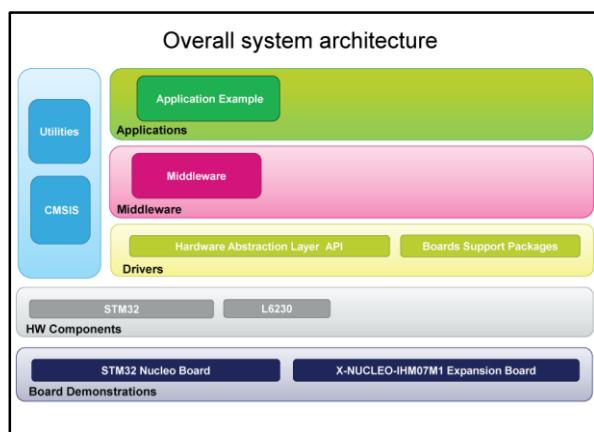


Three-phase brushless DC motor driver software expansion for STM32Cube

Data brief

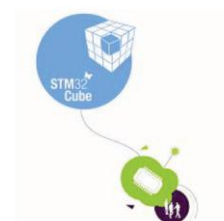


Description

The X-CUBE-SPN7 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 L6230 device. The expansion is built on STM32Cube software technology to ease portability across different STM32 microcontrollers. It is compatible with the NUCLEO-F030R8, the NUCLEO-F103RB, the NUCLEO-F302R8 and the NUCLEO-F401RE when connected to one or more X-NUCLEO-IHM07M1 expansion boards. The software comes with an example implementation of the drivers to control one low voltage three-phase BLDC/PMSM motor. The package contains a user interface layer enabling real-time transmission of data to a PC through the terminal.

Features

- Complete firmware package to build motor control applications based on a single driver (L6230) and hardware expansion board (X-NUCLEO-IHM07M1)
- API function available to send any application command to the motor driver
- Example implementation to control one low voltage three-phase BLDC/PMSM motor
- User interface utility based on PC terminal
- Easy portability across different MCU families, thanks to STM32Cube
- Free, user-friendly license terms



Detailed description

What is STM32Cube?

The STMCube™ initiative was originated by STMicroelectronics to ease developers' life by reducing development effort, time and cost. STM32Cube covers the STM32 portfolio.

STM32Cube Version 1.x includes:

- The STM32CubeMX, a graphical software configuration tool that allows the generation of C initialization code using graphical wizards.
- A comprehensive embedded software platform, delivered per series (such as STM32CubeF4 for the STM32F4 series).
 - The STM32Cube HAL, an STM32 abstraction layer embedded software which ensures maximized portability across the STM32 portfolio
 - A consistent set of middleware components such as RTOS, USB, TCP/IP, graphics
 - All embedded software utilities coming 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 L6230. The drivers abstract low-level details of the hardware and allow the middleware components and applications to send several application commands to the L6230 in a hardware-independent manner. It allows complete management of the L6230 by providing a full set of APIs to send any application command to the motor driver. The package includes an application example for driving one low voltage three-phase BLDC/PMSM motor.

1 Revision history

Table 1: Document revision history

Date	Version	Changes
11-Sep-2015	1	Initial release.

IMPORTANT NOTICE – PLEASE READ CAREFULLY

STMicroelectronics NV and its subsidiaries ("ST") reserve the right to make changes, corrections, enhancements, modifications, and improvements to ST products and/or to this document at any time without notice. Purchasers should obtain the latest relevant information on ST products before placing orders. ST products are sold pursuant to ST's terms and conditions of sale in place at the time of order acknowledgement.

Purchasers are solely responsible for the choice, selection, and use of ST products and ST assumes no liability for application assistance or the design of Purchasers' products.

No license, express or implied, to any intellectual property right is granted by ST herein.

Resale of ST products with provisions different from the information set forth herein shall void any warranty granted by ST for such product.

ST and the ST logo are trademarks of ST. All other product or service names are the property of their respective owners.

Information in this document supersedes and replaces information previously supplied in any prior versions of this document.

© 2015 STMicroelectronics – All rights reserved