

Kontron publishes “nano” specification for Computer-on-Modules

Specification looks set to incorporate credit card sized modules



Eching, Germany, April 15, 2008 – Kontron has published the complete specification and design guidelines for the “nano” Computer-on-Module format. This format is designed as an extension to the COM Express™ (COM.0) specification published by the PICMG to include credit card sized modules.

The “nano” module format (84 mm x 55 mm), for which Kontron already offers products under the name “nanoETXexpress”, is designed as an extension to the PICMG COM Express™ specification that currently specifies the “Basic” (95 mm x 125 mm) and “Extended” (155 mm x 110 mm) form factors. Kontron also supports the “micro” (95mm x 95mm) form factor, which they intend to offer to the PICMG as an extension to the existing COM Express™ specification.

The official standardization of the “nano” format will have an important market impact. The smaller and more highly integrated processors that are enabling increasingly smaller, energy saving system designs require an official Computer-on-Modules standard as soon as possible. This will safeguard against an array of Computer-on-Module designs based on these processors and therefore ensure maximum design security for integrators.

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This extension to the well-established and proven PICMG COM Express™ specification would offer the ideal platform for these processors. Kontron is already developing two modules based on this intended extension to the COM Express™ industry standard and will have samples available for evaluation by the end of Q2 of this year. The nano module follows exactly the COM Express™ pin-out Type 1 with respect to connector location and pin definition. Different size Computer-on-Modules are therefore interchangeable and carrier board designs are reusable. This enables developers to draw upon their existing experience with COM Express™ conforming ETXexpress modules and COM Express™ compatible microETXexpress modules. Only the dimensions are reduced to a minimum. In designing the “nano” COM Express™ form factor, Kontron was able to draw upon its experience from developing DIMM-PC (ISA) and X-board (PCI) designs as well as the Intel® processor roadmap to ensure the highest degree of design security.

Designs outside of this specification, some of which were presented at Embedded World 2008, are basically re-inventing the wheel despite the fact that history has shown that only a single standard per technology base for Computer-on-Modules is capable of being successful. Decisive factors are the bus for customer-specific system expansions and the physical dimensions. All PCI Express studies show that the PICMG COM Express™ standard is the only relevant form factor for Computer-on-Modules with a PCI Express expansion bus. Therefore, this technology is considered to be ideal for implementing extremely compact designs because it will be the first single standard covering all sizes of Computer-on-Modules belonging to a single performance class.

The addition of the new “nano” form factor defines all of the long term relevant interfaces such as Gigabit Ethernet, SATA, USB and PCI Express (including PCIe Gen 2) as well as audio and graphics. Memory and Flash are also already on board – as they are with DIMM-PC and X-board. Compared with card edge connectors, the nanoETXexpress connector is significantly more future proof. Since it has less electronic attenuation, it enables longer pathways on the carrier board. This is important since green IT trends will reduce the possible pathway length in the long term. In addition, it offers greater shock and vibration resistance as well as a clear advantage when it comes to EMC. This is also important since the demands on shielding are increasing due to factors such as second generation PCIe, for example, that doubles the wire speed and thereby the frequency, resulting in the need for greater shielding. Therefore, it makes the most sense to use this Computer-on-Module design that clearly offers the longest lifecycle.

The specification for the “nano” module can be downloaded from <http://www.Kontron.com/COM-Express-Nano-Specification>. Kontron looks forward to working with other PICMG members to officially incorporate the “nano” form factor into the COM Express™ specification.

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About Kontron

Kontron designs and manufactures standard-based and custom embedded and communications solutions for OEMs, systems integrators, and application providers in a variety of markets. Kontron engineering and manufacturing facilities, located throughout Europe, North America, and Asia-Pacific, work together with streamlined global sales and support services to help customers reduce their time-to-market and gain a competitive advantage. Kontron's diverse product portfolio includes: boards and mezzanines, Computer-on-Modules, HMIs and displays, systems, and custom capabilities. Kontron is a Premier member of the Intel® Embedded and Communications Alliance. The company is a recent three-time VDC Platinum vendor for Embedded Computer Boards. Kontron is listed on the German TecDAX stock exchange under the symbol "KBC". For more information, please visit: www.kontron.com.

Digital text (PDF): <http://www.kontron.com/pr/COM-Express-Module-Nano-Size-Spec-080415ENG.pdf>

Digital image (jpg): <http://www.kontron.com/pr/COM-Express-Module-Nano-Size-Spec-080415.jpg>

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