

congatec presents new COM Express Compact module

Unrivalled AI performance for COMs with Intel Core Ultra processors

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[congatec](https://www.congatec.com) – a leading provider of embedded and edge computing technology – boosts AI performance for medical, robotics, industrial, retail, and gaming applications, delivering up to 99 TOPS (Tera Operations per Second). This exceptional AI performance is driven by the new conga-TC750 Computer-on-Module (COM) in the COM Express Compact Type 6 form factor, which is powered by Intel Core Ultra Series 2 processors (codenamed Arrow Lake) with Lion Cove and Skymont P- and E-cores, providing up to 16 cores and 22 threads alongside an integrated GPU and NPU.



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Developers already working with COM Express Compact platforms (95 mm x 95 mm), such as the

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conga-TC700, will benefit particularly from the quick upgrade path to unprecedented AI performance.

Applications with high-performance requirements – especially in graphics and AI – can take advantage of the enhanced x86 and AI capabilities offered by Intel’s new System-on-Chip (SoC) with minimal development effort and a faster time-to-market.

The SoC achieves 99 TOPS by combining the exceptional AI performance of the integrated Intel Xe-LPG+ graphics processor (iGPU) – optimized for parallel, high-throughput workloads and delivering up to 77 TOPS (compared to its predecessor Meteor Lake’s 18 TOPS) – with a highly energy-

efficient NPU providing up to 13 TOPS, and a CPU contributing 9 TOPS for fast response times.

The new SoC also features Intel's latest Xe-LPG+ graphics engine. With its standardized module concept enabling simple upgrades and high scalability, the conga-TC750 is an excellent choice for high-performance IPCs and thin clients, allowing them to stay up to date with easy module replacements. Additionally, AI-supported medical imaging, test and measurement, and graphics-based applications benefit greatly from the new module's significant performance.

"Our new conga-TC750 COM Express Compact modules with Intel Core Ultra Series 2 processors are ideal for applications that always require the latest performance and follow innovation cycles of three to five years. The module concept excels in these scenarios, providing an application-ready computing core that helps developers save time and costs during design-in, scale easily, and achieve a shorter time-to-market. By replacing modules while retaining the carrier board, developers avoid the expense and effort of a full system replacement or redesign," explains Maximilian Gerstl, Product Manager at congatec.

The feature set in detail

The new conga-TC750 COM Express Compact modules are powered by Intel Core Ultra Series 2 processors with a long-term availability of five years. This makes them ideal for high-performance applications requiring upgrades every three to five years.

Beyond their 99 TOPS AI performance, the conga-TC750 modules also offer up to 128 GB DDR5 memory with speeds of up to 6400 MT/s and in-band ECC. An optional NVMe x4 SSD provides up to 1 TB of non-volatile storage. To meet future connectivity demands, the modules feature a 2.5 GbE port via the Intel i226 Ethernet controller with TSN support. They also provide comprehensive peripheral connectivity, including up to 16 PCIe Gen4/5 lanes, two USB4, four USB3.2 Gen2, and eight USB2.0 ports, as well as SATA, UART, GPIOs, SPI, LPC, and I2C. Supported operating systems include Microsoft Windows 11, Windows 10/11 IoT Enterprise, ctrlX OS, Ubuntu, Linux, and Yocto. The conga-TC750 also enables system consolidation through the integrated Hypervisor-on-Module from Real-Time Systems.

Additionally, the conga-TC750 is available as an application-ready aReady.COM module and can, for instance, be pre-configured with licensed ctrlX OS from Bosch Rexroth and Ubuntu Pro. The aReady.VT option 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.

Further information about the new conga-TC750 modules is available at:

<https://www.congatec.com/en/products/com-express-type-6/conga-tc750/>

For further information about the COM Express standard, see
<https://www.congatec.com/en/technologies/com-express/>

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