Renesas Electronics Unveils New-Generation RH850 Microcontroller for Automotive Applications

Renesas Electronics introduced the new RH850 family of 32-bit microcontrollers (MCUs) for automotive applications. The RH850 is based on 40 nanometer (nm) MONOS (metal oxide nitride oxide silicon) embedded flash technology, making Renesas the first semiconductor supplier to provide this technology in the automotive sector. The RH850 family of MCUs is based on the new RH850 32-bit core, which provides the benefits of ultra low power process technology with the superior computing power of the world's leading 32-bit core.

The RH850 family is the latest in a series of devices developed by Renesas Electronics following the merger of Renesas Technology and NEC Electronics in April 2010, which will continue to enhance both former companies' successful, reliable and committed automotive history.

Renesas' RH850 addresses major trends of the changing automotive market across all car segments. These include functional safety requirements from ASIL A to ASIL D level, integration of security functions and especially low power consumption, to support environmental considerations such as CO2 reduction. The RH850 family covers performance classes from 64 megahertz (MHz) up to 320 MHz as single core performance. Multi-core systems will achieve even higher overall performance. The embedded flash memory will range from 256 KB to 8 MB, while additional blocks for data flash, emulating EEPROM functionality, are also included and deliver write/erase endurance values of more than 125 K write/erase cycles at data retention times of minimum 20 years.

The roll-out will involve multiple, application-tailored product line-ups (series), each equipped with the RH850 32-bit core architecture. The series will span single-core, dual-performance cores, dual lock-step cores and multiple-core architectures, addressing virtually all 32-bit MCU performance and safety requirements in the various automotive segments. Combined with scalable functional IP blocks, memory and pin counts, Renesas' series concept allows customers to select the most appropriate product for their needs, safe in the knowledge that they have the flexibility to up- or down-scale without changing the application software.

To ensure software compatibility for customers, all product series are based on the same platform development concept, re-using the same IPs across the entire RH850 generation.

One integrated development environment (IDE) will support the entire RH850 family of products, enabling a smooth migration path from legacy automotive products as well as a further reduction of overall development investment.

Availability

Samples of Renesas' first RH850 family of MCU products will be available in autumn 2012. Mass production is scheduled to begin in 2014. (Availability is subject to change without notice.)

More information can be found at www.renesas.com [1]

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[1] http://www.renesas.com