

KIT9Z1J638EVM (CAN Demo)

Demo for the KIT9Z1J638EVM (Evaluation board) with CAN communication

Overview

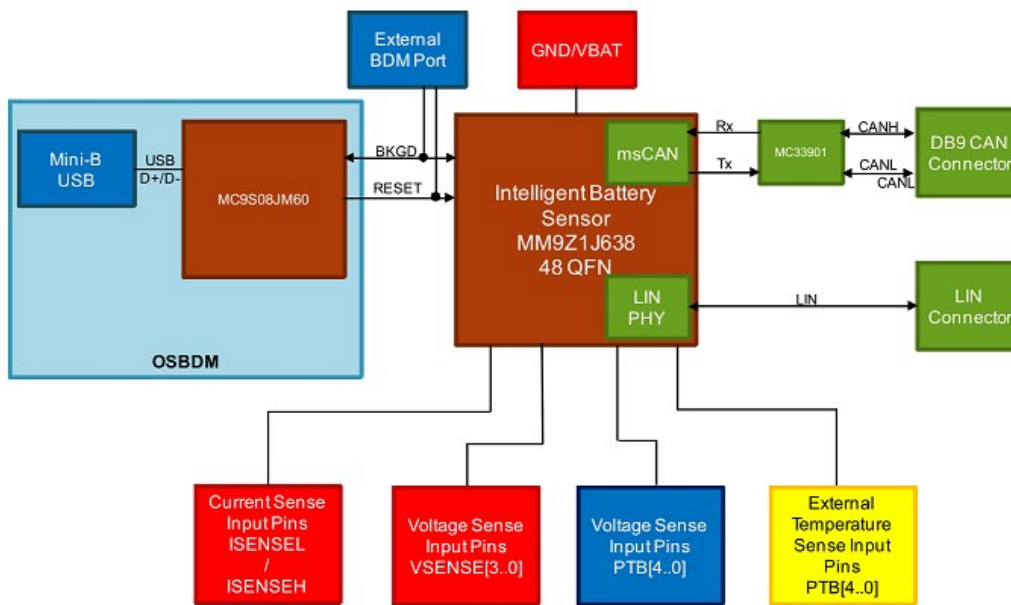
The demo software is provided on an **"AS-IS"** basis. Also see [License](#)

The KIT9Z1J638EVM is the evaluation board for the MM9Z1_638 Battery Management System (BMS) IC. Its primary focus is for 12 V lead-acid battery applications but its not limited to that.

The Evaluation board is not specific for an application and is intended to evaluate all (most) product features.

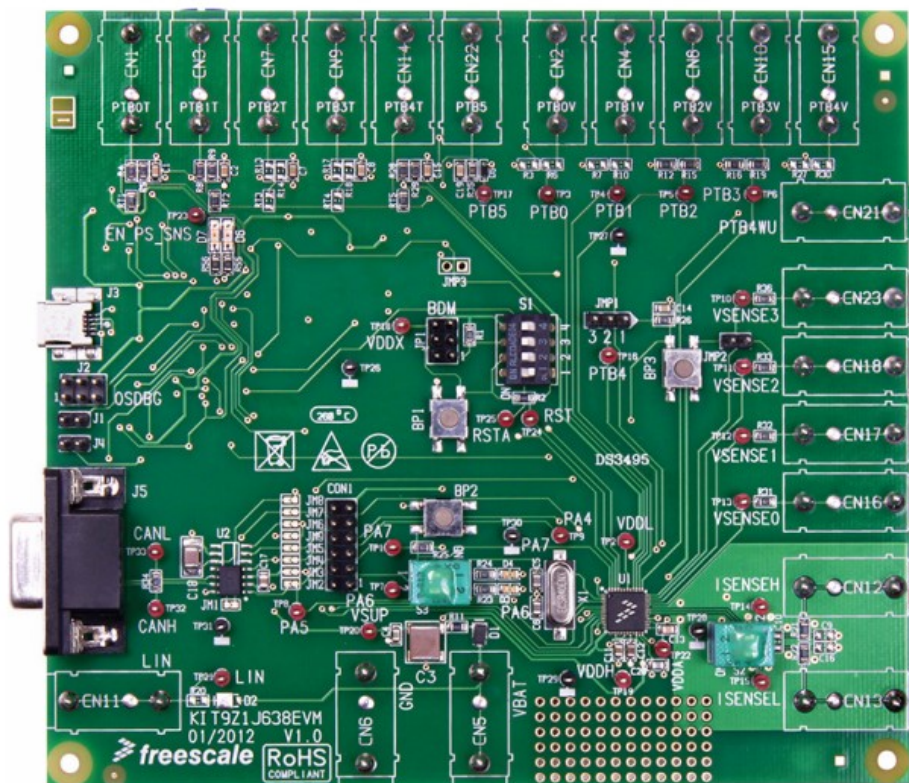
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Evaluation Board

The picture below shows the evaluation board. For details on the evaluation board please consult the evaluation board manual [KIT9Z1J638EVM User Guide](#).



Features

The demo software has the following features:

- basic set of low level drivers required for the demonstration (**Drivers**)
- contains the NXP msCAN SW driver (see [NXP msCAN Driver](#))
- CAN communication with 500kBaud
 - for details on CAN messaging see [Kt638can_messaging](#)
 - using in the 4MHz quartz on the evaluation board
 - 4MHz quartz limits the CAN speed to 500kBps (=8 Tqs)
- basic initialization and device start up
- measures
 - the ISENSE channel
 - all four VSENSE channels (only VSENSE2 is published on CAN bus)
 - the chip temperature sensor (Internal Temp Sensor)
 - the external temperature channel (PTB0)
- low power mode demonstration (STOP mode)
 - demonstrates low current consumption and wakeup from low power mode

The software is written in a style which should provide an easy overview of the individual modules and the interaction and shall enable a good starting point to adopt the software for your own evaluation purposes.

Also see [Software Architecture](#), [NXP NVM Driver](#), [NXP msCAN Driver](#)

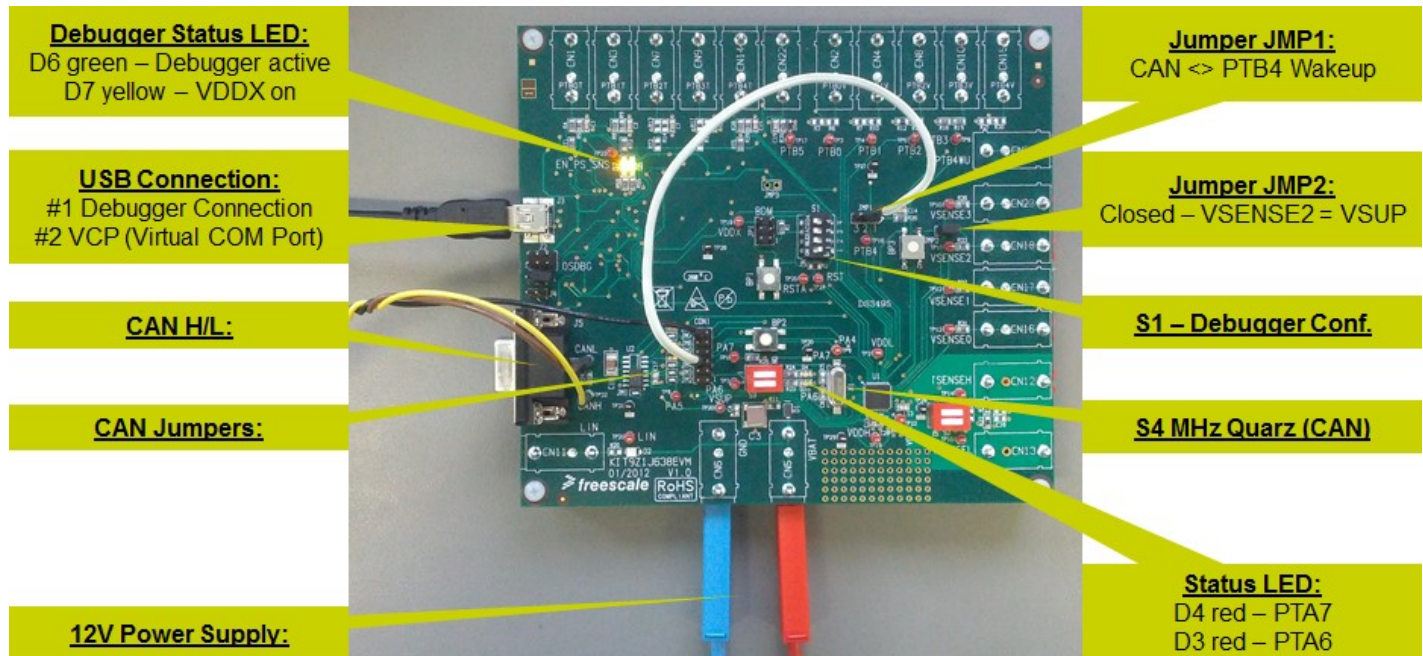
System Requirements

To compile, download (Flash programming) and use this software the following system setup is recommended:

- PC with Windows operating system
 - USB port for BDM Multilink
- CodeWarrior 10.6 (or higher) for MCU
 - www.nxp.com/webapp/sps/site/prod_summary.jsp?code=CW-MCU10
- Evaluation Board
- On-Board BDM

- 12V power supply
- CAN Master / Test tool
- cables

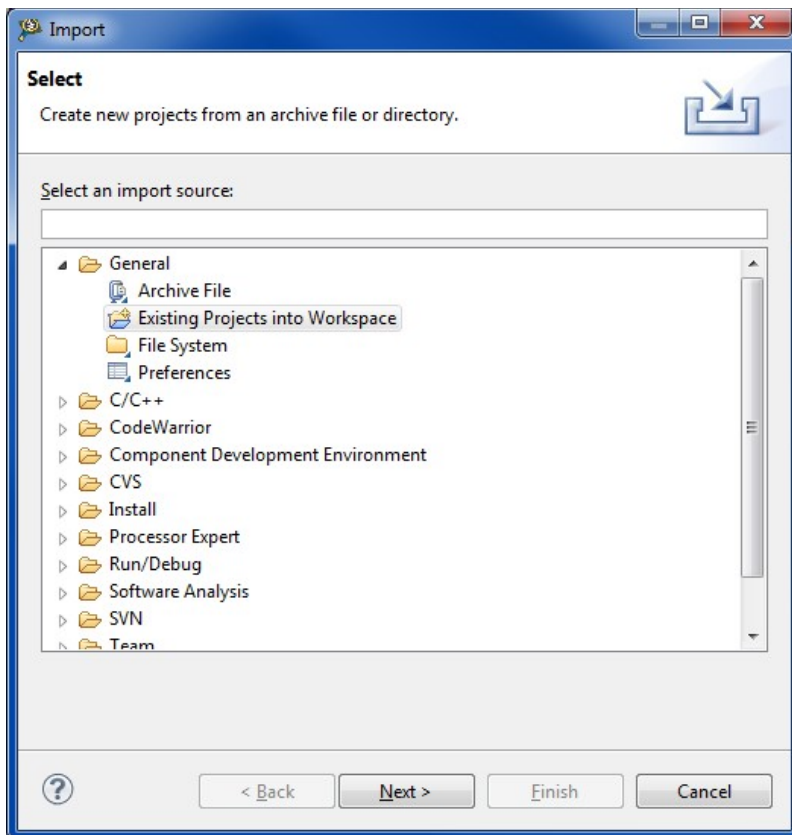
The picture below shows the system setup.



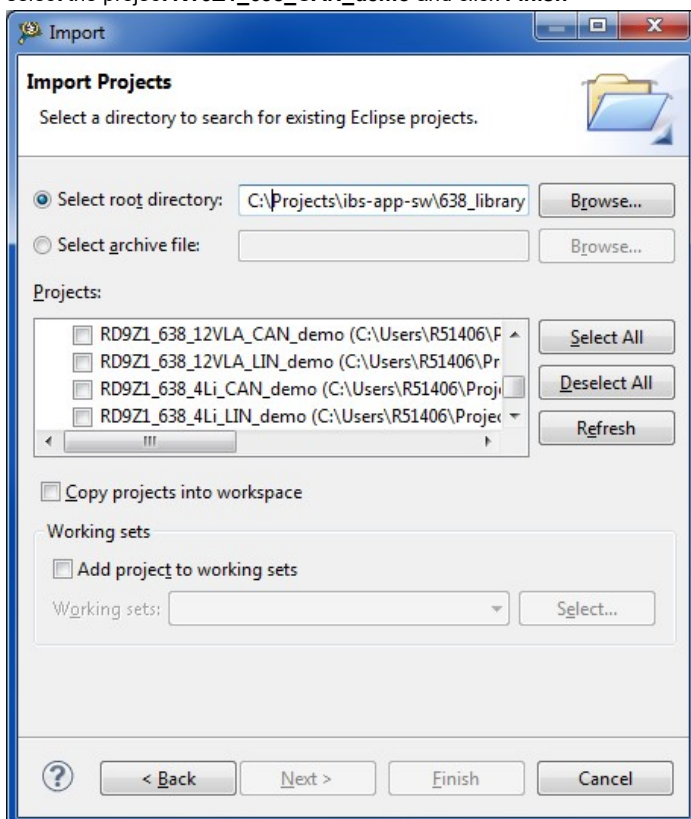
Installation

The following steps are required to import the provided files into CodeWarrior:

- extract the zip-file to a folder on your local hard disc
- start CodeWarrior
 - Go to the **File** menu and select **Import...**
 - Choose **General -> Existing Projects into Workspace** and click **Next**



- select the folder where you extracted the zip file
- select the project **KT9Z1_638_CAN_demo** and click **Finish**



Hardware setup for CAN Demo

A CAN Master is required to run the CAN demo.

The KIT9Z1J638EVM needs to be configured for CAN operation.

Setup the Evaluation Board KIT9Z1J638EVM

- DIP switch S1 (using on-board debugger OSBDM USB interface on J3)

Switch	Description	Setting
1	connect RESET with RESET_A	ON
2	use OSBDM debugger	ON
3	use OSBDM debugger	ON
4	use OSBDM debugger	ON

Note: The DIP S1-1 might need to be OFF for software downloading!

- DIP switch S3 (LEDs)

Switch	description	set to	used for
1	Connect LED D4 to PTA7	ON	indicated power mode. ON in run mode. OFF in low power modes
2	Connect LED D3 to PTA6	ON	indicates transmitted CAN messages

- Jumper JMP2 (Vsense2 input)

Pos	description	used for
1-2	Vsup is connected to VSENSE2 input	to measure Vsup

Note: Due to the circuitry on the KIT9Z1J638EVM the Vsup is quite noisy (noise caused by board circuitry). To get a better reading Open the JMP2 and connect the VSENSE2 to Vbat.

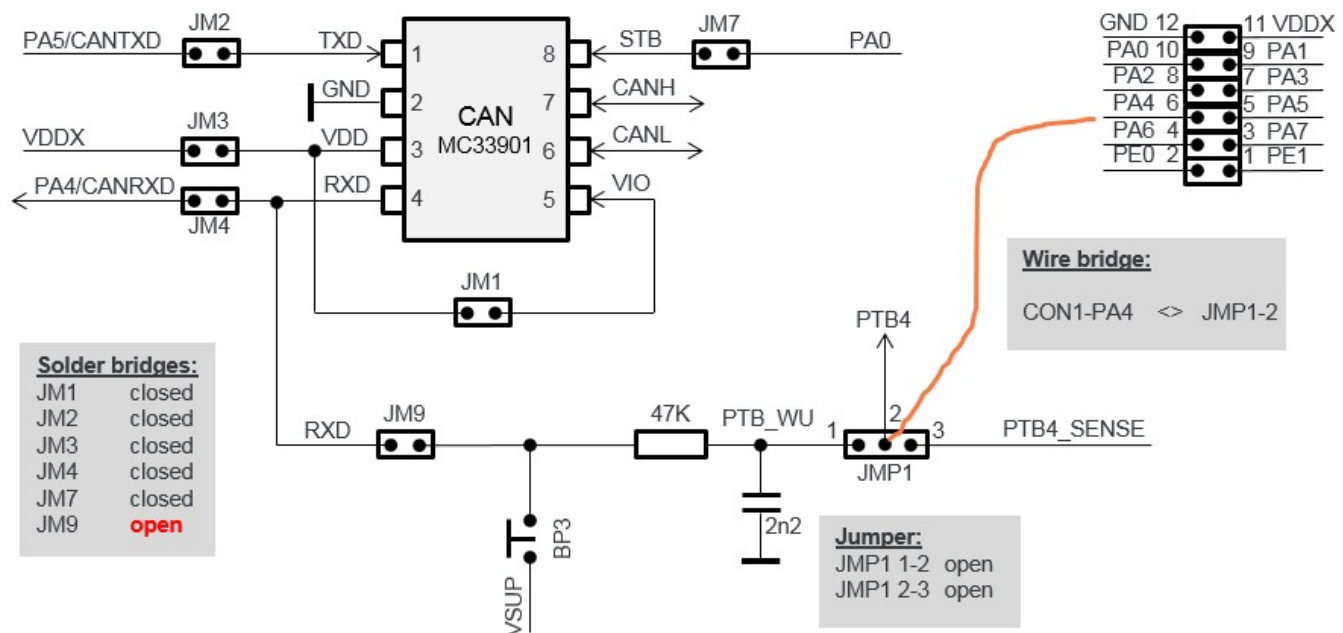
Configure the Evaluation Board for CAN Communication

Please follow **Chapter 9.2 CAN Configuration** in the [KIT9Z1J638EVM User Guide](#).

Note: Opposite to the description in **Chapter 9.2 CAN Configuration** the solder bridge **JM9** should not be set.

- Jumper JMP1 (PTB4 wakeup). No Jumper should be set. Connect the JMP1-2 (PTB4) with CON1-6 (PA4)

Pos	description	used for
2	PA4/CANRX -> PTB4 used for wakeup	CAN wakeup



Setup the CodeWarrior for the CAN demo

- in Codewarrior:
 - build the project and download to the EVB
 - once the software is downloaded and started
 - LED D4 indicates normal mode
 - LED D3 indicates transmitting CAN messages
- use a CAN master to monitor data communication from the device

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