BD18397RUV-M/BD18398RUV-M LED Drivers for Automotive Exterior Lamp.

BD18397RUV-M/BD18398RUV-M Evaluation Board

The Evaluation Kit consists of:

1. BD18397/98RUV-EVK-302 evaluation board with BD18397RUV-M or BD18398RUV-M mounted.
2. MCU plug-in board using CY8CKIT-059, and firmware flashed for GUI operation.
3. For MCU only mode operation other firmware needs to be flashed into CY8CKIT-059 and is provided on request.
4. Micro-USB cable.

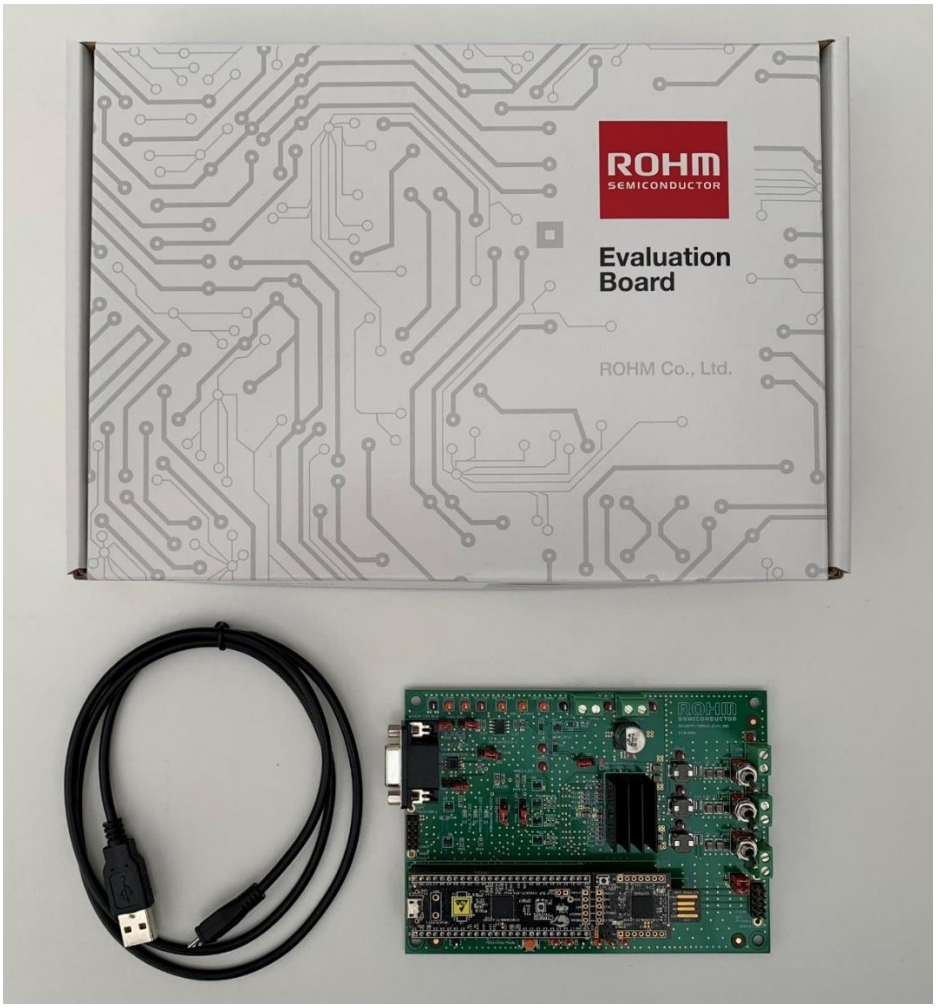


Figure 1: BD18397/98RUV-EVK-302 Evaluation Kit

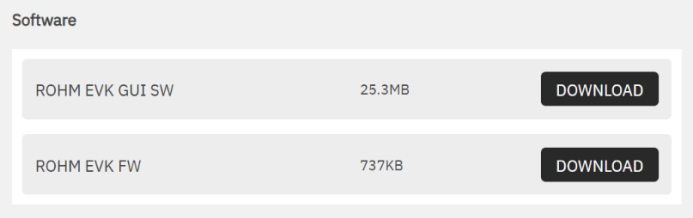
No. 64QS001E Rev.001
July 2024

STEP 1:

Download and install the ROHM EVK GUI SW for your Windows PC/Laptop.

The download link is *https://www.rohm.com/support/accelerometer-evk-support.*

Press Download for ROHM EVK GUI SW



After installation, ROHM EVK GUI appears in startup menu

The CY8CKIT-059 is already flashed with the ROHM's custom firmware (hex file).

ROHM-EVK-CY8CKIT059-firmware-v3.5.0-0.cyacd

ROHM-EVK-CY8CKIT059-firmware-v3.5.0-0.hex

The firmware is in the installation directory:

//Documents/ROHM_EVK_v3/ROHM-EVK-Firmware/CY8CKIT-059

Firmware can also be flashed for non-programmed CY8CKIT-059 boards.

Detailed instructions for updating firmware are given under Firmware section in the Software User Guide found in the installation directory:

//Documents/ROHM_EVK_v3/ROHM-EVK-Docs

Any further firmware update, if required, is flashed by selecting "CY8CKIT-059 programmer" in the GUI, snapshot in Step 2.

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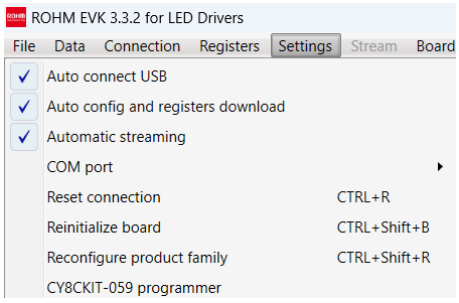
STEP 2:

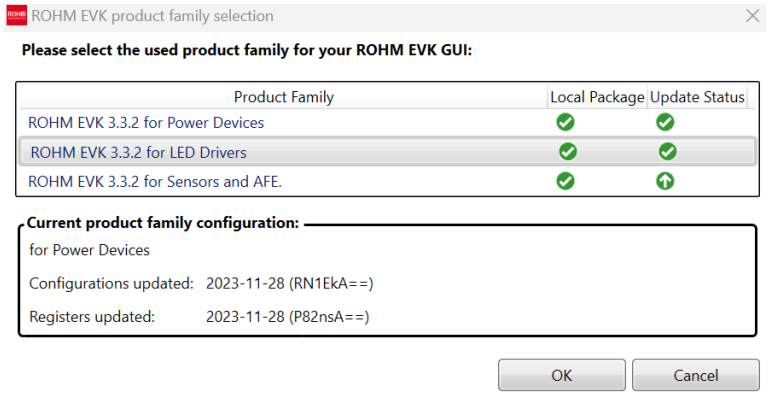
Configuration of the LED Driver is performed once an internet connection is available:

- Launch ROHM EVK GUI SW
- In Settings select “Reconfigure product family”



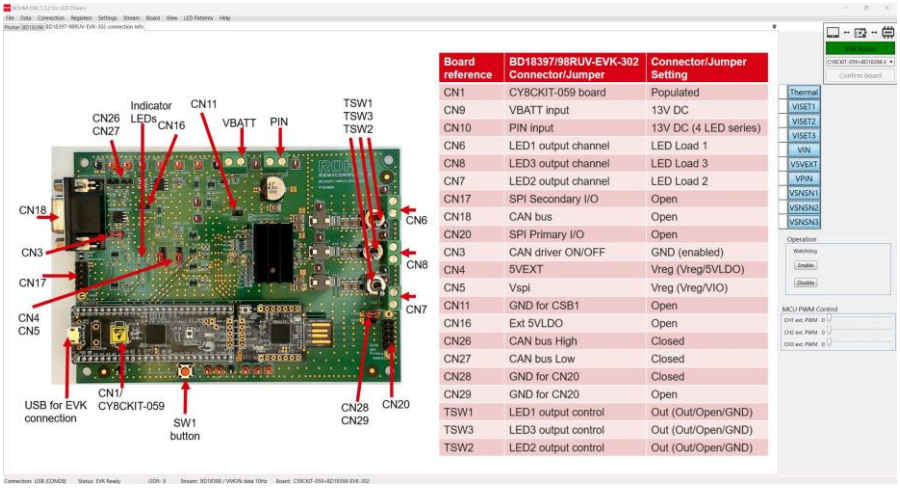
- In Pop-Up menu select: “ROHM EVK 3.2 for LED Drivers”

  Press OK



STEP 3:

The BD18397/98RUV-EVK-302 board connection shows the connection of supply signals VBATT, PIN, 3 LED output channels, USB for EVK data. For flashing firmware if required, the CY8CKIT-059 plug in board is removed from the BD18397/98RUV-EVK-302 evaluation board and inserted into PC/laptop USB receptable using the “USB for firmware flashing” connection. In addition, if CANBUS interfacing is required to the CANBUS, connector CN19 is available. The header and default settings is indicated for the different connector/jumpers on the board.



Board reference	BD18397/98RUV-EVK-302 Connector/Jumper	Connector/Jumper Setting
CN1	CY8CKIT-059 board	Populated
CN9	VBATT input	13V DC
CN10	PIN input	13V DC (4 LED series)
CN6	LED1 output channel	LED Load 1
CN8	LED3 output channel	LED Load 3
CN7	LED2 output channel	LED Load 2
CN17	SPI Secondary I/O	Open
CN18	CAN bus	Open
CN20	SPI Primary I/O	Open
CN3	CAN driver ON/OFF	GND (enabled)
CN4	5VEXT	Vreg (Vreg/5VLDO)
CN5	Vspi	Vreg (Vreg/VIO)
CN11	GND for CSB1	Open
CN16	Ext 5VLDO	Open
CN26	CAN bus High	Closed
CN27	CAN bus Low	Closed
CN28	GND for CN20	Closed
CN29	GND for CN20	Open
TSW1	LED1 output control	Out (Out/Open/GND)
TSW3	LED3 output control	Out (Out/Open/GND)
TSW2	LED2 output control	Out (Out/Open/GND)

Figure 2: THE BD18397/98RUV-EVK-302 connection set-up

The BD18397/98RUV-EVK-302 board connection shows the connection of supply signals VBATT, PIN, 3 LED output channels, USB for EVK data. For flashing firmware if required, the CY8CKIT-059 plug in board is removed from the BD18397/98RUV-EVK-302 evaluation board and inserted into PC/laptop USB receptable using the “USB for firmware flashing” connection. In addition, if CANBUS interfacing is required to the CANBUS, connector CN19 is available. The header and default settings is indicated for the different connector/jumpers on the board.

Below is application example with 5 LED output channels having 5 series LEDs in each channel where the BD18398RUV-M drives the 3x LED channels and the BD18397RUV-M drives the 2x channels.

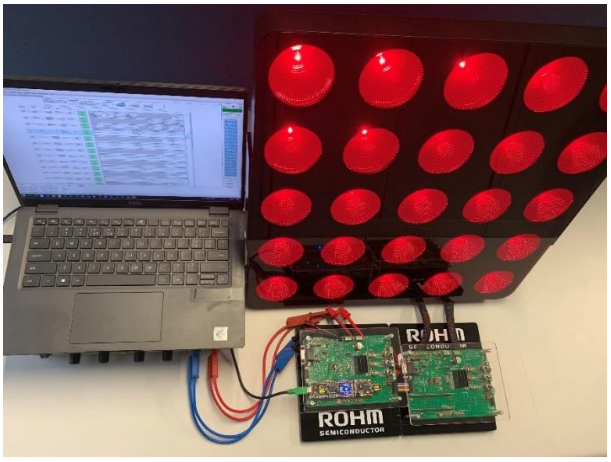


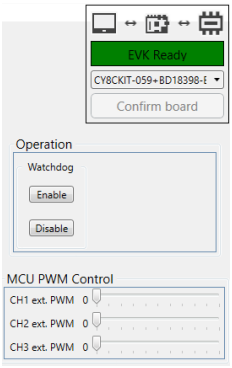
Figure 3: BD18397/98RUV-EVK-302 Evaluation Board set-up

STEP 4:

With the ROHM EVK GUI software installed and configured, connect the USB cable between PC/laptop and the CY8CKIT-059 plug-in board; the blue LED on CY8CKIT-059 plug-in board lights up.

With the ROHM EVK GUI already launched and press “Confirm board” for example BD18398-EVK-302.

EVK Ready goes to green and the green Firmware Ready LED on BD18397/98RUV-EVK-302 board lights up and the default registry values are automatically loaded.



Connect VBATT for example to 12V and VREG green LED lights up.

Connect PIN, the 3 output LED channels are operational and can be controlled using Demo Mode, analog PWM Mode, LIMPHOME Mode or adjusting register entries to appropriate values (refer to BD18398RUV-M / BD18397RUV-M datasheet for complete registry table).

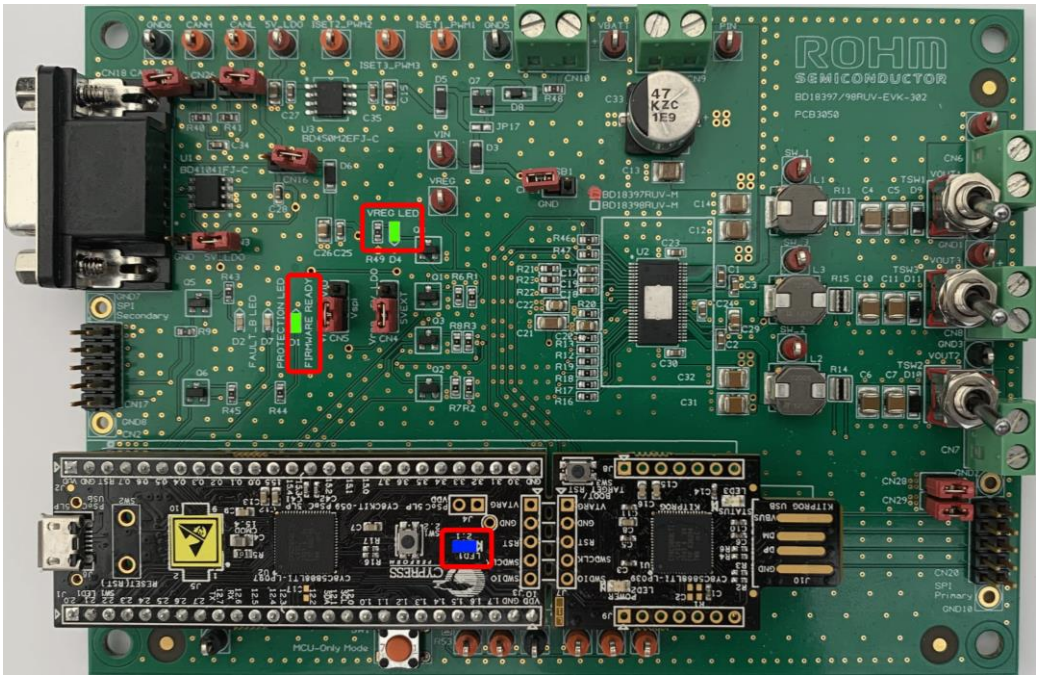


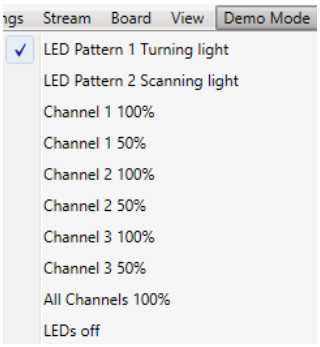
Figure 2: BD18397/98RUV-EVK-302 Evaluation Board

Some of the features include:

- A visual display of real-time device data using the plotter tab function.
- Ability to record device data onto a file.
- Device registry editor for R/W commands.
- Demo mode including turning and scanning LED patterns.
- Digital / Analog PWM, signal monitoring and status register polling.

As example the Demo mode drop-down menu is implemented as shown with a range of selection possibilities.

Here Turning light is selected.



Furthermore, registers can be adapted individually using write command and verified with read command.

All registers can be written and read using the Write all and read all commands.

Polling is implemented to check status registers. For example, by selecting error status the different status registers can be monitored. The status registers are automatically updated during polling using auto stop. Polling stops when auto stop is not automatic after an error status occurs, for example during open/short LED conditions.

The BD18397/98RUV-EVK-302 can also operate in MCU only mode without PC GUI.

For MCU only mode, firmware can be provided on request. GUI does not operate in MCU only mode.

*MCU only mode d*emo sequence is performed by pressing SW1 button sequentially.

SW1 is located on the BD18397/98-RUV-EVK-302 Evaluation Board beside the CY8CKIT-059 plug-in board.

CN16 is mounted to provide 5V supply to MCU in MCU only mode.

For additional details about the BD18397/98RUV-EVK-302 Evaluation board refer to BD18397/98RUV-EVK-302 User Guide.

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