



## **Toshiba and MIKROE introduce motor driving board streamlining prototyping of automotive applications**

*SmartMCD™ enables sensorless field-oriented control (FOC) of BLDC motors*

**Düsseldorf, Germany, 29th October 2024** – Toshiba Electronics Europe GmbH (“Toshiba”) has partnered with [MIKROE](#) to integrate its Smart Motor Control Driver IC (SmartMCD™) into the SmartMCD TB9M003FG board, streamlining prototyping phase for automotive applications.

With a focus on performance, flexibility and ease of integration, the AEC-Q100 Grade 0 qualified SmartMCD features a 32-bit Arm® Cortex®-M0 CPU and a Vector Engine co-processor as well as gate-drivers to control external N-channel MOSFETs for driving three-phase brushless DC (BLDC) motors and permanent magnet synchronous motors (PMSM) more efficiently.

Now a central component on the MIKROE SmartMCD TB9M003FG board, this IC can be conveniently designed into automotive applications like electric pumps, fans, body control, and thermal management systems. The board includes an integrated inverter comprising six small-package, AEC-Q101 qualified MOSFETs for efficient power management. The SmartMCD TB9M003FG board can be optionally connected to external inverter boards for driving higher power BLDC motors consuming several hundred watts.

The SmartMCD TB9M003FG board’s compact design, measuring 130mm × 73mm, includes all circuitry required for motor control, switches, and potentiometers for operational testing. An on-board debug unit (based on Toshiba's TMPM067FWQG), is compliant with the CMSIS-DAP on-board emulator standard and enables out-of-box operation, testing and debugging of the target device.

Additional information about the SmartMCD TB9M003FG IC can be found on Toshiba's website: <https://toshiba.semicon-storage.com/eu/semiconductor/product/automotive-devices/detail.TB9M003FG.html>

MIKROE SmartMCD TB9M003FG Board: <https://www.mikroe.com/smartmcd-tb9m003fg-board>

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#### Notes:

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#### About Toshiba Electronics Europe

[Toshiba Electronics Europe GmbH](#) (TEE) offers European consumers and businesses a wide variety of hard disk drive (HDD) products plus semiconductor solutions for automotive, industrial, IoT, motion control, telecoms, networking, consumer, and white goods applications. Next to HDDs, the company's broad portfolio encompasses power semiconductors and other discrete devices ranging from diodes to logic ICs, optical semiconductors as well as microcontrollers and application specific standard products (ASSPs) amongst others.

In addition, TEE also offers Toshiba's SCiB™ battery cells and modules with lithium titanium oxide (LTO) for heavy-duty applications and Silicon Nitride (SiN) ceramic substrates used in power semiconductor modules, inverters, and converters for their heat dissipation characteristics and strength.

TEE has its headquarters in Düsseldorf, Germany, with branch offices in France, Italy, Spain, Sweden and the United Kingdom providing marketing, sales and logistics services.

Visit Toshiba's websites at [www.toshiba.semicon-storage.com](http://www.toshiba.semicon-storage.com), [www.scib.jp/en](http://www.scib.jp/en) and [www.toshiba-tmat.co.jp/en/](http://www.toshiba-tmat.co.jp/en/) for further company and product information.

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October 2024

Ref. 7548(A1)E