



### **Toshiba expands collaboration with MikroElektronika introducing the Clicker 4 for TPM4K development board for Motor Control**

*Comprehensive assessment of key functional parameters enabled, but with minimal investment needed*

**Düsseldorf, Germany, 19<sup>th</sup> May 2022** – Toshiba Electronics Europe GmbH (“Toshiba”) today announces that Toshiba Electronic Devices & Storage Corporation is strengthening the support it can offer to motor control design projects through its ecosystem of technology partners further. Thanks to the cooperation expansion with MikroElektronika (MIKROE), customers are now able to utilize a new evaluation platform.

The MIKROE Clicker 4 development board for Toshiba’s M4K MCU combined with the Clicker 4 Inverter Shield is a simple to use and cost-effective solution for experimenting with BLDC motor control scenarios. The Clicker 4 for TPM4K has an on-board debugger - avoiding the need for an external debugger. It includes four mikroBUS™ sockets for the connection of a wide range of different MIKROE Click boards™, enabling further functionality to be added. There are also extension connectors, JTAG/SWD debug ports, LED indicators and push buttons. This board is accompanied by the Clicker 4 Inverter Shield, which features six MOSFETs for motor driving, a switching power supply that is used to regulate the motor supply voltage of up to 48V, with a 5V regulated power source, which can be used to power the external controller board. Its flexible interfacing allows positioning feedback to be obtained from Hall sensors and incremental encoders. Over-current protection has been incorporated for assured reliability.

The M4K MCUs are already widely used throughout the industry, proving popular in next generation motor control implementations. These devices each rely on an Arm® Cortex® -

M4 processor core with floating-point unit (FPU) and have memory protection units (MPUs) too. They can deliver 160MHz operation and have advanced-programmable motor driver (A-PMD) functionality, along with advanced vector engine plus (A-VE+) capabilities for vector control purposes. Their memory resources comprise 256KBytes of code flash, as well as 32KBytes of data flash.

The Clicker 4 for TPM4K and the Clicker 4 Inverter Shield are supported by the MCU Motor Studio software available through the [Toshiba website](#). It is a simple, well-structured, and versatile software featuring two main components: a Motor Control PC Tool that allows parameter configuration, drive control, and real-time logging and diagnostics via high-speed UART as well as the scalable, fully configurable Motor Control Firmware for the M4K MCU.

More information on the new MIKROE Clicker 4 boards is available at:

<https://www.mikroe.com/clicker-4-for-tmpm4k>  
<https://www.mikroe.com/clicker-4-inverter-shield>

Additional details on the Toshiba M4K MCUs for motor control can be found here:

<https://toshiba.semicon-storage.com/eu/semiconductor/product/microcontrollers/txz4aplus-series.html#M4K-Group>

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**About Toshiba Electronics Europe**

[Toshiba Electronics Europe GmbH](#) (TEE) is the European electronic components business of [Toshiba Electronic Devices and Storage Corporation](#). TEE offers European consumers and businesses a wide variety of innovative 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.

TEE has headquarters in Düsseldorf, Germany, with branch offices in France, Italy, Spain, Sweden and the United Kingdom providing marketing, sales and logistics services. The company president is Mr. Tomoaki Kumagai.

For more company information visit TEE's web site at [www.toshiba.semicon-storage.com](http://www.toshiba.semicon-storage.com).

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