Software package for L9961 industrial battery management system

Features

- Application examples based on STM32Cube MCU package for STM32G0 series, running on the Arm Cortex®-M0+ 32-bit STM32G071RB microcontroller
- L9961 firmware component driver and application demos of BMS features included

Description

The STSW-L9961BMS software package has been specifically designed to demonstrate the features and the performances of the L9961 industrial battery management system IC on a 5-cell battery pack.

The software package contains application firmware examples designed to run on the mainstream Arm Cortex®-M0+ 32-bit STM32G071RB microcontroller integrated in the NUCLEO-G071RB of the STEVAL-L99615C kit.

The L9961 firmware component driver is integrated with dedicated APIs that, matching with the hardware abstraction layer (HAL) libraries of the STM32CubeG0 firmware package, allows the microcontroller to interact with the device.

In addition to the L9961 driver, STSW-L9961BMS also contains four application demos able to demonstrate the features and capabilities of the L9961 IC component.

The first demo acquires the voltage on each cell and the whole battery pack, it also measures the current flowing in the battery cell series and its temperature.

The second demo utilizes the coulomb counting mechanism integrated in the L9961 device, to monitor the charges flowing through five cells of a battery pack.

The third demo employs the passive balancing mechanism integrated in the L9961 device, to equalize the energy in the five cells of a battery pack.

The fourth demo uses a kalman filter to estimate the state of charge (SoC) of five cells constituting a battery pack and, at the same time, predict their state of health (SoH).

These four demos return as output, through serial communication, the acquired data, and processed information.

Product summary	
Software package for L9961 industrial battery management system	STSW-L9961BMS
Up to 5 cells BMS for industrial applications based on L9961	STEVAL-L99615C
STM32 Nucleo-64 development board with STM32G071RB MCU, supports Arduino and ST morpho connectivity	NUCLEO-G071RB
Chip for industrial battery management applications up to 5 cells	L9961
Mainstream Arm Cortex-M0+ MCU with 128 Kbytes of Flash memory	STM32G071RBT6
STM32Cube MCU Package for STM32G0 series	STM32CubeG0
Applications	Power Tools

DB4988 - Rev 5 - January 2024
For further information contact your local STMicroelectronics sales office.

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Revision history

Table 1. Document revision history

Date	Revision	Changes
10-May-2023	1	Initial release.
24-Jul-2023	2	Updated cover image, product summary and description.
27-Sep-2023	3	Updated cover image, Features and Description.
28-Nov-2023	4	Updated cover image and Description.
30-Jan-2024	5	Updated cover image.

IMPORTANT NOTICE – READ CAREFULLY