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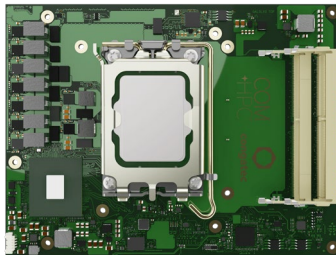


Datasheet

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conga-HPC/cALS

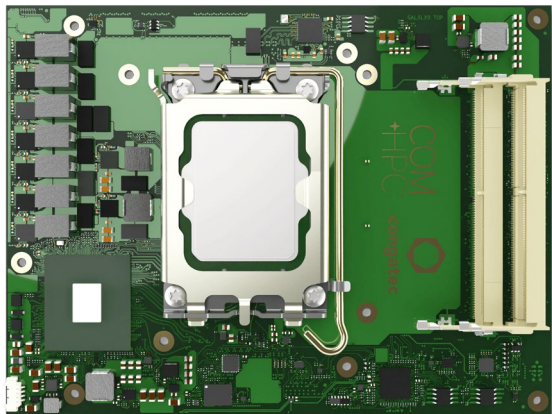
COM-HPC Client Size C module based on 12th Gen Alder Lake Intel® Core™ processor series



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12th Gen Intel® Core™ Embedded Desktop Processors

conga-HPC/cALS

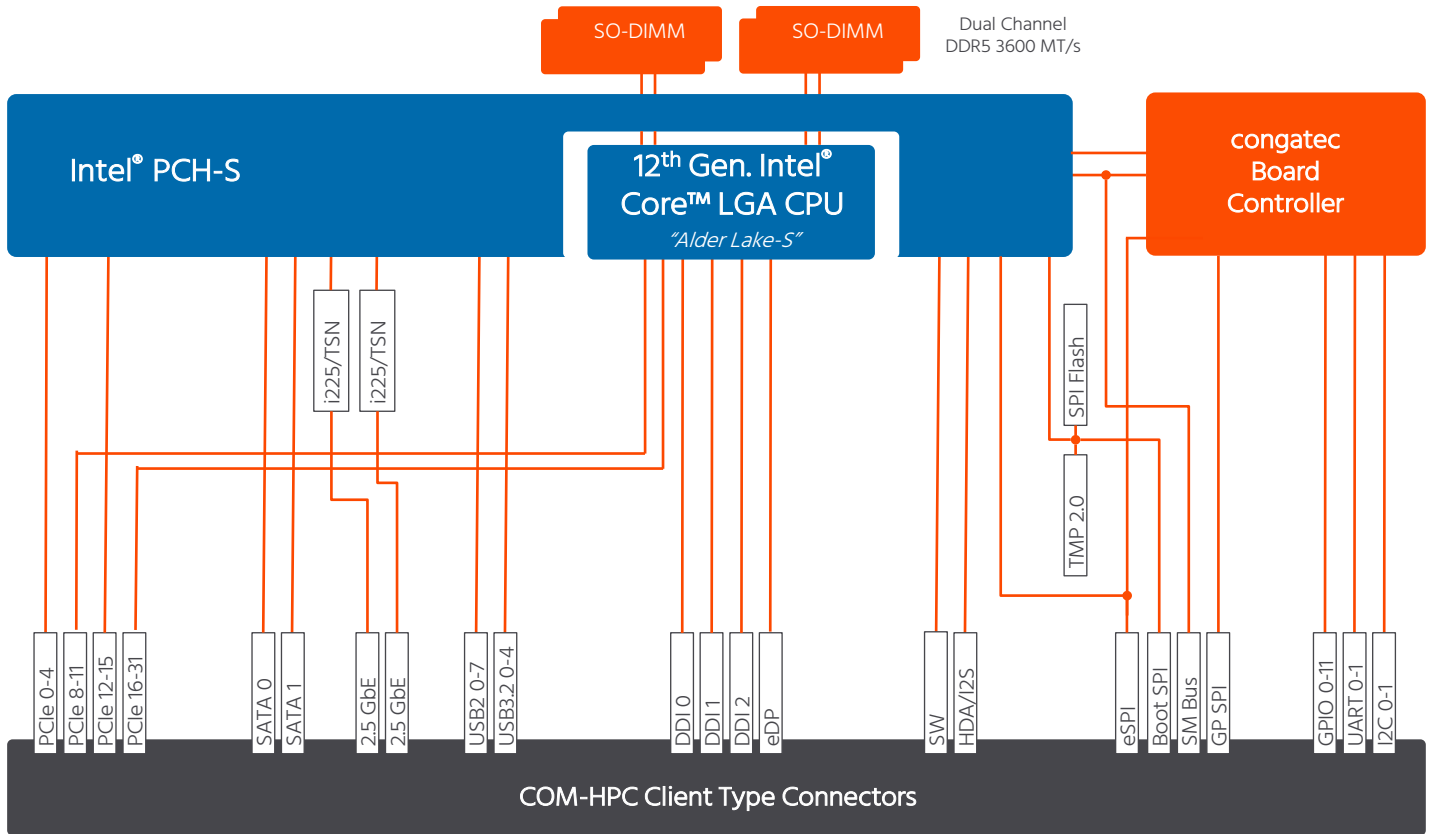


COM+HPC®

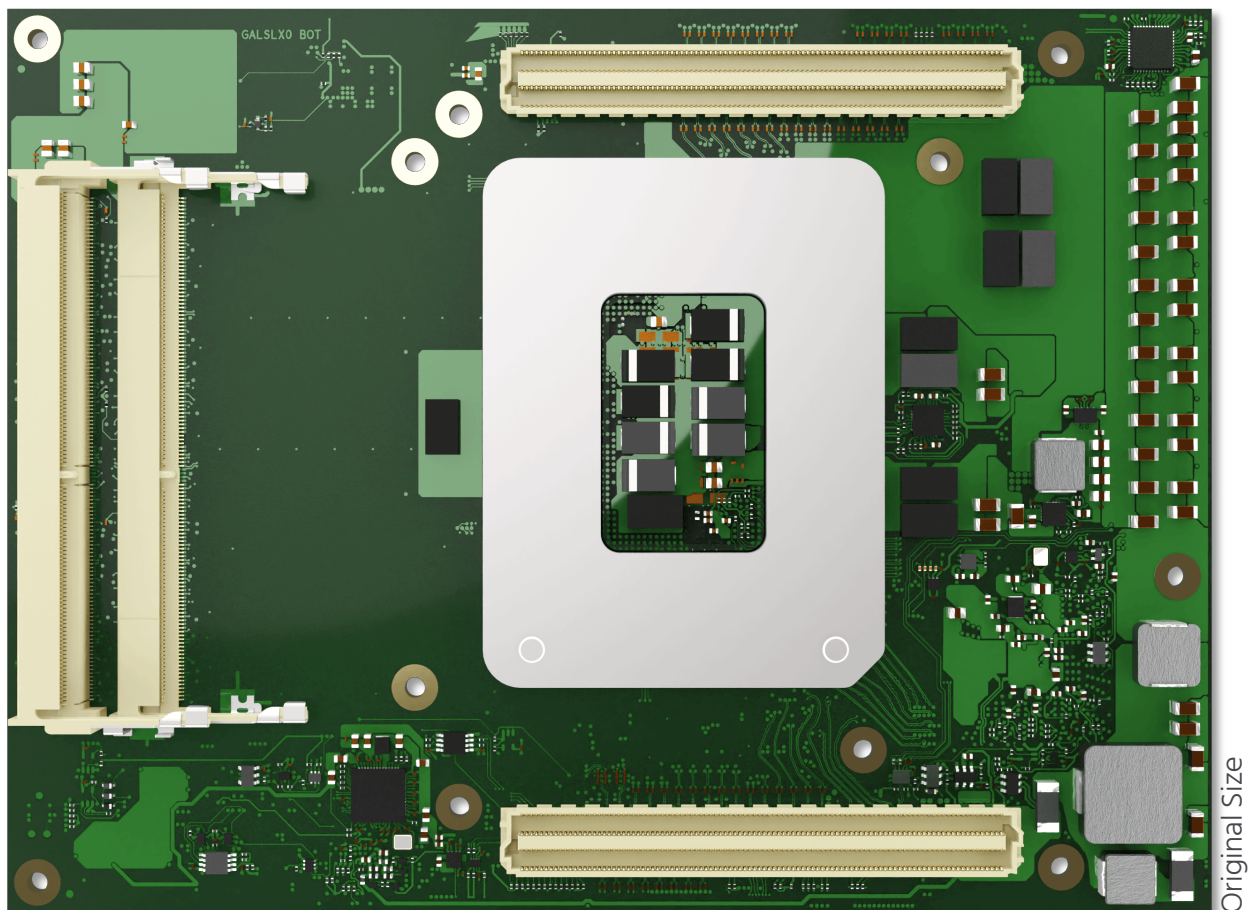
- Intel® hybrid design combines Performance-cores with Efficient-cores
- Intel® UHD Graphics 770 driven by X^e Architecture
- PCI Express Gen 4/5 | USB 3.2 Gen 2
- AI Acceleration based on Intel® Deep Learning
- Embedded Use Condition SKUs

Form factor	COM-HPC Client Size C Client Connector Pinout						
CPUs	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 X ^e 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 ² 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



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

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