

## Firmware for STEVAL-PTOOL2V1 BLDC motor control reference design board

User interfaces and utilities	Motor Control	
Applications & demonstrations	MC_6Step_Lib	
Hardware Abstraction	Hardware Abstraction	Board Support Package
	STSPIN32F0252	
Hardware	STEVAL-PTOOL2V1	

### 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	<a href="#">STEVAL-PTOOL2V1</a>
Reference firmware for LV 3-ph BLDC motors with STEVAL-PTOOL2V1	<a href="#">STSW-PTOOL2V1</a>
250 V three-phase controller	<a href="#">STSPIN32F0252</a>
Applications	<a href="#">Power Tools</a>

## Revision history

**Table 1. Document revision history**

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

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