



# conga-HPC/cALS



## COM+HPC®

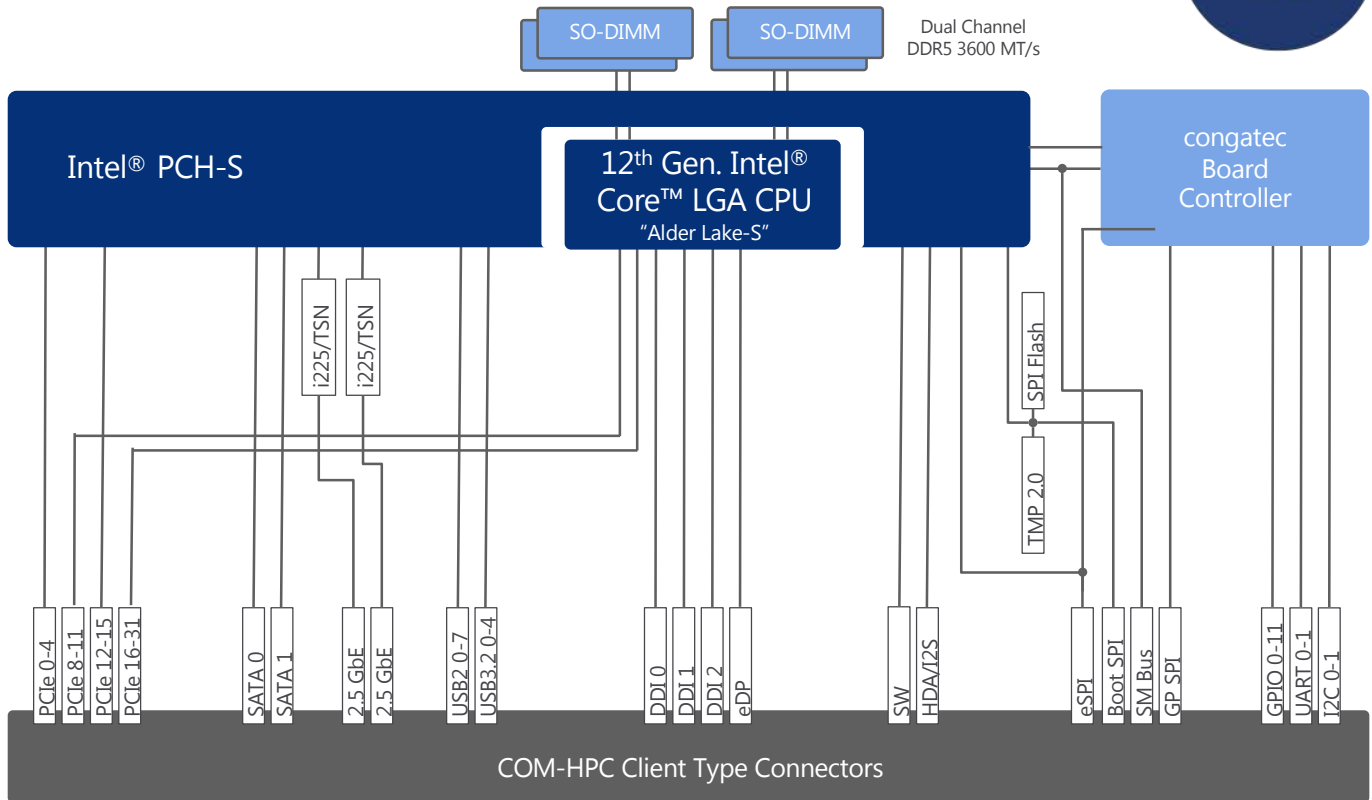
- Intel® hybrid design combines Performance-cores with Efficient-cores
- Intel® UHD Graphics 770 driven by Xe Architecture
- PCI Express Gen 4/5 | USB 3.2 Gen 2
- AI Acceleration based on Intel® Deep Learning
- Embedded Use Condition SKUs

### Form Factor

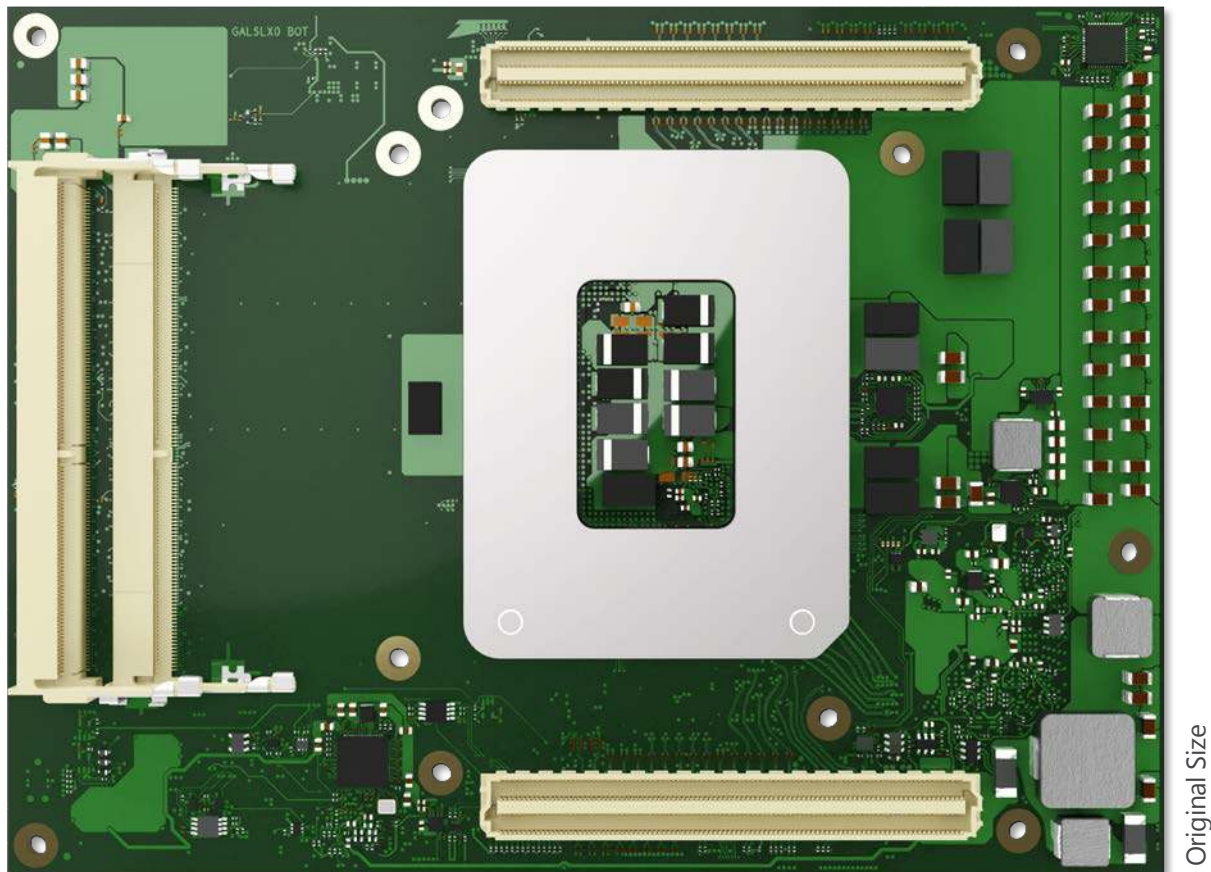
### COM-HPC Client Size C | Client Connector Pinout

CPU	CPU	TDP Target (W)	Cores count (P+E)	Processor Threads	P-cores Freq. GHz	E-cores Freq. GHz	GfX Execution Units
	i9-12900E	65W	16 (8+8)	24	2.3 / 5.0	1.7 / 3.8	32 EU
	i7-12700E	65W	12 (8+4)	20	2.1 / 4.8	1.6 / 3.6	32 EU
	i5-12500E	65W	6 (6+0)	12	2.9 / 4.5	- / -	32 EU
	i3-12100E	60W	4 (4+0)	8	3.2 / 4.2	- / -	24 EU
Processor Socket	LGA 1700						
DRAM	4 SO-DIMM sockets for DDR5 memory modules up to 32 GByte each (128 GByte system capacity) up to 3600 MT/s						
Graphics	Intel® UHD Graphics 770 driven by Xe Architecture   up to 32 EU						
Display	3x DDI   eDP						
Ethernet	2x 2.5 GbE TSN Ethernet (via Intel® i225 LM)						
I/O Interfaces	1x16 PCIe Gen 5 (PEG port)   1x4 PCIe Gen 4   2x4 PCIe Gen 3   4x USB 3.2 Gen2   8x USB2.0   2x SATA 2x UART   12x GPIO						
Audio	2x Soundwire   HDA   I2S (opt.)						
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   32 Mbyte serial SPI with congatec Embedded BIOS feature   OEM Logo   OEM CMOS default settings   LCD Control   Display Auto Detection   Backlight Control   Flash Update						
Security	Trusted Platform Module (TPM 2.0)						
Power Management	ACPI 6.0 with battery support						
Operating Systems	Microsoft® Windows 11   Microsoft® Windows 10   Microsoft® Windows 10 IoT Enterprise   Linux   Yocto   Real Time Systems Hypervisor						
Temperature	Operating Temp.: 0°C ... +60°C			Storage Temp.: -20°C ... +70°C			
Humidity	Operating.: 10% ... 90% r. H. non cond.			Storage.: 5% ... 95% r. H. non cond.			
Size	120 x 160 mm						

# conga-HPC/cALS | Block Diagram



# conga-HPC/cALS | Bottom Side View





Article	PN	Description
conga-HPC/cALS-i9-12900E	049600	COM-HPC Client module based on Intel® Core™ i9-12900E LGA 1700 processor with 8 P-cores 2.3GHz up to 5.0GHz and 8 E-cores 1.7GHz up to 3.8GHz   30MB Intel® Smart Cache   Intel® UHD Graphics 770 with 32EUs   Dual channel DDR5 3600MT/s memory interface   Intel® code name: Alder Lake-S
conga-HPC/cALS-i7-12700E	049601	COM-HPC Client module based on Intel® Core™ i7-12700E LGA 1700 processor with 8 P-cores 2.1GHz up to 4.8GHz and 4 E-cores 1.6GHz up to 3.6GHz   25MB Intel® Smart Cache   Intel® UHD Graphics 770 with 32EUs   Dual channel DDR5 3600MT/s memory interface   Intel® code name: Alder Lake-S
conga-HPC/cALS-i5-12500E	049602	COM-HPC Client module based on Intel® Core™ i5-12500E LGA 1700 processor with 6 P-cores 2.9GHz up to 4.5GHz   18MB Intel® Smart Cache   Intel® UHD Graphics 770 with 32EUs   Dual channel DDR5 3600MT/s memory interface   Intel® code name: Alder Lake-S
conga-HPC/cALS-i3-12100E	049603	COM-HPC Client module based on Intel® Core™ i3-12100E LGA 1700 processor with 4 P-cores 3.2GHz up to 4.2GHz   12MB Intel® Smart Cache   Intel® UHD Graphics 770 with 24EUs   Dual channel DDR5 3600MT/s memory interface   Intel® code name: Alder Lake-S