



Press Note

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New: Smart Control on ARM based industrial system on modules

The current lineup of highly integrated system-on-modules (SoM) with NXP Layerscape and Power Architecture CPUs by MicroSys, feature a custom supervision and power controller. For this purpose, a NXP Kinetis K02 device was integrated. It combines an ARM® Cortex®-M controller with 128KB Flash memory. Previously, such controllers were commonly found in datacenter and cloud computing hardware – mainly in the x86 world.

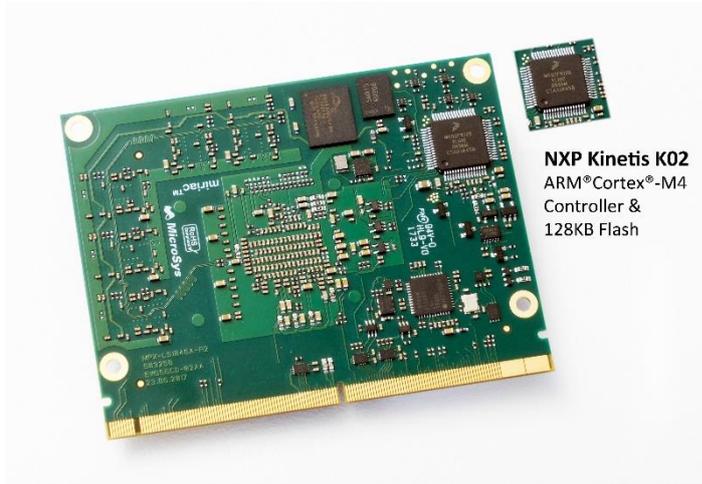
The K02 controller oversees the module's power system and handles system initialization. The modular power management allows for a maximum reuse between different types of modules and maximized interoperability, in-field processor upgrades and defined processor state management with reset control. Since the boot source management is also carried out by the system controller, the customer can run custom firmware upgrade cycles and sophisticated redundancy schemes with ease. Field-Replaceable-Unit

Data (FRU-Data) can be stored on the controller and read out by the host CPU during boot or runtime to establish autoconfiguration or enable automatic software deployment in larger installations.

For reliability and safety considerations, the system controller precisely monitors all internal voltage rails and on-board temperature sensors. Once faults occur, it can transition the SOM into a safe state. All actions and reactions are customizable upon request, supported by a well-documented and modular software architecture.

The system controller also allows in-field, non-destructive software upgrades to enable new features or customer specific software modifications later in the product life cycle.

MicroSys is continuously enhancing the standard software package, with planned features such as temperature monitoring and logging, event logging and custom FRU user data sections.



NXP Kinetis K02
ARM®Cortex®-M4
Controller &
128KB Flash

Fig. 1:miriac MPX-LS1046A SoM with Kinetis K02 Controller

Microsys Electronics GmbH, located in Sauerlach close to Munich, has been designing custom-specific hardware and system solutions for industrial applications for more than 30 years. Besides standard environmental profiles, the systems can be engineered to meet the enhanced requirements for aerospace, defense, chemical or harsh industrial applications. The MicroSys System on Modules architecture based on the miriac® MPX specification supports mainly the high-end NXP processor portfolio as well as industrial bus standards such as VME or CompactPCI.

Supported operating systems include Linux, OS-9, VxWorks and QNX. Software support for communication interfaces such as CAN, EtherCAT, Profinet, FlexRay and ARINC are also part of the portfolio.

MicroSys is known for its sound experience in the areas of system design, software integration, project management, customer specific solutions and technical support.

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