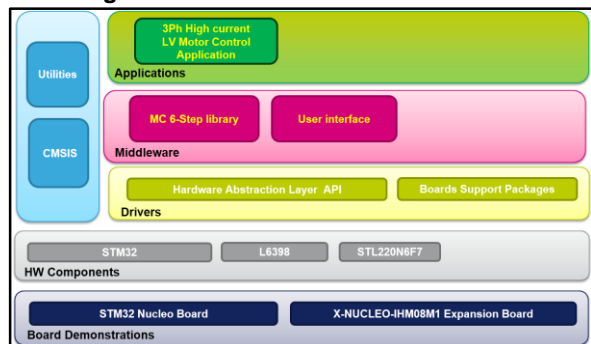


Low-Voltage BLDC motor driver software expansion for STM32Cube

Data brief

Figure 1: Overall software architecture

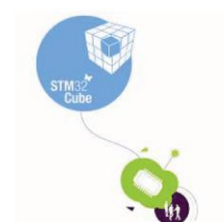


Description

The X-CUBE-SPN8 is an expansion software package for STM32Cube. The software runs on the STM32 and includes drivers that recognize, initialize and send application commands to the L6398 device. The expansion is built on STM32Cube software technology to ease portability across different STM32 microcontrollers. It is compatible with the NUCLEO-F302R8 or the NUCLEO-F401RE when connected to one or more X-NUCLEO-IHM08M1 expansion boards. The software comes with a sample implementation of the drivers to control one low voltage three-phase BLDC/PMSM motor.

Features

- Complete firmware package to build motor control applications based on L6398 gate drivers and STL220N6F7 Power MOSFETs (X-NUCLEO-IHM08M1).
- API function available to send any application command to motor driver.
- Example implementation to control one low voltage three phase BLDC/PMSM motor, available on board X-NUCLEO-IHM08M1 expansion board when plugged to NUCLEO-F302R8 or NUCLEO-F401RE.
- Easy portability across different MCU families thanks to STM32Cube.
- Free, user-friendly license terms.



What is STM32Cube?

STM32Cube™ 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 STM32 Nucleo expansion board based on L6398 gate drivers and STL220N6F7 Power MOSFETs. The drivers abstract low-level hardware information so middleware components and applications can send commands to the L6398 in a hardware independent manner.

The software allows complete management of the L6398 by providing a full set of APIs to send any application command to the motor driver. The package includes a sample application to drive one low voltage three phase BLDC/PMSM motor.

Revision history

Table 1: Document revision history

Date	Version	Changes
03-Dec-2015	1	Initial release.

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