

Renesas and Synopsys Expand Automotive Collaboration with VDK Support for Renesas' RH850/E1x MCU Series

Virtualizer Development Kit Speeds Software Development, Integration and Test of Powertrain Electronic Control Units Using RH850/E1x Series of MCUs

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Highlights:

- Virtual prototype of Renesas' RH850/E1x series of MCUs now available and expands upon the existing F1x series support
- Center of Excellence, a joint development between both companies, continues to accelerate the development and availability of models and VDKs for Renesas RH850 MCUs
- Synopsys VDK for Renesas RH850, a software development kit that uses virtual prototypes as a target, enables Tier 1 and OEM companies to improve quality and reliability and reduce development costs
- VDK can be customized to represent any RH850/E1x MCU series variant with Synopsys virtual prototyping services and Virtualizer tool set

Synopsys, Inc. (Nasdaq:SNPS), a global leader providing software, IP and services used to accelerate innovation in chips and electronic systems, today announced the expansion of its Virtualizer™ Development Kit (VDK) portfolio for Renesas' RH850 MCU with the new RH850/E1x series reference virtual prototype. The new RH850/E1x series reference virtual prototype targets powertrain electronic control units. The Synopsys VDK is a software development kit integrating Renesas' RH850 MCU virtual prototypes with software debug and analysis tools to enable automotive engineers designing RH850/E1x-based engine control units (ECUs) to start software development and integration and test months before hardware is available, resulting in higher product quality and reduced development cost. Renesas' RH850/E1x virtual prototype model was developed through the Center of Excellence collaboration between both companies, which leverages joint engineering teams to develop models and VDKs optimized for Renesas MCUs.

"With high scalability, performance and reliability, Renesas' RH850/E1x MCU series is well suited for powertrain applications," said Akihiko Watanabe, senior manager of AS Strategy Department, Automotive Control 2nd Business Division at Renesas Electronics Corporation. "The availability of the RH850/E1x reference virtual prototype, developed through the Center of Excellence collaboration, enables our customers to obtain a complete solution from a single provider and start software development, integration and test earlier and deliver increasingly reliable products faster."

Synopsys VDK for Renesas RH850 is integrated with design tools such as Mathworks Simulink® environment, Synopsys Saber, Vector CANoe and third party debuggers, enabling system integration and testing using a virtual Hardware-in-the-Loop environment as well as fault and coverage testing in support of the ISO 26262 safety standard. The RH850/E1x reference virtual prototype integrates a fast RH850 instruction set simulator (ISS) and a broad set of peripheral models. The VDK for Renesas RH850 can be further customized to represent other RH850/E1x MCU versions through Synopsys' [virtual prototyping services](#) and [Virtualizer](#) tool set.

"To achieve the required fuel efficiency/emission standards, Tier 1 and OEM companies will increase their reliance on embedded software. Accelerating software development, integration and test will be a vital for

engineering teams to achieve higher levels of product quality," said John Koeter, Vice President of Marketing for IP and Systems at Synopsys. "Synopsys continues to support our customers' innovation of powertrain applications with the availability of the RH850/E1x virtual prototype as part of our VDK portfolio for Renesas' RH850 MCUs. Our VDKs are designed to address the need for earlier software development, integration and test. They are also designed to offer seamless integration with fault and coverage tools to efficiently develop embedded software for automotive ECUs."

Availability & Resources

The Virtualizer toolset and the VDK for Renesas RH850 are available now. To learn more visit:

- Virtualizer: <http://www.synopsys.com/Virtualizer>
- VDK for Renesas RH850: <https://www.synopsys.com/verification/virtual-prototyping/vdk/vdk-for-renesas.html>

About Synopsys

Synopsys, Inc. (Nasdaq:SNPS) accelerates innovation in the global electronics market. As a leader in electronic design automation (EDA) and semiconductor IP, Synopsys delivers software, IP and services to help engineers address their design, verification, system and manufacturing challenges. Since 1986, engineers around the world have been using Synopsys technology to design and create billions of chips and systems. Learn more at <http://www.synopsys.com>.

Editorial Contacts:

Tess Cahayag
Synopsys, Inc.
650-584-5446
maritess@synopsys.com

Stephen Brennan
MCA, Inc.
650-968-8900, ext.114
sbrennan@mcapr.com

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