



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 or dual 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.

Features

- SPC5 BLDC/PMSM FOC library
- Single/Dual motor vector control (FOC)
- Current reading topologies supported:
 - 1-shunt
 - 2-shunt current sensing (on motor phases and inverter legs)
- 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 and SPC560EL microcontrollers supported
- L9907, L99ASC03G FET driver support
- STGAP1S galvanic isolated single gate driver support for High Voltage traction application

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. |

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