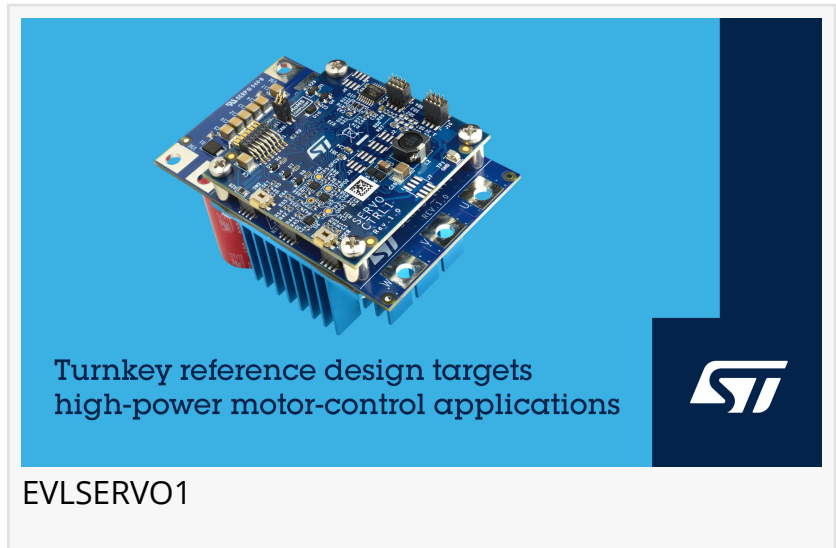


STMicroelectronics delivers turnkey reference design for low-voltage, high-power motor applications

Accommodates FOC, six-step and advanced position and torque control strategies for industrial and home appliances

GENEVA, SWITZERLAND, March 25, 2025 /EINPresswire.com/ -- The [EVLSEVO1](#) servo driver reference design from STMicroelectronics offers a highly compact solution specifically engineered for high-power motor-control applications, providing designers with a turnkey platform to explore, develop, and prototype without compromises.



Delivering 3kW in a compact (50 mm x 80 mm x 60 mm) form factor, the EVLSEVO1 offers a rich set of features for servo motor control in applications including industrial and home automation, home appliances, servo drives, e-bikes, and service and automation robots.

Featuring the advanced STSPIN32G4 intelligent motor driver, the EVLSEVO1 allows developers to implement sensorless or sensed field-oriented control (FOC) with one, two, or three shunts; advanced position or torque control algorithms; or six-step control modes. It combines the STSPIN32G4 with a power stage optimized for nominal bus voltages from 24V to 48V.

The system drives three-phase brushless motors at up to 2kW using only the heatsink, or 3kW with a fan. It provides a flexible and feature-rich platform for system development, including dedicated circuitry to enable regenerative motor braking, and triple-shunt topology for sensing of motor winding currents in differential mode. The platform supports the use of Hall sensors, incremental encoders, and absolute encoders with UART or SPI communication. A CAN transceiver is built-in and eases system-level integration by supporting robust, industry-standard communication.

At the heart of the EVLSEVO1, the STSPIN32G4 is a compact (9mm x 9mm VFQFPN), highly

integrated and flexible SiP module for the control of three-phase brushless motors. It combines a triple half-bridge gate driver with a high-performance STM32G4 MCU, and power-management circuitry that allows it to operate from a single supply. Hardware overvoltage protection for the external MOSFET circuitry, as well as on-board bootstrap diodes are integrated, further saving external components.

The EVLSERVO1 power stage is stacked with the STSPIN32G4 for maximum overall power density. Comprising six couples of paralleled STL160N10F8 MOSFETs with very low (3.2 mΩ max) RDS(ON), its high efficiency, low heat dissipation, and improved motor performance make for exceptional overall power density. Integrated over-voltage, over-current, and over-temperature protection ensure robust operation and minimal bill of materials.

The EVLSERVO1 eases entry into exploring and prototyping using the advanced features of the STM32 ecosystem. Designers gain access to a broad range of software libraries and examples. STMicroelectronics' X-CUBE-MCSDK GUI-based workbench allows developers to quickly and easily configure motor-control firmware parameters – some in real time – dramatically accelerating time-to-market and reducing costs.

The EVLSERVO1 is available now from the eStore and ST distributors for \$168.00.

Please visit www.st.com/evlservo1 for more information.

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Alexander Jurman
STMicroelectronics
Alexander.Jurman@st.com

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