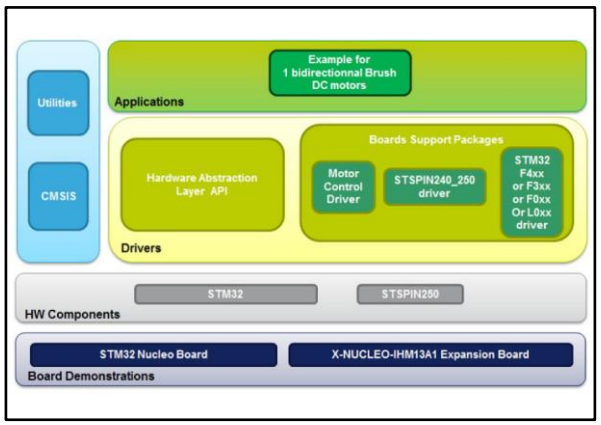
X-CUBE-SPN13

STSPIN250 low voltage brush DC motor driver software expansion for STM32Cube

Data brief



Features

- Driver layer for complete management of the STSPIN250 low voltage brush DC motor driver
- Example for controlling one bidirectional brush DC motor
- Easy portability across different MCU families, thanks to STM32Cube
- Free user-friendly license terms

Description

The X-CUBE-SPN13 software expansion for STM32Cube allows complete management of the STSPIN250 for control of brush DC motors. It is built on STM32Cube software technology for easy portability across different STM32 microcontrollers.

The software comes with a sample implementation to drive a bidirectional brush DC motor with a NUCLEO-F401RE, NUCLEO-F334R8, NUCLEO-F030R8 or NUCLEO-L053R8 development board connected to a NUCLEO-IHM13A1 expansion board.

1 Detailed description

What is STM32Cube?

The STMCube™ initiative by STMicroelectronics helps developers reduce development effort, time and cost. STM32Cube covers the STM32 portfolio.

STM32Cube version 1.x includes:

- The STM32CubeMX graphical software configuration tool to generate C initialization code using graphical wizards
- A comprehensive embedded software platform delivered per series (such as STM32CubeF4 for the STM32F4 series)
- The STM32Cube HAL, an STM32 abstraction layer embedded software which maximizes portability across the STM32 portfolio
- A consistent set of middleware components such as RTOS, USB, TCP/IP and Graphics
- All embedded software utilities with a full set of examples

How does this software complement STM32Cube?

The proposed software is based on the STM32CubeHAL hardware abstraction layer for the STM32 microcontroller. The package extends STM32Cube by providing a board support package (BSP) for the STM32 expansion board based on the STSPIN250.

The drivers abstract low-level details of the hardware and allow the middleware components and applications to access functions and data of the low voltage brush DC motor driver. It offers the following features:

- configuration of the STSPIN250 (bridges input and enabling signals)
- flag interrupt handling (overcurrent and thermal alarm reporting)
- handling of one bidirectional Brush DC motor
- STM32 Nucleo and expansion board configuration (GPIOs, PWMs, IRQs, etc.)

The software package includes a sample application for driving a bidirectional brush DC motor via the user button on the STM32 Nucleo development board.

2 Revision history

Table 1: Document revision history

Date	Version	Changes
30-Nov-2016	1	Initial release.

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