Press Release

Maximum Performance for Safety-Critical Applications

The miriac® MPX-i.MX95 System-on-Module from MicroSys offers high-performance system power for graphics-intensive workloads in automotive, railway, construction machinery, and industrial automation.

Sauerlach near Munich, May 5, 2025 – MicroSys Electronics, a leading provider of embedded computing technology, presents its new energy-efficient miriac® MPX-i.MX95 System-on-Module (SoM) featuring a high-performance graphics engine based on the i.MX95 CPU from NXP® Semiconductors at embedded world 2025. OEMs utilizing this new miriac® SoM from NXP® Gold Partner MicroSys benefit from high processor performance for safety-critical applications, immediate access to prototyping, enhanced connectivity tailored to specific use cases, and comprehensive software support. The offering is rounded out by long-term CPU availability and the module's swappability.

In addition to application-ready hardware and functionally validated low-level software, MicroSys Electronics also offers customer-specific design services at the carrier board and system level. These services extend to SIL certification for markets where functional safety standards comparable to IEC 61508 are required, such as railway technology (EN 50155), stationary and mobile machinery (ISO 13849), manufacturing robots (ISO 10218), control systems (IEC 62061), and drive systems (IEC 61800-5-2). Certification in the aerospace context (DO-254/DO-160) is also significantly simplified thanks to existing manufacturer documentation.

High Performance with Maximum Connectivity

The NXP® i.MX95 CPU with integrated Arm® TrustZone architecture is ideally suited for applications with high safety requirements. Six Cortex®-A55 cores with clock speeds up to 2 GHz, along with a real-time capable Arm® Cortex®-M7 core at 800 MHz and an -M33 core up to 333 MHz, make this module perfect for high-performance real-time and energy-efficient embedded applications. Professional graphics applications also benefit from the miriac® MPX-i.MX95's integrated Arm® Mali™ 3D GPU with OpenGL® and Vulkan® support, as well as a 2D GPU. The SoM offers 16 GB of LPDDR5 memory with speeds up to 6.4 GT/s, plus an NFC-configurable EEPROM for storing data such as serial numbers or user configurations (up to 16 kBit). Storage capacity can be expanded via up to two SD cards and an eMMC with up to 64 GB.

In addition to Arm TrustZone security, the innovative SoM also supports safety: all necessary internal voltages are routed to the module connector to allow, for example, monitoring via a supervisor. Additional safety requirements can be met by using a current sensor to measure parameters such as the power consumption of the SoM, CPU logic, and core. Two temperature sensors are also available for system monitoring.

Comprehensive industrial interfaces ensure maximum connectivity, including 1x 10-Gigabit Ethernet, USB 2.0/3.0, PCIe, I3C, SPI, UART, and MIPI-CSI. The module is extremely compact (82 mm x 35 mm) and designed for use in industrial temperature ranges from -40 to +85 °C. A development kit with power supply, cables, and Linux OS on an SD card is available to help jumpstart development.

More information: https://www.microsys.de/de/products/system-on-modules/arm-architecture/miriacr-mpx-imx95/

About MicroSys Electronics

Since 1975, MicroSys Electronics has developed and manufactured embedded system solutions. A Gold Partner of NXP®, the company heavily integrates NXP's S32 Automotive, Layerscape, and QorIQ processor technologies. System-on-Module (SoM) based designs are a key strength of the company located in Sauerlach near Munich. The portfolio ranges from application-ready SoMs to customer-specific carrier board designs and fully integrated systems. These robust, long-term available designs are especially suited for markets requiring safety standards comparable to IEC 61508, such as railway technology (EN50155), aerospace (DO-160), and mobile machinery (ISO 13849), as well as factory robots (ISO 10218), control systems (IEC 61131-6), and drive systems (IEC 61800-5-2). Other application areas include medical technology (60601) and critical infrastructures like the nuclear sector (IEC 61513) or process industries (IEC 61511). MicroSys collaborates closely with customers in all these sectors to ensure full compliance with applicable standards. More information: https://microsys.de

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