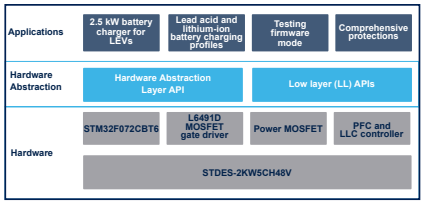
Firmware for the STDES-2KW5CH48V 2.5 kW - 48 V battery charger reference design for industrial light electric vehicles (LEVs)



Features

- STSW-2KW5CH48V firmware implementation based on the STM32F072CBT6 32-bit MCU
- Lead acid and lithium-ion battery charging profiles
- Comprehensive protections

Description

The STSW-2KW5CH48V software package is designed for the STDES-2KW5CH48V 2.5 kW battery charger for industrial light electric vehicles (LEVs).

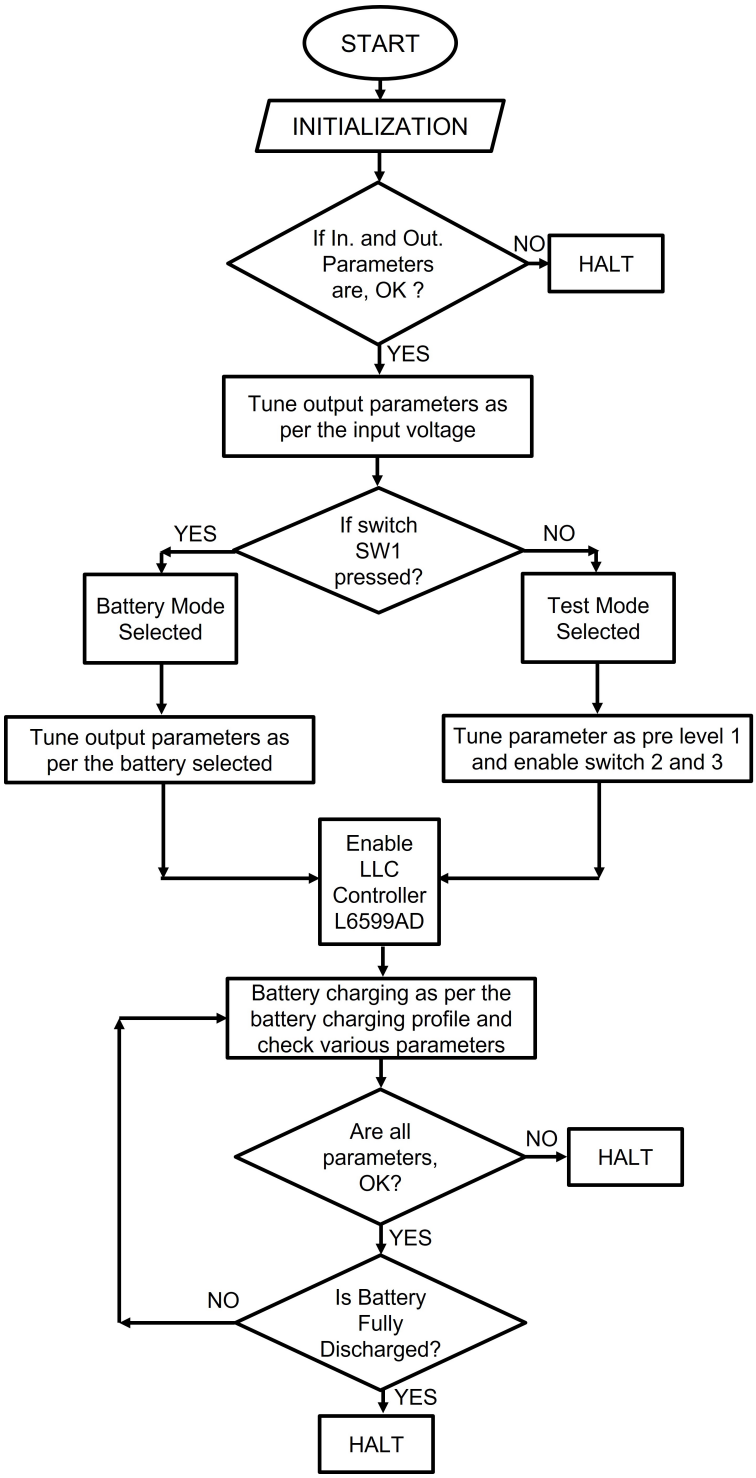
The STDES-2KW5CH48V consists of a power factor correction (PFC) circuit, controlled by the L4984D CCM PFC controller, and a DC-DC circuit based on a full bridge LLC resonant power converter, controlled by the L6599AD.

The firmware is based on libraries generated from STM32CubeMX. It runs on the STM32F072CBT6 high performance 32-bit ARM® Cortex®-M0 microcontroller. It manages the various power stages, adjusts parameters as per the battery charging profile, ensures comprehensive protections by continuously monitoring the input voltage and output signals, and communicates with the user interface.

Product summary	
Firmware for the STDES-2KW5CH48V 2.5 kW industrial LEV battery charger	STSW-2KW5CH48V
2.5 kW industrial LEV battery charger	STDES-2KW5CH48V
Mainstream Arm® Cortex®-M0 USB line MCU with 128 Kbytes of flash memory, 48 MHz CPU, USB, CAN, and CEC functions	STM32F072CBT6
Applications	EV Charging

1 Firmware flowchart

Figure 1. **STSW-2KW5CH48V flowchart**



Revision history

Table 1. **Document revision history**

Date	Revision	Changes
14-Oct-2022	1	Initial release.