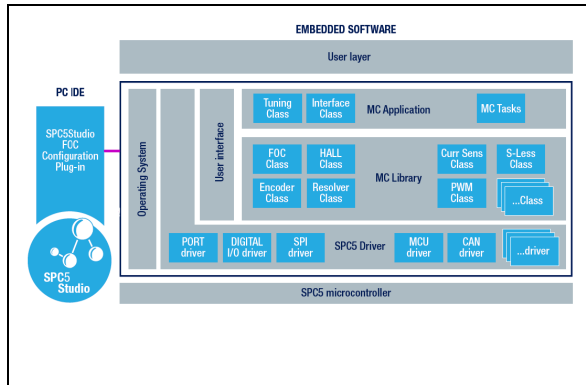


SPC5 Motor Control Tool Kit FOC Library

Data brief



- Motor Control library fully integrated into the SPC5Studio (Motor Control Component has been implemented on SPC5Studio 5.8.1 IO version, recommended, and SPC5Studio v.6.0.0 Bachman version) software development environment with graphic configuration
- Compliancy with FreeGCC, Hightec and Green Hills compiler
- Communication with SPC5 Motor Control Live Monitor (LM) to Real-time live monitoring the SPC5 Library Control Variables

Features

- SPC5 BLDC/PMSM FOC library
- Single motor vector control (FOC)
- Current reading topologies supported:
 - 1, 2 and 3 shunt current sensing (on motor inverter legs) plus 2 ICS on inverter phase
- Speed/position sensors (Encoder, Hall, Resolver) and sensor-less operation (State observer) are supported.
- Speed and Torque control
- Motor control algorithms implemented for specific needs: Max Torque Per Ampere, Flux Weakening and Feed Forward
- Firmware ANSI C, MISRA check compliancy.
- SPC560P, SPC560EL and ultimate SPC58NN84 microcontrollers supported
- L9907, L9908 and L99ASC03G FET driver support
- STGAPxS galvanic isolated single gate driver support for High Voltage traction application
- A set of Demo is already available in the SPC5Studio Wizard

Description

SPC5-MCTK-LIB is part of the SPC5 Motor control Tool Kit solution to develop Automotive application for BLDC motor control.

The Library is made of a FOC FW library and a SPC5Studio configurator plugin.

SPC5-MCTK-LIB enables user to evaluate the SPC5 MCU performance in applications driving single Field Oriented Control of 3-phase Permanent Magnet motors (PMSM, BLDC).

SPC5Studio Motor Control Configurator plugin reduces the design effort and time in the SPC5 PMSM FOC firmware library configuration. The users, through a graphical user interface (SPC5Studio), can generate all parameters which configure the library according to the application needs. Moreover, using real time monitor (SPC5-MCTK-LM) user can visualize speed and power on a running motor as well as change directly firmware settings like amplification gain or reference speed.

Table 1. Device summary

Order code	Reference
SPC5-MCTK-LIB	Evaluation kit integrating

1 Revision history

Table 2. Document revision history

Date	Revision	Changes
23-Nov-2017	1	Initial release.
14-Sep-2018	2	Updated info in cover page.
22-Oct-2020	3	Updated <i>Features</i> .

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