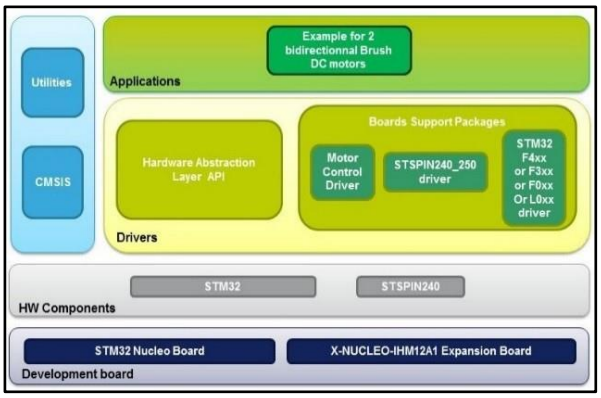
X-CUBE-SPN12

Low voltage dual brush DC motor driver software expansion for STM32Cube

Data brief



Features

- Driver layer for the full management of the STSPIN240 low voltage dual brush DC motor driver
- Sample implementation to control up to two bidirectional brush DC motors, available on NUCLEO-F401RE, NUCLEO-F334R8, NUCLEO-F030R8 or NUCLEO-L053R8 when connected to an X-NUCLEO-IHM12A1 expansion board
- Easy portability across different MCU families, thanks to STM32Cube
- Free, user-friendly license terms

Description

The X-CUBE-SPN12 is an expansion software package for STM32Cube. The software runs on the STM32 Nucleo providing management of STSPIN240 to control low voltage dual brush DC motors. The expansion is built on STM32Cube software technology to ease portability across different STM32 microcontrollers.

It is compatible with the NUCLEO-F401RE, NUCLEO-F334R8, NUCLEO-F030R8 or NUCLEO-L053R8 boards connected to an X-NUCLEO-IHM12A1 expansion board.

The software comes with a sample implementation driving two bidirectional low voltage dual brush DC motors.

What is STM32Cube?

STMCube™ represents the STMicroelectronics initiative to make developers' lives easier by reducing development effort, time and cost. STM32Cube covers the STM32 portfolio.

STM32Cube version 1.x includes:

- STM32CubeMX, a graphical software configuration tool that allows the generation of C initialization code using graphical wizards.
- A comprehensive embedded software platform specific to each series (such as the STM32CubeF4 for the STM32F4 series), which includes:
  - the STM32Cube HAL embedded abstraction-layer software, ensuring maximized 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?

This 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 X-NUCLEO-IHM12A1 expansion board based on the STSPIN240.

The drivers abstract low-level details of the hardware and allow the middleware components and applications to access functions and data associated with the low voltage dual brush DC motor driver.

The drivers feature:

- STSPIN240 configuration (bridge input and enabling signals)
- Flag interrupt handling (overcurrent and thermal alarm reporting)
- Handling of up to two bidirectional low voltage dual brush DC motors
- STM32 Nucleo and expansion board configuration (GPIOs, PWMs, IRQs, etc.)

The software package includes a sample application for driving two bidirectional low voltage dual brush DC motors via the STM32 Nucleo board user button.

Revision history

Table 1: Document revision history

Date	Version	Changes
23-Sep-2016	1	Initial release

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