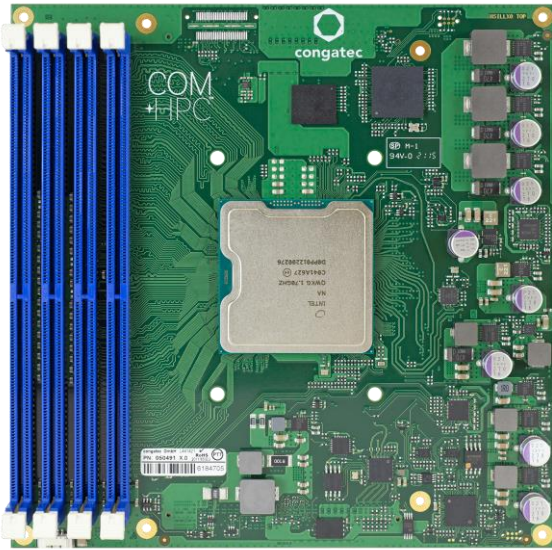


# INTEL ICE LAKE-D XEON PROCESSORS

## conga-HPC/sILL



## COM+HPC®

- Industrial Use Condition with extended Temperature options
- 32 PCIe Express lanes
- AI Capabilities with Intel® DL boost
- Real Time Capable Platform
- Supporting up to 256 GB DDR4 2933MT/s\* Memory

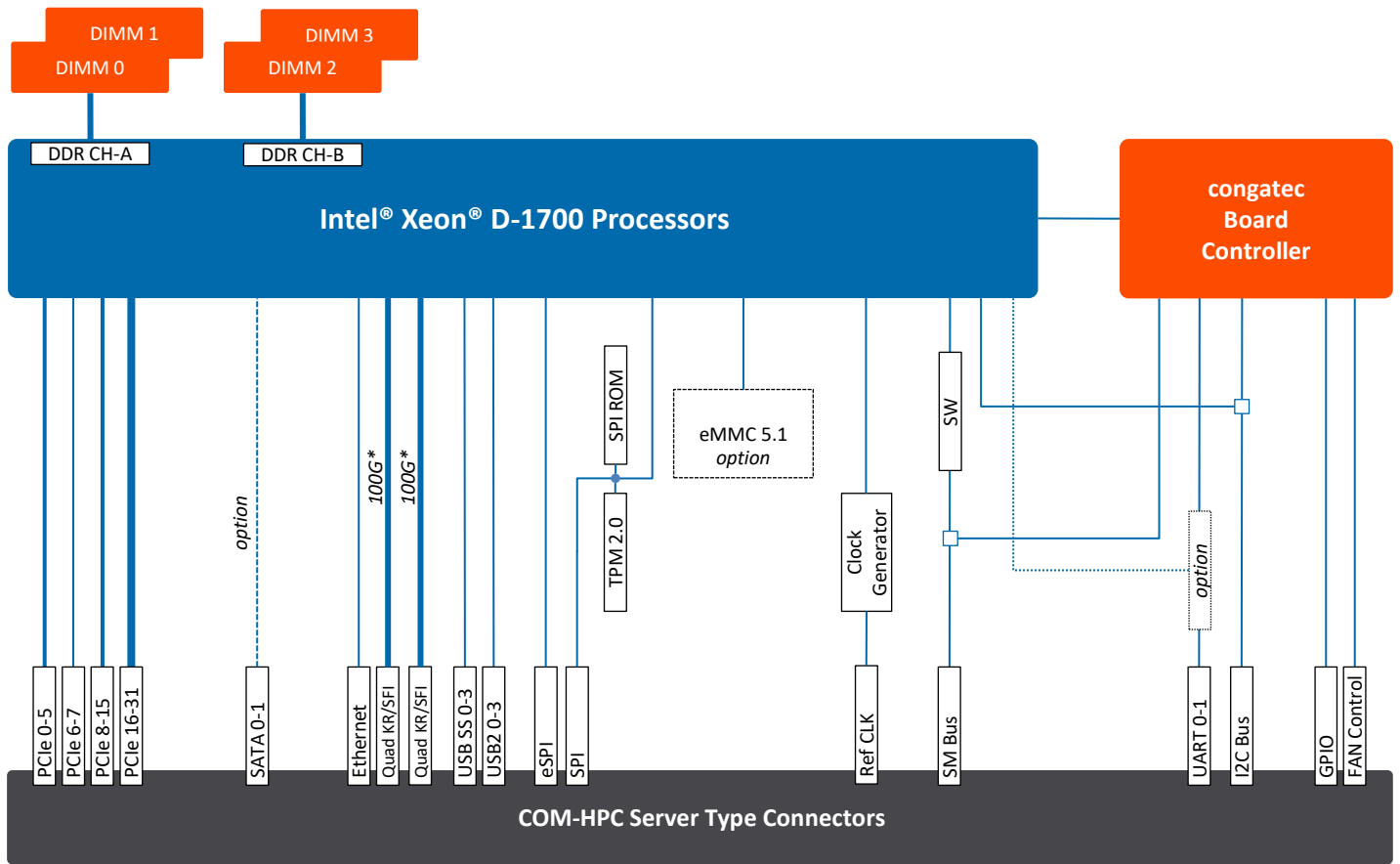
### Form Factor

COM-HPC, Size D (160 x 160 mm), Server Connector Pinout

| CPU                       | Processor  | Cores/Threads                        | Base Frequency/<br>max. Turbo | TDP             | Cache                              | Ethernet<br>Bandwidth | Intel Use Condition                        |
|---------------------------|--|--------------------------------------|-------------------------------|-----------------|------------------------------------|-----------------------|--|
|                           | Xeon® D-1746TER  | 10C/20T                              | 2.0GHz/3.1GHz                 | 67W             | 15MB                               | 100G                  | Industrial (Industrial Temp -40°C to 85°C) |
|                           | Xeon® D-1732TE   | 8C/16T                               | 1.9GHz/3.0GHz                 | 52W             | 15MB                               | 50G                   | Industrial (Industrial Temp -40°C to 85°C) |
|                           | Xeon® D-1715TER  | 4C/8T                                | 2.4GHz/3.5GHz                 | 50W             | 10MB                               | 50G                   | Industrial (Extended Temp -40°C to 80°C)   |
|                           | Xeon® D-1735TR   | 8C/16T                               | 2.2GHz/3.4GHz                 | 59W             | 15MB                               | 50G                   | Industrial (Commercial Temp 0°C to 60°C)   |
|                           | Xeon® D-1712TR   | 4C/8T                                | 2.0GHz/3.1GHz                 | 40W             | 10MB                               | 50G                   | Industrial (Commercial Temp 0°C to 60°C)   |
| Chipset                   | Integrated in SoC  |                                      |                               |                 |                                    |                       |  |
| DRAM                      | 4x DIMM sockets for DDR4 memory modules   Max. capacity = 256GB  |                                      |                               |                 |                                    |                       |  |
|                           | Memory Type  | DIMM Capacity                        |                               | Max. DIMM Speed |                                    |                       |  |
|                           | RDIMM  | 8GB – 64GB                           |                               | 2933 MT/s       |                                    |                       |  |
|                           | VLP RDIMM  | 8GB – 64GB                           |                               | 2666 MT/s       |                                    |                       |  |
|                           | UDIMM (ECC)  | 8GB – 32GB                           |                               | 2666 MT/s       |                                    |                       |  |
|                           | UDIMM (Non-ECC)  | 4GB – 32GB                           |                               | 2666 MT/s       |                                    |                       |  |
| Ethernet                  | 1x 2.5GbE TSN Ethernet<br>2x 40G / 4x 25G / 8x 10G/2.5G/1G/100M lanes   Maximum total bandwidth 100Gb*   |                                      |                               |                 |                                    |                       |  |
| I/O Interfaces            | 16x PCIe Gen4   16x PCIe Gen3<br>4x USB 3.0   4x USB 2.0<br>2x SATA III (6Gb/s)   2x UART   12x GPIO   2x SMBus   2x I2C   |                                      |                               |                 |                                    |                       |  |
| congatec Board controller | Multi-stage Watchdog   non-volatile User Data Storage   Manufacturing and Board Information<br>Board Statistics   I <sup>2</sup> C bus (fast mode, 400 kHz, multi-master)   Power Loss Control<br>Hardware Health Monitoring   POST Code redirection |                                      |                               |                 |                                    |                       |  |
| Embedded BIOS Feature     | AMI Aptio® UEFI firmware   64 Mbyte serial SPI with congatec Embedded BIOS feature   OEM Logo<br>OEM CMOS Defaults   Flash Update  |                                      |                               |                 |                                    |                       |  |
| Security                  | Trusted Platform Module (TPM 2.0)  |                                      |                               |                 |                                    |                       |  |
| Power Management          | ACPI 5.0 with battery support  |                                      |                               |                 |                                    |                       |  |
| Operating Systems         | Microsoft® Windows 10   Microsoft® Windows 10 IoT Enterprise   Microsoft® Windows IoT 10 Core<br>Linux   Android   Yocto   RTS Hypervisor  |                                      |                               |                 |                                    |                       |  |
| Temperature Range         | Commercial:  | Operating Temperature: 0 to +60°C    |                               |                 | Storage Temperature: -20 to +85°C* |                       |  |
|                           | Industrial:  | Operating Temperature: -40 to +85°C* |                               |                 | Storage Temperature: -40 to +85°C* |                       |  |
| Humidity                  | Operating:   | 10 to 90% r. H. non cond.            |                               |                 |                                    |                       |  |
|                           | Storage  | 5 to 95% r. H. non cond.             |                               |                 |                                    |                       |  |
| Size                      | 160 x 160 mm <sup>2</sup>  |                                      |                               |                 |                                    |                       |  |

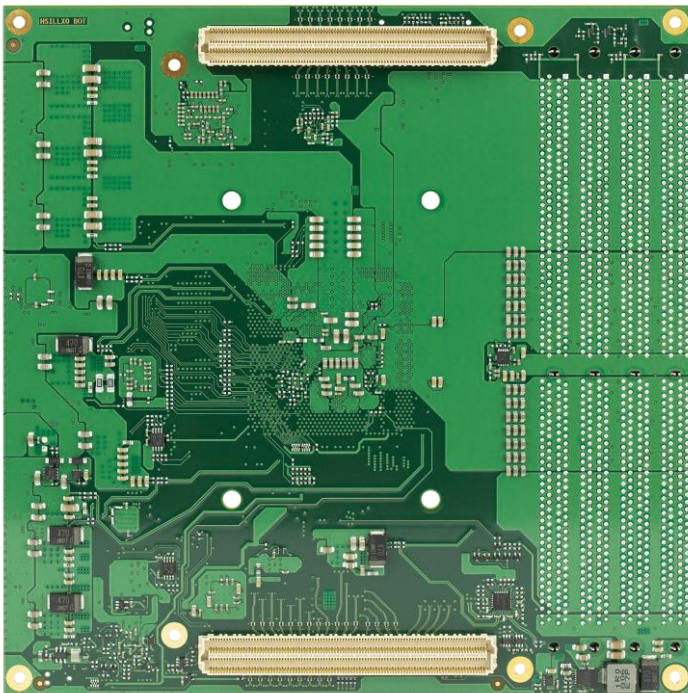
\* Depending on CPU

# conga-HPC/sILL | Block Diagram



\* Maximum total bandwidth 100Gb\*

# conga-HPC/sILL | Bottom Side View



# conga-HPC/sILL | Order Information

| Article                 | PN     | Description  |
|-------------------------|--------|--|
| conga-HPC/sILL-D1746TER | 050400 | COM-HPC Size D module based on Intel® Xeon® D1746TER 10-core processor with 2.0 GHz, 15MB cache and dual channel DDR4 up to 2667 MT/s memory interface (formerly Ice Lake-D LCC). Industrial temperature range from -40°C to 85°C. |
| conga-HPC/sILL-D1732TE  | 050401 | COM-HPC Size D module based on Intel® Xeon® D1732TE 8-core processor with 1.9 GHz, 15MB cache and dual channel DDR4 up to 2667 MT/s memory interface (formerly Ice Lake-D LCC). Industrial temperature range from -40°C to 85°C.   |
| conga-HPC/sILL-D1715TER | 050402 | COM-HPC Size D module based on Intel® Xeon® D1715TER 4-core processor with 2.4 GHz, 10MB cache and dual channel DDR4 up to 2667 MT/s memory interface (formerly Ice Lake-D LCC). Extended temperature range from -40°C to 80°C.    |
| conga-HPC/sILL-D1735TR  | 050410 | COM-HPC Size D module based on Intel® Xeon® D1735TR 8-core processor with 2.2 GHz, 15MB cache and dual channel DDR4 up to 2933 MT/s memory interface (formerly Ice Lake-D LCC). Commercial temperature range from 0°C to 60°C.     |
| conga-HPC/sILL-D1712TR  | 050411 | COM-HPC Size D module based on Intel® Xeon® D1712TR 4-core processor with 2.0 GHz, 10MB cache and dual channel DDR4 up to 2400 MT/s memory interface (formerly Ice Lake-D LCC). Commercial temperature range from 0°C to 60°C.     |
| conga-HPC/sILL-CSA-HP   | 050450 | Standard active cooling solution for COM-HPC Server modules conga-HPC/sILL with integrated heat pipes, 35.2mm overall cooling height and integrated 12V fan.   |
| conga-HPC/sILL-CSP-HP   | 050451 | Standard passive cooling solution for COM-HPC Server modules conga-HPC/sILL with integrated heat pipes, 18.2mm overall cooling height.   |
| conga-HPC/sILL-HSP-HP-B | 050452 | Standard heatspreader for COM-HPC Server modules conga-HPC/sILL with integrated heat pipes and 11mm overall cooling height. Through hole mounting with bore hole standoffs Ø2.7mm.   |
| conga-HPC/sILL-HSP-HP-T | 050453 | Standard heatspreader for COM-HPC Server modules conga-HPC/sILL with integrated heat pipes and 11mm overall cooling height. Threaded mounting with threaded standoffs M2.5.  |
| conga-HPC/sILL-HPA      | 050454 | Heat pipe Adapter for COM-HPC Server modules conga-HPC/sILL. Suitable for standard 8 mm heat pipes to optimize heat distribution.  |
| conga-HPC/EVAL-Server   | 065500 | conga-HPC/EVAL-Server  |