

MCU

Single-chip automotive MCU with CAN FD

Cypress Semiconductor has added another MCU to its Traveo automotive micro-controller (MCU) family: it has more memory for program code and graphics to support hybrid instrument cluster applications.



A Traveo MCU for automotive instrument cluster applications (Photo: Cypress)

The integrated devices in the S6J32xE series provide a single-chip solution that can drive graphics on head-up displays or traditional gauges, but also provides scalability with Cypress's low-pin-count Hyperbus memory interface. The addition continues Cypress's expansion of its automotive portfolio that delivers differentiating performance via its MCUs, memories, wireless radios, capacitive-touch solutions, power management ICs (PMICs), and other technologies.

The MCUs include a low-voltage differential signaling video output, providing a suitable interface to attach external displays such as thin-film-transistors. The MCUs support in-vehicle networking standards required for instrument clusters, including CAN FD and Ethernet AVB.

The Traveo S6J32xE series features up to 4 MiB of embedded flash, 512 KiB RAM, and 2 MiB of video RAM, along with an ARM Cortex-R5 core with 240 MHz performance. The MCUs have up to two 12-pin Hyperbus memory interfaces that improve read and write performance of graphical data and other data or code. The devices can use a single Hyperbus interface to connect to two memories for firmware over-the-air updates, which let end-users get software fixes, features, and applications for their vehicles on-the-go.

"These new Traveo MCUs are another example of our commitment to expand our automotive portfolio to meet the changing needs of our customers, in this case, addressing the strong growth trend of hybrid clusters and head-up displays," said Takeshi Fuse, senior vice president of the Automotive Business Unit at Cypress.

The MCUs integrate enhanced secure hardware extension for robust security. The Hyperbus interface enables connections with Cypress's Hyperflash and Hyper RAM memories, which deliver read/write bandwidth of up to 200 Mbit/s per channel in combination with Traveo MCUs. The MCUs include 50 channels of 12-bit analog-to-digital converters, 12 channels of multi-function serial interfaces and I2S interfaces, and an audio DAC to output the sounds required in today's instrument clusters. The series, which supports a temperature range of -40 °C to +105 °C, is sampling now and will be in production in early 2017. The MCUs are available in TEQFP-208 and TEQFP-216 packages.

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