

# INTEL ICE LAKE-D XEON PROCESSORS

## conga-HPC/sILH



## COM+HPC®

- Industrial Use Condition with Extended Temperature Options
- 48 PCIe Express Lanes
- AI Capabilities with Intel® DL boost
- Real Time Capable Platform
- Supporting up to 1TB DDR4 2933MT/s Memory\*

### Form Factor

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

CPU	Processor	Cores/Threads	Base Frequency/max. Turbo	TDP	Cache	Ethernet Bandwidth	Intel Use Condition
	Xeon® D-2899NT	22C/44T	2.2GHz/3.1GHz	135W	30MB	100G	Industrial (Commercial Temp)
	Xeon® D-2796TE	20C/40T	2.0GHz/3.1GHz	118W	30MB	100G	Industrial (Extended Temp)
	Xeon® D-2775TE	16C/32T	2.0GHz/3.1GHz	100W	25MB	100G	Industrial (Extended Temp)
	Xeon® D-2752TER	12C/24T	1.8GHz/2.8GHz	77W	20MB	50G	Industrial (Extended Temp)
	Xeon® D-2733NT	8C/16T	2.1GHz/3.2GHz	80W	15MB	50G	Industrial (Commercial Temp)
	Xeon® D-2712T	4C/8T	1.9GHz/3.0GHz	65W	15MB	50G	Industrial (Commercial Temp)

### Chipset

Integrated in SoC

### DRAM

4x DIMM sockets for DDR4 memory modules | Max. capacity = 512GB (1TB\*)  
ECC and i-temp variants available

Memory Type	DIMM Capacity	Max. DIMM Speed
LRDIMM	128GB	2933 MT/s
RDIMM	16GB – 64GB	2933 MT/s
UDIMM	16GB – 32GB	2933 MT/s
VLP RDIMM	16GB – 32GB	2400 MT/s

### Ethernet

1x 2.5GbE TSN Ethernet  
KR/SFI Ethernet Maximum Total Bandwidth up to 100G  
50G SKUs: 1x50G | 2x25G | 5x10G | 4x10G | 4x10G+4x2.5G | 4x10G+4x1G  
100G SKUs: 1x100G | 2x100G (fail-over) | 4x25G | 8x10G  
ITU-T SyncE and IEEE1588 PTP option

### I/O Interfaces

32x PCIe Gen4 | 16x PCIe Gen3  
4x USB 3.0 | 4x USB 2.0  
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  
Board Statistics | I<sup>2</sup>C bus (fast mode, 400 kHz, multi-master) | Power Loss Control  
Hardware Health Monitoring | POST Code redirection

### Embedded BIOS Feature

AMI Aptio® UEFI firmware | 64 Mbyte serial SPI with congatec Embedded BIOS feature | OEM Logo  
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  
Linux | Android | Yocto | RTS Hypervisor

### Temperature Range

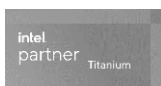
Commercial: Operating Temperature: 0 to +60°C Storage Temperature: -20 to +80°C  
Extended: Operating Temperature: -40 to +80°C Storage Temperature: -40 to +80°C

### Humidity

Operating: 10 to 90% r. H. non cond.  
Storage: 5 to 95% r. H. non cond.

### Size

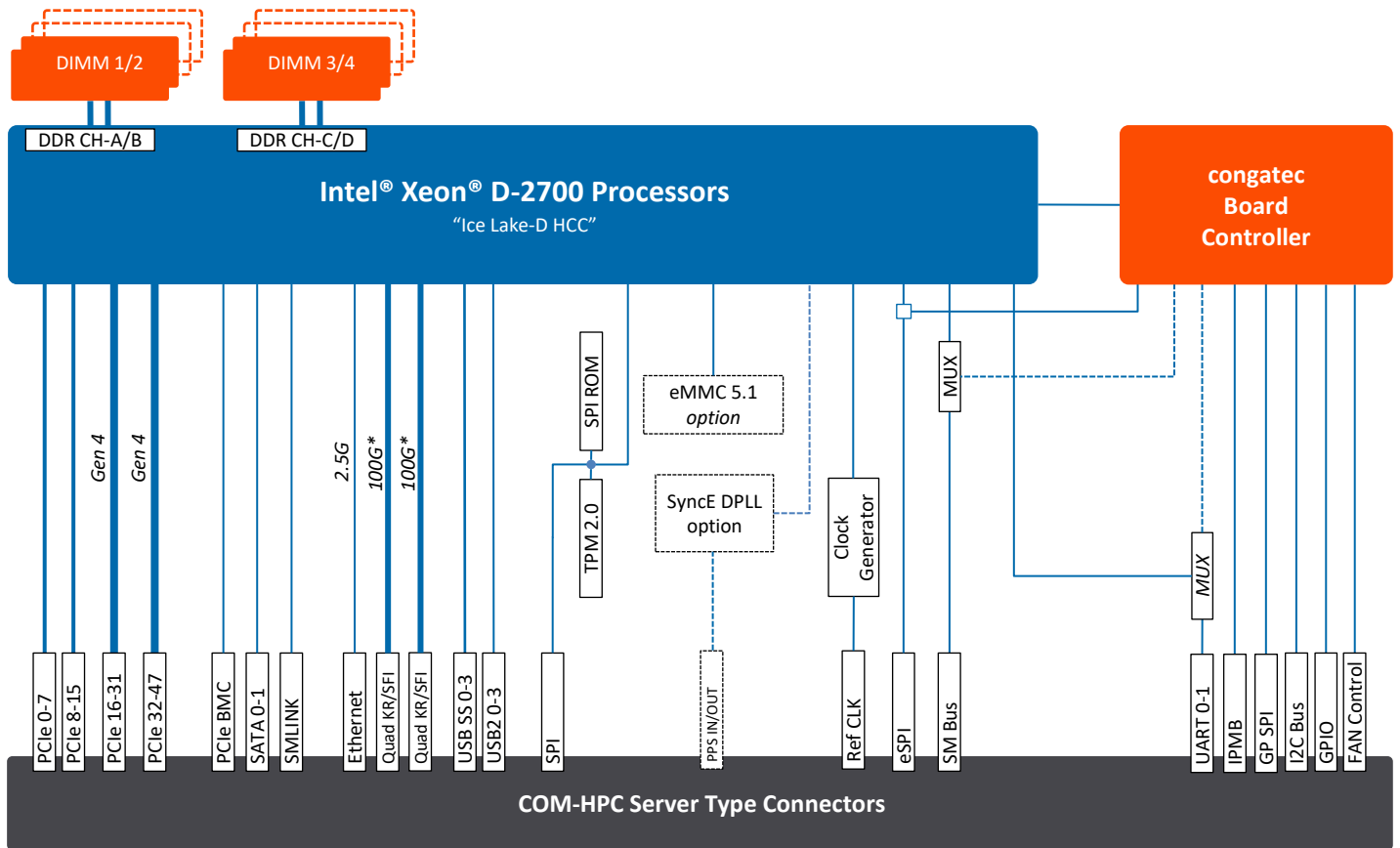
160 x 160 mm<sup>2</sup> (optional 160 x 200 mm<sup>2</sup>)



\* Optional, on COM-HPC Size E variant with 8 DIMM sockets

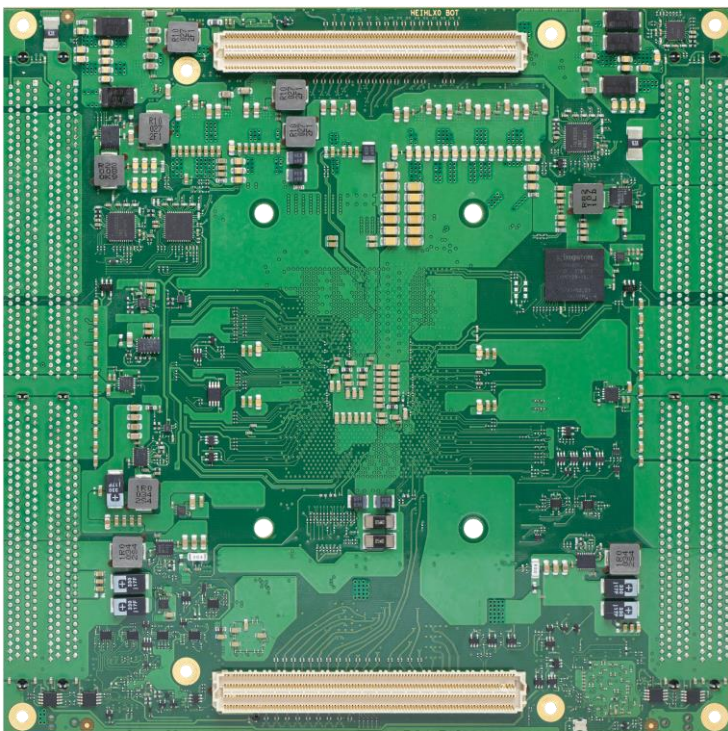
[www.congatec.com](http://www.congatec.com)

# conga-HPC/sILH | Block Diagram



\* Maximum total bandwidth 100G depending on SKU

# conga-HPC/sILH | Bottom Side View



# conga-HPC/sILH | Order Information

Article	PN	Description
conga-HPC/sILH-D2796TE	050900	COM-HPC Size D module based on Intel® Xeon® D-2796TE 20-core processor with 2.0 GHz, 30MB cache and quad channel DDR4 2933 MT/s memory interface (formerly Ice Lake-D HCC). Industrial temperature range.
conga-HPC/sILH-D2775TE	050901	COM-HPC Size D module based on Intel® Xeon® D-2775TE 16-core processor with 2.0 GHz, 25MB cache and quad channel DDR4 2933 MT/s memory interface (formerly Ice Lake-D HCC). Industrial temperature range.
conga-HPC/sILH-D2752TER	050902	COM-HPC Size D module based on Intel® Xeon® D-2752TER 12-core processor with 1.8 GHz, 20MB cache and quad channel DDR4 2666 MT/s memory interface (formerly Ice Lake-D HCC). Industrial temperature range.
conga-HPC/sILH-D2733NT	050910	COM-HPC Size D module based on Intel® Xeon® D-2733NT 8-core processor with 2.1 GHz, 15MB cache and quad channel DDR4 2666 MT/s memory interface (formerly Ice Lake-D HCC). Commercial temperature range.
conga-HPC/sILH-D2712T	050911	COM-HPC Size D module based on Intel® Xeon® D-2712T 4-core processor with 1.9 GHz, 15MB cache and quad channel DDR4 2666 MT/s memory interface (formerly Ice Lake-D HCC). Commercial temperature range.
conga-HPC/sILH-D2796TE DPLL	050995	COM-HPC Size D module based on Intel® Xeon® D-2796TE 20-core processor with 2.0 GHz, 30MB cache and quad channel DDR4 2933 MT/s memory interface (formerly Ice Lake-D HCC). Industrial temperature range. With DPLL option for ITU-T Synchronous Ethernet (SyncE) and IEEE1588 PTP support.
conga-HPC/sILH-D2775TE DPLL	050996	COM-HPC Size D module based on Intel® Xeon® D-2775TE 16-core processor with 2.0 GHz, 25MB cache and quad channel DDR4 2933 MT/s memory interface (formerly Ice Lake-D HCC). Industrial temperature range. With DPLL option for ITU-T Synchronous Ethernet (SyncE) and IEEE1588 PTP support.
conga-HPC/sILH-D2899NT	050912	COM-HPC Size D module based on Intel® Xeon® D-2899NT 22-core processor with 2.2 GHz, 30MB cache and quad channel DDR4 3200 MT/s memory interface (formerly Ice Lake-D HCC Refresh). Commercial temperature range.
conga-HPC/sILH-CSA-HP-B	050950	Standard active cooling solution for COM-HPC Server modules conga-HPC/sILH with integrated heat pipes, 32.9mm overall cooling height and integrated 12V fan. Through hole mounting with bore hole standoffs Ø2.7mm.
conga-HPC/sILH-CSA-HP-T	050951	Standard active cooling solution for COM-HPC Server modules conga-HPC/sILH with integrated heat pipes, 32.9mm overall cooling height and integrated 12V fan. Threaded mounting with threaded standoffs M2.5.
conga-HPC/sILH-HSP-HP-B	050952	Standard heatspreader for COM-HPC Server modules conga-HPC/sILH with integrated heat pipes and 11mm overall cooling height. Through hole mounting with bore hole standoffs Ø2.7mm.
conga-HPC/sILH-HSP-HP-T	050953	Standard heatspreader for COM-HPC Server modules conga-HPC/sILH with integrated heat pipes and 11mm overall cooling height. Threaded mounting with threaded standoffs M2.5.
conga-HPC/sILH-HPA-B	050954	Heat pipe Adapter for COM-HPC Server modules conga-HPC/sILH. Suitable for standard 8 mm heat pipes to optimize heat distribution. Through hole mounting with bore hole standoffs Ø2.7mm.
conga-HPC/sILH-HPA-T	050955	Heat pipe Adapter for COM-HPC Server modules conga-HPC/sILH. Suitable for standard 8 mm heat pipes to optimize heat distribution. Threaded mounting with threaded standoffs M2.5.
conga-HPC/sILH-Retention Frame	050956	Retention frame for conga-HPC/sILH
conga-HPC/EVAL-Server	065500	conga-HPC/EVAL-Server
conga-HPC/LEK-C827-IM 4SFP28	065505	COM_HPC Mezzanine card with Intel C827-IM and 4xSFP28, 4x25G configuration
conga-HPC/LEK-C827-IM 8SFP+	065506	COM_HPC Mezzanine card with 2x Intel C827-IM and 8xSFP+, 8x10G configuration
conga-HPC/LEK-C827-IM 2QSFP28	065508	COM_HPC Mezzanine card with Intel C827-IM and 2xQSFP28, 2x100G, 8x10G (Breakout mode) configuration

# conga-HPC/sILH | Order Information - DRAM

Article	PN	Description
DDR4-LRDIMM-3200 ECC (128GB)	069420	DDR4 ECC LRDIMM memory module with 3200 MT/s and 128GB RAM
DDR4-LRDIMM-3200 ECC (128GB)	069430	Industrial DDR4 ECC LRDIMM memory module with 3200 MT/s and 128GB RAM
DDR4-RDIMM-3200 ECC (16GB)	069200	DDR4 ECC RDIMM memory module with 3200 MT/s and 16GB RAM
DDR4-RDIMM-3200 ECC (16GB) / i-temp	069210	Industrial DDR4 ECC RDIMM memory module with 3200 MT/s and 16GB RAM
DDR4-RDIMM-3200 ECC (32GB)	069220	DDR4 ECC RDIMM memory module with 3200 MT/s and 32GB RAM
DDR4-RDIMM-3200 ECC (32GB) / i-temp	069230	Industrial DDR4 ECC RDIMM memory module with 3200 MT/s and 32GB RAM
DDR4-RDIMM-3200 ECC (64GB)	069240	DDR4 ECC RDIMM memory module with 3200 MT/s and 64GB RAM
DDR4-UDIMM-3200 (16GB)	069000	DDR4 UDIMM memory module with 3200 MT/s and 16GB RAM
DDR4-UDIMM-3200 (16GB)(ECC)	069003	DDR4 ECC UDIMM memory module with 3200 MT/s and 16GB RAM
DDR4-UDIMM-3200 (16GB) / i-temp	069002	Industrial DDR4 UDIMM memory module with 3200 MT/s and 16GB RAM
DDR4-UDIMM-3200 (16GB)(ECC) / i-temp	069004	Industrial DDR4 ECC UDIMM memory module with 3200 MT/s and 16GB RAM
DDR4-UDIMM-3200 (32GB)	069001	DDR4 UDIMM memory module with 3200 MT/s and 32GB RAM
DDR4-UDIMM-3200 (32GB)(ECC)	069006	DDR4 ECC UDIMM memory module with 3200 MT/s and 32GB RAM
DDR4-UDIMM-3200 (32GB) / i-temp	069005	Industrial DDR4 UDIMM memory module with 3200 MT/s and 32GB RAM
DDR4-UDIMM-3200 (32GB)(ECC) / i-temp	069007	Industrial DDR4 ECC UDIMM memory module with 3200 MT/s and 32GB RAM
VLP DDR4-RDIMM-3200 ECC (16GB)	069600	VLP DDR4 ECC RDIMM memory module with 3200 MT/s and 16GB RAM
VLP DDR4-RDIMM-3200 ECC (16GB) / i-temp	069610	Industrial ECC DDR4 VLP RDIMM memory module with 3200 MT/s and 16GB RAM
VLP DDR4-RDIMM-3200 ECC (32GB)	069620	VLP DDR4 ECC RDIMM memory module with 3200 MT/s and 32GB RAM