New development platform for automotive motor control announced

ECN Europe

Toshiba Electronics Europe has announced an evaluation and development platform for embedded systems targeted at automotive motor control applications where compliance with the ISO 26262 functional safety standard is required.

The new IAR KickStart Kit is designed for rapid development, prototyping and testing of designs built around Toshiba's TMPM354 ARM Cortex-M3 automotive motor control MCU. This IC features dedicated motor control and functional safety features and is ideal for automotive motion control applications in electric vehicles and hybrid electric vehicles.

Designed to be used 'out-of-box', the Starter Kit comprises an evaluation board, integrated development environment (IDE) software, a J-Link hardware debug probe; and full documentation. Example application code is also provided to speed development. As well as access to a target TMPM354F10TFG microcontroller the board provides the JTAG connection for programming/debugging, a dedicated motor control interface, CAN connectivity and a comprehensive set of additional connectivity options and peripherals.

The TMPM354F10TFG microcontroller incorporates an Advanced Programmable Motor Driver (A-PMD), a Vector Engine (VE) for field-orientated control (FOC) or Vector Control (VC) – reducing CPU load by more than 50% – a CAN controller and three CAN channels. In addition Toshiba has integrated a Resolver to Digital Converter (RDC). This allows signals from resolver or rotor position sensors to be fed into the MCU directly saving the cost of external analogue devices. Functional safety in accordance with the ISO 26262 standard is provided by optimised, tightly coupled fault supervisors. These supervisors monitor the detailed operation of each of the microcontroller's functional blocks to provide a low-cost, single-CPU solution for functional safety.

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