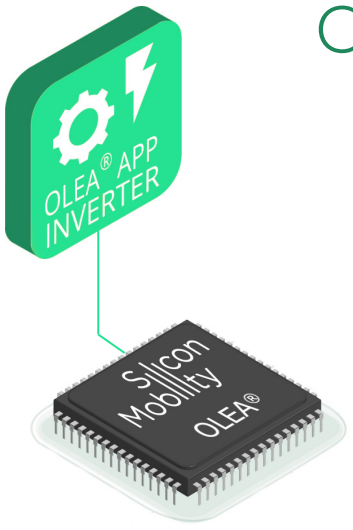
OLEA® APP INVERTER ED



Turnkey Application for the Control of Inverter and Electric Motor

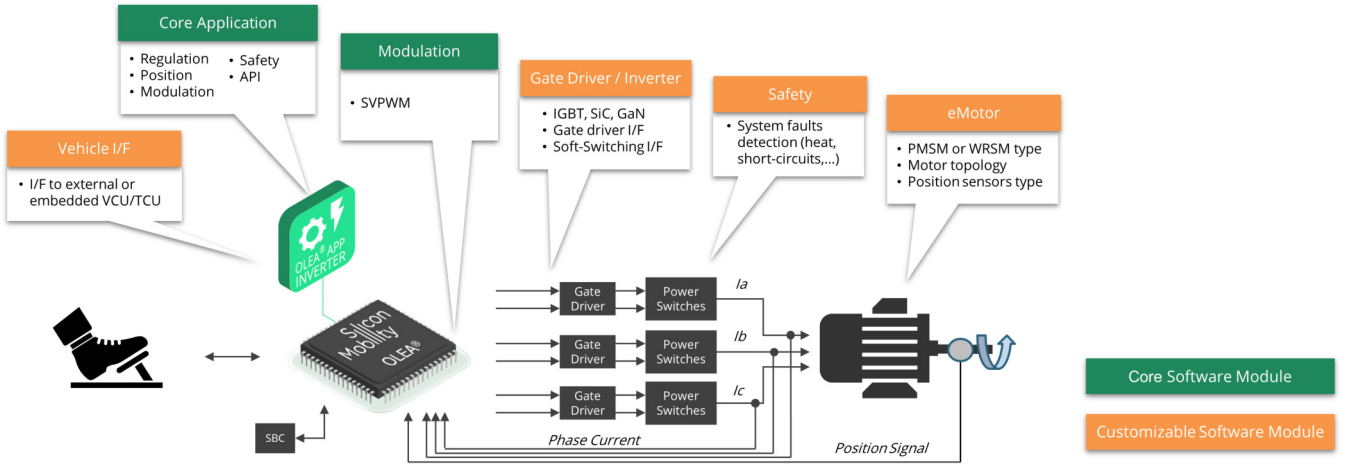
- Dedicated to EV and HEV applications
- Support Low and High-Voltage systems
- Highly customizable and quickly configurable to fit any inverter and e-motor
- Integrated safety and ASIL-D ISO 26262 ready

The most advanced control algorithms

OLEA® APP INVERTER ED is a turnkey software application for the control of inverter and electric motor control, and optimized for the OLEA® FPCU.

OLEA® APP INVERTER ED integrates all the necessary functions for a safe torque or speed regulation of electric motor control. The software is architecture around a core application including the current control loop, the position and speed measurement and the SVPWM modulation. Several customizable modules are available to interface any system configuration such as power transistors, gate drivers type, e-motor topology, position sensor and faults management.

OLEA® APP INVERTER ED software interface is compliant to AUTOSAR 4.3 and is packaged as an application level function with dedicated Complex Device Drivers (CDD) and low-level drivers. The software is accessible either as source code license or object code license.



State-of-the-Art Algorithms

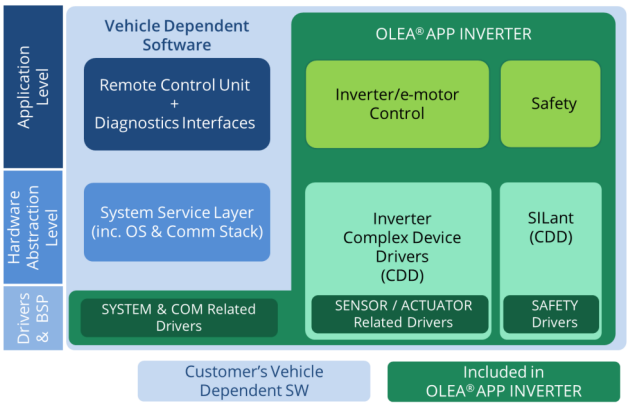
- Field Oriented Control (FoC)
- Space Vector PWM (SVPWM)
- Position Tracking Loop.

Inverter/e-Motor Topologies

OLEA® APP INVERTER ED can be customized to control any e-Powertrain system:

- Compatible with all power transistor technologies (MOSFET, IGBT, SiC and GaN)
- Support any e-Motor voltages (<60V and > 60V) .
- Support all types of e-Motor (PMSM, WRSM and more)
- Support all number of pair poles (1, 2, 4, 8 and more)
- Support 3 or 6 phases current acquisition
- Compatible with all types of position sensor (Resolver, Hall-effect)
- Can be interface with external or embedded VCU/TCU

Key Deliverables



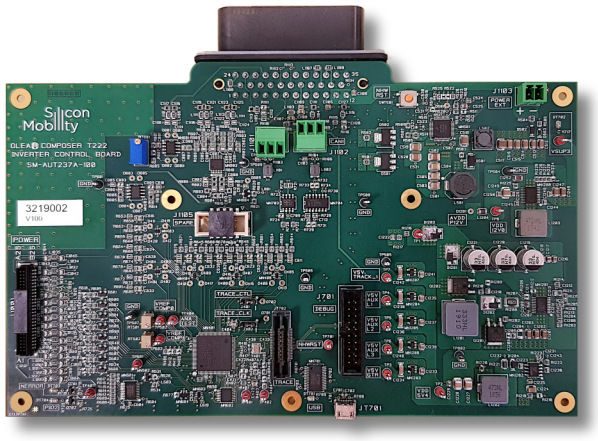
Complete package including:

- MATLAB Simulink Target Model
- Application level functions for high level control of the eMotor and Safety functions
- Complex Device Driver for fine control of the e-motor/ Inverter and Safety mechanisms
- Low-level drivers of FPCU hardware resources
- User's guide including detailed API functions description for fast integration into vehicle dependent software.
- Safety work products
- Consultation with our in-house experts

All the software interface is compliant with AUTOSAR 4.3 requirements

Starter kit for rapid prototyping

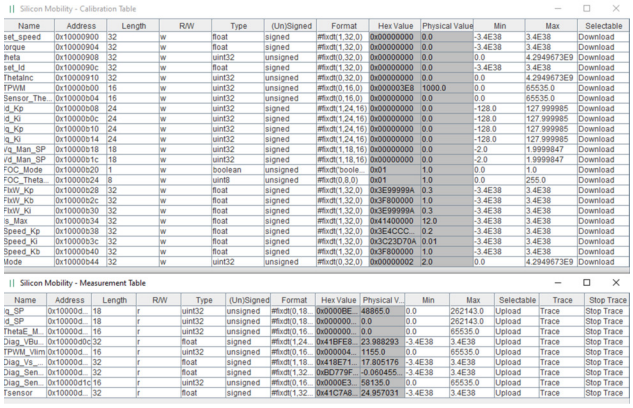
OLEA® COMPOSER – T222 HVIC Starter Kit is a complete and high performance hardware and software solution to evaluate OLEA® technology and rapidly start system integration development. It includes:



The Starter Kit includes:

- OLEA® COMPOSER HVIC Control Board: a hardware control board based on OLEA® T222 FPCU. The board is a reference design delivered with schematics and BoM.
- OLEA® APP INVERTER ED + Functional Vehicle Dependent Software: binary pre-flashed on OLEA® T222 FPCU
- Functional Vehicle Dependent Software demo code includes:
  - Remote Control Unit, XCP interface via CAN-FD
  - Diagnostics Interface,
  - Basic system services inc. scheduler and CAN comm.
- Post-build configuration, calibration and measurement.
- Flash downloader and GUI software for e-motor calibration.
- User's guide for a fast configuration and calibration

Calibration



Silicon Mobility GUI for calibration & measurement

The control, calibration and measurement of OLEA® APP INVERTER ED parameters can be done either using Silicon Mobility Graphical User's Interface or any 3rd party tool compliant with ASAM A2L format.

Silicon Mobility GUI is interfaced via USB and/or CAN port using CAN XCP protocol.

OLEA® APP INVERTER DE supports Vector CANape and Vector CAN interface (VN1610/VX1000) using CAN XCP protocol.

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