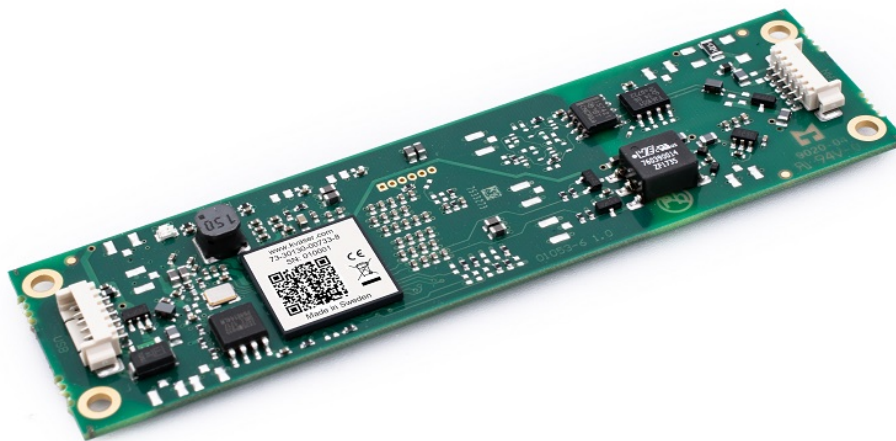


Kvaser Leaf Light v2 CB User's Guide



Copyright 2019 Kvaser AB, Mölndal, Sweden
<http://www.kvaser.com>

Printed Sunday 12th May, 2019

We believe that the information contained herein was accurate in all respects at the time of printing. Kvaser AB cannot, however, assume any responsibility for errors or omissions in this text. Also note that the information in this document is subject to change without notice and should not be construed as a commitment by Kvaser AB.

(This page is intentionally left blank.)

Contents

| | | |
|----------|--|-----------|
| 1 | About this manual | 4 |
| 2 | Welcome to Kvaser Leaf Light v2 CB | 5 |
| 3 | Layout | 6 |
| 4 | Connectors | 8 |
| 4.1 | USB connector | 8 |
| 4.2 | CAN connector | 8 |
| 5 | LED indicators | 10 |
| 6 | Disposal and Recycling Information | 11 |
| 7 | Legal acknowledgements | 12 |
| 7.1 | Usage warning | 12 |
| 7.2 | EU Regulatory Compliance | 13 |
| 7.3 | Patents, Copyrights and Trademarks | 14 |
| 8 | Document Revision History | 15 |

1 About this manual

This document describes a printed circuit board assembly version of the Kvaser Leaf Light v2. It contains a description of the hardware properties, its physical dimensions and instructions for connecting the device to a CAN bus and a USB bus. For further information, please refer to the Kvaser Leaf Light v2 User's Guide.

2 Welcome to Kvaser Leaf Light v2 CB

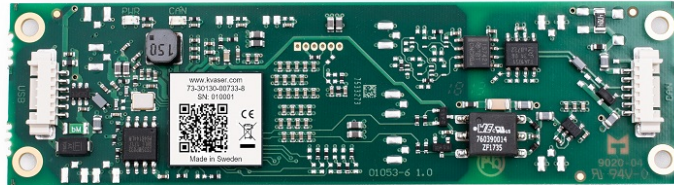


Figure 1: Kvaser Leaf Light v2 CB

This guide applies to Kvaser Leaf Light v2 CB devices listed in Table 1.

| Device | Product Number |
|----------------------------|------------------|
| Kvaser Leaf Light HS v2 CB | 73-30130-00733-8 |

Table 1: Kvaser Leaf Light v2 CB devices and their EAN numbers.

Throughout this document, we use the name Kvaser Leaf Light v2 CB to refer to the product listed in Table 1.

3 Layout

Kvaser Leaf Light v2 CB consists of a printed circuit board (PCB) populated with components.

PLACEMENT DRAWING PRIMARY SIDE

PCB: 01053-6 v1.0

Projrev: A v5

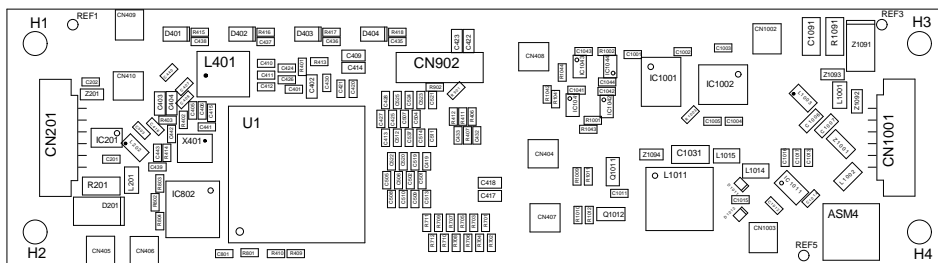


Figure 2: Top view of Kvaser Leaf Light v2 CB

The power LED is placed on the top left (D401), the CAN LED is placed next to the right (D402), see Figure 2. The USB connector is placed on the left (CN201) and the CAN connector on the right (CN1101).

The outline in Figure 3 on Page 7 shows four mounting holes and four square marks where the LEDs are placed.



Note that not all LEDs are mounted on all models of Kvaser Leaf Light v2 CB.

OUTLINE INFORMATION in millimeters

PCB: 01053-6 v1.0

Projrev: A v5

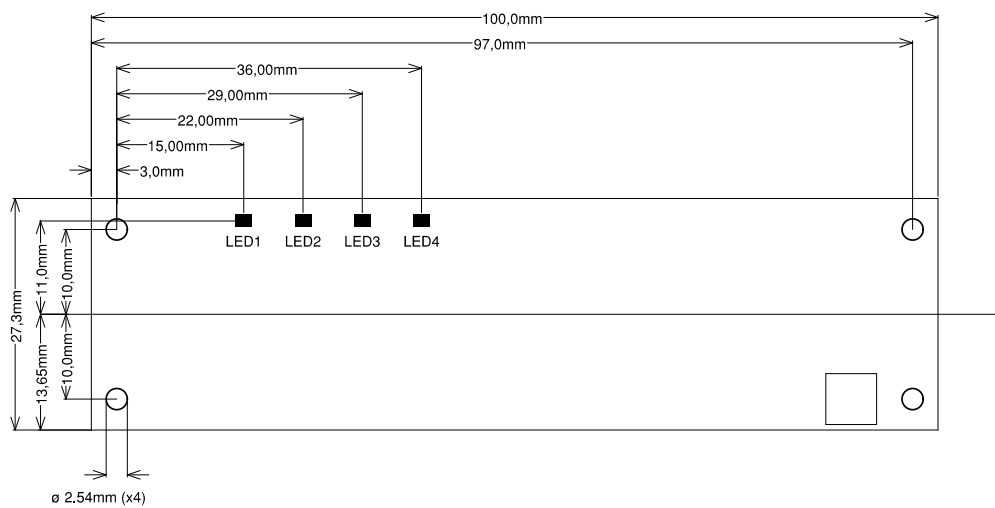


Figure 3: Outline of Kvaser Leaf Light v2 CB

4 Connectors

Figure 2 on Page 6 shows the placement of the USB and CAN connectors.

Both USB and CAN are connected using 6-way connectors and mate with Molex 51021 PicoBlade™ (e.g. housing 51021-0600 and terminal 50079-8000).

4.1 USB connector



Figure 4: Picture of the USB connector

Table 2 describes the USB connector.

| Pin Number | Function |
|------------|---------------|
| 1 | Shield |
| 2 | GND |
| 3 | D+ |
| 4 | D- |
| 5 | VBUS |
| 6 | Not connected |

Table 2: Pin configuration of the USB connector.

4.2 CAN connector

Table 3 on Page 9 describes the CAN connector.

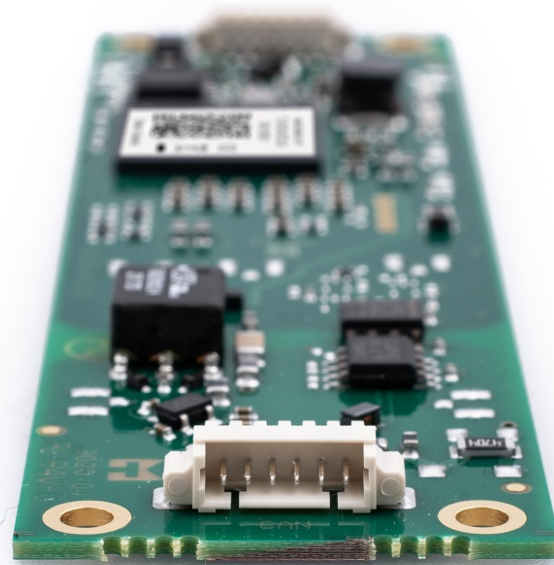


Figure 5: Picture of the CAN connector

| Pin Number | Function |
|------------|---------------|
| 1 | GND |
| 2 | Not connected |
| 3 | CAN_H |
| 4 | CAN_L |
| 5 | Not connected |
| 6 | Shield |

Table 3: Pin configuration of the CAN connector.

5 LED indicators

Figure 2 on Page 6 shows the placement of the LEDs on the PCB. For further information about the LED functionality, please refer to the Kvaser Leaf Light v2 User's Guide.

6 Disposal and Recycling Information



When this product reaches its end of life, please dispose of it according to your local environmental laws and guidelines.

Dispose of batteries according to your local environmental laws and guidelines.

For information about Kvaser's recycling programs, visit:
<http://www.kvaser.com/en/kvaser/recycling-policy.html>

7 Legal acknowledgements

7.1 Usage warning



WARNING FOR ALL USERS

WARNING! - YOUR USE OF THIS DEVICE MUST BE DONE WITH CAUTION AND A FULL UNDERSTANDING OF THE RISKS!

THIS WARNING IS PRESENTED TO INFORM YOU THAT THE OPERATION OF THIS DEVICE MAY BE DANGEROUS. YOUR ACTIONS CAN INFLUENCE THE BEHAVIOR OF A CAN-BASED DISTRIBUTED EMBEDDED SYSTEM, AND DEPENDING ON THE APPLICATION, THE CONSEQUENCES OF YOUR IMPROPER ACTIONS COULD CAUSE SERIOUS OPERATIONAL MALFUNCTION, LOSS OF INFORMATION, DAMAGE TO EQUIPMENT, AND PHYSICAL INJURY TO YOURSELF AND OTHERS. A POTENTIALLY HAZARDOUS OPERATING CONDITION IS PRESENT WHEN THE FOLLOWING TWO CONDITIONS ARE CONCURRENTLY TRUE: THE PRODUCT IS PHYSICALLY INTERCONNECTED TO A REAL DISTRIBUTED EMBEDDED SYSTEM; AND THE FUNCTIONS AND OPERATIONS OF THE REAL DISTRIBUTED EMBEDDED SYSTEM ARE CONTROLLABLE OR INFLUENCED BY THE USE OF THE CAN NETWORK. A POTENTIALLY HAZARDOUS OPERATING CONDITION MAY RESULT FROM THE ACTIVITY OR NON-ACTIVITY OF SOME DISTRIBUTED EMBEDDED SYSTEM FUNCTIONS AND OPERATIONS, WHICH MAY RESULT IN SERIOUS PHYSICAL HARM OR DEATH OR CAUSE DAMAGE TO EQUIPMENT, DEVICES, OR THE SURROUNDING ENVIRONMENT.

WITH THIS DEVICE, YOU MAY POTENTIALLY:

- CAUSE A CHANGE IN THE OPERATION OF THE SYSTEM, MODULE, DEVICE, CIRCUIT, OR OUTPUT.
- TURN ON OR ACTIVATE A MODULE, DEVICE, CIRCUIT, OUTPUT, OR FUNCTION.
- TURN OFF OR DEACTIVATE A MODULE, DEVICE, CIRCUIT, OUTPUT, OR FUNCTION.
- INHIBIT, TURN OFF, OR DEACTIVATE NORMAL OPERATION.
- MODIFY THE BEHAVIOR OF A DISTRIBUTED PRODUCT.
- ACTIVATE AN UNINTENDED OPERATION.
- PLACE THE SYSTEM, MODULE, DEVICE, CIRCUIT, OR OUTPUT INTO AN UNINTENDED MODE.

ONLY THOSE PERSONS WHO:

(A) ARE PROPERLY TRAINED AND QUALIFIED WITH RESPECT TO THE USE OF THE DEVICE,

(B) UNDERSTAND THE WARNINGS ABOVE, AND

(C) UNDERSTAND HOW THIS DEVICE INTERACTS WITH AND IMPACTS THE FUNCTION AND SAFETY OF OTHER PRODUCTS IN A DISTRIBUTED SYSTEM AND THE APPLICATION FOR WHICH THIS DEVICE WILL BE APPLIED, MAY USE THE DEVICE.

PLEASE NOTE THAT YOU CAN INTEGRATE THIS PRODUCT AS A SUBSYSTEM INTO HIGHER-LEVEL SYSTEMS. IN CASE YOU DO SO, KVASER AB HEREBY DECLARES THAT KVASER AB'S WARRANTY SHALL BE LIMITED TO THE CORRECTION OF DEFECTS, AND KVASER AB HEREBY EXPRESSLY DISCLAIMS ANY LIABILITY OVER AND ABOVE THE REFUNDING OF THE PRICE PAID FOR THIS DEVICE, SINCE KVASER AB DOES NOT HAVE ANY INFLUENCE ON THE IMPLEMENTATIONS OF THE HIGHER-LEVEL SYSTEM, WHICH MAY BE DEFECTIVE.



THIS PRODUCT CONTAINS A RECHARGEABLE LI-POL BATTERY THAT MUST BE DISPOSED OF PROPERLY. IT MAY EXPLODE IF DAMAGED OR DISPOSED OF IN FIRE. DO NOT SHORT CIRCUIT.

7.2 EU Regulatory Compliance



EU Declaration of Conformity (DoC)

We

| | | | |
|-----------------|---------------|-------------------|------------------|
| Company Name: | Kvaser AB | City: | Mölndal |
| Postal address: | Aminogatan 25 | Telephone number: | +46 31 886344 |
| Postcode: | 431 53 | E-mail address: | sales@kvaser.com |

declare that the DoC is issued under our sole responsibility and belongs to the following product:

Product: Kvaser Leaf Light HS v2 CB

Object of the declaration (identification of apparatus allowing traceability):

Product: Kvaser Leaf Light HS v2 CB

Type: 73-30130-00733-8

The object of the declaration described above is in conformity with the relevant Union harmonisation legislation:

Electromagnetic Compatibility (EMC) Directive 2014/30/EU (Art. 6)

RoHS recast Directive 2011/65/EU (Art. 4.1)

The following harmonised standards and technical specifications have been applied
(title, date of standard/specification):

EN 55024 (2010)

EN 55032 (2012)

EN 61000-6-3 (2007 + A1:2011)

EN 50581 (2012)

Signed for and on behalf of:

Mölndal

2018-10-04

Place of issue

Date of issue

Claes Haglund, Supply Chain and Quality director

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his/her own expense.

7.3 Patents, Copyrights and Trademarks

All trademarks are the property of their respective owner. Windows is a registered trademark of Microsoft Corporation in the United States and other countries.

Adobe, the Adobe logo, and Reader are either registered trademarks or trademarks of Adobe Systems Incorporated in the United States and/or other countries.

DeviceNet is a trademark of Open DeviceNet Vendor Association, Inc.

NMEA 2000 is the registered trademark of the National Marine Electronics Association, Inc.

For information about Kvaser related CAN patents, see www.kvaser.com/patent.

The products described in this document are protected by U.S. patent 5,696,911.

8 Document Revision History

Version history for document UG_98163_leaf_light_v2_cb:

| Revision | Date | Changes |
|----------|------------|--|
| 1 | 2014-04-22 | First version. |
| 1.1 | 2016-07-08 | Added pin numbers to top view figure. |
| 1.2 | 2017-01-09 | Updated compliance text, added link to patents. |
| 2.0 | 2017-08-25 | Updated EU Declaration of Conformity |
| 3.0 | 2018-10-15 | Updated EU Regulatory Compliance |
| 4.0 | 2019-05-09 | Updated images and added images for CAN- and USB connector |