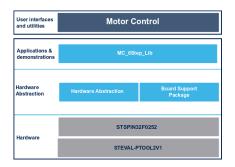




Firmware for STEVAL-PTOOL2V1 BLDC motor control reference design board



Features

- Sample application to drive a low voltage three-phase brushless motor, managing the STEVAL-PTOOL2V1 board
- Timer to generate PWM phase driving signals and current reference
- Management of parameters like minimum and maximum speed, direction etc.
- GPIO, PWM and IRQ configuration
- · Speed control through potentiometer
- · Motor positioning reconstruction through Hall sensors reading and decoding
- Motor control by trigger switch
- Free, user-friendly license terms

Description

The STSW-PTOOL2V1 firmware provides low voltage three-phase brushless DC motor control with the STEVAL-PTOOL2V1 reference design board based on the advanced STSPIN32F0252 BLDC controller with STM32 MCU.

The package includes a sample implementation to drive a BLDC motor with Hall sensors position feedback. It is preconfigured for a trapezoidal driving technique and speed loop with constant PWM duty cycle, known as voltage mode. External potentiometer support allows run-time variation of the target speed.

This software is based on the STM32CubeHAL hardware abstraction layer for the STM32 microcontroller. Motor parameters and speed loop controller parameters are easily accessed and edited in the user configuration file.

The package can be easily downloaded onto the STSPIN32F0252 controller via SWD connection.

Product summary		
3-phase inverter based on STSPIN32F0252	STEVAL- PTOOL2V1	
Reference firmware for LV 3-ph BLDC motors with STEVAL- PTOOL2V1	STSW- PTOOL2V1	
250 V three-phase controller	STSPIN32F0252	
Applications	Power Tools	



Revision history

Table 1. Document revision history

Date	Version	Changes
28-Sep-2020	1	Initial release.

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