



EVB81120-A1

Short Description

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1. Scope

This document is intended to give a brief introduction of the EVB81120-A1 Evaluation Board (EVB). This EVB is designed to work with the MLX81120KLW DFN12 4x4 LIN RGB Master Slave Gateway.

Samples of the MLX81120KLW are not part of the EVB81120-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

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.

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3. MLX81120KLW - Overview

3.1. Application Examples

- LIN slave to master gateway
- 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
- MLX81120KLW:
 - 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 Master Transceiver according to LIN 2.x and SAE J2602
 - LIN Slave 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
 - Configurable wake up sources (LIN and IOs)
 - Integrated Voltage Regulator
 - Integrated RC-Oscillator
 - DFN12 4x4 package
 - Designed for automotive applications

4. EVB - General Description

The EVB81120-A1 is equipped with DFN12 4x4 socket for MLX81120KLW

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)

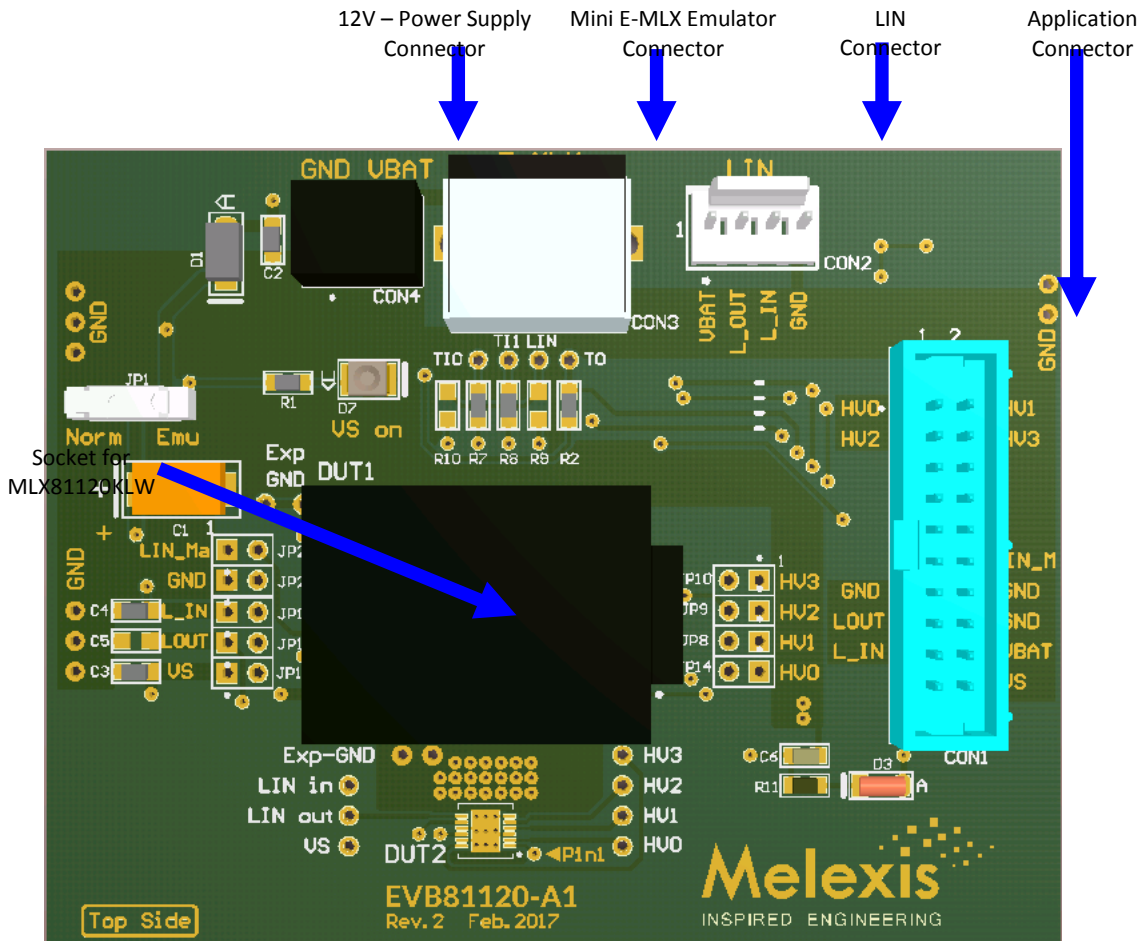
After the programming the EVB81120-A1 can be connected to the customer application in order to run the system standalone without the Mini E-MLX emulator.

For software development purposes of the LEDs connected to the HVx pins it's proposed to use the:

EVB81115-A2 instead of the EVB81120-A1.

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

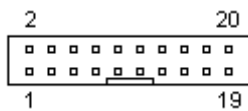


Figure 1 Application Connector - IDC MALE (Top view)

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	LIN_M	Connection to the MLX81120 LIN Master pin
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
<p><i>EVB811xy-B1</i> (Add-on for: <i>EVB81107-A1</i> <i>EVB81112-A1</i> <i>EVB81115-A1</i> <i>EVB81115-A2</i> <i>EVB81120-A1</i> <i>EVB81113-A1</i> <i>EVB81113-A2</i> equipped with two RGB LEDs)</p>	

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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