



## **Toshiba Releases New M4N Group of ARM® Cortex®-M4 Microcontrollers in the TXZ+™ Family Advanced Class**

Dedicated for industrial equipment requiring Ethernet and CAN controller

**Düsseldorf, Germany, 19<sup>th</sup> October 2021** – Toshiba Electronics Europe GmbH (“Toshiba”) has announced the availability of 20 new devices in the M4N group of ARM® Cortex®-M4 microcontrollers manufactured in a 40nm process. These devices further extend and enhance the TXZ+™ family advanced class and include an ARM Cortex-M4 core with floating point unit (FPU), running at speeds up to 200MHz, integrated 2MB code flash and 32kB data flash memory with 100k write cycle endurance. These new microcontrollers also offer a range of interfacing and communication options such as Ethernet, CAN and USB 2.0 FS OTG with integrated PHY.

These types of M4N group microcontrollers are ideally suited for office equipment, building and factory automation applications, as well as being used in industrial networking and information management devices. Within the consumer space these devices are suited to IoT-based home appliances, home security, smart meters and more.

The new M4N group products have enhanced communication functions integrated including a serial memory interface that also supports Quad/Octal SPI, audio interface (I<sup>2</sup>S) and external bus interface in addition to UART, FUART, TSPI and I<sup>2</sup>C supported by a built-in 3-unit DMAC. Moreover, the devices can allocate independent DMA and RAM for each peripheral circuit, and use a bus matrix circuit configuration that allows the bus master to efficiently transfer data. As a result, M4N group devices enable an Ethernet controller, CAN, and USB controller to be processed independently in parallel at the same time.

The newly announced devices support a variety of sensing applications with a high-speed, high-precision 12-bit analog/digital converter (ADC) that allows individual sample

and hold times to be set for each of the 24 ADC input channels. A dual-channel 8-bit digital-to-analog converter (DAC) and a range of motor control functions are also included in the new devices.

The self-diagnosis functions incorporated in the devices for ROM, RAM, ADC and clock help customers to achieve IEC60730 Class B functional safety certification.

Full documentation, sample software (with actual usage examples), and driver software which controls the interface for each peripheral are available for download on the Toshiba website. To further simplify the design process, evaluations boards and development environments are provided in cooperation with ARM global ecosystem partners.

The new devices are available in a selection of fine-pitch LQFP and VFBGA packages. Mass production begins in October.

For more information, please visit: <https://toshiba.semicon-storage.com/eu/semiconductor/product/microcontrollers/txz4aplus-series.html>

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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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