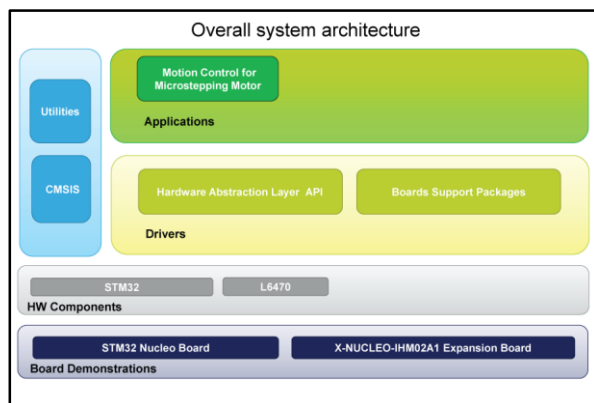


Two axis stepper motor driver software expansion for STM32Cube

Data brief



Description

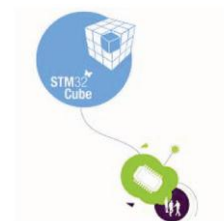
The X-CUBE-SPN2 is an expansion software package for STM32Cube. The software runs on the STM32 and includes drivers that initialize and send application commands to all stepper motor drivers (L6470) mounted on one or more dedicated STM32 expansion boards (X-NUCLEO-IHM02A1) stacked on an STM32 Nucleo board. The expansion is built on STM32Cube software technology to ease portability across different STM32 microcontrollers.

It is compatible with the NUCLEO-F401RE, the NUCLEO-F302R8 or the NUCLEO-F072RB when connected to an X-NUCLEO-IHM02A1 expansion board for STM32 Nucleo.

The software comes with an example implementation, written for three different IDEs: IAR EWARM, Keil MDK-ARM and System Workbench for STM32 (SW4STM32).

Features

- Complete middleware to build applications using stepper motor driver (L6470) for STM32 expansion board (X-NUCLEO-IHM02A1)
- Addresses more than one STM32 expansion board
- Addresses more than two stepper motor drivers in the same daisy chain
- Simple functions to send application commands from one to all stepper motor drivers in a daisy chain simultaneously
- Sample application to send commands through a PC via USART
- Easy portability across different MCU families, thanks to STM32Cube
- Free, user-friendly license terms
- Sample implementation available on board X-NUCLEO-IHM02A1 when plugged into NUCLEO-F401RE, NUCLEO-F302R8 or NUCLEO-F072RB



Detailed description

What is STM32Cube?

STMCube™ represents an original initiative by STMicroelectronics to ease developers' life by reducing development efforts, time and cost. STM32Cube covers STM32 portfolio.

Version 1.x of STM32Cube 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, ensuring maximized portability across the STM32 portfolio
 - A consistent set of middleware components such as RTOS, USB, TCP/IP, graphics
 - All embedded software utilities, including 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 two axis stepper motor driver expansion board based on L6470 for STM32 Nucleo. The drivers abstract low-level details of the hardware and allow the middleware components and applications to send application commands to the L6470 in a hardware-independent manner. The package also includes a sample application that developers can use to start experimenting with the code. The sample application was developed to receive the commands via USART by a PC. For this purpose, a terminal emulator/serial console (e.g. PuTTY) is used.

1 Revision history

Table 1: Document revision history

Date	Version	Changes
20-Oct-2015	1	Initial release.

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