PRESS RELEASE

Fraunhofer IPMS RISC-V processor core for functional safety is supported by development tools from Lauterbach

Fraunhofer IPMS RISC-V processor core supported by debugging tool from Lauterbach

The Fraunhofer IPMS-developed EMSA5-FS processor core for functional safety based on the open-source RISC-V instruction set architecture is supported by another important debug tool. With the integration into the toolsets of the leading manufacturer of microprocessor development tools Lauterbach, numerous debug functions are now available for the 32-bit RISC-V core.

The EMSA5-FS is the first fault-tolerant embedded RISC-V processor core according to functional safety and was awarded the Product of the Year 2022 in the automotive sector by the trade journal Elektronik. Now the developer, the Fraunhofer Institute for Photonic Microsystems IPMS, announced that another important debugger is available for the processor core. The TRACE32® toolset from Lauterbach, the world market leader in hardware-assisted debug tools, now supports the EMSA5-FS and offers developers extensive debug functions.

The EMSA5-FS processor core was the first RISC-V processor core to be certified ASIL-D ready according to automotive functional safety, making it suitable for use in safety-critical in-vehicle systems. It can be made available for any FPGA platform, as well as integrated into customer-specific ASICs for a wide range of foundry technologies. Fraunhofer IPMS also provides services to extend the IP core with customer-specific modules.

"The inclusion of the EMSA5-FS processor core in Lauterbach's TRACE32® toolset represents an important milestone for us," explains Marcus Pietzsch, head of the IP Cores and ASIC Design group at Fraunhofer IPMS. "By working closely with Lauterbach, we can now offer developers additional functionality around debugging software on the RISC-V IP. Developers working with our processor core will thus benefit from the advantages of working with a first-class tool."

Lauterbach's TRACE32® toolset provides multicore debugging on individual hardware threads of RISC-V cores and enables debugging directly from the reset vector, which is needed to test startup codes and other key functions. Lauterbach also provides high-level and assembly debugging for a variety of standard ISA extensions, such as Compressed Instructions and Floating Points. In addition, the JTAG debug transport module (DTM) is fully supported.

The EMSA5-FS is suitable for implementing microcontrollers in automotive, aerospace, medical and other safety-critical devices and systems.

Editor
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About Fraunhofer IPMS

The Fraunhofer Institute for Photonic Microsystems IPMS stands for applied research and development in the fields of industrial manufacturing, medical technology and improved quality of life. Our research focuses on miniaturized sensors and actuators, integrated circuits, wireless and wired data communication, and customized MEMS systems. Fraunhofer IPMS has years of experience in the design of IP cores for automotive communication and has a family of TSN IP cores. More than 150 applications worldwide use Fraunhofer IPMS IP cores, many of them in in-vehicle networking. The multidisciplinary IP design team of Fraunhofer IPMS with expertise in domain-specific computer architectures, network structures, RTL design and implementation of electronic systems is also available as a competent development partner for application-specific adaptations of the IP cores and their integration into complex network architectures.

About Lauterbach

Lauterbach is the leading manufacturer of complete, modular and upgradeable microprocessor development tools worldwide with experience in the field of embedded designs since 1979. It is an international, well-established company with blue chip customers in every corner of the globe and has a close working relationship with all semiconductor manufacturers. At the headquarters in Höhenkirchen, near Munich, the engineering team develops and produces sophisticated and specialized Development Tools, which are utilized all over the world under the brand TRACE32®. Our branch offices exist in the United Kingdom, Italy, France, Tunisia, on the east and west coasts of the United States, Japan and China. Highly qualified sales and support engineers are also available in many other countries. For more information visit http://www.lauterbach.com.

Image

RISC-V processor core EMSA5-FS from Fraunhofer IPMS
for functional safety
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