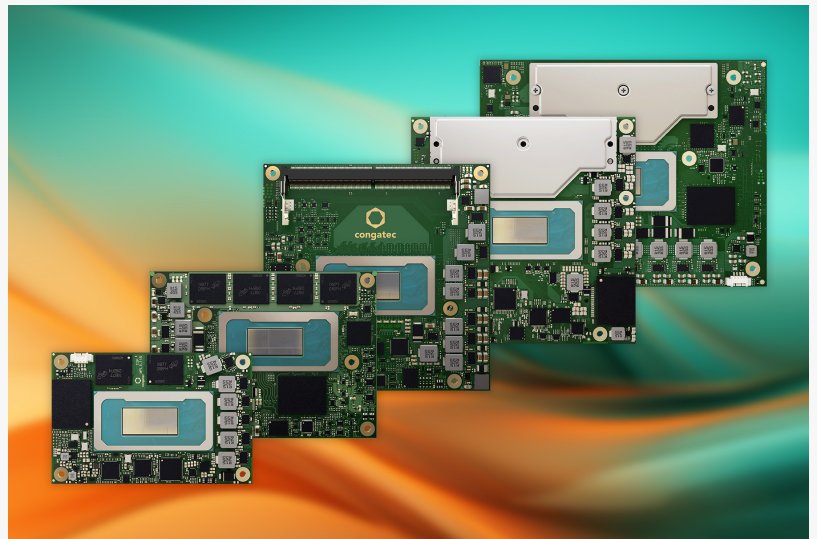# congatec Computer-on-Modules fast-track Intel Core Ultra Series□3 processors for embedded AI

Wide range of congatec modules support for computationally powerful, energy-efficient embedded AI applications

SAN DIEGO, CA, UNITED STATES, January 9, 2026 /EINPresswire.com/ -- congatec – a leading vendor of embedded and edge computing building blocks – today launched the industry's broadest portfolio of Computer-on-Modules (COMs) based on Intel Core Ultra Series 3 processors. The new high-performance modules deliver up to 180 TOPS of power-efficient computation designed for

pr_congatec_Intel_Core_Ultra_Series_3_launch_image

next-level AI acceleration. In most scenarios, the modules' high level of processing capability means discrete accelerator cards will not be necessary for embedded AI applications. The new Intel Core Ultra Series 3 processor-based COMs are ideal for deployment in AI-powered market segments spanning industrial automation and robotics, smart city and transportation, and healthcare and retail point-of-sale.

congatec industry-leading edge AI COMs
Five new congatec COMs across four form factors leverage the advanced heterogeneous core architecture of Intel Core Ultra Series 3 processors to enable local natural language processing (NLP), large language model (LLM) execution, image classification, sensor fusion, and simultaneous localization and mapping (SLAM) in both new and existing designs.

All modules represent a significant advancement in edge AI computing. They offer up to 16 cores with up to 10 TOPS, feature an integrated NPU5 for low-power AI inference with up to 50 TOPS, and can replace discrete AI accelerators with up to 12 Xe3 cores with up to ~120 TOPS. Size, weight, and power (SWaP) optimized small form factor designs are best served with the COM Express Mini and COM-HPC Mini modules. Existing COM Express applications benefit from two different COM Express Compact modules optimized for either rugged or cost. New applications

requiring uncompromised performance and I/O bandwidth will leverage the new COM-HPC Client module.

Increasing AI demand

"We see an immense demand for ever-increasing computing and AI performance at the edge. Existing applications also require upgrades," said Konrad Garhammer, CTO & COO, congatec. "The acquisition of Kontron's module business enables us to provide the market with the largest portfolio of Intel Core Ultra Series 3-based modules. We cover the entire range — from small form factor with COM-HPC Mini and COM Express Type 10 to absolutely high-performance optimized COM Express and COM-HPC Client designs."

"Intel Core Ultra Series 3 processors mark a major inflection point in embedded systems development. System designers can take full advantage of integrated AI on embedded targets without needing a separate AI accelerator," said Michael Masci, vice president, Edge Product Management, Intel. "That represents a tremendous leap in computing power — and in AI performance — for all types of embedded applications with long-lifecycle and high-reliability requirements. It's also ideally suited to size, weight, power, and cost-optimized designs."

"For too long, designers have faced an undesirable tradeoff — get the performance required for embedded AI and pay the power penalty, then manage the size and cost constraints that come with a discrete AI accelerator or sacrifice edge AI capability to meet application constraints," adds Martin Danzer, Director Product Management at congatec. "congatec's extensive portfolio of COMs for Intel Core Ultra Series 3 processors changes the game entirely. Designers can get the embedded AI performance they need in the form factor they require."

The modules in detail

For new designs requiring the highest data-throughput with PCIe Gen 5 and USB4, the COM-HPC Mini conga-HPC/mPTL and COM-HPC Client conga-HPC/cPTL modules deliver extreme performance and I/O bandwidth. For all existing COM Express Type 10-based mission-critical applications the credit-card sized conga-MC1000 is an ideal upgrade. The conga-TC1000 COM Express Compact module targets legacy cost-sensitive systems in need of technology refresh, and the ruggedized conga-TC1000r with screw-locked LPCAMM2 memory is aimed at rugged applications.

All COMs are powered by the Intel Core Ultra Series 3 processors, built on Intel 18A, and can scale up to Intel Core Ultra X9 or X7 processors with up to 4 P-cores, up to 8 E-cores and up to 4 LP E-Cores. Designers can work with up to 96 GB of soldered-down LPPDR5X memory or socketed LPCAMM2 memory on selected SKUs with optional in-band Error Correction Code (ECC) for mission-critical applications. The integrated graphics with Intel Xe-Display-Engine supports up to 3 independent 6K displays.

Supported operating systems include Microsoft Windows 11, Windows 11 IoT Enterprise, ctrlX OS, Ubuntu Pro, Kontron OS, Linux, and Yocto. As application-ready aReady.COMs, they can be

pre-configured with licensed ctrlX OS, Ubuntu Pro, and KontronOS. The aReady.VT option with integrated hypervisor-on-module allows developers to consolidate multiple workloads, such as real-time control, HMI, AI, and IoT gateway functions on a single module. For IIoT connectivity, congatec offers its aReady.IOT software building blocks, which enable data exchange, maintenance/management of the module, carrier, and peripherals, as well as cloud connectivity upon request. To further simplify application development, congatec provides an extensive ecosystem that includes evaluation and production-ready carrier boards, customized cooling solutions, comprehensive documentation, design-in services, and high-speed signal integrity measurements.

For more information on congatec COMs for Intel Ultra Core Series 3 processors, visit:
• conga-HPC/mPTL COM-HPC Mini module: https://www.congatec.com/en/products/com-hpc/conga-hpcmptl
• conga-HPC/cPTL COM-HPC Client Size A module: https://www.congatec.com/en/products/com-hpc/conga-hpccptl/
• conga-MC1000 COM Express Type 10 mini: https://www.congatec.com/en/products/com-express-type-10/conga-mc1000/
• conga-TC1000 COM Express Type 6 compact: https://www.congatec.com/en/products/com-express-type-6/conga-tc1000/
• conga-TC1000r COM Express Type 6 compact: https://www.congatec.com/en/products/com-express-type-6/conga-tc1000r/

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About congatec
congatec is a leading global provider of high-performance hardware and software building blocks for embedded and edge computing solutions based on Computer-on-Modules (COMs). These advanced computer modules drive systems and devices across industries such as industrial automation, medical technology, robotics, telecommunications, and more. congatec's high-performance aReady. ecosystems simplify and accelerate the solution development, from COM to cloud. This application-ready approach combines COMs with services and customizable technologies that enable cutting-edge advancements in system consolidation, IoT, security, and artificial intelligence. Supported by its majority shareholder, DBAG Fund VIII – a German mid-market fund focused on driving growth for industrial enterprises – congatec has the financial backing and M&A expertise to capitalize on expanding market opportunities. For more information, visit www.congatec.com or follow us on LinkedIn and YouTube.

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