

# Extended temperature range platforms for edge computing – from high-end COM-HPC to low power SMARC

*congatec to solve ruggedization challenges of edge server and client designs*

DEGGENDORF, BAVARIA, GERMANY, March 10, 2021 /EINPresswire.com/ -- congatec – a leading vendor of embedded and edge computing technology – focuses on customers' ruggedization challenges, presenting extended temperature range platforms for all performance levels, from high-end [COM-HPC](#) to low power [SMARC](#) modules. The solution portfolio for

COM-HPC server modules is particularly impressive, tackling the fact that a significantly higher TDP must be mastered for these edge computing platforms, which represents a challenging task especially in the extended temperature range.

The driving force behind this focus is the increasing demand for rugged edge and real-time fog computing technologies to facilitate digitization projects in often extremely harsh and challenging environments. Typical use cases for these ultra-durable platforms can be found in critical railway, road traffic and smart city infrastructures, offshore rigs and wind parks, electricity distribution networks, piping systems for the oil, gas and freshwater industries, telecom and broadcasting networks, as well as distributed surveillance and security systems. Further target markets include network connected industrial and medical devices with IIoT / Industry 4.0 connectivity, outdoor kiosk and digital signage systems and, not to forget, in-vehicle applications such as autonomous logistic vehicles.

The new platforms for harsh environments presented by congatec support extreme temperature ranges from -40°C to +85°C, feature BGA soldered processors for shock and vibration as well as high EMI resistance, and can optionally be made available with conformal coating to protect the platforms against ingress from condensation, salt water and dust.



New COM-HPC and COM Express with scalable 11th Gen Intel Core processors

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A highlight of the presentations are the high-end x86 Computer-on-Modules for extreme environments based on the COM-HPC and COM Express standards. The conga-HPC/cTLU COM-HPC Client Size A modules as well as the conga-TC570 COM Express Compact modules are available with new scalable 11th Gen Intel® Core™ processors for extreme temperatures ranging from -40°C to +85°C. Both modules are the first to support PCIe x4 in Gen 4 performance to connect peripherals with massive bandwidth.

Platforms with Intel Atom® x6000E Series processors

congatec's rugged platforms with extended temperature options from -40°C to +85°C on the basis of Intel Atom® x6000E Series, Intel® Celeron® and Pentium® N & J Series processors are available as Computer-on-Modules in the SMARC, Qseven, COM Express Compact and Mini form factors, and also as Pico-ITX Single Board Computers (SBCs). They impress especially in real-time industrial markets, offering not only improved performance but also Time Sensitive Networking (TSN), Intel® Time Coordinated Computing (Intel® TCC), hypervisor support from Real Time Systems (RTS), and BIOS configurable ECC.

New SMARC 2.1 Computer-on-Module with i.MX 8M Plus processor

The presentation is complemented by the exhibition of the brand new SMARC 2.1 Computer-on-Module with i.MX 8M Plus processor. Consuming only 2 - 6 watts, this ultra low power embedded and edge computing platform for extended temperature ranges convinces with 4 powerful Arm Cortex-A53 processor cores and an additional Neural Processing Unit (NPU), which adds up to 2.3 TOPS of AI computing power. Specifically designed for AI inferencing and machine learning at the edge, the modules are also optimized for processing and analyzing dual-camera Image Signal Processor (ISP) data received via the 2 integrated MIPI-CSI interfaces.

Extensive value package for all the extended temperature range platforms included

The platforms provide all features and services required for reliable operation in the most challenging environments. The value package includes rugged passive cooling options, optional conformal coating for protection against corrosion caused by moisture or condensation, a list of recommended carrier board schematics, and components that are specifically designed for the extended temperature range for highest reliability. This impressive technical feature set is complemented by a comprehensive service offering that includes temperature screening, high speed signal compliance testing along with design-in services and all training sessions required to simplify the use of congatec's embedded computer technologies.

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