Connection to LIN Bus (LIN IN)
18	VBAT	12V Power Supply (Not Reverse Polarity Protected)
19	n.c.	not connected
20	VS	Voltage behind Polarity Protection Diode / Chip Supply Voltage

Table 1 EVB Application Connector

5.2. EVB – Available Add-on boards

Part	Picture
EVB811xy-B1 *(Add-on for:* *EVB81107-A1* *EVB81112-A1* *EVB81115-A1* *EVB81115-A2* *EVB81120-A1* *EVB81113-A1* *EVB81113-A2* *equipped with two RGB LEDs*)	

6. Revision History

Version	Changes	Remark	Date
002	Added chapter “5.2. EVB – Available Add-on boards”		02.08.18
001		Initial release	25.07.18

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