ModusToolbox™ Motor Suite

The comprehensive software ecosystem for motor control MCUs

ModusToolbox™ Motor Suite delivers a complete software ecosystem to help motor control engineers evaluate and optimize motor control solutions using Infineon products.

Motor Suite provides three main product types:

– **Motor Suite GUI (Graphical User Interface).** Desktop tool to run motor control evaluation boards in a few mouse clicks, with advanced features like motor profiler, auto-tuner or professional digital oscilloscope.
– **Motor Suite Motor Lib.** Configurable motor control library providing features like control methods (FOC, trapezoidal, more), modulations (SVPWM, trapezoidal), sensing (current shunts, current sensors, position sensors, etc.), protection, and more.
– **Code Examples.** Application specific code examples running on Infineon evaluation boards and reference designs. Based on Motor Lib and compatible with Motor Suite GUI.

Its versatility across motor types, sensor options and control methods, streamlines development and testing, while parameter monitoring provides valuable insights to accelerate prototyping and optimization. This comprehensive solution empowers developers to bring high-performance motor control applications to market efficiently.

The Motor Suite GUI is designed to configure, tune, and test the motor control applications on the following MCUs:

– PSOC™ Control C3
– XMC7200
– TRAVEO™ T2G
– XMC1400 – both standalone and integrated as in IMD700

For more information visit the ModusToolbox™ Motor Suite webpage
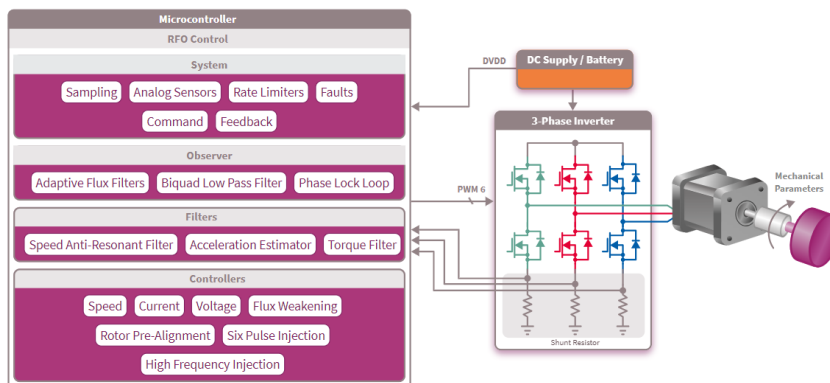
Key applications

Motor Control	Home appliances, General purpose drives, Robotics, Drones, Light electric vehicles, Power tools, Servo drives, Battery powered applications

Key features

Comprehensive Motor Control Ecosystem
– Evaluation GUI
– Motor Control Library
– Code Example
– Integrated in ModusToolbox™

Complete Motor Control Firmware Solution
– Different types of motors supported: PMSM, BLDC
– Control methods: variants of FOC and Trapezoidal
– Current sensing: 1-3 shunts, current sensors
– Position sensors: Hall, encoder, sensor-less
– Protections: OVP, OCP, I2T, temp

Advanced Test and Debugging Tools
– Visualize and analyze motor control signals in runtime
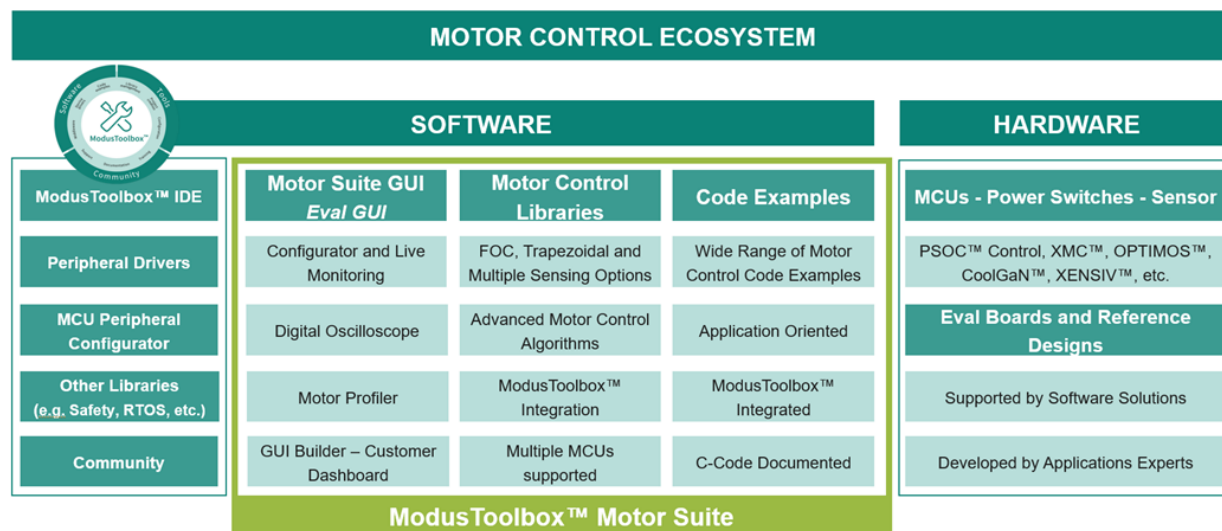– Automatic motor profiler and auto-tuning of PI controllers

Key benefits

– Effortless and Accurate Board Setup
– Comprehensive Signal Analysis
– Customized status monitoring
– Optimized System Performance
– Optimized Algorithms

Block diagram

Supported part numbers

KIT PN	OPN	Family	Product
KIT_PSC3M5_MC1	KITPSC3M5MC1	PSOC™ Control C3	PSOC™ Control C3M5
KIT_PSC3M5_CC2	KITPSC3M5CC2	PSOC™ Control C3	PSOC™ Control C3M5
KIT_PSC3M5_2GO	KITPSC3M52GOTOBO1	PSOC™ Control C3	PSOC™ Control C3M5
KIT_XMC7200_DC_V1	KITXMC7200DCV1TOBO1	XMC7000	XMC7200 MCU
KIT_XMC7200_MC1	KITXMC7200MC1TOBO1	XMC7000	XMC7200 MCU
EVAL_6EDL7141_FOC_3SH	EVAL6EDL7141FOC3SHTOBO1	XM1000	XMC1400 MCU
EVAL_6EDL7141_TRAP_1SH	EVAL6EDL7141TRAP1SHTOBO1	XM1000	XMC1400 MCU
EVAL_IMD700A_FOC_3SH	EVALIMD700AFOC3SHTOBO1	XM1000	XMC1400 MCU
EVAL_6EDL7151_36V_1KW	EVAL6EDL715136V1KWTOBO1	MOTIX™	MOTIX™ 6EDL7151
KIT_TRAVEO™_T2G_B_H_MC1	KITTRAVEOT2GBHMC1TOBO1	TRAVEO™	TRAVEO™_T2G

- Visit ModusToolbox™ software webpage for functionality and releases
- Visit Infineon Developer Community for support

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www.infineon.com