



OUR GLOBAL
COMPETENCE
CENTRES

 APOLLO DISPLAY
TECHNOLOGIES



 DISTEC



 DISPLAY
TECHNOLOGY

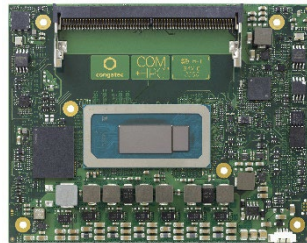


Datasheet

Congatec

conga-HPC/cRLP

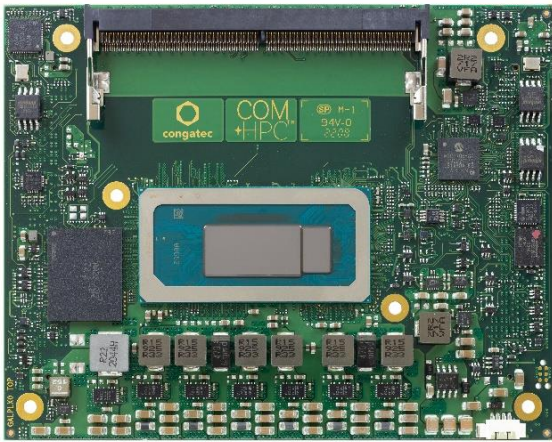
COM-HPC Client Size A high performance module based on 13th Generation Intel® Core™ Raptor Lake processor



The information contained in this document has been carefully researched and is, to the best of our knowledge, accurate. However, we assume no liability for any product failures or damages, immediate or consequential, resulting from the use of the information provided herein. Our products are not intended for use in systems in which failures of product could result in personal injury. All trademarks mentioned herein are property of their respective owners. All specifications are subject to change without notice.

13th Gen Intel® Core™ Embedded mobile Processors

conga-HPC/cRLP

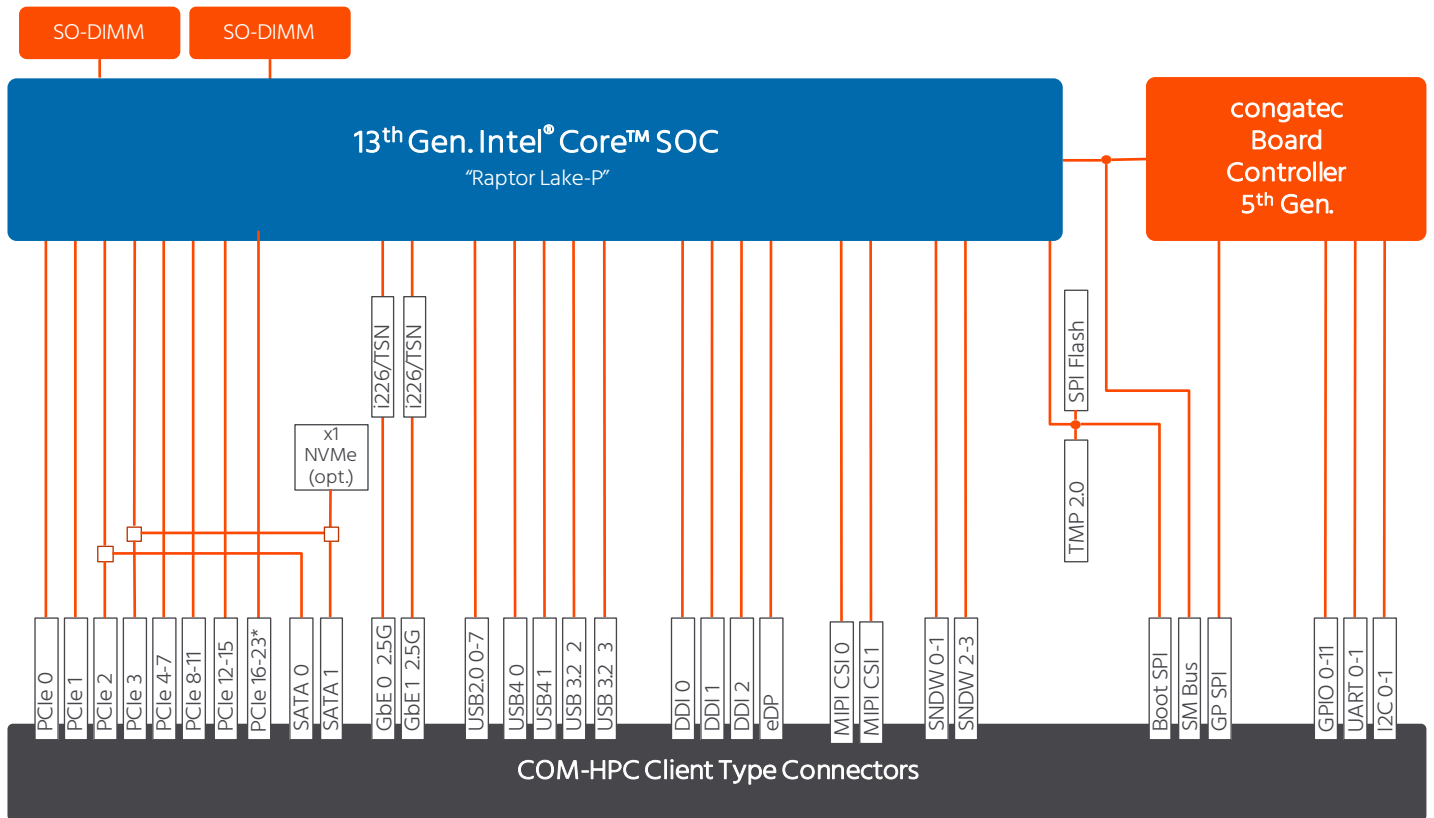


COM+HPC®

- Intel® hybrid design combines Performance-cores with Efficient-cores
- UP to Intel® Iris® Xe Graphics architecture with up to 96 EUs
- Up to PCI Express Gen 5 | Thunderbolt
- AI Acceleration with Intel® Deep Learning Boost (VNNI)
- Options for Industrial Temperature Range -40°C up to +85°C

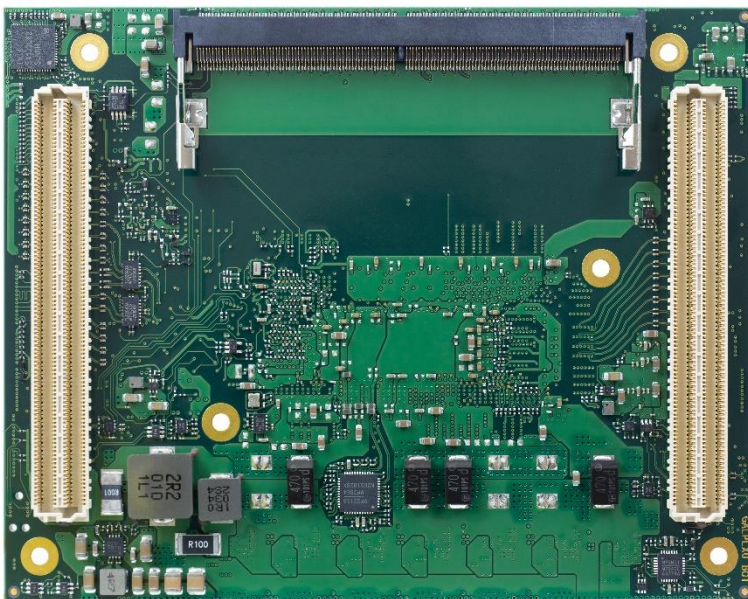
Form factor	COM-HPC Client Size A Client Connector Pinout	
CPUs	Intel® Core™ 13 th Gen Processors Raptor Lake-P (H-Series, P-Series, U-Series)	
DRAM	2 SO-DIMM sockets for DDR5 memory modules up to 32 GB RAM each (max. 64 GB RAM system capacity) up to 4800 MT/s	
Mass Storage	NVMe x1 SSD (optional)	
Graphics	Intel® UHD Graphics or Intel® Iris® X ^e Graphics architecture up to 96 EUs	
Display	3x DDI (up to 8K support) eDP	
Ethernet	2x 2.5 GbE with TSN support via Intel® i226 Ethernet controller series	
I/O Interfaces	Up to x8 PCIe Gen4/Gen5 2 x4 PCIe Gen4 up to 8 PCIe Gen3 2x Thunderbolt 2x USB 3.2 Gen2x1 8x USB2.0 up to 2x SATA 2x UART 2x MIPI-CSI 12x GPIO eSPI SM Bus I2C GSPi	
Audio	2x Soundwire fixed 2x Soundwire or HDA or 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 10 Microsoft® Windows 10 IoT Enterprise Linux Yocto Real Time Systems Hypervisor	
Temperature	Embedded SKUs: Operating 0°C ... +60°C Industrial SKUs: Operating -40°C ... +85°C	Embedded SKUs: Storage -20°C ... +70°C Industrial SKUs: Storage -40°C ... +85°C
Humidity	Operating: 10% ... 90% r. H. non cond.	Storage: 5% ... 95% r. H. non cond.
Size	120 x 95 mm	

conga-HPC/cRLP | Block Diagram



* available on selected SKUs

conga-HPC/cRLP | Bottom Side View



conga-HPC/cRLP | Modules Order Information

Article	PN	Description
conga-HPC/cRLP-i7-13800HE	045500	COM-HPC Size A module based on Intel® Core™ i7-13800HE processor with 6 P-cores 2.5GHz up to 5.0GHz Turbo and 8 E-cores 1.8GHz up to 4.0GHz Turbo 24MB Intel® Smart Cache Intel® Iris® X ^e Graphics architecture with 96 EUs Dual channel DDR5 4800 MT/s memory interface Intel® code name Raptor Lake-P (H-Series)
conga-HPC/cRLP-i7-1370PE	045501	COM-HPC Size A module based on Intel® Core™ i7-1370PE processor with 6 P-cores 1.9GHz up to 4.8GHz Turbo and 8 E-cores 1.2GHz up to 3.7GHz Turbo 24MB Intel® Smart Cache Intel® Iris® X ^e Graphics architecture with 96 EUs Dual channel DDR5 4800 MT/s memory interface Intel® code name Raptor Lake-P (P-Series)
conga-HPC/cRLP-i7-1365UE	045502	COM-HPC Size A module based on Intel® Core™ i7-1365UE processor with 2 P-cores 1.7GHz up to 4.9GHz Turbo and 8 E-cores 1.2GHz up to 3.7GHz Turbo 12MB Intel® Smart Cache Intel® Iris® X ^e Graphics architecture with 96 EUs Dual channel DDR5 4800 MT/s memory interface Intel® code name Raptor Lake-P (U-Series)
conga-HPC/cRLP-i5-1340PE	045504	COM-HPC Size A module based on Intel® Core™ i5-1340PE processor with 4 P-cores 1.8GHz up to 4.5GHz Turbo and 8 E-cores 1.3GHz up to 3.3GHz Turbo 12MB Intel® Smart Cache Intel® Iris® X ^e Graphics architecture with 80 EUs Dual channel DDR5 4800 MT/s memory interface Intel® code name Raptor Lake-P (P-Series)
conga-HPC/cRLP-i7-13800HRE	045510	COM-HPC Size A module based on Intel® Core™ i7-13800HRE processor with 6 P-cores 2.5GHz up to 5.0GHz Turbo and 8 E-cores 1.8GHz up to 4.0GHz Turbo 24MB Intel® Smart Cache Intel® Iris® X ^e Graphics architecture with 96 EUs Dual channel DDR5 4800 MT/s memory interface Industrial grade temperature range from -40°C to +85°C Intel® code name Raptor Lake-P (H-Series)
conga-HPC/cRLP-i7-1370PRE	045511	COM-HPC Size A module based on Intel® Core™ i7-1370PRE processor with 6 P-cores 1.9GHz up to 4.8GHz Turbo and 8 E-cores 1.2GHz up to 3.7GHz Turbo 24MB Intel® Smart Cache Intel® Iris® X ^e Graphics architecture with 96 EUs Dual channel DDR5 4800 MT/s memory interface Industrial grade temperature range from -40°C to +85°C Intel® code name Raptor Lake-P (P-Series)
conga-HPC/cRLP-i7-1365URE	045512	COM-HPC Size A module based on Intel® Core™ i7-1365URE processor with 2 P-cores 1.7GHz up to 4.9GHz Turbo and 8 E-cores 1.2GHz up to 3.7GHz Turbo 12MB Intel® Smart Cache Intel® Iris® X ^e Graphics architecture with 96 EUs Dual channel DDR5 4800 MT/s memory interface Industrial grade temperature range from -40°C to +85°C Intel® code name Raptor Lake-P (U-Series)
conga-HPC/cRLP-i5-1350PRE	045514	COM-HPC Size A module based on Intel® Core™ i5-1350PRE processor with 4 P-cores 1.8GHz up to 4.6GHz Turbo and 8 E-cores 1.3GHz up to 3.4GHz Turbo 12MB Intel® Smart Cache Intel® Iris® X ^e Graphics architecture with 80 EUs Dual channel DDR5 4800 MT/s memory interface Industrial grade temperature range from -40°C to +85°C Intel® code name Raptor Lake-P (P-Series)

conga-HPC/cRLP | Accessories Order Information

Article	PN	Description
conga-HPC/cRLP-CSA-HP-B	049550	Standard active cooling solution for COM-HPC module conga-HPC/cRLP with integrated heat pipes, 29mm height and integrated 12V fan. All standoffs are with 2.7mm bore hole.
conga-HPC/cRLP-CSA-HP-T	049551	Standard active cooling solution for COM-HPC module conga-HPC/cRLP with integrated heat pipes, 29mm height and integrated 12V fan. All standoffs are M2.5mm threaded.
conga-HPC/cRLP-CSP-HP-B	049552	Standard passive cooling solution for COM-HPC module conga-HPC/cRLP with integrated heat pipes, 28.2mm height. All standoffs are with 2.7mm bore hole.
conga-HPC/cRLP-CSP-HP-T	049553	Standard passive cooling solution for COM-HPC module conga-HPC/cRLP with integrated heat pipes, 28.2mm height. All standoffs are M2.5mm threaded.
conga-HPC/cRLP-HSP-HP-B	049554	Standard heatspreader for COM-HPC module conga-HPC/cRLP with integrated heat pipes, 13mm height. All standoffs are with 2.7mm bore hole.
conga-HPC/cRLP-HSP-HP-T	049555	Standard heatspreader for COM-HPC module conga-HPC/cRLP with integrated heat pipes, 13mm height. All standoffs are M2.5mm threaded.
conga-HPC/EVAL-Client	065600	Evaluation Carrier Board for COM-HPC Client type Modules.
DDR5-SODIMM-4800 (8GB)	068901	DDR5 SODIMM memory module with up to 4800 MT/s and 8GB RAM, commercial temp 0°C to +60°C
DDR5-SODIMM-4800 (16GB)	068902	DDR5 SODIMM memory module with up to 4800 MT/s and 16GB RAM, commercial temp 0°C to +60°C
DDR5-SODIMM-4800 (32GB)	068903	DDR5 SODIMM memory module with up to 4800 MT/s and 32GB RAM, commercial temp 0°C to +60°C
DDR5-SODIMM-4800 (8GB) / i-temp	068921	DDR5 SODIMM memory module with up to 4800 MT/s and 8GB RAM, industrial temp -40°C to +85°C
DDR5-SODIMM-4800 (16GB) / i-temp	068922	DDR5 SODIMM memory module with up to 4800 MT/s and 16GB RAM, industrial temp -40°C to +85°C
DDR5-SODIMM-4800 (32GB) / i-temp	068923	DDR5 SODIMM memory module with up to 4800 MT/s and 32GB RAM, industrial temp -40°C to +85°C

Our company network supports you worldwide with offices in Germany, Austria, Switzerland, the UK and the USA. For more information please contact:

Headquarters

Germany



FORTEC Elektronik AG

Augsburger Str. 2b
82110 Germering

Phone: +49 89 894450-0
E-Mail: info@fortecaq.de
Internet: www.fortecaq.de

Fortec Group Members

Austria



Distec GmbH Office Vienna

Nuschinggasse 12
1230 Wien

Phone: +43 1 8673492-0
E-Mail: info@distec.de
Internet: www.distec.de

Germany



Distec GmbH

Augsburger Str. 2b
82110 Germering

Phone: +49 89 894363-0
E-Mail: info@distec.de
Internet: www.distec.de

Switzerland



ALTRAC AG

Bahnhofstraße 3
5436 Würenlos

Phone: +41 44 7446111
E-Mail: info@altrac.ch
Internet: www.altrac.ch

United Kingdom



Display Technology Ltd.

Osprey House, 1 Osprey Court
Hinchingsbrooke Business Park
Huntingdon, Cambridgeshire, PE29 6FN

Phone: +44 1480 411600
E-Mail: info@displaytechnology.co.uk
Internet: www.displaytechnology.co.uk

USA



Apollo Display Technologies, Corp.

87 Raynor Avenue, Unit 1
Ronkonkoma, NY 11779

Phone: +1 631 5804360
E-Mail: info@apolloDisplays.com
Internet: www.apolloDisplays.com