



## Press Release

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Schroff MicroTCA.4 systems

### **MicroTCA is taking over industrial applications**

STRAUBENHARDT – Thanks to the continuous development of the MicroTCA specification from PICMG, Pentair is able to offer various Schroff MicroTCA systems that are suitable as a flexible platform for high-end applications in industrial automation, image processing, real-time motion control, medical technology, radar, telecommunication, transportation, IoT and test & measurement.

Enhancements to the specification define the rear I/O section, which had been missing from MicroTCA to date, in addition to the clock and trigger lines implemented in the backplane (used for precise measuring tasks, for instance). Thanks to the RTM section in the MicroTCA system, analog and digital signals can be processed in a single system. Here, a clear separation of these signals and the power supplies are both important factors. This is made possible by a separate high-frequency backplane for analog signals. Other types of separate RTM backplanes are possible as well, which are used in specific industrial applications, for instance.

Due to market and application requirements, more features have been added. For synchronizing large systems, the "White Rabbit" protocol is now available for deterministic Ethernet for real-time applications. This is because low latency times and defined reaction times are a basic prerequisite for operating industrial systems smoothly. The JSM modules that have now been defined allow for remote access to JTag-capable components. Pentair even equips its MicroTCA.4 systems with an additional separate JSM slot on the rear panel. This JSM module can be used continuously and, for example, updates can be loaded to the FPGA using any AMC slot during ongoing operation.

For smaller scale applications such as digital video and image processing, automation and machine control or electronic signal processing, where redundancy or hot swap may not be needed, it is now possible to use what is called an eMCH as well. This "embedded MCH" ensures communication between the AdvancedMC modules and the monitoring of the entire system, guaranteeing high reliability. The eMCH offered by Pentair features a 1 GbE switch connected to the 1 GbE uplink on the front of the case, enabling direct incorporation of the system components into an existing network infrastructure.

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The additional issue of eliminating the limitation on Fat Pipe has been addressed and is now supported by several Schroff MicroTCA.4 products. This makes it possible to use MicroTCA systems in industrial image or video processing or medical technology (e.g. CT or MRI), where a very high bandwidth is needed in order to transmit large amounts of graphics data. For this purpose, Pentair offers a MicroTCA.4 system with two different backplane topologies that feature x8 or even x16 links between the MCH and dedicated AMC slots. The eMCH was designed specifically for these types of graphics applications.

The outputs and data transfer rates for MicroTCA systems are continuously developed by PICMG and adapted to the requirements of a wide range of industrial applications. The possible data transfer speeds are currently at 40 Gb/s. Pentair offers high-performance MicroTCA systems with 40 G backplanes based on this specification. The portfolio ranges from smaller systems with only two AMC slots to six-slot systems (6 front slots and 6 RTM slots) all the way to fully expanded 19"-wide MicroTCA systems (9 U, 84 HP) with 12 AMC slots, two MCH slots and four power slots on the front side, 12 RTM slots on the back side and various backplane topologies and functionalities.



Fig.: Schroff Standard MicroTCA.4 system, 9 U, 12 Slots

Pentair Contacts: <https://schroff.pentair.com/de/schroff/microtca-systeme>

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