



### **Toshiba Expands Line-up of Arm® Cortex® -M3-based Microcontrollers**

*Reinforces portfolio of high-speed microcontrollers with multiple packages and memory sizes*

**Düsseldorf, Germany, 14<sup>th</sup> August 2018** - Toshiba Electronics Europe (TEE) today announced the launch of the second M3H group in the TXZ™ family of low-power, high-speed microcontrollers based on the Arm® Cortex®-M3 core.

Toshiba launched the first M3H Group with 30 products for consumer and industrial device applications in May 2016, as the first group in the TXZ family. The newly launched second M3H group is again based on the *de facto* industry standard Arm Cortex-M3 core for embedded systems and offers greater performance than the first group.

The new M3H-devices incorporate high-performance analog circuits and the wide range of basic functions required to support comprehensive motor control for applications in consumer and industrial devices. The line-up includes a range of 64 to 144-pin packages, 256 to 512KB of flash memory, and 32KB data flash memory.

The operating frequency is 80MHz, twice the speed of the first M3H group. Integrated features include high-precision analog circuits such as a 12-bit ADC converter with 1.5µs conversion speed with up-to 21 channels, and an 8-bit, 2 channel, DAC.

Toshiba's Advanced-Programmable Motor Driver (A-PMD), a single channel motor control circuit that provides inverter control of brushless DC motors is also built-in. The IC also incorporates versatile general-purpose peripheral circuitry including up to 6 UART channels, 2-4 channel I<sup>2</sup>C, 1-5 channels TSPI, and multiple channels of 16- and 32-bit timers.

These high-precision analog and general-purpose peripheral circuits allow the second M3H group to achieve low-power operation simultaneously with high performance for high-end home appliances and large-scale systems.

In addition there is a built-in self-diagnosis function that checks the reference voltage in the ADC, a RAM parity function to detect errors during memory reads, and a single channel CRC calculation circuit that contributes to reducing software processing loads to comply with the IEC 60730 functional safety standard.

The microcontrollers require a power supply of 2.7 to 5.5V and operate from -40 to 85°C.

Toshiba plans to release groups of microcontrollers for high-speed data processing communication control and devices equipped with high-precision analog circuits for low- to medium-speed motor control. Toshiba continues to expand the line-up of the TXZ family to meet the needs of the motor control and global sensing market.

The mass production is scheduled to start now.

Notes:

\* Arm and Cortex are registered trademarks of Arm Limited (or its subsidiaries) in the US and/or elsewhere.

\* TXZ is a trademark of Toshiba Corporation.

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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. The company's broad portfolio encompasses integrated wireless ICs, power semiconductors, microcontrollers, optical semiconductors, ASICs, ASSPs and discrete devices ranging from diodes to logic ICs.

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