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*The Mini-STX form factor (aka 5x5 with a footprint measuring 140mm × 147mm) is an ideal fit for Server-on-Modules and 10GbE network connectors for copper or fibre channel*

*Text and photograph available at:* [*http://www.congatec.com/press*](http://www.congatec.com/press)

**Press release**

**New modular 10GbE micro server carrier board from congatec
in the Mini-STX form factor**

**congatec enables cost-efficient 10GbE edge server designs**

**Deggendorf, Germany, 27 February, 2018 \* \* \*** congatec – a leading vendor of standardized and customized embedded computer boards and modules – introduces a deployment ready design study of a micro server carrier board with 10GbE support. The modular server board in the 5x5 inch Mini-STX form factor (140mm x 147mm) offers high scalability across all suitable embedded server processor sockets thanks to its COM Express Type 7 slot. This enables 10GbE edge node performance upgrades at lowest cost, as nearly all investments in the real-time system design of 10GbE edge nodes can be re-used. To upgrade the performance, OEMs and network operators only need to exchange the Server-on-Module. This is especially interesting for operators of 5G networks and edge data centers, who expect real-time performance demands to increase once 10GbE infrastructures become deployed more widely, leading to constantly lower revenues per processed data volume. Also, all IIoT, Industry 4.0 and fog server applications will require continuous performance upgrades as security, analytics and artificial intelligence demands will keep evolving for at least a decade to come.

 “Building a 10GbE infrastructure with IIoT, fog or Industry 4.0 servers and 5G small cells at the edges for decentralized decision making in real time is only the first step”, explains Martin Danzer, Director of Product Management at congatec. “Once this infrastructure is established, the performance of these nodes will have to constantly increase as we are only at the beginning of designing such decentralized 10GbE node technologies and the demand for transcoding, security, data capture and analytics capabilities as well as artificial intelligence and real-time communication will continue to grow dramatically.”

**The congatec micro server carrier board in detail**

The edge server board in the 5x5 Mini-STX form factor provides impressively high performance thanks to utilizing the COM Express Type 7 conga-B7AC module based on the Intel® Atom™ C3000 processor. With processor power consumption starting at just 11W TDP, the system offers 4x real-time 10GbE network performance and up to 16 cores, which is ideal for processing many smaller packet sizes in parallel. Compared to other multi-core solutions, such as the Intel® Xeon® D processors, the costs and power consumption here are significantly lower; this makes it possible to roll out very high network bandwidths and storage capacities far into the industrial field.

The congatec micro server carrier board can be equipped with eight different Intel® Atom™ server processor versions – from the 16-core Intel® Atom™ C3958 to the quad-core C3508 processor for the extended temperature range (‑40°C to +85°C). All offer up to 48GB of fast 2400 DDR4 memory, which can be designed with or without Error Correction Code (ECC) depending on customer requirements. The 10GbE interfaces are standardly implemented via SFP+ cages, enabling network connection via both fiber optic and copper cables. In addition, the carrier board provides 2x 1GbE and 2x USB 3.0 interfaces for service and peripherals. One of the 1GbE ports is connected to the integrated board management controller and can therefore be used for server-typical remote management tasks.

The congatec micro server carrier board in the 5x5 Mini-STX form factor further offers a VGA output and a serial interface for local administration. For custom extensions, it provides three M.2 slots. Two of them are designed for M.2 2280 cards with key M and 4 PCIe lanes or 1x SATA, which makes them particularly suitable for storage media. The third M.2 slot accepts M.2 3042 cards with key A. With 2x PCIe, 1x USB 3.0 and I²C, it can connect both storage media and other peripherals. The feature connectors also provide GPIOs, I²C, SM and LPC buses.

If the Server-on-Modules require active cooling – for example, with a 16-core Intel® Xeon® D processor – optional CPU and system fans can also be supported and controlled. This means the congatec micro server carrier board in the 5x5 Mini-STX form factor offers the same server-class performance that up to now only fully-featured 19‑in rackmount servers were able to provide. Today, they can be mounted anywhere and even integrated into autonomous vehicles. Customizing of this hardware platform to fulfill specific demands is possible.

The micro server carrier board in the 5x5 Mini-STX form factor fits perfectly to the COM Express Type 7 conga-B7AC module that can be installed with following processor versions:

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| **Processor** |  | **Cores** |  | **Smart Cache [MB]** |  | **Clock [GHz]** |  | **TDP [W]** |
| **Intel® Atom™ C3958** |  | **16** |  | **16** |  | **2.0** |  | **31** |
| **Intel® Atom™ C3858** |  | **12** |  | **12** |  | **2.0** |  | **25** |
| **Intel® Atom™ C3758** |  | **8** |  | **16** |  | **2.2** |  | **25** |
| **Intel® Atom™ C3558** |  | **4** |  | **8** |  | **2.2** |  | **16** |
| **Intel® Atom™ C3538** |  | **4** |  | **8** |  | **2.1** |  | **15** |
| **Intel® Atom™ C3808** |  | **12** |  | **12** |  | **2.0** |  | **25** |
| **Intel® Atom™ C3708** |  | **8** |  | **16** |  | **1.7** |  | **17** |
| **Intel® Atom™ C3508** |  | **4** |  | **8** |  | **1.6** |  | **11.5** |

More information about suitable COM Express type 7 modules is available on the product page https://www.congatec.com/en/products/com-express-type-7.html

**About congatec**congatec is a leading supplier of industrial computer modules using the standard form factors COM Express, Qseven and SMARC as well as single board computers and customizing services. congatec’s products can be used in a variety of industries and applications, such as industrial automation, medical, entertainment, transportation, telecommunication, test & measurement and point-of-sale. Core knowledge and technical know-how includes unique extended BIOS features as well as comprehensive driver and board support packages. Following the design-in phase, customers are given support via extensive product lifecycle management. The company’s products are manufactured by specialist service providers in accordance with modern quality standards. Headquartered in Deggendorf, Germany, congatec currently has entities in USA, Taiwan, China, Japan and Australia as well as United Kingdom, France, and the Czech Republic. More information is available on our website at [www.congatec.com](http://www.congatec.com) or via [Facebook](http://www.facebook.com/Congatec), [Twitter](https://mobile.twitter.com/congatecAG) and [YouTube](http://www.youtube.com/congatecAE).

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