Silicon Mobility Introduces Software to Drastically Improve Power Flow and Range of Electric and Hybrid Vehicles

New Software for the Industry's First Automotive Field Programmable Controller Unit Enables Higher Yield Power Conversion for Electric and Hybrid Vehicles

Sophia Antipolis – France, February 27, 2018: Silicon Mobility, the full stack technology player powering control solutions for a cleaner, safer and smarter mobility, today announced the availability of OLEA® LIB DC/DC, a new software addition to the Silicon Mobility OLEA® FPCU which enables customers to design highly efficient DC/DC converters for hybrid and electric vehicles.

Hybrid and Electric Vehicles Waste a Lot of Electric Power

Electric and hybrid vehicle performance is mainly characterized by their energy usage efficiency. The longer the range for electric vehicles and best fuel economy for hybrids are the key indicators for best in class vehicle models. However, electrical powertrain systems currently contain several electrical functions that greatly suffer from important energy losses in today's power conversion systems controlling power flow. The numerous alternations between motion and regenerative flows during a simple journey in city traffic produce many transient states where power conversion yield drastically drops, wasting a rare and valued embedded resource: The energy.

OLEA® technology is changing the rules

Now these power conversion shortcomings have been eliminated. Silicon Mobility has developed the OLEA® LIB DC/DC software library optimized for the OLEA® Field Programmable Control Unit (FPCU) that is dedicated to the design of highly efficient DC/DC converters. Together with OLEA® LIB Inverter (introduced in 2017), these revolutionary technologies increase yield in transient state by over 250 percent and add up to 32 percent of range extension to electric and hybrid vehicles measured by the newly established WLTP emission test cycle. Silicon Mobility OLEA technology virtually eliminates the power conversion drop with optimum conversion yields in transient states while improving the power conversion yield in steady state.

OLEA LIB DC/DC Highlights:

- Significant electric and hybrid vehicle range extension.
- Highly efficient power conversion in all states significantly reducing power loss.
- Advanced control of power switches in all technologies (Si IGBT, GaN, SiC).
- Software library optimized for OLEA® FPCU enabling fast application development.

System Benefits:

- Includes state-of-the-art buck-boost valley current and voltage control.
- Capability to control power switches up to 500 KHz switching frequency and up to 6 phases in parallel.
- Design complexity and electronic control unit (ECU) size are reduced
- All extra external digital signal processors (DSP) and field programmable gate array (FPGA) are eliminated.

"With our full stack product line, Silicon Mobility not only drastically improves the performance, control and range of electric and hybrid drivetrain," said Bruno Paucard, CEO, Silicon Mobility, "with our new DC/DC Library, we demonstrate that reach technology content can be made directly by customers with ease."

OLEA LIB DC/DC comes fully equipped with the building blocks for reference and target models for MATLAB Simulink. The models are designed to enable tuning and calibration from software-in-the-loop to hardware-in-the-loop simulations. This new offering is available to select customers for evaluation and will be on display in the Silicon Mobility booth #3A-121 at Embedded World 2018 on February 27 – March 1 in Nuremberg Germany.

Please visit Silicon Mobility to learn more about our revolutionary OLEA products for electric and hybrid vehicles

About Silicon Mobility

Silicon Mobility is a full stack technology player powering control solutions for a cleaner, safer and smarter mobility. The company designs, develops and sells flexible, real-time, safe and open semiconductor solutions for the automotive industry used to increase energy efficiency and reduce pollutant emissions while keeping passengers safe. Silicon Mobility's products control electric motors, battery and energy management systems of hybrid and electric vehicles. By using Silicon Mobility's technologies, manufacturers improve the efficiency, reduce the size, weight and cost of electric motors and increase the battery range and durability. Silicon Mobility technologies and products accelerate the car's powertrain electrification and the deployment of driverless vehicles for OEMs. Silicon Mobility is headquartered in Sophia-Antipolis, France.

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