

STM32 PMSM FOC Software Development Kit

Data brief

Features

- Single/Dual simultaneous vector control (FOC).
- Current reading topologies supported:
 - 1 shunt resistor,
 - 3 shunt resistors,
 - 2 ICS (isolated current sensor)
- Speed/position sensors (Encoder and Halls) as well as sensorless operation (State of observer, High frequency Injection HFI) are supported.
- Speed control, torque control, power control.
- Wide range of STM32 microcontrollers supported: STM32F030C6/C8/K6/R8, STM32F050C6/G6/K6, STM32F051C6/C8/K6/K8/R6/R8, STM32F100xx, STM32F103xx, STM32F2 Series, STM32F302xB/C, STM32F303xB/C, STM32F4 Series.
- Full customization and real time communication through PC software ST MC Workbench.
- Motor control algorithms implemented for specific applications like Maximum Torque Per Ampere (MTPA), Flux Weakening and more.
- Firmware ANSI C, MISRA compliant.



STM32 PMSM FOC SDK is part of ST's motor control ecosystem which offers a wide range of hardware and software solutions for motor control applications.

ST MC Workbench is PC software which reduces the design effort and time in the STM32 PMSM FOC firmware library configuration. The user, through a graphical user interface (GUI), generates all parameter header files which configure the library according to the application needs and can in real time monitor and change some variables of the algorithm.

Description

ST's STM32 offers the performance of the industry-standard Cortex[®]-M core at the service of vector (or field-oriented) control (FOC) algorithms, widely used in high-performance drives. The STM32 PMSM FOC SDK (STSW-STM32100), which includes the PMSM FOC FW library and ST MC Workbench, allows the user to evaluate the STM32 performance in applications driving single or dual Field Oriented Control of 3-phase Permanent Magnet motors (PMSM, BLDC).

1 Ordering Information

The STM32 PMSM FOC SDK is available for free download from STMicroelectronics.

2 Revision history

Table 1. Document revision history

Date	Revision	Changes
14-Feb-2014	1	Initial release.
22-May-2014	2	STM32 PMSM FOC SDK becomes a software package and includes the PMSM FOC FW library and ST MC Workbench.

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