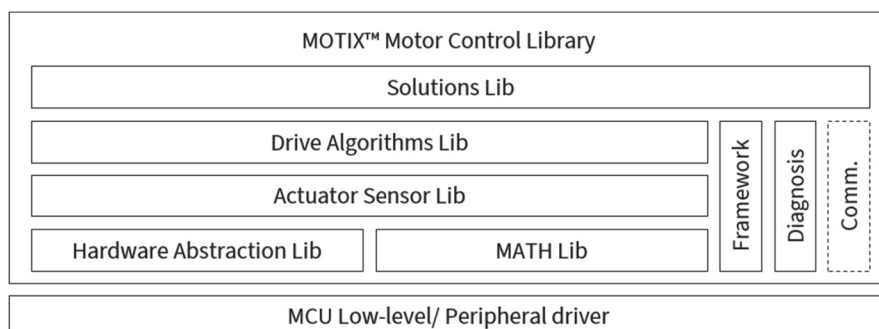# MOTIX™ Motor Control Library

Accelerate your innovation with Infineon's platform for embedded automotive motor control solutions.

MOTIX™ Motor Control Library is an integral part of MOTIX™ Software, instrumental to accelerate innovative automotive motor control system development. It features high scalability and software re-use through its modular and layered architecture, advanced algorithms, diagnosis, supports a broad range of motor types by software parametrization as well as tuning and tracing.

The MOTIX™ Solution Designer GUI tool will accelerate your success in particular supporting in parametrizing library code, software evaluation on Infineon motor control hardware and by its connectivity to professional partner tool chains.

Architecture

Key features (latest major release)

- High scalability and re-useability within MOTIX™ MCU device family by unique modular and layered architecture
- Optimized for single-leg-shunt field-oriented control (FOC) solutions
- Modulator featuring hysteresis-based adaption of current measurement points and shifting patterns, perfect for tackling low inductance motors
- Advanced algorithms
    - Closed-loop start via current waveform analysis (CWA) for sensor-less startup against unknown load
    - Maximum torque per current (MTPC) for optimized efficiency
    - Early blockage detection during start-up
    - Field-weakening for easier management of high-load situations
    - Wind-milling algorithms for detection of external drive and catch-on start into a rotating motor
- Framework & diagnosis: Task scheduler, error/fault detection and reaction, supports tuning & tracing
- MOTIX™ Solution Designer GUI tool support for software parametrization, runtime evaluation, monitoring and tracing
- Support integration of certified 3rd party LIN and CAN driver software
- Automotive SPICE, MISRA C:2012 compliant
- Test and verification reports, Black Duck report, user manuals
- Supported compilers: ARM® v6, IAR for ARM® v8 and GNU v7

Key benefits

- Modular, scalable and automotive qualified software for productive use with MOTIX™ MCU
- Free and simple initial device performance evaluation
- Advanced motor control algorithms for challenging operating points
- Comprehensive ecosystem incl. simulation, motor parameter identification, test automation, tracing & tuning, customization
- Premium support partner MOTEON

Target applications

- Variable speed drives:
    - Water pump
    - Oil pump
    - HVAC blower fan
    - Engine cooling fan
    - Pneumatic suspension compressor

MOTEON motor control designhouse

MOTEON is an Infineon Preferred Design House (PDH) and your global design house partner for motor control software and system solutions. End-to-end solutions and services for auxiliary motor control applications, from software and engineering to testing and tools include:

– Mechatronic model-based system development
– MOTIX™ Motor Control Library, LLD/ PDL resell and customization
– Application software development
– Motor analysis, SW parametrization and tuning services
– Validation and data tracing tool
– Testing as a service
– Test automatization with mobile motor test bench (mMTB)

For more information, visit www.moteon.com or email info@moteon.com.

Availability

We offer various license models from free evaluation to payable productive use including access to maintenance releases. For more information, please contact your local Infineon sales partner and check out Infineon Developer Center (IDC), www.infineon.com/idc.

Release	Description	Supported Devices	License models
v2	Advanced FOC control (Advanced algorithms, improved modulator, increased device coverage) MOTIX™ Solution Designer GUI tool serves evaluation on Infineon HW	TLE987x family TLE989x family TLE995x family	Free evaluation of example binaries, free source code evaluation on request Payable, productive use of source code incl. user/quality documentation via MOTEON

Public

Version: V2.0_EN
Date: 09/2024

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