Toshiba Releases New M3H Group of ARM® Cortex®-M3 Microcontrollers in the TXZ+™ Family Advanced Class

Optimized for the main control of consumer and industrial equipment, and motor control

Düsseldorf, Germany, 26th April 2022 – Toshiba Electronics Europe GmbH ("Toshiba") has started mass production of 21 new microcontrollers in the M3H group as new products in the TXZ+™ Family Advanced Class, manufactured in a 40nm process. The M3H group includes an ARM® Cortex®-M3 core running at speeds up to 120MHz, integrated 512kB (max.) code flash, and 32kB data flash memory with 100k write cycle endurance as well as 64kB of RAM. These microcontrollers also offer various interface and motor control options, such as an encoder, and programmable motor driver. As a result, M3H group devices are suited for a wide range of applications including motors, home appliances, and industrial equipment.

In response to the diversity of consumer and industrial equipment, the new M3H group products have enhanced communications functions integrated as UART, TSPI, I^2C, and a 2-unit DMA controller (DMAC). Moreover, a digital LCD driver is integrated to reduce the number of components for display function, facilitate contrast adjustment, and ensure a flexible board layout.

These 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 12 to 21 ADC input channels. In addition, they provide a solution suitable for controlling AC motors and brushless DC motors in combination with an on-chip advanced programmable motor driver (A-PMD) circuit that can operate synchronously with the 12-bit analog/digital converter.

Also included within the highly integrated device is a dual-channel, 8-bit digital/analog converter (DAC) and up to 135 dedicated input/output (I/O) ports. Other peripherals include a remote-control signal preprocessor (RMC) and CRC calculation circuit.

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

All of the new microcontrollers operate from a voltage in the range 2.7 to 5.5V DC and are housed in high-density 64 to 144 pin LQFP packages.

Documentation, sample software with actual usage examples, and driver software that controls the interfaces for each peripheral can be downloaded from the Toshiba website:
https://toshiba.semicon-storage.com/eu/semiconductor/product/microcontrollers/software-library/txzplus-m3h-group.html

Evaluation boards and development environments are provided in cooperation with ARM global ecosystem partners.

A complete overview over devices in the TXZ+™ Family Advanced Class can be accessed here:
https://toshiba.semicon-storage.com/eu/semiconductor/product/microcontrollers.html

https://toshiba.semicon-storage.com/eu/semiconductor/product/microcontrollers/txz3aplus-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.

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