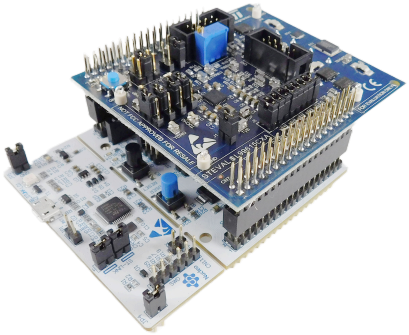
STEVAL-L99615C

Data brief

Up to 5 cells BMS for industrial applications based on L9961



Features

- Measures up to 5 cells in series, with no desynchronization delay between samples
- Coulomb counter supporting pack overcurrent detection
- Fully synchronized current and voltage samples
- Analog input for NTC sensing
- Embedded battery simulator
- Onboard fuse emulator
- Onboard charge and discharge MOSFET
- NUCLEO-G071RB development board with downloaded firmware

Product summary	
Up to 5 cells BMS for industrial applications based on L9961	STEVAL-L99615C
Software GUI for L9961 evaluation board	STSW-L99615C
Chip for industrial battery management applications up to 5 cells	L9961
Mainstream Arm Cortex-M0+ MCU with 128 Kbytes of Flash memory	STM32G071RBT6
Applications	Power Tools

Description

The STEVAL-L99615C is an evaluation kit composed of an expansion board containing the L9961 IC device for battery pack monitoring solution, and the NUCLEO-G071RB STM32 Nucleo-64 development board.

The evaluation kit demonstrates the performance and the ease of integration of ST technology for BMS applications.

The STEVAL-L99615C exploits the characteristics of the L9961 able to monitor up to five Li-ion battery cells in series configuration, communicating with the STM32G071RB microcontroller, through an I²C interface.

The expansion board has been specifically developed to be stacked on the NUCLEO-G071RB development board through the morpho connectors. It embeds a power connector for the connection to a 5-cell battery pack or, alternatively to an external power supply to emulate the battery pack.

A dedicated software package containing firmware program for the STM32G071RB microcontroller and a GUI for the PC (STSW-L99615C), has been released to permit the users to take benefit from the demonstration.

Major characteristics described by STSW-L99615C are: cell voltage and stack voltage monitoring, stack current monitoring, temperature conversion via external NTC, OV, and UV thresholds management.

1 Board schematics

Note: The schematic diagrams below refer to the expansion board included in the STEVAL-L99615C evaluation kit. For the schematic diagrams of the NUCLEO-G071RB development board, see the related web page.

Figure 1. STEVAL-L99615C expansion board schematic (1/5)

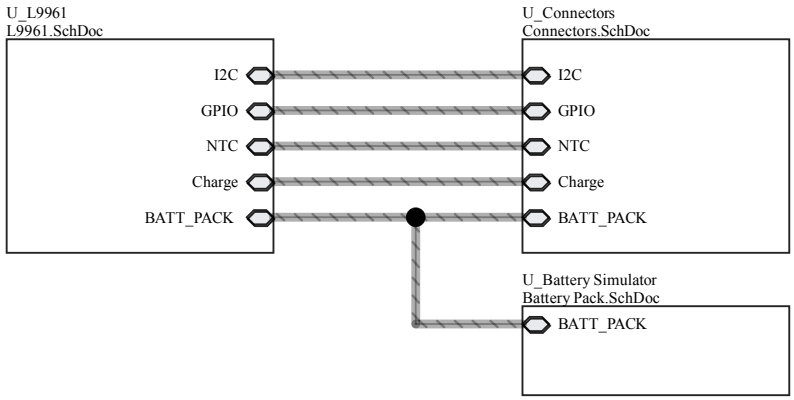


Figure 2. STEVAL-L99615C expansion board schematic (2/5)

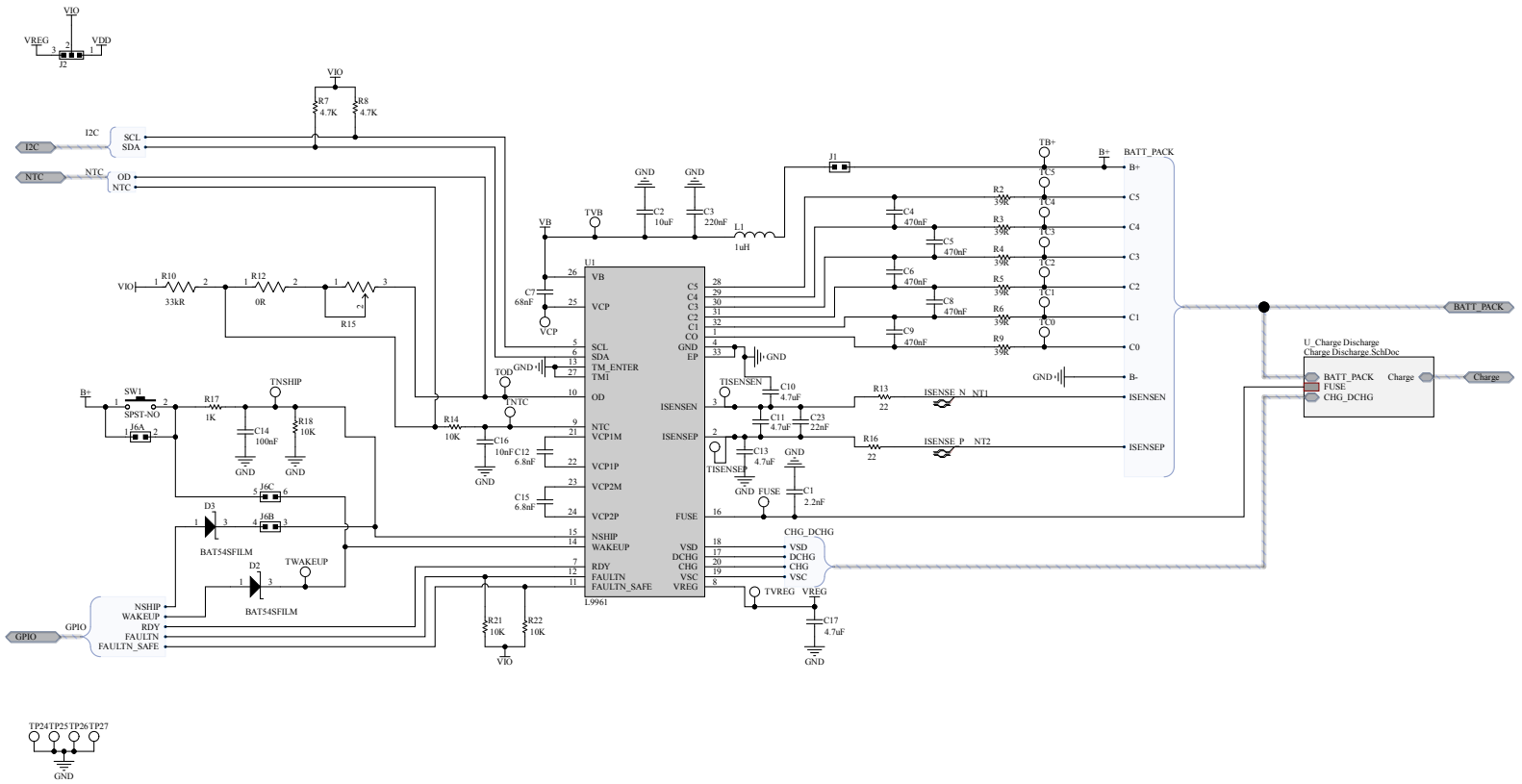


Figure 3. STEVAL-L99615C expansion board schematic (3/5)

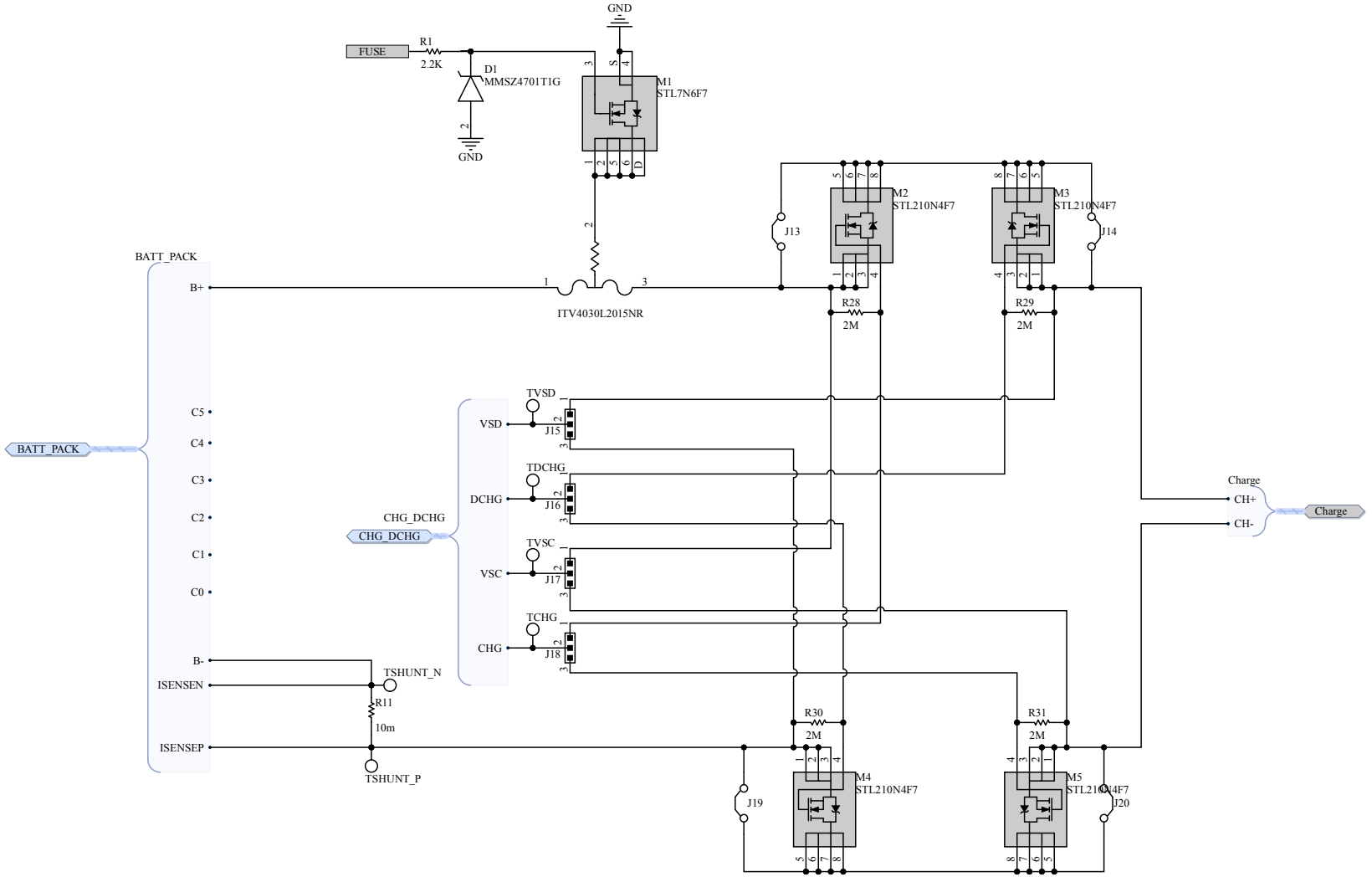


Figure 4. **STEVAL-L99615C expansion board schematic (4/5)**

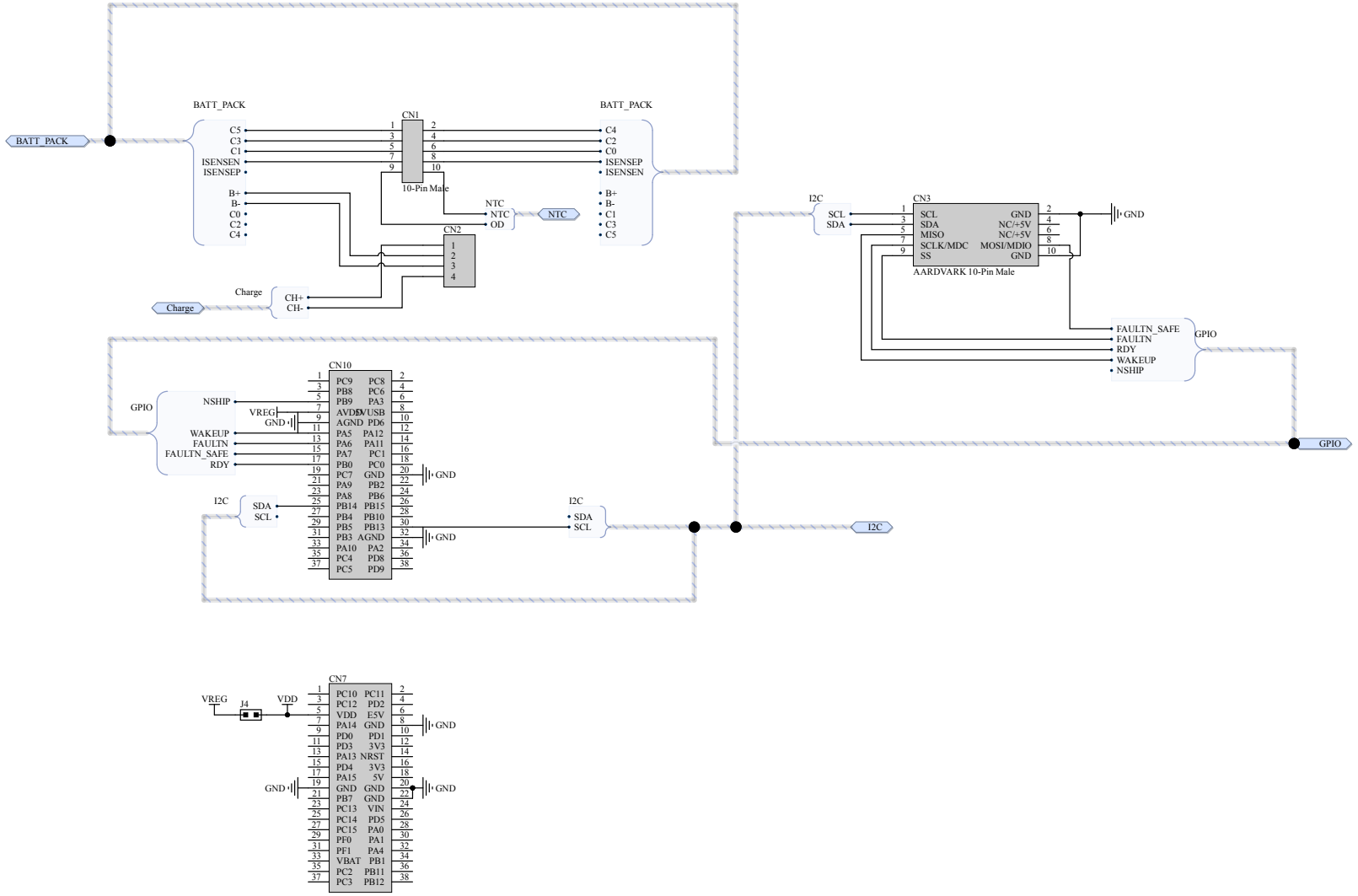
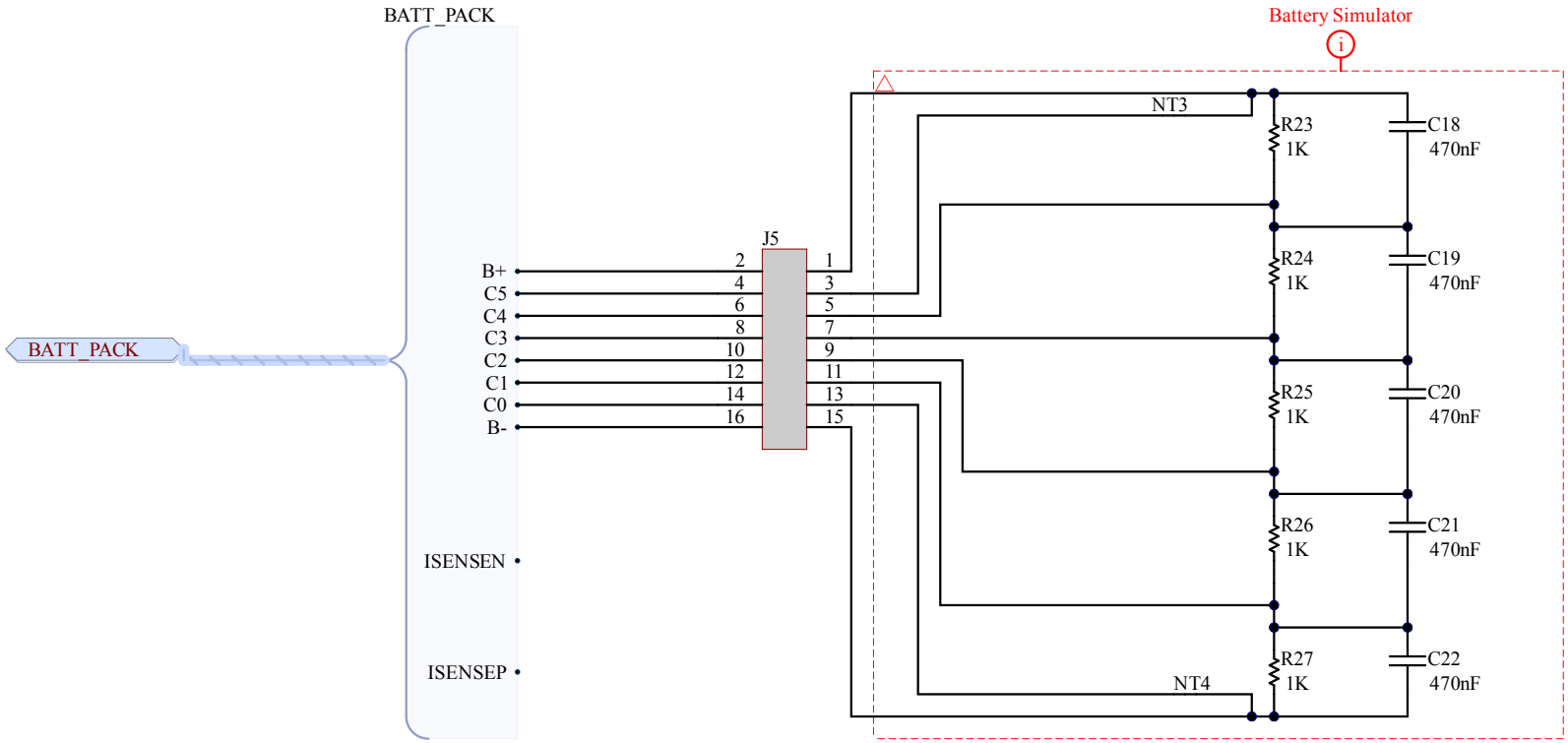


Figure 5. STEVAL-L99615C expansion board schematic (5/5)



2 Kit versions

Table 1. STEVAL-L99615C versions

Finished good	Schematic diagrams	Bill of materials
STEVAL$L99615CA (1)	STEVAL$L99615CA schematic diagrams	STEVAL$L99615CA bill of materials

1. *This code identifies the STEVAL-L99615C evaluation kit first version. The kit consists of a STEVAL-L99615CX whose version is identified by the code STEVAL$L99615CXA and a NUCLEO-G071RB whose version is identified by the code NUG071RB$AU2.*

Revision history

Table 2. **Document revision history**

Date	Revision	Changes
18-Apr-2023	1	Initial release.
03-May-2023	2	Updated figure in cover page.

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