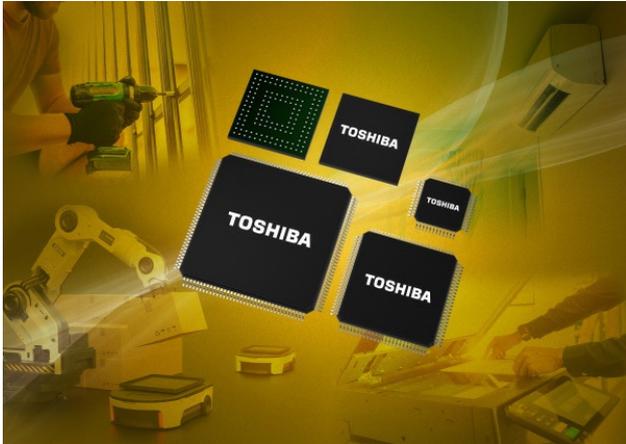


ARM CORTEX-M

## 32-bit micro-controllers portfolio expanded

Toshiba Electronics Europe has expanded its TXZ+ family of micro-controllers. They come with ARM Cortex-M technology and feature CAN.



*The chips are suitable for motor control applications (Source: Toshiba)*

The products are suitable for motor-control systems, domestic appliances, human machine interfaces, and connected IoT (Internet of Things) infrastructure. They are based on Arm Cortex-M processor cores. They leverage a 40-nm CMOS process that exhibits reduced operating and standby current levels. This allows them to deliver superior performance alongside elevated energy efficiency, explained the company.

The chips are available with different flash memory capacity options (up to 2 MiB with 100-k write cycle endurance) and various package formats. This allows them to address different requirements while reducing the associated engineering effort and maximizing software re-use, the company added.

Each micro-controller features a multi-channel 12-bit analog-to-digital converter (ADC). Among the interfaces that may be specified, CAN is one of them. Security mechanisms such as secure boot and access authentication, plus IEC 60730 Class B-compliant functional safety features are all included.

Chips in the M3H group are based on the Arm Cortex-M3 processor core. Operating at up to 120 MHz, they are supplied in LQFP packages. They feature 512-KiB code flash memory, 32-KiB data flash memory, and 4-KiB of separated user flash memory, complemented with a 12-bit ADC and two 8-bit digital-to-analog converters (DACs). Other features are advanced programmable motor driver (A-PMD) functionality and built-in LCD driving capabilities.

Members of the M4K and M4M groups are based on an Arm Cortex-M4 processor core with floating point unit (FPU). Operating up to 160 MHz, they feature up to 256-KiB code flash memory, 32-KiB data flash memory, and 4 KiB of user flash memory. Each of these devices include the company's original motor control IP, which enables sensorless field-oriented control (FOC) of up to three motors via a single micro-controller. M4K and M4M are supplied in LQFP packages. The micro-controllers of the M4M group include an additional CAN controller enabling direct connectivity to the commonly used industrial serial network systems.

M4G and M4N group devices are suitable for complex data processing. The integrated Arm Cortex-M4 processor core with FPU operates at up to 200 MHz. The products provide integrated code flash memory of up to 2 MiB and a separated 32 KiB data flash memory. Featuring A-PMD IP for motor control, they are housed in both LQFP and BGA type packages suitable for industrial and consumer applications. The M4N group additionally includes a CAN controller, USB 2.0 Full-Speed OTG controller with integrated PHY (up to 2 ports), and a 10/100 Ethernet MAC.

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