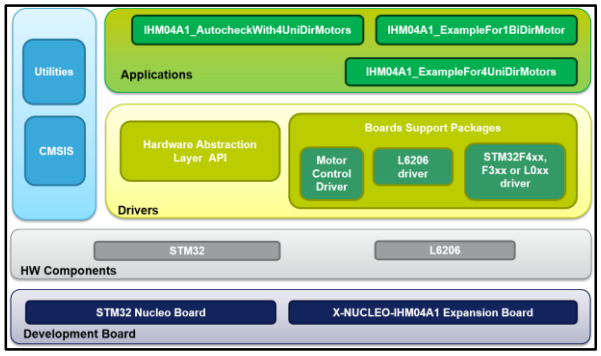
X-CUBE-SPN4

Dual brush DC motor driver software expansion for STM32Cube

Data brief



Features

- Driver layer for complete management of the L6206 dual DMOS full bridge driver
- Example implementation to control one bidirectional brush DC motor or 4 unidirectional brush DC motors
- Easy portability across different MCU families, thanks to STM32Cube
- Free user-friendly license terms

Description

The X-CUBE-SPN4 is an expansion software package for STM32Cube. The software runs on the STM32 and includes drivers that recognize the L6206 device to provide complete management of control for brush DC motors. The expansion is built on STM32Cube software technology to ease portability across different STM32 microcontrollers. It is compatible with the X-NUCLEO-IHM04A1 STM32 expansion board connected to a NUCLEO-F401RE, NUCLEO-L053R8 or NUCLEO-F334R8 board. The software package includes sample applications for driving one bidirectional brush DC motor or four unidirectional 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 STM32Cube for the STM32 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?

The proposed software is based on the STM32CubeHAL, the 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 L6206. It allows complete management of the L6206 by providing a complete set of APIs.

It offers the following features:

- Configuration of the L6206 (bridge inputs and enabling signals, bridge paralleling)
- FLAG interrupt handling (overcurrent and thermal alarm reporting)
- Handling of up to two bidirectional brush DC motors or up to 4 unidirectional brush DC motors depending of the bridge paralleling configuration
- STM32 Nucleo and expansion board configuration (GPIOs, PWMs, IRQs, etc.)

The software package includes application examples for driving one bidirectional brush DC motor or four unidirectional brush DC motors.

Revision history

Table 1: Document revision history

Date	Version	Changes
17-Jul-2015	1	Initial release.
06-Jun-2016	2	Minor text and formatting changes Updated board compatibility details in cover page description

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