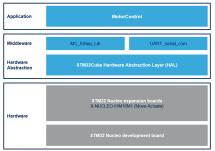


Three-phase motor driver software expansion for STM32Cube









Product summary		
Three-phase brushless DC motor driver software expansion for STM32Cube	X-CUBE-SPN16	
Three-phase brushless DC motor driver expansion board based on STSPIN830 for STM32 Nucleo	X-NUCLEO-IHM16M1	
Three-phase brushless monolithic motor driver	STSPIN830	
STM32 Nucleo development board	STM32 Nucleo	

Features

- Sample application to drive a three-phase brushless motor, managing a single driver (STSPIN830) and an STM32 Nucleo expansion board (X-NUCLEO-IHM16M1).
- GPIO, PWM and IRQ configuration
- · API function available to send any application command to the motor driver
- User interface utility based on PC terminal to control the motor
- · Speed control through potentiometer
- · Motor control by user button
- Easy portability across different MCU families, thanks to STM32Cube
- Free, user-friendly license terms

Description

The X-CUBE-SPN16 is an expansion software package for STM32Cube. The software runs on the STM32 Nucleo providing management of STSPIN830 to control three-phase brushless DC motors. The expansion is built on STM32Cube software technology to ease portability across different STM32 microcontrollers.

The software comes with a sample implementation driving a three-phase brushless DC motor, with BEMF sensing.

It is compatible with the NUCLEO-F030R8, NUCLEO-F302R8, NUCLEO-F303RE or NUCLEO-F401RE development boards when connected to an X-NUCLEO-IHM16M1 expansion board.

The package contains a user interface layer enabling real-time transmission of data to a PC through the terminal.



1 What is STM32Cube?

STMCube™ is designed by STMicroelectronics to reduce development effort, time and cost across the entire 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-IHM16M1 expansion board based on the STSPIN830.

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

The software package includes a sample application for driving a three-phase brushless motor using the user button of the STM32 Nucleo board or the user interface utility based on PC terminal.

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Revision history

Table 1. Document revision history

Date	Version	Changes
18-May-2018	1	Initial release.

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