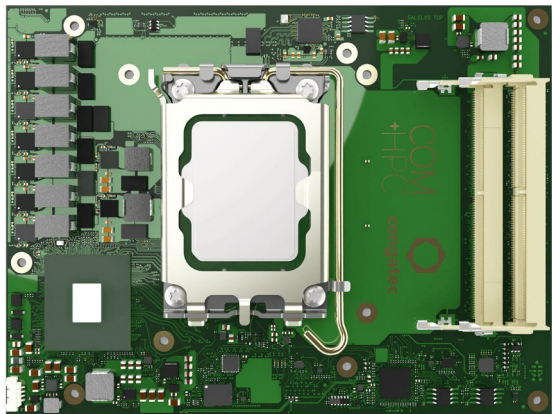


# 12<sup>th</sup> Gen Intel® Core™ Embedded Desktop Processors

## conga-HPC/cALS

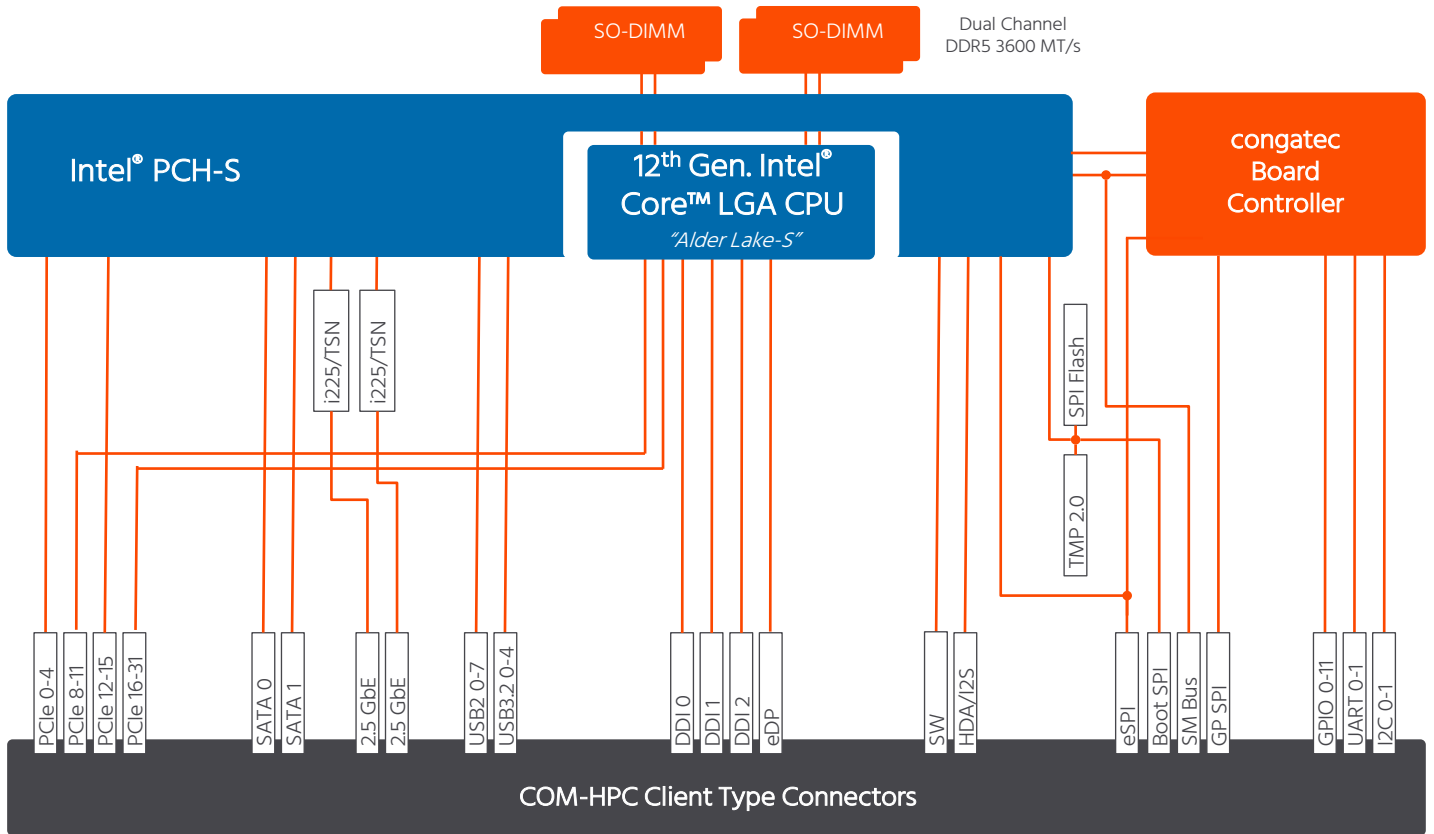


### COM+HPC®

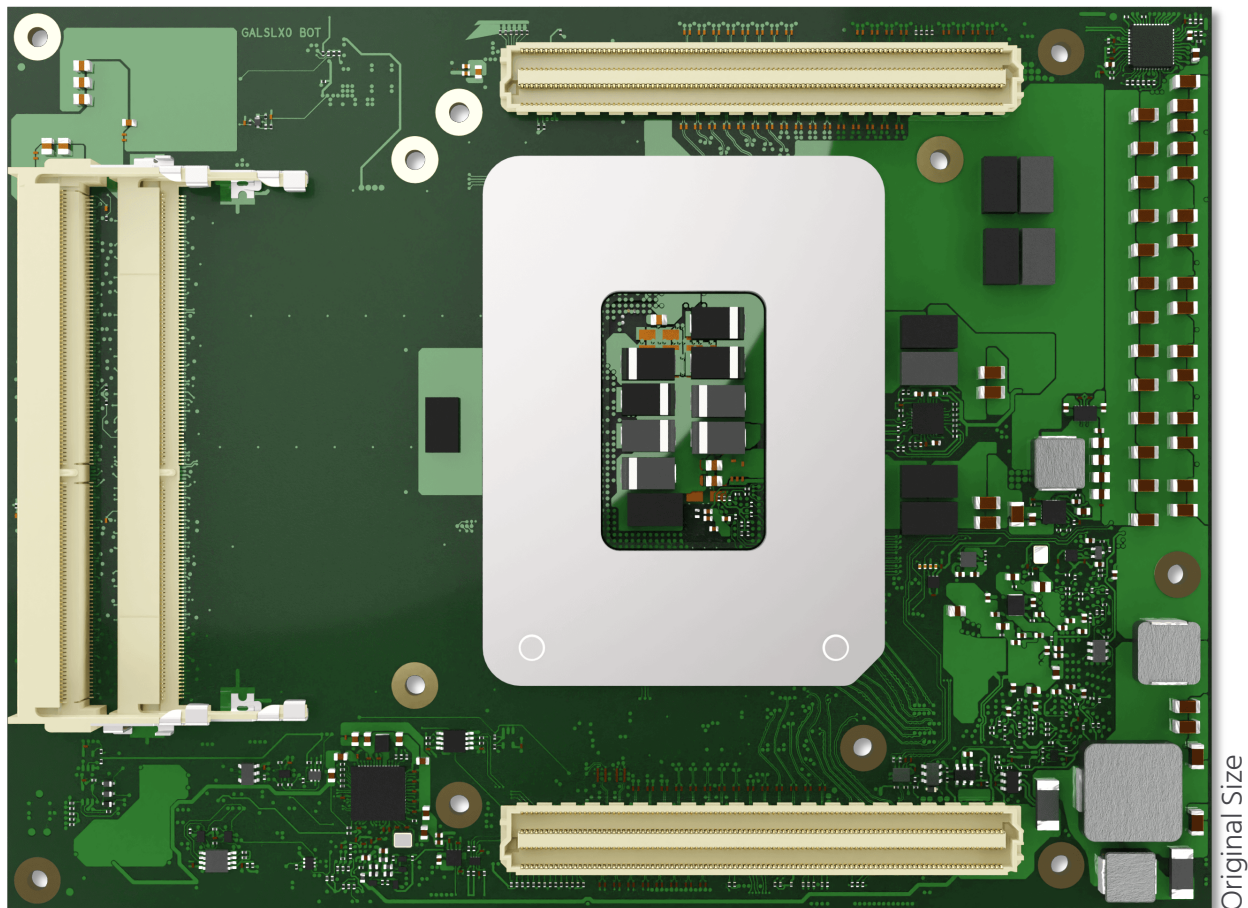
- Intel® hybrid design combines Performance-cores with Efficient-cores
- Intel® UHD Graphics 770 driven by X<sup>e</sup> Architecture
- PCI Express Gen 4/5 | USB 3.2 Gen 2
- AI Acceleration based on Intel® Deep Learning
- Embedded Use Condition SKUs

<b>Form factor</b>	COM-HPC Client Size C   Client Connector Pinout						
<b>CPUs</b>	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
<b>Processor Socket</b>	LGA 1700						
<b>DRAM</b>	4 SO-DIMM sockets for DDR5 memory modules up to 32 GByte each (128 GByte system capacity) up to 3600 MT/s						
<b>Graphics</b>	Intel® UHD Graphics 770 driven by X <sup>e</sup> Architecture   up to 32 EU						
<b>Display</b>	3x DDI   eDP						
<b>Ethernet</b>	2x 2.5 GbE TSN Ethernet (via Intel® i225 LM)						
<b>I/O Interfaces</b>	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						
<b>Audio</b>	2x Soundwire   HDA   I2S (opt.)						
<b>congatec Board controller</b>	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						
<b>Embedded BIOS Feature</b>	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						
<b>Security</b>	Trusted Platform Module (TPM 2.0)						
<b>Power Management</b>	ACPI 6.0 with battery support						
<b>Operating Systems</b>	Microsoft® Windows 11   Microsoft® Windows 10   Microsoft® Windows 10 IoT Enterprise   Linux   Yocto   Real Time Systems Hypervisor						
<b>Temperature</b>	Operating Temp.: 0°C ... +60°C			Storage Temp.: -20°C ... +70°C			
<b>Humidity</b>	Operating.: 10% ... 90% r. H. non cond.			Storage.: 5% ... 95% r. H. non cond.			
<b>Size</b>	120 x 160 mm						

# conga-HPC/cALS | Block Diagram



# conga-HPC/cALS | Bottom Side View



# conga-HPC/cALS | Order Information

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