

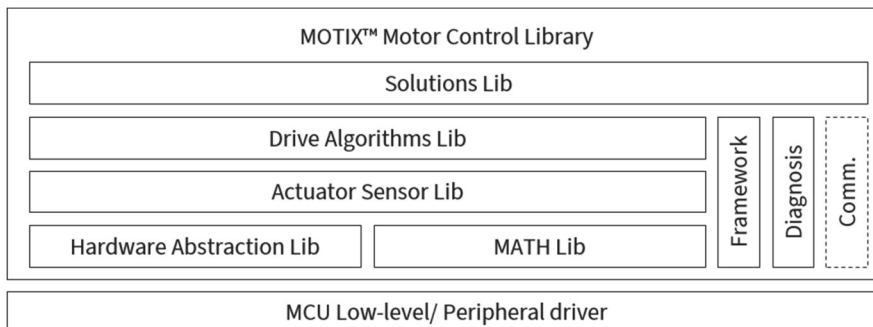
# MOTIX™ Motor Control Library

Accelerate your innovation with MOTIX™ Software – the platform for embedded automotive motor control solutions from Infineon.

MOTIX™ Motor Control Library is an integral part of MOTIX™ Software reducing efforts for automotive motor control system development. It features a comprehensive and highly scalable set of modular, configurable motor control SW components, commonly required for MOTIX™ target applications, unit and integration tested.

Customization and integration with application or 3rd party software is supported by APIs, leveraging best Infineon device features. The MOTIX™ Solution Designer GUI tool will accelerate your success in particular supporting parametrization of library code, SW evaluation on Infineon motor control boards and connection to professional partner tool chains.

## Architecture



## Key features (latest v2.0 release)

- High scalability and reuseability with 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 and communication: Task scheduler, error/ fault detection and reaction, tracing, tuning, signal monitoring and 3<sup>rd</sup> party LIN and CAN stack support
- Automotive SPICE, MISRA C:2012 compliant
- Unit and integration test verification reports, Black Duck report, user and getting started manuals
- Supported compilers: ARM® v6, IAR for ARM® v8 and GNU v7
- Configurable with static and dynamic (runtime) motor parameters, enabled by MOTIX™ Solution Designer GUI tool

## Key benefits

- Modular, scalable and tested SW components reduce motor control platform development efforts
- Easy 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 in thermal management and chassis systems
  - Water pump
  - Oil pump
  - HVAC blower fan
  - Engine cooling fan
  - Pneumatic suspension compressor

## PRODUCT BRIEF

### 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](http://www.moteon.com) or email [info@moteon.com](mailto:info@moteon.com).

### Availability

We offer various free evaluation and payable license models for development and productive use as well as maintenance and support contracts. For more information, please contact your local Infineon sales partner and check out Infineon Developer Center (IDC), [www.infineon.com/idc](http://www.infineon.com/idc).

Release	Description	Supported Devices	License models
v2.0 pre-release	Basic FOC control (V/f start-up, transition speed FOC)  MOTIX™ Solution Designer GUI support	TLE989x family	Free evaluation, source code
v2.0	Advanced FOC control (Advanced algorithms, improved modulator)  MOTIX™ Solution Designer GUI support	TLE987x family  TLE989x family (coming soon)	Free evaluation, hex code example  Payable, source code and user/quality documentation

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