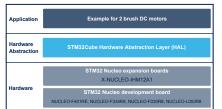




Low voltage dual brush DC motor driver software expansion for STM32Cube





- 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
- Easy portability across different MCU families, thanks to STM32Cube
- Free, user-friendly license terms



Description

The X-CUBE-SPN12 expansion software package for STM32Cube 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 development 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.

Product summary		
Low voltage dual brush DC motor driver software expansion for STM32Cube	X-CUBE- SPN12	
Low voltage stepper motor driver expansion board based on STSPIN220 for STM32 Nucleo	X-NUCLEO- IHM12A1	
Low voltage dual brush DC motor driver	STSPIN240	
STM32 Nucleo-64 development board with STM32F401RE/ STM32F334R8/ STM32F030R8/ STM32L053R8 MCUs	NUCLEO- F401RE/ NUCLEO- F334R8/ NUCLEO- F030R8/ NUCLEO- L053R8	
Applications	Brushed Motor Industrial Tools	



1 Detailed description

1.1 What is STM32Cube?

STM32Cube is a combination of a full set of PC software tools and embedded software blocks running on STM32 microcontrollers and microprocessors:

- STM32CubeMX configuration tool for any STM32 device; it generates initialization C code for Cortex-M
 cores and the Linux device tree source for Cortex-A cores
- STM32CubeIDE integrated development environment based on open-source solutions like Eclipse or the GNU C/C++ toolchain, including compilation reporting features and advanced debug features
- STM32CubeProgrammer programming tool that provides an easy-to-use and efficient environment for reading, writing and verifying devices and external memories via a wide variety of available communication media (JTAG, SWD, UART, USB DFU, I2C, SPI, CAN, etc.)
- STM32CubeMonitor family of tools (STM32CubeMonRF, STM32CubeMonUCPD, STM32CubeMonPwr) to help developers customize their applications in real-time
- STM32Cube MCU and MPU packages specific to each STM32 series with drivers (HAL, low-layer, etc.), middleware, and lots of example code used in a wide variety of real-world use cases
- STM32Cube expansion packages for application-oriented solutions

1.2 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 devlopment board user button.

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Revision history

Table 1. Document revision history

Date	Version	Changes
23-Sep-2016	1	Initial release
18-May-2021	2	Updated all content to reflect software new release.

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