SEMIKRON and Silicon Mobility announce collaboration into a 24V to 96V inverter platform for batteries powered vehicles up to 50KW

Nuremberg, Germany, and Sophia Antipolis, France (March 15th, 2021) - SEMIKRON, a leading manufacturer of power electronics, and Silicon Mobility, a solution provider of digital control for electrified powertrain, today announced the availability of a 24V to 96V inverter platform for automotive battery powered vehicles and industrial off-road vehicles. The Inverter platform delivers from 10KW to 50KW and combines the SEMIKRON SKAI® 3 LV inverter and Silicon Mobility OLEA® inverter and electric motor control solution.

An Ultra-Compact MOSFET Inverter system

SEMIKRON, on one hand, provides **SKAI® 3 LV**, the power and assembly with an advanced integrated MOSFET module with connected DC-link, gate-driver, protection functions, and sensors. It comes with a complete performance power solution for 3-phase motor-drive and a ready-made power section which reduces time to market. All of this is proposed within a custom-made cover to offer an ultra-compact MOSFET inverter. The 3rd generation of the SKAI LV industrial MOSFET inverters constitutes the 7th generation of inverter technology manufactured by SEMIKRON, with more than 1.5 Million MOSFET inverters in the field. The 3rd generation is a platform concept that offers standard design versions or can be customized to meet user's needs. The converter connects easily to a custom control board for quick and easy designing, while leaving the control to the customer.

A highly configurable and intuitive control solution

Silicon Mobility, on the other hand, delivers **OLEA® COMPOSER – T222 Starter Kit** for SKAI3 LV, the digital control and software aspects of the platform. It includes a reference control board integrating **OLEA® T222 FPCU**, a powerful control chip, and **OLEA® APP INVERTER**, a control software application adapted for the SKAI 3 LV inverter power module, fully configurable to support a wide variety of 3-phase PMSM and WRSM electric motor and position sensors. The application provides efficient and safe torque and speed management using Field Oriented Control (FoC) and variable Space Vector Pulse Width Modulation (SVPWM) algorithms from 2kHz up to 100kHz. It also includes numerous configurable safety mechanisms for faults detection and reaction such as overcurrent, overvoltage, and overtemperature. Calibration and validation are enabled thanks to its native ASAM standard support. The starter kit also includes vehicle

dependent software demo code, post-build measurement, configuration, calibration, and firmware update GUI software.

A jump-start for fast system development and open for customization

The combined solution offers users access to an optimized, best-in-class, and full sketch Power + Control Inverter Platform. A ready-to-go service is available at both SEMIKRON and Silicon Mobility to help customers immediately get their hands on the solution enabling fast prototyping and development of any industrial or automotive system. The platform is accessible as a White Box where users can customize upon request the power module packaging/casing from SEMIKRON and access the OLEA APP INVERTER object code through a dedicated license.

Karl-Heinz Gaubatz, Chief Executive Officer (CEO) / Chief Technical Officer (CTO)
SEMIKRON International GmbH

"*With Silicon Mobility, a technology leader in ultra-fast control schemes, a perfect match is formed for high quality, high-performance solutions for low-voltage vehicle applications,*" declared Karl-Heinz Gaubatz, CEO of SEMIKRON. "*With this platform, we give low-voltage vehicle manufacturers access to technologies and solutions far above todays state of the art implementations, providing them the extra edge for their designs.*"

Rainer Kallenbach, Chief Executive Officer (CEO)
Silicon Mobility

"Together with SEMIKRON, a recognized world leader in power module, we combined control technology and power electronics system to deliver a unique platform highly adaptable and customizable with no compromise on performance and quality, » said Rainer Kallenbach, CEO of Silicon Mobility. *"By choosing this platform, vehicle manufacturers can accelerate the electrification of their vehicles and offer themselves the possibility of future differentiation".*

Customers can immediately start testing it out today by visiting Silicon Mobility and SEMIKRON.

Stay safe

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About SEMIKRON:

SEMIKRON is one of the world's leading manufacturers of power modules and systems primarily in the medium output range (approx. 2 kW up to 10 MW). Our products are at the heart of modern energy efficient motor drives and industrial automation systems. Further application areas include power supplies, renewable energies (wind and solar power), and electric vehicles (private cars, vans, buses, lorries, forklift trucks, and more). SEMIKRON's innovative power electronic products enable our customers to develop smaller, more energy efficient power electronic systems. These systems in turn reduce the global energy demand.

SEMIKRON is a family-owned business founded in 1951, headquartered in Nuremberg, Germany. Today the company has a staff of more than 3,000 people in 24 subsidiaries worldwide. This international network with production sites in Germany, Brazil, China, France, India, Italy, Slovakia, and the US ensures fast and comprehensive service for customers. By establishing the ONLINE SHOP, SEMIKRON increased its presence for customers.

About Silicon Mobility:

Silicon Mobility is a technology leader inventor of the FPCU semiconductor architecture for ultra-fast and critically safe real-time control. Silicon Mobility accelerates all e-mobility transitions in the cleanest, safest, secured, and smartest way. 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. Its technologies and products accelerate the car's powertrain electrification for OEMs. Silicon Mobility is headquartered in Sophia- Antipolis, France, with a global presence in Germany, Silicon Valley, CA., China, and Japan. For more information, visit: www.silicon-mobility.com